Programmes and Projects

Andean Countries: A Strategy for Forestry
Case Studies - Volume III of V
ECUADOR

FAO/World Bank Cooperative Programme
Latin America and the Caribbean Service
Investment Centre Division

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PROGRAMMES and PROJECTS

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List of Acronyms and Abbreviations

AME	Association of Municipalities
CEDENMA	Umbrella Organization of E-NGO´s
CNDS	National Council for Sustainable Development
CONCOPE	Association of Provincial Governments
CONIFOR	National Association of Forest Engineers
DNF	National Forest Directorate
EDFSE	Strategy for Sustainable Development of Ecuador's Forests
EU	European Union
FLEGT	Forest Law Enforcement, Governance and Trade
FSC	Forestry Stewardship Council
IERAC	Instituto Ecuatoriano de Reforma Agraria y Colonización
INDA	*Instituto Nacional de Desarrollo Agrario*
INEFAN	*Instituto Ecuatoriano Forestal y de Áreas Naturales*
ITTO	International Timber Trade Organization
LULUCF	Land use, land change and forestry
MDF	Medium Density Fiberboard
MoE	Ministry of Environment
NFP	Natural Forestry Program
NGO	Non-Governmental Organization
NTFP	Non-timber forest product
ONHAE	Organization of the Huaorani People
PFE	Public Forest Estate - *Patrimonio Forestal del Estado*
RF	Forest Regents
SNTCF	National Forest Control System
SNDGA	National System of Decentralized Environmental Management
SENPLADES	Secretariat for National Planification of the Presidency of the Republic
SFM	Sustainable Forest Management
SGS	SGS Group
US$	United State Dollars
VFC	Voluntary Forest Certificate

I. INTRODUCTION

1. In the year 2000 Ecuador had 11,6 Millions hectares of forests which was 47% of the country's continental area. At the pace of extremely quick deforestation of 1.5% annually, which is four times higher than all the neighbouring countries, 1 million hectares of forests may have been gone by this year. There are severe structural problems that are responsible for this, mainly:

- Nearly all of the countries forests are in private or communal possession but 50% of forest land has unresolved land tenure problems.
- Thirteen indigenous people, who account for less than 2% of the countries population, control about 44% of Ecuadorian forests. They represent 17% of all forest owners and control 72% of the forest area, while 83% of forest owners, which are mainly colonists and farmers, have properties smaller than 50 hectares only partially covered with forest. This poses severe problems for SFM and voluntary forest certification schemes.
- Insecure land tenure and non compliance with the law disincentives investment in forestry: Ecuador's attractivity index for forest investment is second last after Haiti
- Demand of wood from natural forests doubles the offer, therefore the accessible forests are over-harvested, degraded and often converted to agricultural land: between 17,5 and 54% of wood is harvested and traded illegally.
- No efficient forest control system in place, neither are there fiscal incentives or market mechanisms to incentive sustainable forest management: illegally harvested timber is 31 to 37% cheaper than the legal one.

2. The forest authority exercised by the Ministry of Environment is very weak and inefficient and needs to be strengthened urgently: the already successful scheme to delegate activities of verification and control to private and social actors should be reestablished. The Outsourced Forest Control System needs to be reassumed to control illegal timber harvesting and trade.

3. Land use zoning and regulation are legal competences dispersed into different institutions at national level and not exercised at all. Land use conflicts are evident at all levels (agriculture, conservation, oil and mining, roads).The decentralization of legal competences to provincial governments could help amalgamate competences of land use zoning at the provincial level in order to implement land use policies and enforce land use regulations.

4. The well intended and consistent "Strategy for Sustainable Development of Ecuador's Forests EDFSE" (2000), which is targeted to give more value to the forest to benefit forest owners, needs the buy-in of political and economic decision makers at the highest level of government and of other sectors exogenous to the forest sector to have the political and social leverage to be implemented and be considered a National Forest Program. A new forest law needs to be approved by Congress in order to solve land tenure problems and offer instruments to foster SFM, like payment for environmental services or fiscal incentives

5. Ecuador has an important comparative advantage regarding its simple, well adapted, forest norms that contain criteria and indicators for sustainable forest management at the level of the farmer and the chainsaw logger: this instrument has a big potential to foster sustainable forest management and combat poverty, but needs to be complemented with technical assistance and market access that benefit also the forest owners. In difference to other countries of the region, most of Ecuador's forests are in possession of people and indigenous communities: the potential of the forests to combat rural poverty needs to be activated urgently.

II. THE FOREST RESOURCE BASE

A. Ecuadors´s Forest Cover

6. The most recent official figures about Ecuador's forest cover (CLIRSEN, 2003) show that up to the year 2000, less than half (47 %) of the countries continental land area of 24,68 million hectares was covered with the following four main different forest types:

Table 1: Ecuadorian Vegetation Types Year 2000

	Vegetation type	Area* (ha)
1	Moist / clouded tropical forests	10.489.756
2	Dry tropical forests	569.657
4	Mangroves	150.002
5	Palm swamp areas	470.407
	Total Forest	**11.679.822**

** not including the Galapagos Islands.*

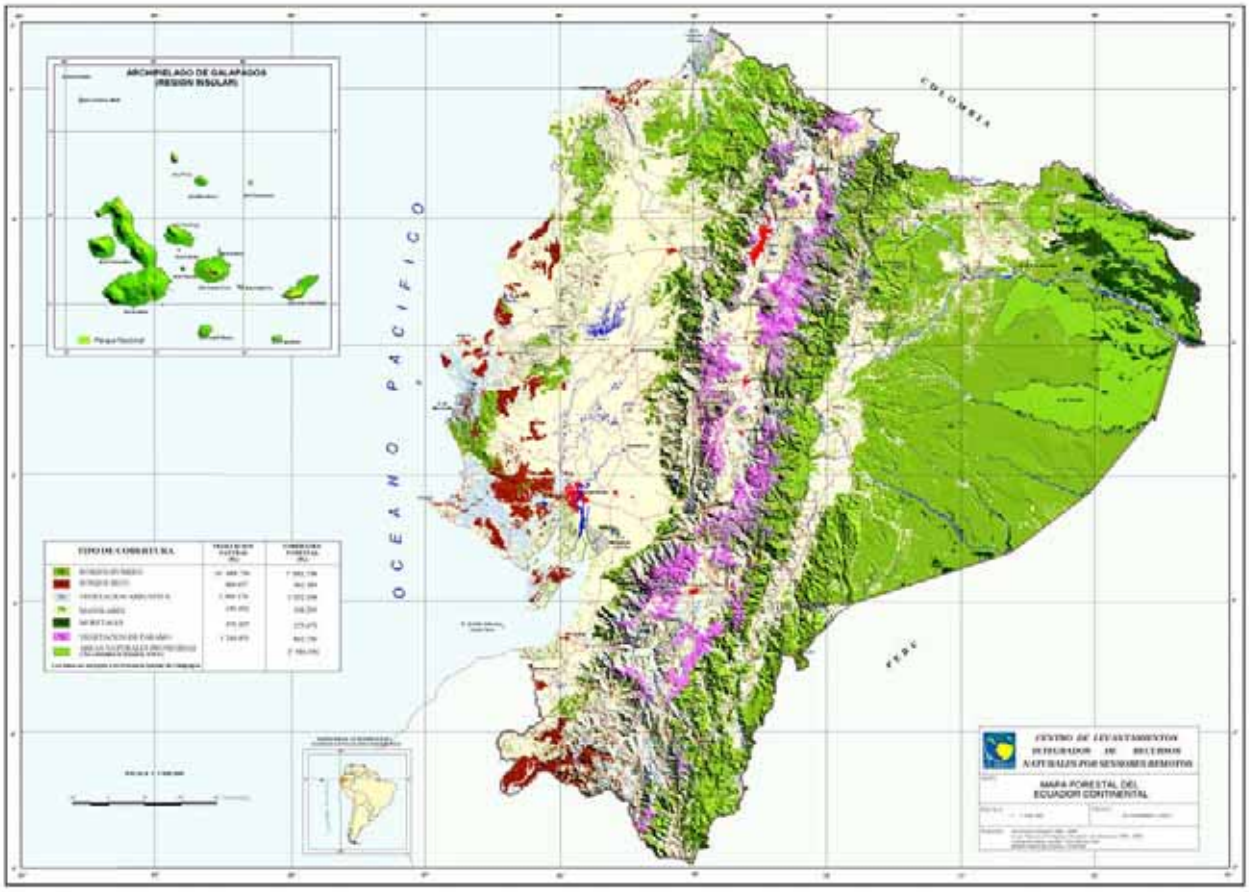


Figure 1: Natural Forest Cover of Ecuador 2000 (Clirsen, 2003).

7. The natural forest cover potentially available for timber harvesting and forest management is estimated to be 7,66 million ha, since 3,98 million ha of forests are inside the National System of Protected Areas (Sanchez R., 2005) in which commercial timber extraction is not allowed.

Table 2: Estimates of Potentially Productive Forest Area in Ecuador

	Million (ha)
Total Natural Forests	11,68
Natural forests within protected areas (SNAP)	(-) 3,98
Forest outside Protected Areas	= 7,66
Protection forest, mangroves, others	(-) 1,96
Potentially productive natural forest area	= 5,7

Sources: CLIRSEN, 2003 / Barrantes, 2001.

8. Barrantes (2001) estimates that only 60% of this area of 5,7 million hectares can actually be used for sustainable forest management which results in 3,42 million hectares of natural forest area with a potential for timber harvesting. FAO (2005) and ITTO (2004) estimate 3,0 million ha, while the last agricultural census estimates the 'productive' forest area to be 3,9 million ha (MAG/ SICA, 2002). (MMA-CARE/AID, 1999) taking additionally into account severe problems of tenure insecurity (see section 1.2 below) and the poor accessibility of most of Ecuador's forests, estimates that only 10% of these potentially productive forests have real options to be harvested on an economically sound and sustainable basis, coming up with only 600.000 ha.

B. Forest Tenure and Distribution

9. There is very poor information regarding forest ownership. Forest tenants can be divided to three main categories: larger territories under control of indigenous people; farms in hand of settlers and public forest land.

Larger Territories Under Control of Indigenous People

10. The Ecuadorian Constitution grants to indigenous communities the ownership of its ancestral territories. These are located in the northwest and the eastern lowlands of the country. Main forest holders are Kichwa, Achuar, Shuar and Huaorani people. Putting together already legalized territories (ca. 4 million ha) and claimed territories (2,3 millon ha) the indigenous nationalities are in control of about 6,4 million ha (SIISE 2003). In the north-western lowlands (Province of Esmeraldas) the indigenous people Awá and Chachi hold about 230.000 hectares of this regions forests (SIISE 2003).

11. It can be estimated that at least 80% of abovementioned indigenous land is covered by natural forests, which equivalents to around 5 million ha. Therefore less than 2% of Ecuador's population is in control of about 44% of the countries forest resources.

12. Communal land is not necessarily used collectively although there may be global land titles on behalf of the entire community. With cultural differences among people, there are more intensively used areas allocated to individual families or clans and extensively used common access areas (e.g. for hunting, gathering). Hence, internally the communities have a specified land use system defined. The internal subdivision of collective land to individual families or clans is also practiced when newly installed roads reach indigenous forest areas, creating the conditions for timber exploitation.

Subsequently, wood companies and traders negotiate with the communities or (more frequently) with individual families. As the land title still includes the entire community, a permit by the community representative is required for timber extraction (Schroeder, 2005).

Table 3: Communal Land of Indigenous People

	Territories (ha)			
People	**Non-legalized**	**Legalized**	**Total**	**Population**
Awá	5.500	121.000	126.500	13.000
Chachi		105.468	105.468	8.040
Afroecuadorian		186.384	186.384	20.000
Tsatchila	10.059	9.060	19.119	2.640
Subtotal (Northwest)	15.559	421.912	437.471	43.680
Cofán	94.000	37.571	131.571	1.000
Secoya		39.415	39.415	380
Siona	47.888	7.888	55.776	400
Huaorani		716.000	716.000	2.200
Shuar	182.468	718.220	900.688	110.000
Kichwa (Amazon)	1.569.000	1.115.000	2.684.000	80.000
Achuar	113.014	884.000	997.014	5.440
Zápara	217.000	54.000	271.000	200
Shiwiar	100.000	89.377	189.377	697
Subtotal (Amazon)	2.323.370	3.661.471	5.984.841	200.317
Total	**2.338.929**	**4.083.383**	**6.422.312**	**243.997**

Sources: SIISE 2002, Codempe 2005, Palacios 2005.

Farms

13. According to the national agricultural census carried out in the year 2000, around 29% of a total of 842.882 farms include forest areas summing up a total of 3.881.140 ha of forests. The average forest cover per property is of around 16 hectares. Substantial differences in property and forest size are found among the three different natural regions of the country. Bigger properties with larger forest cover exist in the Amazon region.

Table 4: Estimate on Forest Area Within Properties

Region	Property size (ha)	Forest area (ha)*
Coast	21,7	18,1
Highlands	8,3	8,0
Amazon Region	50,8	37,0

* considering only those units that include forests. (SICA 2002 in Schroeder 2005).

Table 5: Forest Area According To Property Size (SICA 2002)

Size of the production unit	Nº of units	%	Forest area (ha)	%
< 1	15.817	6,5	2.494	0,1
1 – 2	17.716	7,3	7.893	0,2
2 – 3	16.655	6,9	13.350	0,3
3 – 5	24.654	10,1	32.402	0,8
5 – 10	36.869	15,2	94.958	2,4
10 – 20	37.597	15,5	199.766	5,1
20 – 50	51.297	21,1	732.170	18,9
50 – 100	27.247	11,2	884.894	22,8
100 – 200	10.148	4,2	636.834	16,4
> 200 ha	4.912	2,0	1.276.380	32,9
TOTAL	**242.912**	**100,0**	**3.881.141**	**100,0**

14. Table 5 above shows the forest area within different properties of different size. Around 83 % of the farmers own properties of up to 50 ha, representing only 28% of the forest cover reported for the farms. This, together with the fact that two thirds of all forest owners have forests smaller than 200 has impose severe limitations for the feasibility of sustainable forest management and make traditional voluntary forest certifications schemes unviable from an economic perspective. Cheaper options for VFC adapted to the socio-economic reality of this 238.000 forest owners and market access need to be offered if VFC is to be considered as a means to promote SFM for this important segment of forest dwellers mostly living in extreme poverty.

15. In contrast, only 17% of the forest owners control 72% of the productive forest area. It is not clear if this figure corresponds to indigenous communities, but given the figures shown in Table 3 one should assume that at an important part of the "production units" described in the agricultural census must be referred to individual plots of family/clan use inside communal territories of indigenous people. There is an interesting potential for VFC for this forest owning communities which due to the dynamics inherent to the governance of indigenous communities cannot be compared (and compete on the market) with VFC schemes of big forest concessions given to one private company (like Bolivia). This explains the reason why from 23.000 has certified under FSC Standards in Ecuador until 2006 not one single hectare of natural forest was contained (CEFOVE, 2005).

16. For a study area in the northern Amazon, Torres (2005) indicates that only a 34% of the farmers hold a legal land title and an additional 12 % a certificate of possession. Gatter (2006, personal communication) informs that 2 out of 3 individual farmers in the southern Province of Morona Santiago have a land title.

Public Forest Land

17. Around 4,0 million ha of forests are inside the category "National System of Protected Areas" (SNAP). Around 2,34 million ha are part of the category of "Public Protection Forests" and 2,06 million ha were declared to be "Public Forest Estate – PFE (*Patrimonio Forestal del Estado*)" in the eighties (FAO/FRA, 2005). All these categories overlap with each other to a certain extend and most protected areas are at the same time territory of indigenous people. Nearly all of the PFE is settled by peasants or indigenous communities (Morales, 2005); therefore there is no public forest land under

direct state administration or control outside the protected areas (SNAP). An expert mission to evaluate Ecuador's achievement of "ITTO Year 2000 Objective" declares that all productive forests in Ecuador are in private hands but with unresolved tenure (ITTO, 2004).

Table 6: Estimate of Area for Different Land Tenure Categories

Category	**Area (000 ha)**
Forest within Protected Areas	3.980
Public protection forests	2.337
Public Forest Estate (PFE)	2.056
Farms	3.881
Forests in Indigenous Territories	5.000
Total	**17.254**

18. Table 6 makes an attempt to dimension the amount of forest area with an unclear tenure situation: Since only 11,5 million hectares of natural forest are available, a least 5,75 millions hectares overlap with other categories. This means that for at least 50% of Ecuador's forests tenure problems have yet to be resolved.

C. The National System of Protected Areas (SNAP)

19. The continental part[1] of the National System of Protected Areas (SNAP) is put together of 32 units of different conservation categories which altogether make up an area of 4.060.886 hectares that corresponds to 15,8 % of continental Ecuador (MAE, 2005). 11 Protected areas lie in the eastern part of the *cordillera* and in the Amazon lowlands, making up for more than 80% of the whole system's area.

20. Although the Forest Law[2] dated from 1981 states that the protected areas are a national heritage and that no private no communal property right can be claimed upon them, the Constitution approved in 1998 grants property rights of indigenous communities over their original territories. There are also squatters, settlers and private land owners which claim or hold official property titles inside the SNAP, some of them in ownership long before the protected area was declared. Until now there has been no expropriation of private land within the SNAP. Legal contradictions regarding tenure, access and use create conflicts and uncertainty permanently, both fostering predatory behavior instead of promoting sustainable use and conservation.

[1] Without the Galapagos Archipelago.

[2] *Ley Forestal y de Conservación de Áreas Naturales y Vida Silvestre (1981) Codificación 2004-017 / RO No. 418:10.IX.2004.*

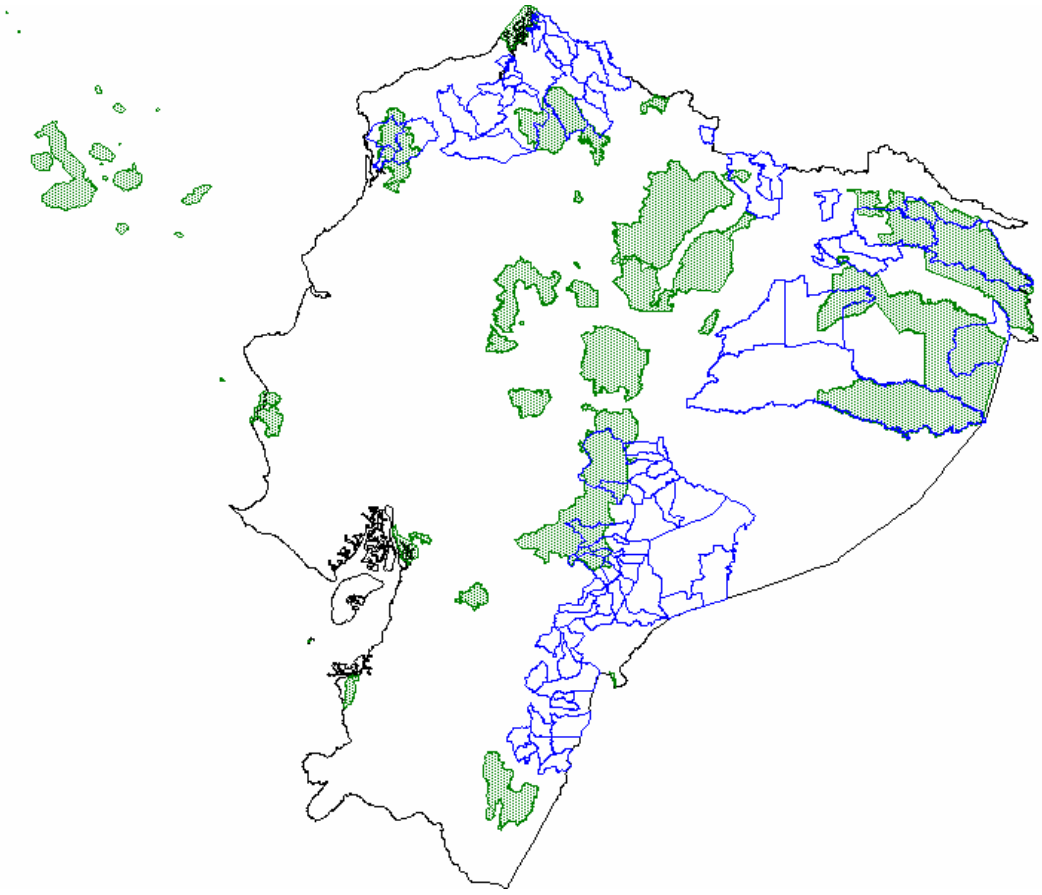


Figure 2: Protected Areas System SNAP (shaded in green) and 7 Selected Indigenous Territories (in blue): Awá, Chachi, Cofán, Secoya, Siona, Huaorani, Shuar. (Source SIISE, 2003).

21. In order to bring more coherence into the legal framework regulating biodiversity conservation four years ago a new law for the Conservation and Sustainable Use of Ecuador's Biodiversity was drafted by the Ministry of Environment with provisions to grant communal ownership of indigenous communities inside of the SNAP. Unfortunately this law hasn't been approved by Congress until now.

22. Although the Forest Law forbids any extractive explotation of natural resources inside the SNAP, intensive illegal logging has often been reported in protected areas (Cabodevilla, 2005) and oil drilling has been the main industry in the Amazon Region for decades.

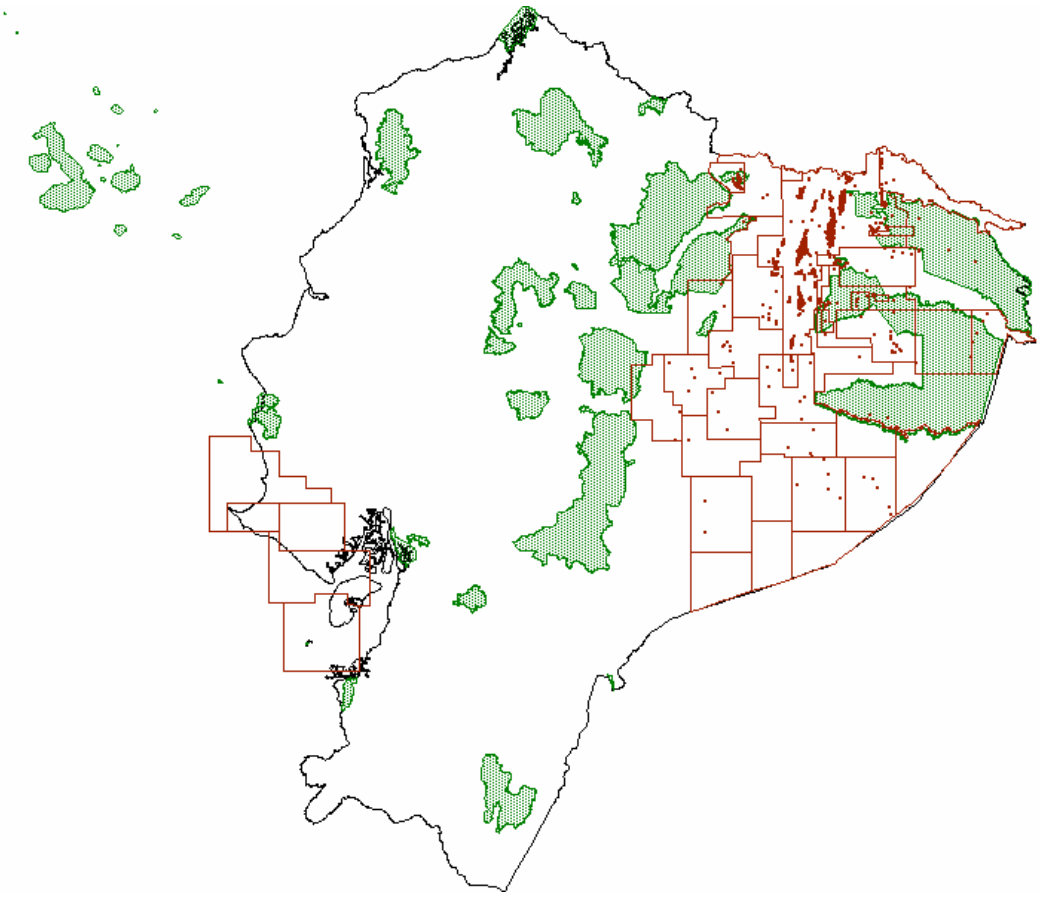


Figure 3: Oil Concession "blocks" (brown lines), Oil Wells (brown spots) and Protected Areas (shaded green).
Source SIISE, 2003.

D. Forest Plantations

23. Since there is no accurate up-dated information available on forest plantations in Ecuador, most authors (Barrantes 2001, FAO 2005) refer to INEFAN (1993) with a total area of forest plantations of 163.000 ha. Since then at least two official aforestation projects (BID 808, Planfor) and several private innitiatives have established another 57.000 ha, therefore a best guess on forest plantations in Ecuador lies above 220.000 ha. Roughly two thirds of these plantations consist of pine and eucalyptus in the highlands, while one third is made up of a much broader variety of species and are located in the pacific lowlands.

Table No. 7: Estimate of Forest Plantations in Ecuador

	Species	Area (ha)	%
Lowlands	*Ochroma lagopus*	12.000	
	Tectona sp., Gmelina sp.	9.000	
	Diff. tropical species	35.000	
	Eucalyptus in Lowlands	4.000	
	Subtotal	*60.000*	*27,3*
Highlands	*Pinus sp., Eucaliptus sp.*	160.000	*72,7*
Total		220.000	100,0

(Sources: Estimate of the author from information from BID 808, Profafor, Eucapacific, Planfor, Grupo Wong, Grupo Durini).

E. Secondary Forests

24. ITTO (2004) estimates that there are at least 1,5 million hectares of secondary forests in Ecuador with a productive potential which has not been adequately considered nor integrated into the market. Although this forests could provide lumber for pallets which consume between 150 (ITTO, 2004) and 350 thousand cbm of wood per year (Vázquez, 2005), the main product coming out from secondary forests are fruit boxes for the national market rudimentarily crafted from "*pigue*" (*Pollalestra sp.*) in the Amazon Lowlands. Areas re-covered with secondary forests may be increasing as a consequence of abandonment of farms by settlers due to significant migration flows to Europe and the USA that have taken place during the last 10 years.

III. THE ECONOMIC, ENVIRONMENTAL AND SOCIALLY RELEVANT ATTRIBUTES OF THE FOREST RESOURCE

25. Due to the harsh rise of oil prices, Ecuador's GDP in 2004 reached around 30 billion US dollars. GDP per capita for the last 20 years has been around 1.400 US$ (CORDES, 2005). The economy has a strong dependence on the primary sector, being oil and bananas the main export products (more than 70%). Forest products make up only 1-2% of total exports (ITTO, 2004). The forest sector has historically participated only of 1% of GDP and for 2004 surely strong under this mark.

Table 8: Economic Relevance Of The Forest Sector (in 000 US$)

	1997	1998	1999	2000	2001
GDP	16.198.551	16.541.248	15.499.239	15.933.666	16.749.124
Agriculture and forestry	1.309.328	1.243.657	1.405.424	1.465.783	1.471.162
Forestry	135.322	146.263	155.934	175.419	173.357
% of GDP	0,8	0,9	1,0	1,1	1,0

Source: Echeverria, 2004, BCE.

A. Wood Production

26. There is few reliable data of forest production available. Depending on the approach regarding the productive forest areas discussed in section 1.1, the wood production potential from natural forest lies between 510.000 and 3,1 million cubic meter per year, while the offer from forest plantations and from secondary forests can be estimated in 2,2 and 3,6 million cubic meters respectively.

Table No. 9: Wood Offer

Forest Type	Total Area (1000x ha)	Accessible area* (1000x ha)	Sustainable Yield (cbm per ha/yr)	Total Standing Wood Volume Offer (000x cbm/yr)
Natural Forests	5.700	3.420 (a) 570 (b)	0,9	(a) 3.080 (b) 510
Plantations	220	220	10	2.200
Secondary Forests	1.500	720	5	3.600

* access and potential for sustainable timber production is estimated 60% (a) and 10% (b) for natural forests (see Sect. 1.1 above), 100% for plantations and 60% for secondary forests.

B. Wood Consumption

27. Based on recent estimates done by ITTO (2004) the standing commercial timber volume showed in Table 10 was obtained: Wood consumption from natural forest is about 2,2 million cubic meters per year.

Table 10: Wood Consumption From Natural Forests

Product	Volume (cbm x 000)	CF to SV*	Standing Volume (cbm x 000)
Chain sawn lumber - Pallets for fruit export - Construction, moldings - Furniture, housing, floors, doors - Balsa and other uses	750 - 150 - 200 - 200 - 200	0,4	1.875
Plywood panels	120	0,4	300
Total			**2.175**

* Conversion factors to standing timber volume from Gatter S. and Romero M. (2005) for lumber and Espinoza G. (2005) for wood panels.

Table 11: Wood Consumption From Forest Plantations

Product	Volume (cbm x 000)	CF to SV	Standing Timber Volume (cbm x 000)
Particle board panels and MDF	160	0,6	266,7
Eucalyptus chips	105	0,8	131,3
Balsawood	170	0,6	283,3
Lumber for housing	200	0,6	333,3
Other secondary processing industry	60	0,4	150
Pallets for fruit export	80	0,4	200
Firewood*	925	1	925
Total			**2289,6**

* assuming a fourth of the firewood consumption of 3,7 million cbm (ITTO, 2004) comes from forest plantations and the rest coming from residues already contained in the other products.
Sources: ITTO, 2004; Vázquez, 2005.

C. Sustainable Wood Balance

28. Table 9 above shows that the potential wood offer from natural forests in Ecuador lies between 510.000 and 3.080.000 cubic meter of wood (commercial standing timber volume). Taking into account severe problems of land tenure for at least 50% of forest covered land which affects severely legal production and sustainability, one can assume that wood offer on a sustainable basis has to be large under the average of 1.795.000 cbm that lies in between these two extreme assumptions, reaching at most 1 million cubic meter standing timber volume from natural forests.

Table 12: Wood Offer And Consumption Balance (In 1000 Cbm Standing Timber Volume)

	Natural Forest	Plantations	Secondary Forests
Offer	1000 -1795	2200	3600
Consumption	2175	2289,6	?
Balance	(-) 1175-380	(-) 89,6	?
(in % of consumption)	54% - 17,5%	4%	

29. Since consumption is 2,175 million cubic meters there is a severe wood deficit for natural forests if these were harvested in accordance with legal provisions regarding land tenure and to national principles and criteria for sustainable forest management, which are mandatory. Since there is no sign of wood shortage on the Ecuadorian wood market one must deduce that the wood industry is being supplied on a large extent (17,5-54%) from forests that are being illegally over-harvested or/and converted to agricultural land.[3] The impressive pace of forest degradation and deforestation in Ecuador which reaches 1,5 % annually (4 times higher than all its neighbouring countries) confirms the latter.

[3] This assumption is consistent with the average volume of wood from natural forest that got a harvesting license between 1997 and 2000, which was 783.593 cbm / year (Thiel, 2004). In this period of time there was moderate control on roadblocks and it was not difficult to transport "legally" laundered wood (see section 4.4) to the market with a harvesting license and a transport permit. The assumption that only half of the timber that reached the industry was of "legal" origin seems to be consistent with the general picture described.

The balance for plantation wood is in equilibrium with a deficit of only 4% of consumption which lies in the margin of error for such a rough estimate.

D. Deforestation, Colonization and Forest Frontier Expansion: Future Trends

30. The deforestation officially reported to FAO (FRA 2002) indicates forest loss of 137.000 ha yearly (1.2%) More recent figures estimates a forest loss of about 1.782.832 ha between 1991 and 2000, which results in annual deforestation of 198.092 ha (1,47%) (CLIRSEN, 2003). This is a deforestation rate 4 times higher than that reported by all the neighboring countries.

Table 13: Deforestation in Ecuador 1991-2000

Vegetation type	1991 (ha)	2000 (ha)	Dif. 91-00 (ha)	Def. / y (ha)	Def. / y %
Moist / clouded forests	12.114.299	10.489.756	1.624.543	180505	1,49
Dry tropical forests	708.768	569.657	139.111	15457	2,18
Mangroves	162.197	150.002	12.195	1355	0,84
Palm swamp areas	477.390	470.407	6.983	776	0,16
Total	**13.462.654**	**11.679.822**	**1.782.832**	**198.092**	**1,47**

31. It is alarming that tropical dry forests, which are present in the central and southern coastal lowlands and are dramatically under-represented in the SNAP, are vanishing at such a quick pace (2,2%).

32. There is no reason to assume that this trend of deforestation and forest degradations may be reverted in the short or medium term mainly because:

- There is no institution with a mandate or capacity to regulate and enforce land use and land use change at regional or landscape level.
- Access roads are being built into the forests, specially in the Amazon Region by local governments and oil companies without environmental provisions nor mechanisms to prevent spontaneous colonization in order to conserve the forest cover.
- Severe dependence on natural forests and the absence of income alternatives for local forest smallholders.
- Until now no serious attempt to re-establish the system implemented between 2000 and 2002 to control and limit the over-harvesting of natural forests is in view.
- There are no public neither private instruments nor institutions to effectively promote sustainable forest management practices among forest smallholders and the wood industry.
- Expansion of competing land use systems and agro-industry like palm tree plantation to substitute tropical forests.

E. Afforestation And Reforestation: Trends for the Future

33. Last reliable data on forest plantations in Ecuador is dated 1993 with 163.000 ha. Estimates on actual plantation area is 220.000 ha (see section 1.4 above), resulting in an annual increment of 4.750 has for the last 12 years. This is coincident with an estimate done by Alomoto (2006, personal communication) a former official of the public reforestation programs of INEFAN, which is 5.000 has

per year; and Almeida (cited in Ospina, 2000) which reports 2 to 5 thousand hectares of planted forest yearly in the early nineties.

34. At his pace it would take Ecuador 40 years to recover the forest area lost in one.
This poor performance is unlikely to change due to:

- Ecuador's investment-friendliness in the forest sector has been ranked second worst in Latin America after Haiti (Nascimiento et al., 2005; BID, 2005).
- Although the MoE has been working on a National Afforestation and Reforestation Plan (MAE, 2004), with the objective to plant 50.000 ha per year, no means of financing, nor relevant incentive schemes or instruments are in place (or in sight).
- The dollarized economy has risen production costs in comparison with other countries of the region.
- The recently issued National Reforestation Plan (MAE 2004).

F. Wood Products Exports and Imports

35. Table 14 shows Ecuador's main wood exports between 1999 and 2003, being plywood, balsawood and "raw wood" (eucalyptus chips for pulp and teak round wood) most important in value. Paper exports should strictly not be considered since there is no pulp and paper mill producing those products in the country.

Table No. 14: Ecuadorian Exports of Wood Products (FOB value in US$'000)

PRODUCTS	1999	2000	2001	2002	2003
Raw wood (chips, round wood)	6.893	4.903	6.945	4.627	4.839
Sawn timber	736	568	615	1.010	551
Balsa Wood	18.598	14.977	16.470	18.036	20.614
Plywood, wood panels, veneer	26.595	29.013	25.790	9.382	23.204
Moldings	2.812	2.299	1.799	2.051	
Particleboards	2.691	3.363	5.688	8.023	12.819
Fiberboards (MDF)	8.464	8.210	7.102	18.535	16.493
Boxes, pallets, drums, flooring	421	81	30	156	233
Doors, windows	973	1.018	1.197	276	590
Boards for parquet, lining	47	21	183	188	112
Handicrafts	3.425	2.545	2.960	2.470	2.032
Furniture	2.651	4.215	2.651	3.645	3.151
Firewood, charcoal	0	52	6	0	5
Subtotal Wood	**74.306**	**71.263**	**71.436**	**68.400**	**84.642**
Paper, cartboard	13.285	14.503	16.912	18.556	24.074
Grand total (incl. paper*)	**87.591**	**85.765**	**88.349**	**86.956**	**108.716**

* there are no cellulose and paper mills in Ecuador, therefore paper and cardboard is re-exported.
Source: Banco Central del Ecuador, in Vázquez E., 2005.

36. Between 1999 and 200 Ecuador exported and average of 91,5 million dollars of wood products per year, with wooden panels (plywood, fiberboard) and veneer (28%) and balsawood (19%) being the main product groups. Falconí (2004) analyzed Ecuadorian wood exports for the last two decades: from

1980 to 1993 wood exports where around 78.000 cbm annually. These figure nearly tripled from 1994 to 2001 reaching an average of around 280.000 cbm per year. Eucalyptus chips (for pulp), teak and plywood were the main drivers of this rise.

Table No. 15: Imports of Wood Products and Paper to Ecuador between 1999 and 2003 (FOB value in 000 US$)

PRODUCTS	1999	2000	2001	2002	2003
Raw wood	4	34	8	5	34
Sawn timber	14	125	178	211	178
Veneer, plywood	305	239	808	735	1.426
Moldings	220	353	898	621	1.505
Particleboards	12	91	278	1.846	853
Fiberboards (MDF /HDF)	667	1.118	2.555	4.652	6.805
Boxes, pallets, drums, flooring	35	136	254	241	169
Doors, windows	23	17	48	60	281
Boards for parquet, lining	240	167	553	734	757
Handicrafts	538	402	941	1.679	1.697
Furniture	3.088	2.090	5.539	9.333	10.157
Firewood, charcoal	3	3	3	7	18
Subtotal Wood	**5.149**	**4.776**	**12.063**	**20.123**	**23.879**
Paper, cardboard	94.323	121.611	135.078	155.301	166.783
Grand total	**99.473**	**126.387**	**147.141**	**175.424**	**190.661**

Source**:** Banco Central del Ecuador (in Vázquez E., 2005)

37. Imported wood products to Ecuador are mainly paper (>90%), also furniture, fiberboard panels and handicrafts which together reach only 6%. The foreign trade balance for wood products is positive if paper imports were not taken into account. Considering paper imports, the balance turns dramatically negative, as shown in Table 16 and Figures 4 and 5. The average of wood product imports in this period has been 13 million dollar of wood products (9%) and 135 million in paper and cardboard (91%), together reaching nearly 148 million US$. The impressive impact of paper and cardboard on the import side of the balance determines a chronic trade deficit for wood products of 62% of the exports, equivalent to 56,6 million dollars yearly.

Table 16: Balance of Ecuadorian Wood Imports and Exports 1999-2003 (FOB x US$'000)

	1999	2000	2001	2002	2003
Total Wood Exports	74.306	71.263	71.436	68.400	84.642
(-) Total Wood Imports	5.149	4.776	12.063	20.123	23.879
Balance (without paper)	69.157	66.487	59.374	48.277	60.764
Paper deficit	-81.039	-107.108	-118.166	-136.745	-142.709
Balance (with paper)	-11.882	-40.622	-58.793	-88.468	-81.945

Figure 4: Ecuadorian Foreign Trade Wood Balance Without Paper

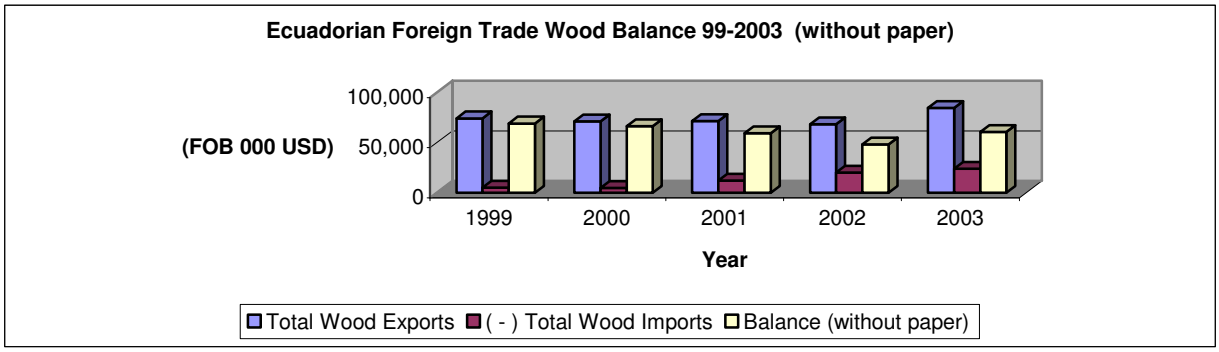
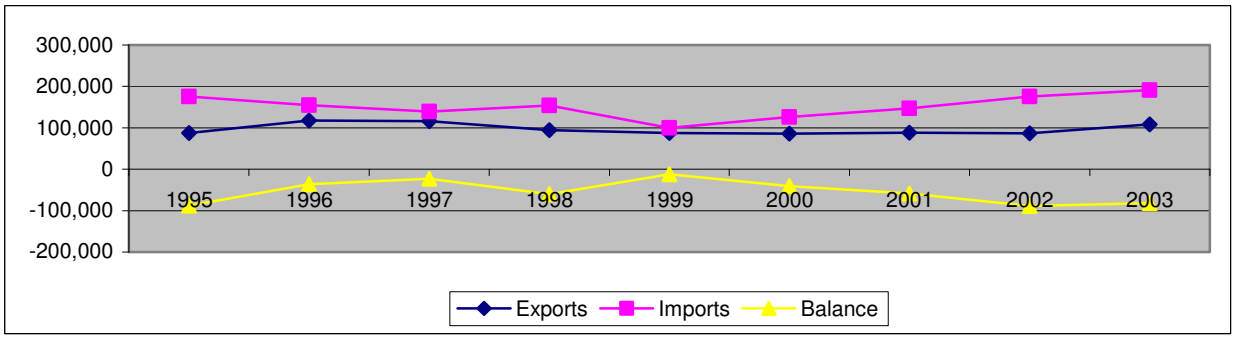


Table 17: Balance of Ecuadorian Wood Imports and Exports 1999-2003 (FOB x US$'000)

	1999	2000	2001	2002	2003
Balance (without paper)	69.157	66.487	59.374	48.277	60.764
Paper deficit	-81.039	-107.108	-118.166	-136.745	-142.709
Balance (with paper)	-11.882	-40.622	-58.793	-88.468	-81.945

Figure 5: Ecuadorian Foreign Trade Balance for Forest Products (in US$'000 FOB values)



38. Due to the big impact of paper on the imports, they will continue to grow specially since there is no plan to invest in a pulp and paper mill in Ecuador. Exports have been oscillating around 100 Million US$ per year in the last decade and there is no reason to assume that this is going to change in the near future. On the import side a steady trend upwards can be registered, which makes us assume that the trade deficit will continue to grow.

G. Domestic Consumption Of Wood Products

39. There are no reliable, up-dated data available about domestic consumption of wood products. According to (ITTO, 2004) it lies around 700.000 cbm for sawn timber and 100.000 cbm for wood panels, being these the main traded wood products consumed in the country.

Table 18: Domestic Consumption of Lumber and Panels

Year	Sawn lumber(1.000 m³)	Wood panels (1.000 m³)
1994	1.562	72
1995	1.579	117
1996	1.770	143
1997	2.000	117
1998	1.999	126
1999	1.367	91
2000	634	73
2001	707	96
2002	643	56
2003	712	100

Source: ITTO (2004).

40. There are very rough estimates for firewood consumption at livelihood level that are not considered in trade flows nor administrative procedures. The contribution of wood as energy source is relatively low in the country (only 7%) due to heavy subsidies for cooking gas and fuel (MEM, 2005): only 13,2% of Ecuadorian households use firewood or charcoal to cook their food (SIISE, 2003).

H. Main Traded Non Timber Forest Products

41. Between 1997 and 2001 the Ministry of Environment reported that an average of around 56.000 m3 of bamboo and "*pambil*" palm wood *(Bactris sp.)* obtained a harvesting license. (Thiel 2004). Another important NTFP is the "tagua" nut *(Phitelephas aequatorialis)*, also known as "vegetal ivory". Echeverría (2004) reports legalized trade of 1.650 tons. Schroeder (2005) mentions that in 1989 3.571 tones of "*Cabuya*" fibers where produced, manly for production of ropes, bags and sacks. Another traditionally relevant NTFP are the leaves of "paja toquilla"*(Carludovicia palmata)*, which provide the fiber for the famous Panama Hat which in fact, is and Ecuadorian product.

I. Forests and their Importance for the Quality of Environment

Water and Soil

42. Ecuador counts with four times more water per person (43.500 m3) than the world´s average (10.800 m3 / person) (CNRH 2002, in Ecodecision, 2002). The importance of forests, specially of Andean mountain forests and clouded forests located at both foothills of the Andes for the regulation of the water regime is crucial. Several regions in Ecuador have been victim of prolonged drought and / or extreme floods in recent years. To what an extent deforestation contributes to this phenomena is still to be determined.

Biodiversity

43. Ecuador's forests host two of 10 of World Biodiversity-Hotspots. The country has the highest number of living species in relation with area on the planet since it counts for 10% of all animal and plant species. It has the third largest diversity of amphibians and the fourth largest diversity of birds worldwide - 17% of all species (Mittermeier et al 2001; MAE, 2001).

Carbon

44. Land use, land change and forestry (LULUCF) are the main sources for emissions of greenhouse gases in the country. Of the 45,5 million tons of carbon emitted yearly from LULUCF (MAE, 2000), approximately two thirds (33 million tons C) are being produced by deforestation. Secondary forests are an important sink for carbon, but this has not been quantified yet. Only 23.000 hectares of forest plantations established by a private company that pays to foster reforestation in exchange for carbon rights have been established in the country until now (Profafor, 2005).

J. Forests and their Contribution to Poverty Reduction

45. A big portion of Ecuador's rural poor are indigenous and black people, most of them with very limited access to education or public health systems, and living with an income of less than 1 dollar per day (SIISE, 2002; Torres, 2005). Most of these people are part of those 2% of the Ecuadorian population that own around half of the countries forests, as already discussed in section 1.2 . Income generated by forest ecosystems is clue to strengthen the weak economy of these rural communities: 10-30% of family income came from the forest, as shown in a study carried out in two north-eastern Provinces of Ecuador. Income from wood was less than 1% in 1990 and climbed to be 13,4% in 1999. (Torres, 2005).

46. Use of medicinal plants by indigenous people is very high. Palacios (2005) presents information from 120 to 481 different plants used by indigenous people in the Ecuadorian Amazon. Buitron (1999) in Barrantes (2001) reports that 90% of medicinal herbs used in Ecuador are originated in the forests. The same source mentions that in 1997, 208 tons of medicinal plants where produced at a commercial value of 83,3 million dollars. Hunting and gathering has been important source of subsistance for these communities for centuries.

47. During the last decade these way of subsistence has suffered a transformation process in areas where oil companies are active. Indigenous people "gather" money or other types of non monetary benefits from the oil companies in order to allow them to work in their territories. The organization of the Huaorani People ONAHE has an annual budget that equals that of the Ministry of Environment - 6 Million dollars yearly - (Müller Franziska 2005, personal communication). Wow this income is distributed among the community and if it contributes to poverty alleviation and development is another question. Examples from the tourism industry to just "give money" to local chiefs to get a permit to enter their territory are also known. Fortunately there are also several good examples of responsible tourism in the forest that foster local community co-management and sustainable development.

K. Quality of Forest Management

48. Since the year 2000 Ecuador has a modern and functional normative framework for forest management, which is contained in several norms for the sustainable use of Ecuadors forests. This norms are mandatory and contain basic criteria and indicators for sustainable forest management: one norm for mechanized extraction contains standards for *"Sustainable Forest Management*

Programmes"; and the other norm for non mechanised extraction (chainsaw logging) is called the *"Simplified Management Programme."* In general terms forest norms in Ecuador seem to be well adapted to the local reality, beginning with the fact that forest are not managed, but harvested. Therefore this norms intent to limit harvesting operation by introducing measurable criteria and indicators. One of the most important crieterion is the one concerning the maintainance of the forest cover (see also Annex No. 1: Criteria and Indicators for SFM in Ecuador). This paramount first criteria is not beeing enforced by any institution (see section 4.5).

49. Since for the last two years there has been no verification of compliance with the norms, it is difficult to say what the quality of forest management is up to day. Since at the moment compliance with forest norms is beeing poorly verifies, , we can assume that most forest dwellers do not comply with the legal requierements and that the quality of forest management in Ecuador is rather poor. One regional exeption is the south-eastern part of the country, south of the Pastaza River, into which the mechanized wood extraction has not advanced yet due to limited acces by heavy machinery. Therefore only chainsaw-loggers make selective timber harvesting with very reduced impact on the forest ecosystem, provided the forest is not being cleared for other land uses afterwards.

Table 19: Main Elements of Ecuadorian Instruments for Natural Forest Harvesting

	Sustainable Forest Movement Programme	**Simplified Forest Management Programme**
1	**Sustainable production**	
	The utilized trees may not surpass 30% of the total basal area (m2/ha)	Minimum diameters for different tree species have to be obeyed (average 60 cm DBH)
	Minimum diameters for different tree species have to be obeyed (average 60 cm DBH)	Within a distance of 25 m of the tree to be harvested there may not be a stump of a recently cut tree.
	Minimum harvest cycle of 15 years	
2	**Maintenance of forest cover**	
	The overall intensity of the intervention (including other silvilcultural measures) may not surpass 40% of the basal area (m2/ha)	Within a distance of 25 m of a tree to be harvested there has to be another large tree of any specie (>min. diam.), or within 80 m there hast to be al large tree (>min. diam.) of the same species.
	The area affected by the construction of local infrastructure (any type of access / roads, etc.) may not surpass 20%	
3	**Biodiversity conservation**	
	Trees species that are under threat of extinction may not be exploited.	Trees species that are under threat of extinction may not be exploited
	Trees of species that have an abundance of less than 1 / 3 ha may not be exploited.	Trees that enter 'conditioned use' (mahogany, etc.) may not be exploited if their abundance is below 0,5 trees / ha
4	**Reduction of negative social and environmental impacts**	
	Areas with slopes of > 70° enter permanent protection and may not be exploited (close to water flows 50°)	Areas with slopes of > 70° enter permanent protection and may not be exploited (close to water flows 50°)
	Areas at the shores of water flows as well as open water surfaces and springs enter permanent protection and may not be exploited. (extension 5-15 m according to width of the water surface)	Areas at the shores of water flows as well as open water surfaces and springs enter permanent protection and may not be exploited. (extension 5-15 m according to width of the water surface)

(Source: Schroeder, 2005).

50. Voluntary Forest Certification is confronted with at least three structural contraints that makes this instrument less interesting than it may be in other countries of the region:

- Mostly all forest land is in private or communal tenance, hence forest concessions with the conditionality to get certified after a certain period of time are not feasible.
- Private forests in farms are relatively small (83%<50ha), thus limiting economic feasibility for VFC.
- The only real potential for VFC at the moment are the indigenous territories (see 1.2); some promisiong innitiatives are in due course (Chachis, Awá).

IV. GOVERNMENT POLICIES

A. Forest Policy

51. In 1995 a "Policy for Forests, Protected Areas and Wildlife"[4] was formulated introducing a radical shift to Ecuadorian forest policies which until then had been implicit in the agrarian and land reform policies of the sixties. Some new elements of this policy were the harmonization of forest and biodiversity use and conservation, more participation of stakeholders and a move from fiscal income driven resource exploitation to sustainable forest management. In order to implement these policies during 1999 and 2000 the "Strategy for the Sustainable Development of Ecuador's Forests"[5] (EDFSE, MAE 2000 – Annex 2) was formulated. Its main objectives are:

- Slow down deforestation giving more value to goods and services provided by natural forests in order to make SFM more competitive against other land use forms.
- Promote conservation of forests and biodiversity in protected areas through ecotourism and sustainable use of biodiversity.
- Recover degraded land through reforestation programs targeted specially to small land owners.
- Grant social participation, especially of indigenous people owning forests in forest policy formulation and implementation processes.

52. These objectives should be achieved through five specific strategies for action:

1. Give more value to natural forests and forest plantations by securing forest land tenure, making the market for forest goods and services transparent and competitive and promoting the insertion of the forest sector into the markets (containing 16 specific tasks).
2. Promote and finance sustainable forest management: offer mechanisms to pay for environmental services and generate income from ecotourism (containing 6 specific tasks).
3. Foster active participation of civil society and forest stake holders in implementing agreed policies and in the institutional arrangements proposed (containing 4 specific tasks).
4. Modernize the institutional and organizational setting: clarifying the role of the state in the exercise of the forest authority and delegate functions to non-governmental parties (containing 7 specific tasks).
5. Modernize the legal framework: a new forest law should be put in place to foster investment, clarify and simplify rules to promote sustainable development of the Ecuadorian forest sector (containing 4 specific tasks).

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[4] *INEFAN 1995: Política Forestal y de Áreas Naturales y Vida Silvestre del Ecuador.*
[5] *MAE 2000: Estrategia para el Desarrollo Forestal Sustentable del Ecuador.*

53. Details of each of this strategies and tasks are contained in Annex 2. During the year 2005 the EDFSE underwent an up-dating and evaluation process with financial support of FAO-NFP-Facility. The final document hasn't been published yet, but it is known that no substantial changes were made (Galindo 2006, personal communication).

B. Forest Legislation

54. The modern forest policies formulated in 1995 and ambitiously articulated in the EDFSE had to be implemented through a new forest law which in fact was finished in the year 2000 involving the same actors that had formulated the policies, but leaving out forest owners, namely the indigenous communities. This lack of political leverage, the severe limitation to invest public resources into the promotion of SFM and the huge political instability of the last five years explains the fact the fact that the draft was never sent to Congress for approval. However an intense reform process at the normative level was brought forward by the Ministry of Environment between the years 2000 and 2004[6] in order to implement the mandate contained in the forest policies, as far as it was feasible without infringing the limitations contained in the "old" law from 1981, mainly:

1. Five criteria and 32 indicators for SFM were introduced as mandatory elements for timber harvesting in natural forest (see also Annex 1).
2. Requirements for proving land ownership to legally harvest timber were made more flexible.
3. Simple, grass-root instruments for land-use-zoning and timber harvesting at farm level were introduced for non-mechanized timber harvesting, which is mainly done by chainsaw loggers.
4. Delegation of several functions of forest administration and verification to private actors and civil-society oversight of control and sanctioning functions were regulated (see also section 4.5: Vigilancia Verde, Forest Regents, NGO´s and private verification bodies under the *SNTCF*).
5. Restrictions for timber harvesting in forest plantations were loosened (as far as the relatively restrictive law in force allowed for).

C. Critical Evaluation

55. Since the formulation of the EDFSE in the year 1999, Ecuador has had three presidents and 8 different Ministers of the Environment responsible for the implementation these forest policies. The strong participation of some of the stakeholders of the forest sector was an important pillar for the relative stability of forest policies. On the other hand their political unimportance kept them unnoticed from the political turmoil of the last five years. The implementation of the very ambitious strategy EDFSE has been modest:

- The new forest law formulated in the year 2000 containing provisions to pay forest owners for environmental services by fuel and water taxes was never approved by Congress.
- The political mandate to recognize land tenure to forest dwellers in the Public Forest Estate ("*Patrimonio Forestal del Estado"*) couldn't be legally implemented.

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[6] *Decreto Ejecutivo 346 (9 mayo 2000); Decreto Ejecutivo 3516 (RO 31 marzo 2003: Texto Unificado de la Legislación Ambiental Secundaria: Libro III "Del Régimen Forestal"; "Normativa ("131") para el Manejo Forestal Sustentable para el Aprovechamiento de Madera de Bosque Húmedo y Plantaciones Forestales" (RO 124 24 julio 2000); and following updates of the forest norms introduced in a continous process of normative improvement (RO 249: 22 enero 2001) and Normas de Procedimiento Administrativo, de la Regencia Forestal, Aprovechamiento Madera Bosque Húmedo, Plantaciones Forestales: Acuerdos Ministeriales 037-040 (4 julio 2004).*

- The delegation of forest administration and verification activities to societal actors in the frame of the SNTCF could only be partly implemented, and the public forest administration is as weak as never before.

56. With this these pivotal elements missing, the objective to slow down forest loss by giving more value to the forests and the forest land could not be achieved. Although the Ecuadorian environmental NGO movement and the timber industry are active players of the forest policy, local communities, forest dwellers and most important, the indigenous people that own most of Ecuador's forests, could not be actively involved in forest policy formulation nor implementation (Kohler, 2005; del Gatto, 2005). The absence of these key players and other political and economic decision-makers determined the low priority of the forest sector in the political agenda. Sectors outside of the forestry and conservation spectrum like Ministries of Finance, Energy (Oil), Public Works and local governments were neither part of the EDFSE process. Same happened with the private sector: only sectoral actors participated. Therefore there is a lack of prioritization of forest policies at the official level. Forest policies do not compete with priorities in the social or infrastructure areas. The forest policies contained in the EDFSE are coherent and well intended, but lack ownership by the decisive sectors of society. And the Ministry of Environment has limited capacity a scarce resources to transform the policies in concrete action alone.

D. Inter Sectoral Linkages

57. In 1999 the "Law for Environmental Management"[7] was approved as a general framework for environmental public policy-setting and coordination. The law contains, among others:

- A mandate to formulate a National Strategy for land use zoning and put in place land use regulations
- The mandate to establish the National Council for Sustainable Development (CNDS) as an advising board to the President of the Republic and head of the "National System of Decentralized Environmental Management" (SNDGA). This council has eight members, 5 from the central government, 2 from the private sector and 1 from civil society.
- The SNDGA as a mechanism for inter-sectoral coordination, integration and cooperation between the different actors involved in environmental management and use of natural resources.

58. The Coordinating Committee of the SNDGA should be integrated by:

- The Ministry of Environment.
- The Secretariat for National Planification of the Presidency of the Republic (SENPLADES).
- A representative of the Association of Provincial Governments (CONCOPE).
- A representative of the Association of Municipalities (AME).
- The President of the umbrella organization of environmental NGO´s (CEDENMA).
- A representative of the officially set board for the development of the indigenous people
- A representative of Afro-Ecuadorian people.
- A representative of the army.
- A representative of the academia

59. The institutional arrangement proposed in the law to provide trans-sectoral implementation of development policies under the CNDS and the SNDGA has never been functional. In 2002 and during

[7] *Ley de Gestión Ambiental (RO 245: 30 julio 1999).*

the present administration, the Ministry of Environment has taken the initiative to activate these instances without much success until now.

Land Use Planning And Regulation

60. There are four public instances at central level with a legal competence of land zoning and land use regulation: Environment, Agriculture, Housing, Energy and Mining and INDA. Since these institutions have not been able to articulate a minimum set of common principles in this respect, Ecuador has neither official land use policies nor guidelines that could be put in place locally. The consequences are baldy felt in the forest sector: the agricultural, cattle ranching and agro-industrial expansion seems to have no stop. During 2002 the Ministries of Environment and Agriculture fought a legal battle over expansion of oil palm plantations that caused deforestation in the north-west of the country. Although the dispute was legally won by the MoE the political and economic pressure the oil-palm industry put on the highest spheres of government forced the MoE to give in and concede a 50.000 ha forest zone to be converted to oil palm plantations in the region. Another example of this lack of coordination of public policies is graphically expressed in Figures 3 and 6 that show that oil drilling activities are being undertaken in national parks. The roads that are being built for the oil industry and by timber companies, as also by the national and the province governments generally bring after them intense settling and squattering with subsequent deforestation waves. Instead of supporting sustainable forest management initiatives, roads that are built into forested areas generally lead to degradation and disappear of the forest cover.

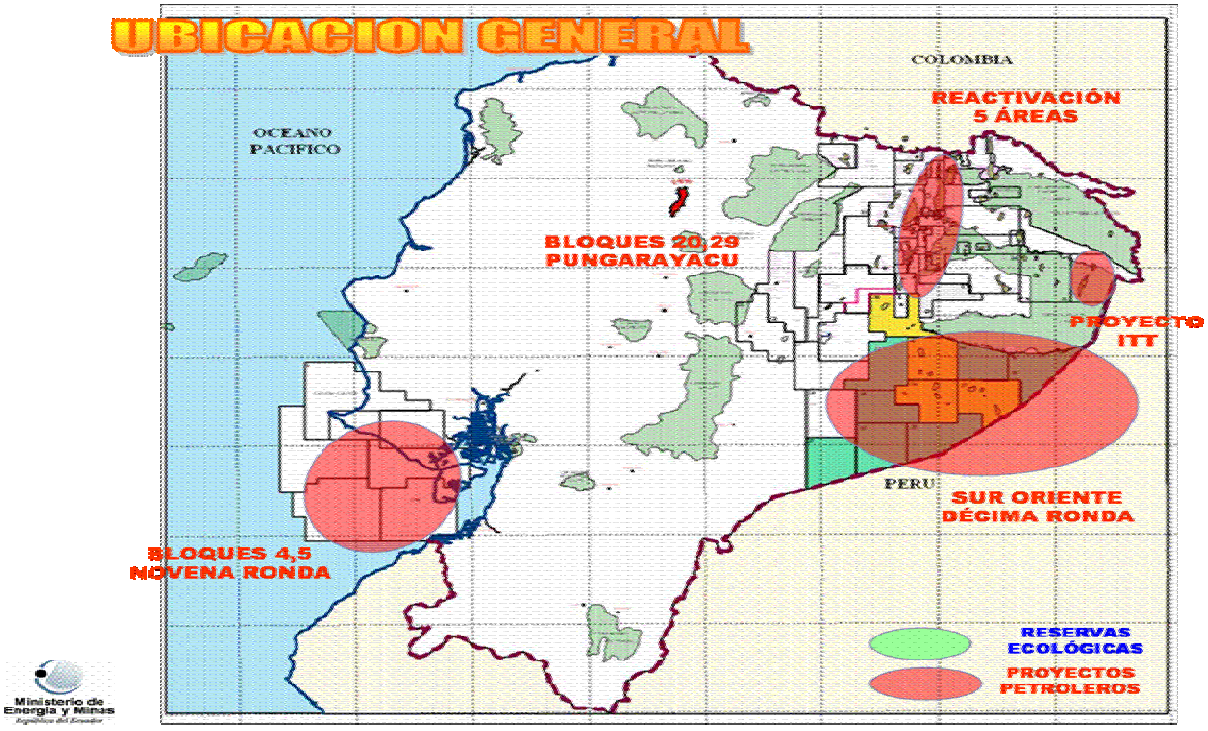

Figure 6: Priority areas and projects of the Ministry of Energy and Mining of Ecuador
(Source: Official webpage http://www.menergia.gov.ec/inicio.html; consulted on 3.1.2006).

Land Tenure

61. The two public instances with a legal mandate to confer titles on public land are INDA (Instituto Nacional de Desarrollo Agrario) and the Ministry of Environment. In principle INDA gives out land titles in areas that are outside the domain of the Ministry of Environment, which are the

protected areas and the Public Forests (Public Forest Estate (PFE) and Public Protection Forests): since borders are not exactly defined there have been several cases in which INDA illegally has given out land titles inside these areas.

62. An inter-institutional agreement between MoE and INDA obliges INDA to request for a land zoning plan *(Plan de Manejo Integral)* previously approved by the Ministry of Environment in order to grant land titles on land with forest cover. Unfortunately neither of both institutions control that the commitments regarding land use and forest cover contained in the land zoning plan are being met. There is no institutional capacity available in neither of these two national institutions to fulfill this task, and there is no public instance at the regional or local level with a clear mandate and with the capacities to enforce land use zoning in order to prevent further forest loss.

V. MAIN PROBLEMS AND POTENTIALS OF THE SECTOR

A. Policies

63. Forest and biodiversity conservation policies have no political priority in a country in which basic needs of the majority of the population are not satisfied and in which a tangible link between conservation and poverty alleviation is not visible. This explains the absence of important political players in their formulation, although invited, have other political priorities. The enormous potential of the EDFSE to combat poverty of most forest dwellers was not adequately communicated to these important decision-makers. Once formulated, the weak political weight and institutional capacity of the MoE made it possible to implement only a rather accessorial part of the policies contained in the EDFSE discussed in section 3.1. Due to big pressure from environmentalist groups and the media, the government has recently declared the state of emergency for the forest control[8]. Although this can be seen as a political signal, it is an act with declarative character since no additional resources have been assigned to the MoE.

B. The Forest Law

64. The forest law in force states that no ownership other than that of indigenous communities can be acknowledged inside the Public Forest Estate (PFE). According to Morales (2005) there are around 2 Million hectares of forests inside the PFE that are under possession of individual families of colonists without resolved tenure. Assuming individual plots of around 50 has this means that around 40.000 families living within the PFE have no prospect to get a legal title for the land although most of them have been living there for years or even decades. On the other hand the law contains a whole chapter of provisions to grant forest concessions to the *"national"* timber industry: No forest concession has been awarded since the early nineties, since nearly all the PFE is inhabited by people.

65. This forest law approved at the beginning of the eighties contains several other anachronisms like:

- An over-regulation and control of the state of the entire forest production chain: the government is supposed to control nurseries, forest plantations, forest fires, forest industries, forestry professionals, among others. Too many duties with no institutional capacities nor resources to fulfill them.
- Prohibition to export round wood: local prices for round wood are very low compared with the international standards.

[8] *Decreto Ejecutivo 998 (RO 182: 6-enero-2006).*

- Forest harvesting and timber transport are controlled and taxed (stumpage tax). Additionally there is the obligation to compensate for the harvested forest with the establishment if forest plantations. Provisions for sustainable forest management are difficult to find.
- The obligation to pay stumpage tax (*impuesto de pie de monte*) for wood harvested in all natural forests on public and private land is an economic disincentive for sustainable forest management.
- Excessive regulatory burden for the transport of wood for forest plantations.

66. Two of the main products of the forest and biodiversity policy formulation process were two new law drafts[9]: one for sustainable forest development and the other for biodiversity conservation. Although these laws contain the solution to one of the biggest hindrance to sustainable forest development, which are the tenure problem inside protected areas and the Public Forest Estate (PFE), neither of them have been approved by Congress since they were formulated 4 years ago. The consequence is that the Ecuadorian Forest sector is still under the rule of a law that implements a philosophy of controlling an extractive practice on supposedly public forest land instead of one with the objective to promote private and communal initiative towards sustainable use of the forest resources.

C. Secondary Norms

67. The political instability and chronic weakness of the Ecuadorian Executive of the last decade, combined with the low priority of the forest sector in the political agenda forced the Ministry of Environment to abandon the expectation that a modern forest law had any chance to be approved by Congress. In order to implement the mandate contained in the EDFSE the MoE embarked in a comprehensive modernization process at the secondary (regulative and normative) level, which had not to be approved by Congress, and that have already been discussed in section 3.2 above. In this context, the Ecuadorian Norms for Sustainable Forest Management contain basic principles, criteria and verifiable indicators for SFM. The norm for non-mechanized harvesting of natural forest is adapted to the socio-economic reality of the chain-saw logger which is one of the main actors of natural forest use, not only in Ecuador but in the whole region. Therefore this successful normative experience as a process of adaptive change has a lot to tell to other countries in which the chainsaw logger is still seen as the villain in the forests. There is an obvious poverty alleviation dimension and further potential in this interesting step taken by Ecuador between 2000 and 2004, as showed by Gatter (2005). The simplified norms for forest harvesting should be complemented by other mechanisms to support the chainsaw logger to improve the quality of his products, have a better market access and grant a more equitable distribution of benefits with the forest owner.

D. Financial Incentives to Avoid SFM

68. While there is only one way of harvesting timber legally, there are at least two ways to do it illegally:

- "Clandestine-illegal": avoids all legal procedures, pays no stumpage tax and tries to avoid forest control checkpoints on the roads.
- "Laundered-illegal": harvest timber illegally in the forest but acquires a timber transport permit when the timber is already cut. Therefore passes checkpoints on the roads with a valid, although illegally obtained timber transport permit.

[9] *Anteproyectos de Ley: Desarrollo Forestal Sustentable del Ecuador (2000); Conservación y Uso Sustantable de la Biodiversidad del Ecuador (2002). Ministerio del Ambiente.*

69. Tables 20 and 21 show the production cost of softwood and hardwood in the Province of Esmeraldas in North-west Ecuador. During phases of very weak forest control, as it was in the years 2004 and 2005, clandestine timber was relatively easy to take to the market saving 37% of costs for soft and 31% for hard wood.

70. During the time when *Vigilancia Verde* was fully active with checkpoints on roads and mobile units, (2000 to mid 2002) mostly laundered timber was able to reach the market (see Figure No 7), with a saving of 18% in average for illegal operators.

Table 20: Production Cost of Tropical Sawnwood in North-West Ecuador

Cost (US$/m³)	**Clandestine Illegal**		**Laundered Illegal**		**Sustainable Legal**	
	Soft	Hard	Soft	Hard	Soft	Hard
Standing timber price	6,5	10,8	6,5	10,8	6,5	10,8
Meeting legal requirements*	0	0	0	0	9,4	9,4
Felling, logging, sawing	19,2	26	19,2	26	29,6	39,6
Transport to local market	13,5	16	13,5	16	19,7	22,1
Fraudulent timber transport permit	0	0	12	18	0	0
Bribe officials at roadblocks	2	4	0	0	0	0
Total	**41,2**	**56,8**	**51,2**	**70,8**	**65,2**	**81,9**

* Management plan, forest regent, stumpage tax, others (Source: Espinoza G., 2005).

Table 21: Average Cost Saving for Laundered and Clandestine Wood in Ecuador

(Cost US$/m3)	**Softwood**		**Hardwood**		**Average**
Sustainable Legal	65,2	100%	81,9	100%	100%
Laundered Illegal	51,2	79%	70,8	86%	82%
Clandestine Illegal	41,2	63%	56,8	69%	66%

71. It is interesting to note that the cost of buying a fraudulent timber transport permit in order to launde illegal timber is 23-25% of the total cost in this modality, while the transaction costs needed to harvest and transport timber in compliance with the law and the C&I for SFM are only 11-14% of the total costs for sustainably harvested and legally obtained wood products.

E. Institutional Weaknesses

72. The public institution in charge of the Public Forest Administration has suffered 11 changes institutional changes since 1952, as shown in Table 22:.

Table 22: Instability of the Official Institution in Charge of the Public Forest Administration

Year	Name of the institution	Integrated into following public institution:
1952	Servicio Forestal	Dirección Agropecuaria del Ministerio de Economía (Ministry of Economics)
1958	Dirección Forestal	Ministerio de Fomento (Development)
1964	Dirección General de Fomento Forestal	Ministerio de Agricultura y Ganadería (Agriculture)
1970	Servicio Forestal y Piscicultura	Ministerio de la Producción, Recursos Naturales y Turismo (Production, Natural Resources and Tourism)
1973	Dirección General de Desarrollo Forestal	Ministerio de Agricultura y Ganadería (Agriculture)
1980	Programa Nacional Forestal	Ministerio de Agricultura y Ganadería (Agriculture)
1985	Dirección Nacional Forestal	Ministerio de Agricultura y Ganadería (Agriculture)
1990	Subsecretaría Forestal y de Recursos Naturales Renovables	Ministerio de Agricultura y Ganadería (Agriculture)
1992	Instituto Ecuatoriano Forestal y de Áreas Naturales y Vida Silvestre	Ministerio de Agricultura y Ganadería (Agriculture)
1997	Instituto Ecuatoriano Forestal y de Áreas Naturales y Vida Silvestre	Ministerio del Medio Ambiente (Environment)
1999	Dirección Nacional Forestal	Ministerio del Ambiente (Environment)

(Source: Thiel , 2004).

73. Since 1999 the National Forest Directorate (DNF) (together with the National Directorate for Biodiversity) is subordinated to the Vice-Minister for Natural Capital of the MoE. This integration occurred during the severe financial crisis Ecuador went through when the financial system collapsed and the economy had to be dollarized and public servants saw their salaries severely reduced from one day to another. From 25 professionals working in the DNF, 20 left and haven't been replaced until now. Most of former functions of the DNF had to be de-concentrated to the 10 regional districts and the 42 local offices that the MoE operates nationwide. The crisis from 1999/2000 was the main driver to delegate to other actors some activities not indispensable for the exercise of the forest authority, therefore limiting itself to deliver forest policy and regulation and to the inalienable competence of sanctioning. From 2000 to 2003 a comprehensive process of delegation of public forest technical, administrative and enforcement activities to civil society and to other specialized actors begun, sadly halted during 2004, but slowly gaining momentum again since middle of 2005. The functions regarding forest administration, verification and control that where delegated into the outsourced National Forest Control System (SNTCF), were the following[10]:

1. Delivery of administrative forest services, such as checking forest management plans for compliance with sustainable forest management criteria and indicators, collecting stumpage taxes for the state, granting timber harvesting licenses and timber transport permits and controlling the use of these licenses and permits in association with VV (see below), was contracted out to an experienced

[10] A detailed description of the SNTCF and its political economy can be found in FAO Forestry Paper 145 (FAO/ITTO -2005); and in Navarro. G., del Gatto F. and Schroeder M. (VERIFOR - 2006).

private verification company of acknowledged international prestige. The contract was awarded to SGS from Switzerland who won the tender process in 2002 but has been stopped since late 2003.

2. Controlling illegal timber transport, by operating fixed check-points and mobile patrols on roads was delegated to the private-public control body "VIGILANCIA VERDE"(Green Surveillance), constituted of five Ecuadorian NGOs, the police, the armed forces and the Ministry of Environment. During 2002 VV managed to seize 580% more illegal timber, than the state acting alone, captured in 1999 (Forest Integrity Network, 2003). When acting integrated in the information system contracted out to SGS, this volume nearly doubled again (see Figure No. 7).

3. Monitoring and reporting about harvesting activities, and filling out of timber transport permits in the forests was delegated to the "Forest Regents" (RF), private acting forest professionals individually appointed by the MoE and personally responsible for the correctness of their reports and statements regarding operations in the forests.

4. Verification system: the contract signed between the Government of Ecuador and SGS late 2002 also required SGS to verify the activities of VV and RF, and to link all the different actors of the forest production chain in a computerized information and tracking system containing enough cross-checks and balances to make illegal timber harvesting and forest corruption extremely difficult and/or expensive.

5. Information system: the database supporting this system offered accurate forest statistics information and geo-referred forest cover mapping. The system was designed to be overseen on-line by the MoE, which, holding the national forest authority, was the head of the "National Outsourced Forest Control System".

74. The system proved to be highly efficient, exposing illegal logging practices nationwide. In response MoE and SGS offices were occupied by force and controlling personnel was threatened by rampaging loggers. Powerful groups of the local timber industry used important resources and political influence to put enormous pressure on the government and on all public control authorities to block and dismantle the control system and finally achieved that in November 2003 when the Constitutional Tribunal (CT) after a process tainted with obvious irregularities (The Economist, 2003; Transparency International, 2002) declared the delegated forest control system to be "unconstitutional". This forced the Ministry of Environment to put the activities delegated to the verification company to a stop and to reassume delegated activities. Since verification and cross-checks and balances which are the core part of the SNTCF system that the MoE has not been able yet to offer, the forest verification and control scheme is incomplete and as such, inefficient.

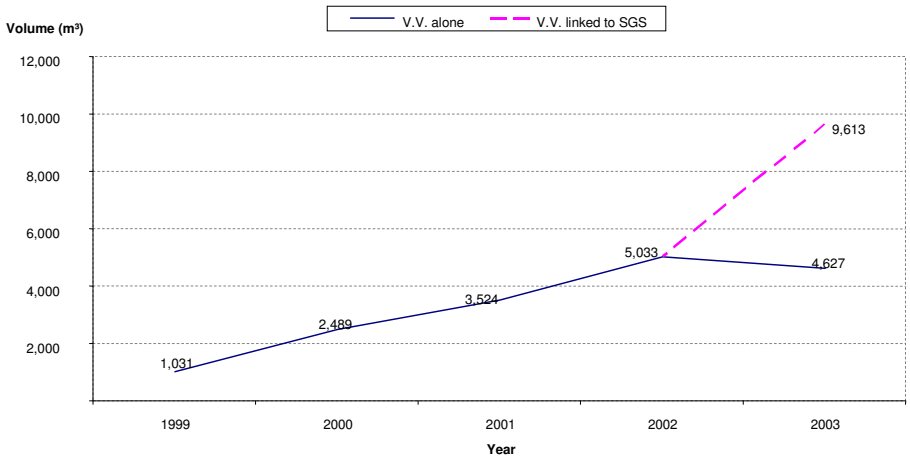

Figure No 7: Illegal Timber Seized at Roadblocks by *Vigilancia Verde.*

75. On the other hand the public forest administration at the local level, which is in charge of approving the harvesting plans and issues the timber harvesting licenses is known to be ill equipped, inefficient and not seldom, corrupt.

76. Although the strategy of de-concentrating and delegating seems to have been an adequate response to the crisis went through in 1999, the DNF is so weak that it does not even have the capacities and resources to oversee and monitor the functions de-concentrated to the level of the local offices. There is no evaluation and monitoring system in place that would allow the DNF to make a systematic follow up of how the regional districts and local offices are implementing the forest policies and how they are fulfilling their duties inherent to the forest administration. Local officers seem to be completely out of control of any superior authority, giving room for discretionary power and corruption.

77. On the other hand the National Outsourced Forest Control System SNTCF, which was designed in response to the severe reduction and obliged redefinition of the role of the Forest Authority, is suspended in a legal limbo since late 2003. The forest administration stands stuck in a severe crisis since then, not being able to hire more public servants due to the chronic fiscal limitations and also not having the political and financial backing needed to re-activate the SNTCF. One breaking point to enliven SNTCF is costs: the stumpage tax that should be eliminated to incentive SFM and lower the cost of legality provides two of the six million US$ of the total yearly budget of the Ministry of Environment. Together with the cost of the outsourced verifications services this is the main piece in the dispute that obstructs the chances to reassume the SNTCF. With this innovative scheme Ecuador would be an interesting candidate to enter into negotiations with the EU in order to celebrate a voluntary partnership agreement under the EU FLEGT Action Plan.

78. As already explained above, there is no institution, neither at the national nor at the regional level with a clear legal mandate to enforce land use zoning regulations. The Ministry of Environment limits itself to sanction illegal land clearing occasionally, without success. Of the 7 oilpalm companies sanctioned by the MoE for illegally clearing the forests between 2001 and 2002, no one has paid the fines which total around a million dollars.

79. In recent days the Association of Provincial Governments CONCOPE has taken up a decentralization process that begun in the year 2001 targeted to transfer legal competences and public resources from central to provincial governments to fulfill competences regarding tourism, environment, agriculture public works, education and health. There is an openly perceived need to create instances to regulate and enforce land tenure and land use: the strong move towards decentralization offers a potential to set these competences into a new dimension, creating the mechanisms that allowed provincial governments to efficiently exercise these competences at the regional or local level.

F. Agricultural Expansion

80. According to Schroeder (2005), “in Ecuador agricultural expansion has its roots in the land reforms and colonization promoted by corresponding laws in the 1960 y 1970ies. Expansion occurred especially towards the paramo highlands as well as the tropical lowland forests in the Amazon and the northwest. Up to the 1980ies the Instituto Ecuatoriano de Reforma Agraria y Colonización (IERAC)

allocated properties of state land to private forest owners, obliging them to convert 50% of the (forest) area to agricultural land (e.g. in the Amazon region allocated properties had a size of an average 50 ha).

81. Regarding economic parameters, any land use system that generates higher levels of income than forestry is more attractive to the proprietor. Hence, pro-deforestation incentives arise if forestry does not generate competitive income levels. Besides, land availability and land conditions play an important role. In more densely populated areas / countries, forest cover often exclusively remains in those areas that are not suitable for any other land use.

82. Hence, economic factors as well and land availability are decisive for the definition of forest cover. In those areas of Ecuador that have witnessed intensive deforestation and forest degradation in the past, and where these processes are ongoing at present, forest management has not been able to advance to an economically attractive land use for the settlers and forest owners.

83. Several studies on the issue indicate comparatively low income levels generated by sustainable forest management. Schneider (2005) recently resumed the following data for the Province of Pastaza in the Amazon region:

Table 23: Opportunity Costs of Land Use Types in the Province of Pastaza

	Land Use / Vegetation type	Opportunity costs US / ha / y
1	Natural primary forests	5,5*
2	Secondary forests (Pigue)	25
3	Grasslands / cattle ranching	89
4	Tropical fruit / Naranjilla	500

Considering harvestable growth of 25m³ of wood in 15 years. Source: (Schneider 2005).

84. However, as primary forest resources are accessed (via newly constructed roads) forest extraction frequently goes way beyond sustainable growth levels. In this manner forest exploitation is able to generate by far higher one-time profits (e.g. up to 1500 US / ha). Under this scenario, forest land either enters a long timer fallow period or is converted to an other (agricultural) land use posterior to wood exploitation." It is clear that SFM has no chance to compete against agricultural expansion without strong public incentives for forest conservation and management and also strong public efforts to combat illegal logging and land conversion. Considering that secondary forest has a opportunity cost that is five times higher than natural forests some attention should be given to the potential of this forest type.

G. Illegal Production and Trade of Forest Products: Main Drivers

85. From the wood offer and consumption balance already discussed in section 2.3, (Table 12) one can deduce that the illegal production and trade of wood in Ecuador lies between 375.000 and 1.´175.000 cubic meters per year. This means that at least 17,5 to 54% of annually harvested forest are being over harvested illegally and/or converted to agricultural land. The economic incentive for illegal timber production and trade was already discussed above. The other main factor for illegal timber harvesting and trade is the lack of efficient and transparent institutions and systems to control illegal activities in the forest sector and enforce the law.

H. Illegal Production and Trade of Forest Products: Key Actors

Group	Attitude / role
AIMA: Ecuadorian Association of Wood Industry (73 members)	Declares to be in favour of a control system although most of its members benefit form illegal, cheap wood
ANSEPMA: Association of public servants of the Ministry of Environment	Opposes strongly to a delegated or outsourced forest control scheme, to lower the stumpage tax and to recognize private land ownership inside the public forest heritage (PFE).
CEDENMA: Umbrella Organization of E-NGO´s	Puts pressure on the government to reassume an efficient and transparent forest control system
CONIFOR National Association of Forest Engineers	Support an outsourced forest control system in which forest engineers have and active role
Ecuadorian Government (except MoE)	Gives forest loss and illegal logging no priority, tries to avoid conflictive issues
Forest Regents	Benefit from weak control. Launder illegal timber sometimes in complicity with MoE local officials
Forest owning indigenous communities at the local level; colonists, farmers, owners	Are mostly not aware of SFM instruments and regulations: sell their trees to timber companies or intermediaries with little benefit
Indigenous people political organizations (CONAIE, CONFENIAE)	Illegal timber and deforestation is not on their political agenda: seem to be unaware of territorial consolidation and poverty reduction dimension of SFM.
International cooperation agencies	Support any effective forest control scheme and has repeatedly “encouraged” the government to implement it
Local timber merchants / intermediaries	Buy trees or timber and launder it using the services of forest regents or local officials. Use force to boycott any efficient system.
Local NGO´s promoting SFM	Strong support a forest control system since their success depends on its
Media	Exercise a strong advocacy against deforestation an in favor of a forest control system
MoE local officials	Same as above for the central level. Some officials though are corrupt and launder timber using fake harvesting licenses to get timber transport licenses.
MoE, DNF senior officials in Quito	Are aware of the situation but know they have no resources nor capacities to control their local offices. Lack of political support in the MoE and the Government.
Vigilancia Verde	Demands more political support from MoE and funding to oversee forest activities

V. KEY THEMES FOR ACTION AT STRATEGIC LEVEL

A. Policy and Regulatory Framework

86. Most of the actions proposed here are already contained in one form or the other in the Ecuadorian Forest Strategy (EDFSE), which can be considered as a complete and very consistent piece for the strategic orientation for the Ecuadorian forest sector: the weakness of this strategy is that due to the political circumstances Ecuador went through during the last years it could not reach the political leverage and social support to be considered a National Forest Program. Therefore efforts to **re-launch a NFP process** with a much stronger involvement of political and economic decision-makers exogenous to the forest sector is considered to be necessary.

87. **Streamlining forest and land use policies**: although forest and biodiversity policies and strategies have been precisely formulated intra-sectorally in the recent past, forest and land use policies need to be set first inter-sectorally to implement them efficiently afterwards. Land use policies require to be placed much higher at the national political agenda taking advantage of the political momentum in which legal competences for agriculture, land tenure and environment are being demanded by provincial governments. A national dialogue between all relevant stakeholders affecting forests and biodiversity (specially forest land owners and actors exogenous to the forest sector) must be summoned in order to set a national land use policy to define protected areas, permanent production forests and other land uses.

88. The **regulatory framework to implement** these policies must then follow together with a new forest law which can benefit from the draft already produced within the forest sector in the year 2000. This which will only be successful in the rather turbulent Ecuadorian political arena if the process involves key political and economic decision makers, together with indigenous people organizations. The new law ought to solve land tenure insecurity and conflicts allowing private forest property and investment in the Public Forest Estate (PFE). But it should also contain incentives for sustainable forest management like provisions to pay for environmental services, and particularly urgent, the abolition of the stumpage tax.

B. Institutional Reform

89. At the moment there is only, if any, scattered institutional competence and capacity to enforce weak and isolated land use regulations. As a result of the National Forest Programme suggested above, a new institutional arrangement need to be put in place to efficiently deal with land tenure, land use zoning and with enforcement of land use regulations. In this institutional array the process of de-centralization of competences from central to provincial government that is in course will have to be considered.

90. Public forest authority at national and local levels needs urgently to be overhauled so that it can efficiently contribute to the sustainable development of Ecuador's forest sector which it evidently does not at present. It is crucial that the forest administration reduces all transaction costs that lie on legal wood harvest. (bureaucratic burden and stumpage taxes[11]).

[11] Stumpage tax contribute to around one third of the yearly budget of the Ministry of Environment and is mainly used in paying salaries for the functionaries of the MoE, although the law states it should be invested for sustainable forest development.

91. Existing mechanisms of independent forest verification (SNTCF) and civil society oversight (*Vigilancia Verde*, the Forest Regents) should be supported in order to provide transparency to fight illegal logging and corruption.

92. Mechanisms of incentive to improve the rentability of SFM like payment for environmental services, technical assistance for little forest owners and voluntary certification schemes will have to be offered.

C. The Political Economy of the Reform: Who Looses and Who Wins

93. A process targeted to streamline land use and forest policies should end with a negotiated agreement from which all parties benefit. Nevertheless if a limitation to further forest conversion to agricultural land is going to be enforced, then forest owners must be compensated economically for the loss of income this may cause to them. Therefore following action needs to be taken:

1. Implement a legal and institutional mechanism of payment for environmental services to forest owners to foster sustainable forest management.
2. Enforce forest law to combat illegal timber harvesting and transport to make legally harvested wood more competitive.
3. Abolish the stumpage tax to foster sustainable forest management.
4. Foster access to national and international markets of legally produced forest products of higher quality (EU-FLEGT).

94. Wood intermediaries and industrial wood consuming sectors will feel the reform is detrimental to them if timber prices rose. Nevertheless this could be compensated by the elimination of stumpage tax and the provision of user friendly and efficient forest administration services reducing transactions costs.

95. Manly the exporting segment of the timber industry would benefit from preferential market access for legally produced forest products and other kind of benefits that could be negotiated in the framework of a FLEGT[12] Voluntary Partner Agreement with the European Union to benefit Ecuadorian timber products exports. Similar preferential market access conditions for legally produced forest products should be also included in regional free-trade agreements as the one being negotiated now days with the United States of America.

96. Functionaries of the Ministry of Environment would oppose stumpage tax abolition since part of their salary is paid from this very reliable source (in contrast to the uncertain transfers from the central government budget). This opposition could be handled if the NFP process manages to give the forest sector a much higher priority in the official agenda. This should achieve to elevate the annual budget of the MoE substantially, or at least by filling the gap produced by the abolition of stumpage tax with other fiscal resources.

97. Most functionaries of the MoE would also oppose the socialization of the PFE since they think this estate is an institutional patrimony of the Ministry of Environment. Accurate information about the level of encroachment and settlement in these forests would help to lower their resistance.

[12] FLEGT: Forest Law Enforcement, Governance and Trade.

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APÉNDICE 1 CRITERIOS E INDICADORES PARA EL MANEJO FORESTAL SUSTENTABLE EN EL ECUADOR (para PAFSu)		
CRITERIO No. 1 : SUSTENTABILIDAD DE LA PRODUCCCION		
	(Indicador)	**(Verificador)**
1	1.1 Intensidad aprovechamiento bosque no podrá ser superior al 30%.	Area basal aprovechada (m^2/ha)
2	1.2 La Reserva Mínima Obligatoria (RMO) para especies forestales de baja abundancia podrá ser: Si abundancia es igual o inferior a 1 árbol cada 3ha: 40% para árboles con DMC y; si abundancia mayor a 1 árbol cada 3ha e igual o inferior a 1 árbol/ha: 20 para árboles con DMC	No. de árboles extraídos Vs. No. árboles reserva (para la especie)
3	1.3 C ciclo mínimo de corta c/aprovechamiento mecanizado es 15 años.	% intensidad aprovechamiento anual
CRITERIO No. 2 MANTENIMIENTO DE LA COBERTURA BOSCOSA		
4	2.1 La intensidad de la intervención en el bosque no podrá ser superior al 40%.	AB árboles: aprovechados anillados; eliminados; inventario o censo
5	2.2 El porcentaje de intervención máximo para la construcción de infraestructura será: camino de acceso 4%; camino de arrastre 7%; pistas de arrastre 8% y; patios de carga 1% (niveles máximos)	% superficie afectada por efecto de infraestructura 20%
6	2.3 El enriquecimiento del bosque, si se va a realizar, deberá efectuarse en claros y no podrá superar los 50 árboles por ha con especies nativas	Listado de especies empleadas
CRITERIO NO. 3 CONSERVACION DE LA BIODIVERSIDAD		
8	3.1 Aprovechamiento de especies "condicionadas" se hará previa demostración de la abundancia.	Número registro de árboles censados y nomenclatura de identificación
9	3.2 Especies de excepcional importancia ecológica deberán ser identificadas en el bosque y protegidas.	Mapa y número de registro de árboles censados
10	3.3 No podrá aprovechar especies con abundancia inferior a 1 árbol cada 3 hectáreas, en general	Mapa y número de registro de árboles censados
11	3.4 Serán ZPP las áreas que son hábitat de poblaciones de fauna o flora amenazadas de extinción y que resultan indispensables para su supervivencia	Lista de spp, sitios y ubicación
12	3.5 Serán ZPP las áreas con pendientes superiores al 50 grados en cursos de agua y ancho mayor a 3 m	Informe de Observación campo
13	3.6 Serán ZPP áreas c/pendientes superior al 70 %	Informe de observación campo
14	3.7 Serán ZPP las áreas declarada así por interés público o por el propietario	Decreto, Acuerdo u Ordenanza emitida autoridad pertinente o propietario

CRITERIO NO. 4 CORRESPONSABILIDAD EN EL MANEJO FORESTAL		
15	4.1 El propietario del área de PAFS tendrá derecho a acceder a información y a ser informado oportunamente por el ejecutor, sobre la planificación y ejecución del manejo.	Información disponible en cualquier momento
16	4.2 El propietario y ejecutor tendrán responsabilidad compartida por las actividades de aprovechamiento y corta durante la planificación y ejecución de todas las actividades de dicho manejo	Declaración juramentada y Licencia de Aprovechamiento
CRITERIO NO. 5 REDUCCION DE IMPACTOS AMBIENTALES Y SOCIALES NEGATIVOS		
17	5.1 Se deberá mantener zonas de protección permanente (ZPP) a lo largo de ríos o cualquier curso de agua en faja paralela a cada margen, según el ancho de río	3 a 10 m: ZPP de5 m 10. 1 a 30 m: ZPP de 10 m; > 30.1 m: ZPP 15 m
18	5.2 Se mantendrá ZPP en fajas, paralelas a cursos de agua, lagunas y reservorios. Alrededor de fuentes, Incluso intermitentes y ojos de agua	Ancho/radio mínimo de 10 m.
19	5.3 Las pendientes máximas en construcción de caminos serán: camino acceso principal: 20 % (12 %) Camino de arrastre: 50 % (20%) Pista de arrastre: 90 % (20 %)	Programa de aprovechamiento e informes de ejecución de Regente
20	5.4 El camino de acceso principal tendrá las obras de conservación necesarias para minimizar la erosión y los daños al suelo y al agua, de acuerdo con las normas técnicas para la construcción de caminos.	Cumplimiento de las normas técnicas del MOP
21	5.5 La tumba de los árboles dirigida deberá ser hacia áreas donde se cause el menor daño posible al bosque	No. personal capacitado. % afectación de copas árboles en pie
22	5.6 La capacitación y el empleo de la mano de obra local, sea de propietarios o pobladores, es indicio de la justa aplicación de los indicadores	Número de ciudadanos locales contratados y capacitados
23	5.7 Los cauces hídricos no podrán ser obstruidos y la remoción del suelo deberá ser reducida al mínimo posible	Inf. de Observación de campo
24	5.8 No se permitirá las quemas incontroladas en el bosque nativo	Inf. Observación de campo
25	5.9 Se deberá implementar mecanismos de recolección y disposición de desechos inorgánicos y no podrán ser abandonados en el bosque	Inf. Observación de campo Inf. Observación de campo

Fuente: Trelles, M. 2003. Conferencia ITTO sobre la Aplicación de Criterios e Indicadores de Manejo Forestal Sustentable, Esmeraldas, Ecuador.

APÉNDICE 2

ESTRATEGIA PARA EL DESARROLLO FORESTAL SUSTENTABLE DEL ECUADOR

MINISTERIO DEL AMBIENTE DEL ECUADOR

I. Introducción

El Ecuador es excepcionalmente rico por la diversidad de ecosistemas que posee y por la presencia de una importante masa boscosa en diferentes ubicaciones geográficas, que le permiten ser uno de los países más diversos del planeta.

Sin embargo, la carente aplicación de políticas consistentes respecto al la conservación y al manejo de los bosques han permitido que este importante recurso se siga perdiendo y que los bosques nativos sigan siendo afectados por una irracional explotación maderera y por procesos de colonización desordenada con la consecuente ampliación de la frontera agrícola.

Frente a esta realidad el Ministerio del Ambiente del Ecuador se ha propuesto formular y poner en práctica un conjunto de políticas y estrategias que permita establecer un equilibrio entre el aprovechamiento sustentable de los recursos del bosque, la conservación de su biodiversidad y el necesario crecimiento económico que propenda a mejorar las condiciones de vida de la población.

Para ello se han retomado y enriquecido iniciativas de política forestal anteriores, entre las que deben destacarse la "Política Forestal y de Áreas Naturales y Vida Silvestre del Ecuador" (INEFAN/PPF, 1995), el anteproyecto de ley forestal generado por el Grupo Núcleo Multisectorial (GNM), las varias políticas y estrategias para el manejo y la conservación de las áreas naturales protegidas y la vida silvestre producidas en el marco del Proyecto GEF/INEFAN desde 1995, el proceso CIC-PAFE, entre otras.

Algunos de los elementos novedosos de la presente propuesta lo constituyen la desconcentración de funciones de la administración forestal del Estado, la tercerización de servicios hacia actores de la sociedad civil, pero sobre todo el entendimiento que el buen manejo de los recursos naturales depende mucho mas de la implementación de mecanismos concretos de fomento antes que de mecanismos de control y de protección coercitivos.

Para ello deberá iniciarse un profundo proceso de transformación institucional e implementarse reformas que permitan cambiar radicalmente la gestión del ex Instituto Nacional Forestal de Áreas Naturales y Vida Silvestre INEFAN (el cual fue integrado orgánicamente al MAE en febrero de 1999), mediante la creación de una unidad desconcentrada y eficiente, con amplia independencia operativa, financiera y presupuestaria a nivel provincial. Además, será imprescindible contar con un nuevo marco legal, simple y transparente, que fomente la inversión y la conformación de alianzas estratégicas entre el sector privado, el no-gubernamental y el comunitario.

Los programas y las acciones estarán orientados hacia una mejor valoración de los bosques y ecosistemas nativos y de los servicios ambientales que éstos proveen, hacia la implementación del manejo sustentable del bosque nativo y de un sistema transparente de

control; hacia el fomento de la forestación en tierras descubiertas y a la incorporación de las comunidades locales en la gestión co-responsable y democrática de los recursos naturales.

El valioso aporte que brindaron más de 350 personas que participaron durante ocho foros regionales que se realizaron en todas las regiones del país en el segundo trimestre de 1999 en la discusión del primer borrador de esta estrategia la han enriquecido sustancialmente. De igual manera, los consensos fundamentales alcanzados durante el resto de ese año y durante el primer trimestre del año 2000, han permitido llegar a una propuesta respaldada por la mayoría de los actores involucrados en el manejo y la conservación de bosques y ecosistemas nativos.

La propuesta inicia un largo proceso de cambio, para el cual diferentes actores privados y comunitarios interesados en el manejo y en la conservación de los recursos naturales se han comprometido a contribuir.

II. Potencialidad de los bosques nativos y de las plantaciones forestales

Entendemos al sector de la conservación forestal como el conjunto integral de las tierras bajo cobertura de bosques y ecosistemas nativos, las tierras de aptitud forestal, áreas destinadas a la protección y la biodiversidad que en todas ellas está contenida, a mas de los grupos sociales y de las instituciones vinculadas a su manejo y conservación.

Ecuador posee una superficie total de 256.279[13] km^2 en donde el uso potencial forestal de la tierra corresponde aproximadamente a un 63 % del total.

Los registros indican que, en cuanto al uso actual del suelo, la superficie de bosques nativos (incluyendo matorrales de altura) alcanza aproximadamente 8 millones de ha, los manglares 227.300 ha [14] y las plantaciones forestales únicamente 143.000 ha[15].

Por su difícil accesibilidad, en la actualidad únicamente 600 mil ha de bosques nativos presentan condiciones económicas para ser manejados silviculturalmente, mientras las tierras con potencial para ser forestadas alcanzan una extensión de mas de 3 millones de hectáreas [3].

Es evidente que el Ecuador tiene una potencialidad productiva forestal, en términos de ventajas comparativas, que no está siendo utilizada. Se estima que los suelos potencialmente forestables con plantaciones con fines meramente productivos están en el orden de un millón de hectáreas. Esto, sumado a la inmejorable posición geográfica del país con relación a los mercados internacionales y a sus favorables condiciones naturales para el crecimiento de bosques (condiciones poco frecuentes en países competidores), el Ecuador es una nación de vocación forestal**.**

El país dispone además de más de 4,6 millones de ha declaradas como áreas naturales protegidas que pueden integrarse al desarrollo turístico y al aprovechamiento sustentable de su biodiversidad.

La Amazonía y el Noroccidente Ecuatorianos poseen una enorme diversidad biológica y cultural que hasta el momento se encuentra sub-utilizada. En ambas regiones el potencial turístico y la riqueza genética son enormes.

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13 Datos oficiales anteriores a la firma de la paz con el Perú.

14 MMA/UICN/INTERCOOPERACIÓN Informe final PROBONA, Quito, Mayo 1999 (Tierras forestales actuales sin páramos).

15 INEFAN/ITTO, 1995.

III. Política de la conservación forestal como política de Estado

La Política de la Conservación Forestal del Estado Ecuatoriano es el marco orientador y el rumbo definido que, junto con los demás actores constituidos por instituciones, organizaciones, grupos o individuos, determinará las futuras decisiones en el sector forestal. La base de la sostenibilidad en el tiempo de esta política la constituye la activa participación de la sociedad civil en las diferentes instancias y niveles de decisión.

Visión

EL ECUADOR MANEJA SUSTENTABLEMENTE SUS RECURSOS FORESTALES Y GARANTIZA A LA SOCIEDAD SU PERMANENCIA, SU DIVERSIDAD BIOLÓGICA Y CULTURAL ASOCIADA; COMPITE DE MANERA EFICIENTE EN EL MERCADO MUNDIAL DE BIENES Y SERVICIOS AMBIENTALES, GENERANDO DESARROLLO ECONÓMICO Y SOCIAL QUE MEJORA LA CALIDAD DE VIDA DE TODOS LOS INVOLUCRADOS.

La Política de la Conservación Forestal está constituida por un conjunto de objetivos y estrategias diseñadas para un horizonte temporal de por lo menos 20 años. Estas deben ser implementadas a través de instrumentos de acción flexibles, coherentes y viables.

A. Objetivos específicos de la política forestal

- **Detener el proceso de pérdida de los bosques nativos**, fundamentándose en la aplicación de instrumentos de fomento que propendan a su manejo sustentable y que valoricen sus bienes y servicios, a fin de mejorar su competitividad con otros usos de la tierra.
- **Conservar y manejar los bosques y recursos existentes en las áreas naturales protegidas**, humedales, manglares y páramos, mediante la generación de alternativas de uso, entre las que se destacan entre otros su enorme potencial turístico y el uso sustentable de su biodiversidad.
- **Restaurar las tierras de aptitud forestal sin bosque**, incorporándolas a los procesos de desarrollo económico y social a través de un masivo programa de fomento a la forestación, tanto con fines productivos como con fines de protección.
- **Asegurar la participación** de las poblaciones rurales, de los pueblos y de las nacionalidades indígenas y negras en los procesos de toma de decisiones y en la planificación, ejecución y seguimiento de programas forestales y de conservación.

IV. Lineamientos transversales

Estos principios atraviesan las políticas, la institucionalidad y la ley forestal propuestas, dándoles cohesión y coherencia.

- APOYO Y PROMOCIÓN DEL MANEJO SUSTENTABLE
- ESPECIALIZACIÓN Y COMPLEMENTARIEDAD
- FACILITACIÓN DE ALIANZAS ESTRATÉGICAS
- DELEGACIÓN DE FUNCIONES A LA SOCIEDAD CIVIL
- EFICIENCIA, TRANSPARENCIA Y SIMPLIFICACIÓN DE PROCESOS
- AUTONOMÍA Y FLEXIBILIDAD
- PARTICIPACIÓN Y CORRESPONSABILIDAD

V. Estrategias

Para alcanzar los cuatro objetivos específicos de la política de la conservación forestal se proponen las siguientes estrategias generales que son:

- **Valoración de los bosques nativos y de las plantaciones forestales**
- **Fomento y financiamiento para el manejo sustentable de los bosques**
- **Fortalecimiento de la participación y gestión de la sociedad civil**
- **Modernización institucional y organizativa**
- **Modernización del marco legal**

A. Valoración de los bosques nativos y de las plantaciones forestales

Estrategia general

Dar mayor valor al recurso forestal asegurando la tenencia de la tierra, haciendo transparente y competitivo el mercado de bienes y servicios que ofrecen los bosques, los ecosistemas nativos, las plantaciones forestales y su biodiversidad; promoviendo la inserción del sector en los mercados y en la agenda económica nacional e incorporándolo en las decisiones relativas a la política crediticia, fiscal y monetaria.

- Estrategias específicas para la valoración de los bosques y ecosistemas nativos:

a) Fomentar y exigir el cumplimiento de los **planes de manejo forestal** sustentable y del ordenamiento integral de las fincas y de los bosques privados y comunitarios.
b) Crear y promover mecanismos y la base legal que permitan el **cobro por los servicios ambientales** que prestan bosques y ecosistemas nativos, para que sus propietarios reciban un pago mensual en efectivo por los servicios que estos brindan. La sociedad demanda de los bosques la protección de los suelos y de otras de infraestructura, la calidad y la regulación de la cantidad del agua, la protección de la biodiversidad y el mantenimiento de la belleza escénica, entre otros. Sin embargo, en el Ecuador, aún no se han creado los mecanismos para internalizar el costo de estos servicios y **compensar directamente a los propietarios de los bosques**.
c) **Adjudicar el Patrimonio Forestal del Estado** a pueblos y nacionalidades indígenas y negras, a colonos y a otros grupos sociales interesados, siempre y cuando éstos garanticen el manejo sustentable y la conservación de los bosques adjudicados.

d) **Reconocer la propiedad del territorio de los pueblos y de las nacionalidades ancestrales** asentadas en el interior del Sistema Nacional de Áreas Protegidas (SNAP) antes de su declaratoria.
e) **Otorgar concesiones de uso** a las comunidades locales que vivan del aprovechamiento sustentable de los manglares y de otros humedales.
f) Establecer un esquema de coordinación interinstitucional transparente entre el INDA (Instituto Nacional de Desarrollo Agrario), el MA y otras instancias públicas relacionadas con la regulación de la **tenencia y la legalización de la tierra** para garantizar la propiedad privada y comunal y dar seguridad que posibilite inversiones en el largo plazo.
g) **Concesionar la administración de ciertas áreas naturales protegidas** o de una parte de ellas a consorcios formados por comunidades locales, ONGs y operadores turísticos y otros que garanticen su conservación.
h) **Fomentar la transparencia de los mercados e incentivar el comercio** de madera, en especial de especies comerciales menos conocidas, y de productos no maderables del bosque, provenientes del manejo forestal dirigido hacia la sustentabilidad.
i) Consolidar el proceso de **ordenamiento territorial** local y regional**.**
j) Favorecer **procesos de certificación forestal voluntaria** y del acceso a mercados para madera proveniente de bosques manejados.
k) Valorar, promocionar y regular el **acceso a recursos genéticos y de la biodiversidad**, reconociendo el conocimiento ancestral de los pueblos y velando por la distribución equitativa de los beneficios, en concordancia con lo estipulado en el Convenio de Biodiversidad.
l) Procurar que las **políticas macro - económicas y las de otros sectores** de la economía no afecten la rentabilidad de la actividad forestal y, por el contrario, propendan a valorizar bosques y ecosistemas nativos, para que éstos no pierda competitividad frente a otros usos de la tierra, u otras actividades económicas de más rápida recuperación de inversión.
m) Incorporar al **sector forestal en las cuentas nacionales** independiente del sector agropecuario.
n) Propiciar la creación de una **cultura forestal** a nivel nacional.

- Estrategias específicas para la valoración de plantaciones forestales y sistemas agroforestales

a) Fomentar el **establecimiento de plantaciones forestales** de calidad y propiciar su adecuado mantenimiento y reposición con la finalidad de producir materias primas industriales y para disminuir la presión sobre los bosques nativos.
b) **Democratizar la forestación** de manera que contribuya a crear polos de desarrollo social y económico.
c) Fomentar el **establecimiento de sistemas agroforestales**, para intensificar el uso del suelo y disminuir la presión sobre bosques nativos.
d) **Desregular el aprovechamiento y el comercio** de madera proveniente de las plantaciones forestales y de sistemas agroforestales.

B. Fomento y financiamiento para el manejo sustentable de los bosques

Estrategia general

Establecer y consolidar un sistema **de financiamiento unificado, transparente y flexible,** que permita desarrollar de manera eficiente un conjunto de incentivos, de cobro por servicios ambientales, ingresos provenientes del turismo y otras líneas de financiamiento, dirigidas a fomentar iniciativas de conservación, de manejo sustentable de los bosques, ecosistemas nativos y de forestación, entre otras. Este sistema debe operar bajo los principios de autogestión, eficiencia y equidad.

Estrategias específicas

a) Crear y consolidar el **Fondo Nacional para la Conservación y Conservación (FONAFORC)** como un sistema de financiamiento ágil y transparente que unifique los instrumentos financieros disponibles para el fomento del manejo sustentable de los bosques y ecositemas nativos, de las áreas protegidas privadas y el desarrollo de la forestación sustentable, a través de cuentas específicas.
b) Incluir en la agenda del Mecanismo Ecuatoriano de Desarrollo Limpio, el potencial de los **bosques y ecositemas nativos, plantaciones y otros ecosistemas** para capturar carbono y poner en ejecución los compromisos y oportunidades que brinda la **Convención Marco de Cambio Climático.**
c) Oerativizar el **cobro de la tasa de manejo forestal sustentable**. Esta tasa será cobrada a la aprobación de un plan de manejo por el servicio de aprobación, control y el monitoreo que el Ministerio del Ambiente le deberá hacer a dicho plan por intermedio de los regentes forestales, de las empresas autitoras especializadas y por su propia unidad de control.
d) Adquirir **créditos concesionales** en el mercado financiero internacional para **incentivar el establecimiento de plantaciones forestales.** El Estado fomentará programas de forestación dirigidos preferentemente a pequeños y medianos propietarios.
e) **Tercerizar la administración y los servicios que se brindan en partes de ciertas áreas protegidas** de manera que se pueda optimizar el potencial turístico y el de su biodiversidad, garantizando al mismo tiempo su conservación. Este esquema de delegación se podrá dar **a través de consorcios** conformados por ejemplo, por comunidades locales, ONGs, gobiernos seccionales, operadores turísticos u otros actores.
f) Gestionar **canje, compra o condonación de deuda externa**, tanto pública como privada, para reforzar las posibilidades de financiar la **conservación, restauración y manejo sustentable de bosques y ecosistemas nativos.**

C. Fortalecimiento de la participación y gestión de la sociedad civil

Estrategia general

Fomentar la participación de la sociedad civil y la generación de alianzas en relación a la toma de decisiones en la planificación forestal, de conservación y aprovechamiento de los bosques y ecosistemas nativos

El Estado propiciará el fortalecimiento y la democratización de los gremios del sector privado y no-gubernamental y propenderá a fortalecer la capacidad de gestión de las organizaciones de base y de los propietarios de bosque.

La participación activa de la sociedad civil junto a la estructura institucional propuesta (SUREMAC) constituye la espina dorsal que propende a su continuidad y que deberá velar por su transparencia.

Estrategias específicas

a) Articular las **dimensiones socioculturales, éticas, de género y generacionales** a los programas y proyectos que se ejecuten.
b) **Fortalecer la capacidad de gestión** de organizaciones de base vinculadas al manejo y a la conservación de los bosques y ecsistemas nativos y fomentar nuevas experiencias e iniciativas locales de desarrollo forestal participativo.
c) Propiciar, sobre la base de iniciativas existentes, la conformación de los **consejos de conservación forestal (COCONFOR) en los diferentes niveles** (nacional y provincial) en los que está estructurado el SUREMAC, los cuales estarán constituidos por representantes del sector privado, de las comunidades, los pueblos y las nacionalidades indígenas y negras y de las organizaciones no gubernamentales a mas de varios otros representantes de la sociedad civil.
   Uno de los principios básicos del sistema, es la incorporación de la sociedad civil en el proceso de toma de decisiones sobre la aplicación de la política de la conservación forestal y sobre lo que sucede a niveles operativos en cuanto al manejo y conservación de los bosques.
   El **Consejo de Conservación Forestal Nacional** apoyará al Ministerio del Ambiente en la formulación de las políticas y las estrategias del sector, vigilará y garantizará la transparencia de la gestión, sin constituir instancia de apelación ni ocuparse de asuntos administrativos. Estará conformado equilibradamente y de manera intersectorial por un representante de cada uno de los siguientes sectores: el sector forestal privado (dueños de bosques), el sector ambientalista no gubernamental, los pueblos y las nacionalidades indígenas y afroecuatorianas, el colegio nacional de ingenieros forestales; el colegio nacional de biólogos y por un representante de las cámaras de turismo; todos los cuales deberán tener representación a nivel nacional. A ellos se sumarán seis representantes de los consejos forestales provinciales, dos de cada región geográfica (Sierra, Costa y Amazonía). Cada **Consejo de Conservación Forestal Provincial**, acompañará la implementación de las políticas nacionales y la aplicación de programas a nivel provincial. Estará integrado de manera similar que el COCONFOR Nacional con la diferencia de que sus miembros deberán tener representación únicamente a nivel provincial.
d) Promover **audiencias públicas y contribuir a la resolución de conflictos** a través de propuestas y mecanismos formales de diálogo que enfrenten los vacíos legales e institucionales relacionados con el reconocimiento de los intereses y derechos de los sectores involucrados, con respecto al uso de recursos forestales.

D. Modernización institucional y organizativa

Estrategias generales

- Consolidar acciones de instituciones públicas y privadas para evitar la duplicación de esfuerzos y generar sinergias que propendan al manejo integral de los recursos del bosque, vinculando a la fuerza pública, a los centros de investigación y enseñanza y a las instituciones de promoción y fomento, tanto gubernamentales como no gubernamentales.
- Delegar a la sociedad civil todas aquellas funciones que no sean estratégicas y que el sector privado las pueda realizar con mayor eficiencia, limitando al Estado a la formulación de políticas, a la emisión de leyes y normas y a un papel de concertador y facilitador.
- Clarificar los roles de los diferentes actores vinculados a la gestión forestal (privados, públicos, comunitarios y otros) dentro de un marco de especialización y complementariedad, con el objetivo de fomentar los procesos de desarrollo del sector.

Estrategias específicas

a. Desarrollar y consolidar la **AFE** (Autoridad Forestal del Estado) como parte de la Autoridad Ambiental cuya misión será la de propiciar el manejo sustentable de los recursos forestales y la conservación de su diversidad biológica y cultural asociada, para contribuir al crecimiento económico y al desarrollo social, garantizando la continuidad de los procesos ecológicos naturales.
b. **La AFE estará organizada de manera desconcentrada en un Sistema de Unidades Regionales de Manejo y Conservación (SUREMAC),** mediante el cual puedan integrarse, en un sólo concepto de desarrollo regional, la protección y el manejo de los bosques, de acuerdo a las potencialidades y a las limitaciones específicas de cada región. Los criterios para la conformación de las **unidades regionales (UREMACs)** deberán ser su homogeneidad biogeográfica, su accesibilidad interna (vial y fluvial) y la división político/administrativa del Estado. La estructura institucional cuenta con tres niveles: el nivel nacional, y los niveles provincial y local). El nivel nacional se limita a una función rectora en cuanto a la definición de políticas, etrategias y normas para que el nivel provincial pueda operar con independencia administrativa, financiero/presuspuestaria y operativa. El enlace entre el nivel nacional y el nivel provincial está dado por una instancia tecno-política de coordinación, los coordinadores regionales los cuales dependen directamente de la dirección nacional. Estos establecen la coordinación entre las provincias de una misma UREMAC y entre UREMACS vecinas Los tres procesos estratégicos del Ministerio del Ambiente relativos a la coservación forestal son: El **Fomento de la Conservación Forestal** (áreas no estatales) plantea las políticas y estrategias dirigidas a fomentar y facilitar todos los procesos y las iniciativas del sector privado y comunitario que estén dirigidas hacia el manejo sustentable de los bosques y ecositemas nativos. Explora y promueve las potencialidades productivas que puedan generarse a partir de ellos y de sus más diversos productos y servicios. Las **Áreas Protegidas y Biodiversidad** (áreas estatales) plantea las políticas y estrategias dirigidas a garantizar su adecuada conservación e integridad y potencializar las posibilidades económicas de las Áreas Protegidas del Estado, con la finalidad de generar desarrollo económico y social. Deberá vincular estrechamente a los actores locales, a las comunidades, a empresarios privados entre otros, al manejo y conservación de las áreas protegidas, de manera que se faciliten

el desarrollo de iniciativas y negocios a fin de lograr un SNAP autosuficiente. La **Autoridad de Control Forestal** plantea las políticas y estrategias dirigidas al cumplimiento de la legislación en el uso y manejo adecuado de bosques y ecosistemas nativos, ubicadas tanto en tierras de dominio estatal como no estatal de acuerdo con las normas técnicas y jurídicas establecidas, incorporando en estos procesos la participación de actores privados en forma de **regentes forestales** y **empresas e instituciones auditoras especializadas**. El concepto cambia de un control de "no uso" o explotación generalmente inadecuada de los recursos naturales, hacia un control para el aprovechamiento sustentable y conservación de los mismos.

c. Vincular al **SUREMAC** un esquema **de consulta** democrático (Consejos Forestales) que facilite la participación de la sociedad civil desde sus bases en cada una de las regiones, constituyendo el motor que impulse el manejo sustentable de bosques y ecosistemas nativos.
d. **Integrar dentro de una visión holística de manejo,** a todos los bosques y ecosistemas nativos.
e. Implementar el sistema de **regencia forestal** para propiciar y controlar el manejo sustentable de los bosques nativos y de los bosques secundarios, en concordancia con los principios, criterios e indicadores de sostenibilidad que se establezcan.
f. El **regente forestal** será un profesional forestal privado, que gozará de fé pública y deberá estar caucionado ante el MA, y será el responsable de la correcta ejecución de los planes de manejo forestales a su cargo, los cuales deberán estar previamente aprobados por la oficina local del MAG.
g. **Crear un consorcio de capacitación intersectorial** en el cual converjan todas las experiencias de manejo forestal y agroforestal (MMA / DINACE /INIAP /ONGs / Sector industrial maderero / MAG-PROMSA/RAFE / Universidades).

E. Modernización del Marco Legal

Estrategia general

Generar junto con la sociedad civil una propuesta de ley forestal y de la biodiversidad visionaria e integradora que, establezca **reglas claras para una decidida gestión privada y comunitaria,** propenda al manejo sustentable y a la conservación de los bosques y ecosistemas nativos y propicie la participación de las comunidades y otros actores claves para lograr el desarrollo del sector, en concordancia con los acuerdos internacionales y las exigencias y oportunidades inherentes a la globalización de los mercados.

Estrategias específicas

a) **Trabajar con los decisores políticos** respecto a la urgencia de que la **Ley Especial para el Desarrollo Forestal Sustentable del Ecuador** sea promulgada respetando los consensos sociales alcanzados. **Concientizar a los diferentes actores** de la necesidad de una ley que no entre en el detalle de la operatividad y que se limite a establecer el marco político y regulatorio para permitir flexibilidad en la dinámica del cambio.
b) Impulsar e implementar la **Reforma al Reglamento** de la Ley Forestal y de Areas Naturales y Vida Silvestre vigente.
c) Promover la implementación de la **Normativa de Manejo Forestal Sustentable del Bosque Húmedo Tropical.**
d) **Elaborar el reglamento de rectoría forestal,** el de concesión de áreas protegidas, entre otras.

The Andean countries of South America have vast areas of natural forests, most of which comprises biologically rich and ecologically fragile tropical moist forests. Proven models for the sustainable management of this resource are scarce, and while farm forestry has been successful developed in some areas, the development of commercial plantations has taken place only in Colombia. The sustainable and equitable development of forestry in the region faces special challenges. Topography, poor infrastructure in forest areas, weak and centralized forestry institutions, low levels of compliance, unclear forest tenure, and a lack of clear and stable natural resource management policies where the role of forestry is clearly defined are factors which combine to constrain potential. However, addressing these issues is a complex undertaking, and if success is to be obtained a measured approach will be required. Initially, support will be needed to put in place an institutional and policy environment supportive of sustainable and equitable growth, with progress in these areas being used to intensify efforts to maximize the contribution which forestry can make to poverty alleviation, sustainable development and environmental conservation.