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GENEVA TIMBER AND FOREST DISCUSSION PAPER 38

FOREST AND FOREST PRODUCTS COUNTRY PROFILE: REPUBLIC OF BULGARIA

by

Dr. Nickola Stoyanov and Dr. Maria Stoyanova

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Note

Abstract

This *Forest and Forest Products Country Profile,* prepared by the well-known national experts, contains information concerning the forest resources of Bulgaria and a description of the status, trends and developments taking place in the forest sector, including the areas in which the most important forestry activities have taken place over the past decade. For the forest sector, as for other branches of the Bulgarian economy, the period has been marked by the implementation of radical reforms necessitated by the changeover from a centrally planned to a market economy, efforts to achieve sustainable development in forest management, and a large scale return of confiscated forest lands back to the rightful owners. The country profile contains tables, statistical data, diagrams, graphs and a brief analysis of the evolution of the forest sector, and data relating to the principal categories and volumes of goods and services in the forestry sector. Most of the figures cited are based on official data drawn from the statistical services of Bulgaria, as well as from research and statistics from NGOs and other foreign sources.

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Symbols and abbreviations

$ - US dollar
a.s.l. - above sea level
AT - Austria
BARET - Bulgarian Association for Rural and Ecological Tourism
BGN - Bulgarian Lev (Bulgarian Currency)
BGFP - Bulgarian-German Forestry Project
BNB - Bulgarian National Bank
BSFP - Bulgarian-Swiss Forestry Program
BG - Bulgaria
CITES - Convention on International Trade in Endangered Species of the Wild Flora and Fauna
CoM - Council of Ministers
DFI - Direct Foreign Investments
DM – German mark
EU - European Union
EFICS - European Forest Information and Communication System
EE - Estonia
FAO - United Nations Food and Agriculture Organization
FI - Finland
FMP - Forest Management Plan
FSC - Forestry Stewardship Council
GDP - Gross Domestic Product
GER - Germany
GIS - Geographic Information System
GNP - Gross National Product
ha - hectare
ICP - International Co-operative Program on Assessment and Monitoring of Air Pollution Effects on Forests
IFF - Intergovernmental Forum on Forests
IPF - Intergovernmental Panel on Forests
IT - Information Technology
IUCN - International Union for the Conservation of Nature
kg - kilogram
km - kilometre
LF - Law for the Forests
LIT - Lithuania
LRPFFLFF - Law for the Restoration of Forests and Forest lands of the Forest Fund
m^3 - cubic meter
MAB - International Program Man and Biosphere
MAF - Ministry of Agriculture and Forestry
MAFAR - Ministry of Agriculture, Forests and Agrarian Reform
MCPFE - Ministerial Conferences for the Protection of Forests in Europe
MDF - Medium Density Fiberboard
Mln. - million
MoEW - Ministry of Environment and Waters
mt - Metric ton
NA – Not available
NFPS - National Forest Policy and Strategy (Bulgaria)
NGO - Non-governmental organization
NFB - National Forestry Board
NOR - Norway
NSE - National Strategy for the Environment
NSI - National Statistical Institute
PA - Protected Area
PEFC - Programme for the Endorsement of Forest Certification Schemes
Ramsar - Convention on Wetland of International Importance
RFB - Regional Forestry Board
RFPPs - Regional Forest Plans and Programs
RILRPFFLFF - Regulation for Implementation of Law for the Restoration of Forests and Forest lands of the Forest Fund
SAPARD - Special Accession Program for Agriculture and Rural Development
SG - State Gazette
SFC - State Forestry Company
SMEs - Small and Medium Enterprises
SUI - Suisse
SWE - Sweden
SWOT - Strengths Weakness Opportunities Threats Analysis
UNECE - United Nations Economic Commission for Europe
UNESCO - United Nations Education, Social and Culture Organization
VAT - Value Added Tax
WB - World Bank

Table of Contents

List of tables

List of figures

page

Preface

The UNECE Timber Committee and FAO European Forestry Commission, working in close co-operation on sustainable forest management, pay special attention to those regions and member countries, which are not always in the mainstream of the global forest policy debate. One way of drawing attention to specifics of the forestry sectors of such countries is the preparation of forest and forest products sector country profiles.

The sector profiles are prepared by national experts and include statistical and other information, as well as brief analysis of the evolution of the forestry sector. The objective of the current forestry profile on Bulgaria is to show the role and the importance of forests and forestry against the background of the country's current economic, ecological and social situation.

Bulgaria possesses valuable forest ecosystems that are extremely rich in biodiversity, and Bulgarian forestry has a long tradition. Significant parts of the Bulgarian forests have protective and recreational functions. The country is highly dependent on imports of resources and energy, including wood/timber resources. The transition to a market economy has revealed many issues in the forestry sector, which made it necessary to carry out urgent reforms to start economically, ecologically and socially sound forest management.

For this reason Bulgaria has been developing a new forest policy in order to provide protection of the forests' ecological, protective, and social functions, while at the same time providing the country with responsibly produced wood to improve the economy.

We express our gratitude to Dr. Nickola Stoyanov and Dr. Maria Stoyanova for preparing this country profile.

Brigita Schmögnerová
Executive Secretary
United Nations Economic Commission for Europe

1. BACKGROUND

1.1 Brief historical sketch

The Republic of Bulgaria is located in southeast Europe on the Balkan Peninsula. Because of its important geographical location, Bulgaria fell under many influences. During its development, Bulgaria endured more than 150 years of Byzantine and 500 years of Turkish domination. Bulgaria became independent in 1878. After the Second World War, Bulgaria fell under the influence of the former Soviet Union and adopted the Soviet model of a centrally planned economic system. In November 1989, Bulgaria started the development of a pluralistic society and a transition into a market economy. During its 1322-year history, Bulgaria passed through many different forms of government and is now a parliamentary Republic.

The Republic of Bulgaria has an area of 110,093.6 km^2 and population of 7,891,100 (2001). The population density is 71.1 people per km^2. The capital of the Republic of Bulgaria is Sofia. The country is divided, administratively, into 28 districts and 263 municipalities. The population lives in 240 towns and 5096 rural settlements. The northern border of Bulgaria is the Danube River and Romania, the eastern border is formed by the Black Sea, the southern border pass through the Strandja and Rodopi mountains (Turkey and Greece) and on the West, Bulgaria is bordered by the former Yugoslav Republic Macedonia and Serbia and Montenegro.

The environment of Bulgaria is characterized by diversity and contrast, resulting from a distinctive combination of relief, geological structure, climate, soil and vegetation. Bulgaria is mostly mountainous, with the main Bulgarian mountain ranges being: Rila, Pirin, Rodopi, Stara planina, Sredna gora, Strandja, Sakar, Vitosha, Lulin, and Osogovo. The highest peak is Mt. Mussala in the Rila mountains (2925 m. a.s.l.). Bulgaria also has several big plains: the Danube Hilly Plain and Dobrudja in North Bulgaria; Trakia Lowland, the Strouma Valley and the Sub-Balkan Valley (part of which is the Rose Valley) in South Bulgaria. The Republic of Bulgaria is characterized by a broad range of altitudes - from below sea level up to 2,925 m, and it is divided into the following belts:

- The Lower Plain and Foothill Belt of Oak Forests (0-800 m a.s.l.);
- The Middle Mountain Belt of Beech and Coniferous Forests (600-2,200 m);
- The Alpine Belt - above 1,800-2,200 m.

The Republic of Bulgaria has a temperate/continental climate, and belongs to the southeastern province of the Central European Region. It falls into four phytogeographical districts: European Forest District, Eurasian Steppe, Forest/steppe District, and the Mediterranean District.

Plant species of the Mediterranean, Boreal, and Arctic regions occur in Bulgaria at various altitudes. About 12,000 plant species grow in Bulgaria, including 4,000 duckweeds, 3,000 fungi, 641 lichens, 637 mosses, 51 ferns, 3,300 flowering plants, 16 gymnosperms, 3,284 angiosperms. Of the 3,300 flowering plants, 71 are trees, 119 shrubs and semi-shrubs, and more than 3,100 are perennials. The animal world is mainly represented by Euro-Siberian and Middle European fauna.

Bulgarian forestry has more than 120 years of history. In the beginning, forestry was influenced from Turkey and Russia. During the early 1900s, Bulgarian forestry followed German forest science and practice. In 1925, the Forest Faculty at the Sofia University started to educate specialists in the field of forestry (forestry engineers). In 1928, the Forest Research Institute was established. After the Second World War, Bulgarian forestry followed the direction of the former Soviet Union.

Bulgarian foresters have had good results in the fields of anti erosion afforestation, creation of new forest plantations, increasing growth rates, use of poplars for forest and products, and improved silviculture and harvest methods.

2. GENERAL ECONOMIC SITUATION

In 2001, the Bulgarian economy showed an upward trend of continued economic stability following the 1996-97 crisis. The Gross Domestic Product (GDP) in 2001 totalled 29,618 million leva. The GDP per capita in 2001 was 3,725 leva. In comparison, the 2000 GDP per capita amounted to 3,274 leva. In absolute value, GDP rose by 4.0% in 2001 compared to 2000. The 2001 gross value added amounted to 26,204 million leva. Note, Bulgarian leva can be converted to US dollars by using 2.185 leva per US dollar for 2001, and 2.124 leva per dollar in 2000. The private sector share of gross value added of the national economy, is 71.7%, indicating real growth of 7.3% compared to 2000. This growth is weaker than growth in the previous year, likely due to completion of the privatisation process.

The data for the period 1998-2001 indicate a trend of reduced gross value added from the agricultural sector to in the national economy (18.8% in 1998, to 13.6% in 2001). The gross value added in the agricultural and forestry sector for 2001 amounted to 3,579 million leva (at current prices) as opposed to the 2000 figure of 3,301 million leva. In 2001, the agriculture and forestry sectors suffered from adverse weather conditions and devastating fires. Besides these factors, agriculture has been negatively affected by excessive fragmentation of agricultural land, inadequate sources of finance, low investment activity in the sector, and shrinking demand (especially from Russian markets).

In 2001, Bulgaria had a negative trade balance (-2,218 million leva). The trade deficit has produced a negative impact on the current account deficit, which reached $ 885 million. However, in 2001, as well as in 2000, the trade balance in the service sector, running a surplus of $545.7 and 505.7 million US dollars respectively because of exceptionally profitable holiday seasons. In 2001, the trade balance in the agricultural sector was also positive by $222.1 million. The current account deficit has been financed with direct foreign investment and with official loans. In 2000 and 2001, the Bulgarian National Bank's hard currency reserve increased.

The leva/euro fixed exchange rate and the introduction of Currency Board resulted in the stabilization of both the national currency and the financial system. The trend toward stability between the leva/US $ exchange and interest rates remained unchanged in 2001. The basic economic indices for Bulgaria (in general), and for the agricultural sector (in particular), for the period of 1998-2001 is shown in Table 2.1. The average annual inflation rate was 7.3% in 2001. The inflation was influenced by external factors such as fuel prices, the exchange rate, etc. At year-end 2001, unemployment in Bulgaria was at 17.3%, compared to 17.9% at year-end 2000.

The composition of the added value for the year 2000 shows that the services sector has the biggest share – 57.7%, followed by the industrial sector – 27.8%. The agricultural sector (forestry and agriculture) has the lowest share – 14.5% (Table 2.2). The share of the forestry sector in GDP for the year 2000 in the public sector was 0.3% and for the private sector 0.2% (0.5% in total). While timber and other wood products form a small share in the whole public product, the contribution of the forestry sector to the protection of the environmental and the nature resources is far more significant.

TABLE 2.1

Basic macroeconomics indices for the period 1998-2001

	Indices	**1998 ***	**1999**	**2000**	**2001**
1.	Gross National Product – million leva	22 421	23 790	26 753	29 618
	Including: Value added – million leva	20 052	21 205	23 697	26 204
	Value added for Agriculture and Forestry – million leva	3 769	3 458	3 301	3 579
	Share of value added for agriculture and forestry, of the value added for the economy as a whole	18.8%	16.3%	13.9%	13.6%
	Foreign trade balance (export-import) – million leva	52	-1 373	-1 432	-2 218
	Including: Agriculture - million leva	252.4	350.5	227.4	222.1
	Forestry and fishing - million leva	9.6	14.8	13.1	NA
	Investments in costs for buying and obtained fixed assets - million leva	6 110.2	8 289.7	10 093.7	9 480.1
	Including: Investments in the agrarian sector (agriculture, forestry, hunting and fishing) - million leva	201.5	188.5	212.2	190.3
2.	Real increasing of GNP	4.0%	2.3%	5.4%	4.0%
3.	GNP per capita				
	in leva	2 715	2 898	3 274	3 725
	in US$	1 543	1 577	1 542	1 705
4.	Inflation :				
	- average for the period	22.3%	1.8%	10.0%	7.3%
	- in the end of the period	1.0%	6.2%	11.4%	4.5%
5.	Rate of exchange leva/ $	1.760	1.838	2.124	2.185
6.	Level of unemployment at the year-end	12.2%	16.0%	17.9%	17.3%
	Registered unemployed – total	465 202	610 551	682 792	662 260
7.	Average wages for the employed in the country – leva	2 199	2 412	2 694	2 980
	- in agriculture, forestry and hunting – in leva	1862	1 977	2 170	2 367
	- in the fishing industry – in leva	1017	1 231	1 256	1 259
	Indices	1998*	1999	2000	2001

Source: NSI and MAF

*The BGN for 1998 is adjusted to the 1999 redenominated currency (1000 BGN = 1 redenominated BGN)

TABLE 2.2

Share of the key economic sectors of the Republic of Bulgaria, in GDP for the year 2000

Economic sector	Share of the public sector (in percentage)	Share of the private sector (in percentage)
1. Agriculture and forestry	14.5	20.6
a) Agriculture	14.2	20.4
b) Forestry	0.3	0.2
2. Industry	27.8	27.3
3. Services	57.7	52.1
Total	100.0	100.0

Source: Statistical book of reference, National Statistical Institute, 2001.

3. FOREST RESOURCES

3.1 Introduction

For Bulgaria, forests are a very valuable ecosystem, and account for 36% of the area of the country. Bulgarian forests provide watershed for about 85% of the water flow in the country or nearly 3.6 billion m^3 of clear drinkable water. They play a significant role through CO_2 absorption. The total absorption capacity is estimated at nearly 142 millions of metric tons of carbon, which is about 516 million metric tons of CO_2 – equivalent. Bulgaria has many rare and endemic species due to its geographical situation –between three zones on the border between Europe and Central Asia.

The total area of forests (forests and other non-wooded lands) in Bulgaria at year-end 2000 was 3.9 million ha ((according to data from the National Statistical Institute). Afforested area is 3.4 million ha or more than 86% of the total forest area. Afforested areas cover about 30% of the country. Bulgaria is 4th in total forest area and other wooded lands amongst the Balkan countries (after Turkey, Romania and Greece).

3.2 Forest Area

During the last 20 years (1980 - 2000) the total forest area increased from 3.743 millions ha in 1980 to 3.914 million ha in 2000. This is an increase of 171,000 ha or 4.57% from the area in 1980. At present (2002), the total forest area is just over 4 million ha and represents about 36% of the total area of Bulgaria. The expansion of forest area is mostly at the expense of agricultural land use. Broadleaved species are dominant in Bulgaria, accounting for 67% of forest area and 56% of standing volume.

According to its main functions, the forest fund in Bulgaria is arranged into three groups:

1. Wood-production and environment-sustaining forests.
2. Protective and Recreational forests.
3. Forests and lands in protected areas.

The distribution of the total area of the forest and other non-afforested lands in Bulgaria according to the functions is showed on the Table 3.1.

TABLE 3.1

Distribution of the area of the forest and other non-afforested lands in Bulgaria according to their functions as of year-end 2000

Functions	Total area - ha	%	Including			
			Afforested area	%	Non afforested area	%
I. Forests of productions and environmental functions (commercial forests)	2 580 845	65.9	2 265 356	81.8	315 489	12.2
II. Protective and recreational forests	1 039 648	26.6	887 792	85.4	151 856	14.6
III. Forests and forest lands in protected areas	293 862	7.5	245 159	83.4	48 703	16.6
Sub-total II+III	1 333 510	34.1	1 132 951	75.0	200 559	15.0
Total	3 914 355	100.0	3 398 307	86.8	516 048	13.2

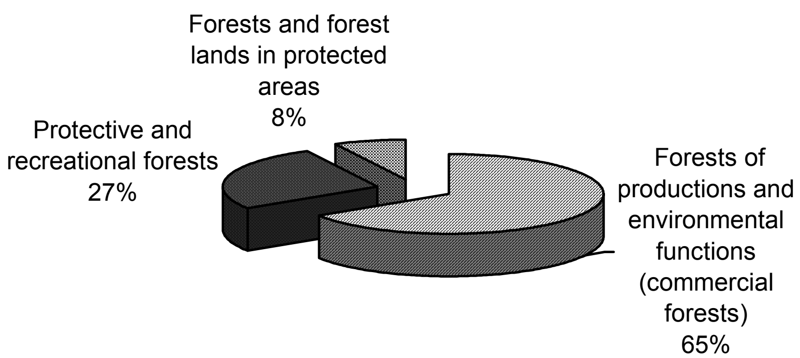
Source: NFB

Note: Afforested area is defined as being forest lands that are covered by artificially and naturally created forests.

The principal aims of the forestry management in Bulgaria are the safeguarding of forests, and increasing their resources. A big part of Bulgarian forests (26.6%) is used for protective and recreational functions, and strictly protected areas account for 7.5% (Figure 3.1). The area of the forests with commercial and environment-sustaining functions is 65.9% of the total forest fund area.

FIGURE 3.1

Distribution of total forest and other non wood area according its functions



Source: Forest Sector Analysis, 2003.

3.3 Protected and protective territories

Under the 1998 Protected Areas Act (which is still in force), six categories of protected areas were defined (Table 3.2). National parks, reserves, and strict nature reserves are declared exclusive state property and despite being located primarily within the forest fund, these lands are managed by the Ministry of Environment and Water (MoEW). There are 723 protected areas, covering some 540,000 ha, among which 390,000 ha (72%) comprise woodlands and forests within the forest fund. The network of protected areas was established by the State Forestry Administration. Bulgaria has 3 National Parks, 9 Natural Parks, 55 reserves and 35 maintained reserves in its forest areas (summarized in Table 3.2). Table 3.3 shows the definitions of the different types of protected areas. Protected areas (PA) cover 541,781 hectares, which is 5 per cent of the country's total area. Under the direct management of NFB are nine natural parks with 237,610 ha of total area, including 159,185 ha of forest area, and all other protected territories (natural landmarks, protected areas and historic sites).

TABLE 3.2

Protected Areas in Bulgaria*

No.	Category	Total number of Protected areas in Bulgaria in 2002	Total area of Protected areas in Bulgaria in 2002 *(ha)*	Protected area included in the forest fund in 2000 *(ha)*	Percentage of Protected area within the Forest fund
1	Reserves	55	76 979.0	58 177.0	75.6
2	Maintained Reserves	35	4 517.1	945.0	20.9
3	National Parks	3	150 362.3	119 226.0	79.3
4	Nature Parks	11	24 7604.0	179 338.1	72.4
5	Protected landscapes	146	39 000.2	21 878.0	56.1
6	Natural landmarks	473	23 318.3	10 007.0	42.9
	TOTAL	723	541 780.9	389 571.1	71.9

Source: NFB

*The figures in the table are approximate because of differences in the reporting body and because of the ongoing process of reclassification implemented under the Protected Areas Act.

According to the Bulgarian Constitution and Law for the Protected Territory, only forest and forest lands of parks with national importance ("Rila", "Pirin" and "Centralen Balkan") and natural reserves (pointed out in the appendices of the Law), are exceptionally state property. The National Parks, the reserves and the maintained reserves are managed under direction of the Law for the Protected Territories and they are under the direct management of the Ministry of Environment and Water. After the reclassification of the protected natural territories under the new Law, the Bulgarian classification of the protected territories will be very close to the classification system of the International Union for the Conservation of Nature (IUCN) (Table 3.3).

TABLE 3.3

Categories and Purpose of Protected Areas in Bulgaria

No.	Category	Purpose	Ownership	IUCN Category
1	Reserve	Protection of existing ecosystems without human interference; monitoring of environmental processes	Exclusive state property	I (II)
2	Maintained Reserve	Protection of ecosystems through maintenance and restoration	Exclusive state property	IV
3	National Park	Protection of natural ecosystems rich in biodiversity while allowing tourism development	Exclusive state property	II(V)
4	Nature Park	Protection of the ecosystem, biological and landscape diversity; with sustainable use of resources and tourism development.	Different (state, communal, individual etc.) property	V(VI)
5	Protected Landscape	Habitat protection for plants, animal and the landscape	Different property	VI , III
6	Natural Landmark	Protection of special landscape features (rock formations, caves, waterfalls, sand dunes, etc.)	Different property	III,(V)

Source: Forest Sector Analysis, 2003.

A large part of Bulgarian protected areas has international importance. Two, National Park "Pirin" and biosphere reserve "Srebarna" are recognized as World natural heritage sites according to the 1972 Convention for Protection of World Culture and Nature Heritage. Seventeen territories are listed as biosphere reserves in the Program "Man and Biosphere" (MAB) of UNESCO. Four areas are recognized as wetland zones with international importance, according to the "Convention on Wetland Zones" (Ramsar, Iran, 1971). There are also 22 sites in Bulgaria listed by Bird life International as important ornithological places in Europe. There are 50 Bulgarian sites encompassing 80% of the protected areas of Bulgaria listed in the UN list of national parks and protected areas. Bulgaria recently signed many international conventions connected with the protection of biodiversity, and are reflected in the "law for the protected territories".

Bulgaria is among other countries in Europe with a small percentage of protected forests. In view of the pressure exerted from the environmental NGOs and society, the area of the protective and recreational forests will increase. These trends need to be considered when making forecasts in relation to future timber harvest.

3.4 Wood volume and volume increment

Distribution of forest area according to the forest inventory of Bulgaria is about 40% coniferous, 30% hardwood, and about 30% mixed hardwood coppice. Table 3.4 provides an overview of Bulgarian forest volume by forest type. This would suggest that about 70% of the forest area, and 75% of the standing volume is economically viable. There has been little change in the species structure of Bulgarian forests from 1980 to present. Conifers went from 33.1% in 1980 to 33% in 2000 (Figure 3.2).

The mean annual increment of Bulgaria for 2000 was 12.3 million m^3 (Figure 3.3), which compares very favourably to the increment of 1980, at 4.7 million m^3. This indicates the level of regeneration of forest resources in spite of the over harvesting that occurred during the period 1955 – 1970. The mean wood increment in 2000 was 4.0 m^3/ha, which is significantly less than the increment in the forests of many European countries and shows that there is potential for increasing the growth of wood stock.

TABLE 3.4

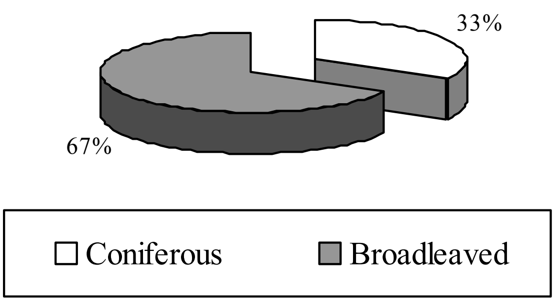
Growing stock by type of forests and age classes for the period 1965 – 1995

Indices	Measure	1965	1970	1975	1980	1985	1990	1995
Total Growing stock*	mln. m^3	252.2	263.5	274.6	303.8	336.7	404.9	467.3
Including:								
Coniferous	-"-	86.8	89.8	95.3	103.0	121.8	158.5	193.0
High stem broadleaved forests	-"-	108.4	100.3	97.7	101.0	101.5	115.0	131.2
Broadleaved for reconstruction	-"-	27.2	29.2	28.1	25.7	25.6	27.0	28.0
Coppice forests for conversion	-"-	26.6	40.0	48.4	67.2	82.0	97.5	108.5
Coppice forests	-"-	3.2	4.2	5.1	6.9	5.8	6.9	6.6
Total average growing stock per ha**	m^3/ha	80.2	83.3	85.1	92.3	101.4	121.7	140.1
Including:								
Coniferous	-"-	120.1	109.7	101.8	96.7	110.9	143.2	180.6
High stem broadleaved forests	-"-	134.1	144.6	150.3	149.5	145.2	161.9	181.4
Broad-leaved for reconstruction	-"-	33.2	36.8	36.7	38.2	40.3	44.4	45.1
Coppice forests for conversion	-"-	39.4	54.7	65.0	90.0	106.0	124.4	134.2
Coppice forests	-"-	26.6	33.2	38.7	51.9	50.5	59.0	58.7
Growing stock by age classes:*								
I class – from 1 to 20 years	mln. m^3	24.0	30.0	30.3	28.9	33.9	41.5	42.8
II class – from 21 to 40 years	-"-	33.9	45.0	51.5	72.9	92.4	109.6	126.3
III class – from 41 to 60 years	-"-	41.3	40.1	38.6	44.5	57.0	71.0	97.9
IV class – from 61 to 80 years	-"-	59.4	56.9	56.7	57.0	56.5	61.7	64.7
V class – from 81 to 100 years	-"-	38.6	38.8	43.4	42.1	44.8	52.0	55.5
VI class – from 101 to 120 years	-"-	25.1	24.8	25.9	27.7	28.9	32.4	37.9
VII class – from 121 to 140 years	-"-	22.5	18.3	27.2	18.9	18.5	21.2	23.9
VIII class – over 140 years	-"-	7.4	9.6	11.0	11.8	12.3	15.5	18.3

Source:NFB

FIGURE 3.2

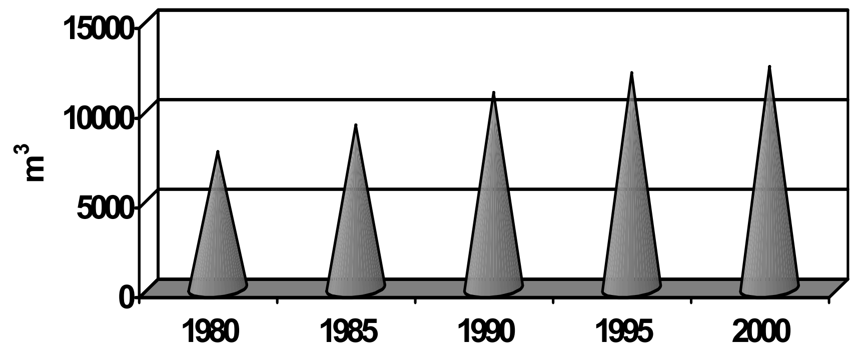
Distribution of area in 2000 by type of forests



Source: *Statistical report 1, Forest Fund, 2000; National Forestry Board, 2001.*

FIGURE 3.3

Changes of mean annual increment of wood of the forests during the period 1980 - 2000



Source: NFB.

The share of forests with special uses increased from 25.9% in 1980 to 34.2% in 2000 (Table 3.5 and Figure 3.4). During this period, many new reserves, green zones, protected areas etc. were created. The total standing volume of Bulgarian forests has increased from 296 million m^3 in 1980 to 526 million m^3 in 2000 (Figure 3.5and Table 3.5). The volume per hectare increased from 73 – 93 m^3 in 1980 to 156 m^3 in 2000 (Figure 3.6 and Table 3.5). This growth is a result of intensive forestry activity (afforestation, cultivation, good seed stock, etc.) and of decreasing harvest. In spite of large tracts of newly planted afforested areas, the average age of forests in Bulgaria increased from 38 to 49 years, between 1980 and 2000 (Table 3.5).

During the period from 1980 to 2000 the harvest was less than anticipated (Figure 3.7and Table 3.5), while during the period from 1960 to 1970, the harvest was much larger than accorded to in the Forest Management Plan. The share of harvested wood volume from thinning increased from 23.3% in 1980 to 40.9% in 2000 (Figure 3.8 and Table 3.5). This was a result of necessary thinning operations in plantations, which were planted during the period 1950 – 1980, and a decrease of total harvested wood. The volume of harvested wood from thinning didn’t change considerably (1,365 thousand m^3 in 1960, 1,826 thousand m^3 in 1995, and 1,537 thousand m^3 in 2000).

TABLE 3.5

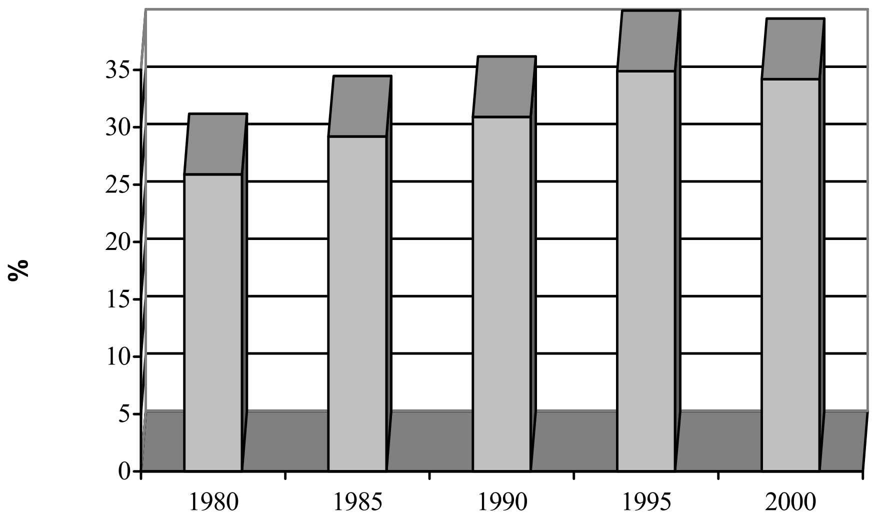
Indicators, characterized forests in Bulgaria in the period 1980 – 2000

Indicators	**1980**	**1985**	**1990**	**1995**	**2000**
Total forest area, ha	3 743 123	3 768 255	3 772 493	3 876 272	3 914 355
Index (1980 = 100)	100.0	100.7	100.8	103.6	104.6
Afforested area, ha	3 199 936	3 229 369	3 236 758	3 356 876	3 375 117
Index (1980 = 100	100	100.9	101.2	104.9	105.5
Percent of forests with special purposes	25.9	29.2	30.9	34.9	34.1
Total growing wood stock, 1,000 m^3	296 379	336 200	395 628	467 180	526 063
Index (1980 = 100	100.0	113.4	133.5	157.6	177.5
Mean wood stock per ha, m^3	93	104	122	139	155.9
Mean annual increment, 1,000 m^3	7 616	9 107	10 922	12 003	12 348
Index (1980 = 100	100.0	119.6	143.4	157.6	162.1
Mean increment per ha, m^3	2.4	2.8	3.4	3.6	4
Average tree age, years	38	40	42	44	49
Percent of coniferous	33.1	33.8	34	32.1	33
Mean stand density	0.75	0.77	0.75	0.73	0.73
Wood available for harvest according FMP, 1,000 m^3	6 536	6 452	6 368	6 519	5 429
Total fellings, 1,000 m^3	5 907	5 534	4 681	4 852	3 755
Felled thinnings, 1,000 m^3	1 365	1 405	1 425	1 826	1 537
Percentage of total fellings from felled thinnings	23.3	25.4	30.4	37.6	40.9
% FMP planned harvest utilized	90.4	85.8	73.5	74.4	69.2
% of harvested wood according to the current increment	77.6	60.8	42.9	40.4	33.7
% of growing stock harvested	2.2	1.64	1.18	1.04	0.71
Fellings per ha of forested area, m^3	1.85	1.71	1.4	1.45	1.12

Source: NFB.

FIGURE 3.4

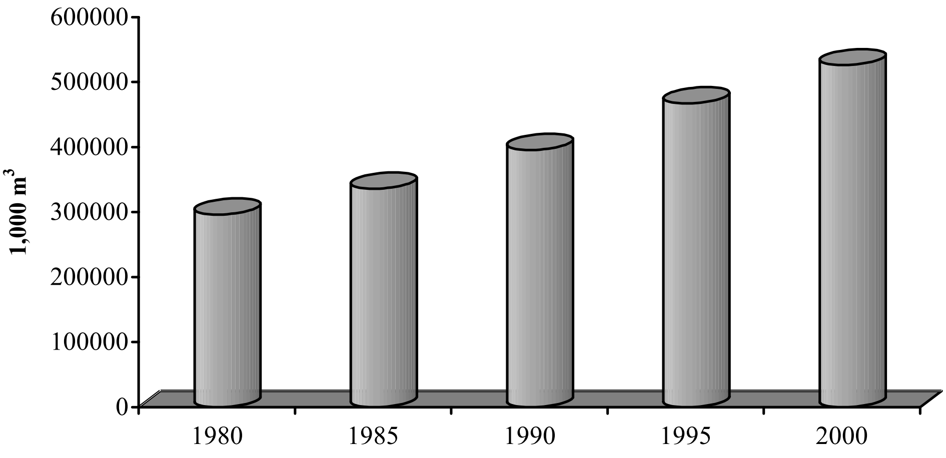
Changes in the share of forests with special purposes during the period 1980 - 2000, %



Source: NFB.

FIGURE 3.5

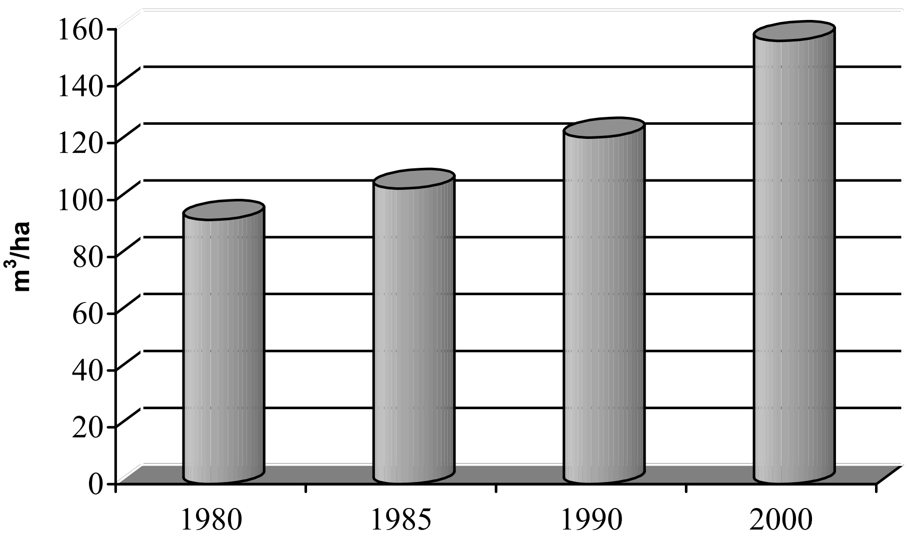
Total growing stock in the forests of Republic of Bulgaria during the period 1980 - 2000



***Source**:* NFB.

FIGURE 3.6

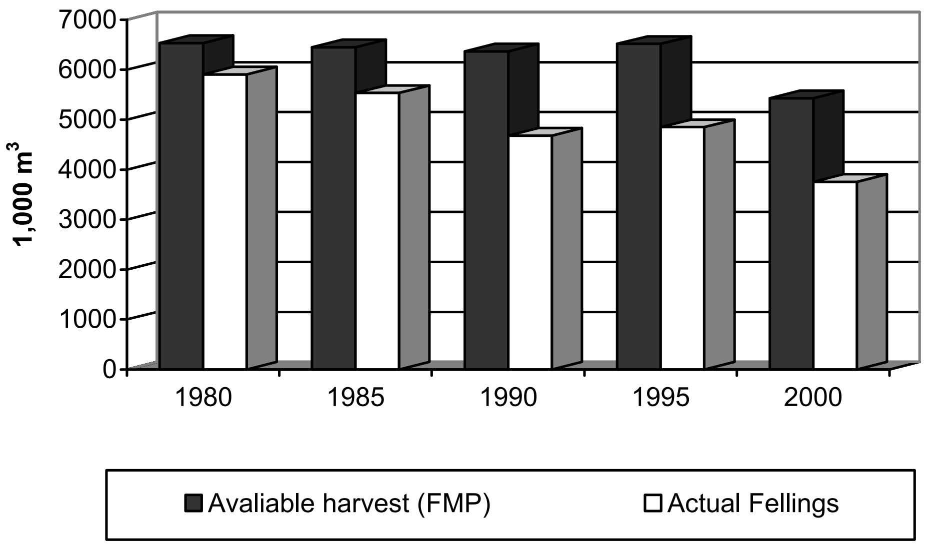
Growing stock per hectare in the forests of Republic Bulgaria, 1980 - 2000



Source: NFB.

FIGURE 3.7

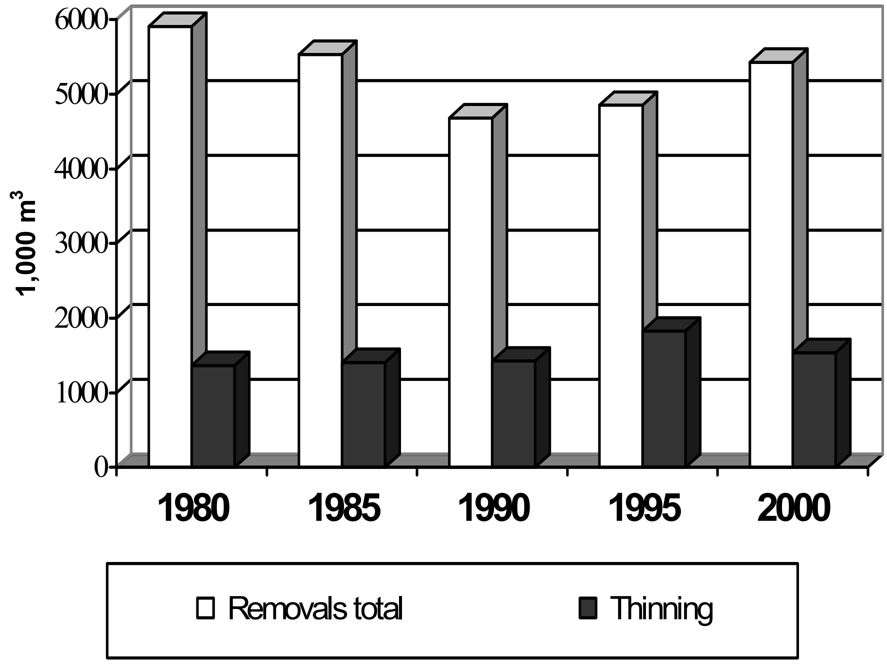
Annual wood available for harvesting and actual fellings



Source: Forest Management Plan

FIGURE 3.8

Changes of removals total and thinning during the period 1980 - 2000



Source: NFB.

During the period from 1960 – 1970, Bulgaria harvested more wood volume than grew, but after 1970, the harvest decreased substantially (in 2000, the harvest was just 33.7% of the 1980 level). The percentage of harvested wood in relation to the standing inventory also showed a decrease: from 2.2% in 1980, to 0.71% in 2000. The annual harvest decreased unevenly during the period 1980 – 2000. The proportion between mature felling and the thinning is 77% and 23% respectively in 1980, but this ratio has also varied during the 1980 – 2000 period. Most timber harvested in Bulgaria is from mature stands. The volume of harvest from thinning didn't change despite the needs created by the more than 1 million ha of forest plantations. The lack of thinning occurred because of the high cost of thinning, coupled with the lack of demand for the small low valued wood.

The decrease of the total harvest also occurred because of the timber that was imported from Komi – Russia. According to the contract with the former USSR, Bulgaria received about 1 million m^3 of wood annually. The main reasons for the decrease in harvest after 1990 were the results of the transition process from a planned to a market economy, and the initial reforms in forest land management (protected areas, increase of park areas, etc.).

From 1965 - 2000, growing stock more than doubled. In 2000, the average volume per hectare for growing stock was 156 m^3. Broadleaved forests account for 67% of forest area, and 56% of stand volume (Table 3.6). Coniferous forests only occupy 33% of the area, but as they have high stocking level, their share of growing stock volume is 44%.

TABLE 3.6

Main Statistical Characteristics of the Forest Fund Regarding the Forest Types in Year 2000

Forest type	**Forested area**		**Total growing stock**		**Mean age, years**	**Mean increment per ha**	**Mean stock per ha**	**Mean stand density**
	ha	*%*	*m³*	*%*				
Coniferous	1 114 674	33.0	231 822 686	44	42	6.73	221	0.75
High stem broadleaved forests	704 374	20.8	148 293 645	28	67	3.57	193	0.74
Forests for reconstruction	535 438	15.8	23 790 301	5	48	1.02	44	0.60
Coppice forests for conversion	900 309	26.6	115 304 775	22	48	2.97	130	0.76
Coppice forests	1 23 349	3.65	6 851 720	1	20	4.05	55	0.80
Total	3 375 117	100.0	526 063 127	100	49	4.00	156	0.73

Source: NFB

Most of the forests are young; about 30 percent are 21-40 years old; and roughly 20 percent are 41-60 years old. Coniferous forests are considerably younger than deciduous high forests. From 1995 to 2000, the average age of forests increased from 45 to 49 years and the mean annual increment expanded from 3.6 m^3/ha to 4.0 m^3/ha. The large portion of young forests explains the relatively high growth rate.

(2) Because of large-scale afforestation programs launched in the middle of the last century, the area of coniferous forests increased rapidly and reached a maximum of 1.33 million ha in 1990. Since then, the area of coniferous forests declined, and as of 2000, coniferous stands covered only 1.14 million ha or 33% of the forest area (Figure 3.9).

This trend is likely to continue, as a result of:

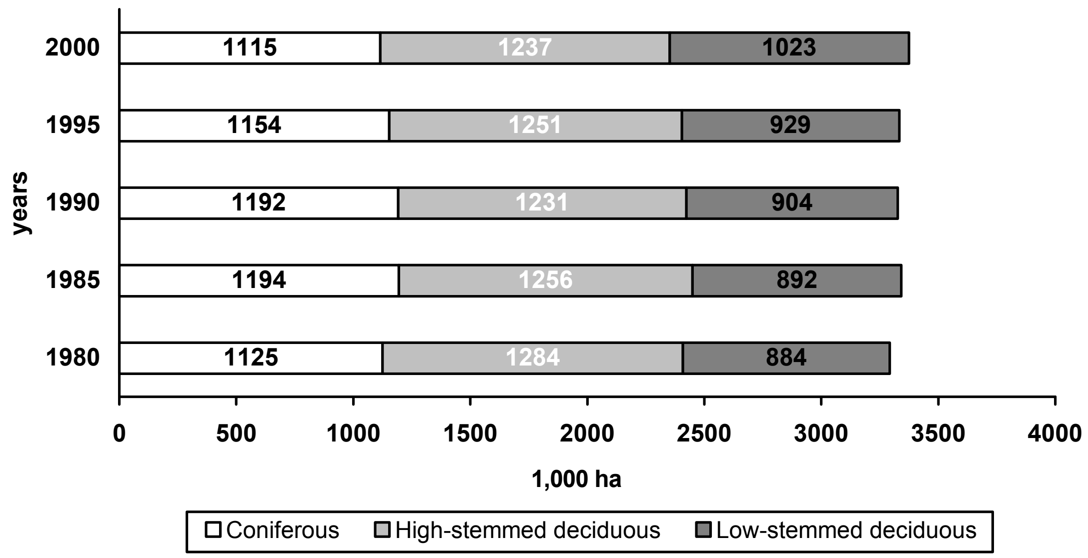
(1) The change to less planting of conifers and more natural regeneration (favouring hardwoods, and more in line with current environmental views) coupled with less conversion of coppice stands. Even artificial regeneration is currently favouring the use of deciduous species (75-80%).

(3) After the existing coniferous stands reach maturity and regenerate, the ensuing secondary succession will entail a natural reduction of conifers. This trend will be reinforced by the expected changes in climate.

(4) The impact of forest fires, other abiotic and biotic factors, will also reduce the area of coniferous forests.

FIGURE 3.9

Structure of afforested area in the period 1980 – 2000



Source: NFB.

Regarding deciduous forests, the area of deciduous high forests is expected to remain stable in the short term, and increase later as reconstructed coppice stands develop into high forests. However, an advance in the age of the low- forests and coppice forests for conversion is observed. Their average age is 20 and 48 years, respectively. This trend will undoubtedly result in reduced increment. The main reasons behind this, is that reconstruction of coppice stands has been substantially reduced in the last few years.

The expansion of the total growing stock is attributable to growth in coniferous and high-stem deciduous forests (Table 3.7). However, it is noteworthy that in 1996-2000 growth slowed down compared to the preceding five-year period. This happened despite a reduction in harvest volumes, which usually leads to accelerated growth. In forests for reconstruction, for conversion into seed stands, and in low-stem forests, the rate of growth was even negative. This suggests that the total growing stock is approaching its biological potential, which is estimated at 550 - 660 million m^3.

TABLE 3.7

Changes in Growing Stock by Forest Type, 1996-2000

(m^3/ha)

Forest type	1996	2000
Coniferous forests	181	221
High-stem deciduous forests	181	193
Coppice forests for conversion	134	130
Forests for reconstruction	45	44
Low-stem forests	59	55

Source: NFB

Note: Low stem forests are defined here as broadleaved forests, which originate from root sprouts and have low productivity.

Statistical data for the period 1990 – 2000 show that the regeneration felling (which varied from 44,100 ha/year in 2000 to 49,600 ha/year in 1900), envisaged in the Forest Management Plan, have been significantly lower; 22,800 ha/year (1991) to 33,800 ha (1999). The total accumulative backlog of regeneration felling for the 11-year period represents 184,700 ha. According to the Forest Management Plan, the share of felling promoting natural regeneration was to be from 38.5% in 1990 to 68.5% in 2000, while the actual performance ranged from 51.8% in 1999 to 96.8% in 1998. Among the regeneration felling prescriptions, the most common is the shelter wood system, which results in a uniform stand structure and even aged forests. There is limited application of irregular or group shelter wood systems, and especially selection systems, which promote the formation of mixed, multi-age stands more in line with natural conditions.

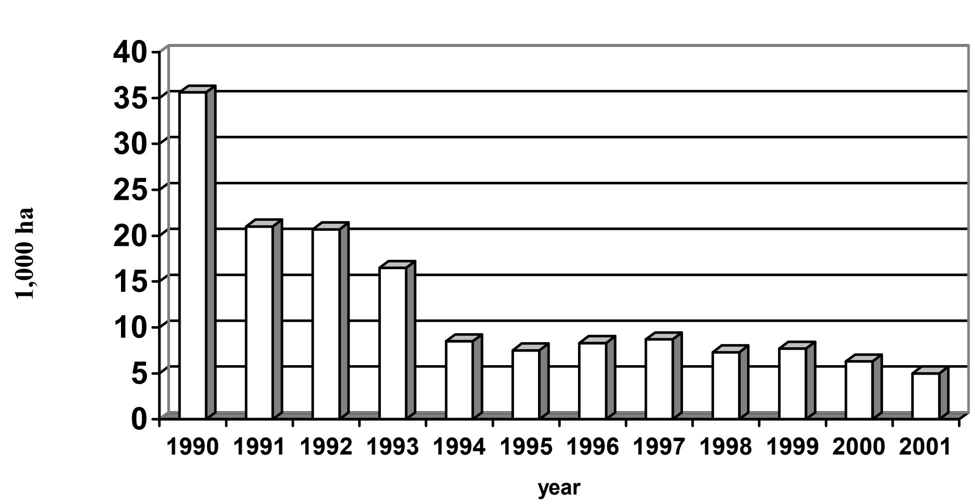
The recent increase in the average volume of growing stock per hectare of high stem coniferous and deciduous forests is primarily a result of limited thinning and regeneration felling. During the last decade, the annual area of regeneration felling remained substantially below the level foreseen in the forest management plan (55.5%- 78.8% of the planned area). Thinning volumes plummeted in the last three years. The area was modest to begin with - 49.8% of the planned area in 1996, but in 2000 it sank to 37.4%, and in 2001 only 28.4% (353,800 ha) of the planned area (1,245,800 ha) of thinning was fulfilled. The backlog in thinning and regeneration felling is the most serious concern regarding the future development of growing stock and increment. In particular, there is a risk that the huge investment made in coniferous plantations will be lost, because of reduced productivity and vulnerability to wind, fires, and pest attacks.

The explanation for not thinning relates to the redirection of activities towards sanitary felling (43,000 ha) and cleaning of the areas devastated by fires. The implementation of thinning in the forests is a most important silviculture activity, and the issue needs to be elaborated in the National strategy. With regard to priority given, thinning are comparable to the recent problems caused by illegal logging and fires, but in terms of actual scale and impact on sustainability, thinning has no equal.

The level of afforestation in recent years shows a sudden decrease, at just 40% of what was planned for in the forest management plan achieved (Figure 3.10). The figures for 2002 show some increase in afforestation compared to previous years, and reached a total of some 7,000 ha, with about 75 – 80% of the areas afforested with deciduous species.

FIGURE 3.10

Changes in area of annual afforestation in the period of 1990 – 2001



Source: NFB

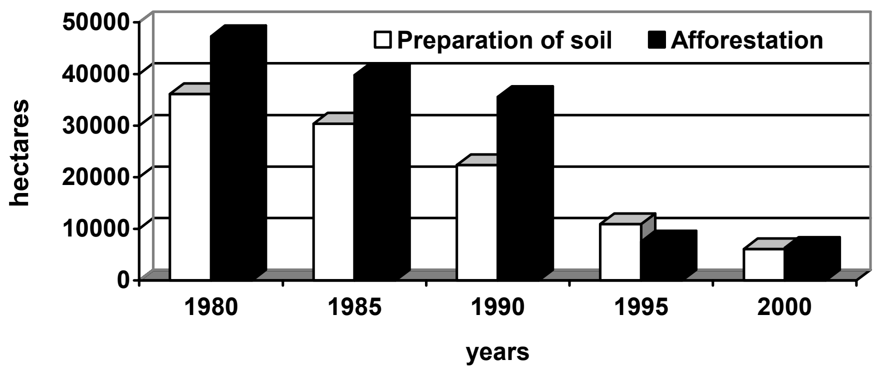
The decline in afforestation is due in part to the following reasons:

- Priority given to natural regeneration.
- A decrease in the share of the stands envisaged for reconstruction with the purpose of ensuring natural regeneration and conservation of sustainable ecosystems.
- Increased cost of afforestation due to increases in the price for labour, fuels, materials, transport, mechanical soil preparation, and a lack of financial means.
- Cessation of silvicultural activities in some forests and lands subject to restitution, as their future owners did not agree with the activities envisaged.

Contrary to the decreasing trend in new afforestation, is the sharp increase in fire-damaged areas (over 130,000 ha for the last 10 years), and fired damaged areas in need of replanting, (over 20,000 ha for the period 1999-2001). The volume of new afforestation and soil preparation for the period 1980-2000 has been decreasing (Figure 3.11).

FIGURE 3.11

Changes of area of new planting and afforestation area during the period 1980 – 2000.



Source: NFB

3.5 Forest legislation

3.5.1 Development of forest legislation

The development of forests and forestry management in Bulgaria is carried out in compliance with the provisions of national legislation and the responsibilities and commitments from the international treaties and agreements. The national legislative framework consists of specific forestry laws and secondary legislation (which affects forestry indirectly); and other statutory laws of relevance to forests, programs, action plans, projects and decrees of the Council of Ministers (CoM). Relevant international agreements includes conventions, ratified by the Bulgarian parliament and government; regulations and directives of the European Union – transposed or harmonized with the national legislation; European and other international documents of global importance, signed by the Bulgarian Government and Parliament.

In the period from the establishment of organized forestry in Bulgaria (1878) through the beginning of the 1950s, legislation concerning forests has been abundant. With respect to ownership and property, the forest laws divided the forests into state, municipal and private. In this period, there were many lawsuits about the property of forests and forest lands between private persons and the state or between the private persons and the municipalities. Nationalization (1946 - 1951) changed the status of the forests with respect to ownership, and interrupted the lawsuits. The Forest Law of 1958 (the seventh forest law) solved the questions about forest ownership in a very different way - all forests and forest lands were considered national property.

The transition from a centrally planned economy to a market economy (starting in 1989), lead to substantial changes in all spheres of life, including forestry. In 1997 - eight years after the beginning of political and economic changes - the Bulgarian parliament accepted new laws for the forests. They are: "Law for the Restoration of the Property of the Forests and Forest lands of Forest Fund" (LRPFFLFF) and "Law for the Forests" (LF). The regulations for implementation of these Laws were accepted in the beginning of 1998. During the period of 1998 to 2001, documentation concerning the implementation of "Law for the Forests" was completed. During this period, several other Laws, which have connection with forests and forestry, were accepted. They are: "Law for the Protected Territories" – 1998; "Regulations for the Organization, Functions and Activity of the Natural Parks within the NFB" – 1999; "Law for the Medicinal Plants" – 2000; "Law for Hunting and Game Protection" - 2000; "Regulations for Implementing the Law for Hunting and Game Protection" – 2001; etc.

3.5.2 Characteristics of the Law for the Forests

The issues covered under the "Law for the Forests", are as follows:

- General Instructions: forest and Forest Fund; property; changes in the Forest Fund; management of Forest Fund; arrangement and inventory of forests; staffing.
- Reproduction of Forests**:** creation of new forests; erosion control; thinning; sanitary and reproductive felling.
- Uses of the forest and lands within the Forest Fund: general principles; business leases; uses of wood; non-wood forest uses.
- Protection of forests and forest lands within the forest fund: general principles; protection; jurisdiction.
- Building (construction) in the forests.
- Financing of forestry: general principles; incomes to the National Fund "Bulgarska Gora"; expenditures from the National Fund.
- Administrative and penal instructions.
- Transitional and closing instructions.

The "Law for the Forests" and its implementation required more than 40 additional documents – addendums, amendments, etc. Because of the extensive number and complexity of these documents, forest specialists from all management levels had difficulties with implementation.

3.5.3 Law for the Restoration of the Property of the Forests and Forest lands of Forest Fund

Trough the LRPFFLFF, restoration of the property is addressed. Ownership of forests and forest lands, according to the law, could be restored to the persons from whom they were nationalized from (after 1946) or to their inheritors. A condition for restoration of property on forests and forest lands, in real boundaries, is the ability to establish boundaries and ownership. Under certain conditions, where it is not possible to restore the property in the real boundaries, the former proprietors or their inheritor could be compensated with other forests or forest lands from the state forest fund (in the cases where the forests are state property). According to the LRFFLFF only Bulgarian citizens, the state, monasteries, churches, mosques, schools, co-operatives, municipalities are eligible for restoration. Non-Bulgarian citizens can acquire the right of property only by inheritance, but they must sell or bequeath the inheritance to a Bulgarian citizen, municipality, or to the State.

The reinstated owners are obliged to register their property in the State Forestry Enterprises. They must manage their forests and forest lands according to the requirements of the "Law for the Forests", "Law for the Protection of Nature", "Law for Hunting", and other specific laws.

Since the beginning of 2000, the Land Commissions began issuing the official decisions for recognition of ownership of forests and forest lands. Currently, the process of restoration of ownership of forests and forest lands is almost finished.

The main problems concerning implementation of new forest laws were as follows:

- For the majority of owners, restored forests are the major or sole source of income, and thus, have an interest to manage their forests only for profit and the benefits that they might extract from them.
- The lack of documentation of ownership did not allow the restoration of all privately owned forests and forest lands, and this created difficulties and conflicts between former owners, inheritors, and the authority.
- The restoration of the property owned by communities was a very difficult task. In the past, communities managed about 56% of all forests and forest lands. Most of these properties were given to the communities from the state in order to satisfy the needs of the citizens for firewood or building materials. Many of these communities would like to retain ownership and made efforts to justify this right. In many cases conflicts arose, because these properties were not community property.
- The effective time window for application of restoration was very short. This lead to processing errors and a general loss of trust in the authorities responsible for restoration.
- The legislation (the new laws, regulations, instructions, orders) is very complicated, which lead to omissions.

The 2002 amendment to the Law on Hunting and Protection of Game, brought a solution to shortfalls of the earlier law. Some of the big landowners and cooperatives, still disagree with provisions in the law that declare game state property, and deny owners the right to independently manage and utilize game resources within their property.

3.5.4 International legislation and responsibilities of Bulgaria

Bulgaria is in a process of pre-accession negotiations with the European Union. Forestry is included in the *Agriculture* Chapter. A strategy for acceleration of the accession negotiations has been adopted with the main purpose being the successful completion of the process by 2003. Intensive negotiations have already begun. In general, the EU framework legislation is being gradually adopted, and no serious obstacles for its implementation are expected to emerge.

Draft amendments providing for preventative measures against forest fires were elaborated, setting forth the necessity that certain woodlands be classified as “areas at risk” and included in the scheme for assistance. Other provisions related to directives on marketing and trade of forest reproductive material were set forth to provide that four indigenous species are listed in the regulation list of species. The policy for transposing EU legislative framework into the national legislation is being successfully implemented. The Bulgarian government has already synchronized most of the national laws with the most important provisions of EU regulations, directives and resolutions. Full compliance with the EU forestry legislation was achieved in 2003. The agenda is the adoption of the relevant regulations on forest fires, marketing and trade of forest reproductive material, as well as implementation of new standards in compliance with the directive on trade with raw unprocessed timber, classified as EEC-EU.

Application of the *Forestry, Afforestation of Agricultural Areas, Investment in Forestry, Processing and Marketing of Wood Products* measure of the EU Special Accession Program for Agricultural and Rural Development (SAPARD) began in 2003. The main purpose of the program is to improve the conditions for sustainable economic and environmentally friendly forestry management, and to assist owners and silviculture companies in the sustainable management of woodland based industries. The program is targeted at private beneficiaries and municipalities. The total amount to be granted is approximately €60 million.

Bulgaria has also signed a number of documents, adopted at international forums, of which the most significant are: the Declaration on Environment and Development (Rio, 1992); the Kyoto Protocol to the UN Framework Convention on Climate Change; the resolutions of the Ministerial Conferences on Protection of Forests in Europe (Strasbourg, Helsinki, Lisbon), as well as other global conventions. Related decisions and adopted documents were the basis for elaboration and implementation of the National Action Plan on Climate Change, the National Strategy and Action Plan on Biodiversity Conservation, the Project for Conservation of Species and Habitats in Bulgaria, the Biodiversity Conservation and Economic Development Project.

A National Forest certification standard is currently being developed. It will apply to all types of forest and ownership. The main aim is endorsement of the standard by the Forestry Stewardship Council (FSC) or eventual accession to the PAN-European Forest Certification framework (PEFC).

3.5.5 Bulgaria commitments on the international agreements regarding biodiversity

The Republic of Bulgaria has committed itself to a number of international conventions prioritising the issues of biodiversity and acknowledging the necessity for its conservation and restoration. International environmental agreements have a tremendous influence on outside perceptions. National and international stakeholders pay close attention to the accepting and implementation of these agreements. Due to international agreements, each individual country can apply for logistical and financial help for fulfilling the environmental strategies put forth from these agreements. Bulgaria has signed and ratified a number of international conventions, treaties and agreements, concerning biodiversity. The international agreements, signed and ratified by Bulgaria, are of paramount importance because Article 4 of the Constitution of Bulgaria from 1991 states: "the international contracts, ratified on the strength of the constitution, published and in force in the Republic of Bulgaria, become part and parcel of home legislation which contradict them". The non-committing agreements, unlike the committing ones, are not affected by this clause. Among the most important agreements signed and ratified by Bulgaria are the following:

1. Convention on the Protection of the World Cultural and Natural Heritage, approved in Paris on 16.11.1972. For Bulgaria it came into force on 17.12.1975, when it was confirmed by provision №13/04.02.1994.
2. Convention on International Trade in Endangered Species of the Wild Flora and Fauna (CITES), signed in Washington on 03.03.1973 and re-signed in Bern on 31.12.1974. In Bulgaria, it came into force on 16.04.1991. It concerns all orchid species, two species of cyclamen, wild snowdrop and *Sternbergia colchiciflora*.
3. Convention on the Protection of Wild European Flora and Fauna and Natural Sites. It was drawn up in Bern on 19.09.1979 and ratified by the Bulgarian parliament on 25.11.1991 (State Gazette, issue 13 from 1991). It is the most important agreement, at a European level, which tackles the preservation of the wild European flora and fauna and their sites. It commits the countries to maintain the population of wild species at levels, that are in compliance with ecological and cultural needs, and promotes the "in situ" conservation of wildlife and sites. This list includes 435 species of 88 families of protected species in Europe. Unfortunately, only 19 species of those encountered in Bulgaria got into the list – 3 of them are lichens, 2 species are ferns and 14 – angiosperms. The fact that there is not a single Bulgarian endemic shows that the richness of the Bulgarian flora was not taken into consideration, when the list was made.
4. Directive 92/43 of the European Community Council on the conservation of natural habitats and of wild fauna and flora (1992, implemented many of the clauses of the Bern convention). It is not in force in Bulgaria, but is of considerable importance for the elaboration of the new home legislation.
5. Declaration on the guidelines of global consensus on the management, conservation and sustainable development of all kind of forests (Rio Principles).
6. Framework convention on climate change. It was signed in 1992 but as a non-committing agreement.
7. Convention on Wetlands of International Importance (Ramsar).
8. The program for man and biosphere by the Organization for Education and Culture (UNESCO) at the UN.
9. Other European agreements, as the Strasbourg (1990), Helsinki (1993) and Lisbon (1998) Resolutions of the Ministerial Conferences on Protection of Forests, etc.

The international agreements are very important and a useful means for the protection of the biological resources and the biodiversity in Bulgaria. These agreements are written into home legislation, but for many of the clauses there is no legal framework to support and enforce the agreements. The current laws are often ineffective because of, jurisdictional ambiguity amongst co-managing institutions, entanglement between old and new laws, insufficient penalties, and a lack of a clear-cut criteria with which to guide the decision process, etc.

3.6 Forest ownership

3.6.1 Forest ownership before nationalization

Forests in the Republic of Bulgaria are state, municipal, or private property. The ownership is regulated by the Constitution and Legislation of the Republic of Bulgaria, which guarantees equal rights to each owner and provides equal responsibilities, immunity of the rights of ownership and independence of the economic activity. According to the official statistics before the nationalization of forests, the distribution of the forest ownership was (Table 3.8, Figure 3.12 and Figure 3.13).

TABLE 3.8

Distribution of the forests by property in Bulgaria before nationalization

Type of property	Number of owners	Afforested area in thousand ha							Average area of holdings ha
		Coniferous	Deciduous		Total	Non-forested area	Total	%	
			High-stem	Low-stem					
State	1	166.5	267.3	329.9	763.7	197.0	961.7	26.6	-
State, given to the communities to manage it*	6 059	112.6	368.4	1 178.0	1 659.2	327.0	1 978.2	54.7	328
School	563	1.0	2.0	12.2	15.2	10.0	28.2	0.7	45
Monasteries and church	500	3.8	9.7	10.3	23.8	12.5	36.3	1.0	73
Cooperative	71	16.4	2.1	0.7	19.2	7.5	26.7	0.7	376
Private over 50 ha**	153	12.6	8.5	30.3	51.4	12.0	63.4	1.7	415
Private under 50 ha**	472 500	42.2	53.7	406.4	502.3	25.2	527.5	14.6	25.2
Total	-	355.3	711.7	1 967.8	3 054.8	592.2	3 627.0	100.0	-

Source: Stoyanov N., Conception for Consulting and Education of Private Forest Owners in Bulgaria, Paper at the International IUFRO Symposium on "Economic Sustainability of Small-Scale Forestry" held in Joensuu, Finland on 20-26 March 2001.

* Municipal forests, which included forests owned by municipalities and forests leased by the State;
** 0.7% of private forests have been incorporated in 71 cooperative unions.

A cursory review of the history of forest legislation in Bulgaria shows that communal and private forest property was formed by the gradual transference of state forests. This has been performed by legislative, as well as by occupancy for use and subsequent legislation by court verdicts.

Only a small part of the municipal forests have been purchased by the communities, whereas the greater part were ceded by the state to the municipalities for the purpose of satisfying the needs of the communities. Thus in the period from the end of 19th century to nationalization (1947), municipalities had the right to use the forests for the need of their population. In fact, the owner of the municipal (community's) forests was the state, which gave only the right to communities to use the forests.

Private low-stem forests occupied 59.4% of the total private forest area. The local population used them mainly for firewood and building materials. These forests were managed mainly by clear felling and reproduced via shoots. The owners were chiefly peasant landowners, and the products they acquired were predominantly for personal use. Small private ownership prevails. The number of owners possessing forests with up to 50 ha is very large, but these forests, as a rule, are made up of several scattered parcels in various places.

3.6.2 The process of restoration of the property of the forests and forest lands in Republic of Bulgaria

Restoration of forest property ownership began in 1997, when the Bulgarian Parliament accepted the Law for the Restoration of the Property of the Forests and Forest lands of the Forest Fund (LRPFFLFF). After accepting of the new forest law in 1997, Bulgarian foresters begun to work on elaboration of regulations, instructions, orders, ordinance, and methods for implementation of the new forest legislation. The practical process of restoration began in 1998 with applications to the special Land Commissions, proving property ownership of former forest owners or their inheritors. According to the applications, there was about 627 000 ha (16% of the area of the forest fund) recognized for restoration to the owners.

At the beginning of 2000, the practical work of restoration of the property and elaborating the documentation connected with this matter was undertaken. The Land Commissions began by issuing the official decisions for recognizing the right of ownership over Forests and Forest lands. It was expected that about 627 000 ha could be restored to the former owners and their inheritors, but by the end of 2000, the actual area was roughly 546,000 hectares (Table 3.9). According to official statistics, the distribution of forests and woodlands by ownership and management for the year 2000 is as follows (Table 3.9):

TABLE 3.9

Distribution of forests and woodlands in Bulgaria by type of property as of year-end 2000

Type of property	Area (ha)	Area (%)
1. State	3 368 547	86.1
of which:		
MAF (NFB)	3 198 088	81.7
Ministry of Environment and Waters (exclusive state property)	140 042	3.6
Others	30 417	0.8
-Experimental Training Forestry Centres	15 482	0.4
-Agriculture fund	1 935	0.4
2. Private	290 008	7.4
of which:		
Physical Persons	286 461	7.3
Legal Entities	3547	0.1
3. Municipalities	234 773	6.0
4. Religious Institutions	21 027	0.5
Total	**3 914 355**	**100**

Source: Statistic of NFB

Until the end of the first year of practical restoration of forests and forest lands (October 2000) were issued the decisions that are showed in the Table 3.10. Table 3.10 shows the decisions that were made during the first full year (2000) of practical restoration of forests and forest lands. The average area of each forested estate restored to the owners, are shown in Table 3.11 and Figure 3.12.

TABLE 3.10

Current status of restoration of forest and land of the forest fund as of October 20, 2000

Regional Forest Boards	Number of settlements - total	Total Non State Forest Lands		Forest Lands owned by Physical Persons		Forest Lands owned by Municipalities		Forest Lands owned by other owners	
	number	number	ha	number	ha	number	ha	number	ha
Bulgaria	4 160	267 965	646 869	266 550	292 854	755	325 604	1 804 757	28 411
Burgas	244	2 488	57 049	2 420	7 298	58	49 696	119 253	55
Sliven	202	9 294	58 517	9 182	11 116	82	46 311	134 704	1 090
Stara Zagora	173	10 129	10 434	10 109	7 103	6	332	38 286	2 999
Kardzali	512	6 571	36 142	6 442	4 447	102	31 147	85 363	548
Plovdiv	178	10 137	28 365	10 073	16 659	29	10 778	76 219	152 438
Smolian	153	13 362	34 865	13 280	30 752	27	3 172	95 611	941
Pazardzik	92	6 090	43 764	6 046	4 538	33	38 243	98 806	197 612
Blagoevgrad	268	7 067	15 441	7 057	7 025	4	8 404	45 266	90 532
Kiustendil	344	20 720	40 486	20 622	23 758	22	5 849	111 801	223 602
Sofia	282	20 093	102 782	19 904	26 338	107	72 364	241 870	4 080
Berkovitza	383	51 628	56 611	51 460	50 013	73	4 144	214 312	2 454
Lovetch	231	46 544	72 383	46 447	46 980	53	23 119	235 757	2 284
V. Tarnovo	354	52 171	55 710	51 966	43 992	72	10 242	214 507	1 476
Russe	285	2 859	4 500	2 832	2 199	11	2 094	14 780	207
Shumen	281	6 195	22 181	6 112	6 678	62	15 068	56 577	435
Varna	178	2 617	7 639	2 598	3 558	14	4 039	20 643	42

Source: NSI

TABLE 3.11

Average area of each forested estate by ownership category (20.10.2000)

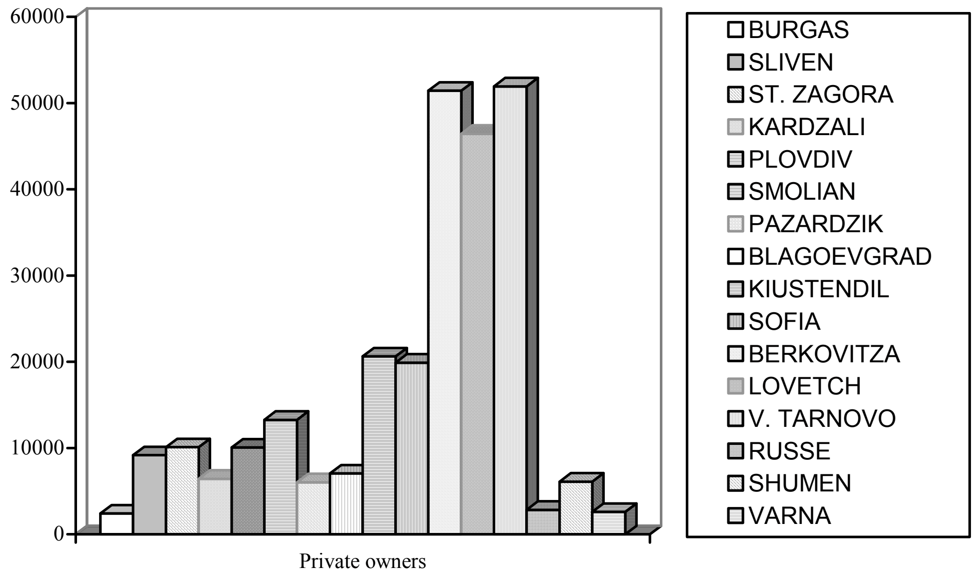
(ha)

Regional Forest Boards	Total Non State Forest Lands	Private individuals	Municipalities	Other owners
Bulgaria	2.4	1.1	431.3	44.6
Burgas	22.9	3.0	856.8	5.4
Sliven	6.3	1.2	564.8	36.3
St. Zagora	1.0	0.7	55.3	214.2
Kardzali	5.5	0.7	305.4	20.3
Plovdiv	2.8	1.6	371.6	26.5
Smolian	2.6	2.3	117.5	17.1
Pazardzik	7.2	0.7	1 158.9	89.4
Blagoevgrad	2.2	1.0	2 250.7	2.0
Kiustendil	1.9	1.1	265.9	143.1
Sofia	5.1	1.3	676.3	37.7
Berkovitza	1.1	0.9	56.8	25.8
Lovetch	1.6	1.0	436.2	51.9
V. Tarnovo	1.1	0.8	142.2	11.1
Russe	1.6	0.8	190.4	13.0
Shumen	3.6	1.1	243.0	20.7
Varna	2.9	1.4	288.5	26.4

Source: NSI

FIGURE 3.12

Distribution of number of the private forest owners by Regional forest management area



Source: NSI

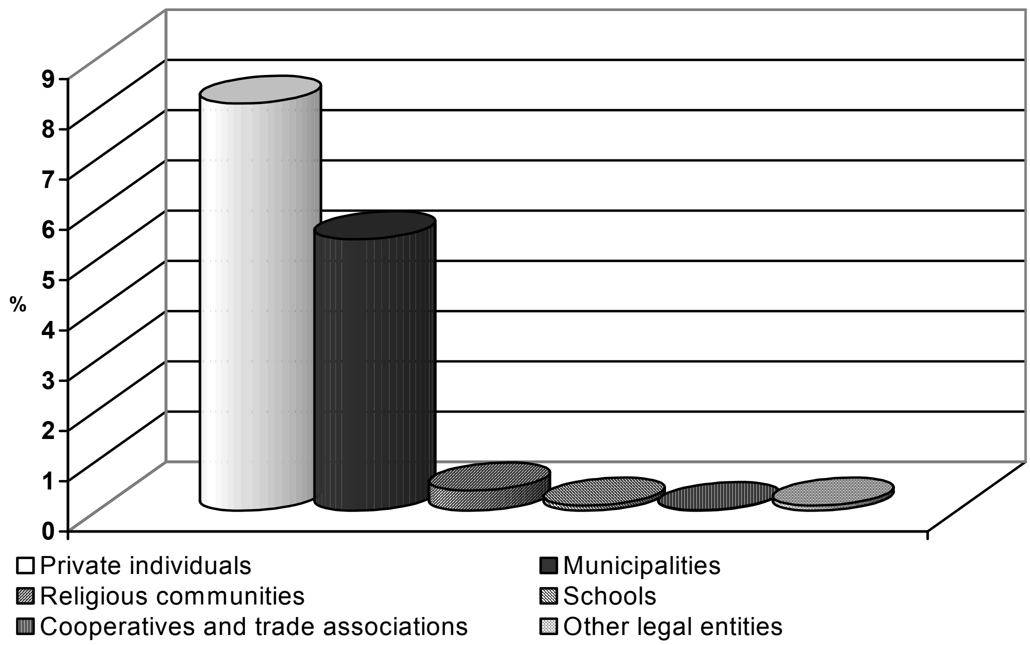
The process of ownership restoration of forests and forest lands in Bulgaria is not finished yet. As of 1 January 2003, non-state forest ownership represented 14.14% of the total forest area of the country and was distributed as follows: private individuals – 8.1%, municipalities – 5.4%, religious communities – 0.4%, schools – 0.1%, cooperatives and trade associations – 0.01% and other legal entities – 0.1% (Figure 3.13). The proportion between different types of forest ownership in different regions of the country varies significantly. The forests of individual owners are small with most being less than 1 ha. There are only 150 individual estates bigger than 50 ha, and the municipal forests are usually several hundred ha. State ownership of forests and forest lands account for more than 85% of the total forest area with the Ministry of Agriculture and Forestry managing 82.1% of the forest area and the Ministry of Environment and Waters managing 3.6%.

The process of forest ownership restoration to municipalities, and to some individuals, is not entirely finished. This process has been accompanied by conflicts of interests, court disputes (as a result of the unsettled ownership), lack of restoration or compensation for some forest owners, delays in taking possession, etc.

The current forest legislation does not address some specific problems with private forest ownership, which creates some difficulties. Functions that provide benefits for the public at large, such as protection of soil and water, restrict the owners rights of use, for which the owners are not compensated. Forest owners are still working at fully understanding their prerogatives for managing their lands, while the municipalities who own forest lands are in the beginning process of clarifying their functions and responsibilities. As shown in Table 3.12 (as of 30 October, 2002) and Figure 3.14, 93% of forests and woodlands are public property, and 86% are owned by the state.

FIGURE 3.13

Share of forests and forests lands in % of total forest area, according to ownership class



Source: NSI

TABLE 3.12

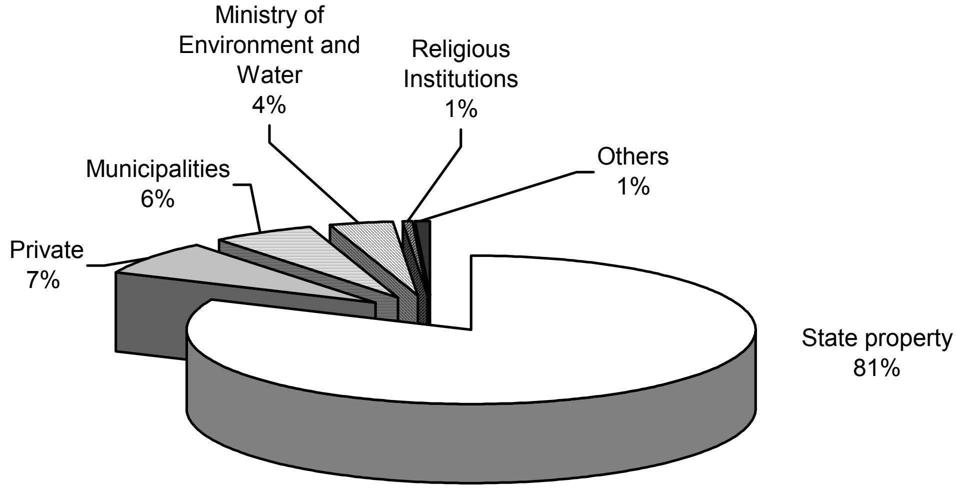
Distribution of forest areas by type of ownership

Type of ownership	**Hectares**	**% of total**
- State forest fund	3 352 643.9 ha	85.66%
- Non-governmental forest fund	561 711.1 ha	14.34%
Including:		
- physical persons	322 386.7 ha	8.23%
- municipalities	212 343.6 ha	5.42%
- religious communities	17 918.6 ha	0.46%
- schools, community centres	4 297.5 ha	0.11%
- co operations, trade companies	320.5 ha	0.01%
- other legal entities	4 444.2 ha	0.11%
TOTAL	3 914 355.00 ha	100%

Source: NSI

FIGURE 3.14

Distribution of forests by type of property



Source: NFB

3.6.3 Management of private forests

Private forests in Bulgaria are managed in different ways:

- A big part of forests and forest lands owned by individuals are managed by their owners. This applies mainly to owners with forests bigger than 10 ha.
- Forest owners possessing small parcels (primarily under<1 ha) have difficulties in managing their holdings.
- The religious communities also manage their forests. In Bulgaria we have several monasteries, which have large forest holdings. They use forest specialist as consultants and managers for their forests.
- Communities in Bulgaria are the biggest forest owners. Currently, there are 10 –15 community forest enterprises, with forest specialists carrying out forest operations.
- In the Smolyan region (Rodopi mountains), we had a past tradition of management of private forests by cooperatives. Currently there are again about 25-30 cooperatives for the management of private forests. The cooperatives implement harvesting; forestry operations; wood processing; and selling of timber, wood and non wood products.

Forest owners can receive help from the state and from trained foresters. The National Forest Board (NFB) in collaboration with NGOs work together for improving the knowledge and training of private forest owners. The National Forest Board elaborated and made suggestions for implementing the Law for the Forests. Especially for management and assistance for private forests and to help private forest owners there were accepted “Conception for management of private forests” and “Conception for creating of mobile education for private forest owners”. In the process of restitution of forests and woodlands, certain problems have arisen, which can be summarized as follows:

- Only 322,387 ha of the original (pre-nationalization) 590,926 ha have been restored because of a lack of documentation. This has led to conflicts between the former owners, their heirs, and the official authorities that administer the process of restoration.
- In the present economic situation in forested areas, the main or the only source of income for most of the owners of restitution forests (mainly in the mountain and rural regions) are the forests. Therefore the owners (the former owners and their heirs) prefer to manage their forests in such a way that would provide maximum profit, which can lead to non-sustainable forest practices.

- Restoration of ownership of forests and woodlands to municipalities turned out to be a very difficult task. In the past, municipalities managed some 56% of the forests and the woodlands mainly through leases from the State-, in order to satisfy the needs of the local population for firewood and timber. The lease agreements were in accordance with the existing legislation, but often undocumented. The provisions of paragraph 5 of the LRPFFLFF and of paragraph 6 of the supplementary provisions of RILRPFFLFF were often violated, which means that the restricted right of use of forests and woodlands within the forest fund, formerly granted to municipalities and others, were taken away and could not be restored. This provoked conflicts between the municipal authorities, the local population and the forestry administration and resulted in a lot of lawsuits and claims.
- The time limits for reinstatement of the forest and woodland ownership were quite short. This resulted in a number of mistakes and shortcomings, reduced the interest of the stakeholders, and affected the activity of the affected authorities.
- The legislation (the new Laws and the secondary legislation – rules, instructions, regulations, methodologies etc) turned out to be too complicated and difficult for interpretation and application, which also led to mistakes and shortfalls.

The main problems regarding the future management of forests and woodlands, resulting from their reinstatement to former owners, are:

- The owners of the restitution forests are not familiar with the forestry legislation and are unaware of their rights and obligations as forest owners.
- The forest owners should receive updated information on the management of forests, and should be trained in the main principles of forest management and logging activities.
- Small forest owners believe that all they could get from their property would hardly be enough to satisfy their own needs for fuel wood and small quantities of timber, and therefore have no desire to become familiar with the principles of the sustainable and cost-effective forest management.
- Most of the forest owners are over 60 years of age, and their area of forests is too small. Despite this, they have no desire to work together, to unite or establish different unions and societies for joint management and mutual assistance in the implementation of the silvicultural and logging activities.
- Most of the owners of restitution forests are informed about the activities, implemented in their forests in the post-nationalization years and are able to assess the positive or negative effects from silvicultural activities, but are unsure, or don't know how to ask for the assistance of experts or specialized institutions.

The establishment of different types of ownership creates new issues for the forest sector, regarding the management and utilization of the non-governmental forests:

- Mechanisms for protecting the interests of forest owners need to be developed, including the elaboration of statutory measures and legislative guarantees.
- Management of small forest properties need to be improved; efforts should be focused on the development of an appropriate form of joint management and incentives for cooperative forest use.
- Measures need to be taken in order to prevent the fragmentation of private forests (typically from inheritance).
- The modern multifunctional forms of forest use should be popularized in order to ensure the sustainable and environmentally friendly management of forests, benefiting both the owners and society.
- Compensation needs to be given forest owners to ensure the implementation of the prescribed or recommended ecological or social functions of forests, in lieu of industrial activities in forests that have a higher purpose.

– To enhance the knowledge and competencies of the owners of restored forests, consulting, training and additional qualification schemes should be developed and implemented.

– Silvicultural activities are being negativity affected as a result of shortcomings in the restitution process. Things such as inaccuracies in the mapping, automated processing, identifying borders of forest property; unfinished procedures of ownership reinstatement; numerous lawsuits; and problems in determining municipal ownership of forests and woodlands within the forest fund, etc. have caused problems affecting both the private owners and state institutions.

State forest property should be considered as state assets, guaranteeing the fulfilment of the ecological and social interests of the Bulgarian citizens. It should ensure the preservation and enlargement of the forest area and the efficient management of the forests.

The state-owned forests and woodlands, which are the greater part of the forest fund, also require consideration in terms of:

– Development and implementation of an administrative and management system to protect the rights of the owner, i.e. the state.

– Development of a system or mechanism to maintain the equilibrium of the ecological, economic, and social functions of forests, aiming at their sustainable management.

3.7 Threats to Forest

A pan-European survey (UN-ECE and European Commission 2002) indicates that defoliation peaked in 1998, when 60.2% of the trees in Bulgaria were moderately or seriously affected (defoliation classes 2-4). Since then the situation has gradually improved, and in 2001 the proportion of damaged trees was recorded at 33.8%. Still, this is a higher level than was recorded in 1990, and the fifth highest level in all of Europe. Only the Czech Republic, Ukraine, the Republic of Moldova, and Italy experienced higher levels of defoliation. The causes of the defoliation include atmospheric pollution, exceptional weather conditions and the impact of forest fires. Bulgaria participates in a European monitoring programme of forest ecosystems under the supervision of the Ministry of Environment and Waters and of the MAF.

Dry weather conditions of the last few years have increased the level of fire danger in Bulgaria. The number and area of forest fires and damages in last ten years are showed in Table 3.13.

TABLE 3.13

Number and area of forest fires and damages in the period 1991 –2001

Years	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Area, ha	511	5 243	17 264	14 253	549	2 150	7 776	6 967	8 290	57 406	20 152
Number	73	602	1196	667	114	246	200	578	320	1710	825
Damage in, 1,000 BGN	4 641	18 616	14 320	12 554	2 600	5 204	19 377	20 474	14 930	30 716	16 081

Source: NFB

The area of forest lands burned during the period 1991-2001, was 133,518 ha, which is roughly 3% of the wooded area of Bulgaria. Burned coniferous forests amounted to 32% of the total, and broadleaved – 68%. A total of 6,531 fires were recorded over the period, and the resulting damage is estimated at almost 160 million BGN. The largest number of wildfires (1,710 on 57,406 ha) broke out in 2000, and a high rate of fires continued in 2001 (825 fires on 20,152 ha).

The Council of Ministers on 07.03.2002 banned the export of round wood damaged by wildfires, amending the Decree concerning the export regime of the Republic of Bulgaria. The ban is on round wood larger than 4 cm. in diameter on the small-end. This occurred because in the last two years large exports of fire-damaged coniferous and deciduous wood were made to Greece from areas close to our southern border. The ban on the export of round wood is aimed at eliminating a motive for arsons, and to provide more resources for domestic timber processing and paper plants. Each year measures are taken for the protection of forests from fires. The forest Management plans include activities for fire minimization, including about 400 km of anti-fire cutting and about 2500 km mineralized strips of land (firebreaks). There are build also 40 fire lookout towers and 133 landing-pads for helicopters.

The main tasks undertaken in fire prevention and suppression are:

- Implementation of preventive activities.
- Creating a contemporary information system for reporting, observing and control of fires on the forest fund.
- Administration and organization of voluntary well-trained civilian group for assistance with extinguishing fires.

One of the basic tasks of the Government and of the Ministry of Agriculture and Forests is to elaborate strategies for prevention and suppression of wildfires as well as for rehabilitation of any resulting burned areas. Other threats to forests include poor health of some coniferous plantations, which are outside their natural range of distribution. Uncontrolled grazing and an excessive number of goats are reported to have contributed to forest degradation. Climatic conditions, i.e. the exceptional dryness over the past two years, has also affected large forest areas.

3.8 Non-wood Forest Products

3.8.1 Hunting and Fishing

Hunting and fishing are of growing interest to the public. The number of hunters in Bulgaria is about 80,000, and fishermen number about 64,000. On a national level, hunting and fishing are perceived generally as a tradition and recreation activity, rather than a source of food.

During 2002, 39 State Game Breeding Stations were created in accordance to the requirement of Law for Hunting and Protection of Game (37 are in the framework of the NFB). Data on game populations during the period 1997 – 2000 are showed in Table 3.14. Table 3.15, Table 3.16 and Table 3.17 show the results from hunting and from international hunting related tourism.

TABLE 3.14

Game populations during the period 1997 - 2002

Kind of game	1997	1998	1999	2000	2001	2002
Red deer	21 398	19 895	18 974	18 262	17 542	16 264
Fallow deer	4 454	4 221	4 200	4 306	3 731	3 748
Roe Deer	73 990	70 481	69 795	71 572	63 610	57 245
Wild-boars	37 485	38 661	41 536	44 994	46 663	42 322
Wild goat	2 249	2 063	1 799	1 779	1 820	1 811
Mufflons	2 462	2 075	2 066	2 279	2 194	2 111
Capercailzie (grouse)	2 166	2 068	2 389	2 737	2 470	2 533
Auroch	76	73	70	69	62	67
Tibetan yak	43	41	37	21	19	20
Capricorn	34	34	23	14	9	4
Bear	880	870	876	834	812	861
Wild rabbit	417 199	437 639	460 572	481 025	474 461	390 567
Pheasant	124 031	118 036	117 569	115 783	105 401	79 865
Partridge	294 641	296 300	317 610	312 976	288 739	232 176
Rock partridge	41 879	38 876	39 012	36 726	28 336	20 906
Wolf	1 663	1 610	1 678	1 976	-	-
Jackal	18 162	19 547	21 382	19 537	-	-

Source: NFB

TABLE 3.15

Hunting and fishing activities (2001)

(Number of game handled and expenditures)

Activities	Measure	Quantity	Funds, BGN
Resettlement and food for the game and fish	*Thousand BGN*		1 222 907
Including:			
Catching and resettlement	*Thousand BGN*		90 314
Including:			
Red deer	*Number*	32	
Fallow deer	*Number*	21	
Deer	*Number*	22	
Wild-boar	*Number*	30	
Mufflons	*Number*	76	
Partridge	*Number*	1 005	
Rock partridges	*Number*	1 200	
Pheasant	*Number*	18 604	
Wild ducks	*Number*	400	
Trout	*Number*	172 199	
Carp and other fishes	*Number*	8 230	
Including food for winter feeding up	*Thousand BGN*		803 076
Including concentrated forage	*Tons*	27 780	
Rough forage	*Tons*	30 158	
Fresh forage	*Tons*	234	
Including forage base	*Thousand BGN*		88 842
Including cornfields for the game	*Ha*	9 103	88 276
Meadows for the game	*Ha*	4 447	12 141
Clear cuttings	*Ha*	1 045	1 568
Building and maintaining of biotechnology equipments	*Thousand BGN*		326 773
Including feeding-trough for big game	*Number*	722	
Feeding-trough for small game	*Number*	695	
Fish barriers	*Number*	114	
Game blinds and towers	*Number*	307	
Building of hunting houses and huts	*Thousand BGN*		50 955
Payments for killed predatory game	*Thousand BGN*		50 792
Total	*Thousand BGN*		**1 651 427**

Source:NFB

TABLE 3.16

Total game harvest, 2000 - 2001

Kind of game	2000 Number	2000 Meat, kg	2001 Number	2001 Meat, kg
Red deer	318	19 310	136	11 017
Fallow deer	82	4 838	48	1 496
Deer	992	4 539	85	823
Wild-boars	8 941	49 697	1 311	34 706
Mufflons	45	2 105	39	448
Wild rabbits	1 823	5 000	3 482	2 647
Wild goat		937	40	220
Partridges		92	5 464	405
Pheasants	6 430	6 624	7 921	6 860
Wood-grouse capercailzie	25	15	23	
Winged game	734 240		61 090	5 432
Total		90 157		64 054
Exported		5 433		613

Source: NFB

TABLE 3.17

International hunting tourism

Years	Number of international hunters	Income, DM
1997	1 667	5 092 596
1998	1 401	4 691 855
1999	1 288	3 520 231
2000	1 545	3 944 321
2001	2 305	2 182 475
2002 (Eur)	2 586	1 609 453

Source: NFB

3.8.2 Herbs, Mushrooms, and Forest Fruits

Medicinal and aromatic plants are the raw materials for the production of a broad range of goods – medicines, infusions, tea, liquors, alcohols, sweeteners, essence, perfumes, cosmetics, dyes, lacquers, etc. These plants and herbs are used domestically and exported, with a trend towards increases of the exported quantity. This makes Bulgaria the biggest exporter of medicinal plants, and among the countries of Central and Eastern Europe and - along with Turkey and Albania - the cheapest source of medicinal plants. The main problems are overexploitation and, low efficiency – the State generates income in the form of gathering fees, which only amount to about $25,000-30,000 per year.

The data about mushrooms and forest fruits is not sufficiently reliable, but the assumptions taken for medicinal plants likely apply to fruit and mushrooms as well (Table 3.18).

TABLE 3.18

Non-timber forest products gained

Products	Measure	1996	1997	1998	1999	2000	2001
Leaf fodder	*m^3*	47 553	89 526	29 390	90 931	5 856	25 794
Charcoal	*tons*	3 340	337	45			6
Christmas trees	*Number*	219 610	433 025	260 840	98 440	110 587	37 641
Lime fibre	*kg*	1 039	126				
Barks	*kg*		19 552	25 000	30 900	34 000	88 570
Hay	*tons*	1 504	3 222	66 608	137 866	1 395	6 486
Nut fruits (walnuts, hazelnuts, almonds, peanuts)	*tons*	820	8 153	18 996	4 339	16 361	14 409
Wild mushrooms	*kg*	422 387	1 351 095	2 341 884	3 375 418	1 287 995	2 833 843
Forest fruits (raspberries, blackberry, blackthorns, etc.)	*kg*	219 085	42 522	999 155	1 507 257	1 281 016	1 452 739
Lime blossom	*kg*	703 825	135 534	238 907	773 179	1 048 750	809 081
Dog roses	*kg*	57 339	273 359	128 626	449 089	313 094	500 016
Forest seeds	*kg*	38 685	20 821	37 129	102 891	59 506	62 274
Herbs	*kg*	9 192	823 404	1 665 836	562 476	672 454	3 442 266

Source: NFB

Part of the challenge of managing non-wood resources of the forest is caused by the provisions for personal use. This provision also makes statistical assessment and managing the resource more difficult. The main problems being:

- The State Forestry Service does not evaluate the potential opportunities for generating income from non-wood forest resources. Consequently, enterprisers are not aware of the opportunities.
- Due to the lack of local processing capacity, the material is not processed in situ; no added value is being generated.
- There is no adequate assessment of the resource.
- In many cases, the technology used for gathering and utilization of the resource could be improved upon.
- Feasible activities.
- Inventory and assessment of the resource.
- Setting out acceptable limits and technologies for utilization.
- Introducing new utilization schemes. For instance: special schemes for utilization; assessment of the resource; setting out of use limits; leasing – concession or other forms of lease.

3.8.3 Tourism and recreation

Bulgarian forests have good potential for the development of tourism and recreation. The main forms of tourism, which have gained popularity are:

3.8.3.1 Skiing and mountain tourism

Winter sport facilities are located in the mountain ranges of Rila, Pirin, the Rhodopes, Vitosha, and Stara Planina. The skiing season in the medium and high mountain resorts is 190 days on average. The total length of ski runs is more than 80 kilometres, and the altitude ranges up to 1500 m.

The lodging centres and facilities of the resorts of Pamporovo, Borovetz, Bansko and Aleko function throughout the year. The infrastructure for winter sports (lifts, ski runs for alpine skiing and cross country skiing) is currently being renewed and developed. To respond to current demand, new centres for ski-tourism (Smolyan, Chepelare, Dobrinishte, Malyovitza, Semkovo, etc.) are being established.

There are various opportunities for sport and leisure activities in the mountains during the summer season. Tourists are offered the chance to enjoy walking tours, cycling, horse riding, gliding, parachute, water sports, rock climbing, caving, orienteering competitions, scout camps, etc. Unfortunately, these forms of tourism are being practiced - for the time being - by just a limited number of people.

3.8.3.2 Hunting and Fishing Tourism

Bulgaria is famous for hunting, having some fine trophy sized red deer and mouflon (Table 3.19). Excellent opportunities for hunting of large mammals (red deer, roe deer, wild boar, bear, wolf) are offered in the forestry centres of: Aramlietz (located in Ihtimanska Sredna Gora Mountain, some 50 km from Sofia); Borovetz (in the northern flanks of the Rila Mountain, 75 km from Sofia); Botevgrad (in the northern slopes of Stara Planina /the Balkan/, 60 km north-east of Sofia); Vitinya (in the central part of the Balkan, 75 km from Sofia); Samokov (in the outskirts of the Rila Mountain, 60 km from Sofia); the State Forestry Centres of Borovo (in the Western Rodopi Mountain, some 90 km from Plovdiv); Genda (in the Eastern Rodopi Mountain, 100 km from Plovdiv).

Bulgaria is rich in diversity of fish species. Opportunities for fishing for freshwater species, such as carp, trout, sheet-fish, perch, pike etc. are offered in the State Forestry Centres Ribaritza (in the northern flanks of the Middle Balkan Range, 110 km from Sofia), Cherni Vit (in the northern side of the Middle Balkan, 110 km from Sofia), Belogradchik (in the north-eastern part of the Balkan, some 180 kilometres from Sofia), Montana (in the north-eastern part of the Balkan, 120 km from Sofia), and others. There are over 1,100 beds in more than 110 chalets and hunting lodges within the forestry centres. This accommodation base is meeting current requirements. Opportunities for business meetings, family tourism, and horse riding are offered in the forestry centres of Apriltzi (in the northern flanks of the Central Balkan, some 190 km from Sofia), Kormisosh (in the Central Rodopi Mountain, some 140 km from Plovdiv), and Gabrovo (in the northern slopes of the Middle Balkan, 220 km from Sofia). International hunting tourism is developed in the centres Borima (in the northern part of the Balkan, some 170 km from Sofia), Lesidren (in the northern flanks of the Balkan, 150 km from Sofia), Lovech (in the foothills of the Central Balkan, 170 km from Sofia), Nikopol (in the central part of North Bulgaria, some 210 km away from Sofia), Teteven (in the northern side of the Middle Balkan, 115 km from Sofia), Troyan (in the northern flanks of the Middle Balkan, 175 km from Sofia), Svoge (in the southern side of the West Balkan, 40 km from Sofia). Along with the other recreational activities, there are opportunities for fishing, eco-tourism and photo-safari, as well as guided tours to natural and historical landmarks within the area.

Each year, over 2,500 foreigners come to hunt in Bulgaria. Most of them are traditional visitors. Bulgaria has some world record red deer and wild boar. Bulgaria is in a leading position in hunting and fishing as a result of, being naturally blessed with a wide variety of game animals and fish, as well as laws and management activity aimed at maintaining this resource.

TABLE 3.19

Harvest of appraised trophies from international hunting tourism

Game species	1997 - 1998	1998 - 1999	1999 - 2000	2000 - 2001
Red deer	266	270	174	188
Fallow deer	58	79	22	61
Deer	205	73	43	85
Wild-boar	192	245	171	275
Mufflons	49	47	26	44
Wild goat	32	48	34	18
Bear	13	12	8	6
Auroch	2	2	1	2
Wolf	7	9	5	23
Wild cat	4	18	13	32

Source: NFB

3.8.3.3 Ecological Tourism

Bulgarian forests have good potential for the development of tourism and recreation. The main forms of forest-based tourism, which have gained popularity are:

- **Ecological Tourism –** A concept to enhance the accessibility of picturesque areas in mountainous and hilly regions of the country by constructing bridges, railings and stairs has been elaborated under the national Bulgarian eco-trails Program of the Bulgarian Association for Rural and Ecological Tourism (BARET). A new program is the establishment of a marked trail system throughout the mountainous and hilly regions of the country.
- **Ornithology tourism –**Bulgaria presents unique conditions for ornithology tourism. About 70% of the birds, inhabiting the European continent can be observed in Bulgaria.

Overall, the market niche for forest-based tourism is underdeveloped. Development efforts are hindered by several factors such as poor infrastructure, and a lack of awareness of opportunities. For instance, the network of trails and observation sites is still in an early stage of development. “Green” tourism has also trouble breaking into the market, as tour operators prefer traditional destinations (the sea, ski resorts, cultural and historical landmarks). Domination by a relatively few large tour operators and hotels offering a mass product has discouraged innovation and risk investment into other sectors of the Bulgarian tourism industry, including mountain regions.

Under the present arrangement, the opportunities to develop forest-based tourism are available mainly to the NFB, who generally lack the necessary expertise and financial resources for investments. The private sector is often unaware of the development potential of the sector and informal inquiries suggest that rural populations generally do not perceive there to be substantial potential in forest-based tourism. There is also no mechanism for engaging the private sector in tourism development in state forest areas (e.g. system for fee collection etc.)

3.9 Analysis of the Revenues and Expenditures of the National Forestry Board

3.9.1 Analysis of the Revenues of the National Forestry Board

The revenues generated between 1990 and 1997 were mainly comprised of the sales of products and services of harvesting, hunting, and other activities. The data presented in table 22 shows that since 1999 the main share of the revenues is formed by revenues for obtaining the right to harvest (72% to 77%) and by state fees paid by the users of wood and non wood forest product (17 – 23%). Revenues from other sources account for only 5 to 8%.

TABLE 3.20

Revenues and expenditure of the National Forestry Board

Indicators	Measure	Years 1999	2000	2001
I. Revenues	BGN	73 526 507	75 480 037	65 349 670
%		100	100	100
Including				
1. Right of use (standing timber sales)	BGN	53 478 225	58 603 936	48 453 027
%		72.7	77.6	74.1
2. State fees (Decree of the Council of Ministers)	BGN	16 955 639	13 290 027	14 159 470
%		23.1	17.6	21.7
3. Penalties, sanctions, administrative penalties	BGN	475 680	776 309	533 261
%		0.6	1.0	0.8
4. Revenues by ownership	BGN	1 427 594	528 769	571 897
%		1.9	0.7	0.9
5. By VAT (restored)	BGN	526 797	2 144 950	1 389 691
%		0.7	2.8	2.1
6. Funding by MoEW and PHARE	BGN	662 572	-	-
%		0.9	-	-
7. Other revenues	BGN	-	136 046	242 328
%		-	0.2	0.4
II. Total expenditure	BGN	67 431 398	84 256 032	68 929 892
%		100	100	100
1. Activities in forests	BGN	20 273 686	30 392 121	21 626 291
%		30.0	36.1	31.4
2. Other expenditure – Support, salaries, insurances- total	BGN	40 445 347	47 975 559	44 217 884
%		60.0	56.9	64.1
- salaries	BGN	17 952 231	20 725 423	22 610 308
%		26.6	24.5	32.8
- insurances	BGN	7 203 234	7 479 688	7 622 998
%		10.7	8.9	11.1
- support	BGN	15 289 882	19 770 448	13 984 578
%		22.7	23.5	20.2
3. Capital expenditure	BGN	6 748 365	5 948 352	3 085 767
%		10.0	7.0	4.5
Difference (budget grant)	BGN	-	8 805 995	3 580 222
%		-	10.5	5.2
Staff – Occupied positions	Number	6 842	6 413	7 264

Source: NFB

For the period 1999 – 2001, the harvesting revenues do not vary significantly either in absolute or relative terms. Comparing the share of revenues, generated by harvesting in recent years, to the 1990–1997 period, a decreasing trend is discernable in recent years. The main reasons for this decrease are the changes in the economic situation in the country, forest ownership restoration, and instability of the forest sector due to the implementation of reforms and fluctuations in the wood market. Similar trends are observed in the changes in revenues, calculated per hectare of forests from the state forest fund (Table 3.21). It is evident that during the last few years the revenues per 1 ha of state forests averaged 20 BGN (about $10).

TABLE 3.21

Revenues by unit area of Bulgarian forests for the period 1999 – 2001

(BGN/ha)

Indicators	Years 1999	2000	2001
Revenues - total	23.00	23.60	20.40
Including Right of usage	16.72	18.32	15.15
State fees	5.30	4.16	4.43
Penalties, sanctions, administrative penalties	0.15	0.24	0.17
Income and earnings by property	0.45	0.16	0.18
VAT	0.16	0.67	0.44
Funding by the Ministry of Environment and Waters, PHARE	0.21	-	-
Other revenues	-	0.42	0.76

Source: NFB

3.9.2 Analysis of the Expenditure of the National Forestry Board

During the 1990 - 1997 period, expenditures were fully covered by revenues generated from economic activities. The expenditure under the “Silvicultural Activities and Forest Road Construction” fund was carried out in accordance with the Ministry of Finance’s unbudgeted income/outcome account. The main expenditure items were capital investments, silvicultural activities, and other expenditures. Silvicultural activity remains a major expenditure item but its share is decreasing – from 64% in 1990 to 43% in 1997.

The second significant expenditure is for the management (administrative or management expenditures) of Regional Forestry Boards, State Forestry (local state authorities - divisions) and other NFB divisions; this expenditure increased from 23% in 1990 to 45% in 1997. Capital investments peeked at 34% of the total expenditures in 1996, compared to 13% in 1990.

For the 1997 – 2001 period, expenditures have the following structure: expenditure for activities in forests (afforestation, forest nurseries and erosion control, forest management and planning, forest protection, protected areas, hunting and fishing), capital investments and other expenditures, including salaries, insurance and current funding of regional boards, state forestry and other units. The expenditure on forest activities decreased from 45% in 1998 to 31% in 2001. This decreasing trend is stable and clearly shown across all silvicultural activities.

Capital expenditures decreased from 10% of the total in 1998 to 5% in 2001. This was due to actions taken by the Currency Board, which was implemented in 1997. The capital investments negatively affect the activities and implementation in the forests. The rest of the expenditures increased from 45% in 1998 to 64% in 2001. The difference in the relative share of revenues and expenditures by type is determined by the changes in the management structure of the sector and the tasks and functions performed. The average costs for silviculture activities for 2001 are presented in Table 3.22. Up to 1999, the unbudgeted fund management system created the possibility for establishing an additional source of revenue and was an important source of funding for some urgent forest activities at the beginning of each year. In 2000 and 2001, all non-utilized funds at year-end must be returned to the state budget.

TABLE 3.22

Costs for different silvicultural activities in 2001

Indicators	Measure	Planned	Actual
Afforestation	BGN/ha	364.4	352.0
Soil preparation	BGN/ha	1 233.7	1 253.0
Filling in forest plantations	BGN/ha	426.8	407.6
Tending of forest plantations	BGN/ha	219.4	216.2
Forest Seed-production	BGN/kg	4.82	3.41
Fencing of the forest plantations	BGN/m	2.13	1.79
Total expenditures for silvicultural activities	BGN/ha	3 684.0	3 778.0
Thinning	BGN/ha	30.0	41.6
Thinning	BGN/m^3	1.13	1.84
Marking of the trees subject to harvesting	BGN/ha	31.4	18.7
Marking of the trees subject to harvesting	BGN/m^3	0.69	0.47
Expenditures for afforestation, nurseries, and erosion control	BGN/ha	3 684.0	3 255.8
Forest management (total state forest area)	BGN/ha	2.33	1.47
Forest fire protection (Forest fund)	BGN/ha	0.58	0.34
Forest protection (Forest fund)	BGN/ha	0.07	0.05
Protected areas	BGN/ha	-	0.86
Hunting and fishery activities (Forest fund)	BGN/ha	0.56	0.46
Total expenditures (Forest fund)	BGN/ha	8.60	6.24
Total expenditures (State forests)	BGN/ha	10.52	7.64
Forest protection (support, fuel etc.)	BGN/1 forest-guard	377.06	319.59
Forest fires	BGN/ha	118.08	80.31

Source: Forest sector analysis, 2003.

The lack of financial means at the beginning of the year causes serious difficulties for the forest sector. Revenues from the forests tend to come in later in the year than when expenditures are incurred, which creates a situation, when the activities of silviculture, forest management and planning, forest protection and others are undertaken.

Since 1999 the National Forestry Board has received a subsidy from the State Budget for maintenance, insurance and compensations of the forest-guards. The state subsidy received in 1997 amounted to some 7,200,000 BGN but decreased to 3,580,000 in 2001. The state subsidy represents 5 – 10% of the expenditure. It is insufficient and does not reflect the actual planned costs for safeguarding the forest. The deficit is covered by the current maintenance budget of the NFB divisions, which decreases the efficiency of the work, both of the forest guards and the NFB bodies and units. The funding of the sector relates to staffing and average nominal salary. The staff numbered 12,230 in 1990 and 7,558 in 2001. The data representing the average nominal salary is not comparable because of fluctuations in inflation during the period. Nevertheless, salaries are lower then in other sectors of the economy.

The comparative analysis of the expenditures and revenues in the fund “Silvicultural Activities and Forest Roads Construction” and the National Fund “Bulgarian forest”, shows that during the period after 1990, revenues exceeded expenditures. Recently, revenues generated are insufficient to cover all the expenditure required in the sector and the state subsidy is variable and inadequate. In addition, there is a clear trend in reduced spending for silvicultural activities, salaries, insurance and maintenance of the staff and NFB units. The net result of this is a sharp drop in expenditures for silvicultural activities (seed collection, seedling production, soil preparation, afforestation, tending of forest plantations and young stands etc.), which can have an adverse effect on the sustainable management of the forests.

3.10 National strategy for the environment and action plan 2000-2006

The National Strategy for the Environment, and the Action Plan for 2000-2006 were adopted with the Council of Ministers' Decree No. 455 of 20 June 2001. The National Strategy is comprised of two parts. The first part incorporates the conclusions from the "environmental scan analysis", the results of the SWOT analysis (Strengths Weakness Opportunities Threats Analysis) and the "objectives tree" based on the analysis, as well as the Action Plan for 2000-2006. The second part includes the complete text of the environmental scan analysis, the analysis by impact factors and industrial sectors, as well as a description of the inter-sectoral instruments for the implementation of the environmental policy.

Forestry issues are addressed within the *Biodiversity* sector analysis of the NSE. While having reservations towards certain statements within NSE, the author shall not comment on the text, and shall quote only that part of it that addresses the problems of the forestry sector.

The first part of the Strategy presents an outline of successes, strengths, opportunities, and threats for each sector. Under the section *Biodiversity* the following strengths in forestry are identified:

- The government in the field of biodiversity and forests adopted strategic documents.
- A high degree of harmonization with the EU legislation concerning biodiversity has been achieved.
- Relatively well-developed network of protected natural areas.

Within the same section the following problems and weaknesses are identified:

- Increased trend towards overexploitation of species of economic value.
- Decreases in numbers of hunted species over the last years.
- Deterioration of the forests (lost forests, excessive or medium defoliation).
- Inefficient implementation of the administrative and compulsory measures for protection of biodiversity and within the protected areas.

Forestry is mentioned in section "Threats" of the SWOT analysis, with reference to the "*continuing process of deterioration of the forest fund*". The "Objectives tree" presents the long-term objective to "improve the quality of life by ensuring favourable environmental conditions and through preservation of the Nature riches based on sustainable management of the environment". One of the specific objectives is to "improve the condition of forests". The quoted conclusions and objectives are based on expert sectoral analysis, describing the condition of the forestry sector by the following statement "*Forests are of special importance for Bulgaria. They cover 3.9 millions ha (some 35 per cent of the country's total area). About 60 percent of these are natural forests.*" The results of the forest monitoring are disturbing. The continuing trend towards deterioration of the forest species is a fact, as shown by the 1998 analysis:

- Only 11.6 per cent of the trees are visibly unaffected.
- 60.2 per cent of the trees suffer medium to excessive defoliation, which is 10.6 per cent more than the number of defoliated trees in 1997.
- Only 9.5 per cent of the coniferous trees show no signs of defoliation.
- In comparison to 1997, the share of trees suffering a medium degree of defoliation has increased by 13.5 per cent, while that of excessively defoliated trees has decreased by 11.1 per cent. The percentage of excessively defoliated and dead trees has increased by 6.6 and 5.9 per cent respectively.
- Among coniferous species, Scots pine and Austrian pine, whose age is less than 60 years, as well as Silver fir over 60 years of age, are most often affected.
- In comparison to 1997, the share of trees with no visible defoliation has decreased significantly, while the share of trees with 2-4 degree of defoliation has increased.

- Only 14.2 per cent of the deciduous species show no indications of defoliation.
- 37.3 per cent are slightly defoliated, while 28.4 percent suffer medium defoliation;
- The percentage of intensively defoliated and dead trees is 20%. Compared to 1997, the share of damaged trees (2-4 degree) has increased 4.5 per cent.
- Regarding the deciduous forests, damages are being observed among the oak and beech species. Compared to 1997, the share of damaged trees has increased to the 3-4 degree of defoliation.

These data should serve as warning indicators for the condition of the forest fund. The future restoration of forest property and the manner of aggressive exploitation, have demonstrated the necessity for planning and implementation of special measures to protect and conserve the forest fund of Bulgaria. The principles of silviculture in Bulgaria are directed at ensuring optimum profitability of the timber industry. Projects related to forest planning do not address the non-economic dimensions of silviculture. Common silvicultural activities are:

- Substitution of local natural forest diversity with monocultures of high economic value (e.g. creation of hybrid poplar plantations within the flooded woodlands of islands along Danube and the other big rivers).
- Industrial activities, implemented without being subject to environmental impact assessment.
- Unawareness and lack of interest in the protection of old forests.

Positive factors are the recent efforts towards protection of wildlife and forests. Among the protection measures implemented are: restoration of flooded woodlands along the Danube river, maintenance of the hydrology systems of several inland marshes; re-introduction of *Slideritis taurica spp.*; and conservation measures for *Trollius europaeus spp*. During the process of adoption of this document, the non-governmental organizations led a campaign for its repeal expressing concerns about its adequacy, validity and fractional data.

3.11 National Forest Policy and Strategy

As a result of the political and economic changes in our country after 1989, the Bulgarian forest sector is in a period of reform, directed towards functioning under market economy conditions and respect of ownership. The complexity of this transition is additionally predefined by the tense social and economic situation in the country. As a result, a number of negative changes in the development of the whole society and the economy have had their impact on the forest sector too.

A number of strategic documents for the forest sector were developed in the past. Two of the more recent ones are: "Program for Accelerated and Extended Reproduction and Most Effective Complex Utilization of the Forest Resources of the Republic of Bulgaria for the period 1990 – 2040" from the 1980s and "National Strategy for Conservation of Bulgarian Forests and Development of the Forest Sector" from 1996. For a variety of reasons, these documents were not taken into consideration in forest sector management.

Conditions create the necessity for creating an effective system for multipurpose forest management and require innovative strategic decisions for the development of a modern forest industry. At the same time, the commitments made on a number of important international agreements and the process of accession to the EU, put our country in front of some challenges. To formulate an appropriate response to the pending issues, the Government of Bulgaria launched a process of formulating a National Forest Policy and Strategy (NFPS) in October 2002. The process is a major undertaking, involving inputs from experts as well as all relevant stakeholder groups and society as a whole, and it sets the stage for all major decisions concerning the sector for the next 10 years. The National Forest Policy and Strategy is based on a number of world-recognized principles adopted by FAO, IPF/IFF, and MCPFE. The over-riding principles are: wide participation of stakeholders, inter-sector approach, conformity with the national legislation, integration with the National Plan for Economic Development, agreement with international engagements, initiatives and conventions related to forests, partnership in implementation, and increasing public awareness.

The NFPS process presented a broad opportunity for stakeholder involvement. Throughout the year a significant amount of information was collected from the numerous meetings with stakeholders, meetings with experts from the state forest administration and the public discussions carried out throughout the country. An important aspect was the consultations with international experts, sharing the experience of other countries in transition. The results of a national representative survey added additional weight to the information basis. In general terms, the NFPS looks at the forest sector, including both forestry and the forest industry. It sets the framework for all major decisions in the sector for the next 10 years. NFPS has three basic goals:

– Sustainable development of an economically viable forest sector through multifunctional forest management in market economy conditions.
– Sustainable development of the forest sector within international criteria.
– Provide national and international financial opportunities and support the development of the sector.

These goals are encapsulated in the vision for the future agreed on a workshop with wide stakeholder participation:

"The Bulgarian forest is a national asset. The resources of the forest ecosystems retain their ecological, social and economic functions for improving the quality of life of people. Forests are professionally managed in a stable forest sector with broad public support and mutual respect and integration of the interests of all stakeholders."

The Bulgarian NFPS looks at 17 strategic directions. Each of them is divided into four different sections: current situation, main issues and challenges, strategic goal, and strategic actions. The strategic directions are the following: Forest management; Protection of the forests; Forests safeguarding; Timber harvesting; Hunting and Fishing; Herbs, mushrooms, forest fruits and others; Biological and landscape diversity; Social functions of Bulgarian forests; Tourism and recreation; Forest industry; The role of the state; Human resources. Forest education and science; Forest ownership; Information management; Involvement of the public and the NGO community; European integration and international cooperation; Forest sector and regional development. Generally, the expected results of its implementation could be summarized as follows:

Environmental aspects:

– Extension of the forest area.
– Acceleration of silvicultural and forest protection activities.
– Conservation and restoration of the biological and landscape diversity components through mainstreaming biodiversity into forest management practices.
– Extension of the protected areas network.
– Enhancement of the role and the contribution of forests for mitigating climate changes.

Social aspects:

– Creation of additional employment in the sector.
– Enhancement of motivation and qualifications of forest workers.
– Adequate use of tourist and recreational potential of forests.
– Reforms in the fuel-wood supply policy for local population.

Economic aspects:

– Increase the revenues for the forest sector through market orientation of the commercial functions of forests.
– Increase and reorganization of harvesting; increased production and export of forest products.
– Development of alternative uses for the forest resource.

- Improved effectiveness of the control in forests by restriction illegal logging, and by trade and processing of timber and other forest products etc.

The NFPS is not envisaged as a static document but more as a dynamic process adapting over time. The responsibility for its implementation rests within all stakeholders not only the Ministry of Agriculture and Forestry. Active participation and cooperation is a key factor for the success of the NFPS.

4. FOREST INDUSTRY

4.1 Assessment of the woodworking, furniture, pulp and paper industry

4.1.1 Current production capacity

The production of wood products and furniture in Bulgaria over the 1998-2002 period shows a continuous increasing trend. The Bulgarian woodworking industry produces all types of wood products except for MDF. The country is a net exporter of wood products. Exports in 2001 were 3.5 times bigger than imports. The woodworking industry comprises of ex state owned large mills for the production of plywood, particleboard and fibreboard. There are also thousands of small and medium sized sawmills especially in the mountain regions. Except for the newly established plant for wafer board and a laminating line for particleboard (investments made by "Kronospan"), all other particleboard, fibreboard, veneer and plywood plants are more than 20 years old (but are still in relatively good condition and producing mainly export products). Only a small number of the sawmills are equipped with new machinery and very few mills have modern dry kilns. Bulgaria is a net exporter of wooden furniture and these exports are continuously increasing. The import of furniture has increased (but at a slower rate), and imports of furniture are still less than 40% of furniture exports. Domestic net sales of the furniture are about 50% of their production. Furniture factories are mainly small and medium sized. There are only a few large ex state-owned factories (producing chairs, mainly for export).

4.1.2 Number of production units

According to official statistics, about 5,427 wood processing companies and 3,351 furniture-producing companies are registered in Bulgaria. Only 30 to 40% of these are currently active. Table 4.1 shows the registered forest product companies by group. Table 4.2 shows the number and type of companies in the furniture segment of the sector. Figure 4.1 shows the structure of the production of wood products (without furniture) in 1999 – 2000 according to activities.

TABLE 4.1

Woodworking companies, separated into sectors

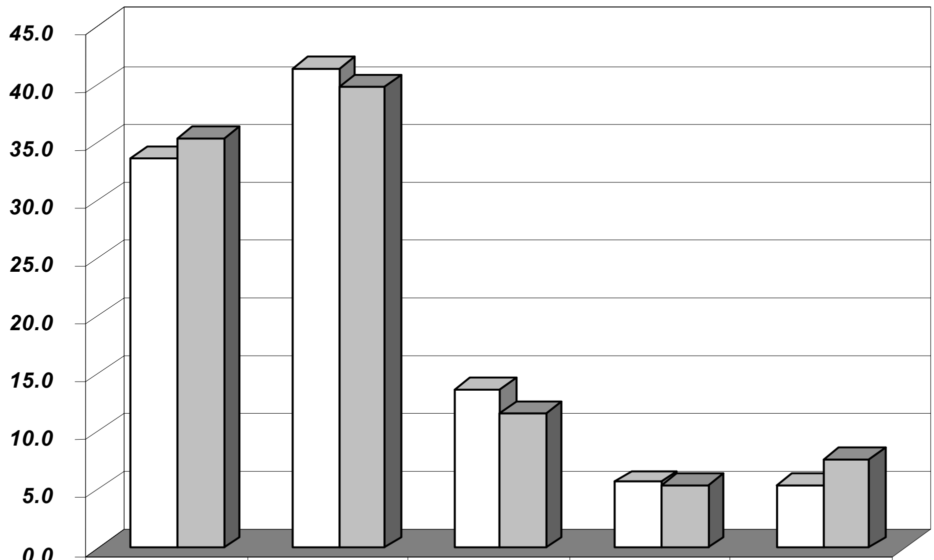
Sectors	Number of companies
Sawmills and wood treatment plants	2 041
Plywood and wood panels	141
Doors, windows and other elements for the building industry	1 880
Packaging	165
Other wood products	1 286
Pulp and paper	2
Products of cork, straw and knitting materials	32
Total:	5 547

Source: Forest sector analysis

FIGURE 4.1

Production of wood products, by sector (without furniture), 1999 – 2000

(1,000 m^3)



	Sawn timber	Plywood and wood panels	Building industry	Packages	Other wood products
1999	33.7	41.5	12.6	5.7	5.4
2000	35.4	39.9	11.6	5.4	7.7

Source: Forest sector analysis, 2003.

TABLE 4.2

Furniture companies by sector

Sectors	**Number of companies**
Chairs and seats	299
Office and shops furniture, excl. chairs	306
Kitchen furniture, excl. chairs	688
Other furniture	1 986
Bed frames and mattresses	72
Total:	3 351

Source: Forest sector analysis, 2003.

4.1.3 Employment

Estimates indicate that about 35,000 employees work in the forest and furniture industry sector, with the greater share being in the forest industry. Most of the factories (80 - 90%) have up to 10 employees or between 10 and 50 employees (Table 4.3 and Table 4.4).

TABLE 4.3

Wood processing companies by number of employees

Sector	<11	11-50	51-100	101-200	>200	Total
Sawmills and treating plants	84	54	11	4	1	154
Plywood and wood panels	7	11	4	3	5	30
Doors, windows and other elements for the building industry	76	57	14	1	3	151
Packaging	16	12	1	-	-	29
Other wood products	35	18	1	3	-	57
Pulp and paper	0	0	0	0	2	2
Products of cork, straw and knitting materials	2	1	-	-	-	3
Total:	220	153	31	11	11	426

Source: Forest sector analysis, 2003.

TABLE 4.4

Furniture companies by number of employees

Sector	<11	11-50	51-100	101-200	>200	Total
Manufacture of chairs and seats	13	7	6	1	4	31
Manufacture business furniture (except chairs)	17	20	3	3	1	44
Kitchen furniture, excl. chairs	34	20	5	2	-	61
Other furniture	90	85	27	12	5	219
Bed frames and mattresses	3	2	-	-	-	5
Total:	157	134	41	18	10	360

Source: Forest sector analysis, 2003.

4.1.4 Amount of foreign investments

Foreign investments in the woodworking, furniture, pulp and paper industry in million US dollars are shown in Table 4.5. The figures show that foreign investments in the sector is low, and this will create future problems in the competitiveness of the sector due to a lack of new technology and equipment. Other sources provide some different data. The accumulation of investments on tangible fixed assets during the 1997-2000 period approached 108 million US dollars; almost 80% of which was used for production equipment. The share of investments in manufacturing is almost equivalent to that of gross output, and was 7.9% for the year 2000. As for the foreign direct investment (FDI), large investments of approximately 68 million US dollars were made in 1999, which is more than half of the total that flowed into this industry during the 1997-2000 period. It is also assumed that the larger share of FDI in 1998 compared to 1997 influenced the increase in the average salary, since it is the only indicator, which has a similar trend with the salary change in 1998.

TABLE 4.5

Foreign investments in the woodworking, furniture, pulp and paper industry

(million $)

Sector	Years				
	1998	1999	2000	2001	Total
Woodworking, furniture, pulp and paper	37.3	24.9	38.1	5.3	105.6

Source: Forest sector analysis, 2003.

4.1.5 Utilization capacity

The utilization capacity of the biggest woodworking and furniture plants is about 75%. They produce mainly export products and their utilization capacity depends primarily on export contracts. Some of them, especially those producing veneer and plywood, have problems with the supply of high quality logs, and this is a major obstacle to increasing their production capacity. The two pulp and paper factories are now using less than 25% of their capacity. Most of the smaller factories, especially those selling only to the domestic market, work at less than 50 – 60% of their capacity. A large proportion of these are not competitive due to their old styled products and equipment. If not renovated, they will be forced to reduce or stop production.

4.1.6 Use of domestic/imported raw materials

The woodworking industry processes mainly domestic raw material. Only small quantities of sawn timber of higher quality (oak, beech, exotic species) are imported. The share of imported sawn timber is insignificant and is of no importance to the industry (Table 4.6). The import of logs is less than 10% of the total quantity used (Table 4.7). The imported logs are predominantly high quality beech and oak. They are used for the manufacture of plywood, veneer, and high quality sawn elements. Table 4.8 shows the trade balance of the forest sector for the period 1998-2001.

TABLE 4.6

Use of domestic/imported sawn timber

(metric tons)

	Years		
Indices	**1999**	**2000**	**2001**
Sales on domestic market	469 311	284 280	350 000*
Import	7 550	15 093	11 441
Ratio in%	1,6	5,3	3.3

Source: Forest sector analysis, 2003.

*/ Estimation

TABLE 4.7

Use of domestic/imported logs

(metric tons)

	Years		
Indices	**1999**	**2000**	**2001**
Sales on domestic market	1 517 000	1 385 000	1 200 000*
Import	54 010	106 050	83 358
Ratio %	3.6	7.7	7.0

Source: Forest sector analysis, 2003.

*/ Estimation

TABLE 4.8

Import and export of wood products for 1998 - 2001

(US $)

	Years			
Indices	**1998**	**1999**	**2000**	**2001**
Export	85 567	99 989	93 469	86 451
Import	12 407	14 988	21 483	25 050
Balance	73 160	85 000	71 985	61 401

Source: Forest sector analysis, 2003.

4.1.7 Volume and value of production

Production of wood products over the 1998-2000 period increased. Production in 2000 was 23,4% higher than in 1998 (Table 4.9). The production of furniture in Bulgaria over this period also increased steadily. The production of furniture in 2000 was estimated at 194 million BGN (at current prices), which is 1.2 percent of the production of the processing industry (Table 4.10).

The analysis shows that the growth is due mainly to the increased manufacturing of metal furniture. Manufacturing of wooden furniture is not regular and depends entirely on exports and to a smaller degree on the domestic market (table 35).

TABLE 4.9

Production of companies, producing wood products (excl. furniture) 1998-2000

Manufacture of wood products (except furniture)	1,000 BGN current prices	Indexes 1998=100	Previous =100
1999	246 199	119.3	119.3
2000	264 697	123.4	103.4

Source: Forest sector analysis, 2003.

TABLE 4.10

Production of wood furniture in 1998-2000

Years	1,000 BGN current prices	Indexes 1998=100	Indexes 1999=100
1999	156 124	106.7	100
2000	194 088	110	101.2

Source: Forest sector analysis, 2003.

TABLE 4.11

Production of wood furniture over the period 1998-2000 by assortments (numbers)

Products (number)	Years 1998	1999	2000
Office furniture	83 682	123 482	68 437
1998=100	100.00	147.56	81.78
Kitchen furniture	132 751	96 928	103 712
1998=100	100.00	73.01	78.13
Bedroom furniture	91 652	76 413	86 499
1998=100	100.00	83.37	94.38
Furniture for living and dining-rooms	149 342	126 415	136 669
1998=100	100.00	84.65	91.51
Chairs	1 217 924	1 573 314	1 572 090
1998=100	100.00	129.18	129.08
Non-upholstered chairs	532 507	575 229	793 167
1998=100	100.00	108.02	148.95
Trestles	28 049	12 007	16 502
1998=100	100.00	42.81	58.83
Furniture of metal (excl. office)	457 022	731 219	1 117 311
1998=100	100.00	160.00	244.48

Source: Forest sector analysis, 2003.

5. TIMBER MARKET (TRADE)

5.1 Timber Export and Import

Between 1997-1999, the average volume of round wood exports was only 235,000 m^3 per year (less than 10% of production). About 60% of exports consisted of hardwood pulpwood, 15% coniferous pulpwood and 20% fuel wood. Saw logs represent only a few percent of the total exported volume. During the same period round wood imports varied between 27,000 – 51,000 m^3 per year (Paligorov et al 2002).

The Bulgarian round wood market for the 1990–2000 period could be classified as predominantly domestic; as more than 90% of the round wood harvested was used to meet the needs of manufacturing, construction and other sectors of the Bulgarian economy, and to satisfy the needs of the local population. Market development can be classified into three sub-periods:

- 1990 – 1991 – liberalization of round wood prices.
- 1992 - 1997 – imposing of a market mechanism on state forest ownership; a hyperinflation environment, and establishment of the Financial Council.
- 1998-2000 – adopting a new regulatory framework and implementation of reforms in the forest sector.

Despite the changes in the regulatory framework and the adoption of the law on the restoration of property of forests and lands in the forest fund, the major timber supplier during the 1990 – 2000 period remained state owned forests. This resulted in the internal market being monopolistic regarding supply.

The industrial consumers of roundwood, wood for pulp and paper production, and fuel wood, determine the demand for timber. Conditions for wood sale contracts during the period 1996-1997 were also determined by the state owned forests. The State owned enterprises, established for this purpose under the provisions of the Law on Commerce, purchase round wood on the domestic market. The main advantages of this mechanism are: discharging of foresters in State forests from sales of wood, establishment of regional wood market, development of enterprises for wood harvesting, etc. The major disadvantages are: forest enterprises become commission agents and as a result, an incorrect commercial partner etc.

During 1998 – 2000, the framework for price setting and type and method of timber sales, were determined by the restructuring of the sector through separation of the State Forestry from the 65 State owned joint-stock companies. At the beginning of 2000, the process was for standing timber sales through auctioning and negotiations with potential end-users.

The major advantages of this model are: a competitive environment for harvesting, creating competition between buyers through uniform rules and transparent procedures, implementing regulations for wood sales, the necessity of more precise measurement of volume and timber sale composition (species, size, quality, etc.), opportunity for revision, control of the felling sites, control of wood measurement from the forest companies, possibilities for supplying the needs of large consumers etc.

Major disadvantages are: frequent changes in the regulatory framework (Instruction No 33) without broad discussion, initiating new mechanism for wood sales simultaneously with the structural reform, possibilities for introducing non-specialists in harvesting, necessity for well equipped and financed harvest contractors, difficulties in performing control, conservation and protection of the forests from the State Forestry enterprises, etc. The new legislative framework on the sale of wood originating from state forests was not properly evaluated though a broad forum in respect to the advantages and disadvantages, and for that reason it was changed many times. The adoption of sudden revisions, especially without considering the concerns of all interested stakeholders in the process, resulted in more disadvantages. The mechanism for harvesting adopted, proved to be clumsy and bureaucratic for the small scale forests.

A broad discussion and evaluation of the advantages and disadvantages of the wood sale mechanism in the state forests is needed. Clear rules and procedures for the different methods for wood sales are also required. A mechanism for harvesting and selling timber contracts is also needed for municipal and private (non-state) forests. Clear elaboration of rules, structures for information, processing and submissions, and purchase mechanisms for timber sales and wood markets are valuable to an efficient timber market.

6. TIMBER PRICES

6.1 Prices by Assortment

The official data for round wood prices are not accurate. The reason is that prices often settle at a much higher level than the initial stumpage prices, which is the basis for official records. The prices shown in Table 6.1 are very close to the actual selling prices of round wood. They differ slightly in the various regions of the country but have been relatively stable during the last few years. Stumpage prices are €8-10/m3 lower than prices shown. The mill-gate prices are in general €10 - 15/m3 higher than the prices in Table 6.1.

TABLE 6.1

Round wood Prices by Assortment

(€/m^3)

Round wood specification	Price
Soft wood	
Saw logs with a diameter on the top end:	
14-17 cm	32
18-29 cm	40
Over 30 cm	46
Over 30 cm high quality	49
Pit props, piles and others	22-25
Pulp and paper wood	18
Firewood	6
Hard wood (beech)	
Saw logs 18-29 cm diameter	33
Saw logs over 30 cm	38
Veneer an plywood logs	80-105
Pulp and paper wood	20
Firewood	11
Hard wood (oak)	
Saw logs	39
Veneer logs	90-128

Source: Forest sector analysis, 2003.

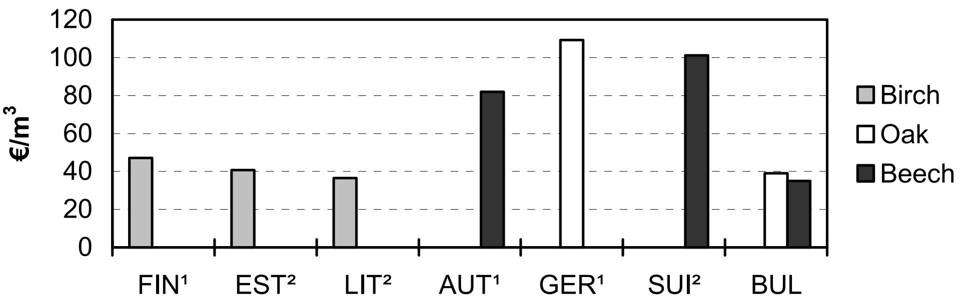
6.2 International Comparison

Timber prices in Bulgaria are low compared to those found in countries such as Germany, Austria and Switzerland, where, depending on the assortment, buyers may pay up to three times more than what is paid in Bulgaria. However, elsewhere, the difference is less dramatic. In the Nordic countries timber cost is only 10-20% higher than in Bulgaria, and in the Baltic countries, prices are about the same or lower than in Bulgaria.

For example, in Germany, Austria and Switzerland selected assortments of softwood logs are traded at about 80% higher level than in Bulgaria. The largest differences were found in the prices for oak logs, which in Germany was almost three times higher than in Bulgaria (Figure 6.1). On the other hand, softwood logs both in the Baltic and Nordic countries fetch very similar prices as in Bulgaria (Figure 6.2). Softwood pulp in Lithuania costs about 15% less than in Bulgaria (Figure 6.3).

FIGURE 6.1

Roadside prices of hardwood logs in selected countries in 2001

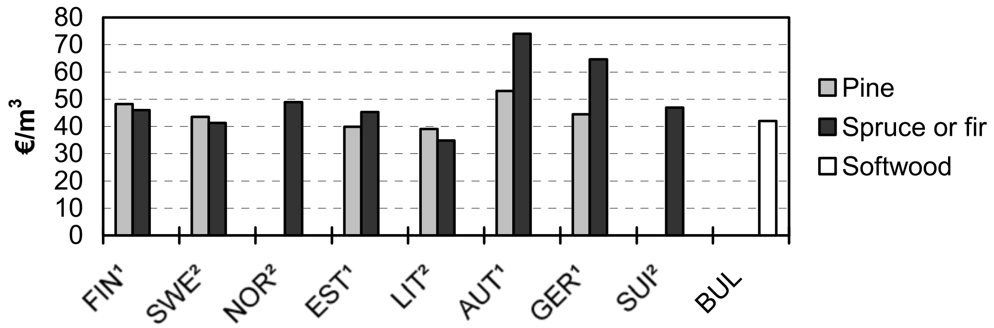


[1] Over bark; [2] Under bark

Source: Finnish Forest Research Institute 2002

FIGURE 6.2

Roadside prices of softwood logs in selected countries in 2001

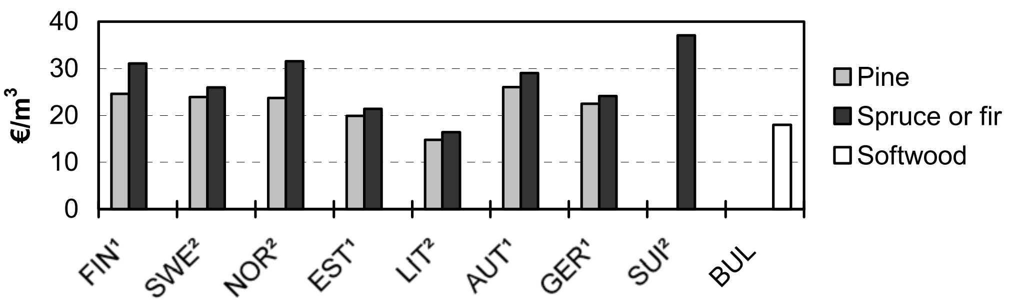


[1] Over bark; [2] Under bark

Source: Finnish Forest Research Institute 2002

FIGURE 6.3

Roadside prices of softwood pulpwood in selected countries in 2001



[1] Over bark; [2] Under bark

Source: Finnish Forest Research Institute 2002

The lack of appropriate log grading systems hinders differentiation of timber prices according to quality. As a result, purchasers have difficulty in valuation, and the full price potential may not be captured. In 1999, the average price of sawlogs in the domestic market varied greatly - from 40 to 90 BGN/m^3. The average price of middle and small sized wood, as well as firewood, ranges between 20 and 40 BGN/ m^3. The average price of wood offered to the local population in 1999 was just over 6 BGN/ m^3 (for standing trees); the average annual price for the soft fuel wood is 2 BGN/m^3, and for hard fuelwood - 6 BGN/m^3.

The pricing for round timber on the domestic market depends on many factors some of which are: opportunities for a supply of wood of exact quantity and uniform quality; inflation index; the currency exchange rate; energy prices; acceptable wage level; demand in the neighbouring countries; proximity to the border of the region.

6.3 Export and Import of Roundwood and Prices on the International Market

The current condition of the timber harvesting and wood processing industries are consequences of: the accelerated process of restitution, diminished international market, and reduced domestic consumption of wood and wood products. During 1996 – 1999, there was a stable trend of falling production and realization. The structure of exported softwood and hardwood timber is as follows: firewood - 42%, middle-sized roundwood – 41%, small-sized roundwood – 13% and large-sized roundwood - 4%.

The composition of softwood exports by category was: middle-sized roundwood – 63%, small-sized roundwood – 28%, large-sized roundwood – 5%, firewood – 4%; and for hardwood species: firewood – 59%, middle-sized roundwood – 31%, small-sized roundwood – 7% and large-sized roundwood – 3%. Hardwood species accounted for almost 70% of the exported wood.

By product types, the exported wood comprised mainly of: Softwood – wood for pulp production– 77%, rafters, post and pole logs– 7%, saw-logs and special order logs – 5%, other miscellaneous products – 12%; hardwood – wood for pulp production – 39%; firewood – 38%; technological timber for boards – 19% and – saw logs, veneer logs, plywood, and others - 4%.

The proportion of both soft and hardwood in the export by assortments is as follows: Wood for pulp production – 51%, firewood – 26%, technological timber for boards – 13%; saw logs and special orders, logs for plywood and veneer – 4%; posts, poles and rafters – 2%, other miscellaneous products - 4%. More than 60% of the wood, offered on the international market is non processed small sized roundwood.

During 1996 – 1999, as a whole, prices in the international market for exported Bulgarian wood was higher than the domestic market, with a few exceptions. A sudden drop in the prices for some categories of timber (middle- and small-sized wood) at the end of 1996 and beginning of 1997, followed by a rise in prices was observed. The highest price reached was for veneer logs from large-sized construction hardwood - \$154.70 /m^3 in 1997.

Exports and import of round timber in Bulgaria started to become liberalized in 1997. Since 1998 no export fees, and from 1999 no import fees, for EU trading partners have been collected. The regime on permission and export fees was removed in 2000. The regime that remains is a registration regime on “firewood” and “wood raw materials”. According to the data presented by the customs statistics of Bulgaria the following trends are outlined:

- Increases in the export price of firewood.
- Reductions in export volumes and prices for round timber with a top diameter – of more then 4 cm.
- The primary markets for round timber are the Balkan countries, with the exception of veneer and plywood logs which go mainly to Italy, Germany and Austria.
- Reduced imports of round timber.
- Bulgaria imports timber mainly from Russia, Ukraine, Belarus, the Balkan countries, Germany, and Italy.

There is a clear trend toward reduced export prices for softwood logs. Export prices are relatively constant for middle-sized softwood – rafters, round logs and pit props; there is a slight decrease in prices of exported non processed small sized round wood for production of cellulose and particle boards. The average annual export price for hard roundwood is higher than for softwood. The highest export prices are for veneer logs of ash, oak and beech. Prices for round hard roundwood, excluding non processed small sized round timber for producing cellulose, and particle board as well as for firewood. The administrative prices reached on the international market and the export prices for Scots Pine logs in Bulgaria are similar to the selling prices in Germany. The prices for spruce logs exported from Bulgaria with a top diameter of 25 – 30 cm are 10% lower on average than the prices in Germany.

The administrative prices in Bulgaria for beech logs on the international market are 200% higher than the selling price for similar assortments in Bavaria and Hessen Germany, and about 40% lower compared to those in Saxony, Saxony – Anhalt, Germany. The Bulgarian export prices for beech saw logs are similar to the prices for beech logs, B/C grade in Saxony, Saxony – Anhalt Germany but some 40% lower than prices for beech saw logs in Bavaria and Hessen Germany.

Bulgarian prices for oak sawlogs on the international market are 75 – 80% lower than the prices in Saxony – Anhalt, Bavaria and Hessen. The export prices in Bulgaria for oak saw-logs are on average 22 – 32% lower than the price for the same grade of logs in Germany. The export prices for oak veneer logs in Bulgaria are similar to the selling prices for oak saw logs in Germany. There is a considerable difference in the prices for logs in Germany depending on tree species, diameter, and quality. In Bulgaria these differences are insufficiently differentiated and have lower levels and values.

Wood commodity production during the last years of the period increased but exports decreased. The main problems for enterprises in the sector are: lack of business contacts with EU partners, the quality of the articles produced, effectiveness of production and organization, staff qualification, and a lack of branch co-operation. To improve the economic effectiveness in the export of roundwood it will be necessary to:

– Carry out regular surveys of the European market to identify potential market niches, with the purpose of promotion of export s of wood products.
– Develop and maintain a database for production and potential sales on the domestic and international market by species, categories and round wood assortments.

7. OUTPUT, TRADE AND CONSUMPTION

The following conclusions can be made from an analysis of domestic wood consumption for the period of 1990 – 2000:

– The amount of round sawlogs consumed by domestic mills was 330,000 to 430,000 m^3 per year), and firewood consumed by households (1.2 to 1.8 millions m^3 per year) does not show tremendous annual variation.
– Greater annual variations can be noticed in the consumption of middle-sized timber (70 000 m^3 to 400 000m^3) and especially small-sized roundwood (14 000 m^3 to 230 000 m^3)
– The most important factors influencing the domestic markets are log supply and demand, the inflation index; fluctuations in the currency exchange rate, prices for energy, wages; proximity of the region to the border, and demand in the neighbouring countries.

For improving and refining the wood market it will be necessary to:

– Undertake continuous in-depth research of the wood market, to turn the findings into a system, providing information for management.
– Wood sales to be oriented to market centres, such as stock exchanges, brokers, auctions.
– Refine the sale mechanism with regards to better using of the most valuable large-sized roundwood and consumption promotion of middle-sized and small–sized roundwood and wood for producing cellulose and particle board.

Bulgaria is not a significant player in the international wood markets. Wood exports represent 0.4% of total exports, and only 0.003% of European imports. Currently, Bulgaria is in bottom place regarding imports in Europe and second from the bottom for exports.

8. INSTITUTIONS

The legislative framework and political decisions changed in line with the historical development of the country. This affected forest management, which has been administered by different ministries or individual organizational structures, subordinate to the Council of Ministers, the Ministries and Departments. Since 1879 changes in the administrative structure were as follows:

1879 – Ministry of Finance

Establishment of the Central Forest Service

Forest Supervision Department

1883 – Ministry of Finance

Public Domains, Forestry, Agriculture and Commerce Department

1894 – Ministry of Commerce and Agriculture

Forestry, Hunting and Fishing Department

1912 – Ministry of Agriculture and Public Domains

Forestry and Hunting Department

1934 – Ministry of Agriculture, Commerce and Public Economy

Forestry, Hunting and Fishing Department

1935 – Ministry of Agriculture and Public Domains

Forestry, Hunting and Fishing Department

1940 – Ministry of Agriculture and Public Domains

Forestry Department

1941 – Ministry of Agriculture and Public Domains

Forestry and Hunting Directorate

1947 – MAF

1948 – Ministry of Forests

1951 – Forestry Board – reporting to the Council of Ministers (CoM)

/The Timber Industry was administered by the Ministry of Heavy Industry/

1957 – MAF

1960 – MAF (MAF)

The *Forestry* Department of MAF

1960 – Main Forestry Board – subordinate to the Council of Ministers

1962 – Forestry and Forest Industry Committee – subordinate to the Council of Ministers

1966 – Ministry of Forests and Forest Industry

1971 – Ministry of Forests and Environmental Protection

1976 – Ministry of Forests and Forest Industry

1986 – MAF

Forestry and Forest Industry Association – subordinate to MAF

1987 – *Forestry and Forest Industry* Association – within the Council of Agriculture and Forestry, subordinate to the Council of Ministers

1990 – Forestry and Forest Industry Committee – subordinate to the Council of Ministers

1991 – Forestry Committee – subordinate to the Council of Ministers

1997 – Ministry of Agriculture, Forests and Agrarian Reform (MAFAR)

NFB – within the structure of MAFAR

1999 – Ministry of Agriculture and Forestry

NFB

Frequent changes in the administrative structure in this relatively short period of time has had various effects on the overall condition of forests. The structure of local and regional forestry administrations were relatively stable, and helped to promote the credibility of forestry authorities by strengthening standards and interrelations. A three-level administrative system has been traditionally implied and comprises of:

- Central Management (Ministry or other Administrative Department).
- Regional administrative bodies or Directorates (Inspectorates), subordinate to the Central Management.
- State Forestry or Forest Management Office.

Special structures have been established to assist management and undertake specific functions:

- Divisions and bureaus for prevention of erosion.
- Forest seed-control stations.
- Forest pest control and disease prevention stations.
- experimental and scientific research stations.
- Poplar research stations.
- Forest information systems.
- Wood marketing and trade companies.

Historically, the existence of a separate central forest management authority has been of benefit to forests and human resources. A positive feature has been the operation of forestry and the forest industry under a single central management. On the other hand, forests were often perceived as a raw material resource, which subsequently led to overexploitation of specific wood types. The centralized planning period featured stable markets and low prices for timber.

The adoption of the Law for the Forests and the Law for Restoration of Forests and Forest Lands of Forest Fund in 1997, initiated a new structural reform in forest management, aiming to introduce market rules and a competitive environment. Measures included separation of the unified Forestry Management through the transfer of industrial assets from State Forestry to trading companies (with state share-holding and the move toward privatized later), and the assignment of new functions and responsibilities to the NFB and its subdivisions. All activities in state forests were funded by the *Bulgarian Forest* National Fund, which was made up of revenues from timber sales and budget subsidies. Currently the Fund is blocked and the only source of financing is the state budget.

The new law contributed to the reinforcement of the three-level management system and the establishment of central management, giving the NFB an executive agency statute within the structure of MAFAR. Its functions and structure were regulated by NFB structural rules (promulgated in the SG, Vol.

69/22.08.2000, in force since 22.08.2000; amendments: SG, Vol. 88/2001, in force since 15/10/2001, amendments: SG, Vol. 99/20.11.2001, in force since 20.11.2001). The employees of specialized departments in the NFB have the statute of civil servants. The NFB manages and controls forests and forest areas. Relevant functions and responsibilities include:

– Administering the Forest Fund.

– Regeneration of forests in the Forest Fund.

– Exploitation of forests and lands in the Forest Fund.

– Protection of forests and lands in the Forest Fund.

– Building activities in the Forest Fund.

– Funding of activities in the state-owned forest fund.

– Administering the hunting management; protection, regeneration, resettlement and exploitation of game resources; assignment and enforcement of the right to hunt; coordination of organized hunting tourism; game and game products trade; implementation of Hunting Management Projects; funding of activities in the Hunting Management Centres within the jurisdiction of NFB.

The NFB submits draft legislation or proposals for adoption of new acts or amendments to the Council of Ministers (CoM). They also submit legislative documents to the Minister of Agriculture and Forestry, in the event that regulations, instructions, methods, etc. should be revised or adopted by the Ministry Collegium.

The NFB authorities are:

Regional Forestry Boards (16 RFBs, established on a regional basis), which:

– Manage state forest fund and exercise control over forests and woodland areas, as well as control over State Forestry in the relevant region.

– Organize, coordinate and control the activities implemented in woodland areas; regeneration of forests; exploitation of forests and woodland resources, landscape design and building activities; and game management.

State Forest Administration (144 in total, covering areas ranging from 4,000 to 42,000 hectares)

– Manage the state forests; implement conservation measures and exercise control over forests and woodland areas; organize and coordinate activities practiced in their region of authority, administer the protection of game in the relevant region and the adjacent hunting management centres.

State Game-Breeding Stations (total 37)

– Function as State Forestry under the provisions of the Law for the Forests and under the management of the NFB.

– Carry out some of the following measures: preservation and enrichment of the genetic diversity of game species; construction of hunting management facilities; implementation of bio-technical practices, regeneration, resettlement and protection of game; improvement of trophy qualities; control the use of game resources and products; administer hunting tourism, the use of forests within the state-owned woodland areas, the conservation of biotope qualities and restoration of habitat.

Departments of the NFB (total number 21):

– **Forest Seed-Control Stations** (2 stations, located in Sofia and Plovdiv)

    o Established under an order issued by the head of the NFB. Scope of activity: control, administration and coordination of the establishment, management and exploitation of forest seed-production base; testing and evaluating the qualities of seeds and samplings of tree and shrub species; maintenance and renewal of a “gene bank” for coniferous and deciduous tree species; development of a National Register on forest seed-production base.

- **Forest Protection Stations** (3 stations located in Sofia, Plovdiv and Varna)
    - Established under an order issued by the head of the NFB. The main functions and responsibilities include: forest protection management and control; forest pathology monitoring and research; laboratory analysis of samples and data analysis; forecasting of calamities, diseases and other damages; supervising of phytosanitation and prevention measures against pests and diseases; reporting the results of implied measures.
- **Nature Parks Directorates** (10 directorates: *Roussenski Lom*, *Sinite Kamani* /Blue Stones/, *Shoumensko Plato* /*Shoumen* Plateau/, *Zlatni Piasaci* /Golden Sands/, *Strandzha*, *Vitosha*, *Vrachanski Balkan*, *Rilski manastir* /Rila Monastery/, *Persina, Balgarka*)
    - Established under an order issued by the head of the NFB. Key functions are: implementation of the Nature Parks management plans; supervision on forest management activities and non-timber resource utilization; control over building activities and park safeguarding in order to protect biological and landscape diversity; monitoring of the natural ecosystems, determine plant and animal populations; coordination of maintenance and restoration measures; organization and administration of recreation and tourism practices, as well as measures for the protection of cultural and historical heritage.
- **Experimental Stations** (3 stations: for Oak Forests – located in the city of Bourgas, for fast-growing woodland species – in the town of Svishtov, and a National Scientific Research Station for hunting management, biology and game diseases – located in the capital Sofia.)
    - Established under an order issued by the head of the NFB. The main purpose is to develop specialized scientific research and forest practices, intensive tree growing and hunting management.
- **Poplar Nurseries** (1 nursery, located in the town of Pazardzik)
    - Established under an order issued by the head of the NFB. The main purpose is production of poplar, willow, hazelnut and walnut saplings and seeds, as well as examination and introduction of new poplar and willow crosses and hybrids.
- ***The Forest Journal* Editorial Board**
    - Purpose is the issue of a specialized journal (the *Forest Journal*) aiming to promote the overall activity of NFB, its bodies and departments, as well as scientific research, international activities, and achievements in the area of forestry and hunting management.
- ***Information and Bank Transfer Systems and Audit* Directorate**
    - Established under an order issued by the head of the NFB. The main purpose is the development and maintenance of information technologies and systems for forest management, planning, analysis and control, as well as the introduction of electronic payment and consolidated accounting.

Experts and the public have different views on the model and schemes for forest sector reform, implemented since 1997. As a whole, negative opinions prevail. The 1997 Forestry Act, was developed too quickly and without enough publicity and transparency. As a consequence, some reasonable proposals of scientific and practical value were disregarded. This, together with political pressure, affected the overall process of forestry management reform in a number of negative aspects:

- The State Forest Administration and other structures were deprived of the right to perform economic activities.
- All means of production have been transferred to the assets of newly established trading companies with state share-holding.
- The principles and criteria for the trading companies were inadequately selected and influenced by subjectivism and political pressure.

- Opportunities for unrestricted interference and exploitation of forests were opened to users, often lacking required competencies and good intentions. Consequent impediment of protection and control led to corruption and theft.
- When carrying out silvicultural activities, only a small number of companies showed interest. The State Forestry department, is still charged with the responsibility to implement silvicultural activities instead of forest companies.
- The cost of silvicultural activities jumped by 15-20%, while the quality of performance decreased.
- Less intensive exploitation and the trading companies monopoly of timber industry profit resulted in a reduction in forest resource revenues.
- Increased numbers of forest fires were due mainly to intentional fires caused by the private users of timber and no effective measures could be applied by the State Forestry as they lack the necessary equipment.
- Trading companies were not always loyal to employees and contractors.
- Privatization of trading companies was not carried out in the most expedient manner.

Positive aspects of the reform were:

- Establishment of market rules and a competitive environment.
- Reduction in the number of officials engaged in state administration and management.
- Creation of professional opportunities for a large number of foresters, operating in the private sector
- Elimination of certain functions, burdening the State Forestry
- Increased investments in modern equipment and technologies, benefiting the production capacity of logging and wood-processing, as well as the quality of products.

Transparency and stakeholder participation has always been claimed in the policies of the Ministry of Agriculture and Forestry and the NFB, concerning important legislative and governmental decisions. Prior to introduction to the CoM, all draft legislation goes through an agreement procedure within institutions, and in certain cases with non-governmental organizations. The best approach to decision-making or agreement on activities is to ask for the assistance of associations, societies, unions, and others. Problems sometimes arise from the fact that:

- The number of non-governmental organizations working in the field of forestry is still limited, and is not administratively strong.
- Certain NGOs are functioning without being officially registered and sufficiently credible.
- There are no foresters among the organizations' leaders or members, and this leads to opinions that are sometimes incompetent.
- Most of the NGOs require training and financial support.

At this stage, the participation of individuals in discussions on important decisions is not expedient, as they often focus on private cases, which are of no relevance or help in solving complex problems. The decision making process concerning regional forest development plans, is not fully refined and makes the activities of local management authorities seem non-transparent to the public.

With the adoption of the Protected Areas Act in 1998, the forests included in the National Parks - Rila, Pirin and Central Balkan as well as the reserves, are managed by the Ministry of Environment and Waters through the National Park Directorates, located in the towns of Blagoevgrad, Bansko and Gabrovo. These statutory actions provoked negative reaction from local authorities and forest management bodies, because ownership of the most valuable forest areas changed. Institutionally, this decision has had the following negative outcomes:

- The control, which used to be exercised over the administration of these areas was eliminated.

- Organizational problems hindered the development of National Parks management plans, which are still a long way from approval.
- Deterioration of protection and fire-prevention measures had a negative impact on the parks and reserves.
- Insufficient competent administrators and a lack of tradition in management of such areas.
- Increases in the number of staff and management expenses.

Accordingly, the best decision would be that these areas remain subordinate to MAF – NFB, while MoEW supervises the departments implementing the management plans. Trading companies of mixed ownership structure undertake logging and trade of unprocessed wood. To administer forest management in municipalities with a bigger share of forest ownership, Municipal Forestry Administration have been established (or are expected to be established). The municipal councils or forest directorates within the municipal administrations are defining their responsibilities. So far, a municipal forestry centre has been established only in the municipality of Haskovo. The regional *Agriculture and Forests* services (subordinate to the Ministry of Agriculture and Forestry) are also authorized to implement statutory measures in forests within the region of their jurisdiction. The 28 regional administrations make use of experts on forests, whose priorities include: the development and implementation of regional plans, as well as enforcement of regional policy.

The following problems need to be resolved regarding the public structure for state-owned forest management, and the effectiveness of decision taking:

- Established structures function inefficiently and bureaucratically. This will require optimization of the number of structures, employees, as well as changes in their functions and responsibilities. The reform of exploitation methods and trade should involve the establishment of new structures, comprised of accounting and marketing experts.
- Administrative capacity and technical capabilities are unsatisfactory, leaving public expectations unfulfilled.
- Economic activities in state-owned forests are not cost-effective and have negative impacts on the forest.
- The current accounting and audit scheme is still not adequate, despite the recent introduction of the budget financing and plan control scheme by the National Audit Office.

Marketing for standing timber sales does not guarantee adequate pricing of the various sale components, despite the transparency of the payment procedures. Inadequate methods for measurement and evaluation of standing trees often generate differences between invoiced and delivered volume, which usually benefits the buyer. In instances of sale under-runs, the buyers seek illegal ways to compensate the deficiency, often involving state administration officials. The limited number of buyers and low-quality of timber leads to poor competition in many regions of the country, and deals are concluded at initial - or even lower than advertised prices. Another practice is collusion between prospective purchasers, which also results in reduced prices. Special wood (veneer logs and plywood), as well as valuable tree species (Wild Cherry, Sycamore, Norway Maple, Wild Service Tree, etc.) sometimes need to be felled to be evaluated, which also contributes to lost state revenues. When sales of timber are not profitable (in certain marketing conditions), enterprises offer it for firewood and other purposes, compensating losses in a “semi-legal” way.

Large timber-processing companies generally disapprove of the idea of buying standing trees offered by small enterprises as the latter cannot guarantee steady supplies and offer timber at higher prices. Administrators have difficulties in putting up timber sales, supervising logging and transportation, and maintaining the infrastructure. In addition, double measurement of timber has to be undertaken (standing and in the log form). In view of above disadvantages concerning the marketing of standing sales:

- In the marketing of standing trees vs. sawlogs; priority should be given to sawlogs, especially where valuable tree species are concerned.

- Logging should be carried out by SFC employees or enterprises selected through bidding procedures, and delivered log sales should also be awarded via bidding , future deals, or consignment stock batch sales.

Besides these opportunities, an entirely state-owned integrated resource and manufacturing model could be applied, i.e. establishment of a state enterprise with a 100% state share, which is not subject to privatization and bankruptcy. The potential benefits include:

- Improvement of state-owned forestry management and environment.
- Increased profit.
- Opportunities for investment in forest regeneration measures, road construction, use and processing of wood and non-timber forest resources.
- Promotion of the social status of foresters and forestry employees.
- Improvement in conservation and protection services.
- Revision of accounting procedures and reduction of malpractices and corruption.
- Further development of opportunities for profit from tourism, hunting, fishing, gathering of mushrooms and herbs, rents, ski-runs, ski-lifts, construction and exploitation of raw materials, etc.
- Enhanced opportunities for participation in international programs and projects.

9. OUTLOOK

With the slump in production, and the changing economic situation, it is difficult to forecast the development of the forest sector and of the sectors that consume forestry resources. At the moment, there will be further reforms in the structure of management, and production of the forest sector. Some of the main goals and strategic actions for the forest sector in the period 2003 – 2013 accepted in the NFPS are as follows:

- To certify at least 30% of Bulgarian forests.
- To promote the afforestation of marginal agriculture lands, including production of biomass for reconstituted wood fibre and for energy, by using specialized national and international financing schemes.
- Design and implement a national forest inventory compatible with the requirements of EFICS.
- To implement regional programmes for improvement in the resistance of the coniferous mono-plantations and broad leaved forest at lower altitudes.
- To elaborate and apply system for assessment of the risk and the economic damages caused by insects, diseases and fires.
- Protection of the forests and forest resources from public theft and vandalism..
- Reorganise harvesting in state forests with a view to fully align it with the requirements of the market.
- To gradually increase the annual harvest to 8.0 million m^3 (standing timber).
- To support incentives and measures to modernise and improve harvesting equipment and practices, including the SAPARD program and other funds.
- Elaborate and implement a national program for the development of hunting.
- Proper regulation of the use of herbs, mushrooms and forest fruits and the creation of conditions for their sustainable exploitation and added value through economic processing.

- To increase the social benefits and revenues from forests to their owners, under the management principles of respect of ownership, equal rights of the consumers and social justice.
- To develop and exploit the tourist potential of the forest resource, and to integrate tourism into traditional activities of forest management.
- Establishment of an effective and viable timber base and furniture industry for processing domestic wood, and to increase production by 10%.
- To encourage processing of middle and low quality timber.
- To encourage the export of manufactured forest products with the view to achieve an increase in exports of 10% per year.
- Optimize the administrative structure of forest management, guaranteeing execution of the public functions of the state and effective management of the state forest ownership.
- To develop and implement an effective model for independent financing of the forest sector, providing an optimum balance between state subsidies and revenues from commercial activities.
- To ensure adequate financial support by the state for the activities related to safeguarding, control and protection of forests as well as protected areas management.
- Improve the system of education, social status of forest workers and the contribution of the scientific institutions to the sustainable management and development of the forest sector.
- To guarantee equal rights and duties to all forest owners in Bulgaria. To sustain an economically viable forest sector providing protection and development of forest resources and ecosystems in the interest of the owners and local communities.
- To restrict fragmentation of forest ownership by implementing a minimum size restriction for a forest holding and encourage re-allocation (forest land consolidation) and cooperative management through associations with different jurisdictions.
- To provide support to the owners for activities concerning the afforestation, regeneration and tending of the forests, their management planning and certification as well as establishment of a system for administrative servicing and a network of centres for education and consultation to private forest owners.
- To establish a mechanism for compensation of lost benefits from limited economic activity in forests which have a higher value for their environmental functions.
- To support the establishment of a market for forest holdings, products and services related to the forests.
- To provide the state, private sector, society, non-governmental organizations and international institutions with accurate and timely information on the status of forests, forest management and forest products.
- To design and introduce an integrated GIS based Forest Information System.
- Implementation of EFICS system of the EU.
- To ensure transparency, accountability and opportunities for public participation at each level in the decision making process.
- To create conditions for active participation in international forest policy, and implementation of the international commitments in the forestry field. To initiate and engage in international collaboration with the EU, Russia and other former Soviet Union countries.
- To prepare regional plans and programs for forest development and integrate with regional development plans.

– To support the development of small and medium business and to stimulate the implementation of projects, which provide additional benefits and employment in the rural and mountainous areas.
– To support and facilitate implementation of the SAPARD forestry measure.
– To support initiatives and projects for sustainable development of non-timber forest resources, and improve capacity in this field.
– To encourage the development of agro forestry to provide additional revenue for the populations of rural and mountainous regions.

The NFPS is not envisaged as a static document but more as a dynamic process, adapting over time, depending on the needs of the sector, the economic environment, and the overall government policy. The implementation of the NFPS is the responsibility of all stakeholders in the forest sector. Ministries which impact the forest sector are obliged to include the NFPS in their decision making processes where relevant.

10. CONCLUSION

During the last 13 years, forestry in Bulgaria passed through a number of structural and economic changes pointed toward transitioning from a planned to a market economy. The new legislation is a good instrument for furthering these changes in the forest sector. During this period there were many problems and difficulties, which are still being worked on.

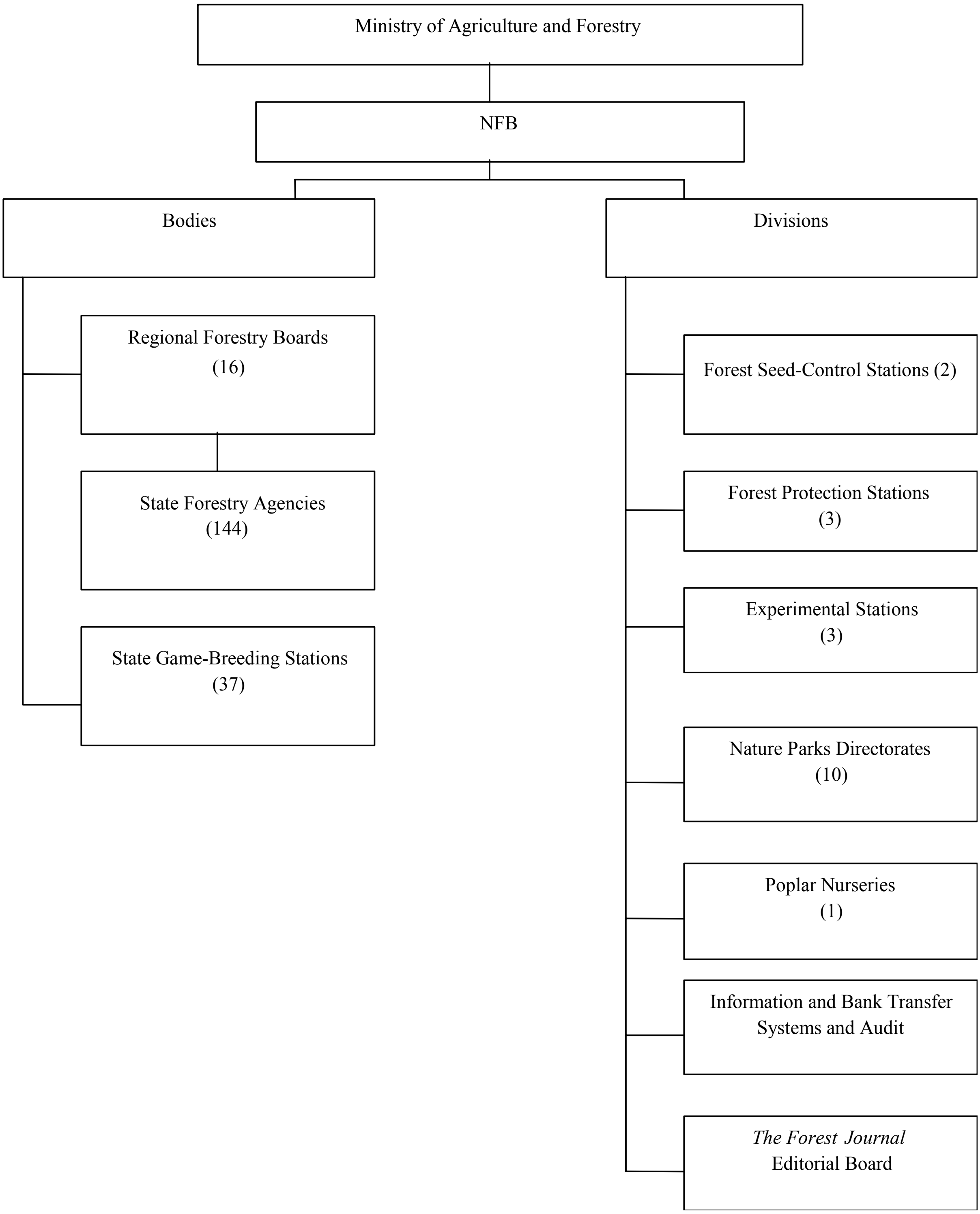
Political instability and an incomplete forest policy are two fundamental problems in the Bulgarian forest sector. Instead of concentrating on ecological aspects of forest management and striving for balance among ecological, economic and social functions provided by forests, many key actors in the forest sector are mainly concerned with political decisions related to the levels of forest administration. However, for a country in transition, where there is not yet a stable and secure forestry decision-making environment, it isn’t possible to address the specifics of economic, social and ecological issues. Indeed, most of the political and financial effort appears to be concentrated toward policy formation, with relatively fewer resources invested on implementation. However, it is normal that Bulgaria addresses the primary political issues in the forest sector and then decides which is the most appropriate model for forest management.

FIGURE 10.1

Structure of the central management of the NFB in 2002

	Head of NFB	
	Secretary General	
Directorate Administrative, Legal and Informational services; Financial and Economic Activities	Directorate Forest and Hunting Resource Management and Economic Policy	Directorate Forest Management
Department Legal Services and Human Resources	Department Economic Policy	Department Forest Management and Protection
Department Financial and Economic Activities	Department Woodland Exploitation and Marketing	Department Woodland Cadastre and Forest Structure; Monitoring of Woodland Resources
Department Informational Services and Public Relations	Department Safeguarding	Department Protected Areas, International Cooperation and NGOs Relations
	Department Hunting and Fishing Management	Department Regeneration of Forests, Erosion Prevention and Scientific Services

FIGURE 10.2
Structure of the NFB in 2002



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ANNEX

List of annex tables

FORESTRY CONTACTS IN BULGARIA

A. Government bodies dealing with forest and forest industries sector

Ministry of Agriculture and Forests
55, Christo Botev Blvd.
1040, Sofia
Tel. +3592 98511
Fax: +3592 9813736
http://www.mzgar.government.bg

Ministry of Agriculture and Forests
National Forestry Board
55, Christo Botev Blvd.
1040, Sofia
Tel. +3592 9884686]
http://www.nug.bg

Ministry of Environment and Waters
67, Wiliam Gladston Str.
1000, Sofia
Tel.+3592 9406222
Fax: +3592 9862533
http://www.moew.govrnment.bg

Ministry of Environment and Waters
National Service for Protection of Nature
22, Maria Louiza, Blvd.
1000, Sofia
Tel. +3592 9406541

Ministry of Environment and Waters
Executive Agency of Environment
136, Tzar Boris III, p.box 251
1618, Sofia
Tel. +3592 9559011
Fax: +3592 9559015

B. Industry and trade organizations

Union of Forestry and Trading Companies in Bulgaria
Kotel, region of Sliven
Tel. +3592 453 2444
Fax: +3592 453 2916

Branch Chamber on Wood Processing and Furniture Industry
20, F, J. Kiuri Str.
1113, Sofia
Tel/Fax: +3592 9634299

C. Universities, research institutes, planning institutes and other institutions

Universities

University of Forestry
10, Kliment Ochridski Blvd.
1756, Sofia
tel. +3592 962 59 97
www.ltu.bg

Faculty of Forestry
10, Kliment Ochridski Blvd.
1756, Sofia
Tel. +3592 622854

Faculty of Forest Industry
10, Kliment Ochridski Blvd.
1756, Sofia
Tel. +3592 621098

Faculty of Ecology, Landscape Architecture and Agronomy
10, Kliment Ochridski Blvd.
1756, Sofia
Tel. +3592 688549

Faculty of Veterinary Medicine
10, Kliment Ochridski Blvd.
1756, Sofia
Tel. +3592 680235

Faculty of Business Management
10, Kliment Ochridski Blvd.
1756, Sofia
Tel. +3592 680804

NGOs

Union of Bulgarian Foresters
17, Antim I, Str.
1303, Sofia
Tel. +3592 9818632

Bulgarian Forestry Chamber
1, Bankova Str.
4000, Plovdiv
Tel/Fax: +35932 636311

Scientific Technical Union on Forestry and Wood Processing
108, Rakovska Str.
Sofia
Tel. +3592 9883683

Research Institutes

Bulgarian Academy of Sciences
Forest Research Institute
132, Kliment Ochridski Blvd.
Tel. +3592 9620442
Fax: +3592 9620447
Http://www.bulnet.com/forestin

LIST OF CONVENTIONS WITH BULGARIA'S PARTICIPATION

1. The Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus, Denmark,1998), signed, not in force;
2. Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Helsinki, 1992), signed, but not ratified;
3. Convention on Co-operation for the Protection and Sustainable Use of the Danube River (Sofia, 1994), signed, but not in force;
4. Convention on the Protection of the Black Sea Against Pollution, ratified on 26.11.1992, in force since 15.01.1994, promulgated: SG, Vol. 49/17.06.1994;
5. Convention on Environmental Impact Assessment in a Transboundary Context (Espoo, Finland, 1991), ratified, in force since 10.09.1997;
6. International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties (Brussels, 1969), ratified, in force since 31.01.1984;
7. Convention on the Transboundary Effects of Industrial Accidents (Helsinki, 1992), ratified in 1995;
8. International Convention for the Prevention of Pollution from Ships (London, 1973), The Convention and the Annexes I and II are in force since 12.03.1985, the Annexes III and V are in force since 13.08.1993;
9. Convention between the Government of the Republic of Bulgaria and the Government of Romania on Environmental Co-operation, ratified in 1992;
10. Convention on Long-range Transboundary Air Pollution 1979 Geneva , ratified in 1981, in force since 1983, Protocols to the Convention, ratified, in force;
11. The 1985 Vienna Convention for the Protection of the Ozone Layer, ratified in 1989, in force since 1991; The 1987 Montreal Protocol on Substances that Deplete the Ozone Layer, ratified, in force;
12. UN Framework Convention on Climate Change 1992, ratified in 1995, in force since 1995; Kyoto Protocol to the UN Framework Convention on Climate Change 1997, signed in 1998, not ratified;
13. Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal 1989, ratified on 18.01.1996, in force since 16.05.1996;
14. The 1992 Convention on Biological Diversity, ratified on 29.02.1996, in force since 16.07. 1996, promulgated: SG, Vol. 19/02.03.1999;
15. Convention on Wetlands of International Importance Especially as Waterfowl Habitat (The Ramsar Convention) 1971, ratified, in force since 24.01. 1976, promulgated: SG, Vol. 56/10.07.1992;
16. Convention on International Trade in Endangered Species of Wild Fauna and Flora (The Washington Convention, CITES) 03.03.1973, ratified in 1990, in force since 16.04. 1991, promulgated: SG, Vol. 6/21.01.1992;
17. Convention for the Protection of the World Cultural and Natural Heritage 1972 Paris, signed, ratified and is in force since 1976;
18. Convention on the Conservation of European Wildlife and Natural Habitats, (The Bern Convention) 1979, ratified on 25.01.1991, in force since 01.05. 1991, promulgated: SG, Vol. 23/10.03.1995;
19. Convention on the Conservation of Migratory Species of Wild Animals (The Bonn Convention) 23 June 1979 With Appendices As Amended 1985, 1988 in force since 1 November 1983 1979. Bulgaria is not a party to the Convention, but took part in adoption and signing of other agreements on protection of migratory species.
20. The Convention Concerning Fishing in the Black Sea, 1959 Varna, signed, ratified, promulgated;
21. The Convention Concerning Fishing in the Danube Water, signed, ratified, promulgated;
22. Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques, 18.05.1977 Geneva, ratified on 25.05.1978, in force since 05.10.1978, promulgated: SG, Vol. 22/16.03.1979;
23. The Antarctic Treaty 1959 Washington, ratified on 23.06.1978, in force since 11.09.1978, promulgated: SG, Vol. 57/20.05.1998;
24. The Antarctic Treaty Protocol on Environmental Protection 1991, ratified on 08.04.1998, in force since 21.05.1998, promulgated: SG, Vol. 69/17.06.1998;

25. Convention on the Conservation of Antarctic Marine and Living Resources 20.05.1980 Canberra, ratified on 17.06.1992, in force since 30.09.1992, promulgated: SG, Vol. 6/22.01.1993;
26. Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency 26 September 1986 Entry into Force 26 Feb 87, in force since 26.09.1987, ratified in 1988, promulgated: SG, Vol. 13/16.02.1988;
27. Convention on Nuclear Safety 17 June 1994, ratified on 14.09.1995, in force since 24.10.1996, promulgated: SG, Vol. 93/01.11.1996;
28. Convention on Early Notification of a Nuclear Accident 26.09.1986 Vienna, ratified in 1998, in force since 22.10.1986, promulgated: SG, Vol. 12/12.02.1998;
29. Agreement on Co-operation between the People's Republic of Bulgaria and the Kingdom of Greece Concerning the Utilization of the Waters of the Rivers Crossing the Two Countries, ratified in 1964, in force since 09.07.1964, promulgated: SG, Vol. 87/03.11.1964;
30. Agreement between the Government of the Republic of Bulgaria and the Government of the Republic of Greece on the use of the Mesta River Waters, ratified on 28.03.1964, in force since 19.09.1996, promulgated: SG, Vol. 85/08.10.1996.
31. Rotterdam Convention on the Prior Informed Consent (PIC) Procedure for Certain Hazardous Chemicals and Pesticides in International Trade - ratified in 2000.
32. Stockholm Convention on Persistent Organic Pollutants signed in May 2001.

Source: Ministry of Environment and Water

ANNEX TABLES

ANNEX TABLE A

Main land-use categories

Categories	**Unit**	**1980**	**1985**	**1990**	**1995**	**2000**
Total area	*1,000 ha*	11 091	11 091	11 099	11 099	11 099
of which:						
-Forest	*1,000 ha*	3 743	3 768	3 772	3 876	3 914
-Agricultural land	*1,000 ha*	6 185	6 169		6 164	6 252
-Other land	*1,000 ha*	1 163	1 154		1 059	933
Percent of total area						
-Forest	*%*	33.75	33.97	33.98	34.92	35.26
-Agricultural land	*%*	55.77	55.62	55.49	55.54	56.33
-Other non forest land	*%*	10.48	10.41	10.52	9.54	8.41
Total %	*%*	100	100	100	100	100

Source: NSI

ANNEX TABLE B

Distribution of forest area in 2000

(ha)

Kind of ownership	**Forests with 0,1 – 1,0 density**	**Afforested area + area of dwarf pine**	**Non afforested area for afforestation**	**Non productivity areas**	**Forest pastures**	**Total Forest and non forest area**
State	2 763 847	2 764 563	116 397	243 779	73349	3 198 088
Agriculture	14 556	14 556	310	69	-	14 935
Experimental and Education Forests	14 148	14 148	59	1 205	70	15 482
Municipal	205 843	205 859	12 066	14 382	2 466	234 773
Private physical persons	264 272	264 272	8 428	9 094	4 667	286 461
Private juridical Persons	3 168	3 168	98	266	17	3 547
Religious	15 836	17 569	350	3027	81	21 027
MOEW	93 447	124 172	963	24 012	895	140 042
Total	**3 375 117**	**3 408 307**	**138 671**	**295 832**	**81 545**	**3 914 355**

Source: NFB

ANNEX TABLE C

Afforested area by ownership and forest type, 2000

(ha)

Ownership type	Coniferous	High-stem deciduous	For reconstruction	Coppice forest for conversion	Low-stem deciduous	Total
Total	1 050 422	768 946	546 012	884 995	124 712	3 375 117
State	864 250	631 664	457 375	710 445	100 113	2 763 847
Agriculture	12 254	927	444	571	360	14 556
Experimental and Education Forestry	6 271	5 110	335	2 423	9	14 148
Municipal	43 367	52 048	43 688	60 189	6 551	205 843
Private physical persons	66 635	39 222	37 354	103 977	17 084	264 272
Private juridical Persons	665	278	380	1 615	230	3 168
Religious	6 453	4 559	2 093	2 395	336	15 836
MOEW	50 527	35 168	4 343	3 380	29	93 447

Source: NFB

ANNEX TABLE D

Natural forested area by ownership and forest type, 2000

(1,000 ha)

Ownership type	Coniferous	High-stem deciduous	For reconstruction	Coppice forest for conversion	Low-stem deciduous	Total
Total	231 823	148 294	23 790	115 305	6 752	526 063
State	189 683	119 241	19 709	94 871	5 503	429 008
Agriculture	1 230	70	13	43	8	1 364
Experimental and Education Forestry	1 880	1 526	44	357	1	3 807
Municipal	8 103	9 533	2 105	7 245	362	27 358
Private physical persons	13 055	7 602	1 652	11 937	947	35 192
Private juridical Persons	98	46	28	207	15	394
Religious	1 861	1 082	85	247	13	3 287
MOEW	15 913	9 195	154	389	2	3

Source: NFB

ANNEX TABLE E

Gross National Product (GNP) in current prices

(million BGN) and GNP per capita (BGN)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999*	2000*
GNP	45	1,356	201	299	526	880	1,749	17,055	21,577	23	26
GNP per capita	5 206	15 721	23 516	35 284	62 243	104 725	209 104	2 051 861	2 613 247	2 774	3 115

Source: Statistical reference book, NSI, 2001

*in redenominated BGN (1000 BGN = 1 redenominated BGN)

ANNEX TABLE F

Gross National Product (GNP) of Agriculture and Forestry

Sectors	1995	1996	1997	1998	1999	2000
Million BGN in current prices						
Agriculture and Forestry	111 416	215 998	4 062 698	4 045 375	3 440	3 269
Industry	272 721	534 298	4 316 306	5 508 751	5 326	6 263
Services	450 239	900 076	6 915 478	9 869 078	11 125	13 001
Value added in basis prices	834 376	1 650 372	15 294 482	19 203 204	19 891	22 533
Correctives	45 946	98 329	1 760 723	2 373 816	2 885	2 921
GNP	880 322	1 748 701	17 055 205	21 577 020	22 776	25 454
Structure %						
Agriculture and Forestry	13.4	13.1	26.6	21.1	17.3	14.5
Industry	32.7	32.4	28.2	28.7	26.8	27.8
Services	53.9	54.5	45.2	50.2	55.9	57.7
Value added	100	100	100	100	100	100

Source: Statistical reference book, NSI, 2001

ANNEX TABLE G

Average size of holdings in private ownership as of year-end 2001

Indicators	**Number of decisions**	**Area of all restoration forests and forest land, ha**	**Average size of holdings in one decision*, ha**
a) according to decisions about recognising the right of property to the owners			
1. With documents, proving their property	272 832	593 239	2.17
2. Without documents, proving their property	24 891	40 572	1.63
Total	**297 726**	**633 810**	**2.13**
b) according to the issued decisions for restoration of property to the owners			
1. With documents, proving their property	266 116	545 610	2.05
2. Without documents, proving their property	19 242	29 515	1.53
Total	**285 358**	**575 125**	**2.02**

Source: Ministry of Agriculture and Forests (MAF)

*The decisions are issued to the owners (or their inheritors) and in one decision are included several parcels, situated in different places.

ANNEX TABLE H

Harvested area of forests available for wood supply in the Republic of Bulgaria, 2000

(ha)

	With natural regeneration	**With artificial regeneration**	**Thinnings**
According to Forest Management Plan (FMP)	30 247	13 946	120 707
Completed (planned) cuttings	10 025	2 437	41 299
Real (Actual) cuttings	21 618	10 936	83 759

Source: NFB

ANNEX TABLE I

Harvest in forests available for wood supply in the Republic of Bulgaria, 2000

	Big sized wood	**Mid sized wood**	**Small sized wood**	**Total industrial wood**	**Fuelwood**	**Brash**	**Removals**	**Fellings**
According to Forest Management Plan (m^3)	981 228	1 193 300	882 376	3 056 904	2 005 074	367 287	5 429 265	6 812 251
% of fellings	14.4	17.5	13.0	44.9	29.4	5.4	79.7	100.0
% of removals	18.1	22.0	16.2	56.3	36.9	6.8	100.0	
Completed (planned) cuttings (m^3)	809 041	796 135	219 952	1 825 128	2 237 922	8035	4 071 085	5 020 548
% of fellings	16.1	15.9	4.4	36.4	44.6	0.2	81.1	100.0
% of removals	19.9	19.6	5.4	44.8	55.0	0.2	100.0	
% of FMP	82.4	66.7	24.9	59.7	111.6	2.2	75.0	73.7
Real (Actual) cuttings (m^3)	750 682	655 354	186 683	1 592 719	2 110 271	51 851	3 754 841*	4 629 810
% of fellings	16.2	14.2	4.0	34.4	45.6	1.1	81.1	100.0
% of removals	20.0	17.5	5.0	42.5	56.2	1.3	100.0	
% of FMP	76.5	54.9	21.1	52.1	105.2	14.1	69.2	68.0
% of planned cuttings	92.8	82.3	84.9	87.3	94.3	645.3	92.2	92.2

Source: NFB

*This is the actual removals of wood in Bulgaria.

ANNEX TABLE J

Harvest in forests available for wood supply in Republic of Bulgaria - main cuttings, 2000

(m^3)

Indicators	Harvested timber in m^3							
	Big sized wood	**Mid sized wood**	**Small sized wood**	**Total industrial wood**	**Fuelwood**	**Brash**	**Removals**	**Fellings**
According to Forest Management Plan	810 747	508 427	257 469	1 576 643	1 129 513	118 761	2 824 917	3 312 597
Completed (planned) cuttings	653 482	364 997	105 134	1 123 613	1 191 839	3 577	2 319 029	2 807 673
Real (Actual) cuttings	568 980	304 978	76 979	950 937	1 103 058	28 740	2 082 735	2 503 416

Source: NFB

ANNEX TABLE K

Harvest in forests available for wood supply in Republic of Bulgaria – thinnings, 2000

(m^3)

	Big sized wood	**Mid sized wood**	**Small sized wood**	**Total industrial wood**	**Fuelwood**	**Brash**	**Removals**	**Fellings**
According to Forest Management Plan (FMP)	162 101	677 929	620 698	1 460 728	866 292	246 938	2 573 958	3 465 425
Completed (planned) cuttings	140 716	399 471	106 225	646 412	947 055	2 986	1 596 453	2 015 690
Real (Actual) cuttings	171 451	335 935	105 069	612 455	903 484	20 773	1 536 712	1 955 345

Source: NFB

ANNEX TABLE L

Average annual quantity of harvested timber in the Republic of Bulgaria for the period 1960 –2000

Years	Unit	Total	Industrial wood				Fuel wood	Brash
			Total	Large	Medium	Small		
1960-1965	m^3	7 499 598	3 587 196	2 491 012	625 679	470 504	3 181 765	730 637
1960-1965	%	100	47.8	35.9	8.3	0.6	42.4	9.7
1966-1970	m^3	6 596 803	3 403 610	2 290 096	704 988	408 537	2 835 062	3 58 132
1966-1970	%	100	51.6	34.7	10.7	6.2	43.0	5.4
1971-1975	m^3	5 715 423	3 017 895	1 879 463	713 107	425 326	2 527 335	170 193
1971-1975	%	100	52.8	32.9	12.5	7.4	44.2	3.0
1976-1980	m^3	5 081 779	2 674 666	1 570 784	673 861	430 020	2 267 060	140 053
1976-1980	%	100	52.6	30.9	13.3	8.5	44.6	2.8
1981-1985	m^3	4 603 891	2 389 424	1 237 519	646 105	505 799	2 110 534	103 933
1981-1985	%	100	51.9	26.9	14.0	11.0	45.8	2.3
1986-1990	m^3	4 125 187	2 087 692	1 010 141	603 415	391 337	1 959 556	77 939
1986-1990	%	100	50.6	24.5	14.6	9.5	47.5	4.9
1991-1995	m^3	3 435 492	1 592 332	716 478	577 736	298 118	1 785 094	58 067
1991-1995	%	100	46.3	20.9	16.8	8.7	52.0	1.7
1996-2000	m^3	4 304 365	1 826 298	794 479	758 999	272 820	2 414 862	63 205
1996-2000	%	100	42.4	18.5	17.6	6.3	56.1	1.5
Average	m^3	5 368 574	2 676 467	1 586 617	668 733	410 222	2 453 495	238 611
Average	%	100	49.8	29.6	12.6	7.6	45.7	4.5

Source: Analysis of market of wood in Republic of Bulgaria, Sofia, 2002 (In Bulgarian).

ANNEX TABLE M

Employment of workers in forestry and fishing

Indicators	**1999**	**2000**
Hired persons	23 423	14 845
Including: private sector	4 650	3 608
Hired persons with labour contract	20 882	12 474
Including: in public sector	18 609	11 085
In private sector	2 273	1 389

Source: Statistical reference book, NSI, 2001.

ANNEX TABLE N

Average annual wages of forestry and fishing worker with labour contract

	1999			2000		
	Public sector	Private sector	Share	Public sector	Private sector	Share
Total *(BGN)*	2 412	2 010	0.83	2 856	2 555	0.89
Total, *(€)*	1 233	1 028		1 460	1 306	
Forestry and fishing *(BGN)*	1 881	1 104	0.59	2 192	1 764	0.80
Forestry and fishing, *(€)*	962	564		1 121	902	
Share of Forestry and fishing sector from Total	0.78	0.55	-	0.77	0.69	-

Source: Statistical reference book, NSI, 2001.

The average monthly wage in forestry and fishing is between 80 and 93 Euro for the public sector and between 47 and 75 Euro for the private sector.

ANNEX TABLE O

Structure of revenues and expenditure of state owned forests, 1997 – 2000

(BGN)

	1997	1998	1999	2000
I. Revenues - total	36 095 617	51 481 055	73 526 507	75 480 037
Revenues – total, *(€)*	18 455 395	26 321 845	37 593 506	38 592 330
1.1. Revenues from the right for use of wood (selling standing timber)	35 529 823	49 202 684	53 478 225	58 603 936
Revenues from the right for use of wood (selling standing timber), *(€)*	18 166 110	25 156 932	27 342 982	29 963 716
% from the revenues - total	98	96	73	78
1.2. Other revenues: state rates, rents, penalties, interests, sanctions	565 794	2 278 371	20 048 282	16 876 101
Other revenues: state rates, rents, penalties, interests, sanctions, *(€)*	289 286	1 164 912	10 250 523	8 628 613
% of the revenues - total	2	4	27	22
II. Subsidies from the State budget	-	-	7 200 000	8 806 370
Subsidies from the State budget, *(€)*	-	-	3 681 301	4 502 625
III. Expenditure - total	34 885 724	49 803 192	67 431 398	84 286 032
Expenditure - total, *(€)*	17 367 787	25 463 967	34 477 126	43 094 763
3.1. Activities in the forests: afforestation, management, protection of forests, hunting and fishing activities	15 079 686	22 574 669	20 273 686	30 392 121
Activities in the forests: afforestation, management, protection of forests, hunting and fishing activities	7 710 121	11 542 244	10 365 771	15 539 244
% of expenditure – total	43	45	30	36
3.2. Capital investments	4 071 729	4 767 558	6 748 365	5918352
Capital investments, *(€)*	2 081 841	2 437 614	3 450 384	3 026 005
% of expenditure – total	12	10	10	7
3.3. Other expenditure including wages and assurances, current expenditure	15 734 309	22 460 965	40 445 347	47 975 559
Other expenditure including wages and assurances, current expenditure, *(€)*	8 044 824	11 484 409	20 679 938	24 529 543
% of expenditure – total	45	45	60	57
IV. Transitional remainder at the end of year	1 348 896	3 026 759	16 321 866	-
Transitional remainder at the end of year, *(€)*	689 680	1 547 557	8 345 238	-
V. Numbers of staff and average monthly wage				
5.1. Number of staff	11 543	9387	7038	6505
5.2. Occupied numbers of staff	10567	9387	6842	6413
5.3. Average monthly wage	92	150	207	257
Average monthly wage, *(€)*	47	77	106	131

Source: Statistical reference book, NSI, 2001.

ANNEX TABLE P

Expenditure on protection and restoration of the Environment

(million BGN)

Destinations	**1995**	**1996**	**1997**	**1998**	**1999***
Total					
	7 788.7	18 159.7	164 705.3	279 209.8	444.6
a) Expenditure on acquisition of tangible and intangible fixed assets designed for the environment					
	2 157.9	4 640.3	64 202.3	91 757.3	100.8
b) Expenditure on maintenance and exploitation of tangible fixed assets and for protection and restoration of the environment					
	5 630.8	13 519.4	100 603.0	187 452.5	343.8

*in redenominated BGN (1000 BGN = 1 redenominated BGN)

Source: NSI

ANNEX TABLE Q

Expenditure on protection and restoration of the environment according to use

(million. BGN)

	1995	1996	1997	1998	1999*
Total	7 788.7	18 159.7	164 705.3	279 209.8	444.6
For water	2 675.0	6 751.3	50 995.5	117 728.1	127.0
For air	2 166.2	4 233.0	44 013.6	64 215.8	176.0
For soil	590.3	1 432.3	13 532.8	14 675.6	13.4
For forests	219.8	516.2	3 832.0	5 470.2	17.9
For protection of biodiversity and for protected natural territories (including IUCN categories I-VI)	6.6	7.5	121.9	330.5	0.8
For hunting and fishing activities	33.3	64.4	364.6	3 600.2	7.5
For educational activity	18.9	16.8	33.4	144.0	0.2
For scientific and research activities	19.3	87.0	819.1	659.2	5.0
For administrative activity	66.4	178.0	2 051.1	2 992.2	5.2

*in redenominated BGN (1000 BGN = 1 redenominated BGN)

Source: NSI

ANNEX TABLE R

Availability of funds per hectare of forest and wooded land

	1997	1998	1999	2000
Average rate of exchange for 1 US $ in BGN*	1 677	1 760	1 838	2 030
Revenues total in BGN*	36 095 617	51 481 055	73 526 507	75 480 037
Revenues total in US $	2 1530	29 244	40 010	37 182
Total forest and other wooded area, mln. ha	3.879	3.877	3.894	3.914
Availability of funds per hectare, BGN	9.3	13.3	18.9	19.2
Availability of funds per hectare, US $	0.0056	0.0075	0.0103	0.0095
Availability of funds per hectare, *(€)*	4.75	6.80	9.66	9.82

Source: NFB

ANNEX TABLE S

Area of protected forests in private ownership (non-state property) as of year-end 2000

(ha)

Forest type	Physical persons	Juridical persons	Religious	Communities
Protected	25 464	119	1 353	25 595
Recreational	15 429	995	1 165	18 488
Protected natural territories	7 263	59	11 739	10 431
Other protected forests	7 231	57	213	16 348
Total protected forest area	55 387	1 230	14 470	70 862
Total forest area	286 461	3 547	21 027	234 773

Source: NFB

ANNEX TABLE T

Staff employed in the forestry sector, planned vs. actual

Administrative bodies	**2000**	**2001**
NFB, according to organization plan of NFB (plan)	63	82
RFB, SF and other bodies, according to organization plan of NFB (plan)	9 567	8 952
Total, according to organization plan of NFB (plan)	9 630	9 034
Occupied numbers, total (real)	6 413	7 264

Source: NFB

ANNEX TABLE U

Staff employed in the forestry sector in the period 1997-2000

Numbers of staff	**1997**	**1998**	**1999**	**2000**
Number of staff (plan)	11 543	9 387	7 038	6 505
Occupied numbers of staff (real)	10 567	9 387	6 842	6 413

Source: NFB

ANNEX TABLE V

Number of Government staff per hectare of forest and other wooded land

	2000	**2001**
Number of Government staff per hectare of forest and other wooded land (plan)	0.0025	0.0023
Number of Government staff per hectare of forest and other wooded land (real)	0.0016	0.0019

Source: NFB

Some facts about the Timber Committee

The Timber Committee is a principal subsidiary body of the UNECE (United Nations Economic Commission for Europe) based in Geneva. It constitutes a forum for cooperation and consultation between member countries on forestry, forest industry and forest product matters. All countries of Europe; the former USSR; United States, of America, Canada and Israel are members of the UNECE and participate in its work.

The UNECE Timber Committee shall, within the context of sustainable development, provide member countries with the information and services needed for policy- and decision-making regarding their forest and forest industry sector ("the sector"), including the trade and use of forest products and, when appropriate, formulate recommendations addressed to member Governments and interested organizations. To this end, it shall:

1. With the active participation of member countries, undertake short-, medium- and long-term analyses of developments in, and having an impact on, the sector, including those offering possibilities for the facilitation of international trade and for enhancing the protection of the environment;
2. In support of these analyses, collect, store and disseminate statistics relating to the sector, and carry out activities to improve their quality and comparability;
3. Provide the framework for cooperation e.g. by organizing seminars, workshops and ad hoc meetings and setting up time-limited ad hoc groups, for the exchange of economic, environmental and technical information between governments and other institutions of member countries that is needed for the development and implementation of policies leading to the sustainable development of the sector and to the protection of the environment in their respective countries;
4. Carry out tasks identified by the UNECE or the Timber Committee as being of priority, including the facilitation of subregional cooperation and activities in support of the economies in transition of central and eastern Europe and of the countries of the region that are developing from an economic point of view;
5. It should also keep under review its structure and priorities and cooperate with other international and intergovernmental organizations active in the sector, and in particular with the FAO (Food and Agriculture Organization of the United Nations) and its European Forestry Commission and with the ILO (International Labour Organisation), in order to ensure complementarities and to avoid duplication, thereby optimizing the use of resources.

More information about the Committee's work may be obtained by writing to:

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1. Forest Products Prices, 2000-2002 (tables available on web, no hard copy available).
2. Forest Products Statistics, 1998-2002.
3. Forest Products Annual Market Analysis, 2002-2004.
4. Forest Fire Statistics, 2000-2002 (web data release expected October 2004, hard copy available December 2004).
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In the interests of economy, Discussion Papers are issued in the original language only, with only minor language editing and final layout by the secretariat. They are distributed automatically to nominated forestry libraries and information centres in member countries. It is the intention to include this discussion paper on the Timber Committee website at: http//www.unece.org/trade/timber.

The Discussion Papers are available on request from the secretariat. Those interested in receiving them on the continuing basis should contact the secretariat as well. Your comments are most welcome and will be referred to the authors:

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Forest And Forest Products Country Profile: Republic Of Bulgaria

This *Forest and Forest Products Country Profile,* prepared by the well-known national experts, contains information concerning the forest resources of Bulgaria and a description of the status, trends and developments taking place in the forest sector, including the areas in which the most important forestry activities have taken place over the past decade. For the forest sector, as for other branches of the Bulgarian economy, the period has been marked by the implementation of radical reforms necessitated by the changeover from a centrally planned to a market economy, efforts to achieve sustainable development in forest management, and a large scale return of confiscated forest lands back to the rightful owners. The country profile contains tables, statistical data, diagrams, graphs and a brief analysis of the evolution of the forest sector, and data relating to the principal categories and volumes of goods and services in the forestry sector. Most of the figures cited are based on official data drawn from the statistical services of Bulgaria, as well as from research and statistics from NGOs and other foreign sources.

UNECE Timber Committee and FAO European Forestry Commission

Further information about forests and forest products, as well as information about the UNECE Timber Committee and the FAO European Forestry Commission is available on the website www.unece.org/trade/timber. Information about the UNECE may be found at www.unece.org and information about FAO may be found at www.fao.org.

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