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Environmental Legislation***

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PREFACE

The IUFRO Research Group 6.13 has again made considerable progress and encouraged an interesting range of topics which have been taken up by our members. The editors wish to thank all authors that have actively contributed to the preparation of these proceedings which are published as the VIIth Report since the start of the group's work. Colleagues interested to join the group and to submit contributions are invited to consult the IUFRO Homepage and the information presented at the end of this volume.

Franz Schmithüsen, Georg Iselin, Peter Herbst

ABSTRACT:

Report VII of the IUFRO Research Group Forest Law and Environmental Legislation contains member contributions which have been presented at the group's working session during the XXI IUFRO World Congress 2000 in Kuala Lumpur / Malaysia as well as papers which have been submitted in the meantime. The 20 papers published in this volume deal with the dynamic development of law as basis for sustainable forest resources development under different social, economic and ecological conditions and in different parts of the world.

KEYWORDS:

Forest Law; Environmental Law; Natural Resources Law; Administrative Law, Sustainable Development; Forest Sector.

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SIX FIRE ZONES AS BEACONS OF FOREST DESTRUCTION: GOODBYE TO THE WETLANDS OF SUMATRA, INDONESIA

IVAN P. ANDERSON AND M. RODERICK BOWEN¹

ABSTRACT

All vegetation fires in Indonesia are lit by man. Remotely-sensed data are well suited to recognizing and locating the source of the fires associated with commercial-scale land clearance.

The wetlands of Sumatra, often with deep peat soils, cover 11 Mha, of which 8 Mha are in the provinces of Riau and South Sumatra. Six major fire zones have been identified; three lie in the east coast wetlands, two in the wetlands of the west coast, and one in inland swamps. Each zone is clearly definable and is characterized by clusters of persistent fires detected over the past four or five years.

The recent fire history of each zone is described, as is the sequence of events that led to the formation of the zone. In five of the six zones this sequence started with the designation of the wetland as Permanent Production Forest. The area was then brutally logged and, consequently, re-classified as Conversion Forest. Estate companies cut and sold any remaining timber. Today's fire zones are the manifestation of the final clearance before oil palm is planted. A failed transmigration programme coupled with over-logging resulted in the formation of the sixth fire zone.

There is no indication that either land-use policy or practices will be beneficially revised in the near future, nor that illegal logging will be controlled. We thus conclude that fire zones will continue to be a feature of the wetlands of Sumatra over the next few years before the wetlands themselves and the unique wildlife that relies upon them, become things of the past.

1. INTRODUCTION

It is clear from statements issued by international organizations and by national and provincial government that there remains much confusion as to the causes of vegetation fires in Indonesia, their seriousness and what can or should be done to lessen their numbers. We find this worrying. Three long-term forest fire projects are based in Indonesia² and much has been learnt since the widespread fires of 1994 and 1997-98. But it seems that the projects are failing to make their findings and recommendations known to those who shape policy and to those who are charged with fire prevention and control at field level.

¹ The authors are based with the European Union funded Forest Fire Prevention and Control Project that works in conjunction with the South Sumatra provincial office [Kanwil Pertanian] of the Indonesian Ministry of Forestry. The views expressed here are those of the authors.

² Forest Fire Prevention and Control Project (European Union); Integrated Forest Fire Management Project (Deutsche Gesellschaft für Technische Zusammenarbeit); Forest Fire Prevention Management Project (Japanese International Cooperation Agency).

A number of general messages need to be clearly understood before considering the threats to the wetlands of Sumatra that, in turn, result in fire zones within them.

- All vegetation fires in Indonesia are started by man³.
- The fires are deliberately lit to clear land for arable farming or for new estate crops or, on occasion, to aid hunting, fishing, etc.
- It follows that those who start the fires do not wish to extinguish them before they have done their work and appeals for them to do so will fail.
- Few of the thousands of fires - some ten or less in Sumatra - that are detected in years of *average* rainfall need to be fought and extinguished to avoid serious environmental or economic damage.
- Only in drought years do numerous fires escape control and become wildfires that need to be extinguished.
- Resources are inadequate to control fire numbers in drought years and priority must be given to avoiding and, if that is not possible, suppressing fires on peat soils in wetland areas.

We also consider continuing claims that remotely-sensed data are inaccurate to be ingenuous. (See Siegert and Hoffmann (2000) and Anderson, Imanda and Muhndandar (1999) for Indonesia-specific examples, and Dwyer *et al.* (2000) for a global study of the detection of vegetation fires). Remotely-sensed fire data far from being inadequate as some government agencies claim, are in fact well suited to recognising and locating the source of the larger, persistent fires. These are the only fires that require the attention of the fire control authorities and the commercial land-holders.

What NOAA data lack in spatial accuracy they gain in the frequency of data capture (Sumatra three or four times a day). The resulting time-series of ongoing high-temperature events (hot-spots), coupled with identifiable smoke plumes, clearly show where the priority fires lie. The low-resolution (~1km) NOAA data are sufficient in themselves although they are greatly enhanced when combined with readily available and free-of-charge, high-resolution (100 m) SPOT data provided through the Centre for Remote Imaging, Sensing and Processing (CRISP) at the University of Singapore website (<http://www.crisp.nus.edu.sg/crisp.html>). The land conversion activity behind the fires is often visible on the SPOT images.

2. THE WETLANDS OF SUMATRA

The wetlands of Sumatra cover over 11 million hectares, equivalent to 23 percent of the total land surface of the island. By far the largest swamplands are found in the provinces of Riau (4.75 Mha) and South Sumatra (3.25 Mha), although sizeable areas are also found in each of the others six provinces (Table1).

³ Only vested interests in the logging and plantation industries suggest that lightning strikes are responsible, and the small number of vegetation fires in Sumatra and Kalimantan that are ignited by exposed burning coal seams is insignificant within the overall picture. We have found no evidence over four years of accidental fires started by discarded cigarettes, etc.

Table 1. Wetland areas (ha) in each of the eight provinces of Sumatra.

Province	Area (ha)	Area of swampland as a percentage of the area of the province
Aceh	609 700	11
North Sumatra	951 800	13
West Sumatra	258 700	5
Riau	4 756 600	50
Jambi	976 100	20
Bengkulu	29 600	1
South Sumatra	3 159 700	31
Lampung	351 100	10
Sumatra	11 093 300	23

Source: data derived from RePPPProT (1988).

Deep (>2 m) peat deposits are found within the wetlands in all provinces except Bengkulu. Their areas are given in Table 2 along with an assessment of their cumulative degree of fire damage up to late 2000. The west coast wetlands appear to be young in geomorphological terms and do not show the concentric pattern of vegetation growth that characterizes the domed peats of the east coast swamps. These peat domes are typical features of many of the larger and older swamp areas of southeast Asia (Whitmore, 1975) and the peat varies in depth from a minimum of 2 m at the convex margins to 10 m or more at the raised centre (RePPPProT, 1988).

Table 2. Areas of peat (ha) over 2 m deep in Sumatra and their estimated degree of fire damage as of October 2000.

Province	Area (ha)	Fire damage based on NOAA detected fires
Aceh	4 000	Slight
North Sumatra	55 300	Moderate
West Sumatra	78 000	Severe
Riau	1 673 300	Slight
Jambi	50 300	Slight
Bengkulu	0	
South Sumatra	83 000	Severe
Lampung	1 200	Severe
Total	1 945 100	

Source: Data on areas derived from RePPPProT (1988)

Many see the east coast wetlands of Sumatra as of the greatest importance for their often unique and/or endangered plants and animals. In recognition of this 544 000 ha had been gazetted by government as Conservation Forests by 1988 and a further 391 000 ha were officially proposed as sanctuary areas (Table 3). The series of over 30 reports prepared by Wetlands International Asia Pacific – Indonesia Programme⁴ in the late eighties and early nineties are an invaluable source of detailed information on many of the swamplands in Sumatra, as is PHPA-AWB (1989).

Table 3. Areas (ha) of the eastern coastal swamplands of Sumatra officially protected and those proposed for conservation as of 1988.

Province	Number of reserves gazetted	Total area (ha) reserves gazetted	Number of reserves proposed	Total area (ha) of proposed reserves
Aceh	0	0	1	17 000
North Sumatra	1	15 675	1	2 900
Riau	4	148 200	10	371 500
Jambi	2	181 500	0	0
South Sumatra	1	75 000	1	205 750
Lampung	1	123 500	0	0
	9	543 965	13	597 150

Source: Data derived from RePPProT (1988)

In the twelve years since 1988 few, if any, of the proposed sites along the east coast obtained protection status and most are no longer undisturbed habitats. Of the gazetted areas Way Kambas in Lampung is heavily degraded, the forest in Padang Sugihan in South Sumatra - once seen as an important bird and elephant sanctuary - is now completely destroyed by logging followed by fire, and Berbak National Park in Jambi is under considerable pressure.

The west coast wetlands occupy six or seven positions along the coast in the provinces of Bengkulu, West Sumatra, North Sumatra and Aceh. In Aceh, three - Suaq Balimbing, Tripa and Singkil – form part of the important and protected Gunung Leuser National Park, with Singkil at some 100 000 ha as the largest. Rampant illegal logging is reported in the west coast swamps of the Park (EIA, 1999) and fires may follow. The Babah Rot wetlands were partially cleared by fire in the early nineties for a transmigration scheme and for oil palm plantations (Rijksen, Diemont and Griffith, 1997). The Aceh wetlands are home to the most important concentration of orangutans in the world, although numbers are down to a few thousand and decreasing at 1 000 per year as their habitat is disturbed (van Schaik, 1999).

The inland back-swamps to the River Musi are large but discontinuous. The swamps are generally separated from the river by levees and they stretch from the coastal tidal swamps near Palembang westwards along the main river and its tributaries some 200 km to the foothills of the Barisan mountain spine that runs the length of the island.

⁴ Wetlands International, Jalan Arzimar III Nomor 17, Bogor, Indonesia

Similar freshwater swamps are found farther north in Jambi associated with the Batanghari River, in particular with its upper headwater tributaries where they traverse the sub-Barisan depression (van Bemmelen, 1970) between the main mountain range to the west and the lower Tigapuluh and Duabelas Hills of central Sumatra. Riley and Harding (1979) described the predominant soil of these swamps as peat, often greater than 2.5 m thick, overlying clay. They considered the land to be unsuitable for agricultural development or settlement owing to difficulties in controlling the watertable and because of the extreme acidity of the soils. Despite this some have recently been cleared for oil palm estates.

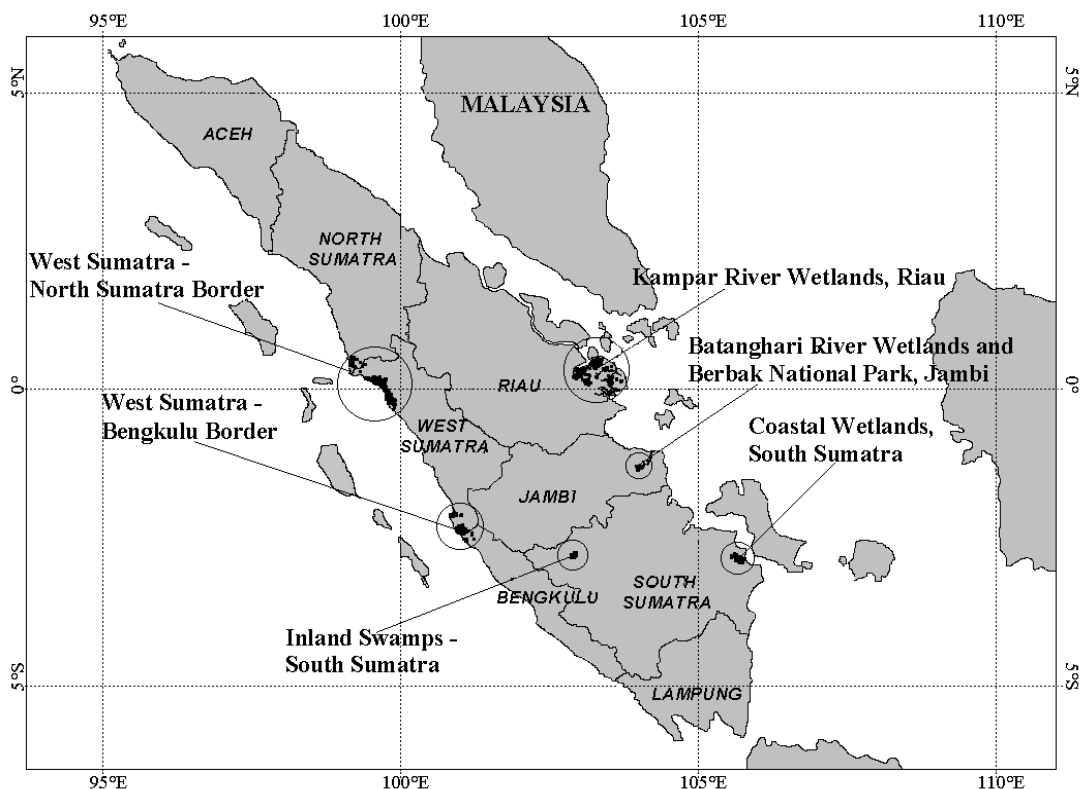
The total area of the freshwater inland swamps in South Sumatra and Jambi cannot be accurately calculated based on available information but is thought to be between 0.5 Mha and 1.0 Mha.

3. THE SIX WETLAND FIRE ZONES

The satellite monitoring of fires in Sumatra started in 1996 and since then fire numbers in each year have been shown to follow a climatically determined, progression (Anderson *et al.*, 1999; Anderson, Imanda and Muhndandar, 2000).

Six major fire zones have now been identified in the wetlands of Sumatra as a result of this continuity of monitoring. Fire zones are characterized by, and are defined as, 'Areas where clusters of persistent fires have been detected over the last four to five years'. The zones are located in the provinces of North Sumatra, Riau, Jambi, West Sumatra, Bengkulu and South Sumatra (Map 1). Only the extremities of the island, Aceh and Lampung provinces, are presently free of fire zones.

Map 1. The six wetland fire zones of Sumatra. Circles indicate the general location of each zone and the fire symbols show the sites of specific fires described in the text.



The six fire zones share the common feature that they are in peat-rich wetlands. There is also a close similarity as to the reasons for, and the sequence of events that led to, the establishment of each of the zones. The process is well illustrated by the development of the zone in the Kampar River wetlands of Riau. The same general progression has taken place in the other two west coast wetlands as well as in the South Sumatra interior wetlands, i.e. in four of the six zones.

- With few inhabitants, and none in a position to object in the seventies, the land was designated as Permanent Production Forest.
- Large parcels of land were then allocated by government to logging companies.
- Prolonged, heavy and unsupervised logging by the companies, compounded by extensive illegal cutting by local people and outside interests, devastated the forests.
- Government reclassified the areas as Conversion Forest as a consequence of the devastation.
- This move attracted the attention of regionally-based entrepreneurs who eagerly sought licences from government, took over the forests and removed all the residual timber that was often of considerable value.
- The same business groups then clear-felled, burned the residues, and planted the ground to estate crops.

The fires have been, and remain, numerous, frequent, persistent, pollution-causing and concentrated within distinct areas.

The story in the coastal wetlands of South Sumatra illustrates a different process that has led to the creation of the fifth fire zone. The chronicle starts in the late sixties.

- Grandiose plans - largely funded by the World Bank - were made to resettle thousands of landless families from the 'inner-islands' of Java, Madura and Bali on the 'unoccupied' tidal lowlands of the province. The perception was that the transmigrants would cultivate wetland rice for subsistence and sale.
- To this end over 300 000 ha of good quality swamp forest were systematically felled, and the timber sold.
- The residual non-commercial species and scrub were cut and burned.
- A complex and extensive system of drainage-cum-irrigation canals was dug.
- Resettlement of the transmigrants started soon afterwards and, despite steadily mounting evidence of the difficulties faced by the settlers on infertile land with periodic shortages of drinking water, continued spasmodically until the early nineties.
- However the great majority of the thousands of families that were planned never arrived while some transmigrants moved on.
- The canal system provided ready access to the remaining unlogged forests.
- Legal and illegal logging systematically depleted these forests.
- The transmigration areas fell into semi-dereliction.
- What remained were many thousands of hectares of fire-prone sedge and grassland on the former transmigration sites plus equally large areas of variously degraded and fire-vulnerable *Melaleuca* and swamp forest.
- The transmigration programme and the logging aided by the *el Nino* fires of 1987, 1991, 1994 and 1997 progressively destroyed over 90 percent of the swamp forests that had once covered the land south of the Musi River.

The huge area is now at great risk of fire in future droughts and its rehabilitation is a major challenge.

'Intermediate' between the cases of Kampar in Riau and the South Sumatra coastal wetlands is the process that has led to the fate of the wetlands in the lower reaches of the Batanghari River in Jambi, the sixth and last of the wetland fire zones within Sumatra. These are ecologically one of the most important wetlands sites in South East Asia and consequently 175 000 ha are designated as the Berbak National Park. The sequence of events that led to the formation of this fire zone are:

- Logging concessions to the west of the Berbak Park and long-standing spontaneous Buginese settlers to the east heavily damaged considerable areas of swamp forest. The destruction was both direct - caused by over-cutting - and indirect triggered by the digging of canal systems to float out the felled logs.
- Extensive illegal cutting, again with canalization, began outside and now extends somewhat within the National Park.
- Around 17 000 ha (10 percent) to the center of the Park were damaged by fires in 1997 and are now grassland. Who and why the fires were lit are not known. The burn scar remains clearly visible on a SPOT Quicklook image of September 2000.

The grassland nucleus, coupled with the boundary felling and illegal logging, have opened the whole Park to destruction by fire in the next *el Nino* year.

4. A BRIEF FIRE HISTORY OF THE WETLAND ZONES

The East Coast Kampar River Wetlands of Riau Province

Fifty percent of Riau is swamp, mainly peatland, and it is these swamps that are the focus of forest conversion. There are 261 registered oil palm estates in the province and allocated concessions are thought to cover 1 – 2 Mha out of 5 Mha that are still officially listed as Conversion Forest. The first, and by now established, estates are on dryland; the new developments are nearly all on wetland. Land-clearing fires in partially drained peat swamps produce copious smoke as the intended surface fires ignite the underlying organic soil. Once started the underground fires are infamously difficult to suppress (Nicolas and Bowen, 1999).

Around 30 percent of the fires detected in Sumatra over the last five years have been in Riau although the province has only 20 percent of the land area. The province thus has one of the highest frequencies of vegetation fires in any province in Indonesia, but it is the smoke haze, rather than the fires themselves, that causes most concern to official opinion. Singapore lies some 100 km to the northeast and smoke from the Kampar River fires periodically drifts across to affect both Singapore and Malaysia.

Plantation development straddles the borders of three Riau districts (Kampar, Indragiri Hulu and Indragiri Hilir) in the Kampar basin and at over 250 000 ha is one of the largest on-going clearances in Sumatra. Large-blocks of fires were detected in July 1996 and peak burning months have subsequently been in January, March, May and June 1997, February and March 1998, July 1999 and in March 2000. There have been very few fires since then, but we assume that this indicates that the land preparation phase is nearly complete – rather than that the companies have responded to frequent complaints from Singapore.

The East Coast Batanghari River Wetlands and Berbak National Park of Jambi Province

The wetlands that border the River Batanghari east of Jambi town were badly damaged by wildfires in late 1997. A large cluster of deliberately lit fires burned in July and August 1999 set in a new estate being managed by the para-statal company Inhutani V for the planting of swampland pulp- and latex-trees.

Extensive illegal logging was seen in the vicinity in September 1999 and September 2000 and large parcels of the wetland are now at high risk from fire in years with an extended dry season when dense herbaceous and woody re-growth will act as the seat for further fires. These new fires will, in turn, further encroach on the fragmented remains of the logged over swamp forest. Further dense transboundary smoke haze pollution seems assured as most of the Jambi wetland fire zone is underlain by an exceptionally thick and ancient layer of peat, and, as from the Kampar River wetlands somewhat to the north, the prevailing winds carry the smoke haze to Malaysia and Singapore.

As the sequence progresses, Berbak National Park, itself on peat swamp, will come under an increasing threat from fire. Berbak is one of only two 'Ramsar-listed' wetland sites in Indonesia. (i.e. an internationally agreed site of the greatest scientific importance decided at a Convention held in Ramsar, Iran, in 1991. Indonesia ratified the treaty in 1992.). Silvius, Simons and Verheugt (1984) give further details.

SPOT images captured in September 2000 show that at least 10 percent of the Park has now been damaged by fire. Considerable land clearing and logging activities on the Park boundaries are also visible on the image, and JICA (2000) reports the view of a local non-government organisation that there is widespread illegal logging of ramin (*Gonystylus bancanus*) within the Park.

The East Coast Wetlands of South Sumatra Province

The great fires of late 1997 in the coastal wetlands of South Sumatra were finally doused by heavy rainfall and a rising watertable in the early months of 1998. No further fires burnt until 18 June 1999 when a single small fire was detected to the east of Palembang. The initial stages gave no cause for alarm and the fire appeared to have died with the onset of periods of persistent rain in mid-July. However it re-appeared and took serious hold at the end of the month. Thereafter the fire steadily spread northwestwards throughout August and September to affect three logged-out forest concessions. It was finally extinguished, like those of 1997, by rainfall at the end of September.

The area was over-flown by helicopter on 15 September at its height when it was evident that many thousands of hectares had already been burnt. SPOT Quicklook images subsequently showed from a very clear fire-scar that some 14 000 ha were heavily damaged (Anderson, Imanda and Muhnandar, 2000).

The fire was set deliberately to clear land allocated for a new estate development in the former logging concession, and it was one of the largest vegetation fires seen to date in Sumatra with the resultant hot-spot cluster bigger than any group detected throughout the 1997 fire crisis. The substantial smoke plume dispersed to the northwest across the mouth of the Musi River and fortuitously did not affect Palembang or any other major town.

West Coast Wetlands of the West Sumatra – North Sumatra Provincial Border

Fires associated with large-scale wetland clearing in West and North Sumatra were first detected in May and June 1996 and were common in February and June 1997, February, June and July 1998, April, May and July 1999, and in June and July 2000. The burning occurred in logged concessions in the process of conversion to another land use, and as elsewhere, probably for oil palm.

The West Sumatra – Bengkulu West Coast Wetlands

A few fires were first detected in the coastal wetland along the borders of West Sumatra and Bengkulu provinces in March 1996 but numbers rose sharply from June to August 1997. Further fires burned from May to July 1998 and again in April, June and July 1999 after which burning ceased. As elsewhere the fires are associated with forest concessions but here their purpose is not known with certainty; some may have been wildfires.

The Inland Swamps of South Sumatra

The first fires of importance in the inland swamps of Sumatra were started in mid-1997 in the wetlands near Muararupit to the west of the province. The fire continued to be re-lit and the area burnt continued to expand periodically in 1998. The estate company persisted and cleared along the eastern margins of the wetland using fire throughout September 1999. The result is that the entire Muararupit wetland of some 10 000 ha was burnt in three years.

The second series of fires of consequence in the interior wetlands was established on 22 July 1999 in the backswamps of the Musi River near Babat in the centre of the province. Why the fire was lit is not known with certainty but it can safely be presumed to mark the start of yet another estate development. This fire reappeared intermittently until 22 September 1999.

There were no further fires in the inland swamps over the next twelve months. We do not know if this is because (a) development of the estates is complete, (b) the amount of land already cleared was sufficient to meet the year 2000 planting target, or (c) current low prices for palm oil caused the suspension of clearing.

These two clusters of inland and the third blaze in the coastal wetlands were the only fires of any consequence in South Sumatra province in 1996, 1998, 1999 or 2000 from amongst the many thousands of smallholder agricultural and other ephemeral minor fires detected (e.g. roadside fires and the burning of fallow growth, both carried out to protect standing crops within an often complex mosaic of land uses).

5. THE FUTURE OF THE WETLANDS

Dramatic changes to the wetlands of Sumatra over the past ten years have arisen directly from transmigration, from logging and from estate agriculture, and indirectly from the fires which are an integral part of, or that accompany, these activities.

This collateral fire damage has been great. EUFREG (1998) and Liew *et al.* (1998), both shocked by the scale of the fires in the 1997 drought, respectively estimated satellite-detected burn-scars in Sumatra to total 1.0 Mha and 1.5 Mha; most of them in the wetlands of the east coast.

We guess from limited SPOT imagery, NOAA fire occurrence data, published information on the oil palm industry and from field visits, that several hundreds of thousands of additional hectares have been burned in each of the last four non-

ENSO years, i.e. in 1996, 1998, 1999 and again in 2000, most as repeat clearance by smallholder farmers. We speculate that the opening-up of new land by estate crop companies burnt a few tens of thousands of hectares of former forest each year, and out of this we further guess that most was in the wetlands of Riau province.

The history of swampland transmigration programmes (e.g. Burbridge, Dixon and Bedjo Soewardi, 1981) and recent discussions with government officials suggest that few entirely new transmigration schemes are planned for the wetlands of Sumatra although some older programmes may be re-vitalized to take new arrivals. If so, re-burning of relatively limited areas is a possibility.

There are no reliable data either on the current area of the remaining wetland forests or on the area of unlogged wetland forests already licensed to logging companies. Figures for illegal felling in the swamp forests are, understandably, even more difficult to guess.

The data that are available suggest that a drastic reduction in area has already taken place. Primary swamp forest covered a striking 3 890 000 ha of South Sumatra province alone in 1900. By 1982 this figure had fallen to 860 000 ha and had further slumped to 290 000 ha by 1989, the loss mainly caused by logging (McKinnon and Artha, 1982, quoted by Danielsen and Vergheught, 1990). Elsewhere logging appears to us not to have been as great in terms of total area degraded per province. However when considered as a percentage of the total wetlands available, the damage may well be as great in the east coast wetlands of Jambi and Riau, in the interior wetlands, and in the wetlands of the west coast.

Some attempts are now being made by central government to control logging through the revoking of commercial licences and by a tightening of existing regulations. But it appears to us that illegal logging may well undermine any gains. All indications are that illegal felling, already widespread prior to the 1997 economic crisis, is now rampant in the wetlands – and in the few remaining dryland forests – with no effective control.

The substantial devolution of power from central government to regional governments, due on 1 January 2001, will also increase wetland exploitation. In theory regionalisation offers tighter local control but it also grants the power to District Heads (*Bupati*) to approve the issue of a Timber Utilization Licence for Public Lands (known in Indonesia as a IPK TM) to individuals and community cooperatives. The regulation was issued in 1999 and the District Heads of East Kalimantan were quick – possibly premature – to start the process and were followed by those in Central Kalimantan and Irian Jaya. As indicated by the name, the licences should apply only to lands outside the forest estate: in practice, many Forest Lands previously granted to logging concession companies are now claimed by the people as Public Land. Each licence is for the relatively small area of 100 ha but cumulatively the effect has been dramatic with 1.5 million hectares in Irian Jaya alone thought to be already allocated (information from Forest Liaison Bureau, Jakarta). The fifty-two *Bupatis* within Sumatra seem to have been slower to seize their windfall although the queues of applicants for their licences are said to be long. Dryland forests areas are now substantially exhausted. The majority of the new IPK TM licences will thus undoubtedly be issued for wetland forests: it could be their final nail. And, there is no reason to believe that illegal logging will diminish under regionalisation.

Fires will thus also continue along the newly opened log extraction roads and canals. As in the past these fires will signal the arrival of an inrush of so-called spontaneous migrants, sanctioned by the local Village Heads, and sponsored by more wealthy individuals for whom they act as 'two-hectare-oil palm sharecroppers'.

Figures on the oil palm plantation industry itself are more readily available than those on wetland forests, although, as with all statistical data in Indonesia, they need to be treated with caution. Three recent publications deal with the industry in Indonesia. The first, produced by CIC (1999), is a wide-ranging compilation of statistical data. The second by Casson (1999) uses much the same source figures but draws on a far wider literature and new research to place the rapid expansion of the industry in a political and economic context. The third article (Aditjondro, in press) provides a wealth of information on the ownership and political connections of the major oil palm companies.

As noted by both Casson and Aditjondro, as well as by Bowen *et al.* (2000) and Anderson, Imanda and Muhnandar (2000) amongst others, there is a strong correlation between fire numbers / area burnt and the land clearing activities of oil palm companies. The island of Sumatra has already been particularly hard-hit by such fires as indicated by the estimated areas planted to oil palm in the eight provinces of Sumatra when compared to the areas in Kalimantan, and in Irian Jaya / Java / Sulawesi (Table 4).

Table 4. Areas (ha) estimated to be planted to oil palm in Sumatra in 1999 compared to areas established in Kalimantan and elsewhere in Indonesia.

Province	Areas (ha)	Percentage of total area planted
Aceh	180 300	6.8
North Sumatra	577 000	21.9
West Sumatra	129 000	4.9
Riau	572 000	21.7
Jambi	216 300	8.2
South Sumatra	228 800	8.7
Bengkulu	67 700	2.6
Lampung	45 300	1.7
	2 016 400	76.6
Kalimantan	485 500	18.4
Elsewhere	132 000	5.0
	617 500	23.4
Total	2 633 900	100.0

Source. Directorate General of Plantations quoted by CIC (1999) and re-worked

What is not clear is how much of the land already allocated to the plantation industry remains to be burned. And, how much of the land applied for but not yet granted by government will, eventually go to oil palm. An additional total of 1.0 Mha, almost all in the wetlands, to be cleared by fire in Sumatra alone seems a conservative estimate. When the burning and planting will take place is uncertain. The industry is now restrained by cash flow difficulties but, as noted by Casson (1999), Sumatra with its established processing facilities and trained labour force, will be the first to recover.

What then of the future? RePPPProT (1988) took the view that since in Sumatra, "... all the remaining forested lowland plains and hills will be eventually converted to agricultural production ... [it is wise] to leave the fragile and unique domed peat swamps intact as forested green lungs or sponges between the great rivers. This would be a far-sighted legacy for future generations." The wisdom of this suggested 'inaction' was however to be ignored; and the less sanguine, although regrettably more accurate, view was taken by Danielsen and Verheugt (1990) who predicted no unlogged swamp forest would remain in South Sumatra province by the year 2000. They did not however anticipate even ten years ago that it would have vanished.

It seems to us that a similar fate now awaits the remaining wetlands forests of the east coast, the west coast and the inland swamps throughout Sumatra. Immediate changes in land-use policy coupled with enforcement of logging regulations would offer a reprieve. But given a national proclivity to a doctrine of *laissez faire* in the domain of natural resource use, we fear that this will not happen.

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VARIETIES OF PROPERTY RIGHTS TO NATURE - SOME OBSERVATIONS ON LANDHOLDING AND RESOURCE OWNERSHIP IN NORWAY AND ENGLAND ¹.

ERLING BERGE

ABSTRACT

The paper reviews some of the theoretical approaches to defining property rights in land and renewable resources, and compares them to legal techniques used in defining and allocating rights and duties to renewable natural resources in Norway and England. The discussion is focused on resources not owned in fee simple by individual persons. A key question is how rights to renewable resources located in uninhabited lands are conceived and enacted. Three ways of defining bundles of rights is identified: The ordinary "full ownership bundle" with a production oriented hierarchy of management rights, the newer "utility bundle" constructed as trusts for the benefit of some well defined group of persons, and the older and less studied "viability bundles" of multi-resource rural economies.

Keywords: property rights, commons, renewable resources, bundle of rights, Norway

INTRODUCTION

Good resource governance is becoming increasingly difficult. As we learn more about policy actions and their short- and longterm consequences, their unintended consequences and interaction effects, the goal of sustainable resource governance seems farther away than ever.

The problem is compound by the pace of social change. The decision parameters are constantly changing. Since Carsons wakening cry of the «Silent Spring» a rapidly growing number of scientists have voiced concern about the longterm viability of our usage of nature. From a somewhat different angle affluent urban populations have voiced new concerns and emphasized new values in their relations to forest resources and wildlife in their countrysides. This has led societies around the world to attempt to formulate or develop rights and duties of citizens and corporations towards aspects of nature that historically have been unknown or uninteresting. These range from the genetic codes of micro-organisms to the public good of a well tended cultural landscape. Declining biodiversity from species extinction and genetic monocultures, ecosystem stability, and landscape conservation represents new challenges for collective choice and political action.

At the same time as new ways of perceiving rights emerge, the ancient rights and duties developed to regulate usage of and distribute the benefits of known goods such as arable land, wood, pasture, and wild game clearly affect the new concerns. The new institutions being developed need to take account of old ones. They need to

¹ This is a revised version of a paper presented to the mini-conference, 12-14 December 1998, at the Workshop in Political Theory and Policy Analysis, Indiana University, Bloomington, IN 47408. I am very much indebted to participants in the workshop, in particular Anna Blomqvist and Vincent Ostrom, for valuable comments. In Norway Torgeir Austenå, and Hans Sevatdal of the Agricultural University, Ås, provided valuable comments and guidance to the literature on Norway. The remaining unclarities and errors are my responsibility

be consciously designed to correct for the impact of, and to incorporate interactions with, old institutions. This requires detailed information on how the old institutions work before designing the new ones.

The present paper will review some of the theoretical approaches to defining property rights in land² and renewable resources, and compare them to legal techniques used in defining and allocating rights and duties to renewable natural resources in Norway and England³. The discussion will focus on resources not owned in fee simple by individual persons. A key question is how rights to renewable resources located in uninhabited lands are conceived and enacted.

1. PERSPECTIVES ON SYSTEMS OF PROPERTY RIGHTS

Devlin and Grafton (1998) recognize two paradigms in the studies of how to mitigate environmental problems: the private property rights paradigm and the public regulation paradigm. Yandle (1998) adds a third: the common law approach. All approaches are in use and all may contribute towards a solution of the problems. But more needs to be known of how they work and interact in practice.

If property rights are the rights defining the legitimate appropriation of a stream of goods, we are led to ask:

- who are the actors entiteled to appropriate?
- what are the goods the actors appropriate?
- how do the actors go about appropriating?
- what are the actors allowed to do with the good appropriated?

1.1 Types of actors

A first approximation to the question of “whom” is the distinction between individuals, various types of collectives, and the state. This distinction is behind the classification of property rights into private, common, and state property rights regimes which further have been associated with private goods, common pool goods and public goods.

Type of Actor	Type of Good	Property Rights Regime
Individual (private)	Private	Private
Collective (public)	Common Pool	Common (public)
State (public)	Public	State (public)

This seemingly one-to-one correspondence of type of actor, type of good and property rights regime is neat. But how close is it to the empirical reality of property rights? It is not close at all. McKean (2000) points out that a lot of conceptual

² I will talk of property rights also in the cases where tenure will be the technically correct term. The usage of tenure is based on the distinction between dominium directum and dominium utile. The Crown held the rights of the dominium directum, the dominion of the soil. The tenant the rights to the dominium utile, the possessory title, also called seisin (Black’s Law Dictionary).

³ Property rights to land and renewable resources are to some unknown degree different in Scotland, Wales and Northern Ireland.

confusion can be traced to the use of "public" and "private" to distinguish types of actors, types of goods, and types of property rights regimes⁴.

1.2 Types of Goods

The classification of goods into private, common pool, and public is often supplemented by the category «club good». A club good is characterised by non-rivalry in consumption (non-subtractable) and excludability from benefit. In our focus here we will be dealing with all types. The goods inherent in land and renewable resources are of all types.

Table 1 Typology of goods

resource is	appropriators are:	
	excludable	non-excludable
subtractable	PRIVATE	COMMON POOL
non-subtractable	CLUB	PUBLIC

Source: adapted from Ostrom and Ostrom 1977

I have argued elsewhere this typology of goods gives us analytical categories that may describe aspects of the utility of real world products, not necessarily the physical goods themselves. Thus, there is considerable room for political choice about the degree to which some real world product shall be treated as private, common pool, club or public, or as a mixture (Berge 1994)⁵.

The question faced by a governor is not just the technical feasibility of exclusion, or the economic return from subtraction, but also their moral desirability and political feasibility. Several recent studies of property rights emphasise their embeddedness in a political system and emergence from a political process (Brouwer 1995, Sened 1997, Hann 1998). Thus the definition of property rights as being one or another type is an interesting fact in itself, and should be expected to vary among societies.

Walking in the wood can be seen as a good. You appropriate it by actually walking in the wood. But what kind of good is it? It is technically excludable, but it may in many cases be very costly to exclude, like it is for many common pool resources. It is in general non-subtractable, but will be affected by crowding. Thus it may be either a club good or a public good with utility modified by crowding.

Who holds the rights to walking in a particular wood? In Norway the right belongs to any person who stays legitimately in Norway. In England it belongs to the owner of the land except where custom or contract allocates it otherwise.

There is nothing inherent in the nature of "walking in the wood" which might be used to "solve" the problem of assigning the right to any particular person. But with

⁴ Social science seems to lack a precise technical language for the discussion of property rights and institutions. Buck (1998:2-5) demonstrates how technical terms in law and political science can convey different meanings. In the translation of legal concepts later on I will rely on Black's Law Dictionary, Sixth edition.

⁵ Thus I disagree with McKean's (2000) position that the nature of a good in general is a physical fact, given the technology. This is only part of the story. The nature of the good is also open to political choice and symbolic manipulation, sometimes with a vengeance if the physical characteristics of the good is disregarded.

increasing crowding there will be an increasing number of externalities affecting other goods in the wood. At some point the cost of these externalities may be high enough to make the cost of exclusion reasonable. Assuming the crowding is real and not just theoretically possible, at what degree of crowding does this happen? Real evidence seems to be missing. All arguments end up with a political “choice” at some point in history.

But for the present discussion there is one interesting aspect to the different choices in Norway and England. In Norway the right of access to woodland is conceived as separate from the land. In England it is bundled with the land.

1.3 Types of property rights

Private Property Rights: It is usually taken for granted that private property rights include all the claim-rights, privileges, powers and immunities⁶ recognized by (mature) legal systems (Honoreé 1961). However, the discussion of private property rights is usually focusing on the right of exclusion from the good and the possibility of alienating the right to its utility. The central feature is the owner’s power to alienate his property either in bequeathing or in trade⁷. Without the right of alienation and exclusion the rest of the bundle of rights seems to be theoretically uninteresting for the (private) property rights paradigm. However, a right, even if in itself inalienable and applying to a good only partly or conditionally excludable, may give rise to a

⁶ Hohfeld’s (1913, 1917) conception of legal relations applied to the relation between owner and non-owner in relation to an object also contains the negation of this relation as seen from the owners position:

	RELATION OWNER	NON-OWNER	ITS NEGATION
Use aspects	claim-rights	duties	no-rights
	privilege	no rights	duties
Exchange aspects	powers	liabilities	no-powers
	immunity	no-powers	liabilities.

Commons (1932) takes the discussion further. He clarifies the meaning of the categories outside the strict legal context as well as the distinction between the directly interested parties (owner/ non-owner) and the «uninterested» third party (such as the «public interest») to which Hohfelds «jural opposite» (negation) relation applies if interpreted in the meaning of a limit on the owner/ non-owner relation.

⁷ In economics the focus on exclusion and alienation is inherent in the emphasis on efficiency in the allocation of productive resources. Tietenberg (2000) describes the structure of property rights necessary to produce efficient allocations in a well-functioning market economy. Well defined property rights have the following characteristics:

1. exclusivity – all benefits and costs accrue to the owner,
2. transferability – all property rights should be transferable through a voluntary exchange, and
3. enforceability – property rights should be secure from seizure or encroachments by non-owners.

But the importance of the allocation of property rights has not always been acknowledged. Coase (1960) argue that in a neo-classical economy (with zero transaction costs) «free» trade in assets will always lead to an optimal resource utilisation. Hence, allocation of property rights do not matter for efficient outcomes, while any restriction on trade will be detrimental to it. This result was labeled the «Coase Theorem» by Stiegler (1989) and many economists seem to stop reading at that point. However, Coase recognized the limitations of the “theorem”. The assumptions require that all actors are rational and possess complete information about all other actor’s preferences and strategies, and that transaction costs and wealth effects are zero. Recognizing this, the conclusion by Coase (1991) and neo-institutional economists (North 1990) is that politics, institutions and distribution of rights do matter. The impact of restrictions on alienation is far from obvious, not even for the efficiency of the economy.

valuable stream of goods, some of which may be alienable. And in between the alienable and inalienable there are all possible variations of the conditionally alienable. These rights can be as private as any completely alienable and excludable good. The problem is not alienation or not, but monitoring and enforcement of whatever rights there are, on the one hand, and the dynamic consequences for transaction costs and distributional equity, on the other.

State Property Rights: In discussing state property rights it is focused on their public character. They are by some seen as being held in trust for the people and should be managed by the wise and filled with good intent state bureaucrats for the greatest good of the greatest number of people. By others it is focused on the inherent difficulties in designing rules to do this even in the best of circumstances, and the many examples of states with corrupt servants making state property into something best described as open access or even their own private property, should warn against too much faith in the state in general (Ostrom 1993).

Common Property Rights: In the discussions of private and public property, the common property rights are by some seen as the ideal combination of private and state aspects of property, and by others as getting the worst combination of the two. It is well within the probable that all arguments about the virtues and shortcomings of common property may be true in some specific context and with some specific combination of rights and duties as defined by some specific political system. It is impossible that all arguments can be true in general.

Problems of collective action: Common property rights and state property rights share the feature of vesting in collective entities, and hence they share the problems of collective action. The first order problem consists in agreeing to assign a particular system of property rights in the first place. This problem has been studied extensively in connection with the management of open access resources (Taylor 1987, Ostrom 1990, Sandler 1992, Ostrom, Gardener, and Walker 1994). The second order problem is to devise a mechanism for monitoring, enforcing, and revising the system of property rights.

1.4 Sources of property rights

If the nature of a good does not give enough advice on what kind of property rights to define, what are the sources of property rights? In an empirical study of the rights and duties of an owner of some particular resource the separate contributions of several sources have to be considered:

- customary behaviour towards the resource as defined by the local culture,
- legislation defining the rights and duties of a holder of the particular resource,
- public legislation on environmental protection and resource management, and
- ideas of equity in dealing with competing interests in the resource.

The relative strength of the various sources can be expected to vary from society to society, from community to community, and, perhaps, also for various types of goods.

1.5 Bundles of rights.

Rights seldom come one by one. Usually they are defined generally and will be thought of as bundles in the sense that the general description of them will allow for

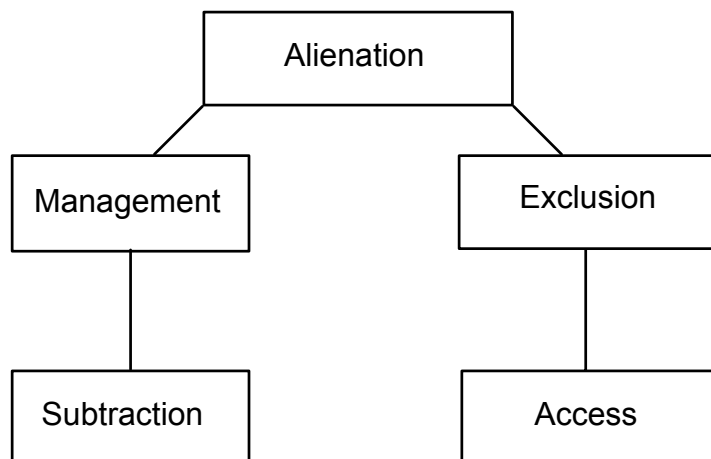
some kind of specification into «elementary» rights. The rules of specification, however, may vary. This leads to a conception of different bundles of rights.

Rights are often defined in an inclusive hierarchy where each category implies the rights in lower level categories (Schlager and Ostrom 1992). Rights of alienation imply rights of management and exclusion. Rights of exclusion imply rights of access and management, and rights of management imply rights of subtraction (Figure 1). Theoretically the five rights can be combined into five packages containing more and more extensive rights. They are often seen to correspond to some particular role in the social system managing a resource (Table 2).

The definition of «owner» in table 1 corresponds to the view holding that only right of alienation and exclusion will constitute «real» private property. Is this in fact the preferred way for legal systems to define owners? To what extent does the law prohibit, allow or proscribe some way of breaking up this hierarchy?

Figure 1: Hierarchy of rights

Collective choice rules



Operational choice rules

Source: Schlager & Ostrom 1992

The bundles of rights defined by table 2 can be said to represent an action or production oriented specification of rights. It emphasises what an appropriator may legitimately do with whatever is owned. It has for some time seemed almost like some kind of cross-cultural standard of property rights in the social science studies of property rights systems.

But this is not the only approach to specification of rights relevant for resource management. If we take the standard ownership position as given, one may further think of two other ways of specification of rights to resources. One is the specification of the resources to which the rights apply as illustrated by the case of Norway below. The other is the specification of rights developed in the trust institution. If the hierarchical specification in table 2 is called action oriented, the trust specification can be called utility oriented in the sense that its origin was the problem of securing the longterm utility of some resource for a specified group of persons.

Table 2: Bundles of rights associated with positions in the resource management system.

	Owner	Proprietor	Claimant	Authorised user	Unauthorised user
Alienation	X				
Exclusion	X	X			
Management	X	X	X		
Subtraction	X	X	X	X	
Access	X	X	X	X	X

Source: Schlager & Ostrom 1992

1.6 Trust ownership

In English and American jurisprudence the trust institution allows separation of legal, managerial and beneficial ownership rights in a way different from what is stipulated in table 2. In a trust the owner according to law and equity has a package of rights put together differently from the hierarchical system of table 2 (see table 3). For land trusts the owner, called trustee, will usually only have the power to alienate the land and enough of the other rights to exercise the right of alienation in conformity with the trust put in him or her. The beneficiary of the trust will retain the rest of the rights and duties. But rights of management may be delegated to some professional while the beneficiary has access and withdrawal rights to the net utility of the property: the net stream of income and other goods it generates. Then the rest of the rights of exclusion, management, subtraction and access are shared according to what needs the manager has and to the benefit of «cestui-que-trust»⁸. The approach to defining the central role of the beneficiary may be called consumer oriented. The other bundles of rights in the system are put together as complements to the rights of the beneficiary.

The flexibility of this system and its ability to address new concerns also in resource management is evident in the development of public trusts such as «The National Trust for Places of Historical Interest and National Beauty» in England.

Again one can ask about how legislation in different countries recognizes the various rights and duties of ownership and which combinations are allowed. To what degree do rights and duties come in fixed bundles, with or without specification, and to what degree can they be specified and distributed to different actors? And how do the allowed bundles go together in relation to the various kinds of resources?

Given the dependence on political systems, it will be interesting to investigate empirically how property rights are defined and how they are distributed. This is no small task. To make it more manageable it is here limited to property rights to renewable resources (timber, pasture, wildlife, fish, etc) and the ground on which these are found. Also, all that which is located below the ground is excluded. The areas of interest will be called «uncultivated or uninhabited lands» and will include what sometimes and in some contexts are called “rough lands”, “wilderness”, “mountains”,

⁸ For technical terms it is referred to Black's Law Dictionary

“forests”, “woodland” etc.⁹ It is further limited to Norway and England, and the investigation will be limited to legal techniques used in assigning property rights. The question of distribution has to be dealt with later. The choice of Norway is based purely on accessibility. It is the case I know best. And in order to find the technical terms to describe the Norwegian case I had to learn about land law in England.

Table 3: Complementary bundles of rights as defined by the trust institution.

	Trustee	Cestui que trust (beneficial use)	Manager (managerial use)
Access	(X)	(X)	(X)
Subtraction	(X)	(X)	(X)
Management	(X)	(X)	(X)
Exclusion	(X)	(X)	(X)
Alienation	X		

2. THE CASE OF NORWAY

The most ancient distinction of property in Norway is probably the distinction between the private holding of the family (the infields of the farm) and the rest of the land (the uncultivated lands) used in common with the other households in the community. In most of southern Norway the most productive forest land and pastures have, through a historical process, become extensions of single private farms, or groups of farms (the rights held in common and inalienably attached to the farms), or it has become the resources of business corporations. The bulk of the more remote of the uncultivated lands in Norway, the mountains and remote forests and pastures, are defined as some form of state property called state commons.

For the uncultivated lands Norwegian jurisprudence have traditionally divided resources into the following categories:

- timber,
- fuelwood,
- pasture¹⁰,
- wildlife (with further distinctions of big game and small game),
- freshwater fisheries (with further distinctions of anadrome fish (salmon and brown trout) and other fresh water fish),
- lakes and streams, and
- ground and remainder.

⁹ The proper designation of the type of lands we are interested in is unclear. The main interest is forest, but in this case it seems prudent to include all kinds of lands (such as bare mountains and marshes) outside the urban and agricultural areas. The CLAUDE (Co-ordinating land use and land cover change data and analysis in Europe) newsletter uses «semi-natural and natural areas» in discussing land cover changes in these lands (Note 2 1998).

¹⁰ The right to gather fodder (cutting grass, collecting moss and leaves etc.) have been important, but are not explicitly dealt with in the acts on commons. However, such rights are mentioned in the act on land consolidation (Act of December 21 1979) §36.

The categories appear in the law code and the owner has different rights and duties in respect of the particular resource (see Table 4). The rights to utilise these resources can be held by two types of entities: legal persons and cadastral units.

The major categories of rights holders recognised by the law are

- the state,
- municipalities (primary («kommune») and regional («fylke») municipalities),
- Statskog SF¹¹,
- citizens and other legal persons,
- the Saami,
- farmers, and
- farms¹².

The state, the regional governments and Statskog have clearly different rights and duties in holding property for the public interest. But we should also note that they can hold ordinary private property. The interesting distinction is thus not their definition as state, municipality, or state corporation, but the purposes for which they hold property.

The legal code defines four different regimes for owning land in common or jointly:

- state commons except forest resources (Act of 6 June 1975 no 31),
- forest resources in state commons (Act of 19 June 1992 no 60),
- bygd commons (Act of 19 June 1992 no 59), and
- land owned in common by farms (Act of 18 June 1965 no 6). (For details about these lands see Sevatdat 1998)

A fifth type called private commons (Act of 19 June 1992 no 61) is for all practical purposes extinct (one case is known to exist).

In table 4 detailed characteristics of the rights to the resources of the bygd commons are outlined.

The main principle organising the system of rights and duties is the ownership of the ground. If nothing is said in statutory law or established by custom the owner of the ground also owns other resources attached to the ground or flowing over it (wildlife, water, fish). But for the uninhabited lands there are old usages establishing rights of common. These rights were made statutory in the Royal law code of Magnus Lawmender of 1276, last revised in 1992. Today they are known as state commons. New types of commons were enacted in 1857 (bygd commons and private commons), and in 1997 a government commission proposed legislation of a new type of commons tailored to the Saami communities in northern Norway (NOU 1997:4, see Austenå 1998). Except for private lands owned individually and lands owned in common by farms, the rest of the uncultivated lands in Norway are lands where the owner of the ground and the owner of other resources may be different.

¹¹ Statskog SF is a corporation 100% owned by the state and possess among other things title to the ground in all state commons. It is charged with the duty of utilising the resources in the state commons and other state lands profitably. (see <<http://www.statskog.no/English.htm>>)

¹² To label the farm as a type of «owner» is not conforming to current legal terminology in Norway or elsewhere as far as I know. As long as the rights are inalienably attached to the farm they are considered to be part of the estate held by the farmer. However, for the analytical purposes here it has seemed useful to introduce the distinction between the farmer and the farm since the legislation uses the distinction systematically for different types of resources.

Table 4: Resource specific property rights regimes in Norwegian bygd commons

	ground and remainder	pasture, timber, and fuel wood	fishing and hunting of small game except beaver	hunting of big game and beaver	pasture and wood for reindeer herding
Rights of common	no	yes	yes	yes	yes
Co-ownership	in common	joint	joint	joint	joint
Unit holding rights	cadastral unit	cadastral unit	registered persons	registered persons	reindeer herding unit registered in the local reindeer herding district
Use and quantity regulation	internal ("owner decision")	internal ("needs of the farm")	internal ("owner decision")	external ("publicly decided quotas")	internal ("needs of the industry")
Alienability	inalienable	inalienable	inalienable	inalienable	inalienable
Power of local choice	yes	yes	yes	yes	yes

Source: Norwegian statutory law: in particular Act of 19 June 1992 no 59 and Act of 9 June 1978 no 49

A first important observation is that for different types of resources there are different rules regulating who can appropriate the good, how regulations of use come about, and the manner of transfer to any successors (table 4). This is here called resource specific property rights. In addition to the differences listed in table 4 there are regulations of the means they are allowed to employ (technology). Some rights and duties are conditional on residence requirements. Those living closer to a resource are given more extensive rights than those living further away.

A second interesting observation is that many of the important rights of common run inalienably with the land, the farm. The stipulation that farms may hold rights is embedded in the legal code even though farms are not recognized as legal actors. A resource, such as pasture, held by a farm is in general inalienable from the farm where it is considered to be necessary for the viability of the farm seen as an economic enterprise. Two principles used in stinting of the usage of the commons are closely related to this. One is to limit the rights of timber to the timber needed on the farm (sale of timber taken in the commons is illegal). The other is to limit the number of livestock on pasture to the number fed on the farm during the winter (beasts «levant et couchant»).

But even the detailed texts of the various acts on rights to resources in uncultivated lands are not enough to get a clear picture of a property rights regime. In addition to these we need to know how public legislation (regulations) affects the scope of the rights. Rights in forests, wildlife and fish are amended by general rules on application of technology, by limiting time of harvesting, by ruling on which species may be harvested, and by setting aside particular areas with more restrictions than the surrounding areas (protected areas). These rules apply regardless of whom the owner is or other details in the regime.

Type of rights-holder and alienability: When ground-owner and user (or owner) of a specific resource are different persons the relation can be organised in several ways. In Norway the main distinctions are

- the right of usage is attached to a particular property (a cadastral unit such as farm), or
- the right of usage goes with a particular person or household;

There is also a distinction between

- rights of usage inalienably attached to either the land or a person, and
- rights of usage which are tradable in a market.

However, between the inalienable and the alienable there are rules of renting land and resources. Farmland, timberland and pasture cannot be rented for more than 10 years. Farmland is not unconditionally alienable in Norway. Permission is required both from municipal authorities and from possible successors as these are defined in the law of allodial rights.

Rights running with the land are either rights of common or land owned in common. There is clearly less alienability of such rights than for rights held by individual persons. Only the personally held right of access to the uncultivated lands cannot be alienated. But on the other hand, only the ground is completely alienable, and then only conditional on permission both by successors and public authorities.

Table 5 Links Between Rights of Harvesting Resource and Resource Holder

Rights vest in	Rights vest		
	inalienable	alienable for a maximum of 10 years	alienable on conditions
land ¹³	timber, fuelwood, pasture, ground	small game, big game, fish,	
person	all men's rights	timber, fuelwood, pasture, small game, big game, fish,	ground

Ownership of the ground: The person holding the best title to the ground is called the landowner. But this does not imply more than a right to some kind of tax or ground rent. Timber trees, fuelwood, pasture, wild game, and fish may all in principle have different owners. The «remainder», which goes with the ground, is more important. Any new uses of the land, not conflicting with established uses, will fall to the ground owner. And if conflict with established uses occur these may sometimes be bought off.

But today we begin to be concerned with that part of the «remainder» which so far has seemed without (economic) value or even has not been perceived at all (low

¹³ In this case the terminology may be confusing. Rights vesting in land will here mean that the cadastral unit is seen as a «subject» capable of holding rights like we are used to see a legal person do. Servitudes of this kind are in Norwegian often called «real-servitutt» (real servitudes). See also note 12 above.

level pollution, genetic information). At the outset the legal system would consider it to be the property of the landowner. But for instance the fate of wildlife other than game has been uninteresting to the landowner. The water quality of lakes and rivers has been a concern as far as it affected the life and quality of the fish, but in general the concern has not been framed in terms of property rights.

The dominant approach to these new aspects of nature has in Norway been public regulation. Acts on wildlife, and environmental pollution have set standards that everybody has to follow. One can see this as the negation of property rights according to Hohfeld's paradigm. There are only duties and liabilities for everybody, no claim-rights, no privileges, no powers, and no immunities. The public regulations are a layer of duties and liabilities put on top of existing property rights. Presumably their efficiency to some extent will depend on how they interact with these.

Conclusions on Norway: Ownership of the ground has during several centuries been growing in importance for the organised usage of various kinds of resources. In the land consolidations during the last century one repeatedly encountered situations where the resources of an area was subdivided in a way that for example gave the pasture to A, the pine timber to B, the deciduous trees to C while the fuel wood, fishing, and hunting were held in common by the three. Nothing was said about the ground. The way this has been interpreted by courts in the 20th century is to see the three persons as owning as much of the ground as the individually owned resources needed (see Austenå 1965). In the absence of other evidence, no one in particular is to be considered the owner of the ground before others (but there was a long debate and many cases of inequitable divisions before this view emerged).

The comparative lack of interest in the ground itself in the customary law of Norway is understandable. There was no use for the ground itself. The important goods were the pasture, the timber and the wild game.

In feudal society the ground itself became an organising principle. It became a symbol of the lord's control of the ground, his property rights in the land (the dominium directum) as distinct from the use and profit from the soil (dominium utile). The kings of the first modern states (Sicily, Normandy and England; see Berman 1983) claimed property rights in the ground of their countries. Thus ground ownership was at the core of the formation of modern states. A contemporary state could have used the dominium directum thesis of the Crown as a legitimation of public regulations. But for this it is no longer needed.

Its current importance is probably due to its inclusion in the property rights theories gaining political power in the 17th and 18th century. The most profitable way of organising property rights was believed to be to join the ground and all the resources within an area in the same estate, the dominium plenum. This was thought to be the ideal situation for economic development. From this theory came the many arguments for enclosure that was vigorously pursued both by Denmark-Norway, and England from the 18th century (but particularly England who started much earlier). In Norway not much happened until the middle of the 19th century.

Thus the interesting things about Norway is first the continuous existence of extensive areas owned in common, basically governed by the same legislation since the 12th century. The enclosure policies did not get going until it was too late. The second interesting thing is the way rights of common and landownership has been codified and included in a system of land ownership by the use of ground ownership as an organising principle.

3. THE CASE OF ENGLAND

The legal techniques available in England seem to encompass all those found in Norway and then some more. Particularly the trust institution should be mentioned.

Historically the same distinctions as those used in Norway are found.¹⁴ The rules about pasture and fuelwood are more detailed and more varied, probably signifying that they were more important than for example game. The complicated divisions of property rights is illustrated by Rackham(1989) in his investigation of the the history of the Hatfield Forest. Around 1550 the King gave all his interests in Hatfield Forest to Lord Rich. A part of the Forest was already owned by the Barrington family. In 1592 the Rich family sold their interests in it to the Morleys of Great Hallingbury. In Rackhams words:

«The Forest had been the Crown's, and the manor someone else's, for much of the middle ages, and this had led to disputes; but the new separation was different. Lord Morley had bought not only the Forestal rights (by now reduced to little more than the rights to keep deer) but also the soil of the whole Forest and the trees in the western two thirds. Barrington already had the trees (but not the soil) of the north eastern third and the right to pasture animals throughtout the Forest; he now bought the manorial jurisdiction over the whole Forest, including the right to hold courts and to fine offenders (including Lord Morley) against the by-laws. As lord of the manor he now had to deal, not with distant and complaisant Royal Forest authorities, but with a resident owner of the Forest eager to enforce his claims. There was plenty of room for the two lords to dispute which rights each had acqui-red, and for high-handed commoners to play off one lord against the other.» (p.97)

The separation of ground from the rest of the resources was clearly important. The one with title to the ground was the landowner. For a non-historian it is startling to observe that one could buy «the manorial jurisdiction over the whole Forest». But reading Bloch's (1940) account of the fragmentation of social power (military, political and economic) during the feudal ages one should not be surprised. Instead we here see one source of the local and regional variation of property rights: the local or manorial judicial powers to define and enforce rights and duties in relation to local resources.

Neeson (1993) in her account of 18th century English rural society extends the picture of a property rights system with elaborate distinctions for those resources that mattered, and where most of it, also fractions of pasture for one animal, could be rented and sometimes sold. But limitations on alienability are ubiquitous. Pasture was usually inalienable. Where pasture was of ancient origin, it was defined as a profit-à-prendre¹⁵ appendant (see Table 6). Its attachment to the land (or rather the cottage) seems to be just as important here as it is for the rights of common in Norway attached to the farm. More recent rights of pasture created by contract were called profits appurtenant. Depending on the phrasing of the contract some of them became inalienable. If the contract defined the rights in terms of beasts «levant et couchant» they could not be separated from the cottage. But if it was defined as a specific number of beasts the rights were alienable. Once they were severed from the cottage they became rights of common in gross. (Neeson 1993:82-83).

¹⁴ For detailed documentation on the 18th century see Neeson 1993.

¹⁵ Rights of common is a type of profit-à-prendre, now only called profits. More on this in Berge 1998.

Even more varied and ingenious were the ways in which grazing on the commons were stunted. The commoners were very sensitive to overstocking and devised through the manorial court by-laws to guard against it. Time frames for grazing, area accessible for grazing, prohibition of agistment of out-parish stock, and number of beasts allowed to graze were variables used in a constantly changing configuration. New by-laws were in many manors promulgated twice a year.

One of the strongest arguments for enclosure was overstocking. Neesons (1993:86) observes «The threat to common pasture came less from the clearly defined rights of cottagers than from the larger flocks and herds of richer men.»

Table 6: Ways of holding Profits-à-prendre (rights of common) in English Land Law

Rights vest in	Rights vest	
	inalienable	alienable
land	appendant	appurtenant
person		in gross

Source: Berge 1998:125

Conclusions on England: One interesting question about England is the degree to which the historical possibilities for defining property rights survive. Technically I think they do. But after enclosure was completed the particular distinctions of various resources were not needed. However, the legal techniques developed remained. And these became important for the kind of capitalism developed in England.

Macfarlane (1998:112), citing Stein and Shand 1974, sees the English common law tradition of treating bundles of rights rather than the total dominion of the thing (as in the Roman law tradition) as being more open to the developments of new rights necessary for capitalist development. The most sophisticated expression of this may be the trust institution (see above). In Canada the trust institution is used as baseline for developing new forms of forest management in something they call an «ecoforestry land stewardship trust model» (Banighen 1997).

In addition to this I would suggest two other aspects of English law as important: the courts of equity, without which the trust institution could not have been developed, and the strong tradition for developing customary law into common law. Neeson's (1993) account of how the manorial courts were used to regulate and enforce usage of property rights gives a fascinating testimony to the versatility of the customary law tradition. It created variety and tailored usage to local conditions. Berman (1983:325) observes that in the medieval society «..., lawmaking itself was regarded as a process of deliberation and discovery. Laws were considered to be either true or false, either just or unjust, and therefore the making and administering of them were not sharply distinguished from their application in case of dispute.» The common law approach to legislation is a continuation of this tradition.

4. COMPARING ENGLAND AND NORWAY: SOME PRELIMINARY CONCLUSIONS

The trust institution developed in English jurisprudence out of the medieval customary law as amended by case law and common law¹⁶. From Simpson (1986)'s survey of the «The History of the Land Law», and Neeson (1993)'s study of «Commoners: Common Right, Enclosure and Social Change in England, 1700-1820» the situation in England in medieval and early modern time until enclosure in some respects was remarkably similar to the situation in Norway far into last century. Two similarities are of particular interest here: the practice of distributing rights to specific resources rather than a piece of land. And the practice of sharing management, or perhaps it could be called a form of co-management.

4.1 Distributed rights, co-management and «viability bundles» in medieval property rights systems

The similarities between England and Norway before enclosure¹⁷ are notable particularly in the widespread distribution of rights to specific resources to different interested parties. While one farmer could hold rights to pasture another could hold the right to the timber trees while both could have right to fuelwood. Resources useful to the farms as economic enterprises were the main concern¹⁸. Ownership of the ground upon which these resources were located was never a big issue. The importance of the ground as a repository for all resources not specified (and already distributed) elsewhere, became apparent as society started to change more rapidly. Basically, the ground came to be seen as being held by the lord of the manor. Again, this happened much earlier in England than in Norway.

The shared management arises particularly (or is most easily seen) in the management of resources on land held in common. The variety of customary ways local communities were governing the access to and removal of goods from common land was partly the reason for the effort of King Henry II of England to establish «common law». Local management of resource use was one feature of this¹⁹. In Norway local management and its relation to centrally promulgated rulings are considerably less studied and documented.²⁰ The co-management did not only encompass a division of power between the Crown and the local community but

¹⁶ Its origin is traced to the effort by the more wealthy to evade the statute of uses from 1536 (see Simpson 1986: 199)

¹⁷ In Norway enclosure had barely started when England's last two acts enacting enclosure of forests passed parliament in 1857. The first act on land consolidation in Norway is from 1821. But only with a second revised act from 1857 did the consolidated area begin to increase

¹⁸ Thus use rights to sufficient acreage of infields and outfields as well as rights to fuelwood and timber were a concern of both the individual farmer and the governing body of the society. The concern with the viability of the farm enterprise also appears in rules about servitudes said to be «appendant» (such as inalienable rights of common to pasture). In settlements a main concern was to keep the land undivided on one persons hand and to give younger generations bargaining strength in relation to the single owner. The concerns and impacts of this are closely parallel to the «allodial» rights in Norway (åsetes- og odelsretten).

¹⁹ The way Henry II went about this became a major contribution to the Western Legal Revolution (see Berman 1983:438-459). He succeeded «by creating a royal judiciary that operated under the control of a royal chancery but also by providing a more rational law and by enlisting *community participation* in administering it.» (Berman 1983:445-446, my emphasis). Use of common land would seem to be an important part of this co-management of the various resources (Neeson 1993:110-157).

²⁰ For a recent contribution see Tretvik 2000

included also at times division of rights in the same resource, particularly timber²¹. In Norway the distribution between Crown and commoners of rights in timber was enacted in 1687 when the commoner's rights to timber and fuelwood were stinted to the amount needed for the farm. If there were more than the commoners needed, the remainder belonged to the Crown. In other words: a commoner could not take timber from the commons and sell it.

For the purposes here we can conclude with an old tradition of co-management of resources on common land and an equally old tradition of distributed rights to specific resources. One important limitation on the distribution of rights to specific resources was a concern with the viability of the farm seen as an economic enterprise. Thus each farm became a specific bundle of rights (an estate) with only one feature in common: the viability as an economic enterprise.

In England enclosure mostly removed common land from agriculture, and by that the importance of distributed rights. In Norway land consolidation never was able to consolidate enough of the outfields and mountain pastures to remove its importance.

I will suggest that this is a third model of bundeling property rights supplementing the hierarchical management bundles and the trust bundles.

Table 7: Distributed resource specific use rights and «viability bundles»

	Farm A	Farm B	Farm C	Co-owner and/or co-manager *Crown *Lord of the manor
farm houses	X	X	X	
infields	ground use-rights	ground use-rights	use-rights	ground remainder
outfields	ground use-rights	use-rights	use-rights	ground remainder
mountain pastures	ground use rights	use rights		ground remainder
fuelwood	X		X	
other resource		X		
timber deciduous coniferous	(X) (X)	(X)	(X)	(X) (X)

So far we have presented the three models

- Action bundles of management rights
- The trust (or «utility») bundles of management rights, and
- Viability bundles of resource use rights

²¹ In Magnus Lagabøters Law code of 1276 it is explained how to divide a whale between the Crown and the local community.

4.2 Why is ownership of the ground so important?

The observations of the importance of the ownership to the ground and the way it is used to structure the bundles of rights suggest two very different modes of development in property right to land and renewable resources. One is driven mostly by legal-academic thinking since the (re) introduction of Roman law in the law school curricula in the 12th century, but also by the demand from powerful persons. The other development is driven by the practical interest of the common-law approach to conflict resolution.

In both Norway and England legal development seems to have led to a theory of landholding where ownership of the ground automatically implies ownership of all resources attached to the ground or flowing across (unless otherwise specified in contracts between owner and some tenant). The ownership position is assumed to have all the rights and duties as specified in the full hierarchical management bundle of rights. This unity of landholding and resources and the full power of actions associated with it give a simple and powerful model of the resources held by independent and selfsufficient individuals and citizens.

Students of modern society often note a trend they call individualisation. Without going into the many aspects of this process it can be noted that the expanding application of the «Roman» action model of land holding obviously is part of it. The model both nurtures it and is strengthened by its cultural and academic standing. The action model is for example taken for granted in the standard definition of ownership and property in neo-classical economic theory (see note 7 above). And its hegemonic standing shows up for instance in the rather automatic inclusion of it in policy recommendations for reforms of the East European economies. Its rather contingent and culture specific nature is not considered. Therefore the existence of alternative models both in England and Norway should be of interest. In the problems of collective action on economic development and resource usage these may pose different both problems and advantages.

In contemporary English jurisprudence we find the «trust» model of landholding. In relation to collective action on resource usage this model may not be much different from the action model. But it has proved very versatile in its adaptations from, on the one hand, the capitalist concerns about organising resource ownership and distributing rents, to on the other hand, collective action based on public concerns about cultural heritage or protection of nature.

In Norway the Roman action model is the standard theory. But in addition we find what we may call a «Germanic» model of resource ownership. In this model resources are distributed in viability bundles. In medieval times rights and duties were negotiated locally, limited and sometimes mediated by the King. Today they are specified in legislation based on the customary rules. Both history and current practice would suggest that this model to a larger degree than the Roman model is furthering collective action at the local level.

It might be an interesting hypothesis to investigate whether more opportunities for collective action at the local level may weaken the power of the state. Some states would seem to act as if this was true.

5. LOOKING BEYOND ENGLAND AND NORWAY

Without trying to offer much in the way of evidence it will be suggested that around in Europe, and probably elsewhere as well, there is a strong general tendency to organise ownership into the «Roman» action model of private property. In England and the Scandinavian countries great efforts have been expended on the enclosure process to take apart the bundle of older rights and put together a new one where ownership of the ground goes together with ownership of all that is attached to or flows over the ground. No country has succeeded completely. Norway is perhaps the one country with least success. England has in one way succeeded completely. But England has at the same time immediately moved beyond this total «unity» of rights by applying the trust institution to the management of land according to new concerns about cultural landscapes and the sustainability of ecosystems.

Another striking feature in contrast to the enclosure movement is the creation of new commons as well as public trusts. The last enactments on «Forest» enclosures in England are from 1857. The same year Norway enacted new types of commons as well as reaffirmed the old commons. A few years later Sweden and Finland were creating new forest commons and in 1976 Portugal made an effort to recreate the old village commons called baldios. England did not try to recreate any of their old commons. But with the legal techniques developed they could create something new, public trusts, owning and managing land, not in common, but for the benefit of the new urban commoners.

Finland (Åland Islands), Denmark (Faeroes, and Greenland), Norway (Svalbard) and of course UK and Switzerland, have regional legislation (in the sense of geographically separate legal systems). The regional variations within countries can of course be explained as remnants of our feudal past. But differences between countries are more difficult. Somewhat surprisingly they do not seem to even merit an explanation: on the one hand they are -presumably- «natural» consequences of the cultural differences and the autonomy of the nation state, or on the other hand, they are mere political distortions of the ideal situation of complete private property. This lack of a comparative perspective on the various ways we use and enjoy nature is to me in itself a puzzle.

What little evidence I have been able to survey do not support the disappearing differences hypothesis, neither does «naturalness» of the variation among nation states seem obvious. My hunch so far is that local variations in geophysical conditions, and an economic organisation tailored to particular local resources has much to do with the stability of property rights, and hence the persistence of their differences. Property rights are kept unchanged because the major political players find them useful as they are (North 1990).

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FOREST AND FORESTRY WITHIN THE FRAMEWORK OF TURKISH ENVIRONMENTAL LAW

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ABSTRACT:

Living quality of human is being effected in all respects by continuous environmental disturbances in the world. The question of environmental protection, probable environmental damages and their consequences have been noticed more clearly during recent years. The unfavorable results of industrialization and the settlements without plans disturbing natural resources and the consequences developed against environment have recently been evident in Turkey too. In this respect, the fact of environmental protection has gained a specific importance now for Turkey.

Environment has entirety with each of its parts, and forests are the one of most significant constituent of this entirety. The environmental protection and, in this scope, the protection of forests by law exhibit parallelism. In this study, the presence of the provisions relating to forests in Turkish environmental law are considered. They should provide a wider range of protection for forests from a legal viewpoint and contribute to filling up the vacuums that may raise in Environmental Law.

Keywords: Forest, Forest Legislation, Environment, Environmental Law, Forest Law

1 INTRODUCTION

Environmental Law is a newly developed legal branch in Turkey as in many other countries in the world. In Turkish Law, the term "environment" is used for the first time in Article 56 of the Constitution 1982. Subsequently, this concept with respective regulations has quickly developed during the year of 1983 following the adoption of the Environment Act.

The legal regulation governing forests is older by the arrangement relating to environment and more detailed by the inclusive subjects. The content of Environmental Law incorporates the direct and indirect provisions relating to forestry. Compilation of these provisions carries importance to forests for the protection by Environmental Law.

2 DEVELOPMENT OF FOREST LEGISLATION

Turkish Forest Law is with a long history. In this regard, the legal regulations may be mentioned in chronological order as follows: The legal regulations before the Land Statute Book, the Land Statute Book dated 1857, the Forest Regulation dated 1869, the Coppice Act dated 1920, the Forest Act dated 1937, The Constitutions of Republic of Turkey dated 1924, 1961 and 1982.

Before the period of Land Statute Books (1857), systematic provisions may not be found. Since the first Forest Act dated 1937, forests were thought to be a resource for firewood and hunting requirements of the palace rather than social and cultural benefits and the idea of free utilization from forests was accepted. Until 1937, it is

difficult to mention serious measures relating to maintenance and improvement of forests. Only limited number of imperial degree of Sultan, statute books and orders were adopted and so forests were utilized thereupon. In this period, forests were addressed under common goods by the State and therefore in a modern sense any regulation was not required.

The provisions of Ottoman Empire Constitution in this period did not include any provision relating to forestry. Furthermore, Document of Agreement dated 1807 (Sened-i İttifak), Imperial Degree of Reform dated 1839 (Tanzimat Fermanı) and Imperial Degree of Improvement dated 1856 did not contain any regulation relating to forestry (Bayraktaroğlu, 1968).

In the period of Land Statute Book, systematic provisions relating to forestry may not be found. The Land Statute Book being the advanced act in that period, contains, however, dispersed and insufficient provisions on forestry. According to the Land Statute Book, lands are present in five categories that are State owned Lands, Abandoned Lands, Ownerless Lands, Foundation Owned Lands, Private Lands. Any forest located on the land of each category was subject to different conclusion (Tunçsiper, 1964).

The Forest Regulation dated 1869 provokes for the first systematic rules adopted in Turkish forestry. This regulation determines the essentials on the utilization of forests, while it also regulates a number of issues relating to protection and operation of forests. In this respect, it is be appropriate to recognize the Forest Regulation dated 1869 to be a legal means of scientific forestry in Turkey.

The Coppice Act Dated 1920 was adopted by the Turkish Grand National Assembly founded in 1920 (Turkish Parliament) after the First World War during Turkish Independence War was taking place. This reflects the importance of forests in the preparation period of the Republic. By this Act, forest villagers were given two hectares coppice per house. However, this area reserved for villagers were insufficient. Besides, the required amount of technical personnel to carry out the act was missing. More important than all others this act led to an enormous destruction in forests. Therefore, the act too did not lead to what was expected.

In 1924, the Coppice Act was abolished by means of “the Act Relating Villagers’ Right of Use of State Forests”. After this Act was lifted, the Forest Regulation dated 1869 was back into force with regard to the utilization of forests (Özdönmez, İstanbullu, Akesen, Ekizoğlu 1996).

In 1924, “the Act Relating the Administration and Operation by Scientific Method of all Forests in Turkey” was adopted. The utilization of forests was regulated by means of this act. The intention of prevention of the customs involving free utilization of forests which has been practiced for hundreds of years, caused public complaints and State had to take a backward step.

The damages over forests widened and accelerated up to 1937 during which free utilization of forests was recognized. It became a necessity to take measures on this issue. An opinion was born, that the forests in Turkey are not only a wealth providing profit but a natural resource which must be protected and developed to take advantage of their services. Consequently, the first Forest Act No. 3116 entered into force. It is considered as the beginning of technical and scientific forestry practice. By this Act, forests were recognized as a major resource of the national economy and the operation of national forests in favor of overall society was anticipated. State’s supervision and surveillance was established for the forests under non-state ownership.

Act No.4785 was adopted pursuant to the Forest Act No.3116 in 1945 by which all forests was intended to gather under State's hand. However, upon reactions, this implementation was abandoned in 1950 and the forests confiscated by means of the Act No.5658 were distributed back to their owners.

In 1956, the Forest Act No.6831, which is currently in effect, was adopted. In this law too, the principles of State operation and State Possession were pursued.

In addition, the principle that State forests should be operated by the State which was introduced with the amendments in the Constitution 1924 in the year of 1937, was maintained in the Constitutions 1961, 1982 and State's supervision and surveillance for overall forests in the country was anticipated.

With this brief summary of the history of Forest Law, the diversity still continues in Turkey today. The Forest Law dating back to the old times exhibits a wide range of legal arrangements. The basic acts may be enumerated as (primarily) the Forests Act 6831, the Act Relating the Reinforcement of Forest Villagers, the National Afforestation and Mobilization Act, and the Act Relating to the Organization and Assignments of the Forest Ministry and the Forest General Directorate.

3 DEVELOPMENT OF ENVIRONMENTAL LAW

Despite the fact that its origins date back to 19th century in the world, environmental law was born by the end of 1960's. The development of environmental law took place in the period including 1990's and its evolution has continued in this direction. In 1970's, much information can not be found about the initiatives in order to find solutions for environmental problems. Apart from certain exceptions, it is seen that environmental issues were addressed only with a number of sentences. These are mostly in the framework of health subject involving the improvements of the environmental conditions.

The provisions relating to environmental right in Turkey were introduced into the Constitution, the Environment Act (1983) and relevant regulations as well as other acts and bylaws in connection with environment during the period of 1980's. Furthermore, the subject of environment is considered within governmental programs and development plans under the heading of "environmental problems". As a significant progress in Turkey during the period of 1990's, the Environmental Action Plan of Turkey prepared with the standby of the World Bank and the 7th Development Plan of 5 years should be mentioned.

Although Environmental Law was said to be born in the last half of 20th century, some authors find significant environmental statements in older legal systems such as Roman Law and Islamic Law. However, the regulations involving environment which were adopted in some European Countries, USA and also in Turkey during 19th Century or by means of mainly older legal systems should not be presented under the heading of environmental law (Turgut, 1998).

Following this approach, in Turkey, the environmental law developments should be seen as dating back to early times of Ottoman Empire. During this and following periods, the questions considered to be related with environment were regulated by means of religious commands. Imperial degrees of Sultan and legal arrangements are found in this respect. For example, "Environmental Cleanliness Regulation" is known which was adopted in the year of 1539. An other example is that Mehmet the Second (Mehmet The Conqueror) transferred his properties in the years close to his death to the Foundation having the purpose of environmental maintenance (Akıncı, 1996). The Constitution 1961 contains a provision (Article 49), which may be

indirectly construed in viewpoint of environment. In this provision, “right of health” is meant differently from what we understand today as right of environment.

Actually, the legal regulations dating back to 16th century which may be relevant to environment can be found in Turkish Law. But these provisions were adopted mostly with respect to the continuance of social life and also the necessities from living in a community. It is inappropriate to conclude that these regulations were in line with considerations in order to protect environment. Otherwise, it is possible to see environmental element in any subject regulating social order. These sorts of regulations, therefore, should not be interpreted under environmental law.

Consequently, one should wait until the Constitution 1982, in order to see a clear and specific use of environment concepts in Turkish Law. The legal regulations relating to environmental concerns are very broad and dispersed. The presence of so many legal resources inclusive the provisions on environment directly or indirectly brings about difficulty in the establishment of limits of environmental law. Under environmental law, in addition to the acts being directly related with environment i.e. the Environment Act, the National Parks Act, the Protection of Cultural and Natural Presence Act, we may enumerate, the legal regulations involving environment i.e. Turkish Civil Code, the Settlement Act, the Bosphorous Act, the Act of Ministry, the Water Products Act, the Shore Act, the Pasture Act, the Mining Act, the General Health Act, the Forest Act, the Underground Waters Act, the Land Hunting Act, the Act About Agricultural Fighting and Quarantine. The legal regulations further include many bylaws, degrees and international agreements.

As a conclusion the subjects relative to environmental law and forest law are present in and around the same areas of interests and platforms. In this regard, the existence of intensive mutual influence and common provisions are very common. Forests are indispensable parts of environment and therefore environmental law may not be thought apart from Forest Law.

In this study, the provisions relating to forests within the essential acts to be addressed here in Environmental Law will be examined. By this examination, the place of forests in environmental law will have been designated. In this manner, the presence of the provisions regulating the same subject and therefore the existence of contradictory provisions or better provisions with regard to forests protection will have to be determined.

The legal regulations governing forestry are older than environmental regulations, and even more detailed by inclusive subjects. But environmental law was prepared with better accordance to the rapidly changing world's facts considering international environmental principles. In this respect, it gains importance in terms of the accomplishment of harmony to international environmental principles. The content of environmental law also contains direct or indirect provisions relating forestry. The designation of these provisions has importance for the utilization by forests and for environmental protection and, if any, for the elimination of the contradictions between them.

4 CONSTITUTIONAL BASIS OF THE PRESENTLY APPLICABLE LEGISLATION

The Constitution 1982 contains provisions relating to the environmental protection, the maintenance of forest and natural resources. In this regard, Article 56 with the heading of Environmental Protection, says : “Anybody shall be entitled to live in a balanced and healthy environment. Developing environment, protecting environmental health and preventing environmental contamination shall be the duties of the State and citizens.”

This opinion is approved and completed by Article 63 which says : "The State shall assure the protection of the values regarding historical, cultural and natural presence and in this respect, shall take relevant supporting and encouraging measures. The limitations to be applied to these presence and values subject to private ownership and the assistance and the exemptions to be granted for this reason to rightful persons shall be regulated by law."

Article 168 of the Constitution with the provisions on the detection and operation of natural resources under State's supervision regulates the utilization of these resources without rendering any damage thereupon. The Article says: "Natural wealth and resources shall be under the command and possession of the State. The title to detect and operate of these belongs to the State. The State may assign this title to natural or legal persons for a prescribed period. The question of which wealth or resource shall be detected and operated by the State in joint partnership with real or legal persons or directly by means of real or legal persons shall be subject to express permission of law. In this case, the conditions binding for real and legal persons and the principles relating to the supervision and surveillance to be conducted by the State and respective enforcements shall be described by law".

Considering these provisions for environmental protection and natural resources by the Constitution 1982, the sensitivity of the Constitution may clearly be seen in its approach to forests:.

Article 169 of the Constitution carries the heading of "Protection and Improvement of Forests" and contains the provisions to this objective. Pursuant to Article 169 : "The State shall put into effect the legal regulations for the protection and improvement of the forest and in this regard, shall take measures. New forests shall be grown up instead of those destroyed by fire, and no agriculture or feeding activity may be permitted in these places. The supervision of each and every forest shall be conducted by State.

No ownership of State's forests may be assignable. By law, State's forests shall be administered and operated by the State. These forests may not be owned by means of prescription and any servitude may not be instituted other than beneficial to the public.

Any activity detrimental to forests may not be allowed. Any political propaganda causing the damage of forests may not be permitted, any amnesty or any partial amnesty for the crimes of forest may not be effected. The crimes committed for the purpose of setting fire, exterminating or narrowing of forests may not be included within the coverage of amnesty or partial amnesty...."

5 ENVIRONMENTAL AND NATURE CONSERVATION LAWS

The Environment Act: The Environment Act No 2872 dated 1983 contains provisions relating forestry. Article 1 of the Act says : "The objective of this Act is to regulate the arrangements and measures to be conducted for the protection and improvement of environment having the quality of common presence of all citizens; the best utilization and protection of the lands in urban and rural areas; the prevention of the contamination of water, soil and air; the improvement and assurance of health, civilization and living standards of future generations in compliance with the economic and social targets based on specific legal and technical essentials."

The scope of the objectives of Environment Act Article 1 directly includes forests and their protection. Forest is a rich environment for life inclusive flora and fauna and an ecological system in quality of wealth with respect to natural composition, varieties of

species and in some cases, integration with history. In this regard, all the objectives established in Environment Act in favor of environmental protection also apply to forests.

Article 3 of Environment Act regulates general principles relating to environmental protection and to the prevention of environmental contamination. According to this Article, environmental protection and prevention of environmental contamination shall be the duties of real and legal persons and citizens, which shall abide the measures and the essentials to be prescribed in this respect. In this Article, one of the basic principles of “polluter pays” relating to environmental law is considered where it is expressly prescribed that who damage environment shall be responsible for these damages. The wording of this Article may be considered as also applicable to forests.

Article 9 of the Environment Act with the heading of Environmental Protection is in direct relationship with forests. This Article says : “The areas under protection to be designated in line with the decisions for any land utilization in rural and urban areas, and the essentials relating to protection and utilization to be applied in these areas shall be regulated by law. In the framework of the essentials hereto; any extreme and inappropriate kind of utilization, any disturbances to the country’s basic ecological balances as a result of importing any kind of waste and garbage from foreign countries, any risk for the species of flora and fauna, any damage to the entirety of natural presence shall be forbidden.

The Board of Ministers shall be authorized to designate and announce the areas sensitive to nationwide and worldwide environmental disturbances and contaminations as being “Special Environmental Protection Areas” so that the prerequisite measures should be taken in order to guaranty the preservation of the beauties for the prospective generation, and to determine a ministry which will prepare the essentials relating protection and utilization to be applied in these areas as well as plans and projects.”

A considerable amount of the areas designated by the Board of Ministers as Special Environmental Protection Areas on the basis of this Article are forest lands. In this regard, Article 9 carries a specific importance in terms of forestry. In these areas, Environment Act and Forest Act shall be applied on a complementary basis. In the Degree having the Command of Law about this issue, it is prescribed that the forests fell in the areas of Special Environmental Protection shall be considered under Environment Act and therefore subject to special protection.

Article 10 of the Environment Act has the heading “Assessment of Environment Effect”. This Article says : “The institutions, organizations and establishments which may cause environmental effect by their anticipated activities shall prepare a “Report for Assessment of Environment Effect”. This report covers the elimination methods of waste and garbages which may cause environmental contamination as well as the measures to be taken considering all the effects on environment.

In the forests too, studies relating to an Assessment of Environmental Effect are to be made. In essence, the Forest Act No.6831 which is still in effect contains no provisions with any enforcement. However, today the forests damaged as a result of badly utilization of environment necessitate an Assessment of Environmental Effect. For this reason, AEE obligation in addition to ordinary legal permission procedure should be effected for any activity to be performed in a forest area. In the AEE applications to forestry, Environment Act and the bylaw of AEE shall be taken into consideration.

In Article 19 of the Environment Act, the operation of “the Fund for Prevention of Environmental Contamination” is mentioned which was established to avoid environmental contamination and to operate environmental potentials. Subparagraph f of Article 19 of Environmental Law contains a provision relating to afforestation. In this point, a direct connection between the Environment Act and the Forest Act exists.

The National Parks Act: The objective of the National Parks Act No. 2873 dated 1983 is to regulate the essentials relating to the designation of national parks, natural parks, natural monuments and natural maintenance areas having national and international importance, and the preservation, improvement and administration thereof without damaging their characteristics and specifications. This Act exhibits parallelism to the Forest Act No. 6831, which is still in effect. The Forest Act, whereby forests are classified in Article 4 with respect to their characteristics and specifications, also applies this classification to national parks. In Article 25 of this Act, the question of national parks is considered as follows: “The General Directorate of Forest shall deal with the allocation of the forest to science deemed necessary by location and specification as well as the areas which fell in the regulation of forest; the maintenance of nature; the assurance of country’s beauty; the provision of society’s various sport and recreational needs; the provision of convenience to tourist acts; the allocation, arrangement and operation or cause their operation of national parks, natural parks, natural monuments, natural protection areas and forest promenade locations.”

Following this provision of the Forest Act, Article 3 of the National Parks Act specifies: “The areas which are designated as having the quality of National Park may be established as a National Park by the Board of Ministers upon the proposal of the Ministry of Forest with the approval from the Ministries of National Defense, Works, Culture and Tourism and from other ministries when deemed necessary.

If the locations fell under the regime of forest, the areas of natural parks, natural monuments and natural protection shall be designated with the approval of the Ministry of Forest.

Again in Articles 3, 4, 5 and in the following ones, there are mutual influences. Particularly Article 13 having the heading of Improvement of Resources contains provisions relating to forests. Technical activities should be conducted in the forest, maquis, shrubbery and the other forms of lands which fell in the scope of this Act considering the management development plans prepared on the basis of multilateral utilization and protection in order to protect, develop and preserve natural conditions.

Article 15 of the Act regulates the forbidden activities in locations which fell in the scope of this Act.

Article 20 of Section 7 of the National Parks Act specifies as follows : “Where any act forbidden in the Forest Act No. 6831 and the Land Hunting Act No. 3167 and the Water Products Act No. 1380 is committed in the places these Act are applicable, the punishment thereof shall be prescribed by a hundred percent increase.

The Bosphorus Act: The Bosphorus Act contains provisions on the protection of natural, cultural and historical presence in favor of public.

Article 3 of the Act regulates the question of construction in Bosphorus. Most of Istanbul’s forest areas are located in the Bosphorus region. Therefore, the Bosphorus Act should be taken into consideration. Especially, relative to the question of construction, a dispute was experienced for some period between the Forest Act and

the Bosphorus Act. The application of the Bosphorus Act being a more general regulation is contrary to Law Literature while there exist the Forest Act No. 6831 which is more specialized and presents arrangements relating to forests. For this reason, the application of the Forest Act would be more appropriate to the forests areas in Bosphorus Region.

Article 4 of the Act contains the heading of forest areas. According to this, the locations to be considered as having State's forest status in the boundaries of Bosphorus Region shall be designated by the Higher Coordination Board of Works of Bosphorus and those being under the possession of Public organization and establishment shall be transferred to the Treasury free of charge. The Ministry of Forest shall also confiscate those, which are under private possession.

Right of use and usufructuary may not be instituted over the forests around the Bosphorus. But being in compliance with the objective of this Act, right of use and usufructuary may be instituted by the respective Ministry upon proposal of the Executive Board of Works.

Article 4 of the Bosphorus Act No. 2960 also contains provision "for private forests". According to this Article, the forests in the boundaries of Bosphorus belonging to a private party shall be confiscated by the Ministry of Forest. Consequently, the private forests in Bosphorus Region shall be deprived of this status and become State's forest. The location addressed under this status shall be regulated in compliance with the project and programs prepared by the Ministry of Forest considering natural features of the Bosphorus Region.

According to the provision of Article 4 private forests located in Bosphorus Region shall not be subject to any construction. Additionally, as considered under the status of State's forest, following Article 169 of the Constitution, no right of use may be instituted outside of public benefit and the private forests located in Bosphorus Region shall deem to have all the capacities relating to public goods.

Article 5 of the Act contains the heading of green areas. According to this, areas which are not taken as forest in the Bosphorus region belonging to the public or private organization and establishments i.e. groves, the sections to be included to grove, vegetable gardens and similar areas shall be considered as green areas. Extermination or damage of the green presence in these areas shall be forbidden.

The Protection of Natural and Cultural Presence Act: The Protection of Natural and Cultural Presence Act No. 2863 dated 1983 contains provisions relating forestry. Article 2 of the Act says: "This Act contains the issues relating to movable and immovable, cultural and natural presence of which protection is required as well as the assignments and responsibilities of the natural or legal persons."

Article 3 of the Act describes the definition and abbreviations used in the Act. In this respect, "Natural Presence" is described as the values coming from geologic periods, prehistoric ages or ancient times which may be located on ground, under ground or under water and for which protection is a must in respect of their scarcity, beauty and capacity. In the same Article, the concept of SITE is mentioned in connection with its importance in terms of forestry, and any place where once a significant historical event occurred or a place with designated natural or historical or cultural capacity is described as the area which should be protected as a site. The forests being one of the primary natural resources are today at the first ranks among the ground values, of which protection is required with respect to their capacity and beauty. The forest areas having specific capacities may be considered as natural SITE areas.

Consequently, the general and special Act governing forests must be applied in complementary basis.

In Article 6 of the Act, cultural and natural items, for which protection is a must are enumerated with the samples of trees, group of trees and similar immovable natural presence with specific qualities.

Article 10 with the heading of Authority and Administration, says “cultural and natural, immovable presence of which possession is under the other public organization and establishments shall be utilized and protected by these institutions pursuant to the provisions of the Act.”

Forests, as said in the Constitution, shall be under the supervision and surveillance of the State. The General Directorate of Forest is in a status of a holder of forests. Consequently, the utilization and protection of the forests, immovable natural presence, shall be carried out by the Forest Administration with respect to the Act of Protection of Cultural and Natural Presence in compliance with the orders and prohibitions in this Act.

The Shore Act: The objective of the Shore Act No. 3621 dated 1990 is to establish the essentials relating to the utilization of shores in favor of the public. Implementation at some points overlaps with forestry. On the shores along which State holds supervision and surveillance, a forest cover may also exist. In such a case, the sections which are not conflicting with the Shore Act shall be applied on the basis of Article 3 regulating exceptions. In case of a conflict, the provisions of the Act of Shore shall be applied.

The Land Hunting Act: The Act No.3167 dated 1937 regulates the hunting performed by means of any instrument of beneficial or detrimental animals in wild life in Turkey. Forests constitute areas where wild animals live. An organic connection between the two acts is easily to be seen.

Article 8 of the Act prohibits hunting in specific areas. According to paragraph c of this Article, hunting is forbidden in public forests before obtaining an approval from the Forest Administration. Despite the Land Hunting Act, the approval from the Forest Administration is requested for hunting in the forests.

Article 16 of the Act with the heading of Maintenance of Hunting Affairs describes the setup of the Central Hunting Commission. As required by the nature of commissions a representative from the Forest Administration is present in the commission, which facilitates the harmony between either organizations or Acts.

Article 20 of the Act governing punitive provisions, provides that Forest Watchmen shall be authorized, in their areas, to capture those acting against the Land Hunting Act together with their materials.

6 OTHER RELEVANT LEGISLATION

Turkish Civil Code: The Turkish Civil Code dated 1943 which may be considered as a significant part of environmental law contains some provisions relating forest.

Pursuant to Article 675 of Civil Code states that anybody, if not prohibited by law, may enter into other party's forest and pasture following custom and habits, and collect and acquire mushrooms and other small vegetal items. But in this provision, what it is dealt with is not State's forest. Approximately 95% of the forests in Turkey are under the possession of the State. The utilization of State's forests is subject to

the conditions clearly set forth in the Forest Act No.6831. Consequently, Forest Act must be implemented.

Article 742 of Civil Code carries the heading of “Forests” and states that anybody with the right of use in a forest may utilize that forest under the framework of a reasonable arrangement.

Some other provisions of Civil Code also involve forests. These articles describe the rules arising from the right of vicinity, stating what should be done and what should not, for anybody when using the property owned. Other provisions that may be linked with forests are about springs and underground waters. These provisions may be applicable only if any spring or underground water is detected in a forest area.

The Encouragement of Tourism Act: The Act No. 2634 dated 1982 contains provisions directly related with forestry and constitutes the basis of many practices relating to forestry. In the Act, the touristic premises are referred, to which may be installed in the forest areas outside of the tourism centers and locations. According to the provision of this Act, the Forest Administrations shall be authorized and responsible for any phase of granting the permission necessary for the prospective touristic premises in forest areas.

The Act About Agricultural Fighting and Agricultural Quarantine: Section 5 of the Act No. 6968 dated 1957 carries the heading of special provisions relating to forests. Article 6 of the Act says : “The fighting against the disease and detrimental seen especially in forests, shall be carried out by the Forest Administration by means of the budget of forest. If the disease and detrimental are both related to forest and agricultural lands, this fighting shall be carried out by the Administration of Forest pursuant to this Act.”

According to Article 37, the fighting against diseases and detrimental detected in a special forests or afforestation areas which may constitute a danger shall be carried out by the Forest Administration.

The Special Provincial Act: In Subparagraph 12 of Article 2 of the Act No.3360 dated 1987, the subjects relating to the constitution of forest, environmental health and protection and forestation are enumerated among the services of The Special Provincial Act.

The Village Act: Article 6 of the Village Act No. 442 dated 1924 regulates the subject of utilization of the goods i.e. pasturage, coppice, summer pasture which are common among villages. In Subparagraph 17 of Article 13, the protection of village wood is enumerated among the obligatory duties of villagers.

Section 5 of Article 36 of the Act with the heading of the duties of headman (the elder of any village), says : “If any fire or flood occur within the boundaries of a village, the headman must gather villagers and attempt to extinguish or encircle. In the same provision, the case of forest fire is examined. Where any forest fire occurs, villagers even if they are outside of the village boundaries, are obliged to assist”.

Municipality Act: The Act No. 1580 dated 1930 assigns to the Municipalities the duty of the protection of forests, arable field, threshing floor, bunch of grape, wood, meadow, pasture and general land against probable damages.

The Act of Shanty: Article 18 relating to the prevention of new construction of shanty houses of the Law No. 775 dated 1966, says “after this law entered into force, inside or outside of the boundaries of Municipality, each and every permanent or temporary structures constructed on lands being under the command and possession of the State, either during construction or after inhabited, shall be promptly exterminated by Municipality or State Police without a requirement for any decision.” As a conclusion that forests are under the command and possession of the State, the Municipality shall play an active role during the extermination of all structures on these lands having no permission, which deemed to be a crime pursuant to the Forest Act No.6831.

The Underground Waters Act: The Act No. 167 dated 1960 regulates the utilization of underground waters detected in forest areas. Underground waters are general waters irrespective of where located. Underground waters found in any forest area shall be under the command and possession of the State. However, any spring coming to surface in a forest area which is deemed to be special water may be utilized. For such utilization, approval from the Forest Administration must be obtained.

The Public Works Act: The Public Works Act No. 3194 dated 1985 provides that settlements and constructions are in compliance with the plan, science, health and environment conditions. The Public Works Act has a direct or indirect influence on forestry. Article 4 of the Act; says “the provisions of this Act not conflicting with the Special Laws shall be applied at the locations to be designated by the Encouragement of Tourism Act; the Protection of Cultural and Natural Presence Act; the Bosphorus Act, the Act About Administration of Greater Municipalities and other special acts being in compliance with relevant provisions of this Act. The Forest Act is one of the special Acts mentioned in the article and provision of the Public Works Act not conflicting with the Forest Act shall be applied in the locations to be designated by the Forest Act.

Article 52 of the Public Works Act addresses the permission for construction to be examined in terms of the Public Works Act. According to this Article, excluding the special forests, which were created by way of planting, special forests may not be divided among their heirs and assigned to the other parties with parts less than 500 hectares. However, pursuant to Article 17 of this Act, constructions may be carried out in areas of some special forests provided that 6% of the horizontal area is not exceeded and relevant permission obtained. During the construction, the maintenance of natural features of forest areas shall be taken into consideration.

Linkages between the Forest Act and the Public Works Act can be seen without difficulty considering the wording of horizontal areas and the construction in accordance with Planning of Public Works. The concept of horizontal area is Floor Area Coefficient (FAC) which is described in the Public Works Act and the same article also contains the concept of “the construction in accordance with the Planning of Public Works” which means that the provisions of the Forest Act must be applied with respect to the Public Works Act.

The Mining Act: The Mining Act No. 3213 dated 1985 contains provision relating the mining activities in the areas of forest and afforestation. According to the Act, mining activities shall be subject to approval on the basis of relating provisions at the places near to site areas, in the areas of forest and afforestation, or at the forbidden military zones.” The provision refers specifically to the Forest Act. The case of mining

activities in forest areas, it is regulated by Article 16 of the Forest Act No. 6831. Pursuant to Article 16, the approval of the Act of Forest is a must in order to obtain a certificate and privilege for detection or operation of mining wells within the boundaries of State's forests.

Article 5 of the bylaw About Allocation of Forest Areas which is effected on the dated of 1995, regulates the essentials and procedures relating the implementation of mining approvals. According to this Article; if any area of petrol or mine detection and operation occur within the boundaries of State's forests, the approval of the Ministry of Forest is required.

The Act About The Organization and Assignments of the General Directorates of State's Meteorology Affairs: Article 2 of the Act No. 3254 dated 1986 is related to forestry. According to this article, the administration shall be responsible for providing meteorological services to the organizations and establishments relating to agriculture, forest, tourism, public works, energy, health, military forces and other organizations and establishments which are deemed necessary; and to carry out meteorological services to be assigned by international agreements.

The Forest Administration must cooperate with the General Directorate of State's Meteorological Affairs on meteorological data, which have particular importance for forest fires. This subject is expressly specified in the Act.

The Act About the Organization an Assignments of the Ministry of Energy and Natural Resources: The No. 3154 dated 1985 regulates the essentials relating to the foundation, organization and assignments of the Ministry. Article 9 enumerates the assignments of the General Directorates of Mining Affairs and in this respect, the assignments involving the performance of mining activities in line with the principle of the environmental protection. Monitoring and taking necessary measures in coordination with the respective institutions are assigned to the directorates.

7 CONCLUSIONS

Environment is a constituent with many elements. In this respect, Environmental Law is as comprehensive as possible. In the scope of legal regulations, numerous acts, decrees, regulations and bylaws may be taken into consideration. With respect to this study, only basic laws involving the subject are examined to designate essential provisions.

As forests are not separable from environment, the Forest Law is like a complement to the Environmental Law. The regulations governing forests also are at the service of environmental protection. In this respect, the legal regulations in direct connection with forests, i.e. the Forest Act, The National Mobilization and Afforestation Act, the Act about Forest Villagers are dealt with terms of the most basic laws relating to environment. As a result of the examination many provisions are detected in direct or indirect relation with forests. In addition to the Constitution primarily, the presence of these provisions carries great importance in respect of the protection and improvement of forests. In the case that the law relating to forest are insufficient or contain legal vacuums the provisions of environmental law may be utilized.

It may be argued that environmental law is a young field and the environmental law in Turkey is in accordance with the modern considerations, which exhibit the capacities closer to international agreements. Turkey is a country party to many international

agreements relating to environment. The implementation of the provisions of such agreements is closely related to the compliance with legal regulations. From this viewpoint, despite the fact that the Environment Act dated 1983 raises some problems in practice, it exhibits a structure conforming to international conditions in terms of the inclusive provisions. The Forest Act dated 1956, which is still in force, requires amendments in many respects and now has come to the point that it can not meet the requirements.

It is getting difficult to protect the forests, which have been rapidly damaged. In this protection, the Forest Law may be insufficient or may not constitute a full parallelism with international environmental principles. As concluded from the results of the study, the legal arrangements relating to the protection and improvement of forest is not limited to the Forest Law only. In addition to the constitutional provisions, many other provisions seem to be at service of the same objective. For this reason, the presence of a fundamental interrelation between the Forest Law and the Environmental Law should be seen, and both legal regulations must be applied to the acts, procedures and activities relating to forests.

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ECOSYSTEM MANAGEMENT AND PREFERENTIAL PROPERTY TAXES FOR FORESTLAND IN THE UNITED STATES

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ABSTRACT

In the paper we examine if and how existing U.S. preferential property tax programs for forestland are used as policy instruments to promote ecosystem management on private lands. A comprehensive summary of the objectives, structure, and effects of existing tax programs was compiled from an examination of the manner in which these programs impede or facilitate ecosystem management. No existing program incorporates objectives of ecosystem management explicitly into their program statement, but numerous programs have incorporated, either explicitly and implicitly, program goals and management objectives that have commonly been identified as characteristics of ecosystem management. We conclude that preferential property tax programs can play a limited but important role in ecosystem management on private forestlands. However, because of the inherent complexities of forestland ownerships, forest management and ecosystem management, no one policy instrument can be expected to address all of the relevant issues, objectives and conflicts. Rather, the solution is more likely to lie in an array of policy instruments that complement and interact with each other.

Keywords: ecosystem management, taxes, incentives, private forestland

1. INTRODUCTION

The United States Department of Agriculture estimates that there are 736.7 million acres of forest in the U.S., of which 424 million acres are held by almost 10 million private owners. Approximately 336 million acres (46%) are owned by nonindustrial private forest (NIPF) landowners (Birch 1996, National Research Council 1998); that is, by individuals and legal entities such as corporations that are not associated with processing timber.

Successful application of the principles of ecosystem management to this NIPF land base will depend on coordination and cooperation in managing across ownership boundaries. If ecosystem management is to succeed on private lands, the participation and good will of private landowners will be essential.

This paper reports on an analysis of one type of NIPF support program - preferential real property taxes - in the context of ecosystem management. We ask the question, "Do state property tax programs for forestland address ecosystem management, and if so, how?"

2. THE IMPORTANCE OF NONINDUSTRIAL PRIVATE FORESTLANDS

Societal benefits provided by NIPF lands range from tangible market goods to non-market existence value, and include clean air and water, protection of biological diversity, provision of open space and scenic views, and production of timber as well

as non-timber goods. These benefits are substantial. For example, 23% of all NIPF lands are accessible to the general public for recreation, and 45% are open to acquaintances of the landowner. NIPF lands hold 55% of the carbon stored in the continental US and sequester 61 million metric tons annually (Moulton 1996). They are a source of an expanding set of non-timber products such as honey, maple syrup, pine cones and herbs (National Research Council 1998, Best 1995, Sample 1994). In terms of traditional timber production, NIPF lands hold 345 billion cubic feet (48%) of the total inventory of growing stock in the United States, and since 1950 have supplied 47-52% of the total annual U.S. production, including 75% of all hardwood timber (Alig 1990, Sampson 1997). Clearly this is a resource that cannot and should not be ignored or discounted.

The private forestland base is characterized by a small number of large tracts, many but not all of which are owned by forest industry, and a great many smaller holdings that typically are owned by individuals. The number of small holdings is increasing. Between 1978 and 1994, the area in holdings of less than 10 acres increased from 11 million to 16.6 million acres, and the area in parcels of 10-49 acres increased from 28 to 60 million acres. Almost one-third of all private forestland is held in parcels of less than 100 acres.

The expansion of smaller holdings has increased forest fragmentation, and turnover of these lands is occurring more frequently. Fully 40% of all current holdings were acquired since 1978 (Birch 1996). If current trends continue, by 2010 95% of private forest owners will own 150 million acres (38% of all private forestlands) in parcels of less than 100 acres (DeCoster 1998). This fragmentation makes it more difficult to keep land in forest cover and to maintain continuity of management over time.

Many landowners hold their forests for non-timber objectives (Ellefson 1992), and this objective is most common among owners of smaller parcels. In a recent survey conducted by Jones, *et al.* (1995), timber production was cited as a very minor reason for owning forestland. Few landowners are explicitly timber oriented; on the other hand, they are not necessarily opposed to harvesting trees either. NIPF owners generally have similar attitudes towards the environment as the general public, and it is clear that they are committed to environmental objectives. Large numbers support regulations to encourage ecosystem management if they can be assured that the regulations would be applied fairly and would achieve environmental objectives (Jones, *et al.* 1995).

Birch (1996) estimated that only 500,000 NIPF owners have management plans. Even if they do elect to manage for timber, landowners face many obstacles including lack of technical information and skills; perceived and real risks associated with fire, insects and disease; lack of capital and long payback periods on capital investments; and tax impediments (Ellefson 1992). In recognition of these problems, a number of federal and state incentive programs have been developed to encourage management of NIPF lands.

Historically, government programs and policies have been driven by a perceived critical need to increase timber production from NIPF lands. Programs often ignored landowner objectives, goals and reasons for owning forestlands (Marler and Graves 1974, in Egan). Some of the earliest research recognized that forestry programs needed to target non-timber forest values if they were to be effective (Barraclough 1949 in Egan 1997), but these findings were rarely incorporated into the design of forestry programs in a serious way.

3. ECOSYSTEM MANAGEMENT

Over the past three decades, there has been a dramatic change in American views, values and attitudes towards forests and their management. There is now much more focus on ecological and environmental health of forestlands, and there is an ongoing debate over how to manage forestlands to respond to these changing views. The newest and predominant term in forest and natural resources management is “ecosystem management,” a management style that focuses more on ecological health and sustainability than on commodity production.

What exactly is ecosystem management? The term has proved difficult to define; indeed, the definitions are as varied as the players involved in the policy debate. Conservationist Edward Grumbine has defined it as management that: “...integrates scientific knowledge of ecological relationships within a complex sociopolitical and value framework toward the general goal of protecting native ecosystem integrity over the long term (Grumbine, 1994).” Grumbine identifies five crucial elements of ecosystem management: 1) maintenance of viable populations, 2) ecosystem representation, 3) maintenance of ecological process, 4) protection of evolutionary potential, and 5) accommodation of human use, as limited by the first four goals. The American Forest and Paper Association defines Ecosystem Management as: “... a resource management system designed to maintain or enhance health and productivity while producing essential commodities and other values to meet human needs and desires within the limits of socially, biologically and economically acceptable risk (in Christensen, et al. 1996).” It has also been defined as “a collaborative process that strives to reconcile the promotion of economic opportunities and livable communities with the conservation of ecological integrity and biodiversity (Keystone Center 1996).”

At least 18 federal agencies have produced policy statements on ecosystem management, and the Forest Service, Bureau of Land Management, Fish and Wildlife Service, Department of Defense, National Oceanic and Atmospheric Administration and several other agencies all have policy statements adopting ecosystem management. Jack Ward Thomas of the USDA Forest Service described it in 1996 as “... the integration of ecological, economic, and social factors in order to maintain and enhance the quality of the environment to meet current and future needs (Thomas 1996).”

While there is no consensus on the definition of ecosystem management, there are varying degrees of emphasis that favor either ecological processes or resource production. Perhaps this dichotomy will never be overcome; the schism between the anthropocentric and biocentric views may never be resolved totally. There is, however, consensus on the need to address and acknowledge the ecological, environmental and sustainability issues in forest management. Whether a consensus develops or not, the term is being used widely and the concept is now shaping the management paradigm.

Rather than attempting to produce a uniformly accepted definition of ecosystem management, we focus on the characteristics of ecosystem management for which there does seem to be general agreement, and seek to determine if current preferential property tax programs incorporate or address these principles. These characteristics include:

- a large scale or ecosystem view,
- long term sustainability,
- minimizing fragmentation of habitats and management across boundaries,

- promoting native species,
- protecting rare, sensitive and ecologically important species, habitats and ecosystems,
- maintaining or mimicking natural ecosystem dynamics, functions and processes,
- maintaining or mimicking naturally occurring structural diversity,
- protecting genetic diversity and evolutionary potential,
- restoring ecosystems, communities and species,
- improved monitoring for impacts on biodiversity and ecosystem health,
- management that is adaptive and responsive to changing knowledge, and
- recognizing societal needs and human activity as part of the ecosystem and management plan.

4. ATTITUDES OF LANDOWNERS TOWARDS ECOSYSTEM MANAGEMENT

Several recent surveys have attempted to determine the attitudes of private landowners towards ecosystem management, and there is preliminary evidence to suggest that they are open to this approach. Brunson, *et al.* (1996) conducted a survey of NIPF landowners in 11 states in 3 regions - Southeast, Midwest and Interior West. Landowner characteristics were very similar to national averages reported by Birch; that is, landowners wanted their land to preserve natural beauty, provide personal recreation and wildlife habitat. Most respondents received no income from the sale of forest products, attesting to the low priority many place on timber production, and fewer than 5% earned more than half of their income from forest products (Brunson, *et al.* 1996).

Brunson, *et al.* found that in all 3 regions, respondents indicated that they would favor the environment over economic considerations if these were in conflict. Landowners in all study regions expressed a positive attitude towards ecosystem management, both in general terms and when asked about including their lands in ecosystem management program. More than half of the respondents were interested in learning more, and very few rejected the concept of cooperation across ownerships outright. Many landowners did qualify their participation in such a program upon fulfillment of certain requirements such as involvement of most neighbors, protection of commodity production and non-involvement of the federal government (Brunson, *et al.* 1996). Preferred methods to enhance participation were tax incentives, technical assistance and subsidies; as might be expected, regulatory solutions were not popular

Another survey of private landowners by Cubbage, *et al.* (1996) was conducted in an area where a timber corporation was attempting to initiate ecosystem management on its own lands and wanted to incorporate surrounding private landowners. The landowner profile differed from the national trends in size of holdings (the average private ownership size in the area was 436 acres) and in reason for ownership - 57% of forestland owners owned their land for timber production. The landowners had historically shown little interest in opening their land to the public or in cooperative management with neighbors. Most landowners were not familiar with the term ecosystem management *per se*, but they were sympathetic to management for non-timber benefits (75%), longer management cycles (50%), adaptive management and assessing impact of management decisions on neighboring and regional lands (40%). Additionally, over half of the respondents indicated that they were interested in ecosystem management, but would need more information before agreeing to

participate. Typically, landowners had conditions for their participation in these management systems, including explicit protection of commodity production and compensation for land that would be removed from production. They were also wary of outside influence, specifically of being forced to incorporate public interests and desires into their land management. Nevertheless, these are relatively encouraging results from landowners who stand to lose the most in terms of immediate returns and timber harvests if their lands were not managed exclusively for timber in the future.

As the field of forestry debates and incorporates the principles of ecosystem management, one is led to inquire into the manner in which these principles might be applied to private lands, especially NIPF lands. Preferential property taxes have proven to be one of the most popular policy tools used by state governments in efforts to affect the use and management of private forestlands.

5. REAL PROPERTY TAX SYSTEMS

In the United States, timber is considered a real asset; that is, it is considered to be a capital improvement similar to a buildings and taxed as such. But because timber is an immature asset that does not produce annual income in the manner of a rental or office building, the cumulative impact of the annual property tax is highly discouraging to retaining timber on land. In recognition of this disincentive, all U.S. states have enacted some type of alternative system for taxing forestlands. There are, however, considerable differences in programs across states. Some set the assessed value of forestland at a fixed value; others levy a fixed tax per acre. Other states have gone with yield taxes, and still others employ use-value or productivity taxes. In addition, many of these programs incorporate combinations of the types mentioned above.

With the universal availability of alternative property tax programs for forestland, but great variation among these programs, they seemed an ideal vehicle for examining how states have or have not incorporated the principles of ecosystem management. We reviewed state statutes, administrative regulations and state publications relating to preferential state property tax programs for forestland. Materials were collected by contacting and requesting items from state forestry agencies, searching official state web-sites and library searches of published state statutes and administrative rules. We prepared summaries of key program characteristics and components, but do reported them here. Instead, we focus on our examination of program materials for evidence of incorporation of principles of ecosystem management listed previously.

6. RESULTS

No existing program incorporates a statement of ecosystem management explicitly into its objectives. Nevertheless, numerous programs have incorporated, either explicitly and implicitly, program goals and management objectives that have commonly been identified as characteristics of ecosystem management; e. g., sustainability; ecosystem dynamics, ecosystem functions and processes; structural diversity; impacts on ecosystem health; adaptive management; restoration; and societal needs. These principles are included indirectly in requirements for management plans and practices; e.g., in provisions that require “best management practices” or management for non-timber products.

We turn now to discussion of each of the principles of ecosystem management and the manner in which they are reflected in tax programs.

Large scale or ecosystem view: No state addresses the issue of ecosystem scale or size directly in its property tax program. The closest feature of existing programs relates to limits on the maximum area of land that can be enrolled. Some states, such as Wisconsin, have no limits and industrial landowners have enrolled thousands of acres. This enhances the opportunity for taking a large-scale view of forest management, but does not require it. On the other hand, states like California, Georgia, Tennessee, Idaho and Oregon do place an upper limit on acreage that can be enrolled in their tax programs. These limits range from a 1,500-acre maximum in Tennessee to a 5,000-acre maximum in Oregon and Idaho. A 1,500 acre holding is still quite large if it is contiguous, but often it is not and the upper limit inhibits taking a large-scale view of management. Limitations on area that can be entered into tax programs probably have more to do with the issue of taxpayer equity than with ecosystem management; *i. e.*, in many states there is a presumption that larger landowners should not be reaping the bulk of the tax reduction benefits.

Long term sustainability: A number of states - *e. g.*, Vermont, West Virginia, New York, Montana, Missouri, Maine and Mississippi - have indirectly incorporated this principle into program goals or provide program descriptions that include wording relating to "retention of forestlands" and "maintaining long term productivity." For example, the declared public policy of the State of Maine is "...that the public interest would be best served by encouraging forest landowners to retain and improve their holdings of forest lands upon the tax rolls of the State and to promote better forest management by appropriate tax measures..."(Maine, sec. 36-572.). In Montana the legislative intent of the "Forest Land Tax Act" is "...to encourage landowners of private forest lands to retain and improve their holdings of forest lands, to promote better forest practices, and to encourage the investment of capital in reforestation..." (Montana, sec. 15-44-103(1)). However, a careful reading of these goals reveals that they are typically stated in terms of the traditional sustained timber yield rather than ecological sustainability. For example, in Montana forest land is defined as land that is "...capable of producing timber that can be harvested in commercial quantity and is producing timber..." (Montana, sec. 15-44-102(5)).

Minimizing fragmentation of habitats and management across boundaries: No state addresses cross-boundary management in their property tax program, but numerous states such as Delaware, Connecticut, New Hampshire, Rhode Island, and Tennessee indicate that they expect their programs to prevent forestland being converted to other forms of land use. If this were the case, the tax programs would help reduce forest fragmentation, but agricultural and forest tax programs are generally viewed by policy analysts as having little retarding impact on land use conversion decisions (Brockett and Gebhard 1999; Parks and Quimio 1996; Anderson 1993).

Promoting native species: No state tax program addresses the issue of native species.

Protecting rare, sensitive and ecologically important species, habitats and ecosystems: No state has any special provisions or treatment of land of this type within forestland tax programs. Some states do have such provisions under open space or conservation categories, but forest management is generally prohibited in these areas. To the extent that forest landowners whose lands are entered in forest tax programs must comply with best management practices relating to these considerations, including those relating to rare and endangered species, there is a positive link to ecosystem management. However, this link is not unique to the tax programs in that other landowners are typically required or encouraged to adopt the same practices

Maintaining or mimicking natural ecosystem dynamics, functions and processes: These issues are addressed at best indirectly in some states through required management plans, required watershed management, erosion control management or allowable management goals. Because some statutes have been written with general language and use terms such as “best management practices,” “watershed management” and “sound silviculture,” the statutes are open to changing interpretations of these terms. As the field of forestry evolves and addresses the ecosystem dynamics, functions and processes, statutes can incorporate these new interpretations. Acceptable management in states that require approved management plans, in states such as Colorado, Indiana, Maine or West Virginia that require enrolled lands to be managed according to “best management practices,” in states such as Rhode Island or Illinois that require “watershed management,” and in states such as Ohio that require enrolled lands to follow “sound silvicultural practices,” can evolve and change without requiring changes in the statutes. The interpretation and implementation of terminology by state agencies is critical. States such as Wisconsin, Indiana, Massachusetts, and Vermont allow for non-timber and non-production management, but these are usually subordinate to production objectives. These states accept wildlife or aesthetic management goals, allowing for more flexible management plans and strategies which incorporate extended rotations and increased residual basal areas. These management techniques can be more sensitive to ecosystem dynamics, functions and processes.

Maintaining or mimicking naturally occurring structural diversity: As with the previous characteristic of ecosystem management, these issues are indirectly addressed through required management plans, required watershed management, or allowable management goals. No state has explicitly required management that maintains or mimics structural diversity, nor has any state attempted to define desirable structural diversity. But in a state such as Wisconsin that recognizes a landowner’s non-timber management goals for recreation, watershed protection and wildlife habitat, that recognition can translate into management that is more flexible. This allows for alternative management practices such as modified timber rotations (*i. e.* longer rotations), partial cuts that can replace clear-cuts, and the modification of residual basal area in single tree and partial cut practices (Tlutsy and Jordahl 1988). In addition, Wisconsin’s Managed Forest Law allows up to 20% of the stand to be managed for nontimber production, allowing even more management flexibility (Wisconsin 1991). Again, interpretation and implementation by the administering state agency are the decisive factors in such indirect and implied links.

Protecting genetic diversity and evolutionary potential: This principle does not seem to have been addressed by any state.

Restoring ecosystems, communities and species: This principle has at most a tenuous link to requirements of adequate regeneration after harvests in states such as Colorado, Illinois, Iowa, Maine, Rhode Island, and West Virginia. However, these states offer little if any guidance on the type of regeneration. None requires the restoration of ecosystems, communities or species. The issue of regeneration is probably adequately, if indirectly, addressed in all other states in their program eligibility requirements for forest cover. That is, if a state requires that the land be forested to enter the program, we can probably safely infer that if a landowner clears the land without any plans for regeneration then the land will be removed from the program. Therefore the program requires regeneration without explicitly requiring it.

Improved monitoring for impacts on biodiversity and ecosystem health: This principle has been partially addressed in some states, such as Indiana, Iowa, New Jersey, Oregon, and Vermont, where lands are periodically inspected. However, inspection is usually done in order to ensure that lands still qualify for the program; e. g., that they have not been converted to another use, or that landowners are following the required management prescriptions, rather than to monitor biodiversity and ecosystem health.

Management that is adaptive and responsive to changing knowledge: This has been partially addressed in states such as Wisconsin, Colorado, Maine, Vermont, New Jersey, Ohio, California and Indiana that require management plans. Some states, such as Colorado, Illinois and New Jersey, require annual reviews and updates of management plans, while others such as Ohio require 5-year review and updates and yet others like Maine and Vermont, require 10-year review and updates. Depending upon the individual administering agencies, this process of review and update can allow for flexible, adaptive management that responds to changing knowledge.

Societal needs and human activity are recognized as part of the ecosystem and management plan: This principle is addressed, but not in the context of ecosystem management. By offering preferential property tax programs for forestlands, states implicitly recognize the societal benefits of forests. Some states are more explicit in recognizing societal benefits gained from forest cover. These are generally stated in program goals or statutory findings, either in the form of timber production (Maryland, Wisconsin, Idaho Tennessee, Vermont), economic benefits (Maryland, Nevada, Wisconsin, Tennessee), provision of open space (Delaware, Rhode Island, Vermont), or enjoyment (Maryland, Nevada, Wisconsin, Tennessee, Vermont).

7. DISCUSSION

Preferential property tax programs for private forestland have an important, but probably limited, role to play in promoting ecosystem management because the property tax is a rather blunt policy tool. Particularly constraining is the constitutional requirement of uniform treatment of land, which usually limits the ability of states to target tax relief at specific rare or threatened forested areas. Tax policy is also largely ineffective in addressing cross-boundary management issues and in preventing conversion of forestland to other uses.

Despite the relatively few "strings" associated with state forestland tax programs and the significant tax reductions they can provide, the programs seem to have limited appeal to landowners. Landowners resist enrollment for a variety of reasons: some feel that they lose control over land use decisions or dislike the period of time lands are required to be enrolled in the program (Wisconsin 1991). It is difficult to design a program that is attractive to landowners while also protecting the public interest in forestlands. Without at least some binding requirements such as implementation of management practices or minimum enrollment periods, programs can be abused by land speculators seeking tax shelters or by a landowner's poor management.

Property tax programs also need to avoid creating incentives for poor management. At least one state - Wisconsin - has experienced problems with yield taxes because some landowners harvest their forest destructively immediately before enrolling their land to avoid the yield tax on timber harvests (Wisconsin Department of Natural Resources Private Forestry Study Team 1999). Other programs offer flexible provisions for withdrawing, subdividing and developing portions of enrolled parcels that can be abused. For example, there is no penalty in West Virginia, Mississippi or North Dakota for withdrawing from the tax program and developing the land. Texas,

Utah, Alabama, Tennessee and Delaware allow landowners to withdraw portions of an enrolled plot for development. Landowners pay a penalty only on those withdrawn portions while the rest of the plot can continue to receive preferential tax treatment. Maryland and Pennsylvania allow portions of enrolled plots to be withdrawn and developed for family members penalty free. These programs also need to be analyzed in the context of other tax reduction programs, most notably farmland programs. Some farmland programs offer either increased tax breaks or less restrictive management requirements than do their forestland counterparts, encouraging conversions or pasturing of forestland. For example, Wisconsin's Agricultural Use Value Assessment Law of 1995 has far less restrictive management requirements than the state's Managed Forest Law and no withdrawal penalty. Forestland owners may be drawn into the program and either convert or pasture their forests (Pingrey 1999).

8. CONCLUSIONS

State property tax programs can be effective in promoting sound management on private lands and incorporating some of the principles of ecosystem management. Many programs do this to a certain extent, but management plans, objectives and practices could be modified to address ecosystem management more effectively. In the end, though, there is a limit to what can be accomplished in terms of promoting ecosystem management using property tax programs.

Promotion of ecosystem management will require an array of policy tools, of which property tax programs might be one component. However, effective policy tools need to be flexible but also more precise than property tax programs. Income tax deductions or cost-share programs for management practices that incorporate the principles of ecosystem management are examples of such more focused tools.

States might also develop programs to promote cooperative forestry operations that would address the issue of managing across boundaries. Managers of state, county and local landholdings could more actively cooperate with adjoining private landowners. States could also offer support to private land trusts. These organizations have proven to be effective in the preservation of important natural and managed areas, and they can also reach a class of landowners who are reluctant to work with government programs. There are a host of other programs that can be coordinated in order to achieve ecosystem management, such as purchase of development rights (PDR), transfer of development rights (TDR), and comprehensive regional planning. States can craft their own strategies to incorporate a variety of different programs in order to achieve the goals of ecosystem management.

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THE LATVIAN NETWORK OF LEGISLATION ADDRESSING SUSTAINABLE FOREST MANAGEMENT AND NATURE CONSERVATION

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1. INTRODUCTION

Latvia has quite old forest conservation traditions. Some forests in Latvia as important areas from nature conservation point of view had been protected already during soviet time or even from beginning of twenty's century. Forests were used to protect dunes from erosion already in the middle of 19th century (Zviedris, 1949) Simultaneously forests had and still has enormous economical significance.

Forests cover about 2.9 million ha or 44% of total land area of Latvia. Distribution of forests by regions is not even and comprises from 29 to 60%. Coniferous – Scots pine and Norway spruce cover about 60% of the forest area, the rest are deciduous – birch, alder, aspen etc. Among them most wide spread is birch - 28%. About half of the forests are growing on wet mineral or peat soils, from those about half is drained. Forest management has always been an integral part of rural life in Latvia, at present is must be considered to be one of the most essential sources of revenue for the national economy. Since the forming of private forestry business during the privatization process of state forestry enterprises, the forest industry – harvesting of timber and the subsequent processing – has become one of the most active sectors of the Latvian national economy. Expressed in economic terms, export of timber and timber products in 1998 made up 33.5% of the total Latvian export. The forest sector is the only sector of the national economy having a positive import - export ratio (in 1998 - 373 million Ls (1USD =0,6Ls). (Anonymous, 1999b). At present the forestry sector is the main employment provider in rural areas, providing about 50,000 direct jobs and about twice or three times as many indirect jobs.

Latvia likewise other Central and eastern European countries is undergoing political and economic transition toward democratic and market oriented social system. This process has serious impact on its legal, structural, environmental and social conditions including management and conservation of forests. As result of land reform, an extensive layer of the private forest owners has formed. According to presently available data (Anon, 1999a) 1.27 million hectares of forest lands (44% of the total area of forest land) is privately owned.

The need to review the basic principles of Forest Administration and forest management has caused a wave of reforms not only in Central and Eastern European countries but also in Western European countries with a long experience in democracy and market economy. Considering the multifunctional role of forests on the society as a whole and the life of every individual, the forestry sector finds itself in the center of attention of international governmental and non-governmental organizations, which is especially important for Latvia during the integration process into the European Community.

2. EXISTING LEGAL FRAMEWORK

2.1 Considerations for analysis

All national legal acts can be divided into three levels – acts (laws) passed by Parliament, regulations adopted by Government, local governments (municipalities) – obligations for everyone in special territory and provisions adopted by other public institutions – Ministries, State Services etc. Last ones usually are obligatory to employees of the special organizations. We analyzed only those most relevant national legal acts which were in force in September 1999. International agreements, conventions etc., come in to force only after their acceptance by Parliament or Government, thus afterwards are binding for every one. We analyzed not only the accepted international "acts" but as well the potentially binding ones. All relevant international acts are divided into three groups – global, pan- European and regional level.

For analysis of the existing national legal framework we divided legal acts in the two main groups (see box. 1). General legislation (for example Civil Law etc.) and Environmental legislation. The last one was divided in to the two subgroups: (of course, this division into 2 parts is relative). First - legal acts regulating whole natural environment as one complex (biosphere) such as laws "On Environment Protection", "On Specially Protected Nature Territories" etc. Second - forest legal relations which are an independent part of legal relations generating, changing and terminating within the area of forest management and utilization e.g. laws "On Forest Management and Utilization", "On State Forest Utilization" etc.

Box 1: Basic National Legal Acts Related to Forests, Environment Protection and Nature Conservation

Environmental Acts		Other General Acts
Forest Acts	General and other Sector Environmental Acts	
Law on Forest Management and Utilization	Law on Environment Protection	Civil law
Law on Utilization of State Forests	Law on Specially Protected Nature territories	Law on Land books
	Law on Protective Belts	Other laws
	Law on Planning of the Territorial development	
Set of Regulations issued on basis of these Laws by Cabinet of Ministers	Set of Regulations issued on basis of these Laws by Cabinet of Ministers	Set of Regulations issued on basis of these Laws by Cabinet of Ministers

Thus, pursuant to the method of study normative acts of the Forest Sector which regulate general issues of forest management - utilization of forests, management of forests, guarding and protection of forests, management of hunting, liability for violation of regulations on forest management and utilization were analyzed as well as normative acts of other legal sectors which address environmental protection and other issues related to the management of forests and forest lands, including ownership, tenure, user's rights in the forest, civil transactions involving forests and their registration in the Land Books, restrictions of user's rights, easements, etc.

We reviewed also the compatibility of the normative acts to the international agreements, potentially binding directives of the European Union.

2.2. Legal framework for nature conservation in forests at international scales

Global scale: Most relevant to Latvian forestry sector is *The Convention on Biological Diversity* which was signed by Latvia together with other 152 countries at the United Nations Conference on environment and development in Rio de Janeiro in 1992. Among other things the participating countries adopted a "*Non-legally binding authoritative statement of principles for a global consensus on the management, conservation and sustainable development of all types of forests*". This "Forest Declaration" outlines basic principles for forest protection and management and has since the Rio conference formed a broadly accepted international framework for regional and national initiatives for development and implementation of sustainable forest management practices. The Latvian Parliament accepted this convention in 31.08. 1995 adopting Law on Convention on Biological Diversity in Rio de Janeiro June 6, 1992.

Pan - European scale: At Pan- European scale there are three main issues, which directly or indirectly are related to forests - Bern Convention, Ministerial conferences "On protection of forests in Europe" and "Environment for Europe".

The *Bern convention* (1979) obliges participating countries to conserve wild flora and fauna and their habitats. Some of those species are forest dwellers and consequently some forests are defined as to be under protection. The Bern convention comes into the force after Parliament issued Law on Bern Convention in 17.12.1996).

At the second *Ministerial Conference on the Protection of Forests in Europe* in Helsinki the Ministers responsible for forests adopted a General Declaration and four new resolutions among them:

- H1 General Guidelines for the Sustainable Management of Forests in Europe.
- H2 General Guidelines for the Conservation of the Biodiversity of European Forests.

At the third conference held in Lisbon in June 1998 among other things were adopted a resolution on 6 criteria and indicators for sustainable forestry and a set of operational guidelines for sustainable forest management. It was also decided that a "*Work-Program on the Conservation and Enhancement of Biological and Landscape Diversity in Forests*" should be initiated as a co-operation between the Ministerial Conferences on Forest Protection in Europe and the Pan-European Biological and Landscape Diversity Strategy (PEBLDS) agreed by the Environment Ministers at the third Ministerial Conference "Environment for Europe" held in Sofia October 1995.

The two Ministerial Processes share common set of goals and there are similarities between the objectives expressed in the Helsinki Resolutions and in the PEBLDS. The emphasis on landscape in PEBLDS provides a link to forests that are a major element of European landscapes. Similarly, the link between the two Processes is a trade-off, rather than a perfect match. (Anon., 1997).

Regional scale (Baltic 21, EU): In the future Latvia if Latvia is going to join European Union it has to accept EU directives. Among them most important in the aspect of nature conservation are *EU Birds Directive* (Directive 79/409/EEC) on the conservation of wild birds and establishes a scheme for the protection of migratory wild birds and their habitats and so called *Habitats directive* (Directive 92/43/EEC). The latter could be recognized as a detailed implementation of the Bern Convention - in the EU, as in many ways the Habitats Directive has the same content as the Bern Convention. Areas assigned under protection according to these directives will form the network of protected areas called "Natura 2000" sites.

At the Visby Summit of environmental ministers (Sweden 1996) it was decided to elaborate a regional Agenda 21 (*Baltic 21*), which lay down an action plan for the sustainable development of the Baltic Sea region. The program is sector oriented, and the plan for the forestry sector aims to "focus on sustainable forestry practices which would contribute to preservation of biodiversity".

The Baltic 21 Sector Report on Forests outlines a rather detailed action program the forest sector. One important topic touched upon in this connection is the environmental aspects of sustainable forest management, including among other goals,

- Conservation of biological diversity by appropriate forest management practices and necessary measures outside the forest sector,
- Identification of key biotopes and habitats of special ecological significance, and adaptation of forest management practices for these special areas,
- Collaboration and share of responsibility between environment and forestry sectors, for setting of operational goals for the conservation of biological diversity,
- Having a network of different types of forest conservation areas that corresponds to the domestic and international conservation objectives,
- Both the quantity and quality of the protected areas should be considered in setting objectives for the protection of forests,

It has to be mentioned that Baltic 21 is not a new legal act. It only compiles recommendations accepted by other international "documents".

2.3 Legal framework for nature conservation in forests at national scale

Policies related to forestry and nature conservation: Latvia has formulated set of national policies, which directly or indirectly affects forestry sector. As most important have to be mentioned forest policies, environment policies and territorial planning strategies.

On April 28, 1998 the Cabinet of Ministers approved the *Latvian Forest Policy*, which provides for a long term development strategy, tactics and basic principles of the forestry sector. Based on these considerations, the Latvian forestry policy has been given a general objective - sustainable (non-depleting) management.

One of the most important tools for implementing the policy is system of normative acts to be established.

The *National Environmental Policy Plan for Latvia*, 1995, defines decreasing biological diversity as a priority problem requiring immediate solutions.

Concept of National Spatial Plan of Latvia, 1998 determines goal, objectives, structure and guidelines for National Plan and spatial/physical planning process in Latvia. As one of the goals - environmental protection, rational use of territory and nature resources, management and protection of nature has been set out. Protected nature territories of national significance including territories of nature network should be specified in National Planning process.

Forest management: The most important legislative acts regarding forest land are the Law On Forest Management and Utilization (1994), Regulations on Final Cutting and Intermediate Cutting Regulations (Cabinet of Ministers 1996), as well as Final Cutting Provisions (1997) and Thinning Provisions (1997) accepted by the Ministry of Agriculture, State Forest Service. These normative acts were developed to ensure long-term sustainable use of forest resources.

Law "*On Forest Management and Utilization*" is the main act on forest which describes basic principles of forest management, utilization and protection. Object of the law are forest covered and non-covered lands awarded for use or into property for needs of forestry (Forest Fund).

Main goals of the law are:

- 1) to provide protection of the forest as ecosystem and regeneration of the forest as resource.
- 2) to regulate basic principles of forest management and utilization.
- 3) to protect the rights of forest managers and users.

Maintenance of Forest as ecosystem is described in the sections, which regulates principles of the forest management, utilization, regeneration and protection. Law describes principle of division into categories, depending upon their economical and ecological significance.

Utilization of State owned forest is regulated by "*Law on Utilization of State Forests*" (1995) Application of the law relates only to state forest fund. The objective of this law is to preserve and enlarge public forests as a guarantee of the whole Latvia forest cover and to provide legal basis for ecological properties protection and utilization in relation to forest resources utilization.

Due to this law the Latvian Government undertakes to ensure execution of principles provided by international agreements binding for Latvia in the utilization of state forests. This law restricts the procedure of alienation of protected and restricted management forests.

More detailed description of division of the forests into the categories is given in the regulations "*On Division of Forests in Categories and Selection of Specially Protected Forest Areas*" (1994). These regulations determine procedure how Latvia's forests are included into categories and how specially protected forest areas are selected.

Category I - protected forests:

- forests in the nature reserves, national parks and nature restricted areas (in compliance with lists approved in legislation acts and other normative acts);
- anti-erosion forests in 1-5 km wide belt along the Baltic Sea and Gulf of Riga following natural borders of erosion-endangered soils;
- green zone forest parks (urban forests)- forests around all Latvia cities, forests within cities administrative borders and forests adjacent to cities.

Category II forests - restricted management forests:

- forests in the protected landscape areas, green zone forests (suburban forests) -forests around largest Latvia's cities and ecologically unfavorable cities (environment protection forests – forests in those territories supervised by Forestries which are located at the Baltic Sea and Gulf of Riga and are not included in category I or other forest of category II

Category III forests - commercial forests - are all the rest forests in Latvia.

In forest category II and III can be singled out the specially protected forest areas - forest groves, forests on valley slopes, forests along banks of rivers and lakes, etc. There are totally 26 different titles.

“Final Cutting Regulations” (1996) and *“Intermediate Cutting Regulations”* (1996) are elaborated to provide execution of Latvia's international commitments on sustainable forest management and to increase amount and value of wood obtained from unit of area, to increase ecological stability and stability against unfavorable environment conditions and to determine a unified forest management and utilization procedure. These regulations set restrictions for utilization rights depending upon forest protection category (subcategory and kind of specially protected forest area).

Environment protection and Nature Conservation: Law On Environment Protection (1991) is a “umbrella” law in environment protection regulating the whole environment protection system and its basic requirements. Objective of this law is to create such an interaction mechanism between of the society and nature, ensuring environment protection, efficient economy and the people's right to enjoy high quality environment.

Basic principles of the law are ensuring favorable life environment, coordination of society's economic and ecology interests, coordination of territorial, national, state and international interests in environment protection and natural resources utilization. Thus the law regulates basic principles of natural resources utilization and requirements of surrounding environment protection.

The object of the law is environment and including nature resources: land, subsoil of the earth, soil, water, atmospheric air, flora and fauna, specially protected nature objects and territories. Thus also the forest is treated as renewable nature object.

The law determines that natural resources utilization laws regulating and restricting natural resources utilization are included in the branch of environment protection laws.

Therefore the aforementioned law "On forest management and utilization" has to be included as such.

In the chapter on Nature protection the law defines specially protected territories, the procedure of management and utilization, is further regulated by the law "On Specially Protected Nature Territories". The law "On Environment Protection" determines that the state especially protects endangered and rare species and biotopes both in the national and international scale, in order to fulfill obligations of those international agreements where Latvia is a participant. However, the biotope is not an object of the law "On Specially Protected Nature Territories". One could conclude that protection of biotopes, likewise legal protection of specially protected forest areas currently in the legislation is an unsettled issue.

The goal of the law on *Specially Protected Nature Territories* (1993) is to determine basic principles of the Specially protected nature territories and a procedure of their establishing, ensuring of existence, management and control. The aim is to unite state, international and regional and private interests in protecting natural territories establishing, preservation, maintenance and protection.

Objects of the law are specially protected nature territories (hereinafter referred to as protected territories). Protected territories are divided into the following categories:

1. nature reserves,
2. national parks,
3. biosphere reserves,
4. nature parks,
5. nature monuments,
6. nature preserves, and
7. protected landscapes areas.

The legal regime of protected territories is detailed by the Cabinet of Ministers regulations.

Nature reserves, national parks and biosphere reserves are established by the Parliament by adopting a special law. Protected landscape areas, nature preserves, nature parks and nature monuments are established by the Cabinet of Ministers. Nature preserves (Natural restricted areas), nature parks and nature monuments, which are significant for nature preservation in the particular territory, can be established also by local governments (municipalities).

The law states that in establishing of the protected territories in Latvia should be taken into account recommendations of international conventions and international environment protection organizations.

Regulations of General Protection and Utilization for Specially Protected Nature Territories (1997) set a general order of specially protected nature territories' protection and utilization in compliance with categories of the protected territories, admissible and forbidden kind of activities in the protected territories.

Law on Protective Belts (1997) sets that protective belts - definite areas the task of which is to protect different type (both natural and artificial) objects from undesirable external influence, to ensure their exploitation and safety or to protect the environment and people from harmful impacts of any object.

The object of this law are different type protective belts, protective zones, protection belts and protection zones determined in laws and other normative acts.

The law sets the following protective belt types:

- protective belts of environment and nature resources protection;
- exploitation protective belts (are set along both transport, communication and other lines, as well as around objects ensuring operation of various state services);
- sanitary protective belts (are set around objects requiring higher sanitary safety. Their main task is ensuring sanitary requirements);
- safety protective belts, their main task is to ensure safety of higher risk objects and their close proximity objects both during their operation and in cases of possible accidents, along with safety of the environment and people.

The object of this presentation is only protective belt of environment and nature resources protection, which will further be considered in a more detailed way.

Protective belts of environment and nature resources protection are established around objects and territories of importance from the viewpoint environment and nature resources protection and rational utilization. Their main task is to diminish or eliminate influence of anthropogenic negative impact on objects for which protective belts have been set up. There are following types of protective belts for environment and nature resources protection:

- protective belt along the Baltic Sea and Gulf of Riga;
- protective belts along water reservoirs and water courses;
- protective belts (protection zones) around cultural monuments;
- protective belts around places for drinking water taking;
- protective belts around health resorts;
- forest protective belts around cities (green zone forest parks).

All restrictions of utilization rights become valid upon after registration in to the land book.

The Council of Ministers Regulations On Specially Protected Nature Objects in the Territory of the Latvian SSR (1987) is in force during the time period while the Law On Species and Biotope Protection is drafted. Last one will include the obligations from international conventions, as well as from EU Directives - Bird Directive and Habitats Directive.

Territorial planning: In 1998 Cabinet of Ministers approved the new Regulation on Physical Planning. These regulations define development of physical plans at national, regional, district (Rajon) and local (Town and Pagast (rural municipality)) level.

At national level a plan is intended to determine the interests of the State in the use of territory and is binding to the State sector, which must observe its provisions in relation to protected and other special areas and objects, infrastructure provision of a strategic nature, areas of strategic national defense significance and other items having national significance. No such national plan currently exists.

The regulations specify that a Rajons plan must have a time horizon of at least 12 years, co-ordinates the interests of State Institutions, the Rajons and its territorial, social, economic and cultural interests, interests of Pagasts which transcend the boundaries or the competence of any one Pagasts or one town municipality.

The set *Territories of national significance* are determined in the Concept of National Plan for Latvia (adopted on January, 1998) among them as most relevant to forest sector:

- especially valuable agricultural lands and forestry areas,
- protected nature areas of national significance including territories of nature network – ecological corridors,
- cultural and historic territories of national significance,
- territories of high risk of national significance (the flooded areas, suffusion and weathering of rocks, areas endangered by glen erosion, landslides, territories of high risk of pollution of underground waters, areas of high fire hazard explosion hazard objects).

3. CONTRADICTIONS IN EXISTING LEGAL FRAMEWORK

Analyzes of the existing legal framework shows set of discrepancies or duplications. As example of the most relevant ones could be mentioned:

- The object of the law *“On Forest Management and Utilization”*, “forest fund” has been directly taken over from the soviet legal system, derived from the terms “forest” as a biological category and “forest land” as an administrative category.
- The subjects of the law *“On Forest Management and Utilization”* - “forest manager”, “forest user”, “forest logger” and “manager of the ~Forest Fund” have been formed in non-compliance with the Civil Law categories “owner”, “legal holder”, “holder”.
- The terminology used in the law *“On Forest Management and Utilization”* as well as in the law *“On State Forest Utilization”*, such as “issue of timber” and “realization” do not comply with the civil law categories “purchase” and “sale”
- Some terms in the law *“On Forest Management and Utilization”* are used without a definition, for example, “arbitrary forest utilization”, although the *Criminal Law of the Republic of Latvia* and the *Code of Administrative Violations* provide for liability in case of “arbitrary forest utilization”.
- CM Regulations *“on Final Cutting”*, *“On Division of Forests in Categories and Selection of Specially Protected Forest Areas”* and *“On Intermediate Cutting”* issued pursuant to the law *“On Forest Management and Utilization”* extend the rights delegated by the legislator by creating new definitions as well broadening those provided in the law.
- The law *“On Forest Management and Utilization”* includes a number of procedures for Civil Law transactions on real property - forest land, which duplicates and at times does not comply with the relevant norms of the Civil Law.
- The legal norms of the law *“On Forest Management and Utilization”* in environmental protection are not co-ordinated with environmental and nature protection as well as with the normative acts regulating specially protected nature territories.
- The mechanism for compensation for restrictions of user rights provided in the law *“On Forest Management and Utilization”* has not been established. The

effect caused by environmental and nature protection policy on realization of the economic interests of owners has not been defined.

- The mechanism for compensating losses caused to the environment created on the basis of the law “*On Forest Management and Utilization*” does not function correctly because of the inconsistently used terminology. Correction of this terminology is one of the most urgent tasks, otherwise under present circumstances serious threat exists to preserving a people-friendly environment. This question has not been resolved in the Latvian legal system.

One of the first documents elaborated in the forestry sector in democratic way is Latvian Forest Policy (1998) In the elaboration of this document were involved not only state institutions but as well all relevant stake holders, interest groups and scientists. Assessment of the compliance of forest normative acts (FNA) to the Latvian Forest Policy revealed that:

- The FNA do not provide that all forests are freely accessible as the national wealth of Latvia, regardless of property form, but utilization of forest products is to be restricted in the interests of the owner.
- The FNA do not include the overall goal of the *Latvian Forest Policy - the requirement for a sustainable forest management*.
- The FNA do not observe the basic principle of equality of owners (equal rights and obligations).
- The FNA do not include a prohibition of further parceling of forest property.
- The FNA do not include norms on state projects promoting reforestation of ineffectively utilized land.
- The FNA do not include a requirement not to reduce the area of state owned forests.
- The institutional structure provided in FNA does not ensure effective realization of State's economic interests in the management of its forests.

4. PROPOSALS FOR IMPROVEMENT OF FORESTRY RELATED LEGISLATION

4.1. Values and functions of the forests to be protected

In order to provide that all relevant values and functions of forests are covered by proposal to improve nature conservation and environment protection efforts, we from the most important international and national legal acts made a list of values to be protected in the forests and functions (services) provided by forests. Analyzes showed that as a rule global agreements and declarations are more general and mostly contain political will or recommendations while coming down to Pan-European, regional or national level documents become more concrete. Another finding is that there is missing common terminology used in the international “documents”. Often the same things were named differently. e.g. key ecosystems, key biotopes. Some of internationally accepted values or services are not relevant to Latvia due to natural conditions like conservation of endemic species or avalanche prevention.

Main conclusions that almost all internationally accepted values and functions are already protected by national legislation except Latvia have no defined types of the biotopes to be protected as requested by EU Directives.

Values and functions afterward were divided into the two groups – those ones which could be protected during forestry operations and those protection of which is not compatible with use of timber resources.

4.2. Proposals for system of the forest protection from nature conservation point of view.

Forests comprise only part of the ecological networks. Taking into account multiform importance, existing legislation (Law on Specially Protected Nature Territories, Law on protective belts) as well draft plans of a Law on Protection of Species and Biotopes, project group on Revision of Latvian Forest protection system (Donis, 1999) proposed classification system of the forests (see table 1) and appropriate recommendations for management regimes of the forests. According to proposal forest management have to differ between forests in the specially protected nature territories (core areas) outside them - multiple use forests. In first case forests are managed to provide goals of specific functional zones (larger areas) (protection of ecosystems, recreational, educational opportunities) while in other case (multiple use forests) the main function at least now is timber production fulfilling minimum ecological considerations (leaving "eternity trees" etc). Within both types of territories Specially Protected Forest Areas and Special Forest Management Areas could be considered as areas of different primary management aims, which have to provide protection of nature, amenity or other values if general management regime do not secure it. For example if in the neutral zone of the National park (main goal of the management in this zone is to mitigate impact of highly populated areas and provide sustainable management) are found woodland key biotope (habitat of rare species etc.) special parcel have to be established - Specially Protected Forest Area additional restrictions on use of natural resources to provide its maintenance.

Next very important aspect of sustainability is planning process - relation of the forest management planning and planning of territorial development.

In the process of elaboration of the forest management plan the development plans of corresponding territories have be taken into account. For management of specific area by different interest groups, could be set simultaneously competitive management goals. In the planning process have to be set management priorities, taking long term goals of economical development, state environment protection programs, programs of development of different industries etc. Law on planning of territorial development states necessity to indicate forestry lands of national importance, which should be respected into territorial plans.

Degree of details depends on size of area as well time scale of planning. Strategy of development of forestry sector (long term plan) has to be integrated in the development plan of the territory. As well forest management plans have to take into account development plans of specific area. Depending on the size of the property or its geographical location forest management may be limited on the level of national, regional, or local (district, city or pagasts) planning. Management of forest within specially protected nature territories may be additionally limited by individual conservation and utilization regulations.

Table 1

Forests	
Multiple use forestry territories (FL)	Specially protected nature territories (LSPNT)
General management regime	General management regime of the functional zone
Specially Protected Forest Areas (Woodland key biotopes (FL), habitats of protected species(LPSB), protected biotopes(LPSB))	
Protective belts, and their functional zones (LPB)	
<p>Special Forest Management Areas*</p> <ol style="list-style-type: none"> 1. Other specially protected forest biotopes (dispersal islets) (FL) <ul style="list-style-type: none"> Separate stands Forest clumps in the agriculture lands Islets of bogs, streams and lakes 2. Transition zones and buffer zones (FL) <ul style="list-style-type: none"> Around bogs Forest edges with agriculture lands Buffer zones around Specially protected Forest Areas Seasonal preserves around Specially protected Forest Areas 3. Genetical reserves of tree species (FL) 4. Anti-erosion forests (FL) 5. Recreation forests* (LPB) 6. Urban environment protection forests* (LPB) 7. Objects of long term research (FL) 	

FL – provided by Forest law and pursuant regulations;

LPB – provided by Law on Protection Belts and pursuant regulations;

LSPNT – provided by Law on Specially Protected Nature Territories and pursuant regulations,

LPSB – provided by Law on Protection of Species and Biotopes and pursuant regulations.

* Part of the special management areas functionally are some of the protected belts. For example, coastal zone of protected belt around watercourses and along streams spatially are almost the same as one of the special management areas –transition and buffer zone.

Therefore, limitations determined by the existing and prospective territory development plans should be clarified before development of the forest management plan in municipalities of the corresponding level. The most precise information is available in the general plans of cities and pagasts, where among other items information relevant to forestry planning is available:

- The permitted utilization of land sites and corresponding utilization aims of the real estate;
- Territories on which land transformation is planned and permitted;
- All kinds of protected belts;
- Specially protected nature territories and their functional zones;
- Specially protected culturally –historical territories;
- Areas with available resources for establishment of health resorts;
- Recreation and tourism objects and areas,
- Territories endangered by water and wind erosion and other territories are determined.

To ensure optimum economic output and the best forest management praxis it is important to plan the forest management, especially in larger properties. Development of short - term and long - term forest management plans have to ensure the achievement of economic as well as ecological and social goals.

4.3. General proposals to forest legal acts

When creating new legal norms, it must be borne in mind that a legal norm is effective only in cases when it can achieve the desired objective by the means at hand; the objective, i.e. a programmed opportunity, for the realization of which the necessary conditions and means already exist. If these do not exist, the legal norm will achieve its objective only at a later date or not at all, if the necessary conditions will not be created. If the objective of the law must reflect the direct result planned by the legislator of its impact on the environment to be regulated, the effectivity of the legal norm is determined its conformity to the objective requirements of life and interests of social development. Thus, legislation must provide mechanisms, which should ensure the functioning of legal norms.

General tasks during drafting of the new forest legislation are following:

- The main problems of the previous legislation must be prevented;
- The principles of forestry policy must be realized;
- It must conform to the concept of management of State forests approved by the State forest administration;
- It must reflect the stage of development of private forest management as a whole;
- the law must apply to all forest owners equally;

- the law must ensure the minimum requirements of a sustainable forest management: without a question, the law regulates only those operations which may cause a threat to the public or the ecological situation as a whole;
- the law has to ensure a good forest management praxis (here an important role is given to the training system and State support in the form of subsidies);
- To prevent forest legislation collisions with other laws, law states: if a forest is located in a specially protected nature, cultural/ historic area or other type of protected area, the norm should be applied that contains the most severe nature protection regime.
- Legislation must incorporate the basic objective of FP - the requirement for a sustainable forest management.

To provide it:

- The object of the law must be the forest (as a biological category) and forest land (as an administrative category). According to the Civil Law, the main thing is forest land (real property), but the forest as trees (movable property) is a supplemental thing. All legal relations relating to the main thing in themselves also relate to the supplemental thing. While the supplemental thing is not divided from the main thing, the same provisions apply to both.
- It must be provided that all owners have the same rights and obligations, structuring the law by property, tenure or usage and from it abstracting subjects of the law. It is recommended that for the purposes of forest legislation, a forest owner be considered a person whose ownership rights are registered in the Land Books (until corroboration the purchaser cannot completely realize his/her ownership rights to the forest).
- Prohibition to further break up forest property must be provided.
- Norms promoting reforestation projects must be incorporated.
- A mechanism for compensation for economic losses caused by restrictions of user's rights must be prepared.
- It must be provided that the forest is accessible to all, but utilization of forest products is to be restricted in the interests of its owner.
- It must be provided that state forests must be preserved in their present size (preserving same as a guaranty for the wooded areas of Latvia).
- Mechanisms must be created to ensure the economic interests of forest owners, including realization of the objective "the owner (state) gains profit from capital (forest)".
- The system of protected forest territories must be scientifically justified.
- Terminology "losses caused to environment by damage" must be specified. Specification of this terminology is one of the most urgent tasks, otherwise under the present economic situation a serious threat exists to the preservation of a user-friendly environment.
- It must be stated absolutely that all forests are accessible to the public as a national resource.

4.4. Proposals for the structure of the new forest law

Purpose of the Law: The purpose of the Law is stated in the preamble of the Law:

- 1) provide for a sustainable management of all Latvian forests and their ability to perform all essential ecological, economic and social functions on a local, national and global scale now and in the future;
 - 2) preserve and improve the diversity of forest systems and eco-systems and forest protective functions;
 - 3) preserve and improve the genetic diversity of species of trees of Latvian forests, stability of forest groves and their ability to renew themselves, thus providing for the requirements of reforestation and afforestation with quality reproductive material of suitable origin;
 - 4) ensuring forest renewal and encouraging the growth of a productive, good quality consistent forest;
 - 5) prevent or limit the impact of factors harmful to forests and consequences of damage caused by same;
- as well as:
- 6) provide the society with correct information on the condition of forest resources and operations of and related to forest management;
 - 7) encourage planning of forest management as the best choice of type of forest management in the interests of forest owners and the society;
 - 8) provide a procedure for the public to realize their goals with the help of subsidies and compensations, thus encouraging forest owners to choose the most desirable type of forest management in cases when such choice is not limited by normative acts.

Object of the Law: The object of the Law are the material and non-material values which individual rights and legal obligations in the legal relationship are related to.

The object of the Forest Law is forest and forest land. Forest is defined as an eco-system dominated by trees whose height at a given location may reach at least 7 meters and whose present or potential crown projection is at least 20% of the area, as well as all its stages of development.

For the purposes of this Law, a *forest is not* isolated tracts of an area up to 0.1 ha, plantations of fruit-trees, as well as rows of trees of artificial or natural origin of a width of less than 20 meters, orchards, parks in populated areas, cemeteries and forest tree seed plantations.

Forest land is defined in the Law (as a territorial category) – i.e. land:

- covered by forests;
- plantation forests,
- infrastructure, plantation forests;
- lowlands, bogs, marshes and glades within or adjoining a forest.

In the Law the following principle is followed: according to the Civil Law, the main thing is forest land (real property), but the forest, being trees (movable property) is a secondary thing. All legal relations as they relate to the main thing automatically also relate to the secondary thing. As long as the secondary thing is not separated from the main thing, the same provisions apply to both.

Subject of the Law: To begin the development of a draft law, it is important to find out *who will be the user of the Law:*

- persons who will interpret and enforce the Law – officers of state and municipality institutions, inspectors, auditors;
- persons whom the Law will set different obligations –forest owners, holders, visitors etc.
- persons who will get protection according to the Law or any privileges – forest owners etc.

The law provides that all owners (including the State) have equal rights and obligations in a forest, structuring the Law according to ownership, and deriving from it subjects of the Law. For the purposes of forest related laws the subjects of the Law is any person whose ownership rights to forest land are registered with the Land Books (forest owner), any person who has obtained legal tenure to forest land (forest holder), as well as any other person who has rights or obligations in accordance with this Law.

A forest owner may use the forest to gain benefits, observing restrictions provided by law. Providing that a forest owner performs obligations laid down by law and is liable for violations of provisions of forest management and exploitation.

Obligations and liability of a forest owner provided by law also apply to persons to whom forest land has been allocated for use or who have inherited forest land or have otherwise obtained it for lawful tenure.

Subjects are also liable for the performance of obligations provided by law if the rights to engage in operations regulated by this Law have been assigned to third parties, except in cases when such liability has been assigned by contract to another third person.

Use of non-timber forest values: The Law states that all forest are freely accessible as a national treasure; however, use of forest products can be restricted for the interest of owner. Forest owner may prohibit forest visitors to move around in his/her /its forest, placing warning signs or by physical demarcation of the prohibited area.

Forest non-timber material and non-material values are defined in the Law. They are:

1. non-timber material values of a forest are physical items related to the forest and which, if taken, are removed from the forest;
2. non-material values of a forest are its recreational nature characteristics stabilizing the environment.

Use of non-timber material values of a forest falls within the competence of forest holder, except when otherwise provided in this Law or normative acts of environmental protection, and protection of species and biotopes.

Compensations and subsidies: Any forest holder is entitled to receive compensation for benefits not obtained from his/her/its possession due to the restrictions of user's rights in forest micro-reserves.

The society realizes its aims by means of subsidies and compensations encouraging forest owners to choose the most welcome alternatives, when the choice is not determined by law.

State through its institutions and (or) financing supports stabilization of forest long-term functions and promotes development of private sector.

Forest state authority: The law states that basic state functions in the forestry sector are performed by:

1. the Ministry of Agriculture – elaborating forest policy and the normative acts necessary for its implementation, and providing information to all groups interested in the process, and providing their possible participation;
2. the State Forest Service – providing enforcement of laws and legal acts passed thereunder, and providing supervision of their observance in all forests irrespective of their owner;
3. unprivatisable state joint stock company “Latvian State Forests” – on the instructions of the Ministry of Agriculture – performing management of state forest, ensuring realisation of ecological and social functions belonging to state forest and accepted by society, ensuring conservation and enlargement of state forest value and gaining revenue from forest in behalf of its owner – the state.

Liability for Forest law violations: For violation of the provision of this Law the guilty person is made liable in the procedure provided by laws.

The Law provides that a violation of individual norms of this Law may result in charges of administrative liability aimed at punishing the guilty person.

If a person, in violation of the Law, has civil liability, the guilty person has to compensate losses. In such situations the compensation paid by the guilty person is used for prevention of the consequences of the damage.

5. CONCLUDING REMARKS

The European and world understanding of principles of a user friendly forest management has made great strides parallel to the changes in Latvian society and economy. After regaining independence in 1990 Latvia became involved into the international processes at different scales (from global to regional) related protection of forests and their values. Laws, regulations issued during soviet time as well international declarations etc. became as basis for formulation of national strategies and management recommendations.

Forests in Latvia like in other countries serve all economical, ecological and social functions and values. Latvia has rather old conservation traditions. Unfortunately instead of system of protected territories there is only set of territories. One of urgent tasks is to develop and implement such system, which has to provide efficient nature conservation in the forestry taking into account all aspects of forest utilization, requirements of international agreements and national conditions. There is proposed legal system of nature conservation while still unsolved question is how much should be protected to provide sustainability. It has to be reminded that forest law and pursuant regulations are only integral part of environmental legislation and only system or network of well co-ordinated legal acts can provide this main goal - sustainability.

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EFFECTOS DE LA LEGISLACIÓN AMBIENTAL EN LAS PRÁCTICAS DE MANEJO FORESTAL EN CHILE

ENRIQUE GALLARDO

RESUMEN EJECUTIVO

Este país ubicado en el extremo sur de América, reconoce durante el siglo XX que recién termina dos esfuerzos legislativos tendientes a conservar y a desarrollar nuestros recursos forestales: en 1925 con la ley de bosques¹, aún vigente y en 1974 con la ley de Fomento Forestal², ambas con diversas modificaciones.

La primera con un marcado carácter proteccionista y de preservación, entre otras medidas, reguló la corta de bosques nativos en áreas de protección y el uso del fuego en terrenos de aptitud preferentemente forestal y la segunda impulsó fuertemente el proceso de forestación y reguló la corta o aprovechamiento obligando a reforestar una superficie igual, a lo menos, a la cortada o explotada conforme a un plan de manejo previamente aprobado por la administración forestal.

A estos dos textos de jerarquía legal deben sumarse algunos instrumentos internacionales ratificados como "ley de la República", referidos a la protección y comercio de la flora y la fauna³ y sobre conservación de la diversidad biológica⁴, y una profusa regulación reglamentaria de protección de especies y áreas silvestres protegidas, legislación toda fuertemente patrimonialista, sectorial y sin una visión ecosistémica o ambiental propiamente tal.

Sólo en 1994, después de más de 20 años de la Conferencia de las Naciones Unidas sobre el Medio Ambiente Humano de 1972 y la Conferencia sobre Ambiente y Desarrollo de 1992, y la fuerte presión del comercio internacional, en Chile con el carácter de "ley marco", se aprobó la Ley sobre Bases Generales del Medio Ambiente⁵ que vino a legislar con sentido global y sistémico, incorporando la dimensión ambiental en todas las actividades del quehacer nacional, entre ellas, la actividad forestal. Esta ley recoge y desarrolla los principios de prevención, realismo y gradualidad con que el gobierno impulsó su política ambiental a partir de 1990, destinada a proteger el medio ambiente, preservar la naturaleza y a conservar el patrimonio ambiental.

¹ Decreto Ley N°656, de 1925, cuyo texto fue modificado, refundido y coordinado por decreto supremo N°4.363, de 1931, del Ministerio de Tierras y Colonización, Diario Oficial del 31.06.31. Última modificación, ley N°18.959, Diario Oficial del 24.02.90.

² Decreto Ley N°701, de 1974, cuyo texto reemplazado, refundido y coordinado fue fijado por el artículo 1° del decreto ley N°2.565, de 1979, Diario Oficial del 03.04.79. Última modificación, ley N°19.561, Diario Oficial del 16.05.98.

³ Convención para la protección de la flora, la fauna y las bellezas naturales de América, suscrita en Washington en 1940 y aprobada en Chile por decreto supremo N°531, de 1967, del Ministerio de Relaciones Exteriores Diario Oficial del 04.10.67 y Convención sobre el comercio internacional de especies amenazadas de fauna y flora silvestre, aprobada por decreto supremo N°141, de 1975, del Ministerio de Relaciones Exteriores, Diario Oficial del 25.03.75.

⁴ Convenio sobre Diversidad Biológica, aprobado por decreto supremo N°1.963, de 1994, del Ministerio de Relaciones Exteriores, Diario Oficial del 06.05.95.

⁵ Ley N°19.300, Diario Oficial del 09.03.94.

La creación legal de diversos instrumentos de gestión ambiental, entre ellos, la obligación, para los proyectos de desarrollo o explotación forestales de gran magnitud, de someterse, antes de su ejecución, al Sistema de Evaluación de Impacto Ambiental, ya ha producido y producirá en el futuro como consecuencia la posibilidad de prever, predecir, identificar e interpretar anticipadamente el o los impactos ambientales que dichos proyectos o actividades forestales provocarán a los recursos ambientales asociados como comunidades humanas, suelos, aguas, aire, fauna y paisaje, permitiendo que en su etapa de diseño se identifique y se describa la o las acciones que el titular ejecutará para impedir o minimizar sus efectos significativamente adversos.

En consecuencia, el país entra al siglo XXI con la esperanza que aún es tiempo para revertir la etapa de destrucción y deterioro de nuestros recursos forestales, y, a través de su manejo sostenible y sustentable, poder satisfacer las necesidades actuales pero asegurando al mismo tiempo la satisfacción de las necesidades de las generaciones del porvenir.

1. INTRODUCCIÓN

La incorporación de la dimensión ambiental a la ejecución de las actividades forestales se ha transformado en los últimos años en una constante en la mayoría de las legislaciones forestales del mundo y por cierto también en América del Sur y específicamente en Chile.

Este feliz hecho no es sino consecuencia del proceso iniciado en Estocolmo en 1972, con la Conferencia de las Naciones Unidas sobre el Medio Ambiente Humano y la ratificación del concepto de desarrollo sustentable, acordada en la Conferencia sobre Ambiente y Desarrollo efectuada en Río de Janeiro en 1992.

Desde 1972 a la fecha, ha surgido una nueva y especial rama del Derecho: el Derecho Ambiental encargado de regular la utilización, el desarrollo y la conservación de los recursos naturales, artificiales y socioculturales que conforman el sistema global ambiente, que rige y condiciona la existencia, desarrollo y calidad de la vida humana, animal y vegetal.

Las nuevas norma jurídicas surgidas al amparo de esta nueva rama del derecho, han servido de marco para que las legislaciones sectoriales, entre ellas la legislación forestal vigente se adecue y se desarrolle. En este contexto es que el Derecho Forestal reconoce cada vez más los múltiples intereses que intervienen en la ordenación forestal o que se ven afectados por ella, prestando cada vez mayor atención a las funciones sociales y ambientales de los recursos forestales y a su uso y ordenación sostenible, como también concediendo una importancia mayor a la participación de una amplia variedad de actores públicos y privados.

Un claro ejemplo de lo dicho, es la modificación en 1998⁶ del estatuto de fomento forestal chileno que reorientó sus objetivos, focalizándolos en la necesidad de regular la actividad forestal no sólo en suelos de aptitud preferentemente forestal, sino que también en suelos degradados, frágiles o en áreas en proceso de desertificación, e incentivar la forestación, en especial, por parte de los pequeños propietarios forestales y aquélla necesaria para la prevención de la degradación, protección y recuperación de los suelos del territorio nacional. De esta manera, se recogen y se incorporan los componentes social y ambientales, ambos componentes básicos del desarrollo sustentable.

⁶ Ley N°19.561, Diario Oficial del 16.05.98.

En consecuencia, se puede ya anticipar como reconocimiento preliminar los innegables efectos que la legislación ambiental ya ha provocado, al menos en la legislación sectorial forestal, y teóricamente, en las prácticas de manejo forestal en nuestro país.

Pero, sin duda alguna, más importante serán los efectos que provocará en el futuro, una vez que los instrumentos de gestión ambiental consagrados en la Ley sobre Bases Generales del Medio Ambiente, vigente desde 1994, se consoliden y se incorporen naturalmente, tanto en el diseño como en la ejecución de los proyectos o actividades forestales, todo ello con el objeto de contribuir a la preservación de la naturaleza, la conservación del patrimonio forestal y la protección de medio ambiente.

2. POLÍTICA AMBIENTAL

Con estos antecedentes, este país sólo a partir de 1990, tomó como base conceptual de su política ambiental el desarrollo sustentable, con el objeto de buscar conciliar el desarrollo económico con la protección del medio ambiente, en un marco de equidad social y transparencia pública⁷.

Dos principios dieron fundamento a los primeros pasos para instalar en Chile la política ambiental: la gradualidad y el realismo.

La "gradualidad", considerando que los problemas ambientales que vivía el país era el resultado de décadas de aplicación de políticas en las cuales lo ambiental, en forma global, no era un aspecto relevante a considerar. Por consiguiente se estimó que revertir el curso del deterioro ambiental y buscar una forma en que el desarrollo y el progreso puedan propiciarse, conciliándolo con la conservación del patrimonio ambiental, exigiría de una modificación estructural que trascendería a medidas efectistas o parciales que pudieran tomarse en el corto plazo.

Asimismo, la institucionalización del tema ambiental en el sector público, la revisión y dictación de normas sectoriales, los procesos educativos tendientes al cambio de actitudes respecto al medio ambiente, no podrían sino aplicarse gradualmente. Detener y revertir los procesos de deterioro ambiental requerirá décadas, durante las cuales todos los sectores de la sociedad deberán aportar en lo que corresponda.

Una expresión de esta gradualidad de las soluciones, fue precisamente el proyecto de ley ambiental, presentado en 1992 al Congreso Nacional, que privilegió en esta etapa la necesidad de consensuar un gran marco de referencia que contuviera los criterios básicos y fundamentales que sustentarían las acciones futuras. Dicha labor legislativa, de suma complejidad, dado el tratamiento integrador y sistémico bajo el cual debía abordarse, no podía sino efectuarse gradualmente. El propio nombre de la ley aprobada, "sobre Bases Generales del Medio Ambiente", reflejan y sintetizan este principio.

La segundo principio de la política ambiental en ciernes, fue el "realismo", entendido éste, en el sentido que los objetivos superiores que debía perseguir esta política debían ser alcanzables y posibles, habida consideración de la magnitud de los problemas ambientales existentes, de la forma y oportunidad en que se pretendía abordarlos y de los recursos y medios con que el país contaba para ello. Especialmente, se consideró que en América Latina existía a la fecha una abundante experiencia de códigos o legislaciones ambientales perfectas, desde el

⁷ Mensaje del Presidente de la República con que se envió al Congreso Nacional el proyecto de ley de Bases Generales del Medio Ambiente de 14,09.92 y documento de la Comisión Nacional del Medio Ambiente, de 1997, denominado "Gestión Ambiental del Gobierno de Chile".

punto de vista doctrinario y teórico, pero que no admitían aplicación, porque no hay una relación entre el aparato institucional encargado de ella y el contenido de la norma a aplicar. Lo realista en esta fase de instalación del tema, fue sentar las bases centrales que orientaran tanto la gestión ambiental pública como privada.

A estos principios se unen posteriormente los de prevención, de participación, el que contamina paga, el de la responsabilidad ambiental y el de la eficiencia.

La Ley de Bases Generales del Medio Ambiente de 1994, da cuenta de estos principios, dando contenido concreto y desarrollo jurídico a la garantía constitucional establecida desde 1980, que asegura a todas las personas el derecho a vivir en un medio ambiente libre de contaminación y el deber del Estado de velar para que este derecho no sea afectado y tutelar la preservación de la naturaleza⁸. Esta ley concebida en estos términos, consideró entre sus objetivos los de servir de punto de referencia para la legislación vigente y para aquella que deba dictarse, crear instrumentos de gestión ambiental y una institucionalidad ambiental transversal que coordina y fortalece las competencias sectoriales ambientales.

Tal como se expresó en el mensaje presidencial de esta ley, se reconoce en ella que el desarrollo sustentable, objetivo general de la política gubernamental, debe conservar la tierra y el agua, los recursos genéticos, no degradar el medio ambiente, ser técnicamente apropiado, económicamente viable y socialmente aceptable.

Este proceso de definición de la política ambiental en Chile, reconoce durante los dos últimos años, dos documentos aprobados por el Consejo Directivo de la Comisión Nacional del Medio Ambiente, integrado por los ministros con competencia ambiental sectorial, asesores directos del Presidente de la República, lo que les da el carácter de documentos oficiales del gobierno.

El primero de 1998, denominado "Una política ambiental para el desarrollo sustentable", recoge la experiencia del corto camino recorrido en la materia y avanza en la definición de objetivos y estrategias en dos frentes constitucionales.

Por una parte, en la conservación del patrimonio ambiental, definida ésta como el uso y aprovechamiento racionales o la reparación, en su caso, de los componentes del medio ambiente, especialmente aquellos propios del país, que sean únicos, escasos o representativos, con e objeto de asegurar su permanencia y capacidad de regeneración, y por otra parte, en la preservación de la naturaleza, entendida ésta como el conjunto de políticas, planes, programas, normas y acciones destinados a asegurar la mantención de las condiciones que hacen posible la evolución y el desarrollo de las especies y de los ecosistemas del país.

A través de ambos frentes, procura la sustentabilidad ambiental del proceso de desarrollo, comprometiendo en la agenda ambiental del Gobierno, a profundizar las acciones emprendidas hasta entonces y tomar posición frente a las materias ambientales no resueltas aún, destacando, entre ellas, la gestión del patrimonio natural renovable, uno de cuyos componentes, son los recursos forestales.

El segundo documento, de enero del año 2000, denominado "Una política ambiental para el uso sustentable del patrimonio natural renovable", establece objetivos de mediano y largo plazo, destacando las líneas de acción que deberán orientar la gestión ambiental del país durante los próximos años, destacándose para nuestro interés las medidas que se tomarán para superar las amenazas al bosque nativo por sobreexplotación y la carencia de medidas adecuadas para su protección.

⁸ Artículo 19 N°8 de la Constitución Política de la República de Chile de 1980, Diario Oficial del 24.10.80.

3. LEGISLACIÓN AMBIENTAL

En relación a este componente básico de la gestión ambiental, que constituye el medio o instrumento para alcanzar los objetivos y estrategias definidas en la política ambiental, el país está dando aceleradamente sus primeros pasos.

Decir que el Derecho Ambiental surge a partir de 1972, fecha de la Conferencia de la Naciones Unidas sobre el Medioambiente Humano, celebrada en Estocolmo, que concluyó haciendo un llamado a los pueblos del mundo para que definieran una política y establezcan leyes y una institucionalidad ambiental, no quiere decir que antes de esta fecha no existieron normas jurídicas de este carácter.

En Chile, existieron siempre, pero con la característica que dictada para regular un determinado recurso, por ejemplo el forestal, "casualmente", afectaba al medio ambiente, esto es, no se trataba de normas dictadas "deliberadamente" para proteger el medio ambiente, sino que este objetivo se alcanzaba casualmente, como consecuencia de la protección de un específico recurso natural y su interrelación e interdependencia con otros recursos y el medio ambiente⁹.

Un estudio de la Comisión Nacional del Medio Ambiente en 1990, identificó 718 cuerpos legales y reglamentarios vigentes en Chile, que calificó como legislación "de relevancia" ambiental, entre los cuales, una tercera parte aproximadamente, constituía legislación forestal¹⁰.

Por esta razón, es posible sostener que sólo a partir de 1994, se inicia en el país la construcción del moderno Derecho Ambiental, con la aprobación de la Ley N°19.300, sobre Bases Generales del Medio Ambiente, que regula el derecho a vivir en un medio ambiente libre de contaminación, la protección del medio ambiente, la preservación de la naturaleza y la conservación del patrimonio ambiental, derecho y objetivos garantizados por la Constitución Política de la República de Chile de 1980.

En estos años primeros años de su vigencia, se han dictado sendos reglamentos de la ley y se han aprobado diversas normas de calidad ambiental, normas de emisión, planes de prevención y descontaminación y programas destinados a cumplir sus objetivos, todos ellos bajo los principios de realismo, gradualidad y prevención con que esta ley fue inspirada.

Si lugar a dudas que entre los instrumentos preventivos de gestión ambiental que crea la ley, el Sistema de Evaluación de Impacto Ambiental (SEIA), debidamente reglamentado¹¹, constituye el paso más importante en la prevención de la degradación de los recursos, entre ellos, los forestales y el que está llamado a ser el que mayor efecto provoca y provocará en las prácticas de manejo forestal.

Otros instrumentos de gestión ambiental considerados por la misma ley y que también regulan las actividades forestales con impacto directo en el manejo forestal y que mencionaré mas adelante, son los planes de manejo, la educación y las áreas silvestres protegidas.

⁹ Capítulo 11 sobre Derecho del documento "Medio Ambiente en Chile" del Centro de Investigación y Planificación del Medio Ambiente, Ediciones Universidad Católica de Chile, 1985.

¹⁰ Repertorio de la Legislación de Relevancia Ambiental vigente en Chile, Comisión Nacional del Medio Ambiente, 1992.

¹¹ Decreto Supremo N°30, de 1997, Ministerio Secretaría General de la Presidencia de la República, Diario Oficial del 03.04.97.

4. PROYECTOS FORESTALES SOMETIDOS AL SISTEMA DE EVALUACIÓN DE IMPACTO AMBIENTAL

A partir de 1997, fecha de aprobación del Reglamento de Evaluación de Impacto Ambiental, todo proyecto de desarrollo o explotación forestales en suelos frágiles, en terrenos cubiertos de bosque nativo, industrias de celulosa, pasta de papel y papel, plantas astilladoras, elaboradoras de madera y aserraderos, todos de dimensiones industriales y susceptibles de causar impacto ambiental, en cualquiera de sus fases, debe someterse, antes de su ejecución, al Sistema de Evaluación de Impacto Ambiental regulado por la ley y su respectivo reglamento.

Como ya se ha señalado, siguiendo el principio de la gradualidad, por disposición de la ley, sólo los grandes proyectos o actividades, los que denomina de dimensiones industriales, deben someterse al Sistema de Evaluación de Impacto Ambiental.

El mencionado Reglamento de Evaluación de Impacto Ambiental se encarga de precisar que se entiende de dimensiones industriales, en el caso de los proyectos o actividades forestales, aquellos proyectos de desarrollo o explotación forestales que abarquen una superficie única o agregada de más de veinte hectáreas anuales, tratándose de las Regiones I a IV, o de doscientas hectáreas anuales, tratándose de las regiones V a VII, incluyendo la Metropolitana, o de quinientas hectáreas anuales, tratándose de las regiones VIII a XI, o de mil hectáreas anuales, tratándose de la región XII, y que se ejecuten en suelos frágiles, entendiéndose por tales aquellos susceptibles de sufrir erosión severa debido a factores limitantes intrínsecos, tales como pendiente, textura, estructura, profundidad, drenaje o pedregosidad; o terrenos cubiertos de bosque nativo, entendiéndose por tales lo que se señale en la normativa pertinente.

En el caso de industrias de celulosa, de pasta de papel y de papel, se entiende como de dimensiones industriales, aquellas cuyo consumo anual de madera sea igual o superior a trescientas cincuenta mil metros cúbicos sólidos sin corteza; las plantas astilladoras y aserraderos cuyo consumo de madera, como materia prima, sea igual o superior a veinticinco metros cúbicos sólidos sin corteza por hora; y las plantas elaboradoras de paneles cuyo consumo de madera, como materia prima, sea igual o superior a diez metros cúbicos sólidos sin corteza por hora¹².

En cumplimiento de esta normativa ambiental, el único proyecto de grandes dimensiones que ha sido sometido al sistema de evaluación de impacto ambiental hasta la fecha, es el denominado Proyecto Río Cóndor de la empresa Forestal Trillium limitada, registrada en Chile y que pertenece a Bayside Ltd, empresa colectiva de la Corporation Trillium, Bellingham, Washington, y el Grupo Beacon, Nueva York, ambas empresas estadounidenses.

Este proyecto comprende una superficie aproximada a 272.729 hectáreas y está basado principalmente en la extracción de madera de 129.000 hectáreas aproximadamente de bosques nativos de Nothofagus, tanto primario como secundario, y en la plantación de esta misma especie en terrenos degradados. Se ubica en el sector sureste de la Isla Tierra del Fuego en la XII Región de Magallanes y Antártica Chilena.

En el estudio de impacto ambiental, la empresa planteó como compromiso el efectuar un manejo forestal sostenible, entendida ésta como la utilización de los bosques y tierras forestales de una manera y tasa tal que aseguren la mantención de la diversidad biológica, productividad, capacidad regenerativa, vitalidad y su

¹² Artículo 3 letra m) del señalado decreto supremo N°30, de 1997.

potencial para desempeñar, tanto ahora como en el futuro, funciones ecológicas relevantes, económicas y sociales, sin causar daño a otros ecosistemas. Asimismo, cabe señalar que con anterioridad, la empresa adhirió a los principios de Stewartship (Fideicomisario-Defensor) que aseguran la sostenibilidad de los bosques y ecosistemas comprometidos y se asesoró de una Comisión Científica independiente para la elaboración de estudios de línea de base diseñados para evaluar la factibilidad y necesidades de un proyecto ecológicamente sustentable, para efectuar recomendaciones específicas con respecto a acciones de mitigación y de monitoreo futuro.

En la Resolución que calificó ambientalmente el proyecto¹³, se identifican más de un centenar de condiciones ambientales, de los cuales la mayoría corresponden a compromisos sobre manejo forestal sustentable, entre ellas se recogen algunas de las recomendaciones de esta Comisión Científica, como la necesidad de realizar evaluaciones formales y periódicas cada cinco años, cuyos resultados deben ser públicos e implementar modificaciones de las prácticas de cosecha de acuerdo con los resultados de estas evaluaciones. Las cosechas para estos primeros cinco años no puede superar los 1.970.000 m³, no superando los tres primeros años las 340.000 m³/año. Se prohíbe la corta a escala comercial del tipo forestal coigüe de Magallanes mientras las investigaciones y estudios lo recomienden. Los cupos de corta deben estar estrechamente ligados a la planificación espacial detallada de las intervenciones, los que se estipularán en los correspondientes planes de manejo que se deberán aprobar y el cabal cumplimiento del concepto e balance forestal, según el cual sólo se puede cortar una cantidad de madera que no exceda al crecimiento que se está registrando en las áreas dedicadas a cosecha, Se establecerán "reservas de biodiversidad" con el propósito de mantener muestras representativas de la diversidad biológica presente en el área, incluyendo 10.000 hectáreas de bosques maduros potencialmente comerciables etc.

El desafío silvicultural planteado con la ejecución de este proyecto es enorme, considerando que se está frente a una causa emblemática para la conservación de los bosques de frontera del fin del mundo.

Por otra parte, la evaluación de impacto ambiental de proyectos industriales forestales y demás tipos de proyectos o actividades susceptibles de causar impacto ambiental, que deben someterse al sistema, también debe incorporar la sustentabilidad forestal y por tanto la corta o explotación de recursos forestales para llevarlos a cabo deben incorporar las consideraciones ambientales referidas a las aguas, suelos, paisaje, flora y fauna entre otros recursos.

5. PLANES DE MANEJO FORESTAL

Sin perjuicio, de las mencionadas normas ambientales que consideran como instrumento de gestión ambiental al sistema de evaluación de impacto ambiental, la misma ley considera como tal, a los planes de manejo de recursos naturales renovables, que tienen como objetivo central, asegurar su capacidad de regeneración y la diversidad biológica asociada a ellos, en especial de aquellas especies en peligro de extinción, vulnerables, raras o insuficientemente conocidas.

Esta misma ley dispone que el organismo público encargado legalmente de regular el uso o aprovechamiento de los recursos naturales en un área determinada, debe

¹³ Resolución N°03 de 11.02.98, de la Comisión Regional del Medio Ambiente de la XII Región de Magallanes y la Antártida Chilena, modificada por Resolución N°032. De 03.06.98.

exigir, de acuerdo con la normativa vigente, la presentación y cumplimiento de planes de manejo de los mismos, a fin de asegurar su conservación e incluir, entre otras consideraciones ambientales, la mantención de caudales de agua, conservación de suelos, mantención del valor paisajístico y protección de especies en peligro de extinción, vulnerables, raras o insuficientemente conocidas¹⁴.

En materia forestal, la ley de fomento forestal vigente en Chile, exige para efectuar cualquier acción de corta de bosque nativo o de plantaciones ubicadas en terrenos de aptitud preferentemente forestal, la aprobación o registro previo de un plan de manejo forestal por parte de la Corporación Nacional Forestal y la obligación de reforestar una superficie, igual a lo menos, a la cortada o explotada conforme al plan de manejo aprobado o registrados según sea el caso¹⁵.

El plan de manejo forestal definido legalmente, es un instrumento que regula el uso y aprovechamiento racional de los recursos naturales renovables de un terreno determinado, con el fin de obtener el máximo aprovechamiento de ellos, asegurando al mismo tiempo la preservación, conservación, mejoramiento y acrecentamiento de dichos recursos y su ecosistema,

La corta de estos bosques sin plan de manejo previamente aprobado o registrado, se sanciona con multa equivalente al doble o triple del valor comercial de las maderas cortadas ilegalmente, y el incumplimiento del plan de manejo aprobado o registrado, con multa equivalente entre cinco a quince unidades tributarias mensuales.

Las exigencias legales señaladas, sin duda contribuyen a la sustentabilidad forestal y por consiguiente a las prácticas de manejo forestal.

6. EDUCACIÓN AMBIENTAL

Como se sabe las normas jurídicas pretenden regular la conducta humana, en este caso, a que las prácticas de manejo forestal se hagan en forma sustentable o sostenible, en términos tales que los bosques satisfagan las necesidades de esta generación pero asegurando la satisfacción de las generaciones futuras.

El cambio de estas conductas humanas para alcanzar la sustentabilidad forestal es tarea de la educación, exigir las es tarea del derecho.

Por último, considerando la gradualidad con que en Chile se ha enfrentado el problema ambiental en su conjunto, los efectos o impactos que la legislación ambiental provoca o provocará en las prácticas de manejo forestal, van a depender en gran medida de la internalización de la conciencia ambiental en cada uno de nuestros conciudadanos, como también de la voluntad política de las autoridades para hacer cumplir la ley.

7. CRITERIOS DE SUSTENTABILIDAD Y CERTIFICACIÓN FORESTAL

Un aspecto mayor que es necesario considerar en la identificación del impacto que la legislación ambiental provoca o está llamada a provocar en las prácticas de manejo forestal, son los procesos de sustentabilidad forestal y de certificación forestal, generados a partir de la cumbre de Río de Janeiro.

¹⁴ Artículos 41 y 42 de la ley N°19.300.

¹⁵ Artículos 21 y 22 del decreto ley N°701, de 1974, sobre Fomento Forestal.

En efecto, no obstante tratarse de instrumentos no vinculantes, esto es, no obligatorios, afectan también directa o indirectamente en otros casos, el manejo forestal, toda vez que ambos procesos se encuentran en avanzado estado de aceptación tanto por gobiernos como por propietarios y empresas forestales. Chile no es una excepción.

Como se sabe, el aumento de la conciencia pública en torno a la multilpicidad de bienes y servicios que proveen los bosques ha creado la necesidad de reconocer el concepto de manejo forestal sustentable, porque éste considera, entre otros, los valores y funciones económicas, sociales, ecológicas, culturales y espirituales de los bosques. Así se acordó en la Cumbre de la Tierra en Río de Janeiro en 1992 y se incorporó en todos los acuerdos y compromisos que allí surgieron. Asimismo, sirvió de base para el posterior desarrollo de iniciativas internacionales específicas sobre criterios e indicadores para la conservación y el manejo sustentable de los bosques.

Entre estas iniciativas intergubernamentales, Chile participa en el llamado proceso de Montreal, compartiendo con el resto de los países participantes con bosques boreales y templados, el interés por reconocer, en todos los niveles, la importancia de la conservación y el manejo forestal sustentable de bosques. En la Declaración de Santiago, de 1995, consensuaron siete criterios, entre los cuales se consideró especialmente como tal, el marco legal, institucional y económico para la conservación y el manejo sustentable de los bosques, reconociendo la importancia de la normas legales ambientales en el manejo forestal, lo que afecta en definitiva a las prácticas de manejo forestal¹⁶.

8. AREAS SILVESTRES PROTEGIDAS DEL ESTADO

Por último, parece necesario destacar la importancia que el país ha dado a otro instrumento de gestión ambiental consagrado en su Ley ambiental, cuyo cumplimiento también ejerce un importante efecto en el ordenamiento territorial al someter a protección extensas áreas silvestres, en muchas de las cuales se encuentran importantes superficies embosquecidas, que contribuyen eficazmente en la protección del medio ambiente, la conservación del patrimonio ambiental y la preservación de la naturaleza¹⁷.

Cuando se habla de aprovechamiento forestal, generalmente se distingue la función productiva o económica del bosque de los demás servicios, sociales culturales, recreativos y, especialmente, ambientales que presta. Sin embargo, Chile muestra un equilibrio entre la protección y la producción, al concebir lo forestal en forma multidimensional, en términos de comprender ambos conceptos y de permitir el desarrollo del quehacer, tanto del sector público como del sector privado y de la comunidad toda.

En efecto, particular importancia tiene en Chile, el cuidado de su patrimonio natural, esa copia feliz del edén que inmortaliza nuestro himno nacional. Son 14 millones de hectáreas que se encuentran al amparo de la ley, un 19% de la superficie continental del país, constituyendo lo que se denomina el Sistema Nacional de Areas Silvestres Protegidas del Estado (SNASPE). El efecto multiplicador, no sólo como elemento de conservación y protección, sino como agente cultural y educativo que este patrimonio ejerce sobre la población y ciudadanos extranjeros, es enorme, siendo visitado hoy por

¹⁶ El proceso de Montreal en Chile, Documento Técnico N°128 de la Revista Chile Forestal, Corporación Nacional Forestal, Agosto de 1999.

¹⁷ Artículos 34,35 y 36 de la Ley N°19.300.

un número cada vez mayor de personas, aproximándose a un millón para el próximo año 2.000.

Los programas de educación ambiental, elaborados por la Corporación Nacional Forestal y ejecutados por el Ministerio de Educación, con alumnos y profesores, aseguran un incremento efectivo del nivel de conciencia que toda comunidad civilizada debe manejar, para cruzar exitosamente el límite que nos separa del siglo XXI. La protección contra los incendios de bosques y el ataque de agentes patógenos, constituye una preocupación central de la Corporación Nacional Forestal. Interactuando por la vía de retroalimentar este accionar, la comunidad nacional emite señales permanentemente, respecto de sus inquietudes específicas en el tema. Justo es mencionar lo que en protección de flora y fauna, con grados diversos de vulnerabilidad ecológica, se realizan en el país¹⁸.

9. INSTITUCIONALIDAD FORESTAL

La administración y fiscalización de la legislación forestal que hemos identificado con el manejo forestal sustentable es de responsabilidad de la Corporación Nacional Forestal, organismo dependiente del Ministerio de Agricultura, cuya misión es garantizar a la sociedad el uso sostenible de los ecosistemas forestales y la administración eficiente del Sistema Nacional de Áreas Silvestres Protegidas del Estado, a objeto de contribuir al mejoramiento de la calidad de vida de las actuales y futuras generaciones.

Distribuido estratégicamente a lo largo de todo el territorio, la Corporación Nacional Forestal, superando los desafíos que plantea un siempre escaso presupuesto y realizando una labor de alto nivel profesional, con los ingenieros forestales y profesionales afines, persigue sentar las bases de un desarrollo forestal sustentable cargado de connotaciones sociales y ambientales que debe reflejarse en la realidad de las de prácticas de manejo forestal.

¹⁸ Chile: Estatuto de Fomento Forestal, Enrique Gallardo, Página 108, Forstwissenschaftliche Beiträge 10, Forestry Legislation, ETH Zurich, 1990.

LA LEY FORESTAL 1998 DE CUBA: SU IMPORTANCIA Y REPERCUSIÓN

JOSÉ M. GAREA ALONSO

1. INTRODUCCIÓN

En Julio 1998 se aprobó una nueva Ley Forestal en Cuba. Las grandes transformaciones de orden institucional, económico y social que ocurrieron en el país durante la última década, así como la necesidad de fomentar y fortalecer el sector forestal, dieron vida a esta importante componente de la legislación cubana en materia de manejo sostenible de los recursos naturales.

En efecto, la Ley Forestal abarca y protege al patrimonio forestal de la nación que cubre de bosques el 21.6 % del territorio nacional, con 2.010.800 Has de bosques naturales, 333.800 Has de plantaciones, más 12.558.000 Has de plantaciones jóvenes, a las que se adicionan las áreas deforestadas con vocación forestal y las áreas inforestales.

En el presente texto, se presentan sucesivamente los antecedentes y las causas que motivaron la adopción de la nueva normativa forestal, el marco político y estratégico en el cual se basa la Ley, el proceso de su aprobación y aplicación, así como sus principales aportes y características.

2. ANTECEDENTES Y CAUSAS

La política forestal de la Revolución, desde los grandes planes de reforestación en la década de los 60, el desarrollo de infraestructura para la extracción y aprovechamiento y el establecimiento de comunidades forestales, hasta el mejoramiento de las condiciones de vida de los trabajadores y campesinos forestales y la preparación de una fuerza técnica especializada, no fue respaldada por una legislación básica forestal, ni por un régimen de sanciones administrativas.

No es hasta 1993 que se dicta el Decreto-Ley No. 136 del Patrimonio Forestal y la Fauna Silvestre y el Decreto 180 sobre Contravenciones de las Regulaciones Forestales. Indudablemente, ambos cuerpos legales constituyeron un paso importante en el ordenamiento legal para la conservación, la protección y el uso racional de los bosques, estableciendo disposiciones en correspondencia con la política forestal del país, el desarrollo alcanzado durante el período revolucionario y las modernas concepciones sobre la protección del medio ambiente y el uso sostenible de los recursos naturales, ya proclamados tanto en la Cumbre de Río sobre Medio Ambiente y Desarrollo como en la Reforma de la Constitución de la República, ambas en 1992.

No obstante el Decreto-Ley trató en forma muy general aspectos importantes como la clasificación de los bosques, el manejo forestal, la conservación y el aprovechamiento, el Decreto Contravencional fue insuficiente para contener los innumerables actos depredatorios contra el patrimonio forestal. Unido a esto, ocurrieron en el país, en el período posterior a la aprobación del Decreto-Ley, profundas transformaciones y cambios en la organización y explotación forestal, en la política ambiental, y en las estructuras de la tenencia de tierra, que aconsejaron el estudio y la propuesta de una nueva Ley Forestal.

Estas transformaciones fueron:

- La separación de las funciones estatales de las empresariales y los pasos dados por el Ministerio de la Agricultura (MINAG) en la actividad forestal, al sustraer del sistema empresarial el control estatal, que inadecuadamente se le confirió durante muchos años, con los siguientes perjuicios al priorizar las actividades económico-productivas en detrimento de las de control y reguladoras.
- El traspaso del Cuerpo de Guardabosques del Ministerio de la Agricultura al Ministerio del Interior.
- La constitución de una Comisión Gubernamental denominada Plan Turquino-Manatí para atender los problemas socioeconómicos de las regiones montañosas y la reforestación de las zonas llanas.
- La creación del Ministerio de Ciencia, Tecnología y Medio Ambiente (CITMA), jerarquizando al máximo nivel la determinación, el control y la aplicación de una política ambiental propia del país.
- La aprobación en 1997 de la Ley No. 81 del Medio Ambiente.
- Las transformaciones en la agricultura estatal con la creación, a partir de tierras estatales entregadas en usufructo, de cooperativas de producción agropecuarias constituidas por obreros, así como la entrega de tierras, también en usufructo, a personas naturales para la explotación familiar, lo cual diversifica y amplía el número de tenentes del patrimonio forestal, que estaba todo prácticamente bajo explotación estatal.

Estos elementos constituyeron la base para la elaboración y propuesta de la Ley Forestal para su discusión y promulgación por el Parlamento.

3. LA POLÍTICA FORESTAL NACIONAL

La política forestal del país, plasmada en el Programa Sector Forestal hasta el 2015, proyecta hacer crecer la superficie cubierta de bosques hasta el 27% con aproximadamente 1 millón de hectáreas de plantaciones, de los que más del 50% serán bosques protectores en las franjas hidro-reguladoras de ríos, arroyos y embalses, en las cuencas hidrográficas en las áreas montañosas y de premontaña y en las costas.

Se trabaja en la actualidad en el completamiento del Programa Forestal Nacional que incluye al resto de los sectores con tenencias forestales o áreas con vocación forestal y las acciones de otros sectores relacionados, como son el turismo, los recursos hídricos, los suelos y la educación.

La Ley Forestal y su rigurosa y consecuente aplicación constituyen el soporte jurídico indispensable para el cumplimiento de la política forestal nacional.

El Programa Forestal surge como consecuencia del potencial acumulado durante los últimos 40 años, en que el país ha materializado grandes esfuerzos en la repoblación forestal y cuidado de los bosques naturales, lo cual permite contar con más de 300.000 Has de plantaciones artificiales. El importante potencial científico-técnico acumulado permite un aprovechamiento sostenible de los recursos forestales, sin menoscabo del importante papel protector y conservacionista que desempeñan los bosques.

El grado de obsolescencia de la industria forestal, dedicada solo a la transformación primaria de la madera, obliga a la necesidad de buscar fuentes de financiamiento para poder explotar las potencialidades de materia prima existente.

Los bosques de pino constituyen la fuente principal para la obtención de madera industrial, los que poseen además un apreciable potencial para la producción de resina y otros productos no madereros.

El incremento paulatino de los niveles de madera aserrada, con énfasis fundamental en la sustitución de importaciones, se destinará a renglones básicos para el desarrollo económico-social del país como son: el desarrollo turístico; la zafra tabacalera; la zafra azucarera; la industria ligera; el programa de construcción de viviendas; los envases agrícolas; y otros usos sociales.

Antes del "período especial" (1990), el país recibía anualmente unos 500.000 m³ de madera aserrada del campo socialista. El reto actualmente consiste en reducir al máximo las importaciones y dar respuesta a las demandas de la economía nacional, con precios y calidades competitivas con relación al mercado internacional.

Durante el período que abarca el Programa, se fomentarán 700.000 Has con diferentes fines productivos y se mejoraron y rehabilitaron 356.000 Has de bosques naturales para la producción forestal. Al final del período, la producción de madera crecerá en 2,5 veces. Sin embargo, el 75% se obtendrá de plantaciones, aliviando la presión actual sobre los bosques naturales.

Este Programa generará también los recursos en divisas que serán el soporte económico para financiar la protección y conservación de bosques y el fomento de las plantaciones de protección que el país necesita, que se estiman en 240.000 Has.

4. LA LEY FORESTAL: SU APROBACION Y APLICACION

La Ley No. 85, Ley Forestal de Cuba, fue aprobada por la Asamblea Nacional del Poder Popular el 21 de julio de 1998.

La definición, fortalecimiento y desarrollo de una política ambiental propia en el país, las profundas transformaciones en la tenencia de la tierra, la necesidad de incrementar el aprovechamiento de los recursos forestales para satisfacer las necesidades de la economía, conjugándolos con un equilibrado régimen de protección y conservación de los bosques y la necesidad de reglamentar y fortalecer el papel controlador del Estado sobre el patrimonio forestal de la nación, fueron los factores principales, unidos a insuficiencias de la legislación anterior, que dieron vida primero a la elaboración y el amplio debate sobre el proyecto legislativo forestal, finalmente convertido en Ley en la fecha señalada.

Los objetivos de la Ley son claros y precisos. Se pueden expresar textualmente, sin comentarios, tal como están definidos en su primer artículo:

- Establecer los principios y las reglas generales para la protección, el incremento y el desarrollo sostenible del patrimonio forestal de la nación;
- Controlar los recursos del patrimonio forestal por medio de las regulaciones establecidas y de los órganos y organismos competentes;
- Promover e incentivar la repoblación forestal con fines económicos, de protección o sociales, así como los manejos silvícolas en plantaciones y bosques naturales;
- Conservar los recursos de la diversidad biológica asociados a los ecosistemas forestales;

- Proteger los bosques contra los desmontes, las talas irracionales, los incendios forestales, el libre pastoreo, las plagas y las enfermedades, así como otras acciones que los pueden afectar; y
- Regular el uso múltiple y sostenible del patrimonio forestal y promover el aprovechamiento racional de los productos del bosque.

La Ley Forestal, como toda norma jurídica que regula una importante rama de la economía nacional que a su vez tiene también un gran valor desde el punto de vista medio-ambiental y social, requiere de disposiciones complementarias que faciliten su eficiente aplicación.

Durante el año siguiente, se elaboró, debatió, aprobó y además se instruyó y divulgó, conjuntamente con la Ley, su propio Reglamento, mediante la Resolución No. 330/99 del 7 de septiembre de 1999, que consta de 171 artículos y reglamenta al detalle todos los procedimientos a observar y cumplir para la aplicación de la Ley. Asimismo, se aprobó el Decreto No. 268 del 8 de septiembre de 1999 sobre las Contravenciones de las Regulaciones Forestales, que permite sancionar por el Servicio Estatal Forestal y por el Cuerpo de Guardabosques las infracciones de la Ley y de su Reglamento con multas y otras medidas como decomisos, obligaciones de reforestar, etc.

Esta legislación fue ampliamente explicada y divulgada en todas las provincias y todos los municipios del país y se celebraron, de conjunto con la Asamblea Nacional, 25 Audiencias Públicas en Municipios montañosos y forestales con la participación de los órganos de gobierno y pobladores, además de los utilizadores y tenentes de los recursos forestales. También recibió una amplia cobertura en la prensa radial, escrita y televisiva, local y nacional.

Desde julio del 2000, está funcionando el Fondo Nacional de Desarrollo Forestal (FONADEF) creado por la Ley, el que cuenta con su Junta de Administración y las Reglas de Procedimiento para su operación, que establecen el financiamiento a personas naturales y jurídicas por las acciones de manejo forestal y el sistema de bonificaciones.

La Dirección Forestal del Ministerio de la Agricultura fue acreedora en noviembre de 1999 del Premio Internacional "Edouard Sauma", que otorga la FAO (Organización de las Naciones Unidas para la Agricultura y la Alimentación) cada dos años, a través de su Programa de Cooperación Técnica, a las instituciones nacionales que más aprovechan y obtienen los mejores resultados de la Asesoría brindada por la FAO (en este caso con la Ley Forestal y sus Regulaciones Complementarias).

5. PRINCIPALES ASPECTOS DE LA LEY FORESTAL

Tratamos a continuación aquellos aspectos que se consideran más importantes, muchos de los cuáles van alcanzando una repercusión favorable en su aplicación.

Después de las "disposiciones generales" del primer capítulo (objetivos y definiciones), el capítulo II –"marco institucional"– dejó bien definidas las atribuciones y funciones que, con relación a los objetivos de la Ley, le corresponden al Ministerio de la Agricultura, al Ministerio de Ciencia, Tecnología y Medio Ambiente y al Ministerio del Interior.

Esta clara repartición ha permitido trabajar y desarrollar a estos Organismos sus funciones, sin interferencias ni conflictos, y con un amplio sentido de colaboración, manifestado entre otras en actividades y reuniones conjuntas, lo cual deberá seguir perfeccionándose.

El Servicio Estatal Forestal (SEF), al que la Ley definió como autoridad encargada de ejercer el control estatal sobre el patrimonio forestal, se encuentra presente y funcionando en las 14 provincias y 169 municipios del país. Dirigido y supervisado por la Dirección Forestal, el SEF cumple las funciones dadas en la Ley en cuanto a la expedición de autorizaciones de tala y otras acciones sobre el patrimonio forestal, la aprobación de proyectos de fomento y otros, la certificación y validación de los trabajos forestales para su financiamiento y bonificación, el conocimiento de las infracciones, la aplicación de multas y el custodio de los decomisos, la asesoría, etc.

Su personal se ha ido calificando constantemente mediante cursos y seminarios nacionales e internacionales, y deberá continuar perfeccionando su trabajo sobre todo en tareas de extensionismo. Hasta la fecha ha sido posible dotarlo al 50% de sus necesidades con equipamiento técnico y aseguramiento a partir de las posibilidades económicas de la Nación y un proyecto del PNUD para el Fortalecimiento Institucional del Servicio Forestal (capítulo III, sección I).

El FONADEF quedó establecido por Resolución Conjunta No. 1-2000 del 28 de abril de 2000 del Ministerio de Economía y Planificación y el Ministerio de Finanzas y Precios. Se nutre, además de la asignación del presupuesto estatal para el financiamiento de la silvicultura y de las actividades de fomento y protección de la flora y la fauna, del valor de las multas y de los decomisos aplicadas por el Decreto No. 268, del importe de las indemnizaciones por daños causados al patrimonio forestal, del valor de las áreas desmontadas y de los costos de su reposición, de donaciones, de los ingresos de las campañas a favor del bosque, de las recaudaciones por autorizaciones, permisos y licencias para actividades forestales y de fauna, y de los ingresos de proyectos internacionales que así procedan (capítulo III, sección II).

El destino de los recursos financieros también se ha ampliado y con ellos se podrán financiar, además de lo ya establecido por la derogada Resolución No. 7 del Ministerio de Finanzas, la elaboración de proyectos forestales, los trabajos de ordenación y de inventario de bosques, los estudios y servicios necesarios para la solución de problemas vinculados al desarrollo forestal, la promoción, divulgación y capacitación forestal, las medidas de protección y conservación de suelos forestales y de fondos fitogenéticos forestales, así como la construcción, la reparación y el mantenimiento de los caminos de uso silvícola.

Los incentivos a la actividad forestal previstos en la Ley alcanzan a bonificar a las personas naturales o jurídicas que ejecuten plantaciones forestales y manejos silvícolas, la reducción o exención de aranceles a la importación de tecnologías y equipamiento para el desarrollo forestal, la reducción o exención de impuestos a productos forestales provenientes de plantaciones y el otorgamiento excepcional de beneficios fiscales o financieros a instituciones o personas para estimular la atención a las plantaciones, la forestación y la reforestación (capítulo III, sección III).

Aunque el Reglamento forestal estableció los procedimientos para tener acceso a estos incentivos, no ha existido, con excepción de las bonificaciones, la conciencia y las acciones necesarias por parte de los presuntos beneficiarios para solicitar y obtener los incentivos económicos establecidos en la Ley. Esta labor tiene hoy la máxima prioridad, mediante tareas de esclarecimiento, extensionismo directo y campañas de divulgación.

En cuanto a las bonificaciones, el trabajo ha estado encaminado a una más amplia explicación y divulgación a fin de que las entidades no forestales y los agricultores pequeños, ya sean propietarios o usufructuarios, conozcan y se aprovechen de las

bonificaciones. También se trabaja en el perfeccionamiento de las metodologías a fin de que se incluyan aspectos relacionados con la calidad de los trabajos forestales, que hasta el presente no se contemplan.

El Capítulo IV, dedicado a los "bosques y su clasificación", incluye los bosques de conservación y define las categorías de los bosques de protección y conservación. El Reglamento forestal estableció la metodología y el procedimiento para reclasificar y categorizar todos los bosques del país. Este trabajo se ha venido ejecutando por cada provincia desde enero hasta diciembre del año 2000 y actualmente esta siendo sometido a análisis y aprobación por la Dirección Forestal.

La ordenación forestal, los planes de manejo y los proyectos técnicos son tratados tanto en la Ley (capítulo V, sección I) como en su Reglamento e inclusive en el Decreto de Contravenciones. Esta importante actividad, imprescindible para el buen manejo forestal, se ha dotado de la jerarquía legal y reglamentaria (ausente en la anterior legislación) que permite y promueve su reencausamiento y despegue, después de los años del período especial en que, por falta de recursos, después de los avances logrados en la década de los 80, cayo en un estancamiento que es necesario rescatar e impulsar sobre las bases de las nuevas técnicas universalmente aplicadas.

El Grupo Empresarial ha realizado esfuerzos por reorganizar los trabajos de ordenación, mediante la creación de una Base Nacional y tres Bases Territoriales, aunando algunos recursos, personal técnico, capacitación y seminarios, pero todo esto es aún insuficiente para reiniciar la ordenación forestal.

Por otra parte, el Reglamento forestal establece que aquellas instituciones (docentes, de investigación, etc.) que cuenten con el personal técnico, el equipamiento y los recursos necesarios pueden realizar Proyectos de Ordenación, siempre que así sean autorizadas por la Dirección Forestal.

En este sentido, la Universidad de Pinar del Río ha solicitado que se le autorice efectuar los trabajos de ordenación en las empresas forestales de esa Provincia, y su petición fue aprobada por la Dirección Forestal. Algunas empresas han concentrado esfuerzos, personal técnico y medios para desarrollar estos trabajos con su propio esfuerzo. Hoy día, la actualización de los proyectos de ordenación y la adquisición de los recursos necesarios para enfrentar esta tarea son el punto más débil en la acción forestal del país.

La Ley declara que la forestación y reforestación son de interés social y encarga al Ministerio de la Agricultura de la dirección y coordinación de estos trabajos, señalando las áreas en que la forestación y reforestación son obligatorias, así como la obligación de dictar y cumplir las normativas técnicas correspondientes (capítulo V, sección II).

El Reglamento regula específicamente el ancho de las fajas forestales en embalses, cauces naturales, zonas que circundan manantiales y a lo largo de cárcavas y barrancas, estableciendo limitaciones en cuanto a cultivos, viviendas o instalaciones que pueden afectar la función hidro-reguladora de dichas fajas.

Estas disposiciones refuerzan jurídicamente la política de reforestación y de protección de las cuencas hidrográficas que lleva a cabo el Estado. El Decreto Contravencional sanciona fuertemente a los infractores en esta materia.

El aprovechamiento forestal recibe un tratamiento adecuado en la Ley (capítulo V, sección III), y el Reglamento es preciso al regular en forma detallada y explícita todo lo relacionado con las autorizaciones de los distintos tipos de guías forestales para

efectuar las talas, el transporte de productos forestales, la comercialización y el uso de los productos forestales, el aprovechamiento forestal en áreas de café y cacao, el aprovechamiento forestal por los usufructuarios, el aprovechamiento de las palmáceas, las prohibiciones y limitaciones de tala y los contratos y otros actos jurídicos sobre el patrimonio forestal.

Se han actualizado, incorporándolas al Reglamento forestal, todas las resoluciones ministeriales en materia de aprovechamiento y se han también regulado nuevos aspectos, lo que permite que todo el amplio espectro del aprovechamiento esté debidamente recogido en un solo cuerpo legal.

Por primera vez, la legislación forestal cubana reconoce derechos –y no solo deberes– de las personas con relación al bosque, y en especial concede derechos de uso a los habitantes de los bosques, o sea a las personas que viven permanentemente en esas zonas, siempre que el ejercicio de tales derechos no afecte su integridad ni la biodiversidad asociada a ellas (capítulo VI).

Esos derechos consisten en la recogida de frutos, leña seca, plantas medicinales, naturalezas muertas y otros, así como efectuar silvopastoreo con animales de su propiedad. También incluyen la posibilidad de adquirir productos madereros para las necesidades personales, así como la posibilidad de aprovechar recursos forestales en peligro de deterioro para las necesidades de las comunidades forestales.

El Reglamento regula la forma de acceder a estos derechos en forma simple, pero cumpliendo elementales normas de control y seguridad. Como se ha divulgado y explicado en seminarios, talleres, audiencias, etc., se trata de que las personas que viven en tan apartados lugares puedan recibir determinados beneficios que, sin dañar los bosques, los incentiven también a su cuidado y preservación.

La consecuente aplicación y reconocimiento de estos derechos, por las autoridades forestales y por los tenentes y administradores de los recursos forestales, debe traducirse en beneficios sociales y ambientales en las regiones boscosas.

Los capítulos VII de la Ley y VIII del Reglamento tratan de la protección y de la conservación de los bosques. La sección primera de ambos capítulos se refiere a la protección fitosanitaria y, en la misma, se establecen las obligaciones de los tenentes y administradores de bosques y las acciones a tomar por estos para la prevención, la detección y el combate de las plagas que afectan a los árboles del bosque.

Se definen las responsabilidades del Servicio Estatal de Protección de Plantas y del Instituto de Investigaciones Forestales en el muestreo, la señalización, el pronóstico y el diagnóstico de las plagas y en el Inventario Patológico Forestal que permita recomendar y aplicar las medidas para el combate y la eliminación de las plagas.

La Ley dispone la determinación de áreas para la preservación de los fondos genéticos forestales, encargando al MINAG y al CITMA dictar regulaciones para la reproducción, el manejo y la conservación de las especies, las procedencias, los individuos o los genes comprendidos en los recursos genéticos forestales del país.

El Reglamento dispone que el Instituto de Investigaciones Forestales elaborará la propuesta de estas regulaciones, lo que ya se ha hecho por especialistas de esa institución y fue debatido en el seno del Consejo Consultivo para el Desarrollo Forestal Sostenible, continuándose en su perfeccionamiento para someterlo a la aprobación de ambos organismos.

Igualmente la Ley regula la introducción de especies forestales de la flora y la fauna silvestre, procedentes del extranjero o de otras localidades del país, lo que requerirá del aval del CITMA y el control por parte del SEF. El procedimiento se estableció en el Reglamento y se elaboran los listados de especies que dentro del país no requerirán de licencia ambiental.

La utilización de áreas del patrimonio forestal para actividades no forestales que no impliquen cambios en su uso, y la evaluación previa por parte del Ministerio de la Agricultura de cualquier obra o inversión capaz de perjudicar al patrimonio forestal, son aspectos regulados en la Ley, cuya evaluación y autorización corresponden al SEF según el procedimiento establecido en el Reglamento.

La protección contra incendios forestales mereció un tratamiento preferencial en la legislación dadas las grandes afectaciones y pérdidas que originan los siniestros en el patrimonio forestal y que se han incrementado considerablemente en el presente decenio con relación a periodos anteriores.

La Ley definió a la protección contra incendios forestales como un sistema de actividades de prevención, control y extinción, así como la investigación y capacitación en esta materia, y dispuso que dichas actividades se regularan en un programa nacional proyectado por el Ministerio del Interior, con la colaboración del MINAG, del CITMA y del Estado Mayor de la Defensa Civil, y aprobado por el Consejo de Ministros.

Este Programa Nacional de Protección contra incendios forestales estará concluido en mayo del 2001 y cuenta para ello con el apoyo del Programa de Cooperación Técnica de la FAO, que comprende la colaboración de funcionarios de la FAO y de expertos internacionales que trabajan en la capacitación del personal cubano y en la elaboración de la estrategia y del programa nacional, adicionándose las medidas y acciones para el uso del fuego en las zonas rurales.

Otros aspectos regulados fueron la prohibición del uso del fuego en las áreas de bosques y sus colindancias, salvo casos excepcionales expresamente autorizadas por el Cuerpo de Guardabosques, estableciendo las obligaciones a cumplir por los tenentes y administradores de bosques en materia de prevención y combate, y también de recuperación y restauración de áreas afectadas, así como las limitaciones en la circulación y el estacionamiento de vehículos y de personas en los bosques y sus colindancias en periodos de alta peligrosidad de incendios.

El Reglamento regula todo lo relacionado con los planes de protección y medidas de seguridad, las obligaciones de las personas y de los administradores y tenentes al conocer o al iniciarse el fuego, la investigación de las causas que lo originaron, la evaluación de las áreas dañadas y las medidas y acciones para la recuperación y rehabilitación de las áreas afectadas, el otorgamiento de los permisos excepcionales para el uso del fuego y las precauciones a observar mientras dure el fuego y como se cumplen las prohibiciones o limitaciones de circulación o estacionamiento en los bosques.

El Decreto de Contravenciones establece una fuerte multa (500 pesos) a quién ordene o haga uso del fuego sin autorización, y de 200 pesos a cualquier otra infracción. Las anteriores multas eran de 50 ó 20 pesos.

Además, el Cuerpo de Guardabosques ha dictado, puesto en vigor y dado a conocer ampliamente las metodologías con relación a los planes de protección, las medidas de seguridad, la investigación de incendios, etc. Por su parte, las empresas

forestales y de flora y fauna han elaborado y ejecutan desde diciembre 2000, los Planes de Protección contra Incendios Forestales.

Se han coordinado con el Estado Mayor de la Defensa Civil las medidas emergentes que permitan la preparación y el enfrentamiento para el período febrero-mayo 2001, se han dictado medidas especiales que consideran el fuego como emergencia nacional y ha sido dispuesto por las Fuerzas Armadas el apoyo con sus medios en la extinción de los incendios.

En el año 2000 hubo una disminución discreta en el número de incendios forestales, pero significativa en cuanto a las áreas afectadas con relación a 1999. De 377 incendios en el 1999, disminuyeron a 323 en el 2000, y de 22.897 hectáreas afectadas, disminuyeron a 6.833 hectáreas.

La Ley Forestal ratifica la prohibición del desmonte para evitar la reducción de los bosques. Esta prohibición estaba en la legislación anterior y está en la Ley del Medio Ambiente de 1997, con la diferencia que no existía procedimiento para tramitar la excepcionalidad, que solo autoriza el Consejo de Ministros. El Reglamento Forestal estableció dicho procedimiento, que es sencillo en la tramitación pero riguroso en la concesión. El Decreto de Contravenciones elevó la multa por infracción de 50 a 2000 pesos y estableció la obligación de reforestar el área desmontada sin autorización.

Por otro lado, las regulaciones del FONADEF instrumentaron que la entidad autorizada a efectuar el desmonte esta obligada al pago del valor de los productos forestales y el costo para restaurar el área desmontada, todo lo cual se ingresa a dicho Fondo. Estas regulaciones complementarias van convirtiendo la prohibición del desmonte en letra muerta por falta de procedimiento, en respeto a dicha prohibición.

El Reglamento Forestal, por último, reguló el tratamiento forestal en áreas urbanas, la responsabilidad por daños y perjuicios al patrimonio forestal, y el Consejo Consultivo para el Desarrollo Forestal Sostenible, el que ha estabilizado su trabajo, habiendo celebrado tres sesiones de trabajo en el año 2001, en las que se han informado y discutido importantes temas sobre el desarrollo forestal.

Un aspecto importante aún pendiente de instrumentar es la implantación del Registro Forestal creado por la Ley, el que cuenta con su proyecto de reglamento pero requiere de precisiones y determinados recursos materiales.

La Dirección Forestal ha trabajado en otros aspectos como son la elaboración e instrumentación de instructivos y normativas técnicas para potenciar el rescate de bosques naturales, para lograr plantaciones en áreas extremas, para el manejo de la regeneración natural, etc., que coadyuven al incremento de las áreas forestales.

De positiva, puede resumirse hasta ahora la aplicación de la Ley Forestal y sus regulaciones complementarias. En el sector forestal del país, ha sido acogida, entendida y cada día más respetada por los empresarios y otros tenentes del patrimonio forestal. Además, desde el punto de vista ambiental, ha sido importante su divulgación y comprensión por parte de la comunidad, de las autoridades locales, y de los campesinos pobladores de las zonas boscosas.

Indudablemente, no todo está hecho. Pues se trata de un trabajo permanente, sobre todo de convencimiento y persuasión en cuanto al cumplimiento de las disposiciones legales para lograr el desarrollo sostenible de los bosques.

6. LA LEY FORESTAL, EL MEDIO AMBIENTE Y EL DEBATE INTERNACIONAL SOBRE LOS BOSQUES

La Ley Forestal, como ya mencionado, se inserta en la política y la legislación ambiental de Cuba. También se enmarca en las temáticas globales que caracterizan el debate internacional sobre los bosques.

El artículo 27 de la Constitución de la República, según quedó modificado en 1992, y la Ley No. 81 del Medio Ambiente de 1997 reconocen y protegen el desarrollo sostenible de los recursos naturales del país.

A tenor de estos principios, se dictaron, además de la Ley Forestal, el Decreto-Ley de Áreas Protegidas en 1999, el Decreto-Ley de Gestión de las Zonas Costeras en 2000 y se están preparando un Proyecto de Decreto-Ley sobre Diversidad Biológica y un Decreto de Caza.

Desde 1993 están vigentes, sobre la base de los principios de sostenibilidad, el Decreto sobre Uso, Protección y Conservación de Suelos, así como Decretos-Leyes sobre la Sanidad Vegetal, la Calidad de las Semillas y la Medicina Veterinaria.

En el plano internacional, Cuba es parte de diversos tratados internacionales que tienen relevancia para los bosques, tales como la Convención sobre el Comercio Internacional de Especies Amenazadas de Fauna y Flora Silvestres (CITES), el Convenio sobre la Diversidad Biológica, el Convenio Marco sobre Cambios Climáticos y la Convención para la Lucha contra Desertificación.

Desde 1996, Cuba ha participado en varias sesiones del Grupo Intergubernamental sobre los Bosques y del Foro Intergubernamental sobre los Bosques, ambos de las Naciones Unidas, y seguirá participando en los trabajos del recién creado Foro de las Naciones Unidas sobre los Bosques (FNUB).

Además, como miembro tanto de la Comisión Forestal para América Latina y el Caribe (COFLAC) como del Comité de Montes de FAO (COFO), Cuba participa regularmente en las sesiones de estos organismos.

En fin, Cuba se inserta en el proceso de Lepaterique sobre los Criterios e Indicadores para el Manejo Forestal Sostenible en América Central, y ha participado en la Iniciativa Costa Rica-Canadá para la determinación de los acuerdos sobre los bosques desarrollada en el marco del Foro Intergubernamental sobre los Bosques.

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EFFECT OF THE FEDERAL ESTATE TAX ON RURAL LAND HOLDINGS IN THE UNITED STATES

JOHN GREENE, TAMARA CUSHING, STEVE BULLARD AND TED BEAUVAIS,

ABSTRACT:

There is considerable evidence that the effect of the federal estate tax on transfers of rural land holdings is increasing. To provide insight into the magnitude of the effect, the Mississippi State University, Forest and Wildlife Research Center, and the USDA Forest Service, Southern Research Station, have cooperated in a study to gauge the effect of the federal estate tax on nonindustrial forests and other rural land holdings. Data for the study were collected by means of a mailed questionnaire, using the Dillman Total Design Method. Random samples of two national forest owner organizations and a national database of rural landowners were surveyed. The results for forest owners indicate that 36 percent of forest estates owe the federal estate tax, a rate many times higher than the U.S. population in general. In 40 percent of the cases where a federal estate tax is due, timber or land must be sold to pay part or all of the tax. The amount of forestland that must be harvested to pay the federal estate tax appears to be on the order of 1.0 million ha (2.6 million ac) per year, and the amount of forestland that must be sold appears to be on the order of 0.5 million ha (1.3 million ac) per year. Of the land sold, it appears that 29 percent is developed or converted to other uses. The responses from forest owners and other rural landowners were more remarkable for their similarities than their differences. There was no statistical difference in the responses from the two groups regarding location of the land, form of ownership, value of the gross taxable estate, size of the holding, whether it qualified for "special use" valuation, whether "special use" valuation was used, amount of estate tax paid, reasons land was sold, or current use of land that was sold.

INTRODUCTION

There is considerable evidence to indicate that the effect of the federal estate tax on transfers of rural land holdings is increasing (see the box below for a description of the tax). The number and percentage of estates in general that owe federal estate tax is increasing year by year (Internal Revenue Service, 1996; Herman, 2001). Urban expansion (U.S. Department of Commerce, 1992; Harris and DeForest, 1994) and gentrification of the areas surrounding cities have driven up the value of much of the nation's rural land. Sharply increased stumpage prices (Morrow and Fritschi, 1997) have also driven up the timber component of forestland value. And the stringent requirements for "special use" valuation - which permits working land to be appraised for estate tax purposes at its value in use rather than its highest and best use - make it difficult for managed forestland to qualify for and remain under the provision.

But particularly for forest estates, little information is available on the actual magnitude of the effect. A handful of case studies used hypothetical families and forest holdings to investigate aspects of the transfer of forestland from one generation to another: the size of a forest that can be transferred without incurring

the estate tax (Sutherland, 1978), the effect of the estate tax on returns to forest management (Sutherland and Tedder, 1979), the effect of using "special use" valuation on the net value of a forest estate (Gardner *et al.*, 1984), the effect of form of forest ownership and assets used to pay the estate tax on returns from the forest (Howard, 1985), and the interaction between federal and state death taxes (Walden *et al.*, 1987; Peters *et al.*, 1998). Additionally, there have been two empirical studies of large forest estates: one in the South, to determine whether estates over 1,400 ha (3,500 ac) had to liquidate forest assets pay the federal estate tax (Lucas, 1963), and one in the Northeast, to determine whether the estate tax figured in landowners' decisions to sell parcels over 200 ha (500 ac; Northern Forest Lands Council, 1994).

The Forest and Wildlife Research Center of Mississippi State University and the Forest Law and Economics Research Unit of the USDA Forest Service, Southern Research Station, have cooperated in a study to gauge the effect of the federal estate tax on nonindustrial private forests and other rural land holdings. This research represents the first effort of its kind to quantify the effect of the federal estate tax on land holdings.

THE FEDERAL ESTATE TAX IN THE UNITED STATES

During the years surveyed in this study, the federal estate and gift taxes were combined into a single, unified tax on transfers of wealth. Lifetime gifts up to \$10,000 per recipient per year were excluded from the tax. Following death, deductions from a decedent's estate were permitted for transfers to a surviving spouse, charitable gifts, payment of debts, and funeral and administrative expenses. As well, a "unified credit" shielded large lifetime gifts and estate values up to a total of \$600,000 in value from tax. Large gifts and estates over \$600,000 in value were taxed at rates that increased sharply, from 37 percent on amounts up to \$750,000 to 55 percent on amounts over \$3 million.

The Taxpayer Relief Act of 1997 scheduled a series of increases in the amount shielded by the unified credit, to a target of \$1 million in 2006. However, the Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA) short-circuited the schedule, separated the gift and estate taxes, and established a separate effective exemption amount for each. The effective exemption amount for gifts will shield lifetime gifts up to a total of \$1 million, beginning in 2002. The effective exemption amount for estates will increase in steps from \$1 million beginning in 2002 to \$3.5 million beginning in 2009. EGTRRA also effects a gradual decrease in the top rate for federal estate and gift taxes, from 55 to 45 percent by 2009. Beginning in 2010, it eliminates the estate tax entirely and sets the top tax rate for gifts equal to the top individual income tax rate. But EGTRRA itself is scheduled to sunset at the end of 2010, returning estate and gift taxes to prior law.

METHODS

Data for the study were collected by means of a mailed questionnaire, using the Dillman (1978) Total Design Method. Questionnaire recipients received a first mailing with a cover letter from the cooperating organization encouraging them to respond. Recipients who had not responded within two weeks of the initial mailing received a postcard reminder; those who had not responded within four weeks of the initial mailing received another reminder with a second copy of the questionnaire.

The questionnaire was pre-tested using a 100 percent survey of individual members of the Mississippi Forestry Association. Following the pre-test, random samples were surveyed from three national groups of landowners:

- X Members of the American Tree Farm System,
- X Members of the National Woodland Owners Association, and
- X Rural landowners nationwide, from a database developed by J.D. Esseks, Northern Illinois University.

Questionnaire recipients were asked to respond for transfers of estates that occurred between 1987 and 1997. Usable responses were received from 758 of the 1,273 National Woodland Owner Association members surveyed, 466 of the 1,380 Tree Farm System members, and 672 of the 3,077 other rural landowners, for an overall response rate of 33 percent.

Chi-square tests at the $\alpha = 0.05$ level of significance were used to test for differences between the responses from members of the two forest owner associations. No differences were found except for the responses regarding location of the land and value of the gross taxable estate. Stratifying the results by region (North, South, and West) accounted for the differences. Accordingly, the responses for the two forest owner associations were combined, with the results for the questions on location of the land and value of the gross taxable estate cast by region.

Chi-square tests also were used to test for differences between the responses for forest owners and other rural landowners. This report summarizes the results of those tests. In addition, it provides initial estimates of the total forest area affected by key findings.

RESULTS

Descriptive Statistics

During the survey period, 9 percent of forest owner respondents and 14 percent of other rural landowners were involved in the transfer of an estate. These results differ statistically (Table 1a), which may indicate that other rural landowners - primarily farmers and ranchers - tend to be older, on average, than forest owners. Applying the estimated number of private forest ownership units from Birch (1996) to the survey findings, an estimated 84,000 transfers of forest estates occur each year, nationwide.

Among the respondents who had been involved in the transfer of an estate, 83 percent of those in the forest owner sample and 94 percent of those in the other rural landowner sample were family members of the decedent. These results also differ statistically (Table 1b), with respondents for forest estates more likely to be a friend, business associate, or professional who served the decedent and those for other rural estates more likely to be a family member.

Other descriptive information - location of the land, form of ownership in which it was held, value of the gross taxable estate, and total area - did not differ between the groups (Table 1c-h). They did differ, however, on use of the land, with forest owners more likely to own substantial forestland (Table 1i), and other rural landowners more likely to own substantial crop- and grazing land (Table 1j, k). Forest owners' forest holdings ranged in size from 3 to 8,100 ha (8 to 20,000 ac), with a mean of 414 ha (1,024 ac) and a median of 63 ha (156 ac). Expanding this finding, an estimated 34.8 million ha (85.9 million ac) of forestland are transferred each year at the death of their owners.

Some 68 percent of the decedent landowners had used the services of a financial or legal professional to plan their estate, a finding that did not differ statistically between the groups (Table 1l). Their heirs differed, however, on whether they believed professional help reduced the amount of estate tax due, with 75 percent of other rural landowners but only 65 percent of forest owners responding “yes” (Table 1m).

Table 1: Summary of survey results on descriptive statistics for forest owners and other rural landowners

	Forest Owners		Other Rural Landowners	
	Number	Percent	Number	Percent
a. Involved in the transfer of an estate^a				
n	1,224	--	672	--
No	1,110	90.7	578	86.0
Yes	114	9.3	94	14.0
b. Relationship to the deceased^a				
n	109	--	90	--
Family member	90	82.6	85	94.4
Friend or business associate	11	10.1	4	4.4
Professional (deceased a client)	8	7.3	1	1.1
c. Location of the land^b				
n	111	--	87	--
North	50	45.0	48	55.2
South	38	34.2	27	31.0
West	23	20.7	12	13.8
d. Form of ownership in which land was held^b				
n	113	--	94	--
Individual	57	50.4	55	58.5
Joint	30	26.5	26	27.7
Partnership	11	9.7	1	1.1
Corporation	8	7.1	4	4.3
Other (e.g., FLP, LLC)	7	6.2	8	8.5
e. Value of the gross taxable estate - North^b				
n	49	--	47	--
LT \$600,000	26	53.1	34	72.3
GE \$600,000, but LT \$1,000,000	12	24.5	7	14.9
GE \$1,000,000, but LT \$2,000,000	4	8.2	4	8.5
GE \$2,000,000, but LT \$3,000,000	3	6.1	1	2.1
GE \$3,000,000	4	8.2	1	2.1
f. Value of the gross taxable estate - South^{b,c}				
n	36	--	24	--
LT \$600,000	22	61.1	17	70.8
GE \$600,000, but LT \$1,000,000	4	11.1	4	16.7
GE \$1,000,000, but LT \$2,000,000	5	13.9	1	4.2
GE \$2,000,000, but LT \$3,000,000	1	2.8	0	0.0
GE \$3,000,000	4	11.1	2	8.3

	Forest Owners		Other Rural Landowners	
	Number	Percent	Number	Percent
g. Value of the gross taxable estate - West^{b,c}				
n	22	--	12	--
LT \$600,000	4	18.2	6	50.0
GE \$600,000, but LT \$1,000,000	6	27.3	1	8.3
GE \$1,000,000, but LT \$2,000,000	5	22.7	3	25.0
GE \$2,000,000, but LT \$3,000,000	4	18.2	0	0.0
GE \$3,000,000	3	13.6	2	16.7
h. Total area^b				
n	111	--	82	--
LT 40 ha (100 ac)	27	24.3	23	28.0
GE 40 ha (100 ac), but LT 200 ha (500 ac)	53	47.7	35	42.7
GE 200 ha (500 ac)	31	27.9	24	29.3
i. Forest area^b				
n	103	--	23	--
LT 40 ha (100 ac)	38	36.9	16	69.6
GE 40 ha (100 ac), but LT 200 ha (500 ac)	38	36.9	7	30.4
GE 200 ha (500 ac)	27	26.2	0	0.0
j. Cropland area^b				
n	40	--	60	--
LT 40 ha (100 ac)	27	67.5	26	43.3
GE 40 ha (100 ac), but LT 200 ha (500 ac)	11	27.5	24	40.0
GE 200 ha (500 ac)	2	5.0	10	16.7
k. Grazing area (pasture and range)^b				
n	43	--	50	--
LT 40 ha (100 ac)	29	67.4	21	42.0
GE 40 ha (100 ac), but LT 200 ha (500 ac)	10	23.3	13	26.0
GE 200 ha (500 ac)	4	9.3	16	32.0
l. Professional helped in estate planning^b				
n	111	--	91	--
Yes	72	64.9	65	71.4
No	36	32.4	26	28.6
Don't know	3	2.7	0	0.0
m. Professional help reduced the tax due^a				
n	72	--	65	--
Yes	44	61.1	49	75.4
No	22	30.6	8	12.3
Don't know	6	8.3	8	12.3
<p>^a The samples differ statistically at the $\alpha = 0.05$ level of significance.</p> <p>^b The samples do not differ statistically.</p> <p>^c Test results are based on a small sample.</p>				

“Special Use” Valuation

“Special use” valuation reduces the gross value of an estate by permitting the executor to appraise assets used for farming or in a trade or business - including timber production - according to their value in use rather than their highest and best use. For both forest owners and other rural landowners, about 28 percent of the estates qualified for and 22 percent elected to use “special use” valuation (Table 2a, b).

With a forest holding, “special use” valuation can be applied to the land only, the timber only, or both. The groups differed in this regard, with forest owners much more likely to apply “special use” valuation to both land and timber, and other rural landowners much more likely to apply it to the land only. No respondents in either group applied “special use” valuation to timber only (Table 2c).

During the survey period, the maximum reduction in gross estate value from using “special use” valuation was capped at \$750,000. The actual reductions reported were similar between the two groups and averaged well below the maximum. For forest owners they ranged from \$0 to \$750,000, with a mean of \$279,583 and a median of \$200,000; for other rural landowners they ranged from \$0 to \$625,600, with a mean of \$322,225 and a median of \$300,000. Expanding this finding, an estimated 21,000 forest estates elect to use “special use” valuation each year, resulting in a combined total reduction in their gross estate value of \$7.0 billion.¹

Table 2: Summary of survey results on "special use" valuation for forest owners and other rural landowners

	Forest Owners		Other Rural Landowners	
	Number	Percent	Number	Percent
a. Qualified for "special use" valuation^b				
n	112	--	88	--
Yes	36	32.1	21	23.9
No	58	51.8	52	59.1
Don't know	18	16.1	15	17.0
b. Used "special use" valuation^{b,c}				
n	36	--	21	--
Yes	28	77.8	16	76.2
No	7	19.4	5	23.8
Don't know	1	2.8	0	0.0
c. Asset(s) valued using "special use" valuation^{a,c}				
n	28	--	16	--
Land only	8	28.6	12	75.0
Timber only	0	0.0	0	0.0
Both land and timber	20	71.4	4	25.0
<p>^a The samples differ statistically at the $\alpha = 0.05$ level of significance.</p> <p>^b The samples do not differ statistically.</p> <p>^c Test results are based on a small sample.</p>				

¹Note the indicated estimates are calculated from small samples.

Assets Used to Pay the Federal Estate Tax

About 33 percent of the estates in both groups paid federal estate tax (Table 3a). The assets used, however, differed. Nearly identical proportions - 16 percent of forest owners and 15 percent of other rural landowners - sold land to pay part or all of the estate tax. Of the remaining owners, a large fraction of forest owners sold timber to pay part or all of the tax, but all other rural landowners used only insurance or other assets (Table 3b).

Table 3: Summary of survey results on assets used to pay the federal estate tax for forest owners and other rural landowners

	Forest Owners		Other Rural Landowners	
	Number	Percent	Number	Percent
a. Federal estate tax paid^b				
n	102	--	78	--
None	65	63.7	56	71.8
Tax on \$600,000 to \$1 million gross estate value	16	15.7	14	17.9
Tax on \$1 million to \$2 million gross estate value	12	11.8	4	5.1
Tax on \$2 million to \$3 million gross estate value	3	2.9	2	2.6
Tax on more than \$3 million gross estate value	6	5.9	2	2.6
b. Assets used to pay the federal estate tax^{a,c}				
n	37	--	20	--
Insurance or other assets	22	59.5	17	85.0
Sold timber to pay part or all of the tax	9	24.3	0	0.0
Sold land to pay part or all of the tax	6	16.2	3	15.0
c. Reason(s) sold timber^d				
n	9	--	0	--
Had to--no other assets were available	6	66.7	0	--
High market value	1	11.1	0	--
Management plan called for a harvest	2	22.2	0	--
d. Reason(s) sold land^{b,c}				
n	7	--	2	--
Had to--no other assets were available	4	57.1	2	100.0
Was the least profitable asset	1	14.3	0	0.0
Heirs not interested in continuing use	1	14.3	0	0.0
Other	1	14.3	0	0.0
e. Current use of land that was sold^{b,c}				
n	7	--	3	--
Still in original use	5	71.4	3	100.0
Partially or fully developed	1	14.3	0	0.0
Other	1	14.3	0	0.0
Don't know	0	0.0	0	0.0
^a The samples differ statistically at the $\alpha = 0.05$ level of significance. ^b The samples do not differ statistically. ^c Test results are based on a small sample. ^d No test: no "Other Rural Landowners" observations.				

In 33 percent of the cases where forest owners sold timber to pay part or all of the estate tax, the primary reason for the sale was that their management plan called for a harvest or that timber prices were favorable. In 67 percent of the cases, however, timber had to be sold because other assets were not adequate to pay the tax (Table 3c).

The need to sell timber was not a characteristic of small holdings, nor was the area harvested inconsequential. The forest size of ownerships that needed to sell timber to pay part or all of the estate tax ranged from 40 to 800 ha (100 to 2,000 ac), with a mean of 312 ha (770 ac) and a median of 198 ha (490 ac). The area harvested ranged from 2 to 445 ha (5 to 1,100 ac), with a mean of 201 ha (498 ac) and a median of 174 ha (430 ac). Expanding these findings, an estimated 4,900 forest estates need to sell timber each year to pay part or all of the federal estate tax, and the forest area harvested is 1.0 million ha (2.5 million ac).¹

For most of the forest owners and all of the other rural landowners who sold land to pay part or all of the estate tax, the sale was necessary because other assets were not adequate to pay the tax (Table 3d). The forest size of ownerships that needed to sell land was larger than those that needed to sell timber, with a range of 32 to 4,047 ha (79 to 10,000 ac), a mean of 1,228 ha (3,034 ac) and a median of 271 ha (670 ac). The amount of land sold, however, was somewhat smaller, with a range of 65 to 316 ha (160 to 780 ac), a mean of 157 ha (387 ac) and a median of 89 ha (220 ac). Expanding these findings, an estimated 3,300 forest estates need to sell land each year to pay part or all of the federal estate tax, and the amount of land sold is 0.5 million ha (1.3 million ac).¹

In about 80 percent of the cases where land was sold to pay part or all of the estate tax, the land sold was still in its original use. But in the remaining 20 percent of cases, the land had been developed or converted to another use (Table 3e). Expanding this finding, an estimated 0.2 million ha (0.4 million ac) of forestland are developed or otherwise converted each year because other assets are not adequate to pay the federal estate tax.¹

DISCUSSION AND CONCLUSIONS

Drawing conclusions from this analysis requires two caveats. First, the forest owner results are from surveys of two forest owner associations, so the results may not be entirely representative of nonindustrial forest owners in general. Second, many of the estimates calculated from the survey results are based on small samples and should be considered indicators of order of magnitude rather than scientific estimates.

An estimated 84,000 forest estates, with an estimated 34.8 million ha (85.9 million ac) of forestland, are transferred each year at the death of their owners. About 50 percent of the estates are held in fee simple by the decedent and an additional 27 percent are held jointly with other persons. The average forest area is 414 ha (1,024 ac). In 40 percent of the cases the value of the gross taxable estate exceeds \$600,000 and in 23 percent of the cases it exceeds \$1 million.

Only 32 percent of forest estates qualify for and 25 percent make use of "special use" valuation to reduce the gross value of the estate for estate tax purposes. In 71 percent of the cases when forest owners use "special use" valuation, they apply it to both the land and the timber. This strategy may be necessary to meet the percentage tests to qualify for "special use" valuation, but it precludes harvesting timber for 10 years. The reduction in gross estate value from applying "special use" valuation to

forest estates averages approximately \$280,000, well under the maximum for the provision. From these results it appears that the number of forest estates that make use of "special use" valuation is on the order of 21,000 per year, and the combined total reduction in gross estate value is on the order of \$7.0 billion.

36 percent of forest estates owe the federal estate tax, compared to roughly 2 percent for estates in general during the survey period. It appears that in 40 percent of the cases where federal estate tax is due, timber or land is sold to pay part or all of the tax. It further appears that 67 percent of the timber sales and 57 percent of the land sales occur because other assets are not adequate to pay the tax.

The need to sell timber or land to pay part or all of the estate tax is not a characteristic of small holdings, nor are the areas affected inconsequential. The mean forest size of ownerships that need to sell timber is 312 ha (770 ac) and the mean area harvested is 201 ha (498 ac); the mean forest size of ownerships that need to sell land is 1,288 ha (3,034 ac) and the mean area sold is 157 ha (387 ac). From these results it appears that the amount of forestland that must be harvested to pay the federal estate tax is on the order of 1.0 million ha (2.5 million ac) per year and the amount of forestland that must be sold is on the order of 0.5 million ha (1.3 million ac) per year. Of the forestland sold, it appears that 29 percent - 0.2 million ha (0.4 million ac) per year - are developed or converted to other uses.

The responses from forest owners and other rural landowners were more remarkable for their similarities than for their differences. The groups differed statistically on nine characteristics. Most of the differences resulted from the different uses members in the two groups make of their land: whether the holding includes substantial forestland, cropland, or grazing land; whether the estate applied "special use" valuation to both land and timber; and whether timber was sold to pay part or all of the federal estate tax. The remaining points of difference have few clear policy implications: whether the respondent was involved in the transfer of an estate during the survey period, whether the respondent is a member of the decedent's family, and whether the respondent believes use of an estate planning professional reduced the amount of estate tax due.

For all other characteristics tested, there was no statistical difference in the responses from the two groups: location of the land, form of ownership in which it is held, value of the gross taxable estate, total size of the ownership, whether the decedent had used a professional estate planner, whether the holding qualified for "special use" valuation, whether "special use" valuation was used, amount of federal estate tax paid, reasons land was sold, and current use of land that was sold.

Efforts are underway to address the shortcomings of this survey by obtaining a larger and broader sample of nonindustrial private forest owners. In the interim, the results of this study provide insight into the effect of the federal estate tax on forest and other rural estates. They show that forest and other rural landowners are many times more likely than the U.S. population in general to incur the federal estate tax. And they indicate the magnitude of the effect the federal estate tax has in precipitating unplanned timber harvests and fragmentation and conversion of forest holdings. As well, the results suggest several avenues for development of an estate tax relief policy for rural landowners in general. Some elements of such a policy might include:

- X A targeted increase in the effective exemption amount for estates that consist largely of working assets, such as land or timber,

- X Revision of the requirements for “special use valuation,” to permit timber harvests made in accordance with a management plan developed in consultation with a professional forester,
- X Recognition of a form of business for family farms and forests, to ensure that they qualify for business-oriented provisions in the tax code or to facilitate the transfer of working lands.

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FOREST AND ENVIRONMENTAL LAW DEVELOPMENTS IN EUROPEAN COUNTRIES WITH ECONOMIES IN TRANSITION

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Keywords: Forest Law, Environmental Law, Central Europe, Eastern Europe, European Countries with Economies in Transition

In 1998 and 1999, two International Meetings on "Experiences with new forest and environmental laws in European countries with economies in transition" were held in Ossiach, Austria, both organised by IUFRO 6.13.00, the forest law and environmental legislation subject group, and supported by the Austrian Ministry of Agriculture and Forestry. Eighteen different nations were represented in at least one of both meetings.

The most extensive part of both meetings comprised of sessions on the legal situation in European countries with economies in transition; the whole range of possible stages of development of forest law and environmental legislation as well as problems concerning implementation and administration were covered by oral presentations and discussions.

By means of the moderation method, impending problems and topics were collected, selected according to their relevance to the participants, and discussed:

ranking by group members	Topic	%
1	Harmonisation of Forest and Environmental Legislation	18,6
2	Private Forests	17,8
3	Financing	17,1
4	Protected Areas	12,4
5	Governance and Participation (Forest Policy)	9,3
6	Public Forest Administration and Management	8,5
7	Forests Functions	6,2
8	Privatization of Forests	5,4
9	Sustainable Forest Management Planning	3,1
10	Definition of "Forests"	1,6

HARMONISATION OF FOREST AND ENVIRONMENTAL LEGISLATION

Harmonisation of forest and environmental legislation was the high priority topic for most participants.

A major objective for the adoption of the new environmental laws is to shift the primary responsibility for the management of protected areas from the forest authorities to the environmental authorities. Consequently, existing strict environmental protection provisions get implemented by environmental officials who, from the forestry officials' point of view, lack the necessary competence to manage forests. In order to minimise conflict between environmental and forestry officials over authorising forest management activities, it might be advisable that e.g. environmental protection officials be consulted in issuing forest licenses of particular significance (i.e. for large areas, or in particularly sensitive areas etc.), but generally authorisation ought to be left up to the forest administration. Existing authorities should resolve questions about the institutional set-up before seeking further progress on adoption of the laws.

Protection of the environment also means conservation and sustainable use of biodiversity of global and national importance. Practically, this will involve both field level interventions, and adjustments to the enabling framework in so far as these are required to secure the sustainability of field interventions. Existing forest legislation needs an environmental update.

The implementation of international environmental agreements to which the countries become a party and even generally compliance with generally accepted norms and principles of international environmental law, even if included in agreements to which countries are not a party, is felt to be an obligation.

PRIVATE FORESTS

Rights and obligations of private forest owners were discussed, in order to find suitable legal arrangements to advocate public interests in the forests as conservation of forests, or their social functions.

It was acknowledged that implementation of the necessary institutional development cannot rely on law enforcement only, but has to be accompanied by capacity building amongst the new private forest owners (through training, information, extension and awareness raising). This especially in the view of the social heritage from the Soviet era, when employees were not encouraged to take initiative or to make decisions, but orders, control, and strict hierarchy characterised the personnel management, while today's society and market economy promote other values, such as quality, just-in-time, motivation and engagement, quick decision-making, creation of trustworthy relations, confidence, self-control and team-work.

The future relationship of new forest owners and authorities, as mechanisms of control of implementation of administration rules in private forests, calls for a new role of the State who will need to change from owner-manager of forests to "safeguarder" of the public interest in the new free market and land ownership systems (i.e., it will ensure sustainable forest management practice on private as well as State forest lands, conservation of environmental services, and support to new private sector actors through participatory management of forests).

FINANCING

Incentive measures were identified to be the most efficient steering instrument regarding implementation of forest management interventions. Though the practical possibility may be doubted in many countries due to budgetary bottlenecks, the basic need to increase support from the state budget, especially with regard to forest ecological and social functions, has been out of question.

One of the possible approaches must be towards financing forest management from multiple sources, as pointed out when discussing different forest functions, below.

PROTECTED AREAS

The concept of protected areas as well as laws on the protection of nature and biological diversity is nothing uncommon to most Central and Eastern European countries with economies in transition; however, in the wake of social changes, significant innovations in the institutional framework for the management of protected areas had to be introduced. So far, in many countries lack of management and planning capacity seems to limit the effectiveness of the whole protected area system and many reserves remain protected only on paper.

Management of protected areas should be based on proper land use zoning and management plans, with clearly defined ecological corridors and buffer zones, and on strengthening the capacity of protected areas management institutions and stakeholders. Public involvement not only in the process of proclaiming a protected area but also in preparation and even implementation of management plans for protected areas is desirable.

Rationalisation of national legal, policy and regulatory frameworks governing protected areas management and biodiversity conservation would include clarification of the policy and regulatory roles and responsibilities of various stakeholders over protected areas and biodiversity conservation, contribution to more efficient protection of protected areas, as well as improvement of legal and regulatory flexibility to change protected area boundaries and zoning, consistent with evolving protected area management goals and public demands.

GOVERNANCE AND PARTICIPATION

Basically, there is a need to develop national forest policies, strategies and action programs, which translate legal obligations and overall national objectives into action. The participants felt that during formulation of such policies, strategies and action programs, more openness, transparency and participation is needed (role of NGOs), whereas a need for accountability or transparency in forest governance was generally questioned.

PUBLIC FOREST ADMINISTRATION AND MANAGEMENT

A need for re-defining the role and functions of the public forest administration towards new requirements arising from the transition process was identified, this through restructuring and re-organising of its structures. Major issues would comprise the separation of commercial and administrative functions of the public forest administration, involvement of communes as forest managers, decentralisation of key functions, application of participatory processes, measures for increasing efficiency and quality of the public forest administration.

The initiatives for changes are expected to emerge from inevitable restructuring needs. It has to be considered that due to the strict top-down order and information system as prevalent in Soviet times, private forest users as well as different levels of public forest administration staff still frequently lack knowledge in management of forests.

FORESTS FUNCTIONS

In the light of (re-)privatisation of forests, special emphasis will be on the non-commercial functions of the forests, benefiting the public interest (as protection forests, or biodiversity issues). In this context, social functions of the forests need to be evaluated and the private owners paid for specific treatment of their forests (as a rule by the common public, the state) or even compensated for resulting economic losses.

Due to the definition of "forest" under the land categorisation (funds system, cf. below), the current rules and regulations of combining and co-ordinating agriculture and grazing with forestry production need to be scrutinised whether or not they are comprehensive and technically adequate in terms of key management issues such as definition of access to resources, structures for management and supervision, and rights and responsibilities of various stakeholders, aiming at co-ordination of agriculture and grazing with sustainable forest management.

In the case of on-wood forest products (NWFP), as wild fruits, berries or herbs, the local population should be entitled to exercise the "minor forest use" of harvesting free of charge. Commercial collection of NWFP, however, should be subject to payments to the private forest owners or the state budget.

PRIVATISATION OF FORESTS

The eminent role of adequate legal and institutional regulations, to guarantee sustainable management and public interest, needs to be emphasised in the context of restitution or privatisation of forest land. Previous experience in the countries under consideration shows that absence of such mechanisms necessarily would result in loss of forest cover, irreversible environmental degradation and significant economic losses for the countries. In some of the countries, implementation of the restitution processes has been delayed due to uncertainty of how to implement the legislation. During the transitional phase, therefore, prior to full privatisation of forests, long-term lease arrangements would ease these processes: user rights to state and collective forests get transferred to villages or private persons on the basis of long-term lease agreements and community based forest management plans.

Considerations on the optimal ratio of public to private forest lands need to take place not above country level, considering each country's specific ecological and economical peculiarities.

SUSTAINABLE FOREST MANAGEMENT PLANNING

One of the questions was on the economic framework for forest management and the (future) role of forest management plans. The core problem in this context is obviously not the quality of the forest management plans (which is usually good), but the poor level of implementation of such plans, caused by lack of technical knowledge plus lack of involvement of lower levels of forest service staff as well as

local users in management decisions (which should include arrangements for provision of access to resources and resource tenure).

Forest certification was discussed as a method of international impact on the level of national forest management through international trade of wood products, thus fostering sustainability.

DEFINITION OF "FORESTS"

The definition of "forest" under the land categorisation (funds system) seems no longer to be applicable; usually, all land categorised under the forest fund was considered to be "forest", no matter if it was under forests or not, based purely on an administrative act. It is not possible to distinguish on objective criteria in the field, whether or not an area is to be considered to be a "forest" as defined by the law, a map indicating the borders of the forest fund is necessary. No clear distinction of forest functions as well as other uses (e.g. forest grazing) are possible under such regimes. A technical definition of the term "forest", based on objective criteria, is needed. Logically, the definition of "forest" includes all types of forests, also private forests.

Concluding, a number of important topics was defined, above all the future functions and role of the public forest administration and private forest owners (including their relations) as well as the general legal and economic framework for continued sustainable management of forests, considering their various functions (including protected areas).

FSC CERTIFICATION IN JAPAN: AN UNCERTAIN FUTURE

AKIRA KAJIWARA

ABSTRACT

This article presents an assessment of the adoption of Forest Stewardship Council (FSC) certification in Japan based on insights from concepts and theories provided from the disciplines of sociology, social psychology, economics, and organizational behavior. It provides a brief history of relevant developments in the forest sector in Japan, as well as a brief discussion of certain characteristics of the collective nature of Japanese society as they concern the current paradigm shift in Japan. Certification is discussed with specific information about FSC Certification as a possible substitute for assurance being lost due to the changes in business relationships resulting from Japan's shift to a more open market. The article suggests that the adoption of a western social instrument such as certification will have possible outcomes which differ from those expected in countries where certification originated.

Keywords: certification, FSC, Japan

1. INTRODUCTION

Twenty years ago, Japanese forestry sector actors could show foreign visitors a flourishing domestic forest industry. Those visitors could have seen exemplary silviculture on intensively well managed private lands as well as lands owned and managed by the Japanese National Forest Agency. Timber companies as well as individual timber farmers were operating at capacity and rural forest communities were economically healthy. Laws were in place which protected Japanese domestic producers from lower priced foreign timber, and Forest Agency resources from public lands provided subsidies to small timber growers assisting them in maintaining a domestic supply of timber for Japan's markets. Trees which had been planted after World War II would soon be coming of age for harvest, and in general Japan's economy was growing and expanding. It was a time when all seemed to be going well for the forest sector in Japan and most actors in this sector of Japanese industry did not recognize nor predict the changes that international pressures would bring about in the near future.

Due to foreign pressure, in the 1960's the Japanese government began the process of relaxing protective trade laws. In the forest sector this meant that foreign timber began to enter Japanese markets. In subsequent years, this lifting of these kinds of protective laws would cause dramatic changes in Japan and especially in the forest sector. Today, most small timber producers cannot afford to harvest their timber since the market price is far too low to cover expenses. The Forest Agency's resource base from which it had provided subsidies for private timber production almost completely disappeared, and rural forest communities fell into economic decline. Due to these financial difficulties the Forest Agency lost much of its power and authority to intensively manage forests on the public lands. These events have created a dismal picture, and there have been no solutions which offer hope to the actors in this once proud sector of Japanese society.

The changes mentioned above severely impacted the forest sector, but these changes were not only felt in the forest sector. All of Japan has gone through difficulties due to

the results of foreign trade pressure to open its markets and deregulation of its trade and financial laws. Japan has moved into what many observers believe is the most significant paradigm shift since the end of World War II. This paradigm shift is effecting all parts of Japanese society and has changed some of Japan's most important social institutions. Long term relationships, which were key to the healthy functioning of business relationships in this collective society, are dissolving in favor of the more short-term impersonal market based business relationships dominant in the West for many decades. As these traditional long-term relationships become less functional, Japanese business is losing the assurance which came from doing business with well known and established business partners. There are no western style institutions nor conventions available in Japanese society which can readily substitute for the loss of this assurance. It is a time of uncertainty and insecurity for all of Japan's businesses. The forest sector cannot turn to national government nor other sectors of society for assistance. It has found itself abandoned in a changing society.

In 1996, coincident with the continued downturn in the forest sector and the society wide paradigm shift mentioned above, WWF Japan introduced FSC certification to a few actors in the forest sector. This initiative seemed strange to many observers because the western concept of certification is culturally and historically unfamiliar to Japanese society, and there is no obvious logical rationale for the Japanese forest industry to be interested in adopting forest product certification comparable to the rationale for certification in other countries. In spite of these conditions, these actors joined together informally to promote FSC certification in Japan and have attracted others to join them from a variety of associated professions. These persons are actively promoting FSC certification in Japan and are meeting with some success. It is unclear at this time what the outcomes of this initiative will be, but it seems certain that the outcomes expected in a western society will be different in Japanese society. Certification may encourage the sustainable management of Japanese forests by western definition, but these results could be inconsequential to forest health and timber production in the Japanese context. However, in the Japanese context, the introduction and adoption of FSC certification in Japan may have outcomes which need to be seriously considered by the Japanese FSC certification promoters and international organizations promoting FSC certification world wide.

In this paper I hope to connect points from Japanese history, economics, and culture with insights from the work of certain social scientists to suggest questions in the Japanese context which all concerned with the promotion of social instruments across cultural borders might well consider. In crossing cultural borders with innovative social instruments, a range of possibilities exist which are worthy of exploration. It is possible that FSC certification in the context of Japanese society could serve a role as significant as replacing the assurance being lost in Japanese society due to the economic crisis and ensuing paradigm shift. Adoption of FSC certification could produce less desirable outcomes. It could function as a non-tariff barrier to imports which might complicate international trade relations at a time when Japan is trying to come into step with international trade expectations. An additional possibility is that if Japan accepts imported certified timber which is cheaper than domestic timber, it might make the situation for domestic timber production worse. Finally, after a substantial investment in money and time, FSC certification could end up only as a window dressing providing an impression to the rest of the world that Japan is keeping up with international expectations concerning protection of the environment. To understand such possible outcomes from the introduction of FSC certification in Japan, it is essential to look at the Japanese social, economic, and cultural conditions into which FSC certification is being introduced.

2. FOREST SECTOR IN JAPAN

Japanese society experienced two major social transitions prior to the current paradigm shift. In 1868 at the beginning of the Meiji Restoration, Japan adopted western style social institutions such as the parliamentary monarchy system of England and the legal systems of France and Germany. German forestry systems and technologies were imposed on national forest lands. These national forest lands were created from the very large estate lands of the aristocratic clans, *han*. The Meiji government seized these lands and brought them under the control of a national governmental agency. Lands which were privately owned and not part of the feudal clan system were not confiscated, but ownership was clearly established for taxation purposes. Therefore, in the forest sector, structure of private ownership did not change and associated traditions remained the same. Privately owned forest lands stayed as they had been for centuries.

The second major social change was at the end of the Second World War. During the occupation of Japan by the allied powers, the USA forces attempted to change Japan to be a more democratic society. Three of these democratic changes were the creation of labor unions, the dissolution of the *zaibatsu*, large company groups owned exclusively by one family, and the redistribution of farmland ownerships. These changes were successful in many sectors of Japanese society, but the forest sector managed to avoid almost all effects of these changes.

The two society-wide major social changes mentioned above had tremendous impact on Japanese society, but the forest sector was able to avoid them and kept traditional methods of operations in tact. The forest sector can be described as old fashioned and traditional in almost all aspects of their operations. The forest sector avoided sweeping changes in Japanese society at two significant times, but it appears that it cannot avoid the results of the financial crisis of the late 1990s. This upheaval revealed the serious malfunction of Japanese society, and one of the most typical examples is the forest sector which is suffering very serious trouble.

The serious financial problems of this last decade have caused the organizations and people in the forest sector to be apathetic because there seem to be no solutions. One of the most demoralizing factors is the chronic financial loss in the domestic forest business. Since Japanese labor and transportation costs are some of the highest in the world, and since forest business is a heavily labor intensive industry, it is very hard to maintain a profitable forest business in Japan. Furthermore, due to strong Japanese currency, yen, tremendous numbers of cheap timber products have been imported to Japan over the last twenty years. This economic structure has made an already bad situation even worse for timber companies.

Another serious problem is the failures in forest policy which created an accumulated deficit in national forest account. Japanese forest authority in government, *Rin-Ya-Cho*, Forest Agency, made a series of unfortunate management decisions in response to changing government policies and shifts in market demands. During the economic expansion of the 1950s and 1960s the agency grew rapidly because there was high demand for timber products and domestic timber production was protected by the Japanese government ban on imported timber products. The agency expanded rapidly over these years and by the 1960s it had financial responsibility for a huge number of permanent/life-time employees as well as extensive subsidy programs for influencing private timber production. During these times of expansion, agency management did not expect the changes in trade policies that were to come.

In 1964, the Japanese government opened the Japanese market to imported timber. This was devastating to the forest industry in Japan and to the Forest Agency. In addition, in 1971 the government of the USA eliminated the gold standard as backing for the USA currency. This change in the conversion system caused major market fluctuations resulting in the value of the Japanese yen being raised significantly in relation to the USA dollar. The forest agency was not prepared to respond to these drastic changes which seriously impacted the economic situation surrounding the forest industry. A series of management decisions such as acceptance of high interest loans from commercial banks rather than asking for assistance from other branches of government produced a US\$ 30 billion accumulated deficit in the national forest account as of 1998. The agency sought commercial loans because it wanted to avoid political and financial influence and interference from the Ministry of Finance. Due to this deficit, in March of 2000, the Diet redirected two-thirds of this deficit to the national general account. The remaining one-third was left as the responsibility of the Forest Agency over a term of 50 years (Forest Agency, 1999). As a condition of this arrangement, the Forest Agency agreed to change their organizational structure losing much of its autonomy and authority.

These problems mentioned above have caused some serious side effects. Due to the financial problem in national forest account, the Forest Agency has reduced intensive forest management on the national forest lands replacing it with the concept of "natural forest management approach". (Arinaga and Kasahara, 1988; Kasahara, 1996) The adoption of this natural management approach has in effect created a situation in which previously highly managed plantation production forests are now suffering from reduction in management and silvicultural treatment. This lack of management policy has reduced the quality of stumpage in Japanese national forests and there have been no initiatives to actively encourage the development of balanced natural ecosystems (Kawakita Shimposha, 1989). Also, the Forest Agency and other public and private landowners have sold their forest lands to private enterprises to create golf and ski resorts. This situation has made local forest dependent communities decline economically because the recession which Japan is now experiencing has undercut the potential of this change in economic dependency from timber to tourism (Suzuki, 1999).

As can be seen from these problems, the forest sector in Japan is severely depressed. The Forest Agency has lost its power to subsidize the industry and the market price for timber products has made harvesting domestic timber a liability. The traditional operating procedures are not functioning and there have been no promising solutions to these serious financial problems. Therefore, even in the very conservative and traditional forest sector, the paradigm shift which is being observed in Japan's social and organizational behavior is being felt intensively. In this dire situation, forest industry actors are desperate to survive and this desperation may have opened them to consideration of any possible initiatives which might offer hope to improve their situation. The adoption of FSC certification may be driven by the hope that it can help revitalize the forest industry in Japan.

3. CERTIFICATION

Certification of forest lands is based on third party conformance evaluation of management practices. This certification process begins with a forest landowner or manager voluntarily requesting that a third party certification body examine their forest operations. Certification is granted if their management practices are in compliance with sustainable resource standards. Specifically, for FSC certification

this means compliance with the *Forest Stewardship Council Certification Principles and Criteria for Forest Management*, which requires certain levels of environmental, social, economic, and technical qualification. Successful completion of a thorough assessment permits the party seeking certification to associate wood product from their land with the FSC logo. This logo is intended to communicate to the consumer that the product they are purchasing originated from “certified well-managed lands.”

Certification was originally intended as an economic incentive which would generate higher profits for those timber producers, suppliers, and retailers who participate in certification programs. In addition to this incentive, it was believed that companies producing and consuming wood products could utilize certification as a quality control mechanism. Buying certified products could be a way of avoiding low-performance suppliers. It was also postulated that some companies producing wood products could find a market place advantage in this situation and be encouraged to pursue certification. Since Japanese companies place considerable emphasis on the quality of supplied raw materials as well as quality of their products, it could be expected that these original intentions would make certification a useful instrument for Japanese timber related manufactures. However, because most of the original intentions have not actually been realized by the implementation of certification in other countries, it could be unreasonable to expect them to be realized in Japan as well.

Furthermore, if we look at the countries where certification evolved and found application, we see that there are critical differences which make Japan unique as a participant in FSC certification. Markets in Europe and the USA have been established for certified wood products. These markets encourage land owners in timber exporting countries to participate in certification. Japan does not export timber and almost no FSC certified wood products are traded in Japan. Therefore, because Japan is unique as a participant and because the original intentions cannot be expected to benefit timber manufacturers, there is currently no apparent economic incentive for FSC certification in Japan and no apparent rationale for the implementation of FSC certification scheme in Japan. However, in February of 2000, a private Japanese timber company obtained Japan's first Forest Stewardship Council's certificate for their forest management. This company pursued FSC certification even though the initial assessment cost to certify one thousand hectares was over US\$ 40,000 (US\$ 40/ha). Compared to the fact that certifying large tracts of timberland can cost anywhere from 7cents/ha to 21cents/ha for the initial certification in USA (Environmental Building News 2000), the cost in Japan is very expensive. At the same time, two timber mills affiliated with this company also acquired certificates for their CoC process. In June of 2000, a second certification was initiated by a timber partnership on its lands in Kochi prefecture. This certification project was supported by the local government of this economically declining rural timber community. These certifications are being implemented even though there seems to be no economic rationale to justify the cost.

There seem to be no immediately observable incentives for these companies to participate in FSC certification not only because these companies do not export wood products to countries where FSC certification is recognized but also because there is no consumer market for FSC certified products in Japan. However, these certification efforts are being supported by several other organizations and this movement to implement FSC certification into Japanese forest sector is gaining momentum.

4. ORGANIZATIONS AND PEOPLE

The first and originally most active promoter for forest certification schemes in Japan was WWF Japan. It is similar to its parent and affiliated organizations in European and North American countries where forest certification is more widely adopted. WWF Japan started to develop forest certification initiatives in Japan in 1996, in line with Target 2 of the WWF global "Forests for Life Campaign." They believed that their most important role was to provide information and facilitate communication since there are very few documents related to certification written in Japanese (Maesawa 1999). Since early 1996, WWF Japan has translated and published a few relevant documents including "The WWF Guide to Forest Certification 1996" and an FSC leaflet and offered several conferences and workshops all over Japan. From April 1997, WWF Japan has started selling FSC endorsed products in its mail order catalogue to introduce examples of certified products to consumers. Also, WWF Japan has been trying to establish buyers groups and trying to find forest owners and/or managers who are interested in being certified under FSC scheme. Due to the continuous efforts of WWF Japan through Mr. Maesawa, the nation's first FSC certification was granted to the Hayami Forest, a 1,070 hectare site located in the community of Miyama in Kii Peninsula along the coast of the Japanese island of Honsyu.

It is important to point out that development and acceptance of certification programs has not been led by final consumers in countries where forest certification is widely adopted. Rather, environmental organizations, companies, and individuals having specific reasons for supporting certification have been the driving forces (Hansen and Juslin, 1999). Specific reasons in other countries include economic incentives, ecosystem health and preservation, and sustainable timber production. Specific reasons for supporting forest certification such as these are not yet recognized in Japan.

In most countries such as those in North America and Europe where certification has been successful, many large companies, often retailers like B&Q and Home Depot, have joined buyers' groups and created demand for FSC certified products. This has not happened so far in Japan. However, the National Federation of Timber Co-operative Association, which is affiliated with the Forestry Agency, and Sanwa Research Institute (SRI) which is one of the biggest consulting firms in Japan affiliated with a large commercial bank, Sanwa Bank, have joined with WWF Japan as the currently most active promoters of FSC certification in Japan. SRI is now managing the Forest Certification Research Working Group focusing on implementation of FSC certification in Japan. This working group has brought together most of the main actors in the arena of forest products certification.

Organizational factors in Japan discussed above compared to Europe and America show us that the influence of ENGOs could be a critical element in adoption of certification in Japan. Those influences are very strong in Europe and North America and only beginning to be felt in Japanese society. Government regulations which are strong in Europe and North America have given support to environmental initiatives such as forest certification. In Japan, government has not strongly supported environmental initiatives, but this kind of activity is beginning to be seen. Furthermore, Japan is more and more feeling the pressure of compliance to international expectation resulting from its participation in the international markets and is moving towards decision making that is more similar to countries whose markets are more internationally open such as those of Europe and North America. These changes are influencing the current paradigm shift in Japan.

5. THE COLLECTIVE NATURE OF JAPANESE SOCIETY

Japan is an example of what sociologists term a collective society (Nakane, 1972). This concept of collectivism is often misunderstood. Many people believe that in a collective society the members of that society will sacrifice their personal well being for the good of the society. These societies are often viewed as societies in which individual gain is less important than the well being of the society as a whole. This view is simplistic, incorrect, and misleading for anyone interested in studying the dynamics of collectivist society behavior. Collectivist societies are ones in which long-term closed relationships between individuals and groups dominate the social functioning within the larger society (Miller and Kanazawa, 2000). Closed in this context means that groups form within the society which exclude others from participation. *Keiretsu* is the term used for these closed groups in Japan. These *keiretsu* groups provide assurance for the members of the group through long-term association and the expectations which evolve over many years of interaction (Yamaji and Kajiwara, 1994). By exclusion of others and commitment to the members of the groups, all in the group are assured that their individual interests will be met by the other members of the group as long as each member adheres to the group's expectations. This loyalty to one's group creates in-group and out-group bias, and functioning successfully in a collective society without being a member of one of these groups is almost impossible (Yamagishi, et al., 1998; Miller and Kanazawa, 2000).

Japan's collectivist society functioned very well in the past to reduce uncertainty in social encounters, and allowed Japan to create a stable, highly productive and efficient society. Low transaction costs and stable equilibrium were enjoyed because of the in-group favoritism created by transactions based on long-term relationships which were closed to outsiders. Being closed to outsiders is an opportunity cost because new opportunities offered by non-in-group members cannot be enjoyed. Until recently savings in transaction costs exceeded opportunity costs in Japanese society. However, the losses from not taking advantage of outside opportunities have grown and the shift is being felt in all parts of Japanese society. Thus the mutually committed long-term relationships such as *keiretsu* and permanent employment and the equilibrium established through them is being challenged. In-group favoritism is becoming a liability rather than an asset, and the paradigm shift from the long-term closed relationships as the base for transactions to a more open system is being felt throughout Japan.

6. PARADIGM SHIFT AND CERTIFICATION

The paradigm shift currently being experienced in Japan is explained by Yamagishi's theories concerning collectivism and in-group favoritism (Yamagishi, Miller et al. 1998). His findings that in-group favoritism is pragmatically based on sanctioning, monitoring, and reciprocity as opposed to psychological mechanisms and phenomenon provide insights into the demise of the successful functioning of the long-term relationship basis for transactions traditionally favored by Japanese business people. Yamagishi predicts that changes are going to come quickly to Japan. He warns that as the "collectivist strategies" for maintaining equilibrium and reducing uncertainty fade away, Japan will go through a period of searching for new systems to replace the traditional ones. These new systems will have to be ones that are compatible with the more open social environment that is now evolving because of the irresistible opportunities offered outside of the closed in-group arrangements. If we accept Yamagishi's warning that Japan's collectivist strategies for maintaining equilibrium are being eliminated by the necessity to open to outside opportunities, certification is coming to Japan at the time of paradigm shift.

7. SOCIAL ADAPTATION

As Japanese society searches for replacements for the sanctioning and monitoring of the collectivist long-term relationship system, there will be a period of adaptive trial and error. North states that there is little in depth understanding of all the aspects of adaptive efficiency in times of environmental change, but observations suggest that overall institutional framework is an important influence on how much a society encourages the trials, experiments, and innovations that produce adaptive efficiency (North, 1990). Incentives built into the institutional framework direct decision making processes, and decisions change and modify the existing systems. If incentives exist and encourage problem solving experimentation, the adaptive efforts have more opportunities for maximization. In traditional Japanese society, social institutions and human preferences for finding solutions have not encouraged the trials, experimentation, and innovations which North deems important for adaptive efficiency. Japanese problem solving has not been oriented to encourage adaptive efficiency because until now there has been little pressure to adapt due to the relative unimportance of outside environments. This has been especially true in the Japanese forest sector.

As witnessed by the advent of FSC certification in Japan, some Japanese are attempting trials, experiments, and innovations even in the forest sector. North's observation that adaptations are often initiated at margins of organizations provides insights into the roles of the actors in FSC certification in the initial stages of promotion in Japan. Margins are the nodes of organizations which are directly connected with the environment. Because of their location close to the environment, agents or actors located in the margins are often those who initiate changes in response to changes in the environment.

... the immediate instruments of institutional change are political and economic entrepreneurs who attempt to maximize at the margins that appear to offer the most profitable (short-run) alternatives. (North, 1990, 100)

One of the important characteristics of actors located at the margins is they are often less constrained by organizational rules and conventions than their superiors in the organizational structure. Since Japan's organizations are highly centralized and hierarchical and usually have not encouraged individuals to experiment and innovate, adaptive problem solving and decision making has been limited. The forest sector exemplifies these phenomena, but if we look at the initial promoters of FSC certification in Japan we see that many of them are located in the margins of their professions and organizations. It appears that their location at the margins has provided them with freedom from traditional constraints.

The location of these actors at the margins of their organizations has implications for the adoption of FSC certification in Japan. One of the main implications for FSC certification is that we cannot expect it to have the same outcomes in Japan that it has had in the countries where it originated. North points out that margins are especially sensitive to cultural influence. Because margins are in direct contact with environments, the margin actors are heavily influenced by those environments. These environments are the interface of all the cultural norms of a society and the needs created by interaction with the outside world. North states that the cultural specific norms of each society create a society's informal constraints and are prevalent and persistent. Therefore, needs at the margins are culturally specific. Each environment in each society has unique social institutions and constraints which dictate the choice processes made by actors at the margins. One of these culturally specific characteristics is the bargaining power of individuals and groups at the margins. Since bargaining power will be different from

society to society, we can expect marginal adjustments to have different outcomes. Furthermore, since societies have different histories which limit how change can be experienced, and since feedback on outcomes of adoption of social instruments from another society is necessarily incomplete, we see that marginal adjustments can not be expected to have the same outcome in different societies. We can expect widely divergent outcomes when social instruments are borrowed from another society. FSC certification can be expected to have different outcomes in Japan than it has had in the countries where it originated.

The insights gained from North's work give us cause for concern about the implementation of FSC certification in Japan. We see a situation in which the actors promoting FSC certification in Japan are doing so with expectations based on insufficient information. If the paradigm shift is happening in the forest sector and if the other factors mentioned in this paper are causing the financial difficulties observed in the forest sector, there are problems which need to be addressed by innovation and experimentation, but at present no rational solutions are available.

8. GARBAGE CAN MODEL OF DECISION MAKING

Concurrent with this situation, certification has been introduced to Japan as a social instrument valuable in countries Japan has looked to for innovation in the past. Certification is not well understood in Japan, but instead of being scrutinized and analyzed for its value in application in Japan, it has been promoted as an exotic valuable tool for social innovation for the forest sector in Japan. It appears that certification may have been chosen mainly because of its availability at a time when problems exist that need solutions, people recognize the need for social change, and pressure for immediate change has intensified. March and Olson describe this kind of decision making in their Garbage Can Model of Decision Making. According to their model, it is common organizational behavior for decisions to be made dependent on availability, timing and mix of participants (March and Olson, 1979).

March and Olsen's theory provides insights to understand organizational behavior in the adoption of certification in Japan. They state that when the three features of problematic preferences, unclear technology, and fluid participation are present, decision making can be subject to processes described in their Garbage Can Model of Organizational Choice. Of the three, unclear technology seems to be evident since forest certification is new to Japan, and information about forest certification is not readily available. There is not enough information in Japanese because there has been very little original work in the area of forest certification done in Japan, and information from outside Japan is not easily understood and not widely available. Fluid participation can be observed in the variation and lack of consistency in who attends certification meetings. There has been relatively little formal structure for the organization of this coalition. The informal network which has evolved does not provide consistency with regards to the input from participants in decision making. The third feature, problematic preferences is not yet readily observable, but I believe closer inspection will reveal that differences in motivations and reasons for promoting FSC certification are already influencing the actors' choices concerning who they align themselves with, which meetings they attend, and which ideas they support. The implementation of FSC certification in Japan has all the hallmarks to be a classic candidate for Garbage Can Decision Making analysis. If this model accurately describes the process of FSC certification adoption in Japan, we have further cause for concern about whether or not FSC certification as a social instrument can provide outcomes compatible with the expectations of the promoters.

9. RITUAL OR RATIONAL ?

According to Meyer and Scott, modern organizations which are decentralized can respond to complex external changes and influences and absorb conflicts better than centralized organizations. Furthermore, they state that most organizations begin as rational, but in the face of conflict, they become more institutionalized and rely on ritual rather than technical activity for their legitimacy. Institutionalized rituals consistent with prevailing myths and compatible with the socio-cultural environment generate confidence in the organization and legitimize it. Legitimacy is necessary for stability, and in order to perpetuate itself, maintaining stability is the actual purpose of an organization. To understand an organization it is important to identify where decision making actually takes place. It is also important to identify the number of sovereigns to which an organization must answer. The number of sovereigns influences the structure of an organization, and multiple sovereigns can destabilize it (Meyer and Scott, 1992).

These theories related to organizational behavior are applicable to the investigation and understanding of the behavior of the organizations which are promoting FSC certification in Japan and of the organizations which are growing out of their efforts. Because certification is a new kind of social instrument in Japan and because coalitions proactive with ecological issues are new to this society, gaining legitimacy is critical for survival. From the perspectives of Meyer and Scott, viewing certification as a ritual can offer insights into the apparent non-rational application of certification in Japan at this time. Also, most of the activities of the actors are not following the traditional Japanese centralized organizational structure. Decision making seems to be happening outside of the normal top/down Japanese structure, but there are multiple sovereigns waiting to see what will evolve out of this initiative. Meyer and Scott's theories provide a valuable framework with which to question the function of ritual and rationality in the organizational behavior of the actors involved in certification.

10. SUBSTITUTE FOR ASSURANCE

As Yamagishi points out, Western societies are trust-based as opposed to the assurance-based system of a collective society like Japan. In trust-based societies, certain kinds of social instruments have evolved to reduce risk and uncertainty which did not evolve in collectivist societies. Examples of these social instruments are seals of approval, accreditations, credit ratings, better business bureaus, and certifications. These social instruments function to provide predictability and reduce risk in the societies of the west where exchanges are more impersonal than in the collectivist type of society in which long-term relationships are fundamental to exchanges. North points out that large amounts of time and energy have been dedicated over centuries to the development of codes of conduct for the exchanges within all societies. Many of these norms find their way into the formal rules and laws of government while many others become institutionalized in the informal constraints and customs of a society. In the west, the social instruments mentioned above evolved to supplement the formal rules or laws of a trust-based society. These social instruments can be installed by private sector groups without society wide approval and do not require the legislation of governments. They can be installed within a sector by the actors of that sector to establish credibility for the organizations and individuals in the sector. The effectiveness of these social instruments depends on the trustworthiness of the body responsible for administering the social instrument and its reputation with the general public. In the trust-based societies of the west, these social instruments

serve the purpose of providing risk reduction and predictability intermediate between formal laws and informal constraints. Most of these social instruments rely on some kind of third party authority as a means of eliminating self-serving bias and thereby establish credibility.

FSC certification relies on third party participation for its effectiveness. A third party as certification authority, usually through an accredited auditor, evaluates the product or service of the first party by a set of standards. If the first party, such as a manufacturer, satisfies the auditor with proof of ability to perform by those standards, the third party certifies for the second party, such as general consumers, that the first party can achieve those standards. Certification is not a third party guarantee that each and every product or service meets the standards. It is a statement of professional opinion that says that a first party has the ability to meet certain standards and operates with those standards consistently. Furthermore, North says that “cheating, shirking, and opportunism” are natural to transactions and third party enforcement is necessary to provide legitimacy and equilibrium. With certification, if there is periodical renewal, then that renewal functions as enforcement. If evidence shows that a first party has lowered its performance below that expected for certification, certification can be taken away. Thus, with the addition of renewal as an enforcer, certification reduces risks for second parties and may make it seem attractive to FSC certification promoters as a substitute for assurance.

Yamagishi says that assurance system equilibrium is being lost due to the paradigm shift in Japan, and there is nothing to replace it. It can be argued that certification renewal as a kind of enforcement can replace the sanctioning and monitoring of the assurance system, and the formality of certification as a social instrument to reduce risk and uncertainty could replace long-term relationships. Therefore, even though Japan is not a trust-based society, it is possible that certification could function as a replacement for the assurance of long-term relationships which is being lost in Japanese society. It may in fact function for the forest sector in the Japanese cultural context to reduce risk in business transactions by creating a new system of discrimination for in-group and out-group bias based on adherence to the standards and principles of FSC certification. It is even possible to imagine that Japanese FSC certification participants could add culturally institutionalized expectations that never become formally part of the standards and practices. (this needs help – working on it – need to discuss this idea to clarify it)

11. TRADE CONSIDERATIONS

It is often assumed that acceptance of FSC certification in Japan will impact those countries which export timber to Japan causing them to improve the management of their forests. It is important to point out that at this time in Japan most efforts to introduce FSC certification have been directed toward the certification of forest lands. If we consider the large number of businesses that are part of the forest sector, there has been very little done to encourage FSC certification of the chain of custody distributing wood products. For there to be any impact on the forest management of timber exporting countries, it is the wood products COC in Japan that must be certified. If FSC certification continues to gain momentum, it is reasonable to expect COC businesses to become involved because of the collective nature of Japanese society. In a collective society like Japan, when a critical point is reached in support of an innovation, it can be expected that the innovation will become pervasive in the society within a relatively short time. For the same reasons we can also expect the Japanese government to become directly involved. If wood products COC does

accept FSC certification then basically all timber entering Japan will have to be certified. However, the expectation that this will improve forest management in timber exporting countries should not be taken for granted. There are associated possible outcomes and repercussions which deserve our careful consideration in order to make better informed decisions regarding the promotion and implementation of FSC certification.

Since certification functions to discriminate certified product from uncertified product, some observers have charged that it can become a technical barrier to trade or what is often called a non-tariff trade barrier. Certification can be described as a non-transparent and discriminatory conformity assessment procedure which has the potential to be used as a protectionist tool. This has become a controversial topic in international trade societies and has been discussed at WTO meetings. At these meetings timber exporting nations charge that they are the ones who must bare the cost of these procedures. If they do not invest in these procedures, certification requirements could close trade to their products and shift it to the more developed nations. They point out that even though non-tariff trade barriers are instituted by consumer nations, the issue is not one that has great effect on the consumer nation. The issue is not directly a consumer country problem issue. It is a producer country issue, and many of those countries are worried about its effect on their economies. The results could be a shift in markets rather than promotion of improved forest management in timber exporting countries.

There might be little to no effect observed within the Japanese domestic market if certification became a trade barrier. However, a possible negative outcome for Japan would be the accusation that it is supporting trade with developed nations who can afford certification and excluding its new trading partners. If Japan implements an initiative which could become a non-tariff trade barrier, that action itself could be a problem in international trade relations. The USA and other developed countries are the main trading partners with Japan, but developing countries are now becoming more important partners. Japan has made large investments in these countries. If Japan doesn't encourage trade with these countries, it is not supporting their developing economies nor its own investments. In the current world trade climate and because Japan has gone through many painful years of opening its markets to free trade, any anti-free trade accusations are sensitive issues. Therefore, the possibility that certification could become a non-tariff trade barrier causing complications for Japan in international trade relations should be carefully considered as the promotion of FSC certification in Japan proceeds.

Since Japan is not at this time a timber exporting nation nor a significant producer for domestic markets, the trade barrier issue in the context mentioned above has little impact on Japanese timber producers. However, the certification issue itself deserves consideration in terms of competition with foreign producers. If COC in the wood products industry in Japanese society accepts certification, domestic timber producers would have no choice except to follow that trend. If they do not, they will not be able to sell their products in the Japanese market which would now be certified product dominated. However, this will not insure that they have market share because world wide certified products are by far cheaper to import to Japan than purchasing certified Japanese timber. This situation will drive Japanese certified products out of the domestic market and will make the Japanese timber producers situation even worse than it is today. A situation which is already bad would be worse because very few Japanese timber producers can be certified under current standards. Many are too small to realize certification independently. Such features of certification as ecological buffer zone requirements would be problematic to achieve.

Also, their operations are too small in terms of business operations and financial scale to be able to afford the cost of certification. This outcome will select in favor of the very few domestic timber producers who can survive in that situation and will not help those who are most seriously affected by the decline. In fact it will make the marginal survivors go out of the market completely and offer no solutions to those who are already out of the market.

Since it seems that for many of the actors in the forest sector in Japan, FSC certification is being viewed as a possible tool to help revitalize the domestic timber industry in Japan, timber producers may believe that certification can make them stronger in the domestic market. Currently there are no imported certified products in the Japanese market. This situation presents the picture that if domestic producers were certified and the market demanded certified products, they would command market share. However, even with the cost of importation, certified timber can be purchased cheaper from foreign producers than it can be purchased from domestic producers. Therefore, once cheaper certified products from outside Japan begin to enter the market, we can assume that no one will buy the higher priced Japanese certified timber products. The domestic timber producers will be worse off than before having made investments in certification which they will have to pay off. As mentioned in this paper, this cost in Japan is much higher than in countries such as Canada, the USA, and those in Europe. The investment in certification will be an expense with no return. These factors further support the suggestion that gaining the support and acceptance of FSC certification should include researching the facts and full disclosure of the possibilities to all involved.

12. WINDOW DRESSING

As pointed out earlier in this paper, Japan has often looked to Europe and North America for models at times when solutions to problems were needed. Most of these give support to the theory that social innovations should not be expected to have the same outcomes when they are adopted into a different culture. In the early 1950s Japan adopted a public accounting and auditing system from the USA as part of an attempt to modernize its financial institutions. This new system was intended to replace the traditional less open system and provide full disclosure, but the system has not functioned as it was intended. Instead it has only served as a surface appearance of credibility. In reality, the traditional systems of accountability did not change, and the new system was just added on as an overlay which gave the impression that Japan was in step with international expectations for accountability in financial matters. If we put together the ideas from social scientists mentioned in this paper, we can imagine an outcome of FSC certification in Japan in which it functions much like the adopted accounting system. It would be little more than a ritual which gives Japan the appearance of being in step with the international community and a leader in Asia working to protect the environment. It could serve this ritualistic purpose and be totally ineffective in promoting forest health and in increasing responsible forest management. In this situation, Japanese forests could be certified and still remain unharvested due to cheaper certified imports still commanding the market. Since Japan is a collective society, acceptance of certification could become a society wide phenomena involving consumers, wood products COC, government, and timber producers, but it seems that we can not be assured from the information available to us now that this would necessarily encourage the improvement of forest management in timber exporting countries supplying timber to Japan. It could instead only cause a shift in markets.

The point here is that awareness of Japanese history and culture suggests that it is entirely possible for Japan to adopt FSC certification for reasons not clearly understood and possibly quite different than the original goals of FSC certification. It is possible that Japan could move forward with acceptance of FSC certification without seriously considering what the actual results will be in terms of environmental protection and timber production improvement in Japan. It seems that justification for the adoption of FSC certification in Japan is based almost entirely on the reported outcomes of the implementation of FSC certification in western societies. This is incomplete feedback and suggests that at this stage acceptance of the FSC certification initiative fits the Garbage Can model of decision making and that it is possibly more ritual than rational in application.

13. CONCLUSION

Japan has just begun the process of adopting the western concept of certification. As I have attempted to show in this paper, the adoption of FSC certification scheme in the forest sector is a complex initiative deserving the attention of all involved. In analyzing this process, it is important to look at not only the expectations normally associated with certification and those voiced by the promoters, but also the more subtle dynamics which may be operating to encourage adoption of FSC certification due to the current paradigm shift in Japan. I have chosen a few examples of possible outcomes which FSC certification as a social instrument could produce. These could serve the Japanese forest sector in positive ways so far unnamed, they could create problems so far unconsidered, or they could become expensive window dressing with very little significant impact on the health and management of forests. There are many more possibilities, and combinations of these possibilities will most likely develop. I have chosen the possibilities presented in this paper only to illustrate the need for careful consideration of culture, economics, and history when moving forward with promoting the acceptance of social instruments across cultures. It is necessary that the promoters of FSC certification including NGOs, government, timber producers, forestry academicians, forest industry COC, and consulting firms associated with the forest industry establish realistic and clearly articulated goals for bringing FSC certification to Japan. If the adoption of FSC certification in Japan becomes only a Garbage Can decision and does not produce outcomes similar to those where it originated, it could end up being only a ritual for creating an international reputation and even make the situation for the domestic timber industry in Japan worse than it is today. Hopefully, with careful investigation and rational decision making, FSC certification, if adopted in Japan, will serve Japan in positive ways beyond any currently under open discussion. Whatever the results, we can expect them to be different in the context of Japanese society from those in countries where certification had its beginnings.

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COMPARATIVE ANALYSIS OF FOREST LAWS IN 12 SUB-SAHARAN AFRICAN COUNTRIES

Volker Kohler and Franz Schmithüsen

ABSTRACT

The paper resumes results of a study evaluating national forest laws currently in effect in the following sub-Saharan African countries: Benin, Burkina Faso, Cameroon, Ethiopia, Gabon, Gambia, Guinea Lesotho, Madagascar, Senegal, Tanzania and Zimbabwe. Six dominant themes are examined: integration of forestry into development and environment policies, new roles for stakeholders, diversification of management systems, valorisation of products and services, forest conservation and measures to promote an appropriate framework of the forestry sector. The results show that most of these aspects are addressed in the forest laws of the countries under consideration. However, they are regulated with varying intensity, and differ to some extent from standards and guiding principles established by the international community. Shortcomings relate mainly to co-ordination of forest sector development with the economic and social development objectives; reform of public forest administrations; adequate participation of stakeholders; assistance to forest owners and local communities; and compensation for social and environmental services of forests.

Keywords: Forest Law; Forest Policy; Environmental Law; Sector Development; Institutional Framework.

1. DOMINANT THEMES OF THE FOREST LAW DEVELOPMENT

Already during the period 1970 to 1980 considerable changes in forest legislation in many Sub-Saharan countries Africa's have taken place (Schmithüsen 1986 a, b). The dynamic move towards adjusting the legal framework for sustainable forest management continued and gained importance since 1990. Texier for a number of French, Portuguese and Spanish-Speaking countries and Young for Anglophone Africa have made a comparative survey of recent trends and accomplishments in adopting new forest laws or amending existing legislation (Cirelli et al. 2001). In the French, Portuguese and Spanish-Speaking countries forest management planning, local and private forestry management and environmental problems associated with forests and tree vegetation have been of considerable concern to policy makers and legislators. In Anglophone Africa similar subjects and more specifically land and ownership definitions, social and community issues, environmental protection, forest management and commercialisation, and institutional issues of the sector have been of concern. Additional information comparing specific aspects of forest law developments or focussing on certain group of countries is available (Bertrand 1992; Breton 1996; FAO 1996 a; Ojwang 1997; Saussay du 1996; Sinatambou 1999). Land tenure and local resource control and management as well as environmental aspects have found particular attention (Arnold 1998, Griffin and Bergin 1996, Kamto 1996; Lawry 1990; Le Roy 1996; Ribot 1995).

The study on which this paper is based has been initiated by the forestry section in Sub-Saharan Africa (Sektion Waldwirtschaft in Afrika südlich der Sahara), which coordinates GTZ forestry advisory projects in sub-Saharan Africa and Madagascar. It was elaborated during 2000 and 2001 in close co-operation with the collaborators of the relevant projects, and with financial support from GTZ'S Tropical Ecology Support Programme (TOEB). It analyses forest laws in force respectively advanced draft versions of new legislation in twelve sub-Saharan African countries, in which German development co-operation is involved in forest sector projects. Countries included in the survey are *Benin, Burkina Faso, Cameroon, Ethiopia, Gabon, The Gambia, Guinea, Lesotho, Madagascar, Senegal, Tanzania, and Zimbabwe* (Kohler 2001).

The objective of the study is to evaluate forestry-related legislation within the framework of the current international debate on forest policy and sustainable forest sector development and to indicate consistencies and inconsistencies between internationally claimed standards and legislation currently in place. Another objective was to assess to what extent current legislation leaves room for more integration of land-uses and for innovations in sustainable land management practices.

Forest legislation in place in the selected countries except *Gabon* and *Tanzania* was passed in the 1990s. The reform of forest laws reflects important changes in national forest policies with the objectives to provide for more effective measures against increasing deforestation and forest degradation as well as to put forestry more closely into the broader framework of social and economic reform processes. Changes in forest laws include improvements of the formal organisation and structure of legal texts; a diversification of the goals and objectives; a greater variety and a more coherent use of policy instruments; and more emphasis on the protection of local forest uses and participatory land management practices. There are obviously considerable differences between the laws subject to prevailing local conditions and to the scope of national resources policies. But there are also a number of comparable trends which determine recent changes in forest legislation within the countries that have been examined.

The analysis of forest laws in the countries included in the present survey is based on an evaluation framework which has been developed with the participants in the survey. The used criteria refer to recommendations from Earth Summit in 1992 (UNCED) and to the principles of sustainable forest management developed subsequently by intergovernmental fora. They provide a reference system for analysis at the level of individual countries as well as for comparison among countries in order to recognise the common trends and differences. *Table 1* shows the selected eleven structural aggregates of the framework and the principal issues that are considered as important in the context of law and policy development. The assessment made in the table considers the applicable forest laws only. A more detailed comparison would require to take as well into consideration the implementing legislation available in governmental regulations, decrees and public administrative procedures.

A general assessment of the results presented in *Table 1* leads to the overall finding that there are a number of legal respectively policy issues that are addressed in practical all forest laws that have been examined. This refers to the objectives and functions of forestry (Criteria 1); to the definition and designation of forest and forest lands (Criteria 3); to the regulation of property rights and the determination of management systems (Criteria 4); to forest utilisation and benefits (Criteria 6 and 7); to forest protection (Criteria 9); and to the enforcement of law provisions (Criteria 11). On the other hand there are a number of legal and policy issues that so far are missing, only dealt with sporadically or only regulated in a few countries. This is for

instance the case with regard to forest sector development planning (Criteria 2) which is prominent in the laws of *Gambia, Guinea, Lesotho and Tanzania* but barely mentioned, or missing in the laws of the other countries. Little regulation also exists with regard to the institutional framework of the sector (Criteria 5); commercialisation and transport (Criteria 8); and training and research (Criteria 10). *Table 1* also allows at least a general view on the considerable differences that exist within countries that have been examined. This refers to the regulatory intensity as well the consistency of the existing legislative framework addressing forest land management and forest sector development. Countries like *Burkina Faso, Cameroon, Gambia, Guinea, Senegal and Tanzania* show a rather complex and balanced legal framework.

The following comments on important recent forest law developments in the countries under review is presented according to the following themes :

- Integration of forestry into development and environment polices;
- Participation and new role of stakeholders;
- Diversification of management systems;
- Valorisation of forest products and services;
- Forest conservation;
- Measures for an appropriate institutional framework for the forestry sector.

Complementary information from country reports is available for *Benin* (FAO 1996 b); *Burkina Faso* (FAO 1995); *Cameron* (Bomba 1996); *Ethiopia* (Mulugeta 1984); *Guinea* (Lankan Traoré 1996); *Madagascar* (FAO 1998; Finioana and Rakotonarivo 1996); *Senegal* (Ly 1996); *Tanzania* (Hitchcock and Shauri 1995; Wily and Mafwnga 1995; Lindsay 1996; Shauri 1999); and *Zimbabwe* (Bruce et al. 1993).

2. INTEGRATION OF FORESTRY INTO DEVELOPMENT AND ENVIRONMENT POLICIES

Forests have long been underestimated as a source of a multitude of locally available and renewable resources. Accordingly, their potential contribution to local, regional, and national development has been under-utilised. Today, a consensus is gaining ground that forestry practices have to be incorporated more consistently into national environmental and development legislation and policies. Integrating the forest sector into national environmental and development policies will create synergistic effects provided that the interrelationships between different sectors are correctly identified and analysed. Relevant criteria for an evaluation of forest law provisions are the objectives and functions of forestry, forest sector development planning, and definition and designation of forests and forest land (*Table 1; Criteria 1, 2, 3*).

Objectives and Functions of Forestry: A precise definition of the economic, ecological, and social objectives of forest sector development is an essential precondition for a clear positioning of the forest sector with regard to other relevant sectors. However, only the laws of *Burkina Faso* and *Guinea*, and the Draft of Bill of *Tanzania* meet the standards of well-defined objectives and forestry functions. Legislation of the remaining countries is limited to some rather general statements or does not even address the principal objectives of the law, e.g. in the case of *Benin* and *Lesotho*.

Table 1: Criteria for Comparative Evaluation and Regulation Intensity in Forest Laws by Countries

- not mentioned; + mentioned; ++ partly regulated; +++ regulated; * Draft Bill

Criteria	Benin	Burkina Faso	Cameroon	Ethiopia	Gabon	Gambia	Guinea	Lesotho	Mada-gascar	Senegal	Tanzania	Zimbabwe
1. Objectives and functions of forestry		*							*	*	*	
1.1. Sustainable, multifunctional forest management	-	+++	+	+	+	+	+++	-	-	+	+++	+
1.2. Conservation of natural resources and environment	-	+++	++	+	+	+	+++	-	-	+	+++	+
1.3. Integration in environment and development policy	-	+++	+	+	+	+	+++	-	-	+	+++	+
2. Forestry sector development planning												
2.1. National development planning in forestry	-	-	-	++	-	+++	+++	++	++	-	+++	-
2.2. Inventory and monitoring	-	-	+	+	-	+++	+	++	+	-	++	+
2.3. Co-ordination/interfaces with other sector planning	+	++	+	+	-	+++	++	++	-	-	++	+
3. Forest and forest land												
3.1. Definition of forest and forest land	+++	+++	+++	+++	++	+++	++	++	+++	+++	++	++
3.2. Classification of forest and forest functions	+++	+++	+++	+++	++	+++	+++	++	+++	+++	+++	++
3.3. Regulations for the preservation of forest area	+++	+++	++	+++	++	+++	+++	++	+++	+++	+++	++
3.4. Conditions for demarcation/change of forest land	+++	+++	++	++	+	+++	+++	-	+++	+++	++	++
4. Property rights and management systems												
4.1. Attribution of management rights	+++	+++	+++	+++	++	+++	+++	+++	+++	+++	+++	++
4.2. Options for the transfer of management rights	+++	++	++	+	++	+++	++	++	++	+++	+++	+
4.3. Consideration of traditional use rights	++	+++	+++	++	+++	+++	+++	+	+++	+++	++	-
5. Institutional Framework												
5.1. Forest administration	-	+	+	+	+	+++	+	++	+	++	++	++
5.2. Cross-sectoral advisory bodies and commissions	-	-	-	+	-	++	+	+	-	-	+	+
5.3. Mechanisms of participation of forest owners	+	-	-	+	-	++	+	-	+	-	++	+
5.4. Involvement of the public in forest Development decisions	-	-	-	+	-	+	+	+	-	-	++	-
5.5. Assistance to forest owners	++	+	-	+	-	+++	+	++	-	-	+	-
5.6. Forest Fund, objectives, financing sources	-	++	+	-	-	+++	++	++	++	++	+++	+

Criteria		Benin	Burkina F.	Camer.	Ethiopia	Gabon	Gambia	Guinee	Lesotho	Madag.	Senegal	Tanzania	Zimbabwe
6.	Utilisation of forests												
6.1.	Conditions for the utilisation of forests	+++	+++	+++	+	++	+++	+++	++	++	+++	+++	+
6.2.	Forest utilisation	+++	+++	+++	+	++	+++	+++	+	++	+++	+++	+
7.	Assessment and distribution of benefits												+
7.1.	Fees for the use of products from state forests	+	+++	+++	-	++	+++	+++	++	++	+++	+++	
7.2.	Fees for products from community/private forests	+	+++	+++	-	-	+++	+++	+++	++	+++	+++	-
7.3.	Distribution of revenue from forest products	-	++	+++	-	-	+++	+++	+++	++	++	+++	+
7.4.	Special fees	-	-	-	-	-	-	-	-	-	-	-	+
7.5.	Valorisation of environmental services	-	-	-	-	-	-	-	-	-	-	-	
8.	Regulation for commercialisation and transport												++
8.1.	Transport, commercialisation, export	+	+	++	+	+	+	++	+	+	++	++	++
8.2.	Regulation of the certification of forest products	-	-	-	-	-	-	+	-	-	-	-	++
8.3.	Forest produce processing industry	-	-	++	-	++	-	+	-	-	-	-	++
9.	Protection of forests												
9.1.	Species and biodiversity	++	++	++	++	+	++	+++	++	(+++)	+++	+++	++
9.2.	Pests and diseases	-	++	++	++	-	++	++	+++	-	-	+++	+
9.3.	Fire	++	+	+	+++	-	+++	+++	+++	(+++)	+++	+++	-
9.4.	Grazing	++	+	+	+++	-	+++	++	++	(+++)	+++	+	
9.5.	Seeds and plant control	-	-	-	-	-	-	-	-	-	-	-	++
10.	Training and research												+
10.1.	Institutions for applied research	-	-	-	+	-	-	+	+	-	-	+	+
10.2.	Institutions for training	-	-	-	+	-	++	+	+	-	-	-	-
11.	Enforcement regulations												-
11.1.	Classification of infractions and penalties	+++	+++	+++	+++	+++	+++	+++	+++	(+++)	+++	+++	+
11.2.	Competencies for prosecution	+++	+++	+++	+++	+++	+++	+++	+++	(+++)	+++	+++	
11.3.	Utilisation of revenues from penalties	++	++	++	-	-	+++	++	+++	+	++	+++	

Forest Sector Development Planning: Forest legislation of all countries refers to linkages between the forestry and other sectors of the national economy. Legislation with detailed regulations on forest development planning exists in countries such as *Gambia*, *Guinea* and *Tanzania* providing useful guidance for co-ordination and co-operation with other sector planning. The laws of *Lesotho* and *Burkina Faso* mention co-ordination with other sectors as a general requirement.

According to the recommendations of UNCED in 1992, National Forest Programmes (NFPs) are appropriate instruments to initiate the process of identifying societal choices and objectives, and to engage different stakeholders in implementing the defined targets. NFPs provide an operational framework for national forest sector planning. Legal commitments for the elaboration of such programs exist in *Gambia* and *Guinea*. They are foreseen in the Draft Forest Bill of *Tanzania*. The Forest Law of *Ethiopia* is restricted to the planning of state and regional forests. In *Lesotho*, the law is limited to some general directions given within the description of the Chief Forestry Officer's duties. While forest legislation in *Madagascar* does refer to a forestry development plan, appropriated guidelines are not provided. Countries like *Burkina Faso*, *Madagascar*, *Senegal* and *Tanzania* have elaborated and passed additional administrative documents, which explicitly refer to co-ordination in planning procedures.

Definition and Designation of Forests and Forest Land: Rather detailed provisions on the classification of forests exists in all countries. However, the regulations on the classification of forest areas respectively the procedures for legally converting forests to other land-uses take account of economic, ecological, and social considerations only to a rather limited extent. Procedures equivalent to a systematic environmental impact assessment (EIA) are rarely established. They only are mandatory in *Burkina Faso* and *Cameroon*, if the foreseen activities are judged to have a serious environmental impact. *Senegal's* Forest Law prescribes an EIA in the case of forest conversion. The National Environmental Act of *Gambia* provides that the forest administration has to be consulted in the case of forest conversion. The provision also applies to the conversion of natural forest vegetation into plantation forests. In its Draft Forest Bill, *Tanzania* requires a co-operation with the Ministry in charge of impact assessments.

3. PARTICIPATION AND NEW ROLE OF STAKEHOLDERS

Application of the principles of sustainable forest management requires a new understanding of the roles of the stakeholders in the forest sector. This implies an efficient state administration with decentralised local and regional structures, co-operation with other local and regional public entities, and a functional distribution of the respective competencies. Developing use and management of existing local and regional resource potentials also implies a systematic involvement of land-owners and other stakeholders concerned. New policy instruments and co-ordination processes are crucial to reach a social consensus on the management and conservation of forest resources. Relevant criteria for evaluation and for assessing the advancement of forest laws are provisions with regard to forest administration, cross-sector advisory bodies, public involvement in decision-making, and mechanisms for participation of forest owners (*Table 1; Criteria 5.1-5.4*).

Forest Administration: The delegation of management responsibilities to regional and local institutions, including private forest owners or their representatives, calls for a revision of the state's mandate concerning forest management and conservation, and of clearly defined mandates, functions and responsibilities of the public forest

administration. It is useful to distinguish between general tasks of the state administration i.e. superintendence of the sector and law enforcement; provision of advisory and technical services for private and public stakeholders; and entrepreneurial management tasks in state-owned forest areas. The forest laws of *Gambia* and of *Zimbabwe* specify the organisation and mandate of the Forestry Administration. The *Gambia's* forest law provides for a well-structured territorial structure in line with the general organisation of the public administration. In *Zimbabwe*, the Forestry Commission is affiliated to –but not integrated into– the Ministry of Environment and Tourism. The commission manages its own budget and is directed by a board of directors.

The Laws of *Lesotho*, *Senegal* and the Draft of Bill of *Tanzania* include a special chapter on the role and functioning of the forest service which addresses its mandate, structure, and organisation. In *Senegal* the “Service des Eaux et Forêts” is in charge of state forest management whereas the decentralised communities have the right to appoint their own forestry personnel commissioned by the forest service. The decentralised communities can decide on the conversion of forest areas outside designated forest reserves. *Tanzania* provides for a general obligation to respect the principles of delegation and decentralisation. Relationships between the central forestry agency and regional and local administrative units are, however, not regulated in detail. According to the Draft of Bill of *Tanzania* mediation and dialogue are supposed to replace hierarchic structures. *Madagascar's* forest law contains a similar provision. While duties and competencies of the forestry administrations are mentioned, the laws of *Benin*, *Burkina Faso*, and *Ethiopia* do not dedicate particular sections to this subject. In *Burkina Faso*, for example, the territorial communities are empowered to establish their own management structures. In *Gabon* there is a special decree determining the duties and organisation of the “Direction générale des Eaux et Forêts”.

Cross-sector Advisory Bodies: Forest legislation usually concentrates on the forest sector and establishes links with other sectors only in exceptional cases. It follows that most laws contain no or only rudimentary regulations enabling the establishment and functioning of cross-sector advisory bodies and commissions. A new development is the establishment of commissions in order to ensure the participation of local community authorities in the process of designating forest areas and approval of conversion of forest areas in the legislation of several countries.

In *Benin*, for example, a commission for land classification, which is composed of representatives from various public institutions, is to be established. In *Gambia* a joint committee comprising professionals and representatives from the public is in charge of designating land for forest parks and forest reserves. *Madagascar's* forest law provides for a forest commission for the designation of forest areas, in which public institutions as well as representatives of NGOs and forest operators participate. In *Zimbabwe* a conservation committee is foreseen which participates in decision-making on the utilisation of natural forests. Several laws call for the establishment of commissions or committees, which could have a direct impact on forest utilisation and management. For example, a “competent” commission has to approve the allocation of concessions and logging permits in *Cameroon*. These regulations can be considered as first steps towards political and administrative co-ordination and co-operation. However, the integration of the forest sector into national environmental and development policies will require a more consistent legal framework and more effective public rules in the future. Further revision and amendment of legislation should provide more opportunities for forestry commissions and advisory bodies to contribute to environment protection and economic development.

Public Involvement in Decision-making: The establishment of advisory bodies is a first move towards a more substantive involvement of multiple stakeholders in decision-making processes. However, their participation so far is still largely limited to the local level and to public authorities. The forest law of *Madagascar* makes an exception in as much as it stipulates that representatives from NGOs are to be members of the forest commissions. *Tanzania's* Draft of Bill has another approach, providing for the creation of a National Forestry Advisory Committee. Its members, representing the various actors of the forest sector, shall participate in decisions which concern the development of forest resources in general. The members are to be appointed by the Minister, who is to ensure a fair balance between public and private interests and an adequate representation of stakeholders from outside the public administrations. In *Lesotho* participation is limited to the presentation of a forestry sector plan to the public for comments.

Participation of Forest Owners: Forest owners participate in the development of the forestry sector by managing private or community forests within the framework of the applicable regulations. In spite of their important role they have so far only few institutionalised opportunities to intervene actively in the formulation of national forest policies and in forest sector planning. Most forest laws do at present barely mention and recognise the role and competencies of forest owner associations and of professional organisations of entrepreneurs in the forest sector.

4. DIVERSIFICATION OF MANAGEMENT SYSTEMS

In terms of access to forest resources and management rights the forest sector in the countries under review was and still is largely dominated by state competencies and public interventions. To a large extent state forest administrations have so far not been in a position to develop sufficient capacities for taking care effectively of their far reaching mandates and responsibilities. Their limited capacities to implement sustainable forest management according to the prevailing regulations, and conflicting customary use regulations on the ground have slowed down in many cases the development of the sector. There is at present a trend at least in some of the new forest laws to look for new approaches with regard to management systems. Important issues for comparative evaluation are allocation of rights to forest resources, transfer of management rights to local groups, protection and development of traditional use rights, and distribution of benefits from forests (*Table 1; Criteria 4, 7*).

Allocation of Rights to Forest Resources: Regulations regarding the access to forest resources constitute the fundamental framework for the development of various systems of forest management. Legislation of all countries under consideration recognises three forms of property: state-owned forests, privately owned forests, and forests owned by communities and local authorities i.e. common-property regimes. The share of different ownership categories, especially the importance of community forests, varies according to country conditions. An important factor is the stage of reform processes within public administrations, i.e. the advancement of decentralisation respectively the redefinition of the role of the public sector.

Regulations concerning the management of state-owned forests provide that the forestry administration is either in charge of managing state-owned forests, or that it may transfer utilisation and management rights to a third party through allocating forest concessions, licences and permits. Rather similar provisions exist in all countries with regard to the management of forest plantations under community and private tenure. The owners have to respect certain restrictions in order to ensure

protective forest functions but have considerable liberty in decision-making. In the case of natural forest areas, regulations vary considerably according to countries. Again the competencies of communities or decentralised local authorities concerning the rights of use and the management of such areas depend to a large extent on the advancement of public decentralisation. As far as private forest tenure exists for natural forests the owner rights are usually even more restricted by law in as much as any utilisation of natural forests must be declared to or authorised by the forest administration. In *Cameroon* legislation extending to privately owned natural forests allows the owners only an option to purchase harvested trees.

Transfer of Management Rights to Local Groups: The transfer of management and utilisation rights to local groups has the potential to bring about considerable changes with regard to a more active involvement of different stakeholders in forest management. With the exception of *Ethiopia* the forest laws of the countries under review provide for such transfers subject in general to the following three conditions: approved management plans, formal agreements, and functioning of a collective management institution. The main differences between countries concern the degree of intervention from the side of forest administrations, the importance of supervision functions, and the level of advisory services and technical assistance. Regulations in this respect can be found in the legislation of all countries except *Gabon* and *Zimbabwe*. In *Madagascar* the transfer of forest management rights is determined within the framework of provisions that relate generally to renewable resources.

In *Gambia* the transfer of management and utilisation rights is a central element of the law. The Forest Bill contains a clear commitment, provides detailed directives and stipulates for measures in order to support management activities of local groups. Transfer procedures take place in two phases with the result that the formal management rights can only be transferred after a successful probationary period of three years. The Draft of Bill of *Tanzania* provides for a multiple system of management and utilisation rights. Provisions related to the designation of village forest reserves and establishment of committees promote forest management by local groups. The transfer of management rights can take place upon request by individual groups, which live adjacent to the forests or which otherwise are interested in wood production and forest management. The forest service has the task to encourage the creation of community forests.

Measures to encourage social forestry are also provided for in the forest law of *Benin*. It provides for a transfer of forest management to adjacent local populations subject to a formal management agreement and a management plan. While the forest areas remain legally under state-tenure the agreements specify in favour of local groups management practices and the use of the income derived from forest activities. There are various options granted by the law to the forestry administration to intervene. In *Burkina Faso*, and *Senegal* the utilisation of the forest by decentralised institutions is emphasised. These, in turn, can transfer management and utilisation rights to local groups. Farming contracts are a particular form of such transfers. They allow temporary agricultural uses of allocated areas followed by reforestation and silvicultural treatment. According to *Cameroon's* legislation, state-owned forests can be entrusted to village communities on the basis of a special form of contracts and subject to the provisions of a formally approved management plan. The public forest administration has to ensure that the conditions of utilisation contractually specified are implemented. It has also a mandate to make available technical assistance for the preparation and implementation of management plans if requested by local communities.

Traditional Use Rights: Customary rights are generally acknowledged in the laws of all countries. They are limited to subsistence needs and exclude the commercial use of forest products. There is an important difference in the exercise of traditional rights inside and outside declared forest reserves, in particular in the regulations of *French-speaking* countries. While these rights are severely restricted inside forest reserves, they are less constrained on other forest lands. Traditional use rights can be limited or even abolished in forests for which management plans have been adopted. In *Gambia* and *Tanzania* a detailed survey of customary rights as well as of the necessary compensation in case of restrictions is part of the procedures for demarcating forest areas and management plan preparation. *Cameroon* and *Guinea* foresee financial compensations in case of temporary or permanent limitations of traditional use rights. In contrast to the other countries under review, *Ethiopia* and *Lesotho* prescribe the payment of fees for forest products in the context of traditional use rights.

Distribution of Benefits Derived from Forests: The laws acknowledge the principle that forest owners should receive the revenues derived from the utilisation of their forest. This also applies in the case of transfer of management rights to local groups. However, special provisions may be foreseen which regulate benefit sharing between the local groups and the forest administration. In *Cameroon, Gambia, Lesotho, Madagascar, Senegal, Tanzania, and Zimbabwe* regulations regarding the financing of forest development funds provide to a certain extent for a partial redistribution of revenues from forest products. In a few cases more concrete specifications exist which allow additional benefits in favour of the local population from revenues derived from forest activities by third party within their traditional living area. In *Cameroon*, for example, the forest law stipulates that the entire contributions to investments in social infrastructure must be transferred to the concerned communities. In order to sustain the development of village communities adjacent to certain state forests, the law also specifies that part of the revenues derived from the sale of forest products is to be utilised for the benefit of these communities.

Gambia's Forest Bill prescribes that the use of revenues generated by the sale of forest produce harvested in the course of forestry operations in community forests will be decided upon by the concerned forest committee. The proceeds are to be used in order to promote protection and development of the community forests as well as a general contribution for community development. Resources spent for community development activities other than forestry may not exceed sixty percent of the deposits into the account. Fifteen percent of the total financial proceeds are to be transferred to a national fund as contribution to national forest development and compensation for technical services rendered by the forestry department in managing community forests. Regarding the attribution of concessions, *Tanzania's* Draft of Bill requires the proof of consultation with the adjacent population, co-operation with the local populations, and mechanisms for conflict management.

5. VALORISATION OF FOREST PRODUCTS AND SERVICES

The benefits from forests and from the forestry sector have been and generally still are considerably undervalued. This is true for both marketed products, and environmental and ecological services which result as positive external effects from protecting forest vegetation and managing the resource on a multifunctional system. The concept of sustainable development, however, puts new demands on the regulatory framework for utilisation and management of trees and forests in order to increase the economic and social values generated by the sector for public and private forest owners and for society as a whole. Legal issues of importance in this

context are the scope of management plans, the framework for forest utilisation, and regulations concerning commerce of forest products (*Table 1; Criteria 6, 8*).

Scope of Management Plans: Management plans are in all countries under review one of the main instruments to improve forest utilisation and to balance public and private interests in land management. The applicable regulations vary, however, to a considerable degree with regard to the categories of forest areas subject to management planning, requirements applicable to different groups of forest owners, and specific contents and standards of such plans. In addition, the role and influence of public forest administrations in terms of approving management plans and assisting in implementation is more or less dominating within the countries. With regard to the ongoing national and international debates concerning sustainable forest management the findings show that improvements have been made. However, the prevailing regulations will need further amendments to ensure a forest land management which provides a wide range of forest products and environmental services.

In *Benin, Burkina Faso, Gabon, and Cameroon* management plans are only required in designated forest reserves and permanent forests. *Benin's* legislation provides directives regarding the demarcation of management units, regulations about forest practices standards, and procedural rules which ensure participation of local residents. In *Burkina Faso*, the forest law established the competence of the forest administration to prepare management plans and to control their implementation. While the Ministry is to approve plans for state-owned forests, the competent local authorities are entitled to approve management plans for forests in which they have the use rights. *Cameroon's* forest law contains rather general statements and stipulates that procedural aspects and standards for management plans are to be regulated by decrees. The law demands that the plans are to be revised and updated periodically. In communal and privately owned forests the requirements for such plans are less comprehensive than in the case of forest management in state forests. *Gabon's* forest law claims that management plans are mandatory, but all specifications and required standards are regulated by decrees. In *Guinea, Madagascar, and Senegal* the law requires management planning for all public forests. The responsibility for the preparation is with the institutions which have the use and management rights subject to approval by the competent authorities. In the case of *Madagascar*, approval is given by the authorities of the decentralised institutions.

In *Gambia* management plans are mandatory for all categories of forest ownership, provided that the area comprises natural forests and exceeds 25 hectares. Forest owners are responsible for the elaboration of the plans. In *Tanzania* similar regulations are in effect. The law provides general regulations for different categories of management plans as well as for minimum standards to be promulgated by decrees. In *Lesotho*, the forest administration is responsible for the management of natural forests. Management plans have to be elaborated for all forest reserves subject to defined minimum standards and to approval by the Minister. Transfer of utilisation rights to co-operatives or private individuals requires agreements with approved management plans. In *Ethiopia* management plans are to be prepared for state-owned and regional forests. No regulations concerning standards, duration, and procedures are provided for in the law.

Framework for Forest Utilisation: In state-owned natural forests two types of regulation usually exist in order to organise forest utilisation. Management, timber harvesting, and marketing of roundwood may be carried out by the public forestry administration. Alternatively, the management and exploitation rights may be

transferred to private operators. There are several procedures for the transfer of the rights: (i) management agreements, i.e. the transfer of management and timber harvesting for a rather limited periods; (ii) concessions, transferring the rights for relatively large areas and long periods; (iii) sales of standing timber of certain species in a defined area; (iv) harvesting permits for a specified quantity of products; (v) permission to practice traditional use rights. The forest laws of the various countries show different choices and combinations of these options.

Benin's forest law requires utilisation permits and the payment of fees in public forest, whereas the utilisation on private forest land is not bound to a special permit, provided there is no danger of degradation. The law of *Burkina Faso* is limited to general statements. In the case of state-owned forests contracts with a list of conditions detailing harvesting and distribution of products may be issued. In *Ethiopia* the law does not include specific regulations on procedures to attribute concessions other than the requirement of a written permit from the Ministry or the appropriate regional entity. The regulations provided in *Lesotho's* law are similar. Forest utilisation requires a licence, with the exception in plantations of individuals, communities or co-operatives. The forest administration is entitled to issue licences and to collect fees. The Act does not specify the fees nor the modalities of issuing licences. According to *Senegal's* legislation utilisation of forest products in state forests is conducted by selling timber cuts, standing volume or timber units. In forests owned by local entities utilisation requires the authorisation of the village head or of the president of the rural council. Private forests may be used according to the needs of the owners. Utilisation is generally subject to the payment of taxes and fees as defined by decrees.

Gambia's Forest Bill provides for licences and permits for any type of activities in state forests. In the case of state forests under the competence of forest committees, the committees in collaboration with the forestry department may decide on the type and number of licences and permits to be issued. They have the right to monitor the licence holders' activities and performance. The procedure for the issuing licences and permits, and the modalities for price fixing is regulated unambiguously. The law of *Guinea* defines common principles which apply to all types of forests regardless of tenurial rights. There are also fairly transparent rules for the transfer of user rights. Formal regulations prescribe the issuing of forest management contracts and of logging permits. Details are to be determined in by-laws and regulations. The rules apply to state forests as well as to forests of communities, districts, and villages. In *Madagascar* rights may be transferred through utilisation and harvesting permits. Utilisation permits refer to all or to selected forest products as indicated in a list, specifying the products and the applicable practices. Moreover, there is an obligation to reforestate respectively to pay financial compensation on the part of the users. The law does not provide specific information related to the determination of fees and modes of allocating such permits. Harvesting permits are applicable for the practice of traditional use rights. They entitle the holders to use limited quantities of forest products to meet personal, non-commercial needs. Again, the procedures are to be specified by decrees. In *Madagascar*, commercial logging and marketing of roundwood require the recognition of the operator as a professional entrepreneur by the forest administration.

The legislation of *Cameroon* contains rather detailed provisions for the use of forests which vary according to different property regimes. Forest utilisation in state-owned production forests is conducted either by timber sales or forest agreements. Forest agreements allow for a long-term transfer of utilisation rights subject to determined management duties. A list of specific regulations is part of the agreement referring to

its duration, the area allocated, and to the establishment of wood processing facilities. A series of payments are due comprising annual fees based on the area, taxes on the production of timber, progressive surcharges on the export of non-processed forest products, investment contributions for social infrastructure, and special fees for carrying out forest inventories and forest management activities. With the exception of inventory and management fees, the forest charges are determined on an annual basis by special decree of the ministry of finance. Legislation in *Gabon* contains similar regulations. A major policy objective in attributing utilisation entitlements is the promotion of local wood transformation and the development of the timber industry. The law itself contains not much on the process and modalities of attribution and utilisation practices. It refers largely to implementing decrees and regulations.

The Draft Bill of *Tanzania*, in comparison with other countries, grants comprehensive rights to those responsible for a forest area provided that the foreseen activities are based on adequate management planning. For certain activities, in particular for the export of forest products, the Ministry is competent to issue permits. The duration of permits extends over a period of three years and can be renewed for a maximum period of fifteen years. The law specifies several factors to be considered in assessing forest fees such as the estimated market value of the products, access to the site of operation, the purchasing power of the buyers, as well as sustainability of production based on site productivity. In addition to permits, concession rights can be granted by the Minister. The conditions for such agreements are determined by law and decrees. In *Zimbabwe*, legislation authorises the Minister, on recommendation of the Forestry Commission, to lease parts of demarcated forests. Financial proceeds derived from concessions are at the disposal of the Forestry Commission. The law also refers to logging permits as well as permits and licences under the Communal Land Forest Produce Act, which addresses forest products on communal land. The licences apply to exploitative activities in both natural forests and plantations. They must be established in written form and specify the amount and conditions of payments for the forest products. In the case of planted forest resources regulations of the forest law are specified in the following way: Use rights and income derived from forest products belong to individuals or institutions which have planted the trees. There are, however, differences in terms of the conditions attached to this rule. For example, according to *Madagascar's* legislation a permit is required to exercise uses, whereas a mere declaration is sufficient in *Burkina Faso*. In *Benin, Guinea, and Senegal* there are no restrictions if the uses are in accordance with management plans.

Regulation of Forest Product Commerce: New approaches to forest utilisation systems require a more progressive marketing of forest products to meet the ambitious objectives for the forest sector. The provisions of most forest laws concerning the marketing of forest products are at present mainly restrictive. Transport, storage, and trade of forest products are frequently subject to cumbersome public regulation through permits and controls. The laws of *Cameroon* and *Gabon* provide first steps on the way to an active participation in the development of market structures. There are several instruments to promote domestic processing of forest products. First, the transfer of concessions requires the establishment of wood-processing enterprises. Second, there are progressive taxes for the export of roundwood. The governmental encouragement of inland wood processing in the present form, which is intended to add value to forest products has its limitations and draw-backs. It tends to prevent the establishment of open log markets for logs with free competition for the raw material and results in an under-

valuation of the raw material. With cheaper raw material available there is also less pressure for the industry to process timber efficiently. However, these obstacles can be tackled. Since production and marketing of forest products are closely linked it is decisive for all countries to realise that public instruments to influence marketing conditions have thus to reorientate towards incentives and promotional measures instead of largely relying on regulative measures. The forest law of *Guinea* provides another approach with regard to marketing conditions. It introduces a quality certificate for sawn timber, i.e. a product certification based on the monitoring of defined qualitative standards. This is different from certification schemes as advocated in international debates which refer largely to ecological and social criteria and indicators of sustainable forest management.

6. FOREST CONSERVATION

Forest ecosystems comprise a large part of terrestrial biodiversity. Together, tropical, temperate and boreal forests offer diverse sets of habitats for plants, animals and micro-organisms, holding a majority of the world's terrestrial species. Forest biodiversity is being reduced due to rapid deforestation, fragmentation, and degradation of forest types. Protection of forests, particularly of primary forests, has consequently an essential significance for the conservation of biological variety and genetic resources. The central instrument, internationally agreed upon, is the Convention on Biological Diversity (CBD) adopted as a result from UNCED in 1992. The Convention is based on a holistic approach, as it combines preservation of biological diversity with utilisation of this diversity and with equitable sharing of the benefits that may derive from the use. The countries which signed the convention have adopted a "work programme on forest biological diversity". It follows an inter-sectoral ecosystem approach and refers explicitly to the close meshing with international forest political dialogues and to the need for harmonisation. Relevant criteria for an evaluation of forest law provisions are the preservation of biological diversity, the prevention and the control of pests and diseases, the protection against fire and grazing and the regulations concerning seeds and plants control (Table 1; Criteria 9.1, 9.2, 9.4, 9.5).

Preservation of Biodiversity: A direct reference to international conventions is made in *Tanzania's* Draft Bill. The Minister has the obligation to facilitate the implementation of international conventions and agreements relating to the reduction of global greenhouse gas concentrations, the conservation on biological diversity, the protection and enhancement of forests and the preservation of wild plants, for which agreements have been signed and ratified. The act confirms the sovereignty over biological resources in forests and determines that they shall be conserved and utilised for the people in Tanzania. A similar provision regarding the protection of genetic resources exists in the forest law of *Cameroon*.

The laws of *Cameroon*, *Ethiopia* and *Lesotho* mention obligations regarding the preservation of biological diversity, however without reference to international conventions. The forest law of *Ethiopia* obliges forest owners to implement the overall directives issued by the Ministry on environmental protection and those pertaining to catchments, unique habitats, and endangered tree species and forest communities within the region. The texts of *Cameroon* and *Lesotho* give general indications about maintenance of biological diversity as a duty of the forest administrations. Except for *Gabon* and *Gambia*, all forest laws contain regulations with regard to the protection of endangered or indigenous tree species.

Forest Protection: More classical topics like forest protection, measures to be taken in case of calamities and natural disasters, protection against fire and grazing find considerable attention in forest legislation of the countries under review. Some texts refer to special legislation, as for example in the case of bush fire in *Madagascar* or of grazing in *Benin, Cameroon, Ethiopia, Gambia, Guinea, Lesotho* and *Tanzania* have adopted regulations regarding the prevention and control of pests and diseases. Forest owners have the obligation to avert dangers and the forest authorities are allowed access to endangered areas and may carry out appropriate measures. With regard to the protection against fire and grazing the texts reflect two different points of view. The laws of the first group of countries acknowledge fire and grazing as traditional forms of use in forest areas and determine criteria according to which these uses may be limited and to what extent (*Benin, Burkina Faso, Guinea, Gambia, Lesotho*). In the laws of the second group of countries it is assumed that the use of fire and grazing are generally forbidden, with exceptions to be made under specifically determined circumstances (*Ethiopia, Tanzania, Zimbabwe*).

Seeds and Plants Control: None of the forest laws taken into consideration contains regulations regarding the control of production and commerce of seeds, and the production of forest seedlings. However, the Law of *Burkina Faso, Gabon* and *Cameroon* have regulations preventing the introduction of invasive alien plant and animal species. They prescribe that the introduction into the national territory of vegetal or animal species is submitted to an authorisation from the forest administration.

7. MEASURES FOR AN APPROPRIATE INSTITUTIONAL FRAMEWORK FOR THE FORESTRY SECTOR

Relevant issues for comparative analysis are regulations concern the operating of forestry development funds, support to private and community forest owners, promotion of education and training, and facilities for forest sector research (*Table 1; Criteria 5.5-5.6, 10*).

Forest Development Fund: In view of the multiple role of forests in providing private and public benefits their sustainable management requires public stewardship and investment in developing the productive potential of the sector. Forest development funds, in which part of the proceeds from produced goods and services are collected offer incentives and compensations in order to supply economic, ecological, and social services in the public interest and on a continuing basis. Precise specifications regarding the organisation of such funds, the composition of decision-making bodies, and the supply and allocation of financial means are necessary in order to ensure their functioning. In the countries under review only the forest law of *Gambia* and the Draft of Bill of *Tanzania* contain detailed regulations regarding the establishment and the functioning of a forestry development fund. In *Gambia* a national fund as well as local funds for the promotion of community-based forest management are provided for in the law. Income derived from state-owned forests is allocated in equal parts to the national budget and to the national forestry fund. Fifteen percent of the income created from community forests enter a central fund, while the remaining eighty-five percent are available for local forestry development. The Draft of Bill of *Tanzania* contains clear objectives and directives concerning the organisation and administration of such a fund. Moreover, it entitles the actors of the forest sector to participate in the decision-making regarding its utilisation. The financing mechanisms are based on contributions from specific percentages of fees (2%) and taxes (3%) for the utilisation of forest products, from income derived from the sale of confiscated

goods, from voluntary governmental, private, or external contributions, and from proceeds from projects financed by the fund.

Cameroon's regulations are rather general. While there is a special forest development fund, to be financed from revenues derived from the utilisation of forest resources, the amount of the contribution is not specified in the law. In *Benin, Burkina Faso, and Guinea*, the creation of forestry development funds is also foreseen by law. However, the objectives are not specified, and there are no indications as to the organisational and administrative structure. Sources of financing are mentioned without clarifying the range of contributions to be made. In *Lesotho* the entire income derived from fees, taxes, and fines flows into the forestry fund. One of its major objective is to provide financial support to private forest owners, and to communities and co-operatives. The proportion of proceeds to be made available for these measures is not specified. The Forestry Fund is independent from the forestry administration as it administered independently with a separate public account. A similar solution exists in *Senegal* where the law stipulates that all revenue derived from fees, royalties, and the sale of forest products flow into the national forestry fund with the objective to finance forest resources development.

The forest law of *Madagascar* addresses the creation of a forestry fund in general terms. Supplementary decrees determine that the fund is to be financed from revenues derived from the transfer of utilisation rights on forest products in state-owned forests. In order to facilitate its functioning, additional regional funds are established. The distribution of the proceeds between national and regional funds is still to be decided upon with a ratio of 30 % to 70% under discussion. Management of the fund is temporarily entrusted to the forestry administration until a new provision is taken by decree. *Zimbabwe's* Law establishes a forestry reserve fund to be financed from contributions which amounts to three fifths of the surplus of the Forestry Commission. However, as there has been no surplus during the past years the fund has not become operational so far.

Assistance to forest owners: The transfer of utilisation and management rights to local communities, user groups and co-operatives requires appropriate skills and managerial capacities at the local level. The same is true with regard to private land owners engaged in tree planting, and managing wood lots and forest lands. The public forest administration has an important role to play in this context. According to *Benin's* forest legislation the administration has a mandate to support actively the transfer of management rights within the framework of agreements with local communities. Supporting measures include promotion of negotiating processes, advisory services, and technical, material, and financial assistance. The law, however, does not provide definite directives which will enable interested partners to claim such assistance in a formal manner. *Gambia's* forest service is to provide assistance to local management committees for the elaboration and implementation of management plans as part of social forestry initiatives. Private forest owners can receive similar assistance upon request. In *Guinea*, the corresponding regulations are general. The forest administration is to assist decentralised communities in the elaboration of management plans and in promoting forest plantations in general.

In *Lesotho* the mandate of the forest service refers to the promotion of forestry and agro-forestry in co-operation with the agricultural advisory services. Moreover, there is an obligation to plan and establish suitable advisory services and technical support upon request to private forest owners and co-operatives. Fees to cover the costs of the services shall be collected. The laws of *Ethiopia* and *Tanzania* mention technical advice and assistance only in a general way as a specific mandate of the forest administration. Addressees, procedures and extent of services are not specified. In

Burkina Faso, Cameroon, Gabon, Madagascar, Senegal, and Zimbabwe the laws contain little on such measures in favour of forest owners. With the exception of *Benin*, financial support to forest management, such as incentives to promote reforestation or the transition to sustainable management of natural forests are not specifically regulated in the laws of the countries under review.

Education, Training and Research: The advancement of forest sector development and sustainable forest management needs appropriate training and technical and professional education of personnel for all categories of forest ownership and on all functional levels. According to the forest law of *Gambia*, the establishment of training centres is one of the important task of the forest service. Its own staff, as well as personnel from other public institutions and interested individuals from local organisations and communities should be provided for, with adequate education and training. The forest laws of other countries under review only give general indications without specific provisions concerning scope and addressees, contents and organisation, and financing. In *Ethiopia*, it is the task of the ministry to make sure that sufficient qualified personnel is available for the management and development of state and regional forests. There are also provisions to support the regions in organising training activities and in promoting general education programmes related to environment issues.

With regard to applied forest research there are only few provisions to be found in the forest laws that have been reviewed. This is the case, for instance, in *Gambia* where the forest service is mandated to carry out this kind of research. Somehow similar regulations exist in *Guinea, Lesotho, and Zimbabwe*. *Tanzania's* Draft Bill addresses research with regard to regulations concerning the collection of wild plants for scientific purposes. Moreover, the forestry fund may be used to promote applied research in forestry, and educational campaigns on the environment.

8. DISCUSSION OF FINDINGS AND CONCLUSION

Advancement of Forest Laws: Recent forest law developments in the countries that have been reviewed show that important regulatory aspects are addressed and that the legal framework provides new opportunities for further advancements to reach sustainable forest management. However, the findings according to the selected criteria for comparative evaluation also indicate that regulations have been made at varying intensities, and that further progress needs to be made in order to achieve the standards and guiding principles established by the international community with regard to effective national forest policies and forest sector development. Gaps and inconsistencies vary from country to country but there are common patterns and issues of concern that can be found in the majority of countries.

Sector Co-ordination: The economic, political, institutional, and demographic environment, as well as a country's area, regional distribution and productivity of forest resources are the driving forces for developing the forest sector. Important factors are, for instance, access to forest land uses and management rights; range of demanded goods and services; access to financial markets and technology; the role of the informal economy and access to existing or developing commercial markets, the organisation of civil society and of the media in influencing public opinion; demographic pressures as well as migration and urbanisation trends, and the availability and impact of the education and research system. This implies that many sectors have forward and backward linkages to forest land uses and management, and that many public policies have impacts that are to be considered as part of the institutional framework that shapes the forest sector's development.

Modern forest laws need thus increasingly institutional and procedural provisions as well as appropriate co-ordinating instruments that ensure that the forest sector fully participates in the evolution of the economic, social, and natural environment. The actual and potential conflicts between sustainable utilisation for the economic production of goods and the need to protect and conserve forests and forest lands for environmental and ecological reasons are prime examples. In spite of common interests on the ground, there is an increasing separation of regulations and planning activities, often based on parallel, in part divergent, organisational and legal structures. The findings show that forest regulations do not yet provide a sufficiently developed framework in order to organise political processes based on negotiation and consultation in a transparent form. They need more explicit provisions which clarify tasks, rights, and duties of the various stakeholders of the forest sector in a transparent form. Furthermore, they should encourage flexible and transparent planning processes and provide instruments for the definition of objectives, priority areas, strategies, and monitoring of implementation.

Reform of Public Forest Administrations: Public forest administrations are in a process of considerable change. Regulatory responsibilities and tasks have, in many cases, been seen as their principal responsibilities and tasks. This becomes evident from the prevailing provisions of forest laws still largely based on the concept of a centralised state forest administration with multiple competencies related to forest policy setting and law enforcement as well as to the management of large forest areas. However, a new understanding of their mandate and tasks is required, based on their role as a process-steering and facilitating public services which are in a position to involve many stakeholders and parties. This implies that they have to be prepared to delegate power in decision-making and forest management responsibilities to local communities and to the private forest sector.

Some of the more recent laws take first steps towards a redistribution of competencies and tasks between public and private actors in the sector and by providing a legal framework for decentralised institutions to establish their own forest services. In the majority, however, the laws give general indications only and do not encourage sufficiently innovative changes. Further amendments and revisions will be needed in order to provide for more transparency in public decisions making, monitoring and control; to develop new structures and co-operative elements within the forest administration but also among different public services; to facilitate the transfer of responsibilities to the private sector and to the actual land managers; and to foster decentralisation i.e. the shift of decision-making and implementation authority to regional or local public units.

Improved Management Systems: Even if practically all forest laws provide several alternatives to transfer utilisation and management rights to individuals, local entities, small operators and large industrial companies the applicable regulations are still much oriented towards a predominant role of the administrations in forest management. Experiences so far show that the administrations lack quite often the necessary means and capacity to fulfil the numerous duties stipulated by law. The reorientation calls for the establishment and strengthening of local and regional management structures within the framework of social forestry, and for a stronger involvement of the private sector as a whole. Regulations which admit the transfer of management responsibilities and a more flexible approach of the administration in implementing them will facilitate such developments. Although the benefits and limits of a stronger integration of regional or local groups as well as private entrepreneurs in forest management are still discussed controversially, there are positive experiences which support this approach. Essential conditions for a successful

transfer of user and management rights are the choice of qualified managers, the economic profitability of forest management and reforestation, and the promotion of management skills and capacities.

Valorisation of Products and Services: The laws put considerable emphasis on forest management planning and regulate the content and procedural aspects of the preparation and implementation of such plans with considerable detail. However, they contain little to strengthen the entrepreneurial forces of the sector by providing an appropriate environment. Instruments and measures to this end include the transparent allocation of exploitation rights, clear directives for sustainable use, the deregulation of markets, and the development of self-regulating mechanisms such as the certification of forest products. Besides, the laws focus on the production of timber and consider much less the need to foster sustainable practices for non-timber forest products both for subsistence and commercial purposes.

Environmental aspects such as biodiversity conservation and CO₂ fixation are important and gain increasingly public recognition. While markets for these services are not developed or only start to emerge, the need to address these services and their significance to society in forest resources planning and management is obvious. The integration of the demand for these services into economic systems requires agreements at national and international levels, which translate currently non-marketed values into marketable products. Examples include charges for watershed protection or the sale of certificates based on CO₂ quantities fixed in forest plantations. Altogether the findings show that the present forest legislation does not yet address environmental aspects at a significant level.

Forest Conservation: Indicators for the increasing public recognition of conservation needs are the international conventions and agreements, especially the Convention on Biological Diversity (CBD) and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The conventions integrate the national efforts into an international context. Additionally, they commit the participating nations to provide “new and additional funds” for the global preservation of biological diversity. With the exception of Tanzania, none of the laws under consideration establishes a direct relation to international conventions and agreements. However, some legal provisions are based on an inter-sectoral ecosystem approaches and prescribe the preservation of biological diversity as consistent with international conventions. A general draw-back is the absence of regulations regarding sovereignty over and access to genetic resources as well as regarding the transfer, handling and use of organisms that may have adverse effects on biological diversity. Further amendments will be required to address these issues in order to combine forest sector development with ecological sustainability.

Institutional Support: As it has been set out forest development funds provide an important opportunity to generate re-investment in the management of natural forests in use, to stimulate new investment of public and private forest owners, and to enhance forest sector development on whole. While the establishment of such funds is mentioned in most forest laws, the purpose, mode of functioning and source of financing are usually not elaborated enough to make such funds operational at a significant scale. Instruments which provide incentives to public and private forest owners in order to implement the forest law’s objectives are poorly developed. The laws mention such assistance, but provide little or no directives as to the addressees and in which way advisory and technical services are to be made available. The biggest draw-back here is probably the fact that forest owners do not have legally confirmed rights to call on the administration for such assistance. As far as education, training and applied research is concerned a new approach for setting an

appropriate institutional framework is needed. The new orientation of the forestry administration with a focus on monitoring tasks, as well as on advisory services to forest management groups or private forest managers implies also new profiles in professional education and technical training. Of particular importance is the promotion of managerial and operational capabilities of the beneficiaries from transferred management rights within social forestry programmes.

Conclusion: In conclusion it may be said that a clear move to promote local and private forestry practices can be recognised in practically all forest laws that have been examined. This is evident from provisions relating to the acknowledgement of local use and management practises, gradual transfer of management responsibilities to local entities and co-operatives and at least some efforts to support such developments through the public forest administration. With regard to environmental aspects the major contribution of forest legislation remains its regulatory function in protecting the forest cover, classifying forest areas according to major uses, and providing for preservation of nature reserves, protected areas and national parks. Sustainable forest management through appropriate planning, which considers not only wood production, but increasingly other products and services of the resource, is an established part of the legal framework that regulates the use and development of forests. These developments provide a more flexible and integrative basis for the sector's development. However, it should also be acknowledged that the present legal framework needs further amendments, precisions and resources in order to become implementable on significant scale. Procedural aspects of implementation, improvement of intersectoral co-ordination, and effective monitoring and evaluation of tangible results are among the pressing needs in order to increase the effectiveness of forest legislation and to foster the advancement of the sector.

LEGISLATION REVIEWED

Benin 1993: Loi No 93-009 du 2 Juillet 1993 portant régime des forêts en République du Bénin

Burkina Faso 1997: Loi No. 006/97/ADP portant Code Forestier au Burkina Faso

Cameroun 1994: Loi No 94/01 du Janvier 1994 portant régime des forêts, de la faune et de la pêche

Ethiopia 1994: Proclamation No 94/1994 to provide for the conservation, development and utilisation of forests

Gabon 1982: Loi No 1/82/PR. 22 juillet 1982 d'orientation en matière des eaux et forêts

Gambia 1998: The Forest Bill, 1998

Guinea 1999: Loi L/99/013/AN portant Code Forestier

Lesotho 1998: Forestry Act 1998

Madagascar 1997: Loi No. 97 – 017 du 16 juillet 1997 portant révision de la législation forestière

Senegal 1998: Loi No 98 – 03 de janvier 1998 portant Code Forestier

Tanzania 2000: 3rd Draft of the Bill for a Forest Act, January 12th, 2000.

Zimbabwe 1996: Forest Act, Chapter 19:05, Revised Edition 1996

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ISSUES OF CONCERN IN ESTONIAN FOREST SECTOR

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ABSTRACT

Two-fold instrument to investigate and identify current issues of national concern was applied. Case study methodology is utilised to assess the national forest program and contribute to forest policy formation process. A single open-ended question was provided to the participants of the survey - "*What are the main 5 problems in Estonian forestry sector?*" In order to confirm the findings from above survey, in-depth interviews of the elite were carried out. The results of the survey of key actors and in-depth interviews of the elite are presented in the paper. We hope that the list of issues of concern in Estonian forest sector, provided in this paper, can be successfully used in the process of Estonian forest policy formation or at least will be considered by forestry decision-makers, while developing forest programs.

Key words: Estonia, policy formation, forest politics, key actors, forest sector

INTRODUCTION

This study is part of a common research effort attempting to define patterns in forest sector development in the Baltic States. Common history over the last century, almost identical international pressure to the sector, and similar natural environment creates the "laboratory" conditions for comparing forest policy formation processes and national forest programs of Estonia, Latvia and Lithuania.

Experience has demonstrated the failure of bureaucracies in Soviet Union to address the problem of environmental degradation (Komarov 1980; Ziegler 1990). Soviet circumstances were unfavourable for conservation in two respects: (1) traditionally resources were regarded as unlimited, and (2) the whole organisation of the state placed an emphasis on output without regard for wasteful production practices and pollution (Hutchings 1982). However, even in such circumstances Baltic republics were more environmentally conscious than most of the other nations of the Soviet Union. E.g., Estonia was the first one of the union republics in 1957 to adopt the Law on the Preservation of Nature (Komarov 1980). Strict nature reserves in the Baltic republics were among the first ones to be established in the Soviet Union. Even if environmental degradation in the Baltic republics was not as severe as in the rest of the Soviet Union, environmental issues rose to political prominence and contributed to the national movement for independence (Lieven 1994; Ziegler 1990). However, after restoration of independence the situation has changed - each nation gained a possibility to individually address problems as related to management of natural resources and to avoid the decline in environmental qualities.

Assessment of the current situation is an essential part of national forest programs (Intergovernmental Panel on Forests 1997). Our investigation contributes to this assessment by exploring the opinion of forest sector stakeholders on issues of concern in Estonian forest sector. The policy formation part of the policy process consists of analysis of problems; setting of goals and objectives; and definition of courses of action (Merlo and Paveri 1997). In this study we applied a two-fold instrument to investigate and identify current issues of concern on a national scale.

The results of the survey of key actors and in-depth interviews of the elite are presented in this paper. By our study we provide comprehensive current picture of the situation in forest management on a national scale, which can serve as a foundation or starting point for national forest policy formation and forest program processes.

METHODS

Case study methodology is used in this study to assess the national forest program and elements of forest policy formation process. A case study is empirical research that typically investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clear. Case studies are suitable for studying trends in national forest policy implementation because the researcher has little control over the circumstances, uses multiple sources of evidence, and conducts an intensive study of relatively few subjects (Murphy 1980; GAO 1990; Yin 1994). Case studies can be divided into three general categories. Exploratory studies are employed where considerable uncertainty exists about program operations, goals and results (GAO 1990). Descriptive studies tend to collect general data and are used to discover and describe what is occurring. Explanatory studies generally test hypothesis and identify causal relationships. As suggested by the literature, studies may have a combination of all three purposes (Johnson & Joslyn 1991; Yin 1994). This investigation is the exploratory case study seeking to understand which issues should be addressed by national forest program and in forest policy formation process in order to eliminate problems in the Estonian forest sector.

In order to collect current information on the situation in the forest sector, the survey among major stakeholders of Estonian forest sector was carried out during the summer of 2001. Methodology, which was previously applied in similar studies in Lithuania and Latvia (Lazdinis 2001a; Lazdinis 2001b; Lazdinis, Vilkriste, and Gulbe 2001), was used in Estonia as well. A single open-ended question (see Weiss (1998)) was provided to the participants - "*What are the main 5 problems in Estonian forestry sector?*" The list of five was chosen after pre-survey attempts, when some of potential respondents were presented with the request to list 10 issues of concern. It appeared that it may be very complicated for participants of the survey without preparation to provide the list of more than 5 issues of concern. During the survey the above assumption was confirmed, since several respondents had difficulties in listing 5 problems. After answering the question, respondents also were asked to rank indicated problems according to their importance (ranging from 5 - the greatest to 1 - the smallest of the listed problems). After completion of the questionnaire, the respondents were interviewed using a focused interview form (Yin 1989).

Respondents to the survey were participants of forest policy making. The individuals were selected based on the best available knowledge in the sector by the investigators, as well as by using a snowball strategy whereby the primary investigator contacted the first round of respondents who identified subsequent interviewees (Patton 1987). A total of 80 individuals were selected representing the following groups:

- Private forest owners (PFO);
- Timber industries (TPI);
- Top level forest authorities (TLFA);
- Intermediate Forestry Staff (IFS)
- Environmental Inspectorate (EI);

- Top level environmental protection authorities (TLEPA);
- Forest scientists (FS);
- NGOs (NGO).

Ten individuals from each group were chosen to participate in the survey. A total of approximately 400 problems were indicated. To a great extent, the participants in this study defined “forestry problems” themselves. We wanted to see how, ten years after the fall of the USSR, sector members perceived the emergence and definition of the forest sector. We paid particular attention to identifying overriding (frequently referenced) problems within forest management and the interface between national policy goals and the resulting conditions in the forest sector.

Results of the above study were considered only as preliminary. In order to confirm the findings of the stakeholder survey, in-depth interviews (Patton 1987) of the elite were carried out. The interviewees defined as “the elite” in forest policy making included: leaders in non-government organizations, administrators in government agencies, forest specialists, industry representatives, etc. The individuals were selected based on the best available knowledge in the sector by surveyors, supported by the snowball strategy (Patton 1987). A total of 16 individuals were selected representing the previously provided groups.

The standardised open-ended interview approach (Patton 1987) was combined with the questionnaire. As a first step, the respondents provided a YES or NO response (three other options were also available – yes and no (Y/N); no and yes (N/Y); and not enough information (?). Then in-depth interviews were carried out. Depth interviewing involves asking open-ended questions, listening to and recording the answers, and then following up with additional relevant questions (Patton 1987). The interview first of all covered experience/behaviour and background/demographic questions. Then interviewees were asked to indicate whether they agree or disagree that the listed problems exist in Estonian forest sector. The main objective of this exercise was to confirm or reject a list of the main issues of concern, which was compiled based on the analysis of results from the survey of key actors in the sector. If an interviewee disagreed that a listed problem existed, then he/she was asked to explain why the particular issue is not a concern.

RESULTS

Problems, or issues of concern, in the forestry sector as listed by the participants of questionnaire were divided into 8 groups and are discussed below. Synthetic grouping based on expert knowledge was applied to encompass individual issues into common groups of problems. Three issues of concern did not correspond to any of the groups, therefore a separate category, named “other issues of concern” was created. Scores for each issue of concern were calculated adding up the ranking points, which for each problem stated by respondent ranged from 5 (the most significant) to 1 (the least significant). Total score per group was generated in order to demonstrate which types of concerns are the most urgent in Estonia. Summary of the results from both research instruments is provided in Table 1.

Table 1. Issues of concern in Estonian forest sector

	Score	YES	NO	Y/N	N/Y	?
ILLEGAL FORESTRY ACTIVITIES AND STATE ADMINISTRATION OF FORESTS						
Illegal logging and excessive felling in private forests, accompanied with theft of forest products. Besides single individuals, organised criminal activities are also sometimes focused on illegal felling and theft of roundwood.	61	11	1	4		
Lack of funding and staff in relevant state institutions to carry out supervision of forest management and other administration activities as charged by the legislation.	62	8	6	2		
Weak capacity of law enforcement institutions and legal system to deal with forestry issues.	25	12	3	1		
Insufficient exchange of information and co-operation between governmental organisations. Besides other negative effects, the above reduces possibilities for supervision and control of illegal forest management activities.	23	11	4	1		
Lack of communication and trust between different interest groups in the sector. Especially there exists a confrontation between foresters and conservationists.	40	10	4	2		
Roles and responsibilities in state forest sector are not defined.	10	5	10	1		
TOTAL per group	221	57	28	11		
FOREST LEGISLATION						
Slow and complex land reform process – large forest areas are still without an owner, which facilitates illegal felling and theft.	45	13	2	1		
Forest legislation is too liberal, weak and inapplicable, which disables effective supervision of forestry activities and law enforcement.	61	6	9		1	
Forest legislation is not comprehensive enough to deal with violations in forestry and to ensure sustainable management of forest resources.	29	7	7	1	1	
Lack of consistence between environmental and forestry legislation.	14	7	3	2		4
Forest policy implementation is problematic and does not correspond to objectives and goals set in the policy documents. The above especially concerns management of private forests.	25	14	1			1
Lack of common understanding and vision (in a form of policy or strategy) on general forest sector development.	36	11	4	1		
TOTAL per group	210	58	26	4	2	5

	Score	YES	NO	Y/N	N/Y	?
PRIVATE FORESTRY						
Lack of forestry experience among private forest owners. Knowledge of private forest owners on requirements and principles of forest management is very poor.	71	11	1	3		
Forest owners do not behave like a “real owner” – they are not interested in long-term forest planning and sustainable forest management.	18	10	3	1	1	1
Lack of advisory services designated for education of private forest owners.	17	8	5		2	1
Holdings of forest owners are scattered and private forest owners are not sufficiently organised in co-operative bodies.	51	12	2	1		1
TOTAL per group	157	41	11	5	3	4
FOREST MANAGEMENT AND TIMBER HARVESTING						
Poor forest regeneration in private forests, which leads to decreasing areas of coniferous tree species.	42	13	1	2		
Lack of management in young forests.	13	14		1		1
Logging quality is poor and there is a lack of trustful logging companies.	20	6	8	2		
Some ecological aspects in forestry (such as ecologically most suitable felling techniques and regeneration methods, felling in nesting and breeding season, harvesting in old-growth, protection of valuable habitats) are not considered.	11	6	5	5		
Thinning in private forests is too intensive.	7	10	3	1	1	1
Inventories of high conservation value forests are not completed. Therefore, with current management intensity many valuable habitats are being lost.	13	11	4	1		
Forest management planning is lagging behind the restitution and is poorly funded.	12	12	4			
Forest inventory is not carried out in sufficient quantity.		11	4	1		
TOTAL per group	118	73	29	13	1	2
FOREST SCIENCE						
Low funding for forest research.	9	9	2	2		3
Insufficient utilisation of forest scientists. E.g., development of forest sector is not based on scientific and rational decisions.	18	6	8	1		1
TOTAL per group	27	15	10	2		4

	Score	YES	NO	Y/N	N/Y	?
ASPECTS OF ECONOMICS						
Strict taxation mechanism facilitates illegal felling and does not favour responsible long-term forest management. Taxation of logging and timber sales is disproportionately high as compared to other sectors.	42	11	4	1		
Irrational investment into logging and sawmilling and lack of local value-added processing capacity.	28	3	9	1	1	2
Lack of roundwood supply.	11	6	9			1
Limited access to export markets for smaller companies and small local consumption.	7	12	3		1	
Use of fuelwood in energy production is not supported by legal system and tax incentives.	7	13		2		1
TOTAL per group	95	45	25	4	2	4
INFORMATION ON FOREST RESOURCES AND PUBLIC RELATIONS						
Lack of information on forest resources in general. Lack of centralised and reliable database covering forest resources, ownership, management details and use.	44	14		1	1	
Forest owners do not submit information to authorities on planned felling and timber sales.	9	9	2	3	1	1
Lack of public participation and transparency in forestry decision-making.	31	6	9		1	
TOTAL per group	84	42	13	4	4	1
OTHER ISSUES OF CONCERN						
Lack of qualified and motivated staff in the whole forest sector.	18	3	8	2	2	1
There were no strategic decisions made concerning abandoned agricultural land – lack of clear strategy for afforestation.	7	13	2	1		
In general, use of forest resources is unsustainable.	20	9	7			
TOTAL per group	45	25	17	3	2	1

Age of persons contacted during the in-depth interviews ranged from 30 to 61. All of them were male. The experience in forest sector also ranged from 1 year to 45 years. Two individuals from each group were contacted, except the top-level environmental protection authorities, from which only one person was interviewed. Three representatives of private forest owners were contacted.

In the following part of this section, the individual issues of concern in Estonian forest sector as indicated by the survey of stakeholders are shortly discussed. When this list of problems was presented to the elite representatives, the opinions concerning individual issues were diverse (see Table 1). Due to the limited space, below we present only contra arguments of the respondents indicating the reasons, why they think that particular issue is not a problem in Estonian forest sector.

ILLEGAL FORESTRY ACTIVITIES AND STATE ADMINISTRATION OF FORESTS

Illegal logging and excessive felling in private forests, accompanied with theft of forest products were among the most commonly mentioned issues of concern in Estonian forest sector. In addition to the above, it was also stated that even organised criminal activities are also sometimes focused on illegal felling and theft of roundwood. However Henn Alton (2001) opposed and indicated that illegal felling and theft is not a concern on a national scale. The respondent stated that the volume of illegally harvested timber is so small that as a percentage of total harvesting volumes it is not noticeable. Ando Eelmaa (2001) considered the above problem more as a regional issue, however insignificant on a national scale. Lack of funding and staff in relevant state institutions to carry out supervision of forest management and other administration activities as charged by the legislation was not viewed by majority of the elite survey participants as a problem in Estonian forest sector. Rein Kokk (2001) was convinced that institutions charged with supervisory tasks have adequate means to complete their job. However, the problem lays in ideology – “currently we deal with consequences of violations rather than causes”, more emphasis should be placed on preventive work (Kokk 2001). Hardi Tullus (2001) also did not show much concern with this issue. This respondent indicated that the problem might be in low position in administrative hierarchy of those responsible for supervision of forest management.

Another issue of concern in this group, was an insufficient exchange of information and co-operation between governmental organisations. Erik Kosenkranius (2001) was one of the 4 who opposed this problem. The respondent indicated that information exchange is quite good and cooperation is reasonable enough. Rainer Kuuba (2001) was also satisfied with cooperation and pointed out that further increase in cooperation would not solve any problems. As related to the lack of communication and trust between different interest groups in the sector, with especially existing confrontation between foresters and conservationists, Toomas Trapido (2001) argued that the confrontation is not so significant between foresters and conservationists as between conservationists and authorities in related fields (e.g., Ministry of Environment). Olav Anton (2001) indicated that the only “misunderstanding” is between greens and industry. Teet Koitjärv (2001) pointed out that communication is much better than before. Only few of the interviewed elite agreed that roles and responsibilities in state forest sector are not defined. Toomas Trapido (2001) indicated that roles and responsibilities are defined, however, not enforced and implemented as prescribed. Erik Kosenkranius (2001) pointed out that state forest management organisation more importantly lacks clear management objectives, which should

be provided by the owner. However, organisation of forest sector is clear and roles are well defined.

FOREST LEGISLATION

This group of problems may be started stating that land reform process is slow and complex - large forest areas are still without an owner, which facilitates illegal felling and theft. Teet Koitjärv (2001) pointed out that land reform is a difficult and time consuming process by its nature, and in Estonia, currently, it is going quicker than was expected. The statement that forest legislation is too liberal, weak and inapplicable, which disables effective supervision of forestry activities and law enforcement was supported only by few participants of the elite survey. Paavo Kaimre (2001) argued that the law is not too liberal – its implementation, instead, is too liberal. The law itself, if followed, would be rather strict. Andres Talijärv (2001) also indicated that the law is sufficient, however, the supervision and forestry institutions is weak. Hardi Tullus (2001) pointed out that at the first approach, the legislation may look quite liberal, however, in reality there is nothing that could be done to change it. Jaanus Aun (2001) stated that ineffective supervision and law enforcement exist not because of the weak legislation, but due to badly defined roles and responsibilities in state forest sector, as already provided above. Toomas Krevald (2001) indicated that law only defines what can be done and what couldn't; however, implementation of the law is a crucial issue.

While discussing the concern that forest legislation is not comprehensive enough to address violations in forestry and to ensure sustainable management of forest resources, Toomas Krevald (2001) again objected that in forest legislation all relevant provisions to deal with this problem exist, however, the real issue is enforcement and implementation of the legal basis. Jaanus Aun (2001) also stressed the concern with implementation rather than legislation itself. Erik Kosenkranius (2001) indicated that the above issue is a problem of how society and police can act against illegal activities. Currently in Estonia, priorities of police cover trucking, illegal alcohol trade, murders and etc., but not forestry by far. The same respondent suggested that this issue should be put into the overall national perspective of crimes. Then forest violations will seem to be a minor concern (Kosenkranius 2001).

Statement that the forest policy implementation is problematic and does not correspond to the objectives and goals set in the policy documents, and that the above especially concerns management of private forests, was supported by majority of interviewees from the elite's survey. Only one respondent disagreed, stating that implementation in forest sector in general is not problematic, the real issue of concern being implementation of forest policy in private forests (Koitjärv 2001). Erik Kosenkranius (2001), concerning the lack of common understanding and vision (in a form of policy or strategy) on general forest sector development, argued that forest policy was approved in 1996-97 and reflected a compromise between different interest groups. Therefore, if there is a need to change some points in the policy, new policy formation process should be started. The new strategy in a form of Forestry Development Plan is being currently prepared (Kosenkranius 2001). Olav Anton (2001) also pointed out that Estonian forest policy for the next 10 years has been drafted. Paavo Kaimre (2001) indicated that there has been an open process of forest policy development since 1995 and everyone interested had a chance to participate.

PRIVATE FORESTRY

The first issue in this group - lack of forestry experience among private forest owners, especially indicating that knowledge of private forest owners on requirements and principles of forest management is very poor - was confirmed by majority of individuals from the elite interviews. Rein Kokk (2001) was the only one who objected and pointed out that approximately 30% of forest owners have received training and education – they aim to improve the quality of their forest management. The rest of the owners are simply not interested in receiving the advice (Kokk 2001).

Paavo Kaimre (2001) was one of those who objected the argument that forest owners do not behave like a "real owner" - they are not interested in long-term forest planning and sustainable forest management, and pointed out that such a generalisation should not be made, because there are poorly performing owners, as well as responsible ones too. Henn Alton (2001) provided that only 10-15% of private forest owners do not care about the future. As related to the lack of advisory services designated for education of private forest owners, Sven Udras (2001) pointed out that quantity of advisory services is sufficient, however, the issue is that people do not know where to apply for the information. Toomas Trapido (2001) considered that there could be more of advisory services, however, the above does not cause a problem – everyone interested will find consulting. Hardi Tullus (2001) saw the lack of interest as a greater problem than the lack of advisory services.

FOREST MANAGEMENT AND TIMBER HARVESTING

The argument that logging quality is poor and there is a lack of trustful logging companies was supported only by few individuals. Toomas Krevald (2001) stated that in Estonia there are reliable logging companies, but in some circumstances private forest owners do not use their services. They rather choose companies, which operate in the market without paying any taxes, and therefore are able to provide the same services for a lower cost (Krevald 2001). The above is also closely related to the logging quality – companies which pay no taxes are cheaper to hire, but their quality of work is poor – they do not consider the consequences of their work. Erik Kosenkranius (2001) noticed that there are good companies, which are even ready to expand their activities, however, paying taxes and working legally is problematic. Quality of the work can also be good, since companies know that they will lose a contract if the quality of their work will not be satisfactory (Kosenkranius 2001). Indrek Tust (2001) indicated that from his experience, all companies that look into future do a good job, however, the problem is criminal activities. Paavo Kaimre (2001) also was convinced that companies providing good quality forest management services exist and can be found.

Another issue of concern stated that some ecological aspects in forestry (such as ecologically most suitable felling techniques and regeneration methods, felling in nesting and breeding season, harvesting in old-growth, protection of valuable habitats) are not considered. Erik Kosenkranius (2001) objected stating that always there is space for improvement. Sven Udras (2001) pointed out that the above represents the coalition of interests, but not the real issue of concern. Rein Kokk (2001) indicated that an understanding of conservation aspects in forest management exists and principles are being considered. Besides the above, there is a strategy concerning protection of valuable habitats (Kokk 2001). Andres Talijärv (2001) argued that the ecological aspects will never be considered to the full extent. Opposing the statement that thinning in private forests is too intensive Hardi Tullus (2001) pointed out that in general thinnings are not too intensive – to the large extent

it depends on who is assessing. Another issue, which was accepted by majority of interviewed individuals states that inventories of high conservation value forests are not completed, therefore, with current management intensity many valuable habitats are being lost. Henn Alton (2001) was one of those who objected and indicated that the inventory is ongoing and if some cuttings are carried out in key habitats – it is more coincidental than intentional. Teet Koitjärv (2001) stressed that inventories of valuable forests are completed for the network of protected areas and inventory of key habitats is launched. Erik Kosenkranius (2001) stated that such an inventory is completed. The question is concerning key habitats, however, one cannot stop all forest management activities and wait for final results. Inventory of key habitats is a process and, of course, over time some values are lost, but other appear (Kosenkranius 2001). Rein Kokk (2001), opposing that forest management planning is lagging behind the restitution and is poorly funded, pointed out that management planning is paid from the state budget and has received substantial funding.

ASPECTS OF ECONOMICS

This group starts with an issue stating that strict taxation mechanism facilitates illegal felling and does not favour responsible long-term forest management. Taxation of logging and timber sales is disproportionately high as compared to other sectors. Toomas Trapido (2001) opposed and pointed out that taxation is not disproportionately high, but it still facilitates illegal activities. The same respondent indicated that some owners already showed that it is possible to successfully manage forests paying all taxes. Olav Anton (2001) provided that compared to other countries, taxes are rather small. The respondent behind this issue of concern saw a hidden interest to free private forest owners from income tax, with which he would strongly disagree. Concerning the irrational investment into logging and sawmilling and lack of local value-added processing capacity, Erik Kosenkranius (2001) agreed that sawmill capacity is higher than that of local forests. However, the development comes in steps – first export of roundwood was an only option, then sawmilling prospered, now value-added development is on the way (Kosenkranius 2001). Olav Anton (2001) concerning this issue stated that investments into timber processing industry made forestry “more expensive” – prices of logs went up, species like alder are also being processed unlike before. It is a normal process that small sawmills will “die-out” and competitive big ones will survive (Anton 2001). Indrek Tust (2001) also stated that all societies have moments like this, and provided the same example of benefits of development – alder processing.

Only few individuals agreed that there is a lack of roundwood supply. Olav Anton (2001) pointed out that above is changing the orientation of industry – the respondent was concerned only with quantities of mature pine and spruce species stands. Erik Kosenkranius (2001) stressed that the above is a question of competitiveness – there are always limits to availability of resources. Only the most efficient ones will survive. There is always an option to start importing more as well. Of course, as the respondent stated, if the pulpmill in Estonia was built, then the above would become a real problem (Kosenkranius 2001). Paavo Kaimre (2001) reminded that timber markets are global and local deficit does not inflict damage to the forest industry. As related to the limited access to export markets for smaller companies and small local consumption, Indrek Tust (2001) provided that the above is a law of the market. Paavo Kaimre (2001) indicated that markets are open to all players and it is a matter of marketing. Local consumption can not be forcefully increased (Kaimre 2001).

INFORMATION ON FOREST RESOURCES AND PUBLIC RELATIONS

One of the issues of concern in this group stated that forest owners do not submit information to authorities on planned felling and timber sales. Most of the respondents were willing to divide the above problem into two significantly different parts. They were stating that information on planned felling is usually submitted (e.g., as stated by Paavo Kaimre 2001), however, data on timber sales is problematic. The concern that there is a lack of public participation and transparency in forestry decision-making was seen as a problem only by few representatives of the elite survey. Jaanus Aun (2001) objected that everyone who is active can participate and has an access to forestry decision-making. Toomas Krevald (2001) raised a question of how open this process should be? The same respondent pointed out that mostly decision-making should be led by the specialists and should not be effected by emotions. Teet Koitjäär (2001) indicated that the role of state in private forestry decision-making is very small, and probably private forestry should be more transparent, but not the state decision-making. Indrek Laas (2001) stated that at every level of decision-making there are interest groups providing their input. Paavo Kaimre (2001) pointed out that during the past 5 years public participation has been a priority.

FOREST SCIENCE

Concerning the argument that utilisation of forest scientists is insufficient (e.g., development of forest sector is not based on scientific and rational decisions), Erik Kosenkranius (2001) indicated that there are researchers, which traditionally studied science that cannot be applied in practical forestry. Currently, the situation in the forest sector has changed and there is a need for applied science. Therefore, it is also up to researchers themselves to better manage their activities – there is a need of “manager team” among scientists as well (Kosenkranius 2001). Teet Koitjäär (2001) noticed that state forest managers utilise scientists significantly better than private forest sector. Hardi Tullus (2001) pointed out that “situation is not bad” – there are many working groups in which scientists are involved directly. Indrek Laas (2001) stressed that those who give valuable contributions are often asked to share their knowledge and experience.

OTHER ISSUES OF CONCERN

The statement that there were no strategic decisions made concerning abandoned agricultural land - lack of clear strategy for afforestation, was supported by majority of individuals from the survey of elite. Indrek Laas (2001) indicated that the strategic decision to afforest 100.000 hectares has been made and “European money is on the way”. Toomas Trapido (2001) expressed an opinion that the land should be allowed to rest – natural succession is no harm. The last in the list of issues of concern in Estonian forest sector was the statement that in general, use of forest resources is unsustainable. Erik Kosenkranius (2001) was one of those who objected and indicated that forest management to a large extent depends upon age structure of Estonian forests – if forest stands are mature, according to the general forestry practice they should be cut. Besides above, forest area in Estonia is increasing.

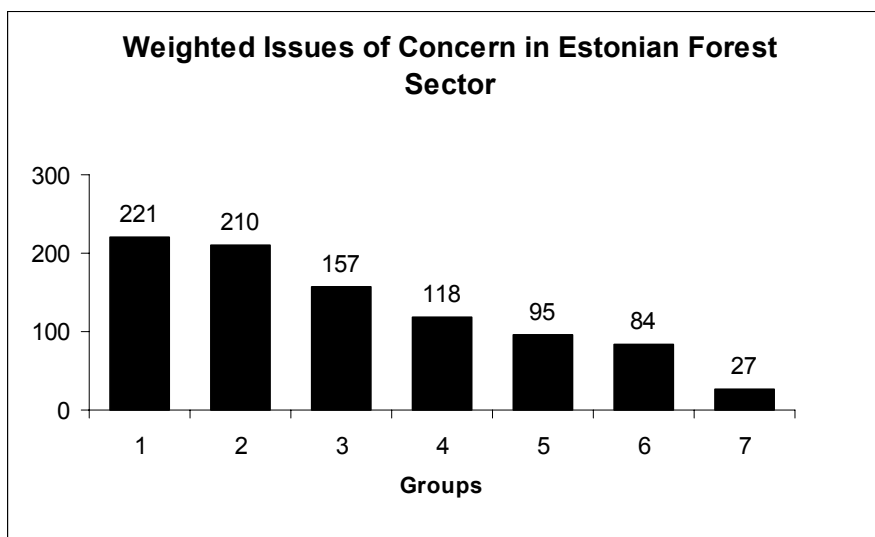
DISCUSSION

After restoration of independence, the general public of Estonia gained access to the decision-making process. The public may now to address issues of concern related to development of natural resources. Forest sector has experienced dramatic changes since 1990 (Kallas 2000). Two major changes in the development of the

forest sector throughout the transformation period of 1990-2000 were: (1) the establishment of a private sector, and (2) an attempt to introduce stakeholder-based participatory policy making practices (Kallas 2000). The involvement of various stakeholders throughout the ten years of transition in the country's forest policy formation process significantly altered the development course of the whole sector (Kallas 2000; Tõnisson 2000; Vähänen, Halko, and Lazdinis 1998). Various issues of concern, as seen by individual stakeholders, were considered as more or less urgent in separate parts of this period. For example, illegal logging in restored private forests had become a serious problem already by 1995 (Economic Commission for Europe 2001). The rapidly growing forest utilisation in private forests was seen as a sign for the Government to take action to maintain the total extraction of timber in private forests at sustainable level (Tõnisson 2000). Lack of cooperation between private forest owners in mid' 90-ties also did not allow this group to defend their interests in public decision-making process (Kallas 2000). In addition to the above, it has been indicated that among other weaknesses of the institutional setting of the Ministry of Environment, tasks, mandates, and responsibilities are not consistent. E.g., Forest Department has many tasks without direct access to implementation (INDUFOR 2000). The same source has also pointed out that the authorisation is inconsistent – the highest political level is in control of technical tasks (the Centre of Forest Protection and Silviculture), whereas the lowest level is charged with policy and legislation development (INDUFOR 2000).

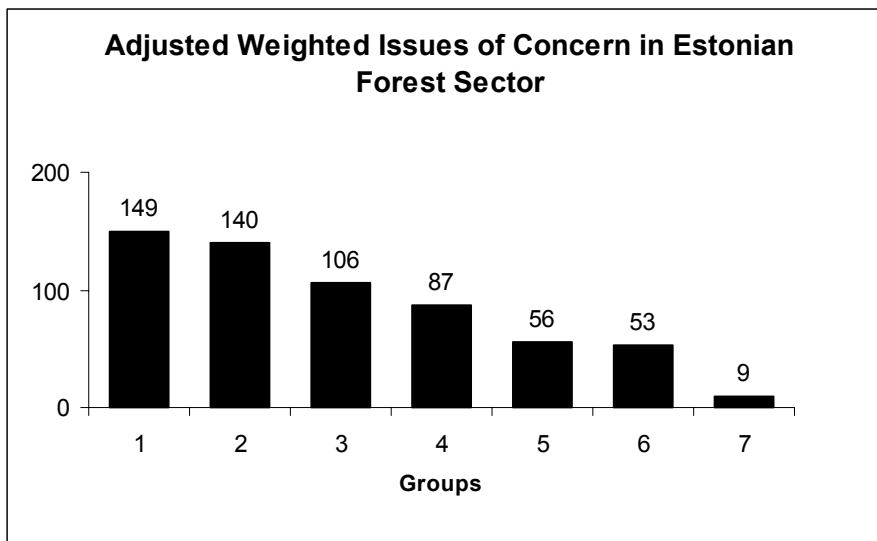
Our study has intended to provide a current list of most urgent issues of concern on a national level in Estonia. As demonstrated by the Figure 1, the largest group of issues of concern in Estonian forest sector still remains illegal forestry activities and state administration of forests. This group has collected the highest score, indicating that the issue was both most commonly mentioned and ranked the highest. Issues of concern related to forest legislation, in the amount of scores, closely followed the leading group. The above in an order of diminishing significance were followed by concerns related to private forestry; forest management and timber harvesting; aspects of economics; information on forest resources and public relations; and forest science. Since the "other issues of concern" do not form a meaningful group, they were not included in the graph. The list of groups, as provided in Figure 1, was summarised after the survey of 80 representatives of sector stakeholders.

Figure 1. Weighted Issues of Concern in Estonian Forest Sector



However, after results of depth interviews of the elite were compiled, Figure 1 was adjusted to include the opinions of representative individuals of each key-actor group. During this step of analysis, the issues of concern, which were indicated as present by less than half of interviewees (8 and less), were excluded from the count. The results of this exercise are reflected in Figure 2. It should be pointed out that after opinion of elites is considered, “Private forestry” becomes more significant group of problems than “Forest legislation”. The difference between “Illegal forestry activities and state administration of forests” and “Private forestry” becomes relatively small. The above may be explained by the fact that elites are better informed of forest legislation as compared to other individuals. Therefore, participants of the elite interviews perceive “forest legislation issues” less important.

Figure 2. Adjusted Weighted Issues of Concern in Estonian Forest Sector



In the individual ranking of the issues of concern in Estonian forest sector, after the opinion of elite representatives is considered, the following five most urgent problems can be indicated:

- Illegal logging and excessive felling in private forests, accompanied with theft of forest products;
- Lack of forestry experience among private forest owners – knowledge of private forest owners on requirements and principles of forest management is very poor;
- Holdings of forest owners are scattered and private forest owners are not sufficiently organised in co-operative bodies.
- Slow and complex land reform process – large forest areas are still without an owner, which facilitates illegal felling and theft;
- Lack of information on forest resources in general. Lack of centralised and reliable database covering forest resources, their ownership, management and use details.

This article is a first scientific paper of such kind, where the attempt was made to provide analytical information of the current situation in Estonian forest sector from the perspective of the above interest groups. It must be noticed that there was a sincere interest among the interviewees in the outcome of the study and willingness to consider it in the future decision-making. During the political turmoil of the 1990s the Forest Sector has responded to the challenges of recreating a private forest

industry and building government agencies. Naturally our results show some areas for improvement but these suggestions should be taken into context. The list of the issues of concern in Estonian forest sector, provided in Table 1, should be used only as a general guide in the process of Estonian forest policy formation or at least this list should be considered by forestry decision-makers while developing forest programs. Perhaps most useful, this investigation may direct policy makers and agencies toward areas for further research. For instance, what steps may be taken to reduce illegal logging? Or if the public perceives that taxation is unfair to the logging industry, the government could provide the facts that disprove this belief or take action to provide "fair taxation." In the post-Soviet era, Estonian natural resource managers and policy makers have made tremendous strides toward improving forest management and providing for public access to the process. As an exploratory study, this investigation was conducted in with the goal of providing information and guidance for future policy and fruitful directions for further research.

Generalising the findings of this study, it may be noticed that the results from all three Baltic countries show considerable differences. It is astonishing how during the period of 10 years forest sectors of Baltic States developed into such different settings. Therefore, in order to assure sustainable development of forest resources in each country, different forest policy instruments and their mixes should be selected and implemented.

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WHY LAW MATTERS: DESIGN PRINCIPLES FOR STRENGTHENING THE ROLE OF FORESTRY LEGISLATION IN REDUCING ILLEGAL ACTIVITIES AND CORRUPT PRACTICES

JON LINDSAY, ALI MEKOUAR AND LAWRENCE CHRISTY

The damage caused by illegal activities and corrupt practices in the world's forests is a problem of enormous proportions. In many parts of the world, forest exploitation is dominated by rampant illegal harvesting, large-scale violation of trade regulations both domestically and internationally, fraudulent practices abetted or condoned by government officials and other destructive activities in violation of applicable laws. According to the World Bank, lost revenues through illegal logging alone costs governments between 10 and 15 billion dollars annually (Contreras-Hermosilla, 2002). The environmental and social costs, though more difficult to quantify, are clearly immense.

The problems related to corruption and illegal forest activities have, in recent years, increasingly engaged the attention of international bodies, governments and civil society. Recent international meetings on the subject¹ signal an increasing willingness on the part of governments and the international community to talk openly about a topic that has traditionally been considered too politically sensitive. Increasing activity by international NGO's such as Transparency International, Global Witness and a growing number of other institutions, in collaboration with local partners, has been important both in publicising the scope of the problem, and in developing and testing new tools for monitoring, detection and prevention. There are also important efforts to build effective linkages and strengthen collaboration between various individual efforts, as epitomised by the recent launching of the Forest Integrity Network (Transparency International, 2001).

WHAT IS THE ROLE OF LEGISLATION?

This paper is concerned with one facet of this complex problem – how important is legislation in the fight against destructive and corrupt forestry practices?

A sceptic might credibly answer “not very”. In country after country, the contrast between what forestry law prescribes and what actually happens on the ground is both stark and obvious. Despite the presence of strong legislation, illegal behaviour by both public and private actors often thrives.

The explanations put forward for this phenomenon are familiar – forest departments lack the financial and human resources to monitor and control forest activities; government officials entrusted with enforcing the law often have more to gain by condoning violations or engaging in violations themselves; court systems are backlogged or bankrupt; the imperatives of daily life for the rural poor overwhelm any likely risks associated with violating the law; etc. Such explanations lend credence to the common conclusion that “the problem is not with the legislation; the problem is with its implementation.”

¹ Recent examples include the East Asia Ministerial Conference on Forest Law Enforcement and Governance in Bali, Indonesia (September 2001) and the FAO Expert Consultation on Policy Options for Increasing Forest Law Compliance in Rome (January 2002).

This observation obviously contains much truth. Many laws around the world lie unutilised or under-utilised due to failures of political will, weak institutional capacity, overall disregard for the rule of law and similar reasons. In such contexts, careful attention to the details of drafting legislative texts may seem academic and somewhat beside the point.

But there is danger in making too much of a distinction between legislation, on the one hand, and its implementation on the other. While no one can reasonably deny that implementation of law requires attention to external economic, social and institutional factors, it is also true that law enforcement can be significantly influenced by the way legislation is drafted in the first place. “The problem” may indeed be implementation, but the scope and severity of the problem can be affected, for better or for worse, by the text itself.

In this short paper, we explore ways in which the drafting of forestry legislation – both in terms of the substantive content of law and the process by which it is written – can facilitate or obstruct efforts to reduce illegal activities. We propose several legislative design principles that have special relevance to the problems of corruption and law enforcement in the forestry sector, derived from several decades of FAO Development Law Service experience in providing legal technical assistance. As will be apparent, these principles – which are not unique to legislation in the forestry sector – are at the same time obvious and frequently overlooked.

What is also noteworthy is that the following principles go beyond the traditional mechanisms for inducing compliance with forestry law – policing, prosecution and penalising. Such mechanisms are certainly of critical importance; indeed, in the minds of many foresters the key to improving forest legislation lies almost entirely in better definitions of offences, increased powers of forest officers, streamlined procedures for prosecuting offenders, and stiffer penalties.

Yet history has demonstrated the fallacy of focusing exclusively on the “control” functions of forestry law. Our thesis here is that law’s ability to influence behaviour will depend less on the strength of its punitive provisions than on the extent to which it enables and encourages positive behaviour.

PRINCIPLE 1. AVOID LEGISLATIVE OVERREACHING.

In a sense, Principle 1 serves as an umbrella for most of the principles that follow. We can speak of legislative provisions that overreach in three diverse yet inter-related ways:

- *Provisions that exceed national capacities for implementation.* Numerous laws around the world have remained largely unimplemented because they are technically unrealistic. There is a severe imbalance between the activities, procedures and institutional arrangements they prescribe, and the financial and human resources available, in government and civil society, to implement them.
- *Provisions that exceed what is necessary to achieve reasonable and legitimate objectives.* Some provisions simply overshoot their mark, because their designers were not careful in fine-tuning techniques to reach clearly defined goals. In applying a catch-all philosophy, over-zealous legislators may cast the net so widely that they end up prohibiting or obliging activities that have little to do with the goals they are trying to reach.
- *Provisions that exceed what is socially acceptable.* The drafters of forest laws have historically tended to give little priority to the social context in which the laws

would apply, with the result that local practices and norms are often misunderstood, neglected or even criminalised. Again, this has implications for the success of implementation – laws frequently fail if they require abrupt reorientations of social or institutional behaviour where the incentives for such change are otherwise weak. More importantly, attempted implementation may lead to injustice, damage local livelihoods and undermine the legitimacy of law in the eyes of local stakeholders.

Of course, none of these three characterisations of “legislative overreaching” are absolutes, and using them responsibly as a basis for assessing legislation requires some careful weighing and balancing. For example, laws are not *inherently* flawed simply because they represent a striving for difficult-to-achieve ideals, or because the immediate prospects for compliance are low. It is unlikely that India lawmakers believed, for example, that passing laws against untouchability was going to eliminate a social practice that had gone on for millennia, yet these were laws that were widely seen as necessary for a new democracy that had committed itself to principles of equity and justice.

Similarly, forestry legislation cannot be faulted for attempting to restrict destructive activities, despite the fact that in some contexts the odds against success are high. Nevertheless, a failure to match legislative provisions with realistic and socially-acceptable objectives and expectations often has the effect of rendering the law difficult to implement or comply with, and of placing unjust burdens on certain classes of stakeholders, without sufficient countervailing benefits.

We can find numerous examples from forestry laws around the world that illustrate the three types of legislative overreaching mentioned above, either singly or in various combinations.

- One example is the tendency of some laws to prescribe complex and costly planning requirements for forests of all kinds, whether large or small and whether or not of special economic or environmental significance. This is a tendency that is particularly evident in the first wave of forestry laws that emerged in Eastern Europe and the former Soviet Union countries in the 1990’s. In several of these countries, restitution processes have resulted in small forest areas being vested in private owners. Management and exploitation of those areas, however, often remain subject to extensive planning and approval processes (influenced to a large extent by lingering attachment to central planning amongst foresters in these countries), with full-fledged management plans required for thousands of individual small forest plots. Whatever the technical merits of this approach in an ideal world, in practice it is clearly beyond the means of smallholders and the capacity of beleaguered and downsized forest departments to implement and enforce. Compliance with the law has been rendered disproportionately expensive, with the result that very little *legal* exploitation takes place. Similar syndromes may be found in the regulation of forestry in many other parts of the world as well.
- Another example of legislative ambition exceeding capacities might be found in the case of some laws that require local processing of all timber before it can be exported. While the intent of such provisions – to strengthen national wood processing and value-added industries and to create employment opportunities – may be admirable, they can be counter-productive if they are included without careful assessment of the actual and likely processing capacity of the country in question. In some cases, that capacity may be so weak as to make compliance virtually impossible for the foreseeable future. Hence, the incentives to resort to

illegal methods are increased and the rule of law is further weakened. In the meantime, by having committed itself to an unrealistic law, government is distracted from developing and putting in place a more realistic approach to the regulation of an activity that it is powerless to eliminate altogether.

- A final example – a particularly vivid example that illustrates all three types of legislative overreaching – involves the definition of the forest estate. In many parts of the world, the “legal” definition of land as forest may have little to do with what actually exists on the ground in terms of tree cover, the potential of the land for forestry, or the importance of keeping the land under forest. In some extreme cases, forests may be a sort of catch-all legal category that includes virtually all land that is not privately occupied. More frequently, the definition of land as forest or non-forest is largely a matter of whether the government has taken the steps prescribed by law for classification. For example, the Indian Forest Act and many laws of its generation provide little substantive guidance as to what types of areas should be considered forests – forests are, in essence, simply what government designates as such in accordance with the prescribed procedures. In the case of marginal or “waste land”, designation as forest or non-forest may at times be a matter of administrative convenience, or an artefact of the balance of power between different government institutions. Moreover, once land has been designated one way or another, any later redesignation intended better to reflect on-the-ground realities may be constrained by the natural desire of institutions to maintain control over their domain.

The legal designation of inappropriate or unnecessary lands as forests poses a number of problems for government, for local people and for society at large, problems that correspond to the three types of overreaching described above. First, it raises the problem of *capacity*: limited government resources are spread thinly, making it difficult to devote necessary attention to priority areas. Second, it may involve application of legal restrictions that are *unnecessary* for achieving reasonable objectives: some land is kept in the legal forest estate simply because it has been classified as such for a long time, not because there is any meaningful relationship between that classification and the objectives of sustainable forest management. Finally, and often most importantly, it raises the question of *social acceptability*. Inappropriate legal definitions of forests may unnecessarily limit the land-use options of local people, undermine local practices and traditions, threaten local livelihoods and override local conceptions of rights and tenure.

Forest laws can be improved in this regard in a number of ways. First, they can include basic guidelines and criteria for forest designation, setting forth basic purposes for designating forest areas in general; and requiring that the reasons for specific forest designations be explained publicly in light of the criteria set forth in the law. Secondly, they can incorporate provisions designed to require meaningful local input into land designation decisions (including mechanisms for appeal), to provide stronger protection for local rights, to enable collaborative management where appropriate (see Principle 4), and to ensure adequate compensation and mitigation where the forest protection imperatives are deemed strong enough to warrant curtailing long-established local practices. Such provisions will not in themselves eliminate the possibility that land is inappropriately included or excluded from the forest estate, or that it is accorded the “wrong” level of protection. What they can contribute, however, is better guidance for the exercise of government discretion, more transparent decisionmaking (see Principle 3) and a framework for more effective recognition and protection of local rights.

PRINCIPLE 2. AVOID UNNECESSARY, SUPERFLUOUS OR CUMBERSOME LICENSING AND APPROVAL REQUIREMENTS

This principle obviously overlaps with the preceding one, and to some extent it is difficult to disentangle the two. Forestry laws and regulations not infrequently set forth burdensome approval requirements for many types of private action where the policy rationale for imposing such requirements is dubious. One of the problems of excessive regulation is that government often lacks the capacity to implement the procedures stipulated in law. The result can be at times that even persons inclined to comply with procedural requirements may find that there are tremendous obstacles to doing so – that approval mechanisms are distantly located, are very slow, or in extreme cases do not exist at all.

Once again, the cutting and removal of trees from private lands in a number of countries serves as a case in point. Some Indian jurisdictions, for example, in the name of soil conservation, impose a 10-year felling programme on a more or less blanket basis to much of the private land in the state. Obtaining permission to cut under the rules that accompany this programme is a lengthy and discouraging process if all the steps are followed faithfully, as many observers have noted. Other examples might include the imposition of detailed licensing requirements for exercising recognised local rights to extract wood or non-timber forest products for domestic use.

In situations where multiple permissions are required and where processes are lengthy and/or costly, the opportunity for rent-seeking by officials increases, as does the temptation for applicants to take action outside the law. In addition, the administration of such schemes can put burdens on forestry bureaucracies that detract from enforcement of more important aspects of the law.

Of course, the point is not that permits, approval processes and the like are inherently bad. Indeed, and perhaps paradoxically, measures designed to create greater transparency and accountability (see Principle 3) may well *increase* paperwork and result in some procedural delays. What *is* detrimental is the accretion of procedural hurdles that serve no apparent policy objectives, or that are likely to serve their ostensible objectives poorly. In a significant number of countries one can point to complex and costly processes and bureaucracies that have taken on a life of their own, and the related phenomenon of entire professional sub-specialities, in both the public and private sectors, devoted to arranging, obtaining or granting exemptions or permissions, the reasons for which may be unclear or forgotten.

In the context of drafting legislation, the addition of another permission or approval process may seem the height of prudence and little attention may be directed to its likely costs, consequences and collateral effects. To reduce this tendency, scrupulous consideration should be given to the following questions:

- What precisely are the purposes of regulating the activity in question, and are they sound?
- Are existing or proposed regulations clearly targeted on fulfilling those precise purposes?
- In defining objectives is there a need to differentiate between different types of situations, such as, for example, natural growth vs. plantations?
- Can regulations be simplified and streamlined without threatening the basic objectives?

- Are regulations realistic in terms of the capacity of Government to implement them and the capacity of private people to abide by them?
- Can policy objectives be better achieved by focusing on establishing broad parameters for private action (say through the formulation of criteria and indicators) rather than through a continuing reliance on permits and penalties?

PRINCIPLE 3. INCLUDE PROVISIONS THAT ENHANCE THE TRANSPARENCY AND ACCOUNTABILITY OF DECISION-MAKING PROCESSES.

Official misbehaviour, including official collusion with or neglect of private misbehaviour, is more difficult to sustain in environments where actions are open to public scrutiny and where decisions can be judged against measurable criteria. Until relatively recently, many if not most forest laws around the world have done little to contribute to the creation of such environments (Rosenbaum 2002).

An example of where these issues come into play concerns the granting of commercial concessions. This is a subject on which many older forest laws and regulations are relatively silent, thus exacerbating a tendency in many parts of the world for the granting of concessions to be a secretive affair, often conducted at high political levels on an *ad hoc* basis. There is a growing trend in national legislation in the direction of spelling out in some detail the steps leading up to the awarding of a contract, sometimes in principal legislation, sometimes in regulations, or most often in a combination of the two. Such legal frameworks set forth, for example, the basic mechanical elements of an auction and bidding system, such as the content of call for bids, the form and content of submissions, deadlines and decision-making timeframes, the professional qualifications and independence of auctioneers, etc. Laws may also specify when government can use non-economic criteria to distinguish between competing bids. Disclosure of proposed deals to nearby communities may be required, and the government may be required to listen to public concerns.

There are a host of other measures that can be taken to enhance transparency and accountability and that are beginning to appear with increasing frequency in national forestry law:

- One is to include more explicit reference to *some basic criteria for decisionmaking*. For example, older legislation typically created a power on the part of a government official to grant a permit within a government-managed forest, but did little to guide the exercise of that power. Now it is not uncommon for legislation to stipulate that such a power must be exercised in a way that is compatible with the management plan for that forest, or with the overall management objectives for a particular type of forest. Similar efforts to guide official actions (or, put less positively, to limit official discretion) are evident in other areas of forest law as well.
- Management plans themselves, as well as other major forest-related decisions are increasingly subjected to an approval process that includes *public review and comment*. In some instances, environmental impact assessment-style concepts are appearing in forestry legislation.
- Laws may create *oversight bodies*, such as commissions or “forestry forums”, consisting of members drawn from non-forestry sectors and civil society, whose role it is to review major decisions, establish policy guidelines, facilitate public debate and the like.

- There is increasing attention to legislating a *public right to information*, sometimes in forestry legislation itself, sometimes more generally in laws dealing with environmental protection or freedom of information.
- Several new laws provide increased opportunities for private citizens to bring suit against government for the violation of forest laws, through *expanded concepts of standing*.

Legislation alone obviously cannot create transparency and accountability in the forestry sector. In the absence of determined civil society institutions committed to pushing these goals forward, the legislative innovations discussed above are likely to be neglected and little used. But measures such as these are nonetheless essential in creating a viable platform from which the performance of public officials can be observed, controlled and improved.

PRINCIPLE 4. ENHANCE THE STAKE OF LOCAL NON-GOVERNMENT ACTORS IN THE SUSTAINABLE MANAGEMENT OF FORESTS.

In recent years, community-based forest management has been promoted for a number of reasons – most prominently as a way of improving local livelihoods and of recognising legitimate local claims to rights over land and resources, and as part of a general trend towards devolving or decentralising various governance functions. It is also increasingly recognised that without local people having a significant stake in the management of local forest resources, the efforts of under-staffed and poorly financed forest officials to patrol and protect forests will often be futile. The absence of such a stake both reduces the incentives of local people to comply with the law, and prevents them from insisting on the compliance of outsiders, including government officials themselves.

Some emerging legislative responses related to this issue have been alluded to already under Principle 3: required consultation between national forest authorities and local people over key management decisions, such as the creation and delineation of forest reserves; required consideration of local peoples' concerns in the granting of concessions in public forests; mechanisms by which the public can serve as watchdogs over the activities of other forest users and government officials, along with a right to challenge government decisions at administrative and judicial levels.

More fundamentally – and the subject of this section – there have been increasing efforts to improve the legal environment for direct local participation in forest management.

Throughout history, national legislation has generally been unfriendly to local forest management. Indeed, in many parts of the world, the overall trend has been an inexorable assertion of government legal control over forests at the expense of local practices and local perceptions. While local usage rights have frequently been given some recognition, forest laws have provided little scope for local people to play a meaningful part in the planning, management and allocation of forest resources on which they may have depended for generations – and which, in numerous cases, they may have actively managed and protected. Frequently, the state has taken on this role itself through the creation of state forests. In other contexts, national law may have left the tenurial status of forest areas unclear, giving weak or no legal protection to existing community-based systems and providing no alternative mechanisms by which local groups or individuals might assert effective control.

Efforts to address these shortcomings in recent legal changes have taken various forms.

First, there has been a proliferation of new mechanisms for the devolution of forest management to local communities, villages, user groups or households through site specific arrangements such as co-management agreements, village forest reserves, community forestry leases and related devices. Nepal's 1993 Forest Act offers a notable example of this approach, providing for the "turning over" of portions of national forest to local user groups who agree to manage the areas in accordance with an agreed-upon plan. A range of variations on this approach may be found in recent laws or regulations in a growing number of jurisdictions, including (to name a few) Philippines, Laos, India, Guinea, Guinea-Bissau, Tanzania, Burkina Faso, Cameroon, British Columbia (Canada), Mozambique and South Africa.

Second, some countries have accorded increasing recognition to the historical land or territorial claims of local peoples. The 1997 Indigenous Peoples' Rights Act from Philippines is an example of this trend, and the rights of indigenous communities figure prominently in several Latin American laws. A number of other countries, including Canada, Australia, South Africa, as well as several countries in central and eastern Europe, are engaged in restoring the lands of dispossessed communities and individuals, some of which include natural forests or commercial plantations.

Despite the unmistakably higher profile given to local forest management in recent legislation, many of the reforms are characterised by significant limitations and ambivalence, both on paper and in practice. In most cases, government forest departments continue to retain most of the important decision-making powers, including the power to draft and approve management plans, and to decide about the selection of species, the marketing of harvested products and the use of benefits by local groups. The strength of the rights granted or recognised under local arrangements may be unclear because the government has apparently wide powers to terminate agreements or legal recognition for poorly-defined reasons.

This suggests that laws designed to promote local management need, at a minimum, to improve in terms of the extent to which they provide for *security* and *flexibility*.

Security of rights will mean different things to different people. Nevertheless, whatever the context, and however limited or extensive the nature of the rights involved, a local management arrangement must not only provide a realistic hope of significant benefits to its participants, but it must instil confidence that the rights to those benefits are secure and cannot be taken away arbitrarily. The concept of "security" can thus be broken down into several key attributes:

- there needs to be clarity as to what the rights are;
- there needs to be certainty that rights cannot be taken away or changed unilaterally or unfairly;
- rights need to be of a reasonable duration – that is, if the rights are not to be perpetual, they should be for a period that is clearly spelled out and that is long enough for the benefits of participation to be fully realised;
- rights need to be enforceable against outsiders and the government itself;
- rights need to be exclusive, that is, the holders of rights need to be able to exclude or control access of outsiders to the resource over which they have rights (though this suggests that the definition of who is a rights-holder needs to be handled carefully to ensure that no one with legitimate claims to the resource is unfairly excluded; attention will be required to identify and protect different types of rights of access and use, such as grazing, hunting and fishing).

Along with security, law needs to provide *flexibility*. Community-based management is about local choices and local adaptation, qualities that are put at risk if legislation imposes a rigid, uniform approach. The legal framework should allow flexibility in deciding what the objectives and methods of management should be, as well as the structure and internal rules of local institutions. Obviously, flexibility can never be unlimited, as both society at large as well as individuals within a particular management group have interests that need to be taken into account, ranging from environmental interests to basic human rights. The challenge for law-makers is to find approaches to defining and defending those interests in ways that do not unnecessarily limit the ability of local people to make choices that reflect their unique needs, conditions and aspirations (Lindsay 1999).

The establishment of sustainable local forest management arrangements faces many formidable challenges, and legal issues may well be of secondary significance in many contexts. Where political, social, economic and ecological conditions are unfavourable for motivating and sustaining local management, a supportive legal framework may not make much difference. And of course, community members themselves are not inherently immune from temptations to engage in corrupt or destructive activities, and the strengthening of property rights or other stakes in forest management may not always be sufficient to dispel such temptations. On the other hand, despite the mixed track record of community-based initiatives over the last decade or so, the underlying rationale for real local involvement remains persuasive and urgent. It is likely that the search for better mechanisms and methodologies for local management will remain an important aspect of national forest strategies for the foreseeable future, and attention to legal aspects will be a necessary piece of the puzzle.

PRINCIPLE 5. THE DRAFTING OF LAW NEEDS TO BE A BROADLY PARTICIPATORY PROCESS.

The drafting of sound and workable law requires genuine involvement of all categories of stakeholders – government and non-governmental institutions, central and local institutions, communities and local forest-dependent people, private sector organisations, etc. This is not a recommendation that flows only from a belief that people should have the *right* to be involved. Instead, we are making a practical point here – without this involvement, there is simply little hope of passing laws that reflect reality and are capable of being used and implemented.

It is important to stress that this recommendation goes beyond simply holding a few seminars or workshops at the end of the drafting process. It requires a true commitment to listening to and understanding the needs, objectives, insights and capacities of the intended users of the law, and finding ways to accommodate the multiple interests at stake. It requires a determination to avoid letting the process be driven by the preconceptions of lawyers, donors and other outsiders, however well intentioned. This is time consuming work, that ideally should entail patient consultations in the field with people directly affected, not simply in a distant capital city. And these consultations should start early, not only when a first draft has already been completed.

Efforts to genuinely promote such consultative processes have been made in several countries in the recent past, particularly in Latin America. Especially noteworthy is the experience of Honduras, where a forestry forum, called *Agenda Forestal Hondureña*, was established with the specific objective of developing a new forest law in a participatory manner. Comprising representatives of all public and private

stakeholders concerned, including farmer, indigenous, environmental and other civil society groups as well as industry, it produced a forest bill in the course of a lengthy and hardly-fought process, during which all parties could fully voice their concerns and defend their interests. Successive drafts were developed within the forum and posted on the Internet, which not only helped make the process more transparent, but also prompted wider social debate. The eventual outcome was a relatively balanced and satisfactory draft law, which the government had then no difficulty to endorse and to table in parliament, where it is now pending approval. A similar participatory drafting process is currently taking place in Paraguay within an *ad hoc* forestry forum (*Mesa Forestal Nacional*), specifically created with the same goal of producing a new forest act through extensive consultations. Earlier processes of this kind achieved varying degrees of success in other countries, including Bolivia (Pavez and Helbingen 1998), Ecuador and Peru (FAO 1998).

Designing manageable participatory processes involves several challenges. There is, for example, a need to reconcile the role of participatory approaches at the *drafting* stage with the role of elected representatives of the people – ie, parliaments – at the *approval* stage. Divergent perspectives between “civil society” and formal political institutions may well become apparent at the point of transition from the first stage to the second. Conflicts may also emerge if care is not taken in co-ordinating multiple consultative bodies with similar or overlapping functions, such as forest and environment advisory committees.

PRINCIPLE 6. THERE IS A NEED TO INCREASE THE EFFECTIVENESS OF DIRECT LAW ENFORCEMENT MECHANISMS SET FORTH IN FORESTRY LEGISLATION.

Here we are referring to the penalties and procedures that come into play in the event of a violation of the law. Such mechanisms may be enhanced, in the first instance, by evaluating the *penalties* with the following questions in mind:

- Are the penalties for a particularly infraction severe enough so that they may act as a deterrent, or are they so insignificant as to be considered at worst a minor increase in the cost of doing business to most lawbreakers?
- On the other hand, are there penalties that are *too* severe, out of proportion to the nature of the offence? In such cases, courts and other enforcement bodies may be reluctant to apply the penalty at all, and the crime will go unpunished.
- Does the law provide for the timely and easy modification of penalties to take into account the effects of inflation? A number of countries have included indexing provisions in their laws, to allow for the automatic updating of penalties rather than requiring legislative action for every penalty increase.
- Does the law allow for consideration of the severity of the damage done in determining the penalty? In addition to fixing a flat penalty for a specific offence, some laws also require the offender to reimburse government for the cost of damages done to the forest estate.

It is also essential to evaluate the *procedures* by which laws are enforced:

- Does the law provide enforcement officers with sufficient powers to apprehend, detain and prosecute alleged offenders?
- Are expedited procedures available for minor offences, thus, on the one hand, helping ensure that a case does not simply get lost in the backlog of lower court

cases, while on the other hand freeing up courts to focus on more severe breaches of the law? The difficulties and delays associated with public prosecutions can, in many cases, discourage forest officers from pressing forward with a case.

- Does the law provide for compounding minor offences, that is, the payment of a prescribed fine as a way of disposing of uncontested cases without the need to pursue full prosecution?
- Does the law provide for the possibility of resolving cases outside of the court system, through administrative tribunals or alternative dispute resolution mechanisms?

Of course, forest law enforcement must be seen in the context of law enforcement overall. Any attempt to significantly improve the legislative framework for enforcement in the forestry sector will almost certainly require attention to laws that apply more generally to law enforcement in society at large. And even more importantly, the effectiveness of any of these mechanisms needs to be evaluated against an overarching concern for fairness – their legitimacy will depend on the extent to which they are perceived to be applied transparently and even-handedly, and not treated as additional opportunities for rent-seeking or coercion. Compounding, for example, runs the risk of being seen as a new tool for extortion, not as a legitimate way of expeditiously resolving cases, if its use is not carefully circumscribed and monitored.

CONCLUSION

The role of legislation in the fight against illegal activities and corrupt practices should neither be exaggerated nor underestimated. Obviously, effective action on this front requires efforts that go well beyond the drafting of legislation – to name a few, technological innovation, improved surveillance techniques, sustained application of political will and commitment of financial resources, attitudinal changes in all parts of society, committed advocacy by civil society organisations, international and regional co-operation and economic reforms.

But while it is a truism that legislation is not sufficient in and of itself, this should not obscure the important role it has to play. For any of the above actions, law is an essential tool, one that can significantly enhance – or just as significantly undermine – their efficacy. In presenting the six design principles above, we have tried to show that drafting stronger legislation requires a broader approach than strengthening standard law enforcement provisions. If legislation is to create a realistic foundation for its own implementation, then it needs to provide scope for meaningful participation in forest decision-making; to increase the stake that people have in sustainable management; to improve the transparency and accountability of forest institutions; and to set forth rules that are coherent, realistic and comprehensible.

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SELECTION OF POLICY TOOLS IN MULTILEVEL INTERNATIONAL NETWORKS

DENNIS C. LE MASTER, NADINE E. BLOCK AND CHARLES E. OWUBAH

1. FOREST RELATED INTERNATIONAL NETWORKS

Forests became a priority issue in international policy and political agendas in the 1990s because of many concerns. A note by the Secretariat of the United Nations (1998) lists four:

- The alarming rate of deforestation and the degradation and decline of forests and other wooded lands, with a resultant loss of environmental values;
- The ability to ensure that future demand for forest products, services, and environmental benefits will be met in a sustainable manner;
- Actions that benefit from unsustainable forestry practices and constraints in international trade and forest products;
- Inadequate coordination and integration of cross-sectoral, forest-related action at the global, regional, and national levels.

These concerns can be expressed differently, certainly more dramatically, but they seem adequately expressed for the purposes of this paper. They articulate a problem toward which policy alternatives can be developed.

Forests and forestry practices were a contentious and sensitive issue in deliberations leading up to and during the United Nations Conference on the Environment and Development (UNCED) in 1992. Three legally binding forest-related instruments were agreed to during UNCED, namely, the Framework Convention on Climate Change, the Convention on Biological Diversity, and the Convention to Combat Desertification. In addition two non-legally binding instruments on forests were adopted: The Forest Principles and Chapter 11 of Agenda 21.

Other legally and non-legally binding agreements have been agreed to. The *Directory of Forest-Related International and Regional Institutions and Instruments*, prepared by the Food and Agriculture Organization (FAO) of the United Nations on behalf of the Inter-Agency Task Force on Forests (ITFF), lists 13 legally binding, forest-related agreements which are contained in Table 1 (FAO 1999). In addition, the earlier cited note by the Secretariat of the United Nations lists 20 non-legally binding agreements, which are contained in Table 2.

In terms of number, the supply of international legally and non-legally binding forest-related agreements seems ample. The issue is their individual and collective effectiveness, which is directly connected with selection of policy implementation tools.

Table 1: Legally Binding Forest-Related Agreements

Alpine Convention
Amazon Cooperation Treaty
Central American Convention on Forests
Convention on Wetlands of International Importance Especially as Waterfowl Habitats (RAMSAR)
Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES)
Convention on Biological Diversity
Convention on Long-Range Transboundary Air Pollution
ILO Convention 169 on Indigenous and Tribal People in Independent Countries
International Tropical Timber Agreement
United Nations Convention to Combat Desertification
United Nations Framework Convention on Climate Change
Western Hemisphere Convention
World Heritage Convention

Sources: Food and Agriculture Organization of the United Nations. *Directory of Forest-Related International and Regional Institutions and Instruments*, Version 1, prepared on behalf of the Inter-Agency Task Force on Forests (ITFF), August 1999.

The recent increase in international agreements in forestry have caused an elaboration of multilevel policy networks as well as the basis, in some cases, for further agreements and expanded networks. Schmithuesen writes:

International forest-related instruments are initiated by national governments, which negotiate the framework of cooperation. At the same time, national governments are the principal agents for implementation. An increasing range of continental and regional processes involving multilateral and supranational entities form at present the international system. ... International and supra-national agreements ... reflect primarily global or continental concerns. They have, however, immediate consequences for the development of rural areas, from which the problems originate, and where the solutions and development chances are to be looked for. (Schmithuesen 2000)

Schmithuesen presents a schematic diagram of interactive hierarchical layers of global, national, and individual decision making. Between the layers, institutional processes in which organizations of various kinds participate, including notably nongovernmental organizations (NGOs), and they can and do affect decision making. The processes and organizations are international between global and national decision making and subnational and local between national and individual decision making. For example, in between global and national decision making, the results of the Pan-European Helsinki Process, in which a variety of organizations participate, affect decision making of individual European nation states.

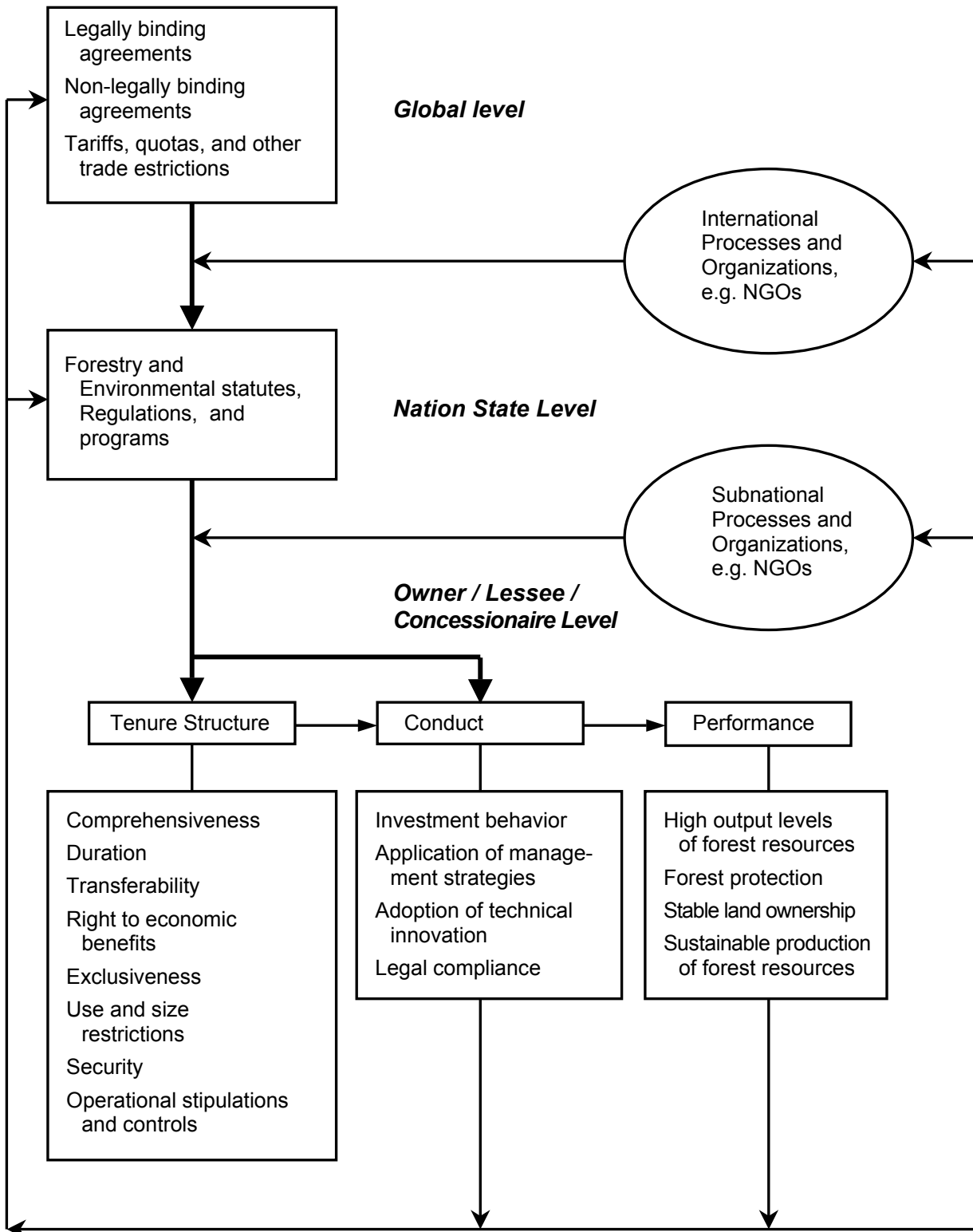
Table 2. Non-Legally Binding Forest-Related Agreements

<p>United Nations Programmes (created by the General Assembly or FAO)</p> <ul style="list-style-type: none"> United Nations Development Programme (UNDP) United Nations Environment Programme (UNEP) United Nations Conference on Trade and Development (UNCTAD) World Food Programme FAO regional commissions <p>Agenda 21</p> <ul style="list-style-type: none"> Chapter 11. Combating deforestation <p>Non-legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests (Forest Principles)</p> <p>Commission on Sustainable Development</p> <ul style="list-style-type: none"> Intergovernmental Forum on Forests (IFF) <p>Criteria and Indicators for Sustainable Forest Management</p> <ul style="list-style-type: none"> ITTO Pan-European Helsinki Process (Helsinki Declaration) Montreal Process Working Group (Santiago Declaration) Tarapoto Proposal Central America Initiative Dry Zone Africa Initiative Near East Initiative African Timber Organization <p>Global Environmental Facility (GEF)</p> <ul style="list-style-type: none"> Climate change and biodiversity windows <p>G-7 Pilot Programme to Conserve the Brazilian Rain Forest (PPG 7)</p> <p>G-8 Forest Action Programme</p> <p>Plan of Action for the Sustainable Development of the Americas</p>
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Source: Secretariat of the United Nations. "International Arrangements and Mechanisms to Promote the Management, Conservation, and Sustainable Development of All Types of Forests," note by the Secretariat, Intergovernmental Forum on Forests, Commission on Sustainable Development, Economic and Social Council, United Nations, 19 June 1998.

The authors offered a similar descriptive model in an earlier publication that described the key position of the nation state in implementation of legally and non-legally binding international agreements and their effects on forest tenure structure, forest landowner conduct, and tenure performance in terms of forest stewardship (Le Master and Owubah 1999). The components of each of the latter three variables are listed in the rectangles below them, which were adapted from earlier work by Luckert and Haley (1997). A modified version of the model is provided in Figure 1. Institutional processes and participating organizations have been added as well as feedback loops.

Figure 1: Role of Nation States and Individual Forest Tenures in Implementation of International Agreements



Source: Le Master, D. C. and C. E. Owubah. "Nation States and Forest Tenures: An Assessment of Forest Policy Tools in Eastern European Countries," in *Forging a New Framework for Sustainable Forestry: Recent Developments in European Forest Law*, F. Schmithuesen, Peter Herbst and Dennis C. Le Master (eds.) IUFRO World Series, vol. 10, pp. 28-38, IUFRO Secretariat, Vienna, Austria.

What the model portrays is that international forestry and environmental agreements, as modified by international processes and organizations, are implemented by nation states through forest and environmental policies in the form of statutes, administrative rules, and programs. These in turn, can be modified by subnational processes and organizations, affecting forest tenure structure, forest landowner conduct, and tenure performance in terms of forest stewardship. Ultimately, collective forest landowner conduct and tenure performance have bearing on future international forestry and environmental agreements as shown by the feedback loops. In sum, the model describes in an abstract way how an international agreement would modify behavior at the individual level.

The challenge is to make this arrangement as effective, efficient, fair, socially acceptable, and administratively practicable as possible. A daunting task indeed!

2. FOREST POLICY TOOLS

In the same paper in which the preceding model was presented, eleven forest policy tools or instruments were listed and categorized as to whether they facilitated or intervened in the functioning of competitive markets, assuming a closed economy. The list is repeated in Table 3.

If an open economy is assumed - an economy in which international agreements and trade exist - the list does not change. For example, international treaties, conventions, and agreements have the effect of regulation and prohibition as do import quotas and export restrictions. Tariffs are taxes, of course, and non-legally binding agreements have the effect of public education programs. In other words, forest policy tools in an open economy are the tools of a closed economy, but often with different names. Their advantages and disadvantages, strengths and weaknesses are virtually the same.

While the list of tools is not exhaustive, the clear implication is that, whatever the international problems are in forestry, the tools or instruments for implementation of the policies addressing them are comparatively few. Compounding the situation is the several problematic conditions commonly attend the circumstances of their use, especially in developing countries.

In the earlier cited note by the Secretariat of the United Nations, six "institutions and policy instruments" are listed as a means of promoting the management, conservation, and sustainable development of forests.

- National forest programs
- Economic instruments and tax policies
- Forest assessment(s)
- Institutional capacity (building)
- Cross-sectoral policy harmonization
- International cooperation

National forest programs is a generic term for institutional approaches to sustainable forest management within different countries to be applied at national and subnational levels. Economic instruments (a euphemism for subsidies) and tax policies and forest assessments are clearly tools or instruments as discussed above. Consideration of the remaining three - institutional capacity (building), cross-sectoral policy harmonization, and international cooperation - as either institutions or tools

seems problematic. They are not institutions in the sense of their being a standard practice, relationship, or organization in a society. Neither are they an instrument in the sense of being a means whereby something, such as forest stewardship, is achieved, performed, or furthered. Actually, they seem to be conditions or prerequisites for effective application of policy tool or instrument.

Table 3: Forest Policy Tools

<p><u>Market Facilitation Tools</u></p> <p>Information gathering (e.g. resource assessments and inventories) and dissemination</p> <p>Public education</p> <p>Technical information</p> <p>Research</p> <p><u>Market Intervention Tools</u></p> <p>Insurance programs</p> <p>Resource protection</p> <p>Land management planning</p> <p>Regulation and prohibition</p> <p>Taxation or subsidization</p> <p>Land trusts for amenity, conservation, or recreation purposes</p> <p>Public ownership or production of goods and services</p>
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Other necessary conditions or prerequisites would include political will, funding, public understanding, and technology. Political will is necessary because if the government of a nation state does not have the political will to carry out its international agreements, they probably will not be accomplished within its borders. And there are few alternatives, for the nation state remains the basic organizational unit of international affairs and will likely continue to be in the foreseeable future. Similarly, adequate program funding is a ubiquitous and perennial problem since funding is limited to begin with, e.g. taxpayers' willingness to pay, and forestry and environmental programs compete with many other programs comparable in importance of purpose. Public understanding of forestry is essential for effective policy implementation. It is generally inadequate, and what exists is unevenly distributed.

Technology is deserving of separate treatment because the "illusion of knowledge" has afflicted natural resource management as it afflicted European explorers in the 14th, 15th, and 16th centuries. Natural resource management regimes are characteristically applied while in very early stages of development.

"Even as flaws became apparent, we cling to paradigms that have outlived their usefulness. Problems are dismissed as minor, or unusual, or isolated and we go back to relying on the research, concepts, and management conventions that we have gotten used to. ... Only after decades of mounting problems do we begin to distrust what we think we know" (Malk et al. 1999).

The application of technology in management, conservation, and sustainable development of forests must be encouraged. On the other hand, some precautions seem necessary. For example, management regimes should be applied when their knowledge base is well tested. They should be subjected to careful monitoring, and experimentation should continue to further learning. Practices should be adjusted or adapted on the basis of monitoring, experimentation, and experience.

To summarize, key conditions for implementation of international agreements in forestry include: international cooperation, the political will of participating countries, institutional capacity, cross-sectoral policy harmonization, adequate program funding, public understanding, and the careful application of technology, including monitoring, experimentation, learning, and adaptive use. These conditions must prevail if international multilevel networks in forestry are going to be successful.

3. PROPOSALS FOR ACTION: A CURRENT INTERNATIONAL EFFORT

The United Nations Ad Hoc Intergovernmental Panel on Forests (IPF) developed a package of proposals, collectively and more briefly called *Proposals for Action*, during the period 1995-1997, which were subsequently endorsed during the United Nations General Assembly Special Session in June 1997 (United Nations Ad Hoc Intergovernmental Panel on Forests 1997). In developing the proposals, IPF was mandated to “pursue a consensus and formulate ... actions in order to combat deforestation and forest degradation, and to promote the management, conservation, and sustainable development of all types of forests.” *Proposals for Action* contains 147 proposals by the count of the authors, which are grouped under five categories.

- Implementation of UNCED decisions related to forests at national and international levels, including examination of sectoral and cross-sectoral linkages;
- International cooperation in financial assistance and technology transfer;
- Scientific research, forest assessment, and development of criteria and indicators for sustainable forest management;
- Trade and environment in relation to forest products and services;
- International organizations and multilateral institutions, and instruments, including appropriate legal mechanisms.

The international community agreed to implement *Proposals for Action* consistent with individual national frameworks of laws, regulations, and programs. Nation states were urged to conduct a systematic, coordinated assessment of *Proposals for Action* in the context of their national forest program and policy framework with the participation of interested parties.

The successor to IPF, namely, the Intergovernmental Forum on Forests (IFF), a unit of the United Nations Commission on Sustainable Development, was mandated to promote and facilitate implementation of *Proposals for Action*. Because of “the complexity and structural particularities of the IPF proposals,” a *Practitioner’s Guide* was prepared, the product of a process started in 1997 when the Governments of Finland, Germany, Honduras, Indonesia, Uganda, and the United Kingdom of Great Britain and Northern Ireland, in cooperation with the IFF Secretariat, FAO, and the United Nations Development Programme (UNDP), joined in an effort to make the IPF proposals more “user friendly (Six-Country Initiative in Support of the UN Ad-Hoc Intergovernmental Forum on Forests 1999). “The purpose of the *Guide* was to help identify the ‘place’ and likely ‘addressees’ of the IPF proposals within the

national institutional setting, ..." The *Practitioner's Guide* contain - again by the count of the authors - 60 country-specific actions to be completed in implementing *Proposals for Action*.

The scope of this effort seems deserving of some pause and reflection and asking in a limited way, about the selection of forest policy tools, and in a more general way, whether the reach of *Proposals for Action* is within its grasp.

4. SELECTION OF POLICY TOOLS

At its simplest level, public policy formulation has three components: a public policy problem, a policy that addresses it, and an implementing mechanism or tool. Sometimes a mix of tools is applied in addressing a public policy problem, such as a technical assistance program and a subsidy for tree planting to encourage forest landowners to maintain their land in a well-stocked condition.

The forest sector of countries with which the authors are familiar is very complex, in part because of the many uses and social values attached to forests, perhaps even approaching the biological complexity of forests themselves. Typically, many public policy problems have occurred, which have been addressed - with varying degrees of effectiveness and efficiency - by a variety of policies and corresponding implementing tools. Indeed, a network of forest policies and implementing tools exists in most countries, and it is interwoven with policy networks of other related sectors such as agriculture and environmental protection.

This network is usually elaborated - made more complex - when a nation state becomes a signatory to and implements an international forestry agreement, be it legally binding or otherwise. The recent increase in international agreements in forestry and related areas has made this network more complex. Harmonization with existing forest and forest-related policies of nation states has and will continue to be a challenge.

Limited Number of Policy Tools: But while the complexity of policy networks and harmonization of forest policies are issues, so is the available selection of forest policy tools. Indeed, the number of public policy issues in forestry for any country exceeds the list of available forest policy tools. And while it is conceded that a given tool - like education or favorable tax treatment can implement more than one policy - it is also clear *limits exist to the number of policies that any one tool can effectively and efficiently implement.*

Prioritization of Issues: Hence, choices have to be made on public policy issues that are going to be addressed within policy framework of a given sector within a nation state. A proven way of doing this is to prioritize issues on the basis of some established criteria as to their relative importance. International efforts that do not appreciate the general imbalance between number of public policy problems and the means for addressing them will likely fail. The considered opinion of the authors of recent international efforts in forestry is that too many issues have been identified for the number of instruments available to address them and too little agreement has been achieved on the relative importance of the respective issues.

The basic reason for the "wide range of forest-related issues" addressed in *Proposals for Action* is that many different forest-related public policy problems exist in countries around the world. The intent was to be inclusive rather than exclusive. Further, no effort was made to prioritize their relative importance because from the outset it was understood that agreement would not be possible based on prior experience. Given the foregoing, what can be reasonably expected of *Proposals for*

Action in terms of on-the-ground changes in “the management, conservation, and sustainable development of all types of forests” from a global perspective? Will a net improvement occur or will “the alarming rate of deforestation and the degradation and decline of forests. . .” continue?

Transformation of Policy into Action: Effective public policy accomplishes its intended purpose, whatever the level of its formulation and implementation. International agreements in forestry are no different. Their purposes must be achieved to be acclaimed effective, and it would seem obvious the likelihood of success is enhanced when the intended on-the-ground effects of a policy are plainly understood and the transformation of policy into action and into specific outcomes can be traced or is “transparent” from international agreement to implementation by individual nation states to modification of individual behavior to on-the-ground effects (such as depicted in Figure 1). Such an understanding, of course, would affect selection of implementing tools by individual nation states, but neither *Proposals for Action* nor the *Practitioner’s Guide* provides it.

Conditions for Successful Implementation: Unfortunately, all countries do not have the same opportunities in terms of access to available policy tools because of economic differences. Some implementing policy tools are more costly than others. For example, referring back to Table 3, the relative cost of individual market intervention tools is approximated by the order of their listing. Furthermore, all countries do not have the necessary conditions present for successful implementation such as the institutional capacity, cross-sectoral policy harmonization, adequate program funding, public understanding, and technology. These problems are recognized in *Proposals for Action*, and many of its individual proposals address them, which is a strength of the document. Nevertheless, no response is evident, at least at this point, to the question: if a country should want to be a signatory and does not have the means to carry out the agreement within its borders, who or what is going to assist them? The likelihood of success of an international agreement will obviously be greater if all signatories have both the necessary conditions for policy implementation as well as equal access to available policy tools.

5. CONCLUSION

To conclude, selection and application of forest policy tools in the context of multilevel international networks is quite similar to their selection and application in individual nation states. Harmonization with the policy networks established by other international agreements is one complicating problem, and effective transformation of the agreement into statute, regulation, and program at the nation state level is another. These problems are addressed by: (1) careful integration of the policy network established by a new international agreement with existing networks, (2) prioritization of policy issues; (3) understanding that limits exist to the number of policies that any one tool can effectively and efficiently implement, and hence, rationing their use in terms of issue priorities, (4) providing unambiguous expression of desired on-the-ground outcomes; and (5) ensuring that all signatory nations have the necessary conditions for policy implementation and access to available policy tools whether or not they can afford them.

Proposals for Action provides a significant step forward “to combat deforestation and forest degradation, and to promote the management, conservation, and sustainable development of all types of forests.” Much, much more work remains to be done, however.

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IMPACT OF NATURE CONSERVATION LEGISLATION ON FOREST LEGISLATION IN FLANDERS

NOËL LUST, LIEVEN NACHTERGALE AND INGE SERBRUYNS

ABSTRACT

This paper aims to find out to what extent forest legislation in Flanders was affected by nature conservation and especially by the nature Conservation Decree of 1997. It mainly focuses on ecological issues in forest legislation.

The problem "Forest-Nature" originated in Flanders in 1970. The first Conservation Act came about in 1973. However, the direction of the Forest Service hardly paid attention to it. This passive and negative attitude of the Forest Service has to a large extent contributed to the conflicts which later arose between foresters and conservationists.

The general conclusions of this study are obvious:

1. There are many overlaps between the Forest Decree of 1990, revised in 1999, and the Nature Conservation Decree of 1997.
2. The Forest Decree pays much attention to the increase of nature value in forests.
3. The impact of nature conservation on forest policy, forest legislation and forest management is clear.
4. The Nature Conservation Decree probably will have in future a still greater impact on the Forest Decree and on the forest management.
5. Numerous sources of conflicts between the forestry sector and the nature sector are present.
6. Conflicts between the sectors will unavoidably lead to demotivation of the forest owner.

Key Words: forest legislation, nature conservation legislation, Flanders

1. INTRODUCTION

It is usual and desirable, that legal aspects concerning forests are brought together in a forest legislation. This way a userfriendly and coherent document is developed. However, there are often still a number of regulations, which thoroughly interfere on the legal regulations of the forest, but which are taken up in other legislations. This leads to several difficulties:

- It is insufficiently known which provisions are taken up in the different legislations.
- The different regulations are not coherent: some of them are contradictory, others are at least confusing, whereas still other ones can be considered as complementary.
- All kind of conflicts are created between the different involved administrations.

Such situations finally lead to a demotivation of both forest owners and forest users. The forest is neglected, forest extension is not stimulated and administrative and juridical problems accumulate.

The problem “Forest-Nature” clearly originated in Flanders in 1970. Before 1970 the subject “nature” was hardly relevant. Yet a number of valuable state nature reserves existed since 1957, managed without problems by the Forest Service. Almost no forest elements were present in these reserves.

The first Conservation Act came about in 1973. At that time there was not yet a Nature direction competent for these topics. The Forest Service was charged with the implementation of this Act. With regard to forest management two important provisions were included:

1. The designation of forest reserves was made possible.
2. Measures could be taken to increase the nature value of forests.

The Forest Service, however, hardly paid attention to these provisions. Anyway no forest reserves were designated and no special attempts were carried out in order to increase the nature value of the forests.

This passive and negative attitude of the Forest Service with respect to the Conservation Act has to a large extent contributed to the conflicts, which later arose between foresters and conservationists. The creation of the Nature Direction and the withdrawal of the competence on nature from the Forestry Service were specific consequences.

A milestone in the conflict between foresters and conservationists was reached in 1989, when the Nature direction designated five most valuable forests as nature reserves.

But in the meanwhile silvicultural insights in Flanders regarding the ecological forest function were evolving thoroughly. This clearly appeared in the new Flemish Forest decree of 1990.

2. ECOLOGICAL ASPECTS OF THE FLEMISH FOREST DECREE OF 1990

In the Flemish Forest Decree the ecological function was for the first time recognised and described as one of the forest functions. However, it appeared to be very difficult to find a consensus for the definition of the term. Finally, the ecological function on itself was very narrowly described. Herewith by far the main attention was paid to the floristic and faunistic importance of the forest.

Yet, at the same time a number of topics, dispersed over the Forest Decree, are stressed. These topics actually belong to the ecological function, at least from the scientific point of view. It mainly concerns topics dealing with the protection function of the forest or with the general protection of the forest. Besides it can also be referred to the chapter on forest reserves.

It was generally stated, that emphasising the ecological forest function could be considered as one of the most important positive points of the new Forest Decree.

The special stipulations on the ecological function only refer to the public forests. Private forest owners have no obligations in this respect. Moreover, there are hardly incentives to motivate private forest owners towards an ecological direction. Incentives for afforestation with native broad-leaves are well bigger than those for afforestation with exotic tree species, such as Norway spruce, douglas fir, Scots pine and larch.

3. DIRECT PROVISIONS OF THE NATURE CONSERVATION DECREE OF 1997 ON THE FOREST

Some articles have been inserted in the Nature Conservation Decree of 1997 altering the Forest Decree of 1990. The direct objective of these articles is to increase the nature value of forests. This implies that the Nature Conservation direction has greater impact on forest policy and forest management.

1. The Nature Conservation Decree stipulates the rules for the establishment of a "Flemish Ecological Network (VEN)". The main objective is to protect nature. It is obvious that many forests will be included in this network. It is presently not clear which obligations will be valid for these regions. The decree strengthens the regulations of the management plan for public forests located in this Flemish Ecological Network.
2. The management plan of private forest located in the VEN (Flemish Ecological Network) must clearly indicate which measures will be taken in order to reach the ecological "target objectives". According to the Forest Decree these constraints were only valid for the public forests.
3. The regulation with respect to management plans of forests located in nature reserves is changed. The management plan is drawn up according to the provisions of the Nature Conservation Decree.
4. Deforestation in nature reserves is simplified. Deforestation in nature reserves becomes possible, provided it is included in a management plan.
5. The rules for deforestation (in non-nature reserves) are becoming much more difficult. An authorisation for deforestation can only be awarded for works of public interest. Moreover the Flemish government must issue criteria for compensation of deforestation.
6. The Flemish government can award subsidies for the execution of measures aiming at nature development in forests.
7. Advice for afforestation of soils located in "nature regions". The Forest Decree stipulated that the advice of the Nature direction is required for the afforestation of some nature regions. The Nature Conservation Decree extends this provision to all regions which are considered as valuable for nature.
8. The Flemish government must issue criteria for ecologically justified afforestation and forest extension. The Act on Rural Planning stipulates that 10.000 ha of new forest must be established in an ecologically justified manner.

4. INDIRECT PROVISIONS OF THE NATURE CONSERVATION DECREE OF 1997 CONCERNING THE FOREST

The Nature Conservation Decree of 1997 foresees also, besides direct changes of the Forest Decree, a great number of provisions with a broad application field, because they generally want to stimulate nature. It is obvious that this influences strongly the forest regulation.

The indirect influence of the Nature Conservation Decree, however, is not yet clear today. Indeed:

- many provisions of the decree are general provisions, which are little concrete and on which the interpretation is strongly different;
- many stipulations of the decree must still be executed by provisions of the Flemish government.

4.1. General provisions of the Nature Conservation Decree

The Nature Conservation Decree includes several “horizontal measures”. These are measures valid for the whole Flemish region, subsequently also for forests. Besides there are many measures which are only valid for certain well defined areas.

1. According to the definition of the decree, forests belong to the term “nature”. This means that forests are covered by the application field of the Nature Conservation Decree. However, the meaning of that is not clear.
2. Mainly for the protection of agriculture, but subsequently also for forestry protection, the very important principle of “freedom of exploitation” was introduced into the Nature Conservation Decree. It means that measures may not restrict activities usually needed for the execution of the management plan in accordance to the destination of the rural planning. This obviously implicates that forestry can be submitted to certain constraints, but that it cannot be made impossible.
3. The Flemish government is authorised to issue all needed measures over the entire territory in order to ensure the environment quality required to maintain nature and to apply the “stand-still” principle both for quality and quantity of nature.
4. The Flemish government is also authorised to issue all measures needed for nature conservation. The scope of this provision, however, is very vague. Therefore it was tried to create more clearness via a provision of the Flemish government, determining the conditions for changes of vegetation and of small landscape elements. This provision foresees three possibilities.
 - The change of certain landscape elements and vegetations is forbidden. These prohibitions are not valid in case of an approved management plan and when it concerns normal maintenance works.
 - A nature license is compulsory for vegetation change in all kinds of nature regions, inclusive practically all forests.
 - In some cases changes must only be mentioned to the municipal authorities.
5. The precautionary principle is a theoretically very important horizontal measure. This measure is considered as one of the core points of the new decree. However, it is once again not clear what will be the importance of such a provision (for the forestry sector).
6. The Nature Conservation Decree also applies the “principle of integration” of the European environment policy. A public authority, authorised to award licenses, must impose such constraints that no avoidable damage to nature can arise.
7. The Flemish Supreme Council for Nature Conservation, which has to advice on nature issues, must subsequently regularly advice on forests as elements of nature.
8. The Institute of Nature Conservation must regularly draw up a “nature report”. Of course this report has also to assess the nature state in forests, evolutions that are to be expected and the past policy.

4.2. The region-directed policy of nature conservation

The decree considers three different regions:

- The Flemish Ecological Network (VEN), in which a specific policy on nature is issued.
- The Integral interweaving and Supporting Network (IVON), in which the authorities take care for the maintenance of the present nature values and take measures to favour nature values and biological diversity.
- Nature reserves.

The provisions of the Flemish Ecological Network are very important for the forestry sector, mainly for the private forest owners.

Nature conservation is dominant in these regions, which must still be marked out. Nature oriented plans must be designed in these regions till 2008 at the latest.

It is not clear for the forest owners what will be the consequences for their forests located within this network. For the time being the Nature Conservation Decree foresees some direct provisions, both for public owners and for private owners:

- The management plan must clearly indicate the measures needed to achieve the ecological objectives.
- Management plans must be in accordance to the nature oriented plans, which still are to be designed.
- A close to nature forestry and the designation of forest reserves must be encouraged.
- Water economy must be directed to a high nature quality.
- The use of biocides is forbidden.
- The change of vegetation is forbidden, unless it is foreseen in an approved management plan.

So the forest owner fears that the economic function of his forest will be strongly restricted.

4.3. General measures for the protection of the natural environment

The Nature Conservation Decree foresees a number of general measures for the protection of the natural environment, which are also partially important for the forest sector.

1. Acquisition

The Flemish Region has a right of precedence of purchase in several circumstances, a.o. for forests located in the VEN, for forests located in nature reserves and their immediate surroundings, for forests located in and around the IVON and in some nature oriented projects.

Also recognised ground managing nature societies have this right of precedence of purchase in the above mentioned regions, yet the right is restricted to the grounds which they are renting.

2. Voluntary management agreements

The Flemish government is entitled to conclude management agreements to the benefit of nature conservation. The management of exotic tree species, such as the control of black cherry, is a typical example.

3. Nature organisation project

Specific nature organisation projects aim at the optimal infrastructure of a region with respect to the maintenance, the recovery and the development of nature and natural environment. Such projects are only allowed when at least 90% of the area is located in a VEN or in forest regions.

The further stipulations of this article do not explicitly refer to elements of forest management, but to the water economy. Once again it is not clear how these stipulations can affect the forest sector.

4. Nature oriented plan.

Nature orientated plans must be designed for all regions (forests) located in the VEN and the IVON. The content of these plans is not yet known, yet these regions should already be delimited. The ecological functions of these regions should normally be emphasised implying that the economic forest functions will be restricted.

5. NEW ECOLOGICAL PROVISIONS OF THE REVISED FOREST DECREE OF 1999

The Forest Decree of 1990 has been profoundly revised in 1999. Part of these changes clearly strengthen or alter the nature value of forests.

5.1. The ecological forest function

1. The ecological function is completely revised. It encompasses today a.o.:
 - the favouring of autochthonous trees and shrub species;
 - the stimulating of self functioning processes;
 - the favouring of a variable forest structure by aiming a.o. at unevenaged and not uniform stands and at a sufficient number old trees and dead timber;
 - an appropriate management of all nature elements and of all valuable elements from a landscape-ecological and cultural-historical point of view;
 - management for the benefit of the maintenance, the development or the recovery of biological diversity, populations of rare species or subspecies and at the benefit of the maintenance, the development or the recovery of natural or partially natural habitats or ecosystems;
 - the maintenance or the recovery of natural water economy;
 - management directed at the control of all external harmful influence.
2. Management of public forests must always pay attention to the ecological function, as described above.
3. Prohibitions in public forests are strengthened. In principle it is forbidden to change the water economy and to use herbicides and fertilisers.

5.2. Forest reserves

1. The definition was revised. Not only the scientific function is stressed in forest reserves, but also and as much the ecological function.
2. The management of forest reserves does not occur anymore in all cases by the Forest administration. This is only still compulsory for forest reserves owned or rented by the Flemish Region.
3. Prohibitions are still more strengthened. In principle it is forbidden to hunt, to use herbicides and fertilisers and to set up any kind of constructions.

5.3. Management of forests

1. The Flemish government must design criteria for sustainable forest management.
2. Forest groups must aim at certain nature conservation objectives.
3. Owners of public forests are allowed to entrust the management of their forests to a nature society, provided those forests have the status of nature or forest reserve.

5.4. Deforestation

The general principle, as determined by the Nature Conservation Decree of 1997, i.e. deforestation is forbidden unless for works of public interest, has been liberalised under great pressure:

- Deforestation in zones with a destination of building area or industrial area or with a similar destination is allowed.
- The Flemish government is allowed to give an authorisation for deforestation on individual and motivated request of the owner.
- The conditions for compensations are partially determined:
 - Compensation is in principle proportional. Only for forests located in a recognised habitat region compensation can maximally reach a factor 2.
 - Compensations can only be implemented in already “green” regions.

- 5.5. The advice right of the Supreme Flemish Council for Nature Conservation concerning all kind of forest issues is extended.

6. DISCUSSION

Changes in opinion: Opinions on forestry and nature conservation have strongly changed during the last century (le Master et al., 1996). Subsequently, legislation had to adapt. In Flanders five steps can be recognised during the last decades with respect to the relation forestry-nature.

- The Forestry Service hardly pays attention to nature conservation in the forest. There are also no guidelines (before 1973).
- The Nature Conservation Act of 1973 formulates the first clear guidelines for nature protection in forests. The Forest Service, however, does not pay any attention to these regulations. This fact mainly shows why the conflict between forestry and nature conservation reaches such dimensions.
- The Flemish Forest Decree of 1990 clearly contains a number of ecological accents; Forest policy and forest management are more and more oriented to a close to nature forestry, in accordance with international developments (Pro Silva).
- The political power of nature conservation strongly increases and the direct and indirect influence of nature conservation on forest policy is becoming more obvious. The Flemish Nature Conservation Decree of 1997 changes to an important extent directly a number of provisions of the Forest Decree of 1990. In the long term the stipulations with an indirect influence on the forest are still more important.
- Also within the forestry sector and certainly within the Forest Service the visions on nature conservation in forests are highly developed. The ecological stipulations are to an important extent accepted by the revision of the Forest Decree in 1999.

Ecological importance of the Forest Decree: The increase of nature values in forests was one of the major objectives of the Flemish Forest Decree of 1990 (replacing the Belgian Forest Act of 1854). The measures, however, were mainly oriented to the public forests. In practice clear attempts were done in order to rise the biodiversity of these forests. Management plans must be adapted to this (Kleinschmitt, 1999). A large number of forests were designated as forest reserves. The Supreme Council of Nature Conservation must advice on forest issues directly dealing with nature, and the Nature direction must advice on afforestations in nature regions.

According to the Forest Decree of 1990 public forests must be managed on a multifunctional basis, with a balance between economic, ecological and social functions, according to the local circumstances.

The development in Flanders is similar to the development in many other countries, such as Sweden (Richter, 1999), Finland (Anon. 1997).

Major problems: The problems in Flanders between forestry and nature conservation correspond quite well to the ones formulated by Glück (1988), Essmann (1989,1993) Mann & Essmann (1998), Mann (1999):

- forest management (contains a number of questions, mainly consideration of ecological and social aspects);
- protection of species and biotopes, reserve areas;
- first afforestation;
- definitions of terms and norms, e.g. close to nature, sustainability, “ordered forestry”;
- competition between competent authorities;
- demand for more designation of unmanaged areas.

The Flemish Nature Conservation Decree of 1997 includes specific problems due to several points:

1. The great number of horizontal measures, which apply to the entire area, subsequently also forests, but of which the application is very vague. It relates a.o. to the stipulations allowing the Flemish government to take all needed measures over the whole territory in order to safeguard the environment quality and to ensure nature conservation, to the very important principle of “freedom of exploitation” in agriculture and forestry, the precautionary principle and the principle of integration.
2. Terms, describing the qualitative level of forest management, are not concretely defined (see also Mann, 1999). It is not yet known which forests will be taken up in the VEN and IVON regions, as well as it is not known which will be the consequences of a “dominant nature function”. Also the content of nature orientation plans must still be determined.
3. *The competence of the Forest Service on forests:* The Forest Decree of 1990 explicitly claims that the Forest Service is competent to apply forest legislation in all forests. This article was strongly discussed by nature conservation, because it wanted to have the explicit competence on forests with the status of nature reserve. Additional stipulations were added in 1999 to the Forest Decree under high pressure of nature conservation:
 - non state forest reserves are managed by the owner. Before they were managed by the Forest Service;
 - nature societies are presently also allowed to manage forest reserves.

4. *The ecological function of the forest:* The ecological forest function was completely revised in the Forest Decree of 1999. The traditional forest terminology is replaced by a typical nature conservation terminology. It must be indicated in the management plan of all forests, including the private forests, to what extent the ecological function is developed.
5. *The Flemish Ecological Network:* The creation of the Flemish Ecological Network is a major objective of the Nature Conservation Decree of 1997. Nature protection is the main objective in these regions.

It is to be expected that, contrary to the first purposes, many forests will be included in these regions. It can also be expected that there the economic function will be restricted. Yet, as already mentioned, these regions must still be delimited and the regulations still be issued. Nothing is also known on eventual compensations. So still many conflicts are probably to be expected between forest owners and nature conservation.

6. *Additional means:* The nature Conservation Decree of 1997 contains also a number of means, which are to a large extent new for the forest owner.
 - Nature license: it is needed for vegetation changes. However, it is not required when an approved management plan exists or when it concerns normal maintenance works.
 - Voluntary management agreements. This instrument was up to now not applied in the forestry sector in Flanders. The control of black cherry is to be considered as a typical example of such an agreement.
 - Subsidies. The Flemish government is allowed to award subsidies for measures favouring nature development. Moreover it can compensate the lack of income. Compensations awarded for the designation of reserves are typical examples. These can occasionally be very high. They are almost always higher than the normal income of a forest owner, since the financial forest result is often negative. Similar provisions can also be found in other European countries (Wagner & Gundemann, 1996; Anon. 1997a; Krott, 1997).
 - Acquisition. The Flemish government as well as recognised ground managing nature societies have, under certain circumstances, a right of precedence of purchase. This right was declined in the Forest Decree of 1990.
7. *Specific issues:* The following issues are of particular interest:

The Nature Conservation Decree of 1997 succeeded to principally forbid *deforestations*. They are only still allowed for works of public interest. These stipulations, however, were changed under high external pressure in the revised Forest Decree of 1999. Moreover the present compensation proposal is obviously not efficient, because they may only be executed in already green regions. The needed grounds will probably not be available

Remarkable is that the nature Conservation Decree strongly facilitates deforestations in nature reserves. Conservationists indeed consider the forest in many cases as an enemy for the development of nature values.

Though nature conservation strongly stresses the occurrence of autochthonous tree species, no specific attention is paid to *the management of exotic tree species* in the Nature Conservation Decree. Yet it is claimed in the revised Forest Decree of 1999, under the chapter of ecological function, that autochthonous

species must be favoured. The term “ site appropriate” tree species, as introduced in the Forest Decree of 1990, has been skipped.

It is well known that nature conservation pays much attention to the recovery of the *natural water economy* (Kapuscinski, 1997). This issue is regularly underlined in the revised Forest Decree of 1999.

Nature conservation can also impose constraints to forestry in order to *protect threatened species*. This is e.g. possible in accordance with measures to approve water economy. This is also possible by the application of numerous possibilities to stimulate forest biodiversity.

8. *Management plan*: The Forest Decree of 1990 has also imposed to the forest owners the constraint of a management plan. Today this appears to be a very good instrument to “escape” the constraints imposed by the Nature Conservation Decree of 1997. Indeed, for the time being everything approved by a management plan is allowed.

The question, however, is which constraints the management plan will have to fulfil in the future, when it will have to take into consideration the provisions of the VEN and of the nature oriented plans.

Taking into account the above considerations the *general conclusions* are obvious.

1. There are many overlaps between the Forest Decree of 1990, revised in 1999, and the Nature Conservation Decree of 1997.
2. The Forest Decree pays much attention to the increase of nature value in forests.
3. The impact of nature conservation on forest policy, forest legislation and forest management is obvious.
4. The Nature Conservation Decree probably will have in future a still greater impact on the Forest Decree and on the forest management.
5. Numerous sources of conflicts between the forestry sector and the nature sector are present. They can lead to a serious controversy between the two groups, whereby from the forestry sector mainly the private owner can be the victim.
6. Conflicts between the sectors will unavoidably lead to demotivation of the forest owner and subsequently to a decreased value of the forest patrimony.

It is obvious that, in order to achieve an efficient forest management for the 21st century, a collaboration between the forestry sector and the nature sector will be unavoidable (Zimmermann, 1991; Anon., 1997b; Mann; 1999). Indeed, the interest of the population for nature and environment is strongly increased and meanwhile also the term “participation” is well known (Weber et al., 1998).

With respect to the high requirements of nature conservation, it is nevertheless remarkable that Mann & Essmann (1998) claim, that the demand of nature conservation for the designation of more areas without management and the increased requirements to forest management by biotope and species protection are hardly recognised as the main elements of today’s forestry activities.

Collaboration between forestry and nature conservation assumes also, that nature conservation positively behaves towards the forestry sector and that it recognises also its weak points (Oettingen-Spielberg et al., 1998). Anyway the Nature Conservation Decree in Flanders is a very difficult workable instrument.

Besides, not only nature conservation should be a partner of forestry in Flanders, but also agriculture. (Lust, 1996).

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SPAIN'S FORESTS ON THE THRESHOLD OF THE 21ST CENTURY

IN MEMORIAM OF PROFESSOR GONZALO FERNÁNDEZ-TOMÁS

EDUARDO ROJAS BRIALES

1 INTRODUCTION:

On the 13th of October 1999 professor Gonzalo Fernández Tomás died from lymphatic cancer in Madrid shortly before his sixtieth birthday. The trajectory of the deceased and his active public life, always closely linked to Spain's forest policy, merited a public act which was organised by his University, the Polytechnic of Madrid, the company where he worked during the previous 10 years (TRAGSA), the College of Forest Engineers and the Spanish Society of Forest Sciences (SECF) through its forest policy group. In the act, that took place in the School of Forest Engineering, Professor Alberto Madrigal commented on Professor Fernández Tomás' personality. He emphasised his prolonged activity, from the Forest Congress of the FAO in Madrid in 1966, passing through different organic positions in the School, positions of responsibility in the State forest Administration forest at the time of the devolution to the regions, up to the deputy directorship of TRAGSA. His innumerable and extensive publications and prolonged links to the FAO were also mentioned. Outstanding among his lasting achievements are the implanting of a periodic national forest inventory and the identification of the forest social sciences as a vitally important field that until then had been underdeveloped and that still require considerable contributions. During the acts there was a round table with different personalities linked to professor Fernández Tomás from the forest world and moderated by Santiago Marraco, ex-president of Aragon. The discussion centred on the future of Spanish forests at the turn of the century. One of these presentations is reproduced below.

2 THE MEDITERRANEAN FORESTS HAVE SHIFTED FROM THE PRIMARY TO THE TERTIARY SECTOR

Historical process: The change from the 2nd to the 3rd Millennium is marked by the most important deep change in the relationship between society and forests in recent history. This always-mutating relationship, which is never easy, is precisely what determines and characterises forest policy.

At the time of the Enlightenment (See de la Croix (1801), Cavanilles (1797), Jovellanos (1983), Rojas (1992 & 1996a)). European forests were on another historic threshold, the one that meant the end of their use as mere primary resources with the beginnings of professional management discernible- based on the principle of persistence¹ - orientated towards supplying growing industry and construction (secondary sector). Nowadays, they have become an eminent tertiary resource. All this has occurred gradually while conserving elements of the previous primary or secondary role. Clear examples of this include rural development, or the need to cover the demands of the wood industry.

¹) The conceptual precursor of the actual principle of sustainability is non other than the forest persistence or "Nachhaltigkeit" first described by Carlowitz in 1713 (Speidel, 1984) with which it shared the mandate of maintaining capital using only the yearly revenue with the aim of not conditioning the options for coming generations (Weizsäcker, 1997).

This evolution is not exclusive to forests. Many other resources have been tertiarised thus substantially modifying their purpose. We could cite examples, such as the chimneys of old factories that are incorporated into the cityscape as decorative elements, or the revaluation of the previously useless coasts and high mountain areas, the tertiary transformation of the ports, the agro-tourism phenomena or the recovery of rafts as tourist activities. All policies that aim to be successful will require a realistic analysis of the starting point and especially the context in which they are developed. Thus, an awareness of the consequences of change from a primary to a tertiary context means for forests is fundamental.

Paradoxical threats: The main risks in the previous primary framework were agricultural pressure (cultivation of marginal land, especially on slopes by means of terraces) and extensive livestock rearing, together with the over-exploitation of the forest (timber, firewood, tannins, teas, resin, acorns, pine nuts, esparto grass, etc.) masterfully described by Cavanilles (1795) and de la Croix (1801). Nowadays the challenges lie both in the infra-management of all the primary aspects (abandonment of agriculture, livestock and forestry) as well as the other side of the coin characterised by punctual or lineal activities with a high impact. In resume, the risks in the past were the result of necessity— as are those behind the deforestation in the Tropics nowadays - while in modern times these are a result of abundance.

Challenges and opportunities: If the challenge then was to clarify and update the medieval property rights, nowadays the challenges are to harmonise the multiple overlapping social demands and, especially, clarify the economic obligations of the beneficiaries.

If the opportunities were then found in the market for forest products that offered interesting profits— as they did up to the 1960s-, nowadays it is the unstoppable demand for nature and especially forests by a highly urbanised society. Prices at that time in the past perfectly reflected costs in captive markets as a result of the indispensable nature of wood and other forest products for a wide range of uses and the local scale of markets owing to the extremely high costs of transport. Nowadays, in the context of the globalised economy, prices are marked by more competitive economic and natural conditions— very different to the modest ones of the Mediterranean climate and landscape— and the competitive wood products that, it can be mentioned, until now have not internalised the environmental costs². The strength of the debate that globalisation generates in society can be gauged from the violent demonstrations during the recent annual meetings of the IMF and the World Bank in Seattle and Prague.

Changes in forest policy: The only period of recent Spanish history when one can talk of an active forest policy is the post-war decades (1940-70). The concentration on public investment, especially on afforestation, their top down approach together with other policy connotations has generated a ruthless criticism³. In this criticism, imperceptible in other policies that were contextualised in their time- such as hydraulic works, roads, social welfare, health, education, etc. —, we can find the origin of the difficulty of reaching the minimum social consensus necessary to define and instigate a forest policy in the new democratic regime. The attempts at a regional or

²) This is the case of the aluminium, iron, cement, plastics, fossil fuels, among others whose current prices only reflect the costs of extraction, transformation and transport but not their high environmental costs (non renewable, recycling, energy consumption, extractive environmental impact, etc.).

³) See Saenz (1984), Groome (1988 & 1989), Adena-WWF (1989).

state level (Spanish Forest Strategy, 1999) have generally gone no further than declarations without the slightest consequence in the budgets.

In any case, the criticism of this policy – and the useless corporate efforts to counteract it – are sterile given that the socio-economic circumstances have nothing to do with the current circumstances so that adaptation or not to the conditions of before are the responsibility of historical analysis. In any case, seeking its reincarnation would be nothing other than nostalgia. Consequently, the forest policy instruments (normative, administration, means, property, etc.) designed for a mainly primary and, in some cases, secondary context, have to change radically when the context becomes overwhelmingly tertiary as is the case of the Mediterranean forests⁴.

*Searching for new ways to valorise the Mediterranean forests*⁵ : As has occurred with other resources, perhaps the principal risk consists of the change from a primary context where the value of the forest no longer lies to another tertiary context where it is valued, although in a different way. This is happening over an excessively long lapse of time and generating a situation of collapse for lack of viability and the consequent lack of economic interest in its management and maintenance. The practically uninhabited interior zones or with a totally aged population cannot be mobilised from within however interesting the perspectives created by the demands of interior tourism are. On the other side of the coin, the coastal zones cannot be completely covered in concrete for infrastructure, commercial, industrial and residential areas completely transformed into an artificial environment and disconnected from both their history and natural environment and the rest of the territory.

To sum up, the principal change that has occurred in the forest environment since the 18th century is the move from a horizontal primary management to an exceptional lineal or punctual management and the great impact as a consequence of urbanisation and tertiary demand. The different activities, as illustrated by modern infrastructures such as the high speed train or motorways have lost their relation with the surrounding territory generating a growing lack of solidarity that is felt by the people affected.

Thus the crisis in the earlier model of development, which characterised the second half of the 20th century, is shown. This model was marked by a strong territorial imbalance, based on the model of the compact city which is highly alienating – both in human and environmental terms –, while the rest of the territory is converted into a free space always available for unrelated uses (infrastructure, urban land⁶, residues, leisure activities) and supply of goods either by simple market rules or by imposition to the best convenience of the predominating urban society.

On the other hand, Roman law as a normalising element over 20 centuries shows clear signs of exhaustion given the new tertiary challenges and uses of the rural environment and their environmental interconnections. It is for example obsolete to continue considering hunting, a renewable natural resource, as a *res nullius*, or limit the property rights of a bottling plant to the chance location of the spring and not to all the watershed or thinking that the tertiary potential of the forest estates can be mobilised over access rights designed for the characteristic neighbourhood relations of primary economies which lack the mobility provided by the private car. In fact, it denotes an evolution of legislation in this sense⁷.

⁴) See Aullo (1976) & Rojas (1995 & 2000).

⁵) See Rojas (1995, 1996b, 1999a & 1999b).

⁶) The urban legislation has treated the agro-forest space like this.

⁷) See the Law on Motorised Access to the Natural Environment (1995).

As the Romans said, it is the dose rather than the poison that matters. What was a risk through excess nowadays can become a risk through lack (felling, livestock, etc.). The problem of forest fires is based precisely in the coming together of an excess of non-used biomass that accumulates in the country -and that under Mediterranean climate is released by fire - and the increase in the causes of ignition resulting from the appearance of a new "urban-forest" inter-phase resulting from the linear or punctual infrastructures that urban society requires⁸. Thus deep changes are necessary in policies that were adequate in the past but are not so for the future.

3 CONCLUSIONS: FROM SUPPLY TO DEMAND ORIENTATION

In the last two centuries, the main object was the resource, limiting the offer to the production possibilities (traditional forest management plans). In contrast, nowadays, and even more so in the future, attention must be re-orientated to demand by searching for the way to harmonise this without endangering sustainability, optimising the social output, with all this financed in an effective and solidarity way⁹.

One of the most deeply rooted misconceptions is that nature is free. On the contrary, experience shows that nature in good condition is expensive and that until now the financing of this has not been resolved at European, state, regional or local level. The lack of final funds from the European Union for the application of the Natura 2000 network or the minute proportion of local budgets invested in the non-urban part of the municipal areas are two extreme but manifest examples.

Thus it is necessary to:

- Make barter and values, utilities and externalities of the forests for society come to the surface and be recognised in accordance with the general evolution of the economy¹⁰.
- Recognise the inadequacy of state ownership and the principal of unique state cash¹¹, ensuring that the beneficiary¹² pays and not the general public in a diffuse way through taxes and that even less should those who provide the offer be penalised.
- The challenge is to transform the risks into opportunities (fires, building, etc.).

The challenge is fundamentally distributive in nature and thus political. The principal risk is in the social weakness and the rooting in the past characterised by the fear of losing the reduced economic and social power that remains from earlier phases. In contrast, the principal strength is the ownership and the time factor together with the growing environmental demand.

The key element for this is the structuring of civil forest society similarly to how the workers resolved the distributive challenge at the high point of the industrial revolution through strong unions.

⁸) Rubbish dumps, electric line, roads, railways, etc.

⁹) See article 45.2 of the Spanish Constitution (1978).

¹⁰) The care of children and the elderly has evolved from being an activity of intra-family bartering into an economic activity whose rise has only nominally increased the GDP.

¹¹) The health policy, of undoubted utility public and thus lacking the private/public synergy intrinsic to forests, for a correct and efficient provision de services requires the separation of the sources of finance from the individualised provision of the services that can even be perfectly privatised in conditions of competition. In the actual system in which the financing and provision are diluted in the same administrative organ, it is impossible to privatise partial provisions given that the cost and the conditions de competition between the public and private health care are everything except transparent and just.

¹²) Free rider in the sense of Olson (1965) cited in Lamo de Espinosa (2000).

Towards a democratisation of the forest and nature protection policies: Finally, a profound democratisation of forest policy and nature conservation¹³ is needed in consonance for example with the emancipation of women where the disregard for rights for the sake of the juridical good is no longer accepted however much this may be considered superior¹⁴. Prevalence for the sake of the common good as a strategy to solve conflicting interests has been overcome in social and environmental market economies by the principle of harmonisation. Society has the obligation of building a framework that leads the social and market agents to the maximum coincidence between their objectives and those of society itself. The intelligent use of multifunctional fiscal and economic instruments in environmental policy opens promising perspectives¹⁵. Here is the challenge of an advanced society.

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IMPLICATIONS OF THE FEDERAL INCOME TAX FOR PRIVATE FOREST ECOSYSTEMS IN THE UNITED STATES

WILLIAM C. SIEGEL

INTRODUCTION

Changing societal demands on private forestlands in the United States in recent years have resulted in greater emphasis being placed on ecosystem management, environmental protection and enhanced stewardship. These concerns are implicitly included in the move to sustainable forest management, an evolving concept which has several definitions. The definitions can be summarized as: "the practice of meeting the forest resource needs and values of the present without compromising the capability of future generations to do the same" (Society of American Foresters 1998). The federal income tax is a significant component of this changing scene. In this paper the major provisions of the tax that are applicable to private forests in the United States are examined. The discussion is directed not only in terms of contributions to the enhancement of sustainable management on private forest ecosystems, but also to the detrimental role sometimes played by the income tax.

THE MOVE TO SUSTAINABLE FORESTRY

Development of Best Management Codes

Forest management practices that are well designed and properly applied are fundamental to forest resource sustainability. As reflected in best practice codes, they can insure sustained forest productivity for market goods, ecological enhancement, and protection of the social and cultural values associated with forests. Such codes are among the most important tools for responding to the increasing public demand for sustainable forestry programs (Cubbage and Moffat 1997).

Best practice codes are usually written as outlines of various forestry practices that are considered to be technically, economically and politically acceptable for achieving certain defined conditions of forest sustainability. They have been developed and implemented in the United States by a large number of both public and private entities. Government agencies, often in response to legal mandates, have been the most active in promulgating and applying best practice codes. Usually the overriding legislation is federal in nature, which then indirectly relies on state governments for development and implementation.

Nevertheless, private organizations representing a variety of interests aligned with sustainable forestry have also drafted codes of best practices for forest management. These are usually associated with various forest certification programs which are voluntary, nonregulatory approaches to promotion of improved forest practices. Certification of a forest implies that the management being practiced meets approved standards issued by a designated authority (Society of American Foresters 1999). Privately developed and implemented codes of forest practices utilized in the United States include, among others, the Sustainable Forestry Initiative of the American Forest and Paper Association (American Forest and Paper Association 2001) and the forest certification program of the Forest Stewardship Council (Forest Stewardship Council 1999).

Role of Investment in the Acceptance of Best Practice Codes

Best practice codes can contribute to enhanced forest sustainability only to the extent that they are accepted and applied by forest landowners and timber harvesters. In many cases, voluntary acceptance and application is the primary approach to their use. The key to success, however, is directly related to financial investment in forest management and protection. If investment capital is lacking in the private forest sector, sustainable management -- together with the associated economic, ecological and social benefits -- may not materialize.

Forest investment is often discouraged by certain inherent characteristics of forests. For example, long growing periods create substantial holding costs and result in revenue uncertainty. Forests are also at risk to insect and disease infestations, and to fire and other natural casualty agents. Economic risks must also be considered. Timber markets fluctuate widely over periods of time -- sometimes at short intervals -- making it often difficult to predict accurate returns on forestry investments. Additionally, environmental risks are present. In many cases, significant portions of forest properties must either be permanently set aside or be subject to only limited timber harvesting due to environmental constraints. Consequently, forest investment is often discouraged in favor of other investment opportunities that provide greater and quicker returns with less risk. This means that policies and programs which encourage adequate long-term forestry investment are essential for sustainable use, management and protection.

THE INFLUENCE OF TAX LEGISLATION

No other single institutional factor in the United States is as all-pervading in its effect on economic behavior and financial investment, including that associated with forests, as is the tax system (Gregory 1988). Any tax affecting the absolute size of the net investment return will have a definite influence on investment decisions. Taxes, therefore, play a critical role in determining the extent to which a framework for supporting sustainable forestry exists. They can either encourage or discourage certain behavior and the subsequent production of goods and services associated with forests.

Tax Policy

Conceptually, tax policy must be well designed, properly focused and well administered if it is to guide investment toward the goal of sustainable forestry. A number of principles have been suggested in this regard.

Equity: Tax policies should provide for equal (fair) treatment among various sectors and also among individuals within a sector. Although tax equity is an important consideration in forestry, tax equity goals applied to forests often conflict with one another (Klemperer 1996).

Efficiency: Tax policies should be efficient in their ability to gather revenue for government operations and to influence private investment decisions. They should not distort or adversely affect market behavior. They should also not adversely affect the timing of management decisions such as harvesting and various silvicultural practices (Hibbard et al 2001).

Simplicity: Tax policies should be simple to administer and easy to comprehend. Taxpayers should clearly understand who is taxing them, how the tax is determined, and how to make optimal use of various tax provisions.

THE FEDERAL INCOME TAX

In the United States the federal income tax law impacts private forest landowners and forestry investment behavior more than do any of the many other tax laws that have been enacted (Siegel 1987). Set out in the Internal Revenue Code, this tax has been in place since 1913 when it was established by passage of the sixteenth amendment to the U.S. constitution. Several of its provisions apply specifically to forests and timber; other provisions apply in general terms. Many of these are written in complex terms and are confusing in application and interpretation. Effects vary among forest owners, depending on their classification for tax purposes and the level of their involvement in managing forest property (Siegel 2002). Relatively few provisions, however, have the specific objective of encouraging forest owners to make long-term investments in forest resource management. Rather, most apply to all taxpayers. Four areas of the federal income tax have a major bearing on forestry investments (Siegel 1987). These are: (1) the reforestation amortization and credit provisions, (2) capital gains treatment of timber income, (3) deduction of forest management expenses, and (4) the taxation of government cost-share payments received by landowners for forestry practices.

Reforestation Tax Incentives

Reforestation Amortization: As a general rule, under the U.S. tax code, direct costs incurred in connection with reforestation -- whether by planting or by natural regeneration -- are required to be capitalized. Such expenditures include those made for preparation of the site, for seeds and seedlings, for control of competing vegetation until the seedlings are established and free to grow, and for labor and tools. This means that the costs may not be deducted immediately from the landowner's income as reported on his or her tax return but can only be deducted from income realized from harvesting the trees that were planted. In most cases this will mean a wait of many years. In recognition of this problem, Section 194 of the tax code, enacted in 1980, provides a limited exception to the general rule. It permits a landowner to amortize (deduct) over eight years up to \$10,000 annually of qualifying reforestation expenses associated with commercial timber production. By amortizing, the deductions may be applied to whatever income from any source is reported on the tax return. Those reforestation expenditures in excess of \$10,000 per year are capitalized in the usual way as explained above.

Reforestation Credit: At the same time that Section 194 was added to the tax code, the income tax law was amended to provide a 10 percent reforestation tax credit under Section 48. A credit, unlike a deduction from income, is a direct offset against taxes owed and is thus more valuable. As with amortization, a \$10,000 per year limitation also applies to the credit. Since the credit is 10 percent, this means that a maximum of \$1,000 per year may be claimed as a credit and used to reduce the taxes associated with income from any source.

Sustainable Forestry Implications of Amortization and Credit: The \$10,000 annual limitation on use of the reforestation amortization and credit provisions has been in place since enactment of the law in 1980 with no subsequent increase in the eligible dollar amount. During the intervening years reforestation costs have more than doubled. Therefore, although these particular provisions of the income tax law were designed to provide an investment incentive for forest landowners, the benefit has become considerably less valuable for that purpose over time.

The trend among many nonindustrial private forest owners in the United States today -- particularly those owning small parcels of forest land -- is away from primarily

timber production to management for other benefits (Hoover and Koontz 2002). Although many of the resulting environmental goods and services often devolve from the planting of trees, they are generally not marketable -- or only minimally marketable. They do, however, provide significant public benefits. If Sections 48 and 194 of the tax code are to encourage private forestry investment and sustainable forestry practices in future years, the law must be amended in several respects. First, the \$10,000 annual limitation for both amortization and the credit should be increased to at least \$25,000, in recognition of current costs or reforestation, and thereafter indexed for inflation. Secondly, Sections 48 and 194 need to be broadened to remove the requirement for commercial timber production and to include tree planting associated with qualified environmental and conservation practices. In recent years numerous legislative bills to accomplish these recommendations have been introduced in the U.S. Congress, but none have been passed into law.

Capital Gain Treatment of Timber

The U.S. federal tax code provides for lower tax rates on long-term capital gains as opposed to ordinary income. A capital gain is the profit realized from the sale of capital assets held for more than one year as investment property. Capital assets include -- among other things -- securities (stocks and bonds), certain timber property, and collectibles such as art. Gains from the sale of these same items, if held as part of a business, are not eligible for the lower capital gain tax rates but instead are taxed at higher rates as ordinary income. Since 1944, however, there has been an exception for timber to this general rule. Proceeds from the sale of standing timber held as part of a business are also eligible for capital gain treatment if the timber is disposed of in a certain way under very complex rules in accordance with Section 631(b) of the tax code. This provision of the tax law was enacted largely for the purpose of eliminating the tax inequity that existed between timber owner who did not manage their forest lands (investors) and those who actively pursued long-term management (Briggs and Condrell 1986). Under tax law rules, many owners in the latter category are classified as being a business with respect to their forest ownership.

Capital Gain Eligibility Needs to be Simplified: In comparison to being taxed as ordinary income, capital gains treatment for timber income can substantially lower tax bills and thus raise investment returns. Noncorporate taxpayers are currently taxed at six levels for ordinary income, with a maximum rate of 38.6 percent. The highest rate for long-term capital gains is only 20 percent, and some long-term gains are taxed at 18 or even 10 percent. As mentioned above, all timber income is technically eligible to be taxed as a capital gain rather than ordinary income. Past this, however, the simplicity ends.

So-called lump-sum timber sales are the easiest to make, the least complex, and generally bring the highest price. The trees are sold outright for a fixed price agreed upon in advance, often involving a sealed bid process. Title to the trees passes to the purchaser, who then has an agreed upon time for harvesting. Forest owners classified as investors qualify for capital gains treatment with lump-sum sales. However, if an owner's silvicultural and harvesting activities rise to a certain level, income from this type of sale may no longer qualify as a capital gain. The person who actively manages his or her property may no longer be considered an investor in forest land but instead be classified as being in the timber business. There are no specific rules governing when this status is reached, which creates major problems and confusion for forest owners.

In order to avoid the risk of losing capital gains treatment for their timber transactions, many persons are forced to sell timber under the rules of Section 631(b) of the tax code. This involves using a written legal contract under which the risk of loss to the trees is borne by the seller until they are cut -- unlike a lump-sum sale where title to the trees is transferred before they are harvested. The timber is paid for on a measurement basis after it is cut. These types of contracts are extremely complex and confusing, and lend themselves to fraud and abuse against landowners. They are disliked by many reputable timber purchasers, which limits the availability of prospective buyers. Less money is usually received for the timber as a result. Many forest owners, therefore, are discouraged from actively managing their properties and practicing sustainable forestry.

For the last four years, remedial legislation to permit lump-sum sales to be made under Section 631(b) has been introduced in the U.S. Congress but to date has not been enacted into law. This change is essential if the timber capital gains provisions of the tax code are to provide maximum encouragement for sustainable forestry investments.

Deduction of Management Expenses

Nonindustrial private forest owners in the United States are subject to exactly the same tax rules as all other taxpayers with respect to the deduction against income of current operating costs related to investments and businesses. Therefore, as a general rule, timberland owners are basically eligible to deduct their management costs from income from any source in the year that the costs are incurred -- as opposed to capitalizing them as discussed earlier. Management costs include all normal expenses associated with the forest property such as fees paid to a consulting forester; expenditures for silvicultural practices, timber cruising, and boundary line maintenance; the cost of insurance; and property taxes. Again, however, it is here that the simplicity ends. The uniqueness of forest ownership and management, as contrasted to other types of investment, creates a number of difficulties not faced by most other taxpayers who do not have forest land.

Taking Deductions by Timber Investors: For those forest owners who are considered for tax reasons to be investors as discussed above, most management costs are defined as "miscellaneous itemized deductions" on the income tax return. This means that the costs can only be deducted to the extent that they exceed two percent of the taxpayer's adjusted gross income from all sources -- and then only if it is otherwise advantageous for the taxpayer to itemize deductions on the tax return. For many forest owners, reasons unrelated to forestry preclude itemizing deductions. The end result is that a large proportion of management costs incurred by forest "investors" are unable to be deducted. Recovery of the costs is permanently lost.

Taking Deductions by Those Whose Forest Land is a Business: For those forest owners whose timber ownership is considered a business, as discussed above, the so-called passive activity loss rules of the income tax law govern the deduction of management expenses. Many persons in this category are unable to meet the rigid requirements of these rules which are applicable to all businesses but which have little relationship to the unique characteristics of nonindustrial forest ownership. Even if the rules can be met in a particular year, they generally preclude using the services of a consulting forester or hired labor, or having family members assist with managing the property. When the rules cannot be met, the expenses incurred must be suspended until timber is sold; at that time they can be deducted from the sale

proceeds. Often this is many years after the expenditures are made which has a significant negative impact on investment return.

Implications of the Timber Expense Deduction Rules: As discussed above, many forest owners who actively manage their properties for timber production are unable to fully deduct their management costs each year on their income tax returns. This is unfortunately the case even though the tax law generally provides that operating expenses are deductible if directly related to the production of income. But the problem goes beyond this. As pointed out earlier, many forest owners in the United States, particularly those who have only small properties, are turning away from primarily timber production to management for nonmonetary benefits. The outputs that result are also important components of sustainable forestry. But since a profit motive is lacking, the associated management costs are never deductible.

Private forest owners in the United States are increasingly being required or requested to incur costs primarily associated with improving the environment. These activities frequently reduce the income potential of the property rather than increase it since they often involve reducing the acreage available for commercial timber production. Examples include set-aside acreage for the protection of endangered species, and buffer zones near waterways in which timber harvesting is prohibited or severely limited. Such costs are also not deductible under any circumstance.

The current income tax rules relating to deduction of annual management costs negatively impact forestry investment by a significant proportion of private forest owners in the United States. If this situation is to be remedied, the law needs to be changed. The complex rules should be simplified and modified to recognize the uniqueness of forestry operations. The parameters also need to be broadened to permit the deduction of expenditures -- whether voluntary or mandatory -- which are related to those nonmarket forest activities that contribute to a sustainable forestry environment. Several bills have been introduced in the U.S. Congress over the past ten years to do this, but support has been weak and none were enacted into law.

Taxation of Government Cost-share Payments

Section 126 of the U.S. tax code governs the income taxation of government cost-share payments received by forest owners. These are payments made by various government entities for part of the costs of reforestation and various silvicultural practices. Generally, if income (such as from a timber sale) was realized from the property during the three years preceding the year the cost-share funds were received, the money is not included in the recipient's income and thus is not taxed. However, if there has been no income from the property during this three year period, only part of the money received will be exempt from taxation. The exempt portion will vary from one situation to another, depending on a complex formula set out in the income tax law (Siegel, Hoover, Haney and Liu 1995).

Implications of Cost-share Taxation for Sustainable Forestry: As indicated above, Section 126 of the tax code discourages landowners from participating in cost-share programs if there has been no income from their forest property during the three preceding years. This arbitrary rule has no logical relationship to the timing of forestry practices. If Section 126 is to fully encourage forestry investments, and in turn the practice of sustainable forestry, it needs to be amended to delete the income test and to provide that cost-share payments received by forest landowners are excludable from taxable income under all circumstances

CONCLUSION

Legislative decision makers in the United States appear not to be fully cognizant of the potential level and value of the ecosystem services that are provided by well managed forest land. Support for federal income tax changes and other policy options to address the encouragement of sustainable forestry practices will depend in great part on an increase in awareness of private forest resource values by members of the U.S. Congress. The public at large is becoming increasingly vocal with respect to enhanced stewardship on private forests. There are indications that its voice is beginning to be heard in the Congressional halls. Tax changes as outlined above may be close.

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STELLUNG UND STÄRKUNG DES WALDEIGENTUMS IN DEUTSCHLAND

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1. VERFASSUNGSRECHTLICHER HINTERGRUND

Art. 14 des deutschen Grundgesetzes (GG) schützt das private Eigentum als Rechtsinstitut. Dem Schutz unterliegen alle vermögenswerten Rechte. Inhalte und Schranken des Eigentums werden vom Gesetzgeber festgelegt. Der Gestaltungsauftrag des Gesetzgebers ist weit. Bei der Neufestlegung eigentumsgestaltender Regelungen ist innerhalb des Rahmens von Privatnützigkeit, Bestandsschutz und Sozialbindung eine umfassende Abwägung vorzunehmen. Dem Verhältnismäßigkeitsgrundsatz kommt hierbei besondere Bedeutung zu, sodass die gesetzlichen Regelungen zur Erreichung der mit ihnen verfolgten Zwecke stets geeignet und erforderlich sein müssen. Zumutbarkeitserwägungen spielen vor allem im Einzelfall eine Rolle. Der Gesetzgeber hat daher sicherzustellen, dass individuelle Rechtspositionen durch Befreiungs- oder finanzielle Ausgleichsregelungen im Vollzug der Gesetze sachgerecht berücksichtigt werden können¹.

Das Eigentum an Grund und Boden wird seit jeher weitgehenderen Beschränkungen unterworfen als das Eigentum an mobilen Gegenständen. Es unterliegt tendenziell einer erhöhten Sozialpflichtigkeit, die mit der Unvermehrbarkeit des beschränkten Gutes Grund und Boden begründet wird. Die Sozialpflichtigkeit bestimmt sich bei Grundstücken aus seinem Zustand und seiner Lage im Verhältnis zur Umgebung². Situationsbedingte Einschränkungen der Nutzungsfähigkeit des Grundeigentums ergeben sich i.d.R. aus den ökologischen Eigenheiten eines Grundstücks. Zur Beurteilung der besonderen Situation eines Grundstücks sind aber auch die bisherige Nutzung und der Umstand von Bedeutung, ob potenzielle Nutzungsmöglichkeiten bestehen. Bestandsgeschützte und sich objektiv anbietende Nutzungen können daher ebenso eine Situationsberechtigung begründen³.

Das Eigentumsrecht nach Art. 14 GG ist in erster Linie als Abwehrrecht gegen staatliche Beschränkungen angelegt und erst in zweiter Linie als Anknüpfungspunkt für Ausgleichs- und Entschädigungszahlungen. Dieser klare Aufbau des Eigentumsgrundrechts wird in letzter Zeit durch den Gesetzgeber aufgelöst, der in den neueren Umweltgesetzen verstärkt dazu übergeht, umfassende Ausgleichs- und Entschädigungsregelungen zu verankern, die weit über die auf atypische Ausnahmesituationen bezogenen Billigkeits- und Härtefallregelungen früherer Prägung hinausgehen⁴. Auch die neuere Rechtsprechung des Bundesverfassungsgerichts (BVerfG) bricht mit dem Prinzip der Nachrangigkeit finanzieller Kompensation, indem sie dem Gesetzgeber nunmehr aufgibt, in den gesetzlichen Ausgleichsregelungen präzise festzulegen, welche Einschränkungen ausgleichspflichtig sein können⁵.

¹ Ausführlich dazu Wagner/Jönsson, Einschränkung der Waldbewirtschaftung durch Naturschutzauflagen, Augsburg/Göttingen 2001, S. 25 ff.

² Z.B. Bundesgerichtshof (BGH), Natur + Recht (NuR) 1989, S. 407.

³ Z.B. Bundesverwaltungsgericht (BVerwG), Die öffentliche Verwaltung (DÖV) 1993, S. 1091.

⁴ Z.B. § 10 Abs. 2 Bundes-Bodenschutzgesetz (BBodSchG), § 3 b Bundes-Naturschutzgesetz (BNatSchG), § 19 Abs. 4 Wasserhaushaltsgesetz (WHG).

⁵ Bundesverfassungsgericht (BVerfG), Deutsches Verwaltungsblatt (DVBl.) 1999, S. 698 ff.; siehe dazu z.B. Battis, Denkmalschutz und Eigentumsgarantie, NuR 2000, S. 421 ff.; Schmidt, Die Aufopferung vermögenswerter Rechte, Neue Juristische Wochenschrift (NJW) 1999, S. 2847 ff.; Stüer/Thorand, Abschied von salvatorischen Klauseln im Denkmal- und Naturschutzrecht, NJW 2000, S. 3737 ff.

2. GESETZLICHE REGELUNGEN DES WALDEIGENTUMS

Neben den Waldgesetzen enthalten auch die neueren Umweltgesetze eine Vielzahl von Bestimmungen, die Anknüpfungspunkte für forstlich relevante Vorschriften darstellen. Neben den gesetzlichen Verschlechterungs- und Beeinträchtigungsverböten (z.B. für geschützte Biotöpe oder europäische Schutzgebiete)⁶ sind es vor allem Handlungsermächtigungen für die Verwaltung, die zur Umsetzung der jeweiligen umwelt- oder bodenschutzrechtlichen Ziele Rechtsverordnungen erlassen kann (z.B. zur Ausweisung von Natur- oder Wasserschutzgebieten)⁷ oder im Rahmen einzelner Erlaubnisverfahren vorab Gelegenheit erhält, die vorgesehenen Massnahmen auf ihre Vereinbarkeit mit den Schutzzwecken der einschlägigen Umweltgesetze zu überprüfen⁸.

Das Handlungsinstrumentarium als solches ist nicht neu, zugenommen hat dagegen die Zahl der nationalen Umweltgesetze, was insgesamt zu einer Ausweitung der Schutzziele geführt hat. Zu nennen ist hier insbesondere das Bodenschutzrecht, die Wasser- und die Naturschutzgesetze. Die Aufwertung und Ausweitung umweltrechtlicher Vorschriften ist massgeblich durch das Europarecht beeinflusst worden, das seit einigen Jahren auf eine Anhebung des ökologischen Schutzstandards in der Gemeinschaft abzielt⁹.

Die Forstwirtschaft ist beispielsweise durch den Aufbau des europaweiten Schutzgebietsnetzes Natura 2000 und die durch die Mitgliedsstaaten zu gewährleistende Umsetzung der Fauna-Flora-Habitat-Richtlinie (FFH-RL)¹⁰ und der Vogelschutz-Richtlinie (V-RL)¹¹ in grossem Ausmass betroffen, da ein grosser Teil der zu schützenden Lebensräume Waldhabitate sind. Auch im Bereich der Projekt- und Programmplanung geht die Europäische Union (EU) in Richtung eines fachübergreifenden Schutzansatzes. Für die Forstwirtschaft ergeben sich diesbezüglich erhöhte Anforderungen aus der Verpflichtung zur Umsetzung der europäischen Richtlinien zur Umweltverträglichkeitsprüfung (UVP)¹² in das deutsche Recht oder der unlängst in Kraft getretenen EU-Richtlinie zur Prüfung der Umweltauswirkungen von Plänen und Programmen¹³.

3. ZULÄSSIGKEIT UND GRENZEN DER REGELUNG DES WALDEIGENTUMS

Gesetzgeber, Verordnungs- und Satzungsgeber, Planungs- und Vollzugsbehörden tragen eine grosse Verantwortung, um die im Spannungsfeld zwischen der Freiheit des Waldeigentums und den gesellschaftlichen Ansprüchen an eine die Interessen des Allgemeinwohl berücksichtigende Nutzung der Wälder entstehenden Konflikte zu begrenzen. Hoheitliche Regelungen des Waldeigentums sind daher im deutschen Recht generell nur zulässig, wenn

- die Schutzwürdigkeit und Schutzbedürftigkeit einer Fläche/eines Biotops/einer Art nachgewiesen ist,
- die Eignung und Erforderlichkeit der Nutzungsregelungen zur Erreichung der angestrebten Schutzziele nachgewiesen ist,

⁶ Z.B. §§ 19 c, 20 c BNatSchG, Art. 6 FFH-RL.

⁷ Z.B. §§ 12 ff. BNatSchG, § 19 WHG.

⁸ Z.B. § 8 BNatSchG, §§ 9, 10 Bundes-Waldgesetz (BWaldG).

⁹ Anschaulich Jans, *European Environmental Law*, 2th ed., Groningen 2000, S. 2 ff.

¹⁰ RL 92/43/EWG vom 21.5.1992, Amtsblatt (ABl.) EG Nr. L 206, S. 7 ff.; zum Problemfeld europäischer FFH-Gebietsschutz und Forstwirtschaft vgl. Christophersen, *Natura 2000 und Forstwirtschaft*, Augsburg 2001; Jünger, *Umsetzung und Vollzug der FFH-Richtlinie und deren Auswirkungen auf die Forstwirtschaft in Deutschland*, Dissertation Univ. Freiburg 2002.

¹¹ RL 79/409/EWG vom 2.4.1979, ABl. EG Nr. L 103, S. 1 ff.

¹² RL 85/337/EWG vom 27.6.1985, ABl. Nr. L 175, S. 40 ff.; RL 97/11/EG vom 3.3.1997, ABl. Nr. L 73, S. 5 ff.

¹³ RL 2001/42/EG vom 27.6.2001, ABl. Nr. L 197, S. 30 ff.

- die Massnahmen dem Eigentümer im Hinblick auf den mit ihnen angestrebten Erfolg (insbesondere wirtschaftlich) zumutbar sind¹⁴.

In diesem Rahmen ist eine Abwägung der betroffenen Belange vorzunehmen. Diese Abwägung hat sich an bestimmten Leitvorgaben auszurichten¹⁵:

3.1 GRENZEN DER ABWÄGUNG

Von grosser Bedeutung ist hierbei zunächst, ob sich umwelt- und bodenschutz-rechtliche Auflagen auf bereits verwirklichte, bestandsgeschützte oder auf nur mögliche, bislang aber nicht ausgeübte Nutzungen beziehen. Der legal geschaffene Eigentumsbestand ist generell geschützt, in ihn darf ohne Einwilligung des Eigentümers (enge Ausnahme: Enteignung) nicht eingegriffen werden¹⁶. Vor diesem Hintergrund gilt:

Unstrittig ist, dass die bisherige Bewirtschaftung eines Waldes einschliesslich der im Rahmen ordnungsgemässer Bewirtschaftung erforderlichen Pflege- und Entwicklungsmassnahmen Bestandsschutz genießt¹⁷. Handelt es sich hierbei z.B. um einen standortgemässen Fichtenbestand, kann kein vorzeitiger Umbau des Bestandes verlangt werden, auch nicht in FFH- oder sonstigen mit einem restriktiven Schutzstatus versehenen Gebieten.

Auch nach Endnutzung eines Bestandes ist die forstwirtschaftliche Nutzung als solche weiter zulässig, da diese in ihrem Bestand geschützt ist. Und obgleich die Eigentums-garantie grundsätzlich nicht die Befugnis umfasst, ein Grundstück auf die wirtschaftlich ertragreichste Weise zu bewirtschaften, so besteht doch auch ein genereller Bestands-schutz der Eigentumsposition Wirtschaftswald. Nach ständiger Rechtsprechung greift die Eigentums-garantie jedenfalls in den Fällen ein, in denen das Eigentum aufgrund hoheitlicher Restriktionen seine Funktion als Wirtschaftsobjekt einzubüssen droht. Dies muss der Eigentümer nicht hinnehmen, er muss aus seinem Eigentum Gewinn ziehen können¹⁸.

Umgekehrt sind qualitative Änderungen oder räumliche Erweiterungen der Eigentums-nutzung nach der Rechtsprechung grundsätzlich nicht vom Bestandsschutz umfasst, sodass eine Festschreibung auf den Status quo der bisherigen Nutzung unter diesem Aspekt grundsätzlich zulässig ist¹⁹. Fraglich ist aber, was unter einer Änderung der bisherigen Nutzung zu verstehen ist. In jedem Fall die Änderung der Art der forstlichen Bodennutzung, sodass Erstaufforstungen und Waldumwandlungen Einschränkungen unterliegen können. Die Waldgesetze unterwerfen daher beide Massnahmen einem Genehmigungsvorbehalt. Anders dagegen bei Änderungen innerhalb der forstlichen Bewirtschaftung. Derartige Massnahmen sind walddgesetzlich grundsätzlich zulässig, nur der Kahlhieb ist nach einigen Landeswaldgesetzen genehmigungspflichtig. In begründeten Fällen (z.B. im Schutzwald) können daher zwar Kahlhiebe verboten werden, grundsätzlich aber nicht die kleinflächige sukzessive Einbringung weiterer standorts-gemässer Baumarten in vorhandene Bestände. Soweit derartige Massnahmen aus zwingenden naturschutzfachlichen Gründen untersagt werden sollen, hat der Eigen-tümer einen Entschädigungsanspruch.

¹⁴ Wagner/Gundermann, Gesetzliche Ausgleichszahlungen an Waldbesitzer zur Abgeltung von Belastungen durch Naturschutz und Wasserwirtschaft in der Bundesrepublik Deutschland, Forstwissenschaftliche Beiträge 1996/16, Professur Forstpolitik und Forstökonomie, ETH Zürich, S. 305; Wagner/Gundermann, Compensation Payments to Forest Owners for Nature and Water Protection Measures in the Federal Republic of Germany, ebenda, S. 319.

¹⁵ Siehe auch Wagner/Gundermann, a.a.O., S. 310 ff., 323 ff.

¹⁶ Isensee/Kirchhoff, Handbuch des Staatsrechts, Band III; 1988, § 60 Rz. 45.

¹⁷ BVerfG, Entscheidungssammlung Band 83, S. 205 ff.; BVerwG, Entscheidungssammlung Band 94, S. 5 ff.

¹⁸ BVerwG, Entscheidungssammlung Band 67, S. 97 ff.

¹⁹ BGH, Entscheidungssammlung Band 123, S. 245 ff.

Dementsprechend richtet sich die Dauer des Bestandsschutzes für einen Waldbestand massgeblich nach dem angewandten Verjüngungsverfahren. Im Fall einer großflächigen Endnutzung (Kahlhieb bis zur übermässigen Vorratsabsenkung) wird der Bestandsschutz häufig hinsichtlich der bisherigen Baumartenzusammensetzung (nicht aber hinsichtlich der forstlichen Bodennutzung sowie des Rechts, einen bewirtschaftungsfähigen Bestand neu zu begründen) im Zeitpunkt der Nutzung entfallen. Bei kleinflächigen Verjüngungsverfahren besteht dagegen regelmässig Bestandsschutz, der sich (als eigentumskräftig verfestigte Anspruchsposition) jedenfalls auf alle gleichartigen oder folgerichtigen Formen der Nutzungen erstreckt. Vom Schutzbereich des Art. 14 GG bleibt daher umfasst, was im aufstockenden Waldbestand bereits angelegt, sich daraus also folgerichtig entwickelt hat. Dies gilt insbesondere für Naturverjüngungen bzw. für solche waldbaulichen Verfahren, die kleinflächig und unter Einsatz von Naturverjüngungen arbeiten (Plenter-, Femel-, ggf. auch Schirmschlagbewirtschaftung)²⁰.

3.2 RICHTPUNKTE DER ABWÄGUNG

Da die gesetzlichen Regelungen die Rechte und Pflichten der Eigentümer generell und abstrakt festlegen, beurteilt sich die Verhältnismässigkeit gesetzlicher Regelungen nach einer typisierenden Betrachtungsweise. D.h., in personeller Hinsicht wird nicht auf den einzelnen, sondern generalisierend auf den Durchschnittseigentümer der von einer Vorschrift betroffenen Personengruppe abgestellt²¹, in sachlicher Hinsicht grundsätzlich auf die Art des Eigentumsobjekts²². Typisierte Rechtsmassstäbe bieten zudem die Fachgesetze selbst an. So gelten im Naturschutzrecht differenzierte Regelungen für allgemeine Flächen einerseits und Flächen mit besonderem Schutzstatus andererseits, überdies spezielle Vorschriften für den Arten- und Biotopschutz.

Beim Vollzug derartiger Bestimmungen tritt an die Stelle der generell-abstrakten eine individuell-konkrete Verhältnismässigkeitsprüfung, bei der die Umstände des Einzelfalles zu berücksichtigen sind. Hierbei bestimmt sich die Zumutbarkeit von Massnahmen vorrangig nach dem verbleibenden Wert der Fläche. Entscheidend sind daher die Restnutzungsmöglichkeiten auf der konkreten Fläche, nicht aber die allgemeinen Vermögensverhältnisse des Eigentümers²³. Die bisherige Nutzung der Fläche, der dort erzielte Ertrag sowie die auf der Fläche angestrebten Nutzungsziele fliessen mit in die Abwägung ein.

Die von Naturschutzaufgaben betroffenen Flächen sind stets auch als Bestandteile des eingerichteten und ausgeübten Gewerbebetriebs geschützt²⁴. Werden einzelne Flächen eines Forstbetriebes naturschutzrechtlich gesichert, dann entscheiden daher auch die Auswirkungen auf den Gesamtbetrieb mit über die eigentumsrechtliche Zulässigkeit. Entscheidend sind daher auch die Ertragslage des Betriebes sowie insgesamt allgemeine betriebliche Zielsetzungen. Ebenfalls beachtlich sind Eingriffskumulationen, nämlich Beschränkungen des Eigentums, die für sich betrachtet nur geringe Belastungen mit sich bringen, in der Summe aber eine weitreichende Inanspruchnahme des einzelnen Eigentümers zur Folge haben. Die Verwaltung muss in diesen Fällen genau prüfen, ob zusätzliche Eingriffe dem Eigentümer bzw. dem Forstbetrieb noch zumutbar sind²⁵.

²⁰ Bayer, Forstwirtschaft und Naturschutz, Dissertation Univ. Göttingen 1991, S. 140 ff.

²¹ BVerfG, Entscheidungssammlung Band 70, S. 84; Band 71, S. 13.

²² Ehlers, Eigentumsschutz, Sozialbindung und Enteignung bei der Nutzung von Boden und Umwelt, Veröffentlichung der Vereinigung Deutscher Staatsrechtslehrer (VVDStRL) Band 51, S. 228.

²³ Moench, Die Entwicklung des Denkmalschutzrechts, Neue Zeitschrift für Verwaltungsrecht (NVwZ) 1988, S. 309.

²⁴ BVerfG, Gewerbearchiv (GewArch) 1992, S. 21 ff.

²⁵ Schink, Naturschutz- und Landschaftspflegerecht, Münster 1989, Rz. 662.

Im Hinblick auf die Massnahmerichtung ist das Eigentum relativ ungeschützt gegenüber Unterlassungsanordnungen, wenn hiermit ein bestehender Zustand durch Nichtvornahme beeinträchtigender Massnahmen aufrechterhalten werden soll. Aktive Pflegemassnahmen zur Bewahrung eines bestimmten naturnahen Zustandes einer Fläche können dem Eigentümer grundsätzlich nicht auferlegt werden, müssen allerdings u.U. von diesem geduldet werden. Die Verpflichtung, aktiv Massnahmen zur Veränderung des bestehenden Zustandes durchzuführen oder die Durchführung derartiger Massnahmen durch Dritte zu dulden (z.B. den vorzeitigen Umbau „nur“ standortgemässer in Bestände der potenziellen natürlichen Vegetation), kann vom Eigentümer zumeist mit guten Erfolgsaussichten abgewehrt werden²⁶.

3.3 BEACHTUNG FACHGESETZLICHER WERTUNGEN

Die vom Bund und den Bundesländern in Deutschland erlassenen Waldgesetze bilden den zentralen Rahmen für die Bewirtschaftung der Wälder. Die Gesetzgeber wollten mit den Waldgesetzen einer gesellschaftsorientierten Forstpolitik auf der Grundlage einer freiheitlichen Eigentums- und Wirtschaftsordnung den Weg weisen. Dazu gehört ein echter Interessenausgleich zwischen der Allgemeinheit und den Waldeigentümern. Deshalb sind in den Waldgesetzen Wertungen (z.B. zu Erstaufforstung, Walderschließung oder Hiebmassnahmen) enthalten, die bei den jeweiligen Entscheidungsprozessen beachtet werden müssen²⁷.

Soweit es um naturschutzbezogene Anforderungen an die Bewirtschaftung der Wälder geht, enthalten die Naturschutzgesetze, zum Teil aufgrund entsprechender Querverweise in den Waldgesetzen, weitere Wertungen. Eine herausragende Stellung nimmt dabei der dort formulierte Grundsatz der besonderen Bedeutung der Forstwirtschaft für die Erhaltung der Kultur- und Erholungslandschaft ein. Dadurch ist sichergestellt, dass bei Massnahmen des Naturschutzes und der Landschaftspflege stets darauf zu achten ist, dass eine nachhaltige Bewirtschaftung der davon betroffenen Wälder weiterhin möglich bleibt. Der Grundsatz der besonderen ökologischen Bedeutung der Forstwirtschaft enthält ein Konfliktminimierungsgebot zu Gunsten einer ordnungsgemässen, nachhaltigen Waldbewirtschaftung²⁸.

4. MITWIRKUNG UND HONORIERUNG

Während die beschriebenen Grundsätze vor allem dafür sorgen sollen, dass das Waldeigentum von allzu weitreichenden staatlichen Eingriffen verschont bleibt, ergeben sich aufgrund des grossen verfassungsrechtlichen Stellenwerts, den das Eigentum in Deutschland genießt, weitere Forderungen für den Ausgleich der häufig divergierenden Interessen von Eigentümern und Gesellschaft an die Bewirtschaftung der Wälder.

4.1 GESTALTUNGS- UND MITWIRKUNGSRECHTE

So kommt dem Eigentum vor allem die Aufgabe zu, dem Einzelnen eine eigenverantwortliche Gestaltung seines Lebens zu ermöglichen. Das Eigentumsrecht ist damit auch ein Freiheitsrecht²⁹. Daraus ergeben sich bestimmte forstpolitische Forderungen:

- Den Forstbetrieben sollte durch Schaffung geeigneter rechtlicher und wirtschaftlicher Rahmenbedingungen die Möglichkeit gegeben werden, eine den jeweiligen Eigentümerzielsetzungen entsprechende nachhaltige Bewirtschaftung ihrer

²⁶ Ehlers, VVDStRL Band 51, S. 231.

²⁷ Siehe Wagner/Gundermann, a.a.O., S. 314, 326.

²⁸ Siehe Wagner/Gundermann, a.a.O., S. 314 f., 326 f.

²⁹ Z.B. Louis, Bundesnaturschutzgesetz, Kommentar, 2. Auflage, Braunschweig 2000, § 12 Rz. 81.

Wälder zu verfolgen. Beschränkungen der Eigentümerbefugnisse aufgrund anderweitiger Nutzungsansprüche an den Wald sind auf das aus Allgemein- gründen Erforderliche zu begrenzen. Zur Abgeltung der daraus resultierenden finanziellen Nachteile sollten forstliche Honorierungssysteme erarbeitet werden.

- Den Eigentümern sollte im Vorfeld waldbanspruchender und/oder die Waldbewirtschaftung einschränkender öffentlicher Planungen und Vorhaben³⁰ ausreichend Gelegenheit zur Mitwirkung eingeräumt werden. Soweit dies in rechtlicher Hinsicht möglich ist, sollten hoheitliche durch eigentümerbezogene Planungen ersetzt werden (z.B. Bewirtschaftungs- und Managementplanung in europäischen Schutzgebieten durch die Eigentümer), um die Eigenverantwortlichkeit zu stärken.
- Bei waldbanspruchenden und/oder die Waldbewirtschaftung einschränkenden öffentlichen Planungen und Vorhaben, die zu einer verstärkten Erholungsnutzung der Wälder führen, ist sicherzustellen, dass den Eigentümern daraus keine über die mit dem allgemeinen Waldbetretungsrecht einhergehenden haftungsrechtlichen Nachteile erwachsen. Auf den Erlass haftungsbeschränkender Regelungen sollte hingewirkt werden, um insbesondere die Frage der Verkehrssicherungspflichten zu lösen³¹.
- Waldbeanspruchende und/oder die Waldbewirtschaftung einschränkende Planungen und Vorhaben, denen kein öffentliches Interesse zur Seite steht (z.B. Ausdehnung der Betretensrechte für bestimmte Nutzergruppen), sollten nur im Einverständnis mit den Eigentümern durchgeführt werden. Den Eigentümern sollte andererseits aber auch die Möglichkeit eingeräumt werden, die ihnen gehörende Waldflächen bestimmten Vorrangfunktionen (z.B. zur Einrichtung von Reit- oder Radwanderwegen, von Sportflächen, etc.) zuzuführen, soweit keine Gründe des öffentlichen Wohls dagegen sprechen³². Dadurch würde den Eigentümern die Möglichkeit eröffnet werden, dort höhere Erträge zu erwirtschaften, wo sich die gesellschaftliche Nachfrage nach bestimmten Leistungen des Waldes auf vermarktungsfähige Sektoren bezieht.

4.2 HONORIERUNGSSYSTEME FÜR FORSTLICHE LEISTUNGEN

Aus Verhältnismässigkeitsgründen sind hoheitliche Einschränkungen des Waldeigentums nur dann zulässig, wenn andere Mittel zur Erreichung der gesellschaftlich angestrebten Ziele nicht verfügbar sind. In allen anderen Fällen sollten – aus rechtlichen und aus Akzeptanzgründen – die Möglichkeiten kooperativer Handlungsformen, insbesondere in Gestalt freiwilliger Bewirtschaftungsvereinbarungen, als vorrangiges Instrumentarium ausgeschöpft werden. Hierzu sollten aus forstpolitischer Sicht Honorierungssysteme für forstliche Leistungen entwickelt werden, die geeignet sind, eine angemessene Bezahlung der Eigentümer für die von ihnen erbrachten Allgemeinwohlleistungen sicherstellen³³:

- Der Gesetzgeber sollte daher sicherstellen, dass alle über die waldgesetzlichen Bestimmungen zur sachgemässen Forstwirtschaft hinausreichenden Leistungen

³⁰ Ausführlich zu dieser Problematik Röhrscheid, Walderhaltung durch UVP, Augsburg 1999.

³¹ Vgl. etwa Riethmüller/Wagner, Verkehrssicherungspflichten in der Forstwirtschaft, Wertermittlungsform 1999, S. 21 ff.

³² Zur Frage des situativen Vorrangs bestimmter Waldfunktionen vgl. Wagner, a.a.O., S. 19 ff.

³³ Entsprechende Ansätze etwa bei Grabmair, Österreichische Rechtsgrundlagen und ökonomische Beurteilung von Naturschutzaufgaben für Waldflächen, Dissertation Univ. Wien 1994; Sagl, Bewertung in Forstbetrieben, Berlin/Wien 1995, S. 139 ff.; Wagner/Jönsson, a.a.O., S. 75 ff.; Lanschützer u.a., Entgelte/Entschädigungen in Natura 2000 Gebieten (Forstwirtschaft), Wien 2001.

als grundsätzlich abgeltungsfähig und abgeltungswürdig erklärt und entsprechende Entgeltregelungen geschaffen werden. Dabei ist auf die einvernehmliche Herleitung der Honorierungssysteme zu achten. Um den Waldeigentümern ausreichend Rechtssicherheit zu geben, ist ihnen bei Vorliegen der gesetzlichen oder verordnungsrechtlichen Voraussetzungen ein Rechtsanspruch auf Abgeltung einzuräumen³⁴.

- Forstliche Leistungen können sowohl die aktive Durchführung von Massnahmen als auch deren Duldung durch Dritte oder das Unterlassen bestimmter Massnahmen sein³⁵. Abgeltungsfähig sollten sowohl Grundleistungen, die von den Eigentümern erbracht werden müssen, um allgemeine gesetzlich vorgegebene Ansprüche der Gesellschaft zu erfüllen, als auch massnahmenbezogene Leistungen sein, die von den Eigentümern aufgrund konkreter Vereinbarungen oder Vorgaben erbracht werden, ohne dass hierfür andere Nutzergruppen direkt herangezogen werden können³⁶.
- In Ausfüllung der aktuellen Rechtsprechung des BVerfG ist zu gewährleisten, dass in den gesetzlichen Regelungen die Voraussetzungen konkret dargelegt werden, unter denen eine finanzielle Honorierung von Leistungen erfolgen soll³⁷. Soweit die Behörden im Vollzug der Gesetze bestimmte Massnahmen hoheitlich anordnen, haben sie in diesem Rahmen bereits darüber zu entscheiden, ob und, soweit möglich, in welcher Höhe eine finanzielle Abgeltung zu erfolgen hat³⁸.
- Obwohl die Kommunen nicht dem Schutzbereich des Eigentumsartikels 14 GG unterfallen, ist anerkannt, dass sie ihre Eigentumsrechte nicht unentgeltlich dem Staat oder anderen öffentlich-rechtlichen Körperschaften zur Verfügung stellen müssen³⁹. Es sollte daher sichergestellt werden, dass auch die waldbesitzenden Gemeinden Adressaten des forstlichen Honorierungssystems werden.
- Der Gesetzgeber ist gehalten, ein umfassendes forstliches Honorierungssystem im Rahmen der forstlichen Förderung nach den Waldgesetzen zu verankern. Soweit es um Massnahmen des Vertragsnaturschutzes im Wald geht, ist besonders zu berücksichtigen, dass die Naturschutzgesetze es ausdrücklich zulassen, dass auch andere Fachbehörden, z.B. die Forstverwaltung, durch vertragliche Vereinbarungen zur Verwirklichung der Ziele des Naturschutzes beitragen können⁴⁰.

4.3 VERTRAGSNATURSCHUTZPROGRAMME IM WALD

Die deutschen Naturschutzgesetze bestimmen, dass die Naturschutzbehörden zur Erreichung der Ziele und Grundsätze des Naturschutzes und der Landschaftspflege die Formen der kooperativen Zusammenarbeit, insbesondere Verträge, nutzen sollen⁴¹. Solche Vertragsnaturschutzmassnahmen können auch durch andere Fachverwaltungen, z.B. die Forstverwaltung, durchgeführt werden. Auf dieser Grundlage

³⁴ So z.B. Art. 36 a Abs. 2 des Bayerischen Naturschutzgesetzes (BayNatSchG), § 19 Abs. 4 WHG.

³⁵ Allgemeiner bürgerlich-rechtlicher Leistungsbegriff, vgl. § 241 des Bürgerlichen Gesetzbuches (BGB).

³⁶ Grundsatz der Subsidiarität staatlicher Entschädigungsleistungen; dieser findet seinen Ausdruck z.B. auch in der amtschaftsrechtlichen Subsidiaritätsklausel des § 839 Abs. 1 BGB.

³⁷ BVerfG, DVBl. 1999, S. 698 ff.

³⁸ BVerfG, DVBl. 1999, S. 702 ff.

³⁹ Wagner/Jönsson, a.a.O., S. 44 f. mit weiteren Nachweisen.

⁴⁰ Ausdrücklich vorgesehen z.B. in Art. 2 a Abs. 3 BayNatSchG.

⁴¹ Z.B. § 3 a BNatSchG, Art. 2 a Abs. 2 BayNatSchG, § 2 des Brandenburgischen Naturschutzgesetzes (BbgNatSchG), § 51 Abs. 1 des Landesnaturschutzgesetzes Mecklenburg-Vorpommern (LNatSchGMV), § 3 a Abs. 1 des Landschaftsgesetzes für Nordrhein-Westfalen (LGNW), § 39 Abs. 1 des Sächsischen Naturschutzgesetzes (SächsNatSchG), § 1 Abs. 5 des Thüringer Naturschutzgesetzes (ThürNatG).

ist es vorrangige forstpolitische Aufgabe, Vertragsnaturschutzprogramme für den Wald mit folgenden Prämissen zu entwickeln⁴²:

- Die Verträge sollten Sicherheit bieten, d.h. sie sollten, soweit möglich, abschliessende Regelungen beinhalten. Die Vertragspartner müssen sicher sein können, dass über die in den Verträgen festgelegten Bewirtschaftungsregelungen hinaus keine weiteren naturschutzfachlichen Anforderungen mehr im Raum stehen.
- Soweit es um Naturschutzverträge in nationalen und europäischen Schutzgebieten geht, ist daher darauf zu achten, dass die Verträge, soweit es geht, die hoheitliche Inschutznahme der Flächen entbehrlich machen. Darüber hinaus sollten sie auch die dort angeordneten Rechtsfolgen (Verschlechterungsverbot, Verbot erheblicher Beeinträchtigungen, Pflicht zur Verträglichkeitsprüfung für Projekte und Pläne) in abschliessender Form regeln. Nur auf diese Weise kann bei den Waldeigentümern als Vertragspartnern Akzeptanz durch Rechtssicherheit erreicht werden.
- Ein Vertragsschluss sollte nur auf der Grundlage beiderseitiger Abschluss- und Regelungsfreiheit erfolgen. D.h., die Eigentümer als spätere Vertragspartner müssen frühzeitig in die Ausgestaltung der Verträge miteinbezogen werden, damit ein echtes Aushandeln ermöglicht wird und nicht nur einseitig vom Staat vorgefertigte Vertragsmuster zu unterzeichnen sind. Nur auf diese Weise können die Waldeigentümer motiviert werden, überhaupt Verträge abzuschliessen und umzusetzen, die sie in ihrer Bewirtschaftungsfreiheit gegenüber den gesetzlichen Regelungen beschränken.
- Die Verträge müssen für die Eigentümer lukrativ und wirtschaftlich sein, d.h. die gewährte Honorierung muss in einem angemessenen Verhältnis zur vereinbarten Leistung stehen⁴³. Als Gegenleistung kommen nicht nur Geldzahlungen in Betracht. Auch der Verzicht auf weitere hoheitliche Anordnungen oder die Zusicherung kurzer Genehmigungs- und Bearbeitungsfristen können adäquate Gegenleistungen darstellen.

5. FAZIT

Das Eigentum genießt in Deutschland, wie in allen demokratischen Staaten, höchsten verfassungsrechtlichen Schutz. Gegenüber den weitreichenden naturschutz- und umweltpolitischen Forderungen der Gesellschaft droht jedoch gerade das Waldeigentum an Boden zu verlieren, da die wirtschaftlich sinnvolle Nutzung von Wäldern durch zahlreiche Auflagen mehr und mehr erschwert wird. Jedoch bietet das deutsche Recht ausreichende Mechanismen zur Abwehr überzogener aber auch zur Berücksichtigung angemessener gesellschaftlicher Forderungen an das Waldeigentum. Der richtige Mix aus Selbstverantwortung, Mitwirkungs- und Gestaltungsrechten sowie geeigneten Honorierungs- und Abgeltungsmodellen wird die Waldeigentümer auch künftig in die Lage versetzen, eine vielen Interessen gerecht werdende Bewirtschaftung ihrer Wälder zu ermöglichen.

⁴² Dazu ausführlich Giesen, Natura 2000 – Rechtsschutzmöglichkeiten und Verteidigungslinien, Kongressbericht des Deutschen Forstvereins, Dresden 2001, S. 60 ff.

⁴³ Siehe dazu die in Fn. 33 genannten Autoren.

THE INTERNATIONAL DISCOURSES ON SUSTAINABLE DEVELOPMENT AND SUSTAINABLE FOREST MANAGEMENT – THEIR RELEVANCE FOR MODERNISING FOREST LAWS

GERHARD WEISS

ABSTRACT

International processes define sustainable forest management under the premises of sustainable development. For the field of forestry this implies a broadening of the sustainability concept: The concept of sustained yield would have to be extended by broader ecological, economic and social aspects. A modernisation of forest laws would require to include ecological goals like the conservation of biodiversity in regulations, monitoring systems and subsidy programmes. Furthermore, in order to better recognise different societal needs, a broader inclusion of interest groups in forest policy-making would be necessary. These changes are not easily implemented, because participatory processes meet with resistance of established actors of the policy-making system. When looking at the implementation process in progress so far, it seems questionable if the goal of sustainable development will be realised in forestry: On European level, criteria and indicators developed for measuring sustainable forest management are strongly biased towards timber production; on national level, not much efforts are made to include new societal goals in forest policy and no procedures for a better recognition of different interests are introduced in Austria by now.

Key Words: Policy-making; sustainability concepts; ecological modernisation; institutional change;

1. THE TASK OF DEFINING SUSTAINABILITY

1.1 Different concepts of sustainable forest management

The concept of sustainable forest management has changed throughout history and still is understood very differently between different groups. It can be learned that sustainability itself is not just an ecological category but is defined in a social process. In defining sustainability, implicitly goals of forest management are formulated. In classical forest policy in Central Europe, sustainability is understood as sustained yield of timber. The classical sustained yield concept was superseded by multiple use forestry of the just closing century. Multifunctional, multipurpose or multiple use forestry strives for the fulfilment of different goals, like: timber production, protection against natural hazards, recreation, etc. Since the industrial revolution these goals of forest management can be seen as requirements of modern industrial society on forest management (Weiss, 2000a, b). Today, this concept of sustainable multiple use forestry again is challenged by a new paradigm, which can be called ecological sustainability or ecosystem management. It is to be understood in the context of sustainable development which presumes three aspects of sustainability: economic, ecological and social aspects. The paradigm of this “new forestry” requires the goals of forest management to be defined in a social process that includes all groups interested in the forest (Kennedy/Thomas, 1996). We see that sustainability not only has to rely on ecological knowledge but necessarily implies values.

1.2 Normative and positivist approaches to sustainable development

The term of sustainable development was popularised by the report of the UN World Commission on Environment and Development: "Our Common Future" (WCED, 1987) and by the UN Conference on Environment and Development in Rio de Janeiro in 1992 (UNCED). The WCED describes sustainable development as development that "meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987: 8). Definitions like this are elaborated in political processes. Science can contribute to these definitions but in the whole they have to be understood as political goals, not as scientific definitions. Even within the scientific literature there is a lively dispute over the "right" interpretation of this goal – for instance, by emphasising different aspects of consuming natural resources (e.g. Constanza, 1994) or using the environment as sinks (e.g. Goodland et al, 1991). There is not and there will never be a scientific consensus on definitions and indicators of sustainable development because of restrictions of scientific knowledge on the natural ecosystem (Ludwig *et al.*, 1993), and because of different normative assumptions on the hierarchy of societal goals. As Hutchcroft (1996) formulates, scientific positivism cannot adequately address the political and cultural issues concerned when designing action for sustainable development. If scientists would try to find absolute definitions for sustainable development, this would 1) be a misinterpretation of the political goals of sustainable development, and 2) a misunderstanding of the role of science in the building of societal goals. First, political goals never are absolute; political processes are fluid and political goals are always subject to further negotiation. Second, also scientific knowledge never is absolute; scientific findings about our world are subject to interpretation. Even if scientists elaborate goals for society they are part of a political process.

A more realistic picture of the role of science in formulating societal goals is not to replace politicians by scientists but to see the scientific system aside from the political system, but interrelated (as system theory suggests, e.g., Luhmann, 1986). In this way science can contribute to the reflection on societal/political goals. The (political) goal of sustainable development can be, should be, and has been criticised by political scientists and economists. Political science teaches that political processes are dependent on the power distribution between societal groups. When looking at political discourses and decision-making processes the role of power may not be neglected. In political debates on environment and development a bias has been observed towards powerful interests, for instance, in technical regulation (e.g. Wolf, 1986), in risk communication (e.g. Compare, 1995), and in the sustainable development debate (e.g. Eblinghaus/Stickler, 1996; Spehr, 1996). Within economics, conventional planning instruments like cost-benefit analyses (CBA) or the use of criteria and indicators have been criticised for their normative implications that, for instance, favour short-term economic interests and established interest groups (Meppem/Gill, 1998: 124f; Weiss, 1999: 233-236). One important lesson from the debates on criteria and indicators for sustainable forest management is that there will only be a common agreement on technical criteria and indicators if negotiation processes between the political stakeholders come to an agreement: the scientific process of defining criteria and indicators cannot be seen apart from political processes (Franc et al., 2000: 291). As these conventional planning tools that proceed from a positivist view of scientific problem resolution have failed, Meppem and Gill (1998) argue that sustainable development should not be seen as a defined goal but as a process and a learning concept. The process of developing indicators should be seen as a learning process as well, in which experts and citizens are involved (Meadows, 2000).

Normative definitions of sustainable development have partly reflected this insight that the positivist tradition in science and linear approaches to political planning have failed in the regulation of environmental problems. So, for instance, participatory processes are demanded in many documents within the sustainable development discourse. The following analysis of the discourses of sustainable development and sustainable forest management tries to pin down the central contents of sustainability as understood within these discourses and at the same time to make visible power relations among involved groups. For assessing their practical relevance it is also of interest to trace the implementation/operationalisation process on different levels of policy-making.

2. INTERNATIONAL DISCOURSES ON SUSTAINABLE DEVELOPMENT AND SUSTAINABLE FOREST MANAGEMENT

2.1 The discourse on sustainable development

Starting from the debate on deforestation in the tropics and forest decline (*Waldsterben*) in Europe, forests enjoy broad public awareness today. Since the 1980's, forest management is discussed politically on a world-wide level and under the premises of "sustainability" (Glück, 1994). This discourse on sustainable forest management is related to the international discourse on "sustainable development". Sustainable development is the dominating discourse on environmental politics since the report of the World Commission on Environment and Development, *Our Common Future*, was published in 1987 (so-called *Brundtland report*, WCED, 1987). While earlier environmental discourses formulated relatively simple demands (e.g., the discourse on the limits of growth requires an end to economic and population growth), the concept of sustainable development is complex (*Table 1*): it strives for a harmonisation of resource preservation and economic development; it recognises social and ecological systems; and it refers to the local and global level. Sustainable development incorporates the goals of ecological protection, economic growth, social justice, and intergenerational equity – locally and globally, immediately and in perpetuity (Dryzek, 1997: 121).

Table 1: Discourse analysis of sustainable development (source: Dryzek, 1997: 132)

<p>1. Basic entities recognised or constructed</p> <ul style="list-style-type: none"> • Nested social and ecological systems • Capitalist economy • (no limits) 	<p>3. Agents and their motives</p> <ul style="list-style-type: none"> • Many agents at different levels, notably transnational and local rather than the state; motivated by the public good
<p>2. Assumptions about natural relationships</p> <ul style="list-style-type: none"> • Subordination of nature • Economic growth, environmental protection, distributive justice and long-term sustainability go together 	<p>4. Key metaphors and other rhetorical devices</p> <ul style="list-style-type: none"> • Organic growth • Connection to progress • Reassurance

The formulation of sustainable development can be explained by the globalisation of politics: The industrial countries of the northern hemisphere imposed their demands for environmental protection on the so-called developing countries in the south, e.g. the reduction of population growth, or the protection of virgin tropical rainforests. The southern countries' answer was that they should have the same rights for economic development as their northern counterparts had in history and still have. Furthermore, they argue that the real environmental problem is the consumption of resources per capita, which is much higher in the north than in the south. From the

confrontation of the goal to protect the world's resources and the recognition of the right for economic development of the world's poor, the idea of sustainable development was born. Thus sustainable development received an ecological, an economic and a social dimension and is to be applied to all countries of the world. On the whole, sustainable development draws a positive picture: It not only demands a harmonisation of ecological, economic and social goals, but also believes that this harmonisation is possible. As Dryzek (1997: 132) puts it: "We can have it all."

The complex concept of the sustainable development is perhaps at the same time its strength and its weakness: By recognising the mutual dependency of social and ecological systems, orienting at economic, ecological and social goals, relating to present time and future, considering not only governmental but also local and transnational actors, and extending linear thinking into thinking in organic relationships (*Table 1*) it comes closer to reality. With this complexity, on the other hand, sustainable development runs the risk of becoming too vague. Furthermore, having a strong notion of accepting the present economic system, it loses much of the critical messages of prior environmental discourses.

Sustainable development is much more a vision, than a clear and practicable concept. Indeed, Brundtland's report also included detailed analyses of global problems of environment and development. The structural causes of environmental problems – being a product of existing political and economic structures – were addressed and recommendations were formulated. Important critical messages, however, are missing in the follow-up process and sustainable development has not produced the sort of institutional restructuring that appear to be necessary (Hajer/Fischer, 1999: 3). In contrast to the analysis, the proposed solutions do not adequately reflect the complexity of the basic problems. Instead of restructuring the system, solutions rather have the character of "more of the same". For instance, instead of institutional reforms the development of criteria and indicators for measuring sustainability and for controlling the system are propagated. This "eco-managerialism", as Hajer and Fischer call it, ignores a central conclusion of many social, political and economic scientists: namely, that the ecological crises is an unintended consequence of industrial society and capitalism. If ecological problems are a side-effect of the existing system, solutions have to start at a reform of the existing structures and processes. One important feature formulated in the international processes following e.g. the Rio Summit is the demand for stronger and balanced inclusion of local people and non-governmental organisations in decision-making. The activities started until now rather seem to be as authoritative, bureaucratic and technocratic as before. The results produced by the political processes aiming at sustainable development so far are poor: five years after the Rio Summit none of the goals had been accomplished (Hajer/Fischer, 1999). Until today, sustainable development is defined only very vaguely, and it is interpreted by different groups very differently, according to their beliefs and interests (Dryzek, 1997).

Sustainable development is not a strict concept, it is rather a goal. Any interpretation of the overall goals and principles of sustainable development inevitably incorporates value decisions. With regard to sustainable forest management, for instance, Rametsteiner (2000: 57) states that the results of ongoing political processes are "driven by the various actors, their respective values, interests, knowledge and their relative negotiation power." Therefore, an objective scientific concretisation is not possible. All the more important are the procedures of how the goal of sustainability should be implemented. As no objective definitions of "sustainability" exists the task is rather to define the procedures how sustainable development is to be interpreted.

Sustainable development has been criticised because so far it hasn't changed environmental politics very much. Critics fear that behind the debate powerful actors go on with their destructive activities (Spehr, 1996; Eblinghaus/Stickler, 1996). A final evaluation of sustainable development is not possible yet, as many activities are still in progress: on political level international regimes are emerging (conventions on biological diversity, on climate change, etc.), and the concept of ecological modernisation tries to translate sustainable development into scientific terms (Jänicke, 1988; Beck *et al.*, 1994). A preliminary evaluation in particular would have to ask if policies have incorporated new goals and in how far institutional changes have taken place.

2.2 Discourse on sustainable forest management on global and European level

Within the discourse on sustainable development forests are mainly valued as a vast bank of genetic resources and for their contribution against global warming (CO₂-fixation). The conservation of forests was an important topic of the UN Conference for Environment and Development in Rio de Janeiro in the year 1992. This topic was brought into discussion by the industrialised countries in the northern hemisphere, who were arguing for a global forest convention and focused their demands on tropical forests (thus concerning primarily "developing countries" of the southern hemisphere). The hard negotiations on a legally binding global forest convention resulted only in a vaguely formulated and non-binding Statement of Forest Principles ("Non-Legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests") as the lowest common denominator between north and south (Humphreys, 1996: 102). The principle of sustainable management, conservation and sustainable development of all types of forests was furthermore included in Chapter 11 "Combating Deforestation" of Agenda 21, the main result of the Rio Summit. One declared aim of the UNCED was to agree on a World Forest Convention but this has not been achieved until today, although it has been discussed within the Intergovernmental Panel on Forests (IPF) 1995 – 1997 and within the Intergovernmental Forum on Forests (IFF) 1997 – 2000 (IISD, 2000). Since recently, the "north-south divide" is **not** so clear any more, as e.g. Malaysia, traditionally a leading voice of the developing countries, supports the ideas of a legally binding instrument for the conservation and sustainable development of the World's forests. As a prerequisite, transfer of technology and financial aids to developing countries is required.¹

The international discourse on sustainable forest management incorporate the same basic issues as described above for sustainable development in general: On the one hand the conservation of forests is required, on the other hand the right for development is conceded. This resulted mainly from the fact that the north imposed the conservation issue on tropical forests – which practically are the forests of developing countries – and the south insisted on their right for development. Forests and the deforestation problem are seen differently from the north and the south: The north wants to protect but the south wants to utilise the forest resources. Behind the northern position also use interests can be identified: transnational companies prospect for pharmaceutical products (Crucible Group, 1994). In the south, forest land is important for timber and agricultural production as well as mining. While the north postulates the population growth as the main problem for environmental protection, the south holds against that the key factors for ecological degradation is the consumption of resources and the emission of waste and pollutants (Centeno, 1995: 2).

¹ Opening speech of the Prime Minister of Malaysia, Mahathir Mohamad, to the XXI IUFRO World Congress, August 7, 2000, in Kuala Lumpur.

In the final documents the aim of the north for preserving as well as the aim of the south for developing were adopted. Both objectives are valid for all countries now: preservation of forests also has to be considered by northern countries; at the same time they also can argue for further economic development. This broad aim threatens the elaboration of effective measures to fight deforestation – which, like other environmental problems, are of a global dimension. Within the Rio follow-up process the underlying causes of deforestation and degradation of forests are identified in the following fields (Verolme/Moussa, 1999: 3):

- land tenure, resource management, and stakeholder participation
- trade and consumption
- international economic relations and financial flows
- valuation of forest goods and services.

Political, social and economic changes are not only required in order to preserve tropical forests (Centeno, 1993: 44) but also for Europe. The problem fields identified for the preservation of European forests point to the need of far-reaching institutional reforms, concerning the following topics (Colchester, 1998: 2f): land tenure regimes; timber-primacy in forest policies; industrial interest groups dominating policy-making; short-termism of politicians; destructive effects of markets, subsidies and tax regimes; air pollution; aid, trade and foreign investments. According to that report which was prepared for the Intergovernmental Forum on Forests the following key issues have been failed to be addressed so far (Colchester, 1998: 3):

- more effective measures to change the balance of power over forests
- measures to reduce consumption
- reforms of aid programmes
- reforms in international law to permit regulation of trade and investment on environmental and social grounds.

Until today, a global forest convention has not been achieved although this has been negotiated in follow-up processes (Intergovernmental Panel on Forests, Intergovernmental Forum on Forests). Instead, various initiatives for elaborating criteria and indicators for sustainable forest management have been started, among others the Pan-European Process for the Protection of Forests in Europe. This process which started through a first Ministerial Conference on the Protection of Forests in Europe in Strasbourg in 1990, initially was concerned with the problem of forest decline in Europe (*Waldsterben*) and further on adopted the Rio goal on attaining sustainable forest management in all forests (Second Ministerial Conference in Helsinki, 1993). This – still ongoing – process so far has resulted in a list of criteria and indicators for sustainable forest management, comprising quantitative and qualitative indicators on ecological, economic and social aspects of forestry. These criteria and indicators shall serve for setting policy goals and evaluating policy measures for guaranteeing sustainable forest management in Europe.

Within the international scientific and political discourse on sustainable forest management there are disagreeing positions on the role of science and technology, and thus on criteria and indicators, in the attempt to attain sustainable forest management. There are critics that do not believe that modern society can save the forests because they see environmental degradation as an intrinsic factor of modernity. In their view, the use of criteria and indicators within scientific knowledge systems is not capable to redirect politics and economy. Within the discourse on sustainable forest management the role of science and technology at least is relativised. Today, mainstream international society considers scientific knowledge and indigenous peoples' knowledge to be complementary knowledge systems (Humphreys, 1996:

148). The international discourse on sustainable forest management strongly demands the recognition of local knowledge and the inclusion of local communities in the policy-making process, e.g. by participatory procedures in policy-making. The Pan-European Process includes non-governmental groups but is dominated by forestry administrations. The list of criteria and indicators focuses on such figures that are already existing and easily available. Thus features of traditional forest policy are preferred. In application, a bias towards quantitative indicators is effective, which mainly are economic and ecological aspects. Social and cultural aspects are mostly neglected. Established interests are preferred in this process. This bias of criteria-and-indicators-lists towards interests of established administrations and powerful lobbies of industries can be explained by the generating process which takes place in established policy-making systems favouring already powerful groups. The same bias even can be observed in the criteria-and-indicators-list elaborated by the Amazon Co-operation Treaty (Centeno, 1997).

The instrument of criteria and indicators – as understood in the traditional way – is a technocratic tool in itself. Criteria and indicators for sustainable forest management usually refer to a technical model of forest management. Institutional and procedural aspects of forest management and forest policy-making are not included in such a view. An effective change of forest policy and management, however, depends on a change of the political-administrational and economic system. Furthermore, it is hard to get hold of social and cultural features within such a technical oriented model. Representing a distinct exception from conventional approaches, Brang et al. (2000) have presented a modelling approach for indicator development. The basic idea is to capture the essence of a real, complex system. This framework was not built in a pragmatic manner by employing indicators that already exist, but was developed from a theory-based model that included the political-economic dimension of forest management. In contrast to, for instance, the Pan-European criteria and indicators, the elements of the conceptual model are not result-oriented but process-oriented. It strives for promoting an enhanced understanding of the factors influencing the decision-making process and for supporting the identification of crucial variables which drive system dynamics. This model could be an alternative approach that might be capable of indicating also structural and procedural factors that determine forest management.

Besides of the production of criteria and indicators presently no efforts are made to change procedures or to address underlying causes of forest loss in Europe. It therefore is questionable if the goal of sustainable forest management – according to the international discourse on sustainable development – can be achieved by the Pan-European process. It seems that the basic criticism of the sustainable-development discourse is also true for the discourse on sustainable forest management: Powerful actors who have a vivid interest in maintaining the status-quo dominate the discourse and hamper changes in the structures and procedures of policy-making.

Chances for arriving at an international agreement on a forest convention as a legally binding instrument on sustainable forest management and the formulation and implementation of effective instruments by the newly formed UN Forum on Forests (UNFF) are very limited. Until today no common view on the problem situation and no mutual trust between countries has developed. Furthermore, several core issues have already been taken by other forest-related conventions, namely the Framework Convention on Climate Change (FCCC), the Convention on Combating Desertification (CCD), and the Convention on Biological Diversity (CBD). This makes it more difficult for countries in favour of a World Forest Convention to convince other countries of the necessity for such a convention (Pülzl, 2001).

3. THE EXAMPLE OF AUSTRIA

Austria has signed the Rio declarations as well as the resolutions issued at the Ministerial Conferences for the Protection of Forests in Europe. By this Austria has committed herself to ensure sustainable forest management according to those international agreements. The question arises to what extent existing measures already meet those demands and in what way forest policy has reacted to new requirements. Preliminary evaluations of the Austrian forest policy using the Pan-European criteria and indicators for sustainable forest management (Sehling, 1999; Weiss, 2000b) result in a good performance when looking at timber production. With regard to this "classical" goal of forest policy strong regulations and an extensive monitoring system exist. Although certain damages by logging operations, etc. occur, respective policy outcomes and impacts in general can be assessed positive. Forest policy is weak against influences from outside forestry: The results of forest protection against air pollution are poor, and the forest share in regions with high pressure on land-use and land development is decreasing. In Austrian forest policy, economic and ecological goals are seen from a national-economic, natural resource management view-point. Regional-economic or employment goals are not included in forest policy. Ecological goals mainly are regulated in nature protection laws of the Austrian provinces. The goal of preserving biological diversity, ranking among others on top priority position in international forest politics, is hardly included in Austrian forest policy by now. Only minor corrections of the traditional course of forest policy towards "close-to-nature" management of forests have been made. According to the documents of UNCED and the Pan-European Process, a participatory style of policy-making is required but this is not pursued in Austria.

The major underlying causes for forest degradation in Austria are described in Pregernig/Weiss (1998: 24-26) as the following: predominance of economic interests within the political system; delegation of authorities between the federal state and the provinces; pursuit of short-term economic goals; primacy of timber production; green pillarisation and selective clientelism. Pregernig and Weiss argue that external pressure from international regimes, just like the Pan-European Process, could be one factor for policy change. Until today forest legislation has not responded to the new demands although various declarations and resolutions on sustainable forest management in the new understanding were signed by the Austrian government. Generally, the style of policy-making has not changed very much in recent years in Austria. At the moment, there are no major legislative activities in the field of forestry. However, the current forest political situation can be described by a tension between the traditional introverted forest politics and new societal demands. Demands for including ecological goals in forest policy and introducing participatory processes meet with resistance of the established policy-making system (Weiss, 2000b: 55).

In this situation the international processes may be of relevance for national policy-making. International agreements may impose action on national level and the position of political actors may change through international activities (Hogl, 2000). For instance, the Austrian government may use these developments as legitimation for new activities more independent from forest owners' interest groups or for changing the policy network by including new interest groups in the negotiations on forest policy. Ongoing researches in Austria try to find out more on the current goals and strategies of political actors in this process. For the time being, there is too little knowledge to assess the further development of forest politics in Austria.

4. MODERNISING FOREST LAWS

The implications of the analyses presented here are that “modernising” means “ecological modernisation”. Sociologists and political scientists have described the ecological crises as the (unintended) consequence of a globalised modern capitalist society (e.g. Beck, 1992; Giddens, 1996). Modern societies transform the natural environment by colonising nature and by their physical metabolism (Fischer-Kowalski et al., 1997). Modernity has brought about technological systems that endanger the environment – so authors call for a new modernity that includes ecological concern: ecological modernisation (Jänicke, 1988) or reflexive modernisation (Beck et al., 1994). In this light environmental degradation is seen as a structural problem which can only be dealt with by attending to how the economy is organised, but not in a way that requires an altogether different kind of political-economic system (Hajer, 1995: 25). Authors argue for a deep institutional reform, for instance, a consensual and interventionist policy style, but still consistent with corporatism (Dryzek, 1997: 151). However, efforts so far have rather advanced the typical modernist features of big science and co-ordinated management (“eco-managerialism”, Hajer/Fischer, 1999: 3), leaving aside basic cultural and political questions about the institutions implicated in producing the crisis in the first place (Hajer/Fischer, 1999: 5).

A systemic view on forestry and forest policy reveals that forest management is strongly influenced by the basic political and economic constitution of a country. General institutional arrangements like administrative structures, market regulations, taxation systems, etc. determine public policy and private utilisation of the forests. Possible revenues from forest management, for instance, basically determine the intensity and the way of forest utilisation. Forest ownership distribution, property rights, market regulations, taxation systems, rural development policies, etc. are closely intertwined. The competitiveness of wood products against alternative materials like concrete, steel, plastics, etc. has an effect both on the utilisation of forests and rural development. Decreasing forest management may have positive implications for nature conservation goals, but not necessarily and not in any case. On the other hand, abandoning forests usually is connected with abandoning rural areas. An ecologically, economically and socially sustainable development would have to aim at a balance of these goals in forest management. One of the most important instruments suggested for a more sustainable use of natural resources is an ecological tax-reform: Increased taxes on non-renewable resources and lessened taxes on labour promise a more sustainable development of rural areas. Such a policy would open up chances for a better balance of ecological and economic goals in forest utilisation. However, such policies are decided not within the forestry sector. For modernising the society with regard to ecological concerns there is obviously a need for a new constitution for the political-economic system (e.g. Minsch *et al.*, 1996).

Besides of restructuring basic institutional frameworks, there is also room for innovations within the forestry sector. Modernisation within the scope of forest law would mean that

- a) the goals of forest management are broadened, and
- b) that broader societal groups are included in formulation and implementation of forest policies.

Broader goals: Present forest laws are still strongly oriented at timber production. Conservation goals are included only in a limited way, often related to “naturalness” of forests (in Europe, there is a trend to “close-to-nature” management). The goal of

biodiversity with its different aspects – ecological, genetic and organismal diversity (Gaston and Spicer, 1998: 3) – has not been considered yet in forest laws. Within the scientific community, however, there are discussions on this topic. In Austria, for instance, the inclusion of a fifth “forest function”, the “habitat function” of forests, has been discussed since years. A revision of the forest law with regard to fauna and flora habitats would be a step towards a better recognition of the biological significance of forests.

Besides of that, a discussion is needed, in which way social goals could be incorporated into forest laws. The consideration of economic utilisation is already included through the support of timber production in most forest laws. However, a strong objective of the international discussions on sustainable forest management is the inclusion of different management goals in forestry (“multiple use forestry”). Yet, other uses of the forests other than timber production are usually discriminated in the law (for the example of Austria see Weiss, 2000b: 48). Only certain “functions” that are regarded to be in the public interest, are considered. Cultural and spiritual tasks are hardly touched in European forest policies. The way of forest utilisation, of course, directly affects the cultural role of forests. Attitudes of different groups (e.g. the public and forest owners) towards forest management (or non-management) are not reflected in the laws (view of forests as a place of work and source of income vs. forests as a place of unspoiled nature and landscape amenities; e.g. Terrasson et al., 1998).

The scope of incorporating these broader goals into forest laws (and ordinances) is wide: it would have to touch regulatory instruments (e.g. restrictions/prescriptions of forest management), economic instruments (e.g. orientation of subsidies towards social and ecological goals), and informational instruments (e.g. including ecological features into national forest inventories; including social and ecological goals into training programmes, extension work and public relations). The effective consideration of different forest uses is strongly dependent on procedural questions of policy-making, which are discussed in the following.

Broader inclusion of groups: A change of forest policies and laws is only to be expected if procedures of policy-making are accordingly adapted. International discourses on sustainable forest management call for the recognition of different societal interest groups; the documents especially mention indigenous peoples and local communities. In a Central European context this implies a stronger participation of the public on local level and the inclusion of different interest groups on regional and national levels.

Public participation is one requirement of international agreements and is required by social science authors as a precondition for an “ecological” or “reflexive” modernisation of the society. In Europe, depending on tradition and forest land distribution, different groups are involved to various extent in the single nations. The representation of forest owners, environmental groups, touristic associations, etc., are to be balanced in different ways.

For all European countries it can be said that the State forest services are rather powerful actors in the field of forestry. It holds true for all of these countries, that the authorities are not used to participatory processes in decision-making. With regard to the whole policy process, the requirement for public participation applies for the formulation as well as the implementation of forest laws: In the preparatory phase of a forest law revision, all groups interested in the forest would have to be invited for an open discussion process (formulation stage). Participatory processes would also be needed in the elaboration of planning instruments or the resolution of use conflicts on

regional and local level (implementation stage). All this is the aim of National Forest Programmes, which are required in international agreements (Egestad, 1999). National Forest Programmes as consistent with the new view of sustainable forest management, follow a new paradigm of policy planning based on a series of ambitious principles such as participation, decentralisation or holistic and intersectoral orientation (Glück, 1999).

Forests contribute to sustainable development by very different goals: on the one hand forests are seen as nature by urban people, on the other hand the produced timber is an environment-friendly product (Schmithüsen, 1998: 25f). These goals are partly contradictory: one goal calls for conservation, one for utilisation. A resolution of these obvious conflicts is not a mere technical task; it implies value decisions and therefore needs democratic inclusion of different societal groups. A balanced representation of interests would include production goals just like nature conservation and tourism goals and others – depending on the interests expressed through participatory procedures. Such processes may reveal even new needs that have not been recognised by now.

5. CONCLUSION

In the understanding of ecological modernisation, the political debate on sustainable development includes first steps towards the right direction, but still misses to address some crucial questions. The debates on sustainable development and sustainable forest management seem to have recognised the need for a new orientation of politics towards ecological concern and social equity. For their implementation, however, effective action is still needed. The conference “Rio-plus-Five”, held in New York in 1997, five years after the Rio Summit, showed that none of the goals of sustainable development had been realised so far. Ten years after the conference the picture will not be very different.

One important conclusion from the debates about the right interpretation of sustainable development and the search for criteria and indicators is to understand sustainable development as a process instead of a known goal. Therefore, the most important task would be to look at the institutions and procedures that are in charge of realising the goals of sustainable development and sustainable forest management. Policy-making has to deal with the following questions: Which institutions interpret the goals for sustainable forest management? By which procedures are they concretised and implemented?

For attaining sustainable forest management there will be tasks within forest policies but also in other policies which form the environment for forest management. These other policy fields may be environmental and nature conservation policies, but in the first place economic policy is concerned. The general economic constitution of a country also forms the most important framework for forestry.

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ENDANGERED SPECIES AND TIMBER HARVESTING: THE CASE OF RED-COCKADED WOODPECKERS

DAOWEI ZHANG ¹

ABSTRACT

This paper presents a theoretical framework and empirical evidence on the relationship between regulatory uncertainty induced by the possible invasion of an endangered species - the Red-Cockaded Woodpecker (RCW) - and timber harvesting. Timber harvesting probability and methods in a large number of mature private forests are assessed using a forest production model based on the conventional theory of capital. The empirical results indicate that landowners whose forests are close to a known RCW habitat have a high propensity to cut timber and use a clear-cut method. All these behaviors may be to achieve one apparent objective: destruction or foreclosure of potential RCW habitat quickly and before the Endangered Species Act (ESA) comes into force. This means that ESA has given landowners perverse economic incentives and induced actions that they would otherwise not have and that are detrimental to the full recovery of endangered species. The results have implications for future reforms in environmental regulations.

Key Words: (maximum 5)

1. INTRODUCTION

The issue of differentiating legitimate public regulation of private property from regulatory takings has become important and controversial in the U.S. (Pilon 1988; Flick et al. 1995). The Endangered Species Act (ESA), probably the most powerful environmental regulation ever enacted in the U.S., is in the center of this controversy. First enacted in 1973 and amended several times since, the ESA is intended to protect species from becoming extinct (Tobin 1990). The ESA creates two main processes: the *designation* of species and their critical habitat through listing, and *protection*. Listing is important because it triggers the four major provisions of the ESA, which are to *conserve* listed species, avoid *jeopardizing* them, avoid destruction of *critical habitat*, and avoid *taking* them (Souder 1995).

Under ESA, no person may take endangered or threatened species. Taking is defined very broadly - far beyond merely killing an animal or plant. In the ESA, "the term 'take' means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct [ESA section 3(19)]." Furthermore, U.S. Fish and Wildlife Service guidelines define harm to include "an act which actually kills or injures wildlife by significant habitat modification or degradation where it actually kills or injures by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering." This regulatory definition and its application to private lands have recently been upheld by the U.S. Supreme Court (*Sweet Home v. Babbitt*, 11 S.Ct. 714, 1995).

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More than 80 percent of listed endangered species have some habitats on private lands, most of which are private forest and agricultural lands (GAO 1994). There are no publicly-provided incentives for private landowners to protect endangered species. Federal tax incentives and cost sharing programs used to encourage private landowners to behave so as to advance public objectives, such as soil conservation and tree planting, have not been used to protect endangered species until very recently (Eisner et al. 1995).

The usual presumption is that, other things being equal, landowners would avoid management activities that would attract endangered species onto their lands. This belief continues to produce advocates for protection of private property rights, not only from private landowner organizations but also from public agencies and some environmental groups. Recently, the U.S. Fish and Wildlife Service, with the support of some environmental groups, especially the Environmental Defense Funds, designed and implemented the "Safe Harbor Program," "No Surprise Policy," and "No Take Regulation" (EDF 1995, Zhang 1999). Except for some isolated case studies (e.g., Mann and Plummer 1995), the view that weakness in the current endangered species related regulations impedes good management and stewardship of forest resources is rarely supported by quantitative evidence.

The influence of endangered species induced regulatory uncertainty or weakening of private property rights on landowner behavior has been a subject of much speculation but very little empirical study. There have been a number of theoretical and policy studies on private rights and landowner behavior and performance (e.g., Posner 1992; Cotter and Ulen 1988; Zhang and Pearse 1996, 1997). However, despite its importance to public policy, the quantitative influence of endangered species related regulatory uncertainty on landowner behavior has not received much attention, partly due to its controversial nature and the requirements of strict confidentiality of many landowners that have endangered species on their lands.

This paper presents the results of an initial attempt to measure, directly, the influence of endangered species induced regulatory uncertainty on landowner timber harvesting behavior. The study differs from other investigations of this question insofar as it is based on econometric analysis of recorded timber harvesting activities under two different regulatory conditions, utilizing a large sample of data on an important endangered species, the Red-Cockaded Woodpecker (RCW). The primary finding of this paper is that regulatory uncertainty and lack of positive economic incentive alter landowner timber harvesting behavior and hinder endangered species conservation on private lands. This paper begins, in the next section, by describing the RCW and the theoretical framework and econometric methods adopted. This is followed by a discussion of the data used in this study. The remaining sections present empirical findings, conclusions, and policy implications.

2. ANALYTICAL FRAMEWORK

2.1 The Birds and the Regulation

The RCW was listed as an endangered species in 1970. Unlike other woodpeckers, the RCW chooses to chisel out its den cavity in live mature pine trees, a task that may take as long as four years. The RCW prefers mature pine trees that have been infected with red heart fungus, which tends to weaken the heartwood and make the birds' excavation somewhat easier. Furthermore, the RCW prefers open park-like stands containing little understory and usually forages for insects on trees over 45 years in age. In much of the vast southern pinery, hardwood forms a substantial

component of the forest, to the detriment of the RCW. Intentionally controlled (prescribed) burning can control the undergrowth, preventing this cause of nest abandonment.

The RCW is one of the most controversial endangered species in the country. The significance of the RCW is that it needs medium to large size tracts of mature southern pine forests for its habitat. Southern pines are the most important commercial species in the South. Since the South accounts for nearly half of the timber harvests and one-third of forest inventory in the country (Powell *et al.* 1992) and more than 70 percent of southern forests are privately owned, protecting the RCW will likely alter some private forest management activities. Therefore, the RCW probably has the most significant economic impacts on private and public landowners in the U.S. of all endangered species except the Northern Spotted Owls (Souder 1995).

The U.S. Fish and Wildlife Service has specific rules that apply to private landowners with RCW (U.S. Fish and Wildlife Service 1992). This manual contains definite restrictions on private landowners' forest management options. In the cluster area, a 200-foot radius (2.9 acres) surrounding a cavity tree, no trees greater than 10 inch in dbh (diameter at breast height or at 1.3 meters height) should be cut, no pesticide should be used, and no road should be built without permission. In addition, a minimum of 60 acres of foraging habitat within a half mile of the cavity tree, and a minimum of 3,000 square feet of pine basal area (a cross-section area of all trees measured at dbh) in trees 10 inches dbh or larger should be maintained. Since a half-mile radius covers 502 acres, landowners can do some timber harvesting if they or other landowners maintain enough foraging habitats within a half mile of the cavity tree.

Unlike the Northern Spotted Owls, RCW is a territorial bird, meaning that it usually does not fly far away from its primary habitats. The biological attributes of RCW, its significant economic impacts, and the presence of a government guideline for managing private forests where RCW resides all provide a unique opportunity to study the impact of ESA-related regulatory uncertainty on landowner behavior.

Will forest landowners have an economic incentive to harvest early before the RCW comes to their lands and otherwise manage in a way that minimizes the suitability of their forests for RCW habitat? Previous studies are primarily focused on national forests (e.g., Hyde 1989) or numerical calculation of the impacts of the guidelines on timber harvesting revenue (Cleaves *et al.* 1994; Meyers *et al.* 1995) or forest conditions and timber production possibilities when RCW is present (Rosie *et al.* 1990). We adopt an analytical and econometric approach to answer this question.

2.2 A Model of Forest Landowners Facing Regulatory Uncertainty Induced by An Endangered Species

A landowner who faces regulatory uncertainty or possible invasion of an endangered species may behave differently from other landowners in terms of timber harvesting. This behavior can be shown in a simple forest production model. To illustrate the main point of the analysis, we take the perspective of stand-level optimization. We assume the following:

1. Capital markets are perfect so that timber producers can borrow and lend at a known real interest, r .
2. Stumpage prices, P , are constant;

3. Timber yield, $Q(t, I)$ is a function of age t and silvicultural investment I , where $Q_i = \partial Q / \partial i > 0$; $Q_{ii} < 0$ for $i = t, I$.
4. If no endangered species are on the land, the landowner has a secure property right to his forest, and the probability of losing a portion of the forest is zero. There is a non-zero (δ) probability of losing a portion (α , $0 < \alpha < 1$) of the forest if an endangered species moves into the forest and ESA applies. This is a case of 'partial regulatory taking' where regulations only restrict landowner's management activity, take away part of their property rights, and reduce the value of their property partially, and landowners do not get any compensation.
5. The probability of losing a portion of his forest (δ) is an increasing function of time. This reflects that the longer the landowner waits before harvesting, the more likely he will lose a portion of the forest because RCW prefers to reside in old growth forests.

The analysis is considerably clearer and more intuitive if we simply consider a model in which the planning horizon runs through one rotation. The landowner maximizes net return V to the fixed factor, land, over time t . Restating the problem to allow either land purchase at the beginning of the timber rotation and land sale at harvest time or continuous replacement of timber harvests leaves the problem unchanged.

In the case of simply focusing on one rotation, the objective is to maximize the expected present value of future cash flow considering regulatory uncertainty. If the landowner does not lose any portion of his forests ($\alpha = 0$), the expected value of the forest can be expressed as:

$$V_1 = P Q(t, I) e^{-rt} - I \quad (1)$$

If he does lose a portion (α) of their forests ($\delta = 1$), the expected value of the forest can be expressed as:

$$V_2 = (1 - \alpha) P Q(t, I) e^{-rt} - I \quad (2)$$

The objective is then to maximize:

$$V(t, E) = (1 - \delta) [P Q(t, I) e^{-rt} - I] + \delta [(1 - \alpha) P Q(t, I) e^{-rt} - I] \quad (3)$$

This is the well-known Faustmann formula with the addition of a stochastic uncertainty factor (Gane 1968). It is the same as maximizing the difference between gross revenues and total costs where revenues are harvest receipts and costs are the annual opportunity costs of forest land use and silvicultural investment under regulatory uncertainty. The model contains the weakness that it is risk neutral. However, if the result shows that a risk-neutral landowner responds negatively to policy uncertainty, risk-averse landowners will respond negatively to policy uncertainty as well.

Equation (3) can be simplified as

$$V(t, E) = (1 - \alpha \delta) P Q(t, I) e^{-rt} - I \quad (4)$$

First order condition for a maximum requires that

$$\partial V / \partial t = [(1 - \alpha \delta) (P Q_t - r P Q) - \alpha \delta_t P Q] e^{-rt} = 0 \quad (5)$$

Which can be simplified as

$$Q_t - \alpha \delta_t Q / (1 - \alpha \delta) = r Q \quad (6)$$

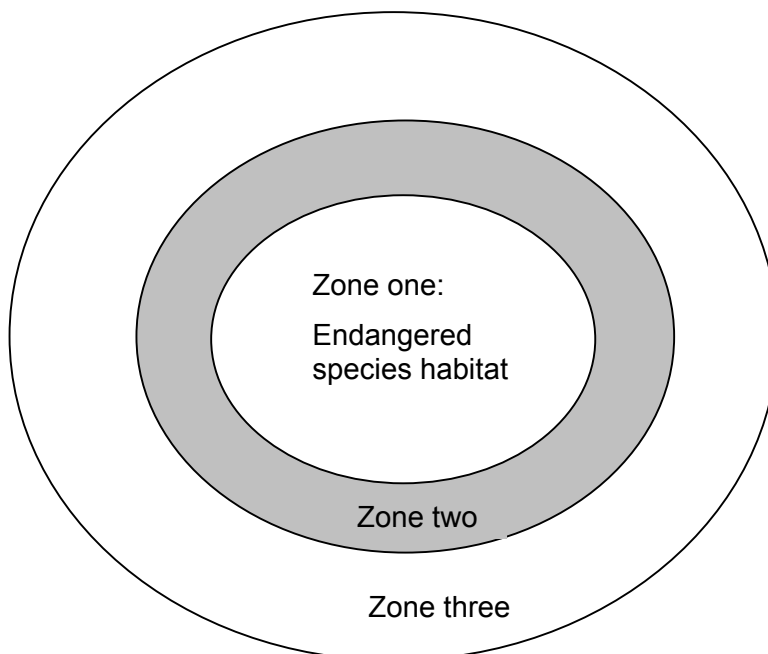
or

$$Q_t / Q = r + \alpha \delta_t / (1 - \alpha \delta) \quad (7)$$

The optimal condition (6) can be interpreted easily. On the right is the interest foregone by postponing harvesting the forest for one period. On the left is the gain from postponing the harvest one period, consisting of the value of timber growth over the period minus the portion of timber that the landowner might not be able harvest due to ESA during the period. Obviously, for optimality the marginal gain from postponing the harvest one period must equal the marginal loss of postponement.

Since δ_t and $(1 - \alpha \delta)$ are great than zero, the second term in equation (7) is positive. In the absence of policy uncertainty, $\delta = 0$, equation (7) simply reduces to the well-known result that a forest should be harvested when its rate of growth equals the discount rate. With regulatory uncertainty, the forest should be harvested when the rate of growth is more than the discount rate. In other words, the effect of policy uncertainty has the same impact as the increasing discount rate in the Faustmann formula. A review of literature shows that, in general, an increase in discount rates leads to earlier harvesting (Hyde 1980, Chang 1983, Hyde and Newman 1991). Therefore, everything else being equal, landowners who face possible invasions of endangered species to their forests will cut timber earlier than those who do not have to face the regulation.

Figure 1. Endangered species habitat zone and its surrounding areas



The possibility of RCW invasion is higher when a forest stand is close to an RCW habitat. Figure 1 illustrates the location relationship among landowners who have an endangered species (say, the RCW) on their lands and those who face possible invasions of the endangered species on their lands. Lands in zone one are active endangered species habitats and therefore are subject to the ESA. Lands in zone two are adjacent to or very close (say, within 1 mile) to the active RCW habitats, and there is a high possibility of the endangered species moving to these lands in the near future if suitable habitats are provided. These lands will be subject to the ESA if RCW does come. Lands in zone three are farther away from the active RCW habitats and relatively safe from possible RCW invasion.

Everything else being equal, we hypothesize that landowners close to an active RCW habitat will harvest their forests earlier and use a harvesting method that forecloses potential RCW habitats. There are, of course, other factors that will influence landowners' timber harvesting behaviors in particular circumstances - the marginal revenue and characteristics of the forest stand and the landowners' characteristics. Thus,

$$\text{HARVEST} = f(\text{ZONE}, \text{MR}, \text{C}_f, \text{USE}, \text{C}_o) \quad (8a)$$

$$\text{METHOD} = f(\text{ZONE}, \text{MR}, \text{C}_f, \text{USE}, \text{C}_o) \quad (8b)$$

where HARVEST is harvest or not (discretionary dependent variable);

METHOD is the harvesting method (discretionary dependent variable);

ZONE is a measurement of closeness of a forest stand to a known RCW habitat;

MR is the marginal revenue of the stand;

C_f is the characteristics of the forest stand, including basal area (a measure of density and tree size, species composition, and size of the forest stand);

USE is the landowner's primary use of the forest stand;

C_o is the characteristics of the landowner, especially his education, income and length of forestland ownership.

The results of a regression of the above logistic equation can reveal the influence on landowner timber harvesting and harvesting method decision of each of the independent variables. Clear-cutting, the most destructive method to a potential RCW habitat, is hypothesized to be more often used when the possibility of the RCW's coming to the stand is high.

3. DATA

The unit of observation for this study is timber stand, which is a tract of forest with similar age, species composition, and location. Here each stand is treated as a homogeneous unit with respect to its stand characteristics, location, and species composition.

The study area covers 32 counties in the sandhills and coastal South Carolina and North Carolina (Figure 2). All of these counties currently have active RCW. A mail survey designed according to the total design method (Dillman 1978) was conducted in the Fall of 1998. The survey contained 56 questions, focusing on timber harvesting activities (and the lack of them) in the past 10 years. If timber harvests had been done, the landowners were asked to provide location (the closeness to a known RCW habitat), harvesting method used and forest stand characteristics for a maximum of three stands they cut in the last 10 years. They were then asked to provide the same information for one oldest forest stand that had not been cut and was older than 35 years (All known RCW cavity trees are older than 35 years). These who had not cut any timber were asked to provide information for the oldest forest stand. And those who had not cut any timber in the last 10 years and did not have any forest stands old than 35 years were only asked to respond to questions related to landowner characteristics.

Figure 2. Geographical regions of North and South Carolina included in the timber harvesting survey



Since some questions related to the forest stand characteristics were fairly detailed and technical, landowners were asked to provide the names, addresses, and phone numbers of assistance foresters they used or their timber buyers if they could not answer them. Then a follow-up telephone interview to these foresters or timber buyers was conducted to recover this information.

The sampling procedure was designed to achieve a representative and unbiased sample of relatively large non-industrial private forest landowners in these counties. Industrial forest landowners were excluded from this study because they have the time, space, and financial flexibility that non-industrial forest landowners rarely have. In addition, many forest landowners have signed "no take agreements" with the U.S. Fish and Wildlife Service so that they can conduct forest practices approved by the Service, and the Service will not challenge their management activities under the ESA.

The names and addresses of all forest landowners who owned more than 100 acres of forest lands (large tract is more likely to attract RCW) in these counties were collected from individual county tax assessors. Seven of these counties only provide a list of owners of farm and forestlands over 100 acres. After deleting all known forest industry landowners, a sample of one out of 10 landowners (and one out of every 15 for the seven counties with combined lists of forest and agricultural landowners) in each county was then selected for the survey. The final mailing list comprised 1,742 randomly selected landowners.

The final survey sample had 1,696 landowners since 48 surveys (3%) were returned unopened. Five hundred and eight of the surveys were completed and returned, representing a response rate of 30 percent. A follow-up telephone survey of a randomly selected sample of 50 (3%) of the non-respondents reveals that non-respondents are not correlated to the size of ownership, income, education, age, and county origins. The overall estimated error for the survey results is plus or minus 4

percent at the 95 percent confidence level. Some 190 respondents that did not cut any timber in the last 10 years and have no forest stands older than 35 years were excluded from this study, leaving 318 respondents. Excluding stands that are predominantly hardwood (66), which is not a good habitat for RCW and is not relevant to this study and another 18 stands where (18) pre-mature thinning method (thinning of stands less than 30 years' old) was applied leaves 522 timber stands (and 252 respondents as some respondents reported more than one timber harvesting). However, information on characteristics of 206 stands are not available as some landowners did not respond to the questions and do not have or did not provide the name of assistance forester or timber buyers. The final useful timber stands used in this study are 316, of which 230 were harvested in the last 10 years and 86 are still standing. Of the 230 harvested stands, clear-cutting was used in 164 stands and other methods, including seed-tree, shelterwood, selection, and thinning, were used in the rest of the 66 stands.

Table 1. Variable definitions and sample statistics

Variable	Definition	Mean	Standard deviation
HARVEST	Occurrence of timber harvesting (dummy: 1 if timber harvesting occurred in the last 10 years, 0 otherwise)	0.7278	0.4458
METHOD	Harvesting method (dummy: 1 if clear-cut, 0 otherwise)	0.7130	0.4533
ZONE	Closeness to a know RCW habitat (dummy: 1 if adjacent or within one mile of a known RCW habitat, 0 otherwise)	0.4051	0.4917
MR	Marginal revenue of pine products per acre, in constant 1997 dollar	196.3412	90.0782
BA	Basal area in square feet	79.4873	22.7041
SPECIES	Predominant species (dummy variable: 1 if longleaf pine, 0 otherwise)	0.2848	0.4520
SIZE	Number of acres of the stand	172.1772	427.4596
USE	Primary use (dummy: 1 if primarily used for anything other than timber production, 0 if for timber production)	0.4905	0.5007
FIRE	Use of prescribed burning (dummy: 1 if prescribed burning is used for every 7 years or less, 0 otherwise)	0.3956	0.4897
FINCOME	Percent of forestry income in the family's total annual income in the last 5 years (dummy: 1 if more than 10 percent, 0 otherwise)	0.4462	0.4979
LENGTH	Years of forest land ownership	34.4430	30.3485
EDUCATION	Owner's level of education (dummy: 1 if college or post graduate degree, 0 otherwise)	0.8259	0.3798

Table 1 describes the variable definitions used in the statistical analysis, their mean values, and standard deviation. The mean values and standard deviations of these variables used in the harvesting method model are not much different from these in the timber harvesting model and are not reported here. Tables 2 and 3 present the corresponding information for each zone.

Table 2. Sample Statistics of the explanatory variables by zones for timber harvesting

Variable	ZONE = 1		ZONE = 0	
	Mean	Standard deviation	Mean	Standard deviation
HARVEST	0.8047	0.3980	0.6755	0.4694
MR (in 1997 dollar)	193.9880	81.5384	197.9434	95.6371
BA	78.8125	21.5417	79.9468	23.5083
SPECIES	0.4219	0.4958	0.1915	0.3945
SIZE	228.5547	565.8152	133.7926	294.4664
USE	0.5547	0.4990	0.4468	0.4985
FINCOME	0.4531	0.4998	0.4415	0.4979
LENGTH	39.9844	38.8832	30.6702	22.1209
EDUCATION	0.8125	0.3918	0.8351	0.3721
No. of observations	128		188	

Table 3. Sample Statistics of the explanatory variables by zones for timber harvesting method

Variable	ZONE = 1		ZONE = 0	
	Mean	Standard deviation	Mean	Standard deviation
METHOD	0.7864	0.4118	0.6535	0.4777
MR (in 1997 dollar)	211.0242	77.3784	213.2681	101.5531
BA	82.9417	19.2246	84.3543	22.1927
SIZE	140.8350	168.3852	97.7244	144.6842
USE	0.4660	0.5013	0.3858	0.4887
FIRE	0.3495	0.4791	0.3858	0.4887
FNCOME	0.4660	0.5013	0.4882	0.5018
LENGTH	40.9515	41.1657	30.4646	22.3162
EDUCATION	0.8058	0.3975	0.8346	0.3730
No. of observations	103		127	

HARVEST and METHOD are two qualitative dependent variables that were estimated by means of logistic regression. HARVEST took the value of one when the stand was harvested in the last 10 years and zero otherwise. Similarly, METHOD took the value of one when the stand was harvested using clear-cutting and zero otherwise.

Of the independent variables in the two regressions, that for the location, ZONE, is of special interest in this study. ZONE was assigned a value of one if the stand is adjacent to or within one mile of a known RCW habitat and zero otherwise (i.e., if the stand is more than one mile away from a known RCW habitat or the owner did not know or was not sure how far the stand was from an RCW habitat). Since closeness to an RCW habitat may attract RCW to the tract and bring the ESA that affects the management options for landowners, the coefficient for this variable is expected to have a positive sign in both harvesting and harvesting method models.

Landowners' timber harvest decisions are often based on the marginal revenue of cutting the timber and the marginal cost of letting the timber grow one more period. They cut their timber when the marginal revenue equals marginal cost. Therefore, a variable MR, the marginal revenue per acre, is included in equations 8a and 8b. It is calculated as

$$MR = \sum(\text{Pine Product} * \text{Stumpage}) * \text{Interest rate} / \text{CPI} \quad (9)$$

The pine products cover pole, sawtimber, chip-n-saw, and pulpwood. The first part of equation 9 is the total revenue per acre. Multiplying it by the interest rate gives the marginal revenue of the stand. CPI is the consumer producer index (1997=100), which standardizes the MR in the 1997 constant dollar. Since the interest rates of individual landowners are unknown, we used the prime loan rate—the interest rate that banks charge their best customers, as an instrumental variable to reflect the general conditions of the money market.

Equation 9 is valid because change in marginal revenue as a result of price change and biological growth equals interest rates. When the stand is not cut, the marginal revenue is calculated as of the fourth quarter of 1998. The coefficient of MR is expected to be positive for the harvesting model. However, its sign in the harvesting method model is less clear. One on hand, large marginal revenue may mean that landowners can afford to use harvesting methods other than clear-cutting. But there are no theoretical base and empirical studies that show marginal revenue influencing landowners' choices of any specific harvesting methods.

The stand characteristics include BA (basal area), SPECIES, and SIZE. The coefficient of BA is expected to be positive in the harvesting model because high basal area means that the stand is dense and that doing nothing to the stand will reduce its biological growth rate. However, its sign is difficult to predict in the harvesting method model since no empirical study on the relationship between basal area and landowner's choice of harvesting method exists.

The variable SPECIES took the value of 1 when the predominant species in the stand was Longleaf pine, and zero otherwise. Longleaf pine is known to be a preferred species for RCW. However, longleaf typically matures later than other pine species, and, everything else being equal, landowners will cut it later than other species. Since we have controlled for factors related to the possibility of the RCW's coming to the stand, the coefficient of SPECIES is expected to be negative. The variable, SIZE, is expected to have a negative sign in both models because cutting too much timber within a year could make landowners jump to a high tax bracket and pay more income taxes.

The variable USE is a dummy variable that represents the primary management objective of landowners. It took the value of one if the primary objective was anything other than timber production (hunting and other recreation, hunting lease, pine straw harvesting, farm or domestic use, and land investment). It is expected to be negative for the harvesting model and positive for the method model. If landowners have a primary objective other than timber production, they will postpone timber harvesting and use other aesthetically appealing harvesting methods if they decide to cut some timber.

A variable FIRE was used in the method model to control the cleanness of forest stands on harvesting method. It took the value of 1 if landowners used prescribed fire in every 7 years or less and zero otherwise. It is expected to have a negative sign for two reasons. First, the forest stands will be cleaner if fire is frequently used, making other harvesting method such as seed-tree, shelterwood, thinning applicable. Second, fire promotes natural regeneration. Harvesting methods other than clear-cutting protect young tree seedlings better.

Finally, three variables were used to control the characteristics of landowners. FINCOME took the value of one if a landowner had more than 10 percent of his family income from his forests in the last 5 years and zero otherwise. It is expected to be positive in both models, as landowners with a high portion of their income from forests tend to cut more timber. LENGTH is the number of years since owning the first tract of forest. It is expected to be negative for both models since landowners who have owned forestlands for a long time have probably developed a better land stewardship ethic. The variable EDUCATION took the value of one if the landowner had a college degree or post-graduate degree. It is expected to be negative in both models as they are more knowledgeable and probably more appreciative of forest uses other than timber production.

4. EMPIRICAL FINDINGS

Equations 8a and 8b were run using linear logistic regression. Both models fit relatively well as the $-2\log L$ (-2 *the logarithm of likelihood ratio) and Score test are all significant at the 0.1 percent level or better. Models in which the continuous independent variables took logarithms were run as well. In both cases, the simple linear model performed better. None of the variables used has correlation coefficients exceeding $\sqrt{0.40}$.

The results of the regression for equations 8a and 8b are presented in Tables 4 and 5, respectively. Of the 10 parameters estimated in each equation, 6 are significant at the 10 percent level or better in the timber harvesting model and 5 are significant in the harvesting method model. Most of the signs and values appear reasonable. Indeed, all signs in estimated models confirm our expectation.

The variable for closeness to a known RCW habitat, ZONE, is positive and significant in both models at the 1 percent level. Therefore, possible regulatory intervention induced by proximity to a known endangered species habitat has a significant positive impact on landowners' decisions to harvest timber and to use the clear-cut method. These results indicate that after allowing for other influences, the possibility of timber harvesting and using the clear-cut method are higher when the stand is close to a known RCW habitat.

Table 4. Value for the explanatory variables for timber harvesting

Variable	Coefficient	Wald χ^2 ratio
ZONE	1.1996	11.7109***
MR	0.0065	7.8354***
BA	0.0212	7.4099***
SPECIES	-0.1280	0.1341
SIZE	-0.0014	4.2985**
USE	-1.0721	11.2374***
FINCOME	0.1860	0.3584
LENGTH	-0.0010	0.0278
EDUCATION	-0.6114	2.1917*
INTERCPT	-0.9362	1.7706
-2 log L (df=9)	72.8700	
Score (df=9)	67.7260	
No. of observations	316	

Table 5. Value for the explanatory variables for timber harvesting method

Variable	Coefficient	Wald χ^2 ratio
RCW	1.0836	9.3377***
MR	-0.0001	0.0056
BA	0.0004	0.0021
SIZE	-0.0025	5.4396**
USE	0.1329	0.1524
FIRE	-0.5203	2.5792*
FINCOME	1.2798	12.4277***
LENGTH	-0.0130	6.7190***
EDUCATION	-0.2579	0.3407
INTERCPT	1.0618	1.9564
-2 log L (df=9)	31.3990	
Score (df=9)	29.3700	
No. of observations	252	

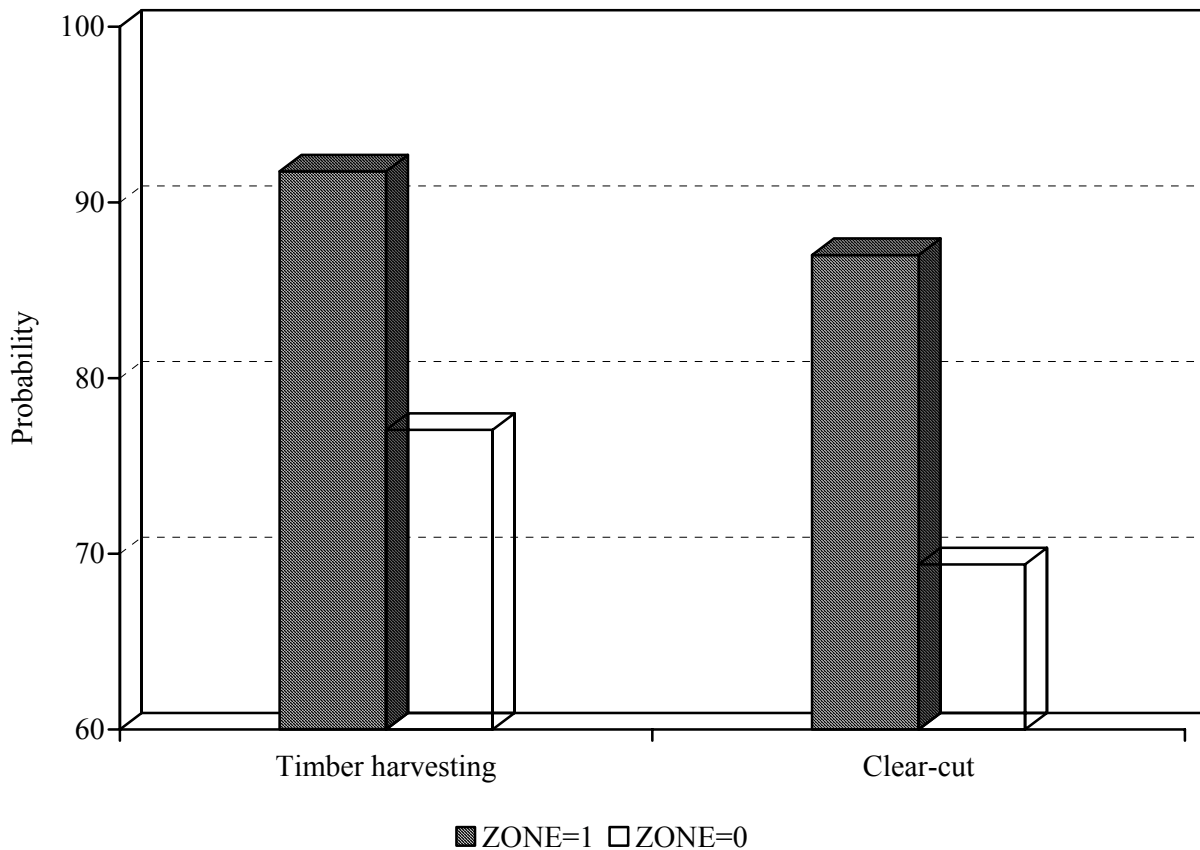
* Significant at the 10 percent level.

** Significant at the 5 percent level.

*** Significant at the 1 percent level.

Figure 3 presents the effect of ZONE on the probability of timber harvesting and harvesting method, respectively. These relationships are based on the results in Tables 4 and 5. To produce these figures, the continuous variables were fixed at their mean values, and the others based on the assumption that the stand is predominantly longleaf pine and is used primarily for timber production, prescribed burning is used for every 7 years or less, the owner's income from forestry is greater than 10 percent of his family income, and the owner has a college degree.

Figure 3. Probability of timber harvesting and using clear-cut method



The coefficient for marginal revenue is positive and significant at the 1 percent level, confirming the expectation that a high marginal revenue increases the possibility of the stand's being cut (Table 4). Among other significant influences on timber harvesting probability, the positive coefficient for basal area suggests that highly dense stands tend to be harvested earlier, as expected. The variables for size and primary use show that these, too, are significant influences on timber harvesting probability, both in a negative way. Education influences the timber harvesting possibility in the same fashion. Other variables for species composition, income from forestry, and length of ownership are not significant.

The coefficients for variables in the harvesting method model are similar to those in the timber harvesting model. The other significant variables include size, use of prescribed fire, forestry income, and length of forest ownership. In this model, coefficients for the marginal revenue and basal area are not significant at any reasonable significant level, indicating that both variables do not influence a landowner's choices of harvesting method.

5. CONCLUSION AND POLICY IMPLICATIONS

The purpose of this study was to assess, quantitatively, the popular notion that regulatory uncertainty induced by possible invasion of an endangered species influences the landowner's decision to cut timber quickly and to use a harvesting method that forecloses the potential endangered species habitats. The logic of this convention is clear enough: Without any financial compensation for providing habitats for endangered species but more governmental regulatory limitation on their land use and management options, landowners do not have any incentive to voluntarily provide any additional habitats for endangered species. Thus, landowners will do things that they might not do otherwise—to cut the timber and eliminate suitable habitats and to do so before the endangered species come onto their lands.

The findings of this study support this general argument. To this extent, they are broadly consistent with the conclusion of other studies on property rights (Feder et al. 1988; Luckert 1988; Zhang and Pearse 1996, 1997) and on the Endangered Species Act in popular articles and books (Mann and Plummer 1995; Stroup 1996). More uniquely, the empirical findings indicate that the magnitude of disincentive-induced foreclosure of potential endangered species habitat is large.

The implications of these findings are significant. Of the vast majority of endangered species that have some or all of their habitats on private lands, their future to stay there and to survive well is not bright if the current policy is not changed. A full recovery of these species, as mandated in the Endangered Species Act, is even more remote as private landowners have little incentive to provide additional habitats to endangered species, but too much incentive to preclude them from coming onto their lands. Facing isolation, many groups of endangered species could eventually die out. Moving all of these species onto public lands seems to be an unpractical solution for most endangered or threatened species.

Having realized this situation, many environmental groups started to lobby for more flexible regulations and more programs that provide positive incentives for landowners. Safe Harbor is invented for this purpose. Safe Harbor is a voluntary agreement between landowners and the U.S. Fish and Wildlife Service. Under these agreements, landowners are committed to doing something that is expected to benefit endangered species. In return, landowners receive assurances that they can “undo” the thing that they carry out under the agreements in the future. The agreements apply to landowners with or without an endangered species on their lands. In either case, a pre-agreement baseline population of endangered species (which may be zero) is established, and landowners are required to maintain this population unless unforeseeable natural events destroy endangered species habitats. Others have called for cost-share programs and tax breaks for landowners who provided habitats for endangered species (e.g., EDF 1996).

A more dramatic solution is to provide for compensation or rental payments for landowners who provide endangered species habitats on their land (e.g., Epstein 1985; Bourland and Stroup 1996). If implemented, a compensation policy will provide all incentives that landowners need to provide habitats for endangered species. However, the political feasibility of this policy is unknown, and the transaction costs for implementing this policy need to be studied.

The results of this study have broad policy implications. First, the ESA is not working on private lands because it does not provide much incentive to landowners. Any attempt to make ESA more effective will have to accommodate the need of private landowners and provide them positive incentives for endangered species conservation. More flexibility in the application of the ESA, such as Safe Harbor, is a

step towards the right direction. However, it is not enough to attract small, non-industrial landowners who do not have the necessary time, space and financial resources that large and industrial landowners possess. Second, many environmental regulations designed to protect the environment have unintended consequences on producer and consumer behavior, which in turn, harm the very environment that the regulation is intended to protect. Future reforms to these regulations need to eliminate the regulation-induced behaviors by providing positive incentives to producers and consumers. In other words, regulations can work or work better only when private incentives are built in.

It is widely known to foresters and many forest landowners that the RCW will go away if no prescribed burning is used for a period of 7 to 10 years so that understory hardwood grows high enough to reach the RCW cavity holes. We have found a negative but statistically insignificant relationship between prescribed burning and closeness to a known RCW habitat. We understand that several key variables such as closeness of the site to a city or township and the attitude and experience of landowners with fire were missing from the models. Further research could be done in this area.

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