UNECE

United Nations
Economic Commission for Europe

Food and Agriculture Organization
of the United Nations

**GENEVA TIMBER AND FOREST DISCUSSION PAPER 46**

# Forest and forest products country profile

# Tajikistan

UNITED NATIONS

ECE/TIM/DP/46

United Nations Economic Commission for Europe/
Food and Agriculture Organization of the United Nations

UNECE

Timber Section, Geneva, Switzerland

## GENEVA TIMBER AND FOREST DISCUSSION PAPER 46

# Forest and forest products country profile: Tajikistan

by Prof. Khukmatullo Akhmadov

**UNITED NATIONS**

**New York, Geneva 2008**

## Note

The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

## Abstract

This publication, *Forest and Forest Products Country Profile of Tajikistan*, prepared by a national expert, contains information about the forest resources of the country and a description of the status, trends and developments taking place in the forest and forest products sector as a whole. It focuses on forestry activities over the past decade, i.e., 1995-2005, with a brief reference to the historical and geographical background. For the forest sector, as for other branches of the Tajik economy, this period was heavily influenced by the reforms resulting from the change from a centrally planned to a market economy and, additionally, by efforts to achieve sustainable forest management. The profile contains some statistical data - tables, diagrams, graphs and a brief analysis of the evolution of the forest sector and data for the principal categories and volumes of goods and services in the forestry sector. The data are mainly collected from the government statistical sources of Tajikistan, literature and other recently published sources, including the data from research institutions and statistics from NGOs.

ECE/TIM/DP/46

UNITED NATIONS PUBLICATIONS

ISSN 1020 7228

## Preface

The UNECE Timber Committee and FAO European Forestry Commission work in close cooperation to support sustainable forest management in all parts of the region. Tajikistan, like other countries of central Asia, has a relatively small forest resource and plays practically no role in international trade in forest products. Yet forest issues are important in Tajikistan when considering rural poverty and environmental degradation as forests are both symbols of vulnerability and possible means to achieve a more sustainable development for rural populations. This profile provides information about all aspects of the forest and timber sector of Tajikistan against the background of the country's current economic and social situation. It follows a similar profile on Uzbekistan as we seek to improve our coverage of central Asia forest/timber issues.

The transition to a market economy highlighted the need for urgent reforms to encourage forest management that would be sound not only economically, but also ecologically and socially. There has been progress on a forest policy that would guarantee the forests' ecological, protective, and social functions and at the same time provide the country with responsibly produced wood to improve the economy, but there remain major problems of resources and of political will.

We hope that this country profile will contribute to increased awareness, inside and outside Tajikistan of the potential to incorporate forest/timber measures into the broader development agenda

Marek Belka

Executive Secretary

United Nations Economic Commission for Europe

**Acknowledgements**

The secretariat is indebted to Professor Khukmatullo Akhmadov from the Tajik Research Forestry Institute and to all his colleagues who were involved in the preparation of this country forestry profile, for having presented a clear picture of the Tajik forest and forest products sector.

The author is grateful to colleagues from UNECE/FAO Mr. Kit Prins, Mr. Alexander Korotkov and Ms. Maria Levina for recommendations and assistance in preparing this paper for publication.

**CONTENTS**

## CONTENTS (*continued*)

### List of tables, illustrations and figures

## Foreword

Until relatively recently, scant attention has been given by international organizations to the development of projects and preparation of documents and publications relating to the current state of the forests of Tajikistan, the country's forest resources, the harvesting of timber and other forest products, including non-wood products, the formulation of a forest policy in Tajikistan, including on the issue of illegal logging, and many other issues. Tajikistan's forest specialists and forest organizations welcome the launching of work in this area by the UNECE Timber Committee and the FAO European Forestry Commission. Thanks to efforts by UNECE/FAO, Tajikistan's 2005 assessment report on its forest resources has been prepared, together with information on its forest policy. Following a workshop on illegal logging, held on 16 and 17 September 2004 in Geneva, the Finnish company Savcor Indufor, with support from the World Bank, prepared Tajikistan's report on illegal logging. The project in question was conducted with the participation of Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Georgia, Kyrgyzstan, Moldova, Serbia, Tajikistan and Uzbekistan. These two projects were of crucial importance as they represented the first ever attempts to assess Tajikistan's forest resources, to provide an informed account of illegal logging and to describe the current state of forests in the country as a whole.

The issues of forests and timber harvesting are of crucial importance for Tajikistan, since the country's forested areas, given its mountainous terrain, serve the purposes both of protecting the environment and providing harvestable products. Accordingly, both legal and illegal logging activities are of great importance. Given the relatively small area of the country's forests, the harvesting of even small quantities of forest products could have catastrophic effects, turning fertile soil into wasteland. Yet archive photographs and materials that we have examined furnish extensive evidence of logging activities conducted in many districts of the country prior to the 1950s, showing that the harvested timber was rafted down mountain rivers. Since 1950 all logging has been prohibited in Tajikistan's forests and the country's main suppliers of timber products are Kazakhstan and the Russian Federation.

In current circumstances, the issue of forest protection, particularly in mountain areas, is one of key importance to the State. Accordingly, in 2004, the Tajik Government decided to amalgamate the Ministry for the Protection of Nature and the Tajik Forestry Production Association, forming from their union the State Committee for Environmental Protection and Forestry, which also has jurisdiction over the Forest Management and Hunting Agency. All Tajikistan's forests are State property. The State Committee for Environmental Protection and Forestry is responsible for the protection, restoration, replanting and sound use of the country's forests. Most of Tajikistan's forested areas fall under the authority of the agency and a small part is controlled by collective farms. Supervision of all forests, however, is the prerogative of the State Committee. In addition, the State Committee has responsibility for 4 nature reserves, 2 national parks and 13 sanctuaries.

Forests cover some 3% of the country's entire area and all its forested areas fall in category I, in which all commercial logging is prohibited. A total of 90-95% of the country's commercial-use timber is imported from the Russian Federation. The remainder is prepared on small privately-owned tree plantations and is sold on local markets, primarily for the construction industry. When marketing timber, private individuals must submit documentation to the central and local authorities indicating its source. Logging is only permitted as a forest improvement measure or for environmental enhancement. According to its agreed plan, the State

Committee annually harvests 6,700 cubic metres of timber to meet the needs of various institutions, primarily for use as fuelwood. Demand for timber among the population outstrips supply, placing a heavy strain on the country's forest resources. Some 500-600 reports of logging violations are filed every year.

The real figures are probably somewhat higher, however, since the country's few inspectors and forest guards are unable to supervise the entire area under forests. Illegal timber harvesting also takes place in protected areas.

The depletion of the country's forest resources is further exacerbated by the problem of poverty. Rural communities and even some urban inhabitants are forced by dire need to exploit the country's forest resources to their limits, with deleterious effects on their state. The routine use of forest areas, year-round, as grazing land for livestock, the cutting of firewood and the gathering of nuts and medicinal plants and other practices are leading to the depletion of forest resources. Since many forests lie near inhabited areas, they are accessible to rural communities and some are even threatened with disappearance.

Logging is the main cause of erosion in the country; the problem of gully erosion is rapidly increasing in severity. Where forests are felled in hillsides and areas with rugged terrain, the soils are heavily eroded and there is virtually no natural regeneration of the forest cover.

Prof. Khukmatullo Akhmadov
Director,
Tajik Research Forestry Institute
Mukhamadiev St., 6-2
Dushanbe 734019
Tajikistan
Email: ahmadov@yandex.ru

## 1. Introduction

Tajikistan is a mountainous country, with 93% of its area covered by the mountain ranges of the Pamir-Alai; it lies between latitudes 36° 401′ and 41° 051′ north and 67° 311′ and 75° 141′ east, has an area of 142,500 km$^2$ and lies at approximately the same latitude as Greece and the southern areas of Italy and Spain, at the centre of the Eurasian landmass.

Tajikistan's territory stretches 700 km from east to west and 350 km from north to south. Its frontier follows a very irregular path, reflecting specific historical and geographical features of the Tajik people and Central Asia. To the north, the frontier juts into the territory of Uzbekistan and, to a lesser extent, Kyrgyzstan, occupying the western part of the Fergana valley. In the west, north-west and north-east, Tajikistan has a common frontier with these two countries. In the east, it has a frontier with China, stretching 430 km, and in the south, stretching 1,030 km, with Afghanistan. In the south-east, a strip of Afghan territory measuring between 15 km and 65 km separates Tajikistan from India and Pakistan. In the west, at the far edge of the country, tongues of desert and semidesert land reach from the Turan plains into Tajikistan, where they gradually metamorphose into rolling terrain and submontane foothills. In the east, the country abuts on the vast mountain ranges and plateaux that roll across the central areas of the Asian landmass.

The country's specific geographical situation is responsible for such features of its natural environment as its dryness and continental climate, the uneven distribution of its water resources, the preponderance of arid and semi-arid landscapes and its scant forest cover.

The population is unevenly distributed about the country. With a total population of some 6,187,800, its mean density is 73 persons per km$^2$, but the population density in desert and high-altitude areas is below one per km$^2$.

The natural environment of the country's mountain areas is extremely vulnerable to human influences. The slightest disruption of mountain ecosystems can have disastrous consequences. Highland desert landscapes are the most vulnerable of all and it is here that the majority of the country's forested areas lie. Some 95% of the area of Tajikistan is under a heightened risk of environmental destabilization, primarily owing to illegal logging, the heavy cultivation of steep hillside areas, including those under forests, and overgrazing by livestock.

Other areas whose environmental state can be described as precarious include the highland deserts which cover large areas of the eastern Pamirs and the riverbank forests, where wind erosion is rapidly increasing because of the felling of forest trees and shrubs.

While Tajikistan is rich in mineral resources and raw materials, its populated areas, towns and industrial centres are unevenly distributed because of these environmental conditions.

The country's rugged terrain, its poorly developed road and rail network and the predominance in its economy of agriculture and the extraction of raw materials combine with

other factors in determining the living standards of the population and their ability to make sound use of its natural resources. In recent years, food and fuel shortages have forced people to reclaim steeper hillside areas and to clear the forests that previously covered them, further accelerating desertification processes in many areas of the country. This presents further evidence of the great vulnerability of mountainous environments to a wide range of natural and human influences.

Forests make up slightly over 3% of the country's total area (table 1): accordingly, in terms of its forest cover, Tajikistan is at the bottom of the list of the Central Asian republics, although scientific studies suggest that, in the early twentieth century, some one fifth of the country was under forests.

**Table 1. Extent of forest and woodland cover**

| Categories | Area (1 000 ha) | |
|---|---|---|
| | 1987 | 2003 |
| Forest | 380 | 410 |
| Other woodland | 142 | 142 |
| Other land, | 13 474 | 13 444 |
| - including tree-covered | 106 | 102 |
| Inland water bodies | 259 | 259 |
| Total area | 14 255 | 14 255 |

*Source*: Tajik State Land-Use Committee, Dushanbe, 1988, 1991, 1998, 2001, 2004.

## 2. Brief historical sketch

Tajikistan is unusually rich in plant resources, with some 5,000 different species, thanks, above all, to the wide diversity of its natural landscapes. Among these species are a number of plants which have a value for the population.

This variety of plant species has led to the emergence of a range of diverse and unusual types of plant cover in Tajikistan. The areas covered by these different types of vegetation, their harvesting seasons, productivity and potential economic benefits to the country have still not been fully studied. Over the period from the 1940s to the 1970s, Tajik scientists undertook to assemble data on the country's forest resources: while a large volume of work was accomplished in this area, there are frequent discrepancies between the sets of data gathered by different authors and, as a result, to date there is no single agreed figure in the scientific literature for the total area of Tajikistan's forests. According to figures held by the Forest Management and Hunting Agency, the total area under forests in Tajikistan is 410,000 hectares, but this does not include 50,000 hectares of forests which belong to *dehkan* (small family-owned) farms.

Tajikistan does not have many real forests. The mountain slopes are ringed with small broken strips of tree-covered land between the altitudes of 500-700 m and 3,200-3,700 m, invariably in the form of sparsely forested stands typical of all arid mountain regions.

Forests extend down into the valleys only where there are rivers providing a constant source of irrigation. In these sparsely forested stands, the trees are spaced too far apart for their canopies to meet, with the result that there is rampant growth of shrubs and long grass in between. The highly fragmented nature of these forested areas and the sparseness of their tree cover are almost ubiquitous features of the landscape and have led some botanists to maintain that there are no real forests in the southern mountains of Central Asia. They prefer instead to refer to these arboreal stands as the Pamir-Alai parkland, groves, open or desert woodland, savannah or merely clumps of trees, thereby placing emphasis on their "non-forest" nature.

These sparse stands, which typify the mountain districts of Tajikistan, are still forests in nature, regardless of the extent of human influence on them. The interdependence of their various components is extremely pronounced, particularly in their rhizosphere, or root-zone. Studies have shown that in the sparse dryland forests, where the presence of moisture is a key environmental factor determining their structure, the trees exhibit features showing that they are gradually evolving from trees into shrubs. They tend to be squat and multi-stemmed, with dense broad crowns and stunted trunks.

The lower boundary of Tajikistan's forests runs approximately along the 500-700 m contour line, the altitude at which, in southern Tajikistan, scattered stands of pistachio (*Pistacia vera*) are found. Over most of the country, however, the lower boundary of forest cover rises to 1,200-1,500 m and in places as high as 2,200 m, as a consequence of the widespread destruction of forests in the past, primarily during the development of the mining industry in Central Asia. The upper limits of the country's forests run along the 3,200-3,400 contour line, sometimes rising as high as 3,700 m, while isolated shrubs may be seen in the Pamirs at altitudes as high as 4,800 m. At these altitudes, forest clumps of juniper (*Juniperus spp.*), birch (*Betula spp.*) or willow (*Salix spp.*) form unusual environmental niches in a general landscape of treeless terrain, covered with low thorny scrub, or cold-resistant heathland. None of the trees or shrubs growing here manifest any signs of expansion: they have a low rate of seed propagation, tend to be stunted in growth and have a shallow root stock. The occurrence of occasional live trees in vast "cemeteries" of dead forest testify to the former existence of large and species-rich forest stands. Their disappearance is due no doubt to abrupt changes in the natural conditions caused by extensive orogenic processes, both in the past and those still under way in the latest phase of geological development in the Pamir-Alai region.

The inclusion of an increasing area of mountains in the troposphere has led not only to the degradation of forests but even to their downward drift, the disappearance of warmer-weather species and the spread of treeless steppes, subalpine grasslands and tall-grass semi-savannah. In the modern era, many varieties of trees and shrubs thrive better at altitudes lower than those at which the main concentrations of these species are currently found. For example, *Juniperus turkestanica* always grows better in areas considered typical of *Juniperus semiglobosa*, which occurs at altitudes lower than those of *Juniperus turkestanica*. For its part, *Juniperus semiglobosa* now does better in birch groves situated at even lower altitudes. *Juniperus seravschanica* always grows faster and bears fruit more abundantly in maple forests formed by

the species *Acer turkestanicum*, which is typically found at lower altitudes than *Juniperus spp.* The downward "slide" of the frontiers of different ecosystems is also occurring with *Pistacia vera* trees and many other forest stands in Tajikistan.

The first endeavours to plant forests took place in Tajikistan in 1882. Large-scale planting only commenced, however, in 1947, in the country's forest enterprises. At that time there were no obstacles to forest development, since prior to 1966 the land belonging to the State forestry fund had not been made available for long-term use but was reserved for collective and State farms. Currently, most State forest land is used, as previously, for summer and winter grazing, which impedes the conduct of tree planting and reforestation work.

The severe climate and poor soils, the remoteness and difficult terrain of the forest stands necessitate the use of agricultural machinery. The country's bad roads, the long distances between its widely scattered forests, the lack of equipment and the poor technical infrastructure all militate against the quality and effectiveness of any work carried out. At no point during their use of the land administered by the State forest fund did the country's agricultural authorities take any steps to promote forestation, to boost the productivity of the existing forest plantations or to improve the quality of the country's rangeland. The systematic and unregulated grazing of livestock over a period of 30 years has led to the massive proliferation of erosion processes.

The implementation of protective forestation measures was first launched in Tajikistan in 1969 and has continued in two main areas:

- Tree-planting on mountain slopes, ravines, gullies and other unusable (derelict) land in collective and State farms;

- The laying of forest shelter-belts in irrigated farmland.

Since 1998 the practice of planting forest shelter-belts has been discontinued and instead more attention is given to the development of saxaul (*Haloxylon*) grazing land and the planting of saxaul protective belts. In Sughd and Khatlon provinces planting programmes of this kind are carried out every year over an area of some 500 hectares. These plants not only promote the grassing of sandy rangelands and sandy areas in general, they also provide good grazing for sheep and goats.

Forest-like plantations of walnut and pistachio have also been developed, primarily for soil protection and water conservation purposes rather than for the cultivation of the nuts themselves. Plantations of this kind cannot of course form the basis for commercial nut-farming, the demand for which is very high in Tajikistan. In the 1970s and 1980s there was a drive in the country to develop nut-farming into a more intensive commercial activity. This was impeded, however, by the lack both of technology and of the necessary funds to develop plantations. Notwithstanding these obstacles, over recent years forest enterprises have already planted 1,200 hectares of pistachio (*Pistacia vera*) and walnut (*Juglans regia*). In addition, starting from 1964, between 3 and 12 million poplar seedlings have been planted every year and other species planted both as a source of commercial timber and as an erosion protection measure on mountain slopes, along roads, etc.

Prior to 1992, reforestation measures were conducted every year over an area of some 4,500 hectares; from 1993, this area was reduced to 3,000-3,500 hectares, owing to lack of funds. The survival rate of the forests planted in 1960-1982 is 72%; of those planted in 1982-1994, 68%; and of those planted in 1994-2004, 78%. These low survival rates of planted forests are attributable to unfavourable soil and climate conditions and, in addition, the lack of funds for their proper maintenance.

Between 1992 and 1997, the forestry situation in the country underwent a crisis. Coal and commercial timber imports from other countries ceased. The centralized energy supply system operating in the post-Soviet States collapsed, leading to rampant exploitation of forests. For most people in villages and the countryside forests represented the only source of fuel and, in mountain districts, the main source of construction material, leading to the felling of age-old trees. According to statistical records, the overall area of the country's forests remained much the same, but studies have shown that their density was reduced, in other words, the trees became much more sparse. The country's reserves of timber were depleted. The systems for the continuous supervision of forests started to break down and, in some districts, ceased operation altogether. From early 1997, the forest management situation in the country has started returning to normal.

The small amounts allocated from the State budget for forest development are insufficient to ensure the sustainable management of forests. In addition, most members of the population earn too little to be able to afford heating coal. Together these two factors constitute the main reasons for the heavy exploitation of the country's montane forests, since local populations are forced to break the law and engage in illegal logging.

## 3. Background information on the macroeconomic situation in the country

In line with the targets set by the United Nations Millennium Development Goals for increasing real income levels, the gross domestic product (GDP) per head of the population increased by some 70% over the period 1999-2004. Accordingly, thanks to well coordinated macroeconomic management targeted to achieve the economic growth necessary to boost income levels, inflation levels in 2004 dropped to 5.7% from 26.3% in 1999; loans granted by the banking sector more than doubled (as a percentage of GDP); and the private sector share of GDP also grew. Quality improvement measures in public health care and in ensuring access to treatment for the poor made it possible to reduce maternal mortality and typhoid and paratyphoid infection levels. Where the provision of infrastructure for the poorest population groups is concerned, to ensure their access to reliable and accessible public social services, more telephone lines, mobile telephones and internet connections are also being provided.

The monthly inflation rate in the consumer sector currently stands at 0.6% (at the same period in 2004, it measured 0.33%).

Tajikistan's basic social and economic indicators are set out in table 2 below.

**Table 2. Basic social and economic indicators**

| | 2003 | 2004 | 1st quarter of 2005 |
|---|---|---|---|
| Population (millions) | 6.6 | 6.8 | 6.8 |
| Nominal GDP (million somoni) | 4 757.8 | 6 157.5 | 1 274.6 |
| Business sector (% of GDP) | | | |
| Agriculture | 25.2 | 21.6 | 9.0 |
| Industry | 20.9 | 19.6 | 22.0 |
| Services | 38.6 | 42.3 | 51.3 |
| Per capita GDP (somoni) | 724.0 | 910.0 | 187.2 |
| Growth in per-capita GDP, *over corresponding period in previous year (%)* | 10.2 | 10.6 | 7.8 |
| State budget deficit/surplus (*% of GDP*) | 1.1 | -0.9 | 3.6 |
| Consumer price index, *as indexed against previous year* | 117.1 | 106.8 | 105.7 |
| Food price index | 115.8 | 105.0 | 106.1 |
| Service price index | 140.8 | 117.3 | 103.8 |
| US dollar-somoni exchange rate | 3.0607 | 2.9711 | 3.0413 |
| Official unemployment level (*%)* | 2.4 | 2.2 | 2.1 |
| Number of registered unemployed, (*1,000s*) | 46.9 | 41.6 | 39.7 |
| *As percentage of corresponding period in previous year* | 98.9 | 88.7 | 95.4 |
| Average monthly wage (somoni) | 44.61 | 60.79 | 87.77 |
| *percent increase over corresponding period for previous year* | 37.0 | 36.2 | 44.4 |
| Balance of trade (million US dollars) | -83.1 | -460.3 | -66.1 |
| Share of foodstuffs in imports, % | 9.2 | 9.4 | 12.1 |
| Share of foodstuffs in exports, % | 3.3 | 3.0 | 3.1 |

*Source*: State Statistics Committee.

### 3.1 Gross domestic product

Preliminary estimates show that the actual GDP for the first quarter of 2005 rose by 7.8% over the levels for the first quarter of 2004. The main factors stimulating growth in GDP were increases in agricultural and industrial production and in trade volumes.

### 3.2 Prices and tariffs index

Monthly inflation rates in the consumer sector measured 0.6% (as compared to 0.33% for the corresponding period of 2004). Over the first quarter of 2005, price increases for food products outstripped those for non-food items. More detailed information is provided in the section on access to food.

### 3.3 Foreign trade

Tajikistan's foreign trade turnover for the first quarter of 2005 amounted to $488.7 million. Exports brought in $211.3 million, or 0.8% less than in the first quarter of 2004, while imports amounted to $277.4 million, a difference of 7.4% compared to the same period of 2004. The gap between exports and imports was responsible, in general terms, for the trade balance deficit

measuring minus $24.1 million. The country's trade deficit with other countries of the Commonwealth of Independent States measured $147.5 million, while with other foreign countries it had a trade surplus of $123.4 million. Tajikistan's main exports are: aluminium, cotton, electricity and precious and semi-precious stones and metals. Its main imports are chemicals, electricity, machinery and equipment and plant products, including wheat, flour, sugar and vegetable oil.

### 3.4 Labour market

According to data from the Ministry of Labour and Social Welfare, there were 82,800 unemployed able-bodied persons registered with the employment services as at 11 April 2005, representing a drop of 21.5% by comparison with the corresponding period in 2004. Over the period January-March 2005, 15,600 jobseekers registered with the unemployment services, of whom 5,500 were placed in work. As at 11 April 2005, 17,100 job vacancies were announced by the country's enterprises, meaning that there were 4.8 people for every job vacancy. As at the end of March 2005, 39,700 of those registered as jobseekers had the official status of unemployed persons and, over the first quarter of 2005, of those officially registered as unemployed some 500 underwent vocational training courses. The services of 4,700 persons were enlisted in paid community work. Of all those officially registered as unemployed in the country, 2.3% - or some 900 individuals - receive unemployment benefit.

### 3.5 Growth in agricultural production

Gross agricultural output for the first quarter of 2005 measured 105.7 million somoni at current values, or 8.7% more than in the corresponding period of 2004. Included in that total are: 500,000 somoni from crops, or a decrease of 20.2%, and 105.1 million somoni from livestock, or an increase of 8.9%. Khatlon and Sughd provinces accounted for the largest share of the country's gross output, with 27.8% and 44.3%, respectively. Cereals and grain legumes account for 44.6% of the country's cultivated land, industrial crops for 36.8%, of which 32.4% is represented by cotton; animal feed for 10.7% and potatoes and squashes for 7.9% (table 3).

**Table 3. Area under crops (thousands of hectares)**

| | 2003 | 2004 | 2004 | 2005 |
|---|---|---|---|---|
| | | | 1st quarter | |
| Cultivated area | 886.9 | 905.6 | 302.1 | 251.6 |
| Winter crops | 187.2 | 163.7 | 87.0 | 112.6 |
| Cereals | 187.2 | 163.6 | 87.0 | 112.6 |
| Wheat | 177.1 | 152.1 | 87.0 | 112.6 |
| Barley | 9.9 | 11.4 | - | - |
| Spring crops | 699.7 | 741.9 | 155.2 | 215.0 |
| Cereals | 217.4 | 240.1 | 110.0 | 126.7 |
| Wheat | 157.8 | 170.7 | 97.4 | 107.1 |
| Barley | 27.6 | 37.5 | 11.0 | 18.8 |

*Source:* State Statistics Committee.

### 3.6 Livestock

As at 1 April 2005, the total number of cattle in all categories of farms increased by 8% over the corresponding period in 2004, that of sheep and goats by 11.6%, of horses by 1.2% and of poultry by 19.4%. Over the first quarter of 2005, a total of 14,600 tons of meat was produced on farms of all categories, representing an increase of 6.1% over the corresponding period in 2004; the milk yield measured 98,100 tons, or 7% more than in 2004; and that of eggs 22.2 million, or an increase of 38.9% over the previous level. The average milk yield per cow over the first quarter of 2005 measured 359 kg, representing an increase of 2% over the previous level. Over the first quarter of 2005, the calving rate in farms of all categories measured an average of 22 calves per 100 cows and the egg-production rate 33 eggs per layer, or 49% more than in 2004. The egg-production capacity of layers on farms in Sughd province increased by 25%.

### 3.7 Analysis of producer prices

During the first quarter of 2005, both wholesale and retail prices of wheat increased by 31.3% and 17.3%, respectively, over prices in the same period of 2004, even though wheat imports over the same period increased by 50%. In 2005, milk prices also underwent seasonal fluctuations across the country as a whole, although during the first quarter of 2005 prices increased by comparison with the same period of 2004.

### 3.8 Trade in principal food products

In Tajikistan, food products constituted 2.8% and 3.1% of all exports in the first quarters of 2004 and 2005, respectively. The share of food products in the total volume of imports was more than three times higher than in that of exports, constituting 9.7% and 12.1% of the total in the first quarters of 2004 and 2005, respectively. The major food imports are: wheat and flour, which constitute the bulk of food exports, followed by sugar, cooking oil, tea, meat, cereal products (macaroni, noodles, other pasta products, bread, pastries and biscuits), vegetables, fruit and others. Imports of food products over the first quarter of 2005 increased by 50% by comparison with levels in the first quarter of 2005, although certain fluctuations may be observed in import trends. For example, imports of sugar dropped by 36%, of milk and milk products by 20% and of macaroni, noodles and other pasta products by 24%, while those of wheat increased by 190% over levels for the first quarter of 2004, measuring 63,200 tons, as compared to 21,800 tons for the previous period, while those of flour increased by 50%, measuring 77,200 tons, compared to 51,000 tons in the previous period.

### 3.9 Earnings

Over 2004, people’s income and other earnings (including from self-employment) grew in nominal terms by 25.6%, measuring on average 33.75 somoni per person per month. In real terms (factoring in the consumer price index), earnings increased by 17.6% (see table 4).

**Table 4. Welfare indicators**

| | 2002 | 2003 | 2004 |
|---|---|---|---|
| Average per capita income (somoni per month) | 19.50 | 26.88 | 33.75 |
| Per Capita income Increase over previous year (%) | -- | 37.8 | 25.6 |
| Mean nominal wage | 32.55 | 44.31 | 80.23 |
| Increase in mean nominal wages (%) | -- | 36.1 | 81.1 |
| Mean consumption per capita (somoni per month) | 19.43 | 26.17 | 32.93 |
| Increase in mean consumption per capita (%) | -- | 34.7 | 25.8 |

*Source*: Analysis of domestic budgets and current statistical data.

The primary sources of household earnings remain earnings from labour - 57% - and proceeds from the sale of farm produce - 13.8%. In 2004, the earnings of the richest 10% of the population were 6.4 times those of the poorest 10%. As at 1 April 2005, unpaid wages in the country as a whole totalled 31.3 million somoni.

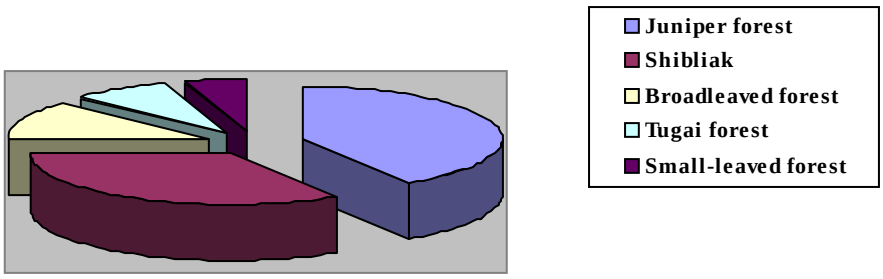
### 3.10 Spending

Over 2004, thanks to the increase in actual earnings and the stabilization of prices for goods and services, the average spending by the population also increased in both nominal and real terms. By contrast with 2003, affluence levels in the population converged somewhat. Thus, spending by the richest 10% of the population, which measured 6.1 times that of the poorest 10% in 2003, dropped to 5.5 times that in 2004.

## 4. Forest resources

Notwithstanding their relatively small area, Tajikistan's forests represent a high level of diversity, including eight floral coenotypes. The five most widespread floral coenotypes are broadleaved mesophilous forest, hard-leaved xerophilous light forest, or *shibliak*, small-leaved microthermous mountain forest, juniper forest and *tugai* forest (see figure 1). Besides these, there are residual stands of a further three floral coenotypes - *dendrohalophyton*, *dendropsammophyton* and mountain taiga. In addition, certain tree and shrub species form part of the *cryophyton*, or cold-weather plant-life, occurring at high altitudes, and the *petrophyton*, or rock plants, growing on areas of bare rock.

**Figure 1. Structure and distribution of forests in Tajikistan**

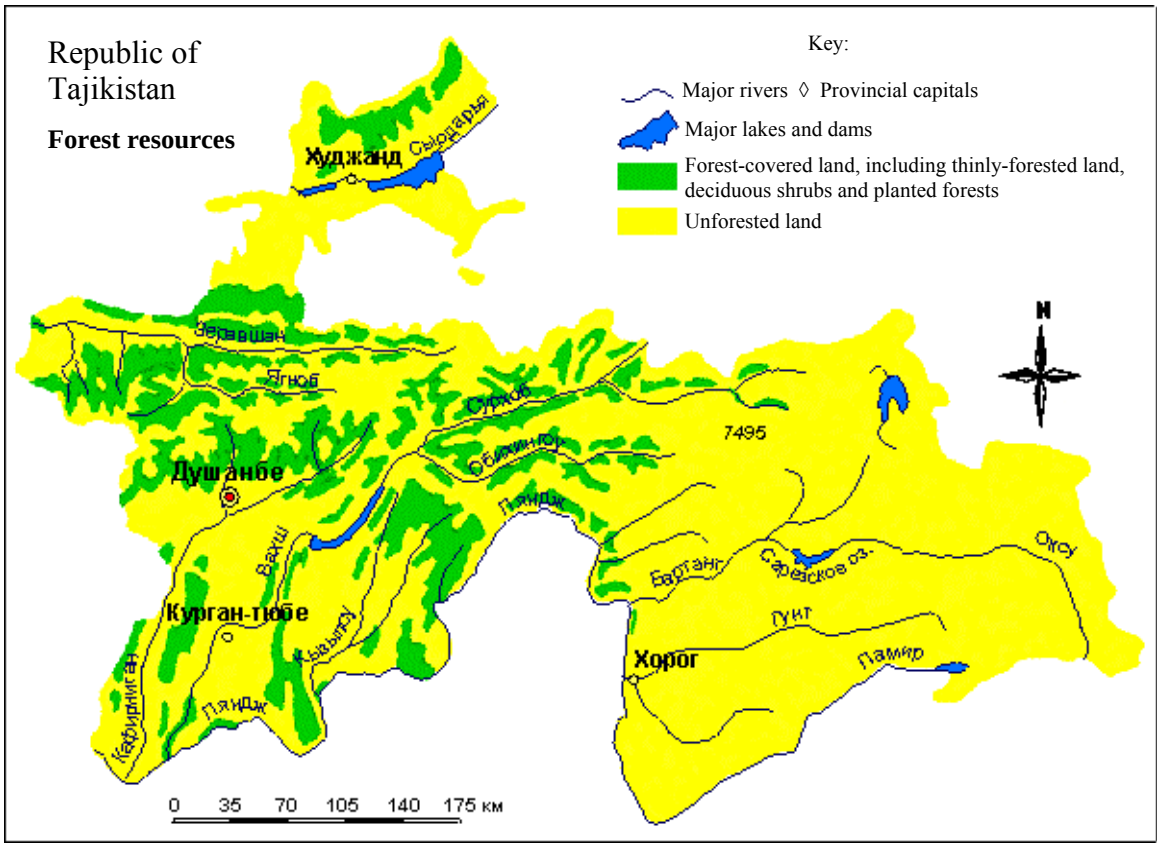



*Source*: *Land Fund of the Republic of Tajikistan as at 1 January 2003*, Dushanbe, 2004 (in Tajik).

Tajikistan's dendroflora comprises 268 species of trees and shrubs. The hard-leaved xerophilous forests are the richest in species terms, with 89 distinct species. These are followed by the small-leaved mountain forests, which number 57 species, 42 of which are trees proper. In third place come the broadleaved forests, with 45 species of dendroflora. In most of the floral coenotypes shrubs outnumber tree species: thus, in the *shibliak* stands, there are 64 different shrub species; in the broadleaved forests, 29 species; in the small-leaved forests, 15 species; and in the microthermous juniper forests, 17 species. Some of the country's floral coenotypes consist exclusively of shrub species. Currently, in most of the floral coenotypes an apparently natural process is under way, whereby trees are giving way to shrubs or stands of tall, single-stemmed trees are ceding their place to multi-stemmed, shrub-like formations, under the influence of the generally unfavourable conditions for the growth and propagation of trees in Tajikistan (see illustration 1).

*Broadleaved forests* - these are communities with a preponderance of broadleaved deciduous mesophytic, mesothermophilous and microthermophilous trees. The annual cycle of these plants may be divided into an extended period of estival vegetation with several phases and a period of hibernation. In Tajikistan broadleaved forests are made up of the following species: *Juglans regia*, *Malus sieversii*, *Acer Regeli*, *A. turkestanicus* and *P1atanus orientalis*. The main broadleaved forest stands stretch from the Hisor to the Alai mountain ranges, covering the slopes of mounts Peter I, Vakhsh, Hazratishokh and Darvoz at altitudes of between 1,000 and 2,300 m.

**Illustration 1. Forest resources of Tajikistan**



The country's maple forests (*Acer spp.*) do not form large compact stands, but alternate with shrubs, other forest species and grassland in the upper altitude ranges. At lower altitudes they tend to occur alongside the species *Celtis caucasica* and *Amygdalus bucharica*, and at higher altitudes with *Juniperus*. Several primary forms of maple forest can be identified. The formation *P1atanus orientalis* occupies a small area in the Hisor-Darvoz ranges and stretches along the rivers. It occurs in the form of dense forests (0.9-1.0) of long-boled trees. The formation *Juglans regia* is widespread in the Hisor-Darvoz ranges and in other mountain districts of the country. The mesophilous *Juglans* flourishes on the moist northern slopes, with a high degree of canopy compactness (0.7-1.0), and very tall trunks (15-25 m). Typical species include *Juglans*, *Impatiens praviflora* and *Poa nemoralis*. In more sparsely forested stands the species *Lonicera nummulariifolia* and *Rosa canina* also occur. In walnut forests, beside water, the species *Rubus caesius* is typically found. The nut-tree *Aegopodium tadzhikorum* can also be included in this category. Umbelliferous nut-trees also occur widely. The formation *Malus sieversii* occurs throughout the Hisor-Darvoz range, and is sometimes found in the north of the Kuhistoni Badakhshon autonomous province: its range abutting on the range of *Juglans regia*. Small stands of apple trees are intermingled with *Juglans regia*, *Prunus sogdiana* and *Crataegus turkestanica*, with different herbaceous cover. The formation *Prunus dasvasica* is most widely represented on Mt. Peter I, but also occurs throughout the Hisor-Darvoz range and on the Turkiston range. This formation customarily forms part of apple and walnut forests, but sometimes also forms separate stands.

*Tugai* - this is a combination of dense, streamside undergrowth and brush with massive reedbeds (*Phragmites*) and oxbow lakes. They form an unusual primordial system in the arid subtropical zone. In the early nineteenth century, there were some 1 million hectares of alluvial *tugai* forests in Tajikistan, but following the conversion of this land to agricultural uses, primarily the cultivation of cotton, the area of *tugai* has been reduced to some 120,000 hectares - in other words, nearly 90% has been lost over the course of 100 years. The main *tugai* species are the following: *Phragmites communis*, *Saccharum spontaneum*, *Erianthus ravennae*, *Typha angustifolia*, *T. Laxmannii*, *T. Minima*, *Imperata cilindrica* and some members of the *Carex*, *Butomus*, *Scirpus* and *Calamagrostis* families. On heavily salinated soils, such salt and sun-tolerant species as *Aeluropus litoratis* and *Glycyrrhiza glabra* also occur. Where the groundwater levels are 1-2 metres below the surface, the tree layer is represented by the species *Populus diversifolia* and *Elaragnus angustifolia*, and the shrubs by *Tamarix romosissima*, *Lycium ruthenicum*, *Halostachys belaneriana* and others.

Tajikistan has no central database on its forests and logging activities. The collection, processing, exchange, storage and dissemination of information on forest resources are all impeded by such problems as the following:

- Reliable information on forest resources in the country is hard to come by;
- There is no database on the various forest resource criteria and indicators;
- Monitoring of forest resources is inadequate;
- The country's forest enterprises lack facilities and infrastructure;

- There is no central network for the collection and processing of information;
- Cartographic material is all outdated;
- Local people are poorly informed about the importance of forest resources.

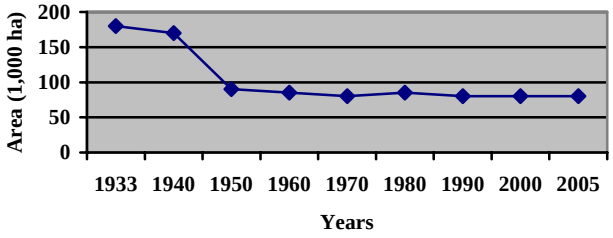
*Small-leaved forests* - these are communities with a preponderance of deciduous mesophytic and microthermophilous trees. These forests are widespread in the flood-belts alongside all mountain rivers, along all ranges from altitudes of 1,500 m up to the treeline. Depending on the actual altitude, small-leaved forests comprise species from the *Betula*, *Populus*, *Hippophae rhamnoides* and *Fraxinus* families. These forest stands are often invaded by a variety of shrubs and other forms of grassland vegetation. Birch (*Betula spp.*) groves are widely dispersed across the alluvial forests of the mid-highlands of Tajikistan. They occur in groves or form mixed stands together with tree species from the *Populus, Hippophae rhamnoides* or *Juniperus* families. In all, 26 species of the *Betula* family are found in Tajikistan. The *Hippophae rhamnoides* formation and other free-standing and mixed stands of this plant occur widely throughout Tajikistan in mountain river flood-belts, starting at 500 metres above sea level and continuing as high as 3,700 m, the lower reaches of the highlands proper. *Hippophae rhamnoides* generally takes the form of a low tree or shrub, occurring exclusively in constantly wet areas, primarily on recent alluvial deposits. The formation *Populus pamirica* also occurs as an alluvial stand and is confined to the gravel beds of all the western Pamir rivers, although heavy logging has prevented it from spreading very widely; the stands are found at altitudes of between 2,000 and 3,000 m. The density of these forests range between 0.5 and 0.7 and they include the tree species *Betula turkestanica*, *Salix schugnanica* and often also *Hippophae rhamnoides*. The formation *Fraxinus potamophila* is customarily found in flooded areas of the valleys in the lower reaches of the mid-highlands. *Salix* occurs in the flood-belts of mountain rivers, in particular in the western Pamirs at altitudes below 3,000 m.

**Illustration 2. Small-leaved forests of the Pamirs**

*Source*: Yearbook of the Republic of Tajikistan, Dushanbe, 2005.

*Shibliak* - these are communities of mesoxerophytic and xerophytic mesothermophilous deciduous trees and shrubs, occurring in sparse stands. The grass cover in these communities is ephemeral or xerophytic in nature. *Shibliak* stands are well adapted to surviving long dry summers with only a brief period of hibernation. The *shibliak* canopies in Tajikistan are dominated by the species *Amygdalus bucharica*, *Pistacia vera*, *Calophaca grandiflora*, *Cercis Griffithii*, *Rhus coriaria*, *Zizyphus jujuba* and others. Their herbaceous layer consists primarily of ephemeral plant species. Pistachio (*Pistacia vera*) formations occur extensively in the south-west of the country, growing on the slopes and foothills of the Babataga, Aktau, Karatau, Tereklitau and Vakhsh ranges. In the 1930s, extensive areas were covered by pistachio forests, but these declined sharply in the 1940s and 1950s (see figure 2). The pistachio alternates with the ephemeral species *Amygdalus bucharica*, *Cercis Griffithii* and other *shibliak* formations. Amigdaloids, such as *Amygdalus bucharica*, occur widely throughout the country, covering large areas in the south-west. As a rule, they favour lower altitudes, but can also be found quite high in the mountains. They form separate stands or frequently grow in combination with other species, including *Juniperus*, *Acer* and *Pistacia vera*. Stands of *Calophaca grandiflora* are usually mixed with *Amygdalus bucharica*, *Cotoneaster*, *Cercis Griffithii* and, less frequently, *Pistacia vera*, *Juniperus* and *Acer Regelii*. The Caucasian hackberry (*Celtis caucasica*) is found on the slopes of the Hisor and other ranges. The tree species include *Acer Regelii* and *A. turkestanicum*, and also *Amygdalus bucharica*. Sumac (*Rhus coriaria*) occurs patchily along the southern slopes of the Hisor and other ranges, in dense stands with an admixture of *Ziziphus jujuba* and *Amygdalus bucharica* and low, ephemeral grass cover. The Chinese date (*Ziziphus jujuba*) is found on the southern slopes of the Hisor range. *Ziziphus* tends to be ephemeral, the first layer comprising *Ziziphus jujuba* with an admixture of *Amygdalus bucharica* and *Celtis caucasica*, and a preponderance of ephemeral species in the grass cover. The formation *Cerasus verrucosa* is not widely found. In the underbrush layer the species *Lonicera Korolkovii*, *Berberis*, *Rosa*, *Amygdalus bucharica*, *Acer Regelii* and *Pistacia vera* predominate, while their herbaceous cover consists of ephemera.

**Figure 2. Variations in the area covered by pistachio over the period 1933-2005**




*Juniper forests* - these are communities dominated by conifers of cryophytic and microthermophilous, mesoxerophytic and xerophytic, and occasionally also xeromesophytic varieties. The *Juniperus* family is represented in Tajikistan by several species: *Juniperus sibirica*, *J. turkestanica, J. Seravschanica, J. semiglobosa* and *J. schugnanica*. All these trees tend to be short-growing, sometimes gaining 15 m in height, but usually shorter, and form dwarf forests in the highest forested altitudes. The *archa*, or Central Asian juniper, and the

stands and dwarf woodland which it forms are of great value in combating erosion, protecting hillsides from landslides and from being washed away. Junipers are drought-resistant and light-loving and, while their stands tend to be sparse, they sometimes occur in denser clumps. The formation *Juniperus turkestanica* is widespread in the mountains of Central Asia and throughout the highland areas of Tajikistan at higher altitudes. They form separate stands and also occur in mixed forests. In the lower reaches of its range, *Juniperus turkestanica* occurs as erect trees, while in the upper reaches it tends to be procumbent or trailing in form. As a rule, *Juniperus turkestanica* forests occur along the northern slopes of the Turkiston range. *Juniperus Seravschanica* is a large tree standing 10-12 m in height, which occurs widely in Tajikistan at altitudes of up to 2,500 m. *Juniperus schugnanica* and *J. sibirica* have been observed in Tajikistan, as community-forming species. They do not however play an extensive role, although they do occur - the former in the western Pamirs and the latter more or less throughout the high montane region.

**Illustration 3. Junipers of Tajikistan**

Currently Tajikistan's State forest land measures a total of some 1.8 million hectares, only 25% of which is actually occupied by forest stands. The area under forest measures 410,000 hectares, 38,000 hectares of that consisting of forests planted over recent years. Of the total area of forest land administered by the forestry authorities, 1,187,600 hectares - or some 70% - has been set aside for long-term use as grazing land for collective and State farms (see table 5).

Tajikistan's forests are predominantly stands of yield classes III and IV, with an average yield potential of 35 cubic metres per hectare. Notwithstanding the country's low forestry indicators, forests play an inordinately important role in Tajikistan. The country's forests play an indispensable role, above all, in collecting moisture, protecting the soil, regulating the climate, improving the environment, providing food, medicine and scientific materials and, albeit to a limited extent, as a source of timber.

Depending on the major natural characteristics of the area, the country's forests are distributed as follows: 150,000 hectares under juniper; 9,000 hectares under walnut; and 80,000 hectares under pistachio.

The total timber mass in the forests of Tajikistan is reckoned to be some 5.3 million cubic metres and this resource is being depleted at a rate of approximately 36,000 cubic metres per year (see table 6).

The main indicators of Tajikistan's forest resources are set out in table 7 below.

**Table 5. Distribution of State forest land, by use categories**

| Use categories | Area (1 000 ha) |
|---|---|
| Land covered by forest | 414 |
| of which: | |
| Planted forest | 88 |
| Planted open canopy forest | 27 |
| Not closed canopy forest | 299 |
| of which: | |
| Scattered trees | 173 |
| Clearings | 126 |
| **Total forest land** | **713** |
| Not forested land | 1 060 |
| of which: | |
| Ploughed land | 6.6 |
| Hayfields | 4.7 |
| Grazing land | 840 |
| Other | 208.7 |

*Source*: State Committee for Environmental Protection and Forestry of the Republic of Tajikistan.

**Table 6. Breakdown of forests by predominant species**

| Species name (English and Latin) | Total volume (million $m^3$) | |
|---|---|---|
| | 1990 | 2000 |
| Juniper - *Juniperus* L. | 3.5 | 3.3 |
| Pistachio - *Pistacia* L. | 0.42 | 0.40 |
| Maple - *Acer* L. | 0.38 | 0.34 |
| Persian walnut - *Juglans regia* | 0.35 | 0.32 |
| Poplar/Aspen/Cottonwood - *Populus* L. | 0.27 | 0.25 |
| Birch - *Betula* L. | 0.05 | 0.05 |
| Almond - *Amygdalus* L. | 0.03 | 0.03 |
| Willow - *Salix* L. | 0.03 | 0.03 |
| Elm - *Ulmus* L. | 0.03 | 0.03 |
| Myrobalan plum - *Prunus* L. | 0.03 | 0.03 |
| Remainder of species | 0.57 | 0.52 |
| Total | 5.66 | 5.30 |

*Source*: Environmental Protection in the Republic of Tajikistan, Dushanbe, 2004.

**Table 7. Forest resources and their protection**

| Main indicators | Years | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1991 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
| Total area of State forest land, including forests reallocated for long-term use (million ha) | 1.7 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| Area under forests (1 000 ha) | 390 | 408 | 410 | 410 | 410 | 410 | 410 |
| Total volume of timber (million $m^3$) | 5.7 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 |
| Forest coverage, as percentage | 2.7 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Restored forests (1 000 ha) | 4.0 | 3.1 | 2.9 | 1.7 | 2.3 | 2.2 | 2.3 |
| including: | | | | | | | |
| Planted forests | 3.9 | 2.2 | 2.1 | 1.4 | 1.7 | 1.5 | 1.7 |
| Regenerated natural forests | 0.1 | 0.9 | 0.8 | 0.3 | 0.6 | 0.7 | 0.7 |

*Source*: *Yearbook of the Republic of Tajikistan*, Dushanbe, 2005.

## 5. Timber and the wood-processing industry

The timber industry is not well developed in Tajikistan. Prior to 1992, the country had a furniture factory which used imported timber. Currently, owing to the shortage of timber, none of the country's woodworking industries remain in operation.

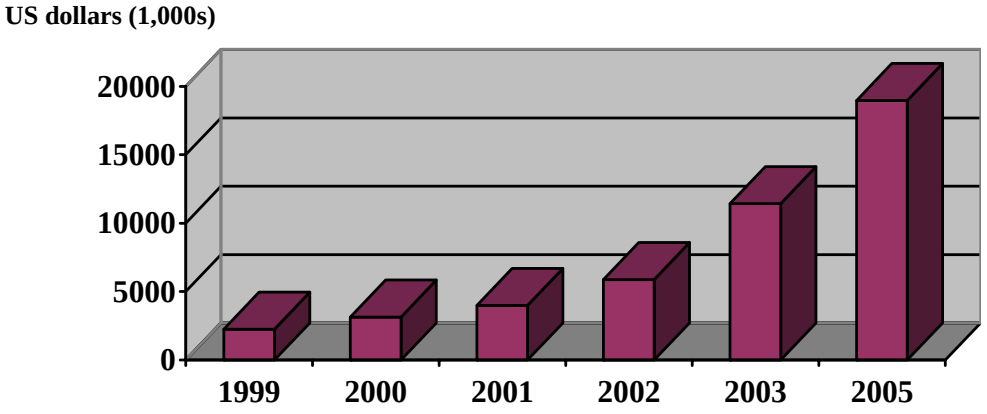
Tajikistan has no industrial forests; accordingly, the only logging that takes place is for forest improvement and maintenance purposes and the resulting timber is primarily used as fuelwood. As a result, there are no timber-processing enterprises operating in Tajikistan's forestry sector.

In the 1970s and 1980s, while Tajikistan was still part of the former USSR, an average volume of some 400,000 cubic metres of timber was imported every year from the Russian Federation, of which 350,000 cubic metres was used for woodworking purposes and 50,000 cubic metres for fuelwood. Currently, the Russian Federation has cut its exports of timber by 75% and does not export any fuelwood at all.

Commercial timber was used for construction and the manufacture of furniture. Currently, some 109,000 cubic metres of commercial timber is imported every year from the Russian Federation, at a cost of more than $20 million, and used for construction purposes (figure 3). The Dushanbe furniture factory and other furniture manufacturers have been out of operation for more than 10 years owing to the lack of materials.

Recently, with the steady depletion of the country's forest resources and the shrinking of its forests, and also the introduction of protection measures, the volumes of authorized logging have been considerably reduced in Tajikistan, with the result that, through the conduct of their forest clearing operations, Tajikistan's forestry enterprises process a mere 7,000 cubic metres of fuelwood per year, representing less than 5% of the country's needs for fuelwood. Generally speaking, no commercial timber is prepared.

**Figure 3. Imports of processed timber**




*Source: Yearbook of the Republic of Tajikistan*, Dushanbe, 2005.

## 6. Timber trade

Trade in timber products imported from the Russian Federation and Kazakhstan is only conducted by private organizations and firms, which operate in compliance with the law of the Republic of Tajikistan on private enterprise.

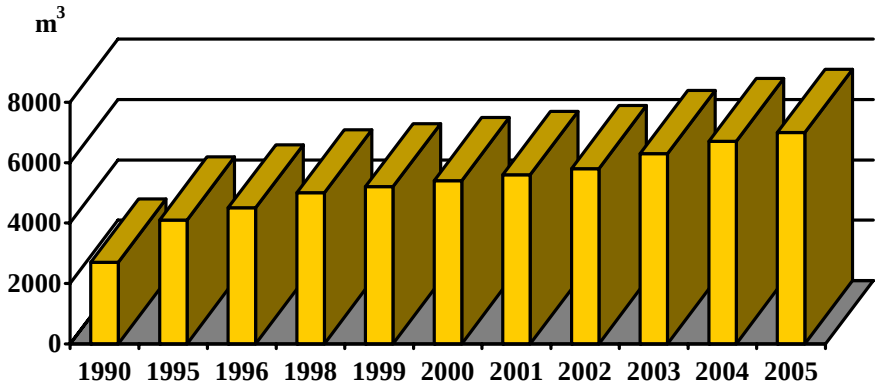
The forests are the State property of Tajikistan and a shared asset of the Tajik people.

It should be noted that the processing of commercial timber from the forests of Tajikistan is categorically prohibited. The only logging that is permitted is for forest improvement and maintenance purposes.

The article of the Forest Code of the Republic of Tajikistan setting out limits for the processing of timber in the conduct of forest improvement and maintenance operations stipulates that the volume of such logging shall be determined on the basis of established standards for forest maintenance and improving the species composition and quality of forests, and also in accordance with the necessary scope of tree-thinning and other operations related to the clearing of planted forests of low economic value. The extent of timber-processing operations arising from the conduct of other logging operations is determined by the scope of work required for the clearing of forest areas, the laying of firebreaks, etc.

The preparation of timber products depends on logging operations conducted in the country's forests for maintenance purposes, in accordance with the condition and quality of the forests, within established planning limits, and totals some 6,700 cubic metres per year, while logging for maintenance and forest improvement purposes covers an area of some 3,400 hectares per year. The resulting timber is for the most part intended for childcare centres and schools, hospitals, children's homes and other State establishments and is marketed at prices established by the forest management and hunting authorities and ratified by the Tajik Government (figure 4).

**Figure 4. Processing of forest timber produced by logging for forest maintenance purposes**




*Source*: State Committee for Environmental Protection and Forestry of the Republic of Tajikistan.

The regulations governing logging are set by the national Government.

The procedures for the processing of timber are laid down by the State Committee for Environmental Protection and Forestry and by its local offices.

In mountain forests, the logging methods used are designed to safeguard the special protective, anti-erosion and water-regulating functions performed by these forests.

That said, however, throughout the country there is heavy woodcutting for firewood, particularly during the winters. This is because electricity supplies to rural areas are limited during this period and local people have no other source of fuel for the heating of their homes and for cooking. Every year, the forestry authorities draw up some 500-600 reports of violations of the forest regulations. The forestry officials are too few in number to ensure proper supervision of all the country's forest areas, particularly by night: as a result, surveys conducted among local populations have revealed that the actual number of trees felled in the country's forests is considerably greater than that officially recorded.

An analysis of the resulting situation in the country indicates that the primary reason for these violations consists in the country's low economic level, which, in its turn, lies at the source of the poverty of large numbers of people. In order to heat their homes and to cook food, particularly in rural areas, people are obliged to cut down trees. For those people living near forests, the harvesting and sale of fuelwood on the outskirts of large settlements offers an opportunity for them to earn a little extra income.

## 7. Consumption of forest products

According to official figures, the total imports of construction timber, paper and cardboard amount to $22.2 million, of which $1.2 million is spent on paper and $19 million on sawn and processed timber. A total volume of some 109,000 cubic metres of timber is imported into the country. An analysis of the import figures indicates, however, that the country's total needs for sawn and

processed timber amount to some 135,000 cubic metres and the resulting shortfall has the effect of driving up the price of timber. According to official statistics from the forestry and hunting authorities, some 6,700 cubic metres of firewood is harvested. A detailed analysis of this issue indicates, however, that the real figure is in fact much higher, measuring some 90,000 cubic metres. Our calculations are based on the following considerations: some 2 million people live in the country's towns and urban districts and use gas, paraffin and electricity for heating and 3.4 million live in the lowland valleys and employ a range of plant and animal products and waste for heating, rarely making use of firewood harvested in the forests. That leaves some 600,000 people who live in mountain areas and do use firewood for heating and cooking purposes. Assuming an average family size of five persons, the total number of families potentially using firewood comes to 120,000. Taking the figure of 0.25 cubic metres of firewood per month as the average consumption rate and considering that the local population makes heavy use of firewood during the three winter months, in addition to other forms of fuel, while the rest of the population, owing to the remoteness of the country's forests and the lack of transport, lack any opportunity to gather firewood, we arrive at a total figure for harvested firewood of 90,000 cubic metres, set against the official estimates of 7,000 cubic metres: in other words, the actual volume of harvested firewood is almost 13 times greater than the official figure. For this reason it can be concluded that the country's mountain and floodplain forests are under considerable strain.

Prior to 1950, timber was processed in Tajikistan for a range of economic purposes, including construction, for which timber was primarily harvested from the country's juniper, walnut, maple and plane-tree forests.

In addition, in the early 1950s hundreds of thousands of hectares of *tugai* forest were cleared in the country's valleys for the cultivation of cotton, reducing the total forested area in Tajikistan to one quarter of its former size. Some forest stands were completely wiped out, leaving areas of wasteland in their place.

Given this situation, the government of the then Tajik Soviet Socialist Republic took a decision to prohibit all logging and declared the country's forests protected areas, with valuable anti-erosion and anti-landslide functions. Agreements were concluded on the supply of timber from the Russian Soviet Federative Socialist Republic. Pursuant to these agreements, Russia set aside an area of forested land in Siberia for the processing of timber to meet the needs of Tajikistan. Specialists from Tajikistan worked alongside Russian specialists on these timber-processing projects. Following the collapse of the USSR, however, the system ceased operation as a State-administered project.

Currently, all deliveries of timber from the Russian Federation are effected by private individuals. Violations of the law are precluded, however, by a process involving multiple checks of compliance with the laws and regulations before the timber reaches Tajikistan.

All the country's forests are listed in forest category I, with a high environmental, economic and social value. Most of the country's forests are situated in the highland regions, where they perform essential protective, anti-erosion, soil-conservation and water-regulation functions, while also serving as a source of timber, other commercial products and foodstuffs, including the pistachios and walnuts so beloved of the people of Tajikistan.

It should also be noted, however, that the volumes of natural gas, coal, fuel oil and other forms of fuel imported by Tajikistan have dropped considerably, provoking wide-scale unlawful

logging activities which are leading to the depletion and degradation of the country's forests and soils, hastening erosion and deforestation processes and arousing the keen concern of the Government.

By virtue of their natural properties, including the proliferation among them of nut-bearing and other wild-growing fruit trees (walnut, pistachio, almond, apricot, mulberry, apple, myrobalan plum, cherry, hawthorn, pomegranate, persimmon, etc.), Tajikistan's forests have served throughout history as a source of food, as well as providing firewood and building materials, and, in some regions, hay and grazing for livestock, a site for apiaries, etc.

In the 1970s and 1980s, as many as 500-600 tons of nuts and fruit were processed by forestry enterprises alone, together with a comparable quantity of dried fruit and as much as 800 and more tons of medicinal plants (such as ephedra, *Ungeria Victorii*, dog-rose, sea buckthorn, hawthorn and barberry, as well as other medicinal herbs). The country's forests played host to such activities as bee-keeping, horse breeding, raising of other livestock, fur-farming, reindeer-breeding, poultry farming, horticulture, nut farming and other activities.

Regrettably, following the collapse of the Soviet Union, the volumes of non-timber products declined radically; thus, in recent years, a mere 40-60 tons of nuts and fruits are harvested yearly. With breakdown of the ties between the former republics of the Soviet Union and the lack of any guarantees provided by purchasers, the processing of non-timber forest products has virtually come to a stop.

Market mechanisms are virtually non-existent in the country's forest enterprises; accordingly, there are no incentives for the development of forest-based businesses.

## 8. Timber prices

The forestry authorities sell standing timber to the population at a reduced price, ensuring that all citizens have access to affordable fuelwood. Standing timber in communal forests is released free of charge to meet the needs of local communities.

Forestry agencies are exempt from payment for timber which is produced in the course of forest maintenance work and other forestry-related measures.

The Government of Tajikistan lays down the procedure for the costing of standing timber and sets statutory rates for its use, in certain cases granting partial or total exemption from payment for standing timber to government bodies, cooperatives and public enterprises, establishments or organizations and to individuals.

Currently, the average price of commercial timber exported by private enterprises and organizations is some $175 per cubic metre.

## 9. Institutions

### 9.1. Institutions concerned with forestry issues in Tajikistan

The offices and departments concerned with forest issues in Tajikistan fall into the following categories: supervisory, administrative and managerial.

The first category includes ministries and committees responsible for overseeing compliance with the laws and regulations in force. These include the State Committee for Environmental Protection and Forestry, the Ministry of Agriculture and the State Committee for Land Management (see table 8).

The State Committee for Environmental Protection and Forestry of the Republic of Tajikistan and its local bodies form a coherent national system for overseeing and monitoring matters relating to hydrometeorology, environmental protection and the sound use of natural resources, and are concerned with the following primary tasks:

- Charting and conducting a centralized State environmental policy in such areas as land use; use of water resources; forest management; mining of widespread mineral deposits; use and protection of atmospheric air and of animal (including fish) and plant resources; areas under special protection regimes; hydrometeorology; and control of hydrometeorological processes and other phenomena;

- Providing government authorities, economic organizations, voluntary associations and the public at large with hydrometeorological and environmental information relating to the state of the natural environment;

**Table 8. Official bodies responsible for forest management**

| | Forests and forested areas (ha) | Forests managed by (%) | | Year | Source |
|---|---|---|---|---|---|
| | | Government authorities | Private bodies | | |
| State Committee for Environmental Protection and Forestry | 1 897 000 | 100 | | 2005 | State Committee for Environmental Protection and Forestry |
| Ministry of Agriculture | 90 000 | 50 | 50 | 2005 | Ministry of Agriculture |
| Dushanbe municipality | 900 | 100 | | 2005 | Dushanbe municipality |
| Total State forests | 1 987 900 | | | | |

- Improving the early warning system for natural disasters due to hydrometeorological phenomena and on unusually high pollution levels likely to cause emergencies and other damage;

- Developing draft laws and other regulatory instruments relating to protection of the environment, the sound use of natural resources and hydrometeorology;

- Setting out principles for the regulation of economic activity and the use of natural resources in the area of environmental protection;

- Working together with the Academy of Sciences of the Republic of Tajikistan and with ministries and other government offices to study the impact of human activities on hydrometeorological processes, the climate and the natural environment and identifying priority areas and developing scientific research work and recommendations on ways of ensuring the sound use of natural resources, on forecasting and early warning, and on measures to prevent environmental degradation and the emergence of environmental mishaps and disasters;

- Coordinating and setting standards for harmful effects on the environment, working together with ministries and government offices, and also with enterprises and organizations, on the conduct of qualitative and quantitative surveys of such harmful influences (in addition to physical effects) on the environment and, working with the State Statistics Committee of the Republic of Tajikistan, drawing up a national inventory of pollution sources;

- Disseminating environmental protection information and conducting environmental education for the public, working together with environmental non-governmental organizations and engaging in international cooperation in the fields of hydrometeorology, natural resource use and environmental protection.

Protection of forests is the responsibility of the Government and, given the serious plight of the country's alpine forests, in 2004 the Government of Tajikistan took a decision to amalgamate the Ministry of Natural Protection and the Forest Management and Production Association of the Republic of Tajikistan, into the State Committee for Environmental Protection and Forestry of the Republic of Tajikistan, which incorporates in its structure the Forest Management and Hunting Agency. All the forests of Tajikistan are State-owned. The State Committee for Environmental Protection and Forestry is responsible for ensuring their preservation, restoration, expansion and sound use. Most of the country's forests are managed by the forestry agency, while responsibility for a small area rests with collective farms. Oversight of these forests and of their sound use is still exercised by the State Committee. In addition to the country's forests, the State Committee is also in charge of 4 nature reserves, 2 national parks, 13 sanctuaries, 148 natural monuments and a number of other natural features. The State Committee includes in its structure an inspectorate for the protection of animal and plant life, the Tajik Forest Research Institute and the Forest Management and Hunting Agency, which, in its turn, administers 52 forestry offices.

The principal tasks of the State Land Management Committee include the following:

- Charting a centralized policy and implementing all decisions adopted on matters relating to land management, land use and land ownership, including in forest land;

- Conducting State supervision to ensure effective use and protection of land resources in compliance with the law;

- Drafting and conducting State programmes to regulate land-related matters, to implement land reforms and to ensure sound use and protection of land resources.

The Ministry of Agriculture of the Republic of Tajikistan is the government body responsible for developing and implementing a centralized State agricultural policy. The Ministry conducts its activities in close cooperation with other ministries and government offices and with local authorities (the *hukumats*), the Academy of Sciences of the Republic of Tajikistan, the Tajik Academy of Agricultural Sciences and other organizations, institutions and enterprises, since forest stands also fall under the jurisdiction of this Ministry.

Forestry agencies in the second category perform administrative functions. These include the State Forest Management and Hunting Agency and provincial and regional forest management and production associations, which are responsible for publicizing regulations, laws, programmes and other instruments received from superior bodies and for ensuring that the tasks imposed by those bodies are carried out (table 9).

The last category - bodies concerned with forest management - includes forestry offices, inspectorates, forest nurseries and forest hunting operations, and these are the bodies directly responsible for managing the forests. They are entrusted with such tasks as ensuring the sound use of forestry resources, protecting forests and expanding their area, conducting monitoring and assessments of the country's remaining forests and many other responsibilities.

At the same time, scientific research institutes such as the Tajikistan Forestry Research Institute, the Botanical Institute, the Zoological Institute and Tajikistan National Parks - the State organization responsible for specially protected areas - conduct scientific research work in forests and prepare recommendations on ways of protecting and improving forests, expanding their area and enhancing their species make-up and carry out monitoring of forests and their interaction with other components of the natural environment (see table 10).

### 9.2 Training of forestry specialists

Prior to 1992, forestry specialists were trained in higher education institutes of the Russian Federation and Ukraine. Tajikistan was unable to offer training in this field as it had no faculties of forestry in its universities and no need to develop such faculties, since many cities of the former USSR already had forestry institutes. Following the collapse of the USSR, however, the problem of training arose and Tajikistan was only able to open its own specialized institute in this field in 1997.

**Table 9. Government bodies responsible for forest management and their level**

| Hierarchy | Bodies responsible for enacting legislation and managing forests | | |
|---|---|---|---|
| | Name of body | Quantity | Average area (ha) |
| State level: level 1 | State Committee for Environmental Protection and Forestry | 1 | - |
| Regional level: level 2 | State Forest Management and Hunting Agency - government body | 1 | 1 800 000 |
| | Tajikistan National Parks - government agency for specially protected areas | 1 | 2 780 000 |
| | Tajikistan Forestry Research Institute - government body | 1 | 1 060 |
| Regional level: level 3 | Provincial and regional forest management and production associations | 4 | 450 000 |
| | Provincial and district *hukumats* | - | - |
| Regional level: level 4 | Forestry enterprises | 40 | 45 000 |
| Local level: level 5 | Local hukumats | - | - |

In 1998, the Tajik Agricultural University opened a forestry faculty, for the training of forestry specialists. Currently, the faculty has 60 students. In addition, the polytechnical institute trains intermediate-level specialists in this field.

**Table 10. Principal bodies associated with forestry activities**

| Type of organization | Name of organization | Primary responsibilities | Address |
|---|---|---|---|
| Government forestry offices | State Forest Management and Hunting Agency; forestry offices | Forest protection and reforestation | Karategin St. 65, Dushanbe |
| | Forest nurseries | Cultivation of saplings | |
| | Forest hunting operations | Forest protection and reforestation and organization of commercial hunting activities | |
| Non-governmental organization | Aral Foundation<br>Kuhiston Foundation<br>Global Environment Facility<br>Man and Nature | Conduct of international nature and forest protection programmes | Dushanbe |
| Education and research | Botanical Institute | Studying the species composition of the country's forests and protected areas and its current status | Karamov St. 7, Dushanbe |
| | Zoological Institute | Studying the species composition of the country's forests and protected areas and its current status | Rudaki Prospect 29, Dushanbe |
| | Forestry Institute | Comprehensive research in forest protection, species selection, biology of rare animal species and other fields | Valami St. 9/1, Dushanbe |
| | State University (Faculty of Biology) | Scientific research | Rudaki Prospect 19, Dushanbe |

## 10. Outlook for the development and management of forests

All Tajikistan's forests belong to the State. The State Committee for Environmental Protection and Forestry is responsible for the protection, restoration, expansion and sound use of forests. Most of the country's forests are administered by the State Committee, while a small number belong to family-owned farms - *dehkans*. Supervision of their condition and sound use remains the prerogative of the State Committee, however.

In mountain areas, forests play an important role in helping local populations overcome their poverty. Residents of these areas are able, on the basis of special agreements, to harvest forest products such as walnuts, pistachio, dog rose and medicinal and other plants, a portion of which are surrendered to the State while the remainder they gather for themselves and can market as they see fit. In addition, local populations are able to buy firewood at a reduced price and to graze their livestock in forested areas.

There is no forestry industry as such in Tajikistan and the sale of forest products may only take place in special shops.

Tajikistan has no national programme for the development of its forest sector and, owing to lack of funds, nothing is being done at present to develop such a programme. Currently the country only has an outline plan for the development of its agro-industry sector for the period up to 2015, in which a separate section is devoted to the development of the forestry sector over that period.

The policy on forest management and forest resources is set down by the State and the Government of the Republican Tajikistan and is reflected in the country's constitution, its laws on the protection of nature and of the subsoil and its resources, on the use of animal resources and on specially protected nature reserves, and also in the forest code and other codes and government decisions. The development of the forestry sector is closely interrelated with other sectors of the economy. One key element of the Government and State policy in this area is the protection and restoration of mountain forests, which are of crucial importance for the conservation of the country's nature resources as a whole and are also essential in protecting the soil from erosion, in particular. Notwithstanding the economic hardship in the country, the Tajik Government allocates funds for the restoration of forests of various types. In addition, in order to ensure the sound use of forested land, the Government sets aside areas of State land for the development of forest enterprises, with the intention of expanding the area under forest. Development of forestry is an integral part of the Government's economic and social programmes.

Nature protection and the sound use of natural resources are regulated by the Tajik Constitution, pursuant to which the land, its subsoil resources, the air above it, animal and plant resources and other natural resources are the exclusive property of the State, which guarantees their effective use in the interests of the people.

Tajikistan's policy relating to protection of natural resources and the environment is designed to ensure that priority is given to the country's environmental interests, taking into account the need to foster environmentally friendly attitudes, the sound use of natural resources

and safeguards for human rights. The Nature Protection Act adopted in 1993 is one of the country's most important legislative instruments. This act, working in combination with a range of organizational, legal, economic and educational measures, is intended to promote the development and strengthening of an environmental legal framework for the protection of the natural environment in the interests of the present and future generations and to ensure environmental safety throughout the territory of Tajikistan. The primary goals of this act are the following:

- To safeguard species diversity and to preserve the necessary conditions for the propagation of plant and animal species which are historically established in the country;

- To protect natural communities, to maintain the natural balance and to develop environmental monitoring.

The Forest Code of Tajikistan was adopted in 1993, by decision of the Majlisi Oli - the parliament of Tajikistan, with the principal aim of preserving Tajikistan's forest resources and ensuring the protection and sound use of the land, water, animal and plant resources found within its forests.

In addition, regulations were adopted on the forestry businesses which form part of the Tajik associated enterprises group, with the main purpose of regulating the work of forestry enterprises, ensuring State oversight of the protection of forests and their resources and regulating hunting and the harvesting of food and medicinal products.

In 1994, the Animal Resources (Protection and Use) Act was adopted and, in 1996, the Specially Protected Natural Areas Act.

In addition to these, rules have been adopted by decision of the Government stipulating the levels of fines for breaches of the forest law, in order to ensure the protection and sound use of forest resources.

The main political texts governing the country's forest sector are, as at the current time, the country's poverty reduction strategy paper and the State environmental programme for the period 1998-2008, which were approved by the Government in 1997 and 2002, respectively. According to these texts, the forestry sector is intended to become one of the priority areas of the country's social and economic development and they reaffirm the Government's obligation to ensure the comprehensive development of a national forestry policy. These texts set out a programme of action for the period from 2002 to 2008 and lay down principles to promote the development of national policies in all areas, including forestry.

Pursuant to the provisions of these texts, the Government has launched its programme of social and economic development, designed to ensure sound use of the natural resources of Tajikistan, to maintain the soil, forests, rangelands and water resources in an optimal state, to preserve the country's biological balance and to safeguard rare and threatened species of flora and fauna. Currently, work has been launched on a study of environmental pollution levels and

a special commission has been set up to track violations of nature protection laws. The funds allocated from the State budget for environmental protection are insufficient to cover even the very minimum essential nature protection measures and, for the time being, no alternative sources of funding have been found. Cooperation with international organizations in the field of environmental protection is poorly developed. The country's legislative and regulatory framework on environmental protection needs to be reviewed and standardized.

These texts identified several areas for the development of the forestry sector:

- Drafting and adopting a national strategy for the preservation of biological diversity;
- Monitoring environmental conservation and protection: development of a legal and regulatory framework;
- Conducting pilot forestry development projects as part of the national programme under the United Nations Convention to Combat Desertification;
- Preserving the environmental balance of alpine forests and boosting the productivity of forests;
- Ensuring the survival of virgin forests of local, residual and other valuable tree species;
- Boosting the productivity of the soil and protecting the soil from erosion processes due to water, wind, gully and forest erosion and other forms of erosion and from mudslides, rockfalls and other natural processes;
- Ensuring the sustainable use of natural resources;
- Identifying non-traditional energy sources to meet the energy needs of rural populations;
- Developing ecotourism and hunting as a means of tackling social and economic problems and ensuring sound use of natural resources.

In order to meet the challenges of sound use of forest resources and to increase the area of forests in Tajikistan it is essential in the near future:

- To limit the use of fuelwood by lowering the prices of alternative energy sources. In surveys conducted among rural populations more than 70% of all respondents came out in favour of lowering prices of other forms of fuel to a point where they are cheaper than firewood. The lowering of prices for alternative energy sources, such as gas (when this is feasible), or paraffin, will help reduce and in some areas even entirely halt the wide-scale clearing of forests. The survey also demonstrated that, in the conditions prevailing in Tajikistan, gas (in cylinders) would seem to be the most suitable alternative, since most inhabitants already have gas appliances;

- To adopt urgent measures to conserve certain plant species currently threatened with extinction, such as, for example, *Malus Sieversii* (a species of wild apple), which was included in the World Conservation Union (IUCN) Red List in 1978. The protection accorded to this plant must be stepped up and the area in which it can propagate be extended, since several of these species are forest-forming in nature;

- To recommend a range of measures to promote the growth of natural forest stands, to restore and foster the reproduction of other natural resources and to seed and plant medicinal plants, including some which had not previously occurred in this territory; in respect of certain species, to take urgent measures to limit (and, in some cases, even to prohibit) the gathering of medicinal plants;

- To put a stop to the loss of the country's genetic resources caused by the wholesale destruction of commercially valuable and decorative species and of entire floral coenotypes (such as *tugai*, broadleaved forests and others) which serve as the habitat of a number of rare species currently on the verge of extinction. In order to preserve the genetic species base, it is essential that the country's standard rules laid down in this area be strictly adhered to in all already existing and proposed nature reserves, that a broad network of mini-reserves be established to protect various species and that all forms of commercial activity should be strictly controlled in areas where there are concentrations of rare and valuable plant species.

Deforestation is the consequence of logging activities by private individuals and organizations and also of the grazing of livestock, which prevents the recovery of forests. This process is further exacerbated by the continuing desiccation of the climate and the current geological process of the lifting of the Pamir-Alai range, which is having a dramatically deleterious effect on conditions conducive to the growth of forests.

Deforestation can only be halted by:

- Ensuring the delivery of imported fuel to populations;

- Promoting the maximum possible use of gas and electricity;

- Stiffening the fines for damaging forest lands, particularly those imposed on persons responsible for the offending decisions;

- Restricting and, in certain cases, prohibiting outright the grazing of livestock in juniper forests;

- Improving the conditions for and the rules regarding the grazing of livestock in xerophilous forested areas;

- Setting in place nature protection systems in sand and desert forests and *tugai* stands;

- Prohibiting routine logging activities, except those carried out for forest improvement purposes, under the supervision of the relevant appropriate nature protection bodies and designed to restore the country's forest stands.

In order to ensure the sound use of forest resources and their conservation and restoration, the following long-term measures must be set in place:

- Creation of planted forests of quick-growing species, which can be used as fuelwood and, in certain cases, as additional construction materials;

- Use of alternative energy sources, including wind power, and construction of small hydroelectric stations on mountain rivers to provide electricity to small settlements;

- As a long-term measure, boosting the income of rural populations derived from stock-breeding and crop-farming, enabling them to cover the costs of alternative energy sources at market prices. This measure is designed to be implemented over a very extensive period, since it will take many years before the poorest population sectors are sufficiently affluent to be able to buy fuel at market prices;

- Raising environmental awareness among rural populations, with regard to the sound use of natural resources and, in particular, of forests. Rural populations are not always aware of the serious consequences of the degradation of forests and of the negative effects on the environment of land-clearing activities. It is essential for educational work to be conducted among rural communities to teach them about such issues as the interaction between people and nature, the sustainable use of forest resources and alternative energy sources;

- Improving the system for the management of forests by amalgamating forestry enterprises and increasing the powers of forestry officers;

- Securing the adoption at the government level of a code of honour for forestry officials;

- Organizing local and interregional systems for the protection of forests from pests and diseases;

- Promoting efforts by the Government to deal with the issue of the development of coal deposits and setting prices for coal that are affordable to rural populations;

- Increasing the wages and salaries of forestry employees, in particular those at lower levels;

- Increasing funding from the State budget for the planting of forests and forest stands;

- Bringing the forest code into line with existing legal and regulatory instruments and international requirements;

- Converting State-owned forest land from the long-term use category to the free-use category;

- Appointing directors of forestry enterprises and forestry specialists with specialized training;

- Developing a long-term, multi-targeted forestry training programme;
- Training highly qualified staff in the fields of forest management and forest administration, both in Tajik higher education institutions and abroad;
- Refurnishing and re-equipping the logistical base of the country's forestry enterprises;
- Conducting regular education and awareness-raising work among local populations, in particular schoolchildren, on the role of forests in the life of communities and on their importance for the environment;
- Conducting regular one-day workshops to familiarize local populations with the existing legal and regulatory instruments relating to forests;
- Publishing and disseminating leaflets, brochures and other handouts about forests in the Tajik language and disseminating these among local communities;
- Ensuring the adoption by the Government of regulations fixing the price of imported timber.

The following reasons are adduced, among others, for the lack of development of the forestry sector in Tajikistan:

- The shoddy technical state of forestry enterprises and the lack of a proper administrative infrastructure for the management of this sector; some forestry offices do not even have electricity, water and heating. There are virtually no computers. In some districts, the forestry officials themselves lack the necessary skills. Forestry sector employees are often unqualified and have little or no idea about modern technology and efficient working methods. Working conditions and safety equipment are below standard. The extremely low wages and salaries paid and the lack of other incentives mean that the managers of forestry enterprises, forestry specialists and other employees have little interest in improving their management systems or in protecting forests. The sector's logistical base is obsolete or non-existent. The forestry officials do not have even the most rudimentary equipment, while the poachers are often extremely well equipped;
- The lack of awareness among rural populations of the importance of forests: local inhabitants are not kept sufficiently well-informed about the role of forests in protecting the environment and, as a result, see no harm in cutting down trees around their settlements. Awareness of the role of forests is only brought home to them by mudslides, the loss of the soil cover, the destruction of grazing land and other natural disasters;
- Lack of funds: allocations from the State budget for the protection of forests and the conduct of afforestation measures are insufficient to cover even the barest minimum essential measures;

- Lack of qualified staff: because of the low salaries paid, specialists are loath to take jobs in the forestry sector. Every year 10-15 specialists receive degrees in the country's agricultural university but only one or two of these take up jobs in the forestry sector;

- Ignorance of the law: in Tajikistan, there are a large number of legislative and regulatory instruments designed to ensure the integrity of the country's forest resources. Some 90% of the country's rural inhabitants are unaware, however, of the basic laws or have no access to them because they are not disseminated sufficiently widely;

- Inadequate management by the Government of the forestry sector and lack of accountability by the legislative authorities for forestry matters: jurisdictions and obligations often overlap or conflict with one another. Different organizations, including the ministry and various committees, exercise the same functions in different aspects of forestry work. As a result of these conflicting and poorly defined functions, the effectiveness of the work of the forestry authority is undermined;

- High cost of imported timber: the limited availability of locally harvested timber for construction purposes is driving up the prices of imported timber on the domestic market and inducing rural local populations to cut wood in remote forests.

All the above-listed problems are outlined in the country's poverty reduction strategy paper, ratified by the Government of Tajikistan. This paper clearly sets out modalities for reducing poverty among the population and also stresses the need to ensure supplies of gas and electricity to rural populations, which will reduce woodcutting and help ensure conservation of the forests. Another important document dealing with the issues of forest management, forest conservation and the expansion of areas under forests is the programme for the development of the agro-industrial sector over the period up to 2015. As set out in this document, the Government will promote the development of forest stands in order to ensure a source of construction materials and fuelwood for local populations. In addition, the issues of the conservation of forests and their protection from logging are explored in the national programme of action to combat desertification and the action strategy for the conservation of biological diversity, both ratified by the national Government.

## 11. Conclusion

Tajikistan's forests are listed in category I and, in general, perform nature protection, anti-erosion and anti-landslide functions and all commercial lobbying is categorically prohibited. The country's forests are primarily used for the harvesting of food products, medicinal materials and for recreational purposes. The vast majority (95%) of the country's commercial timber is imported from the Russian Federation. Nevertheless, illegal logging continues in Tajikistan's forests, primarily for fuelwood. In order to preserve the country's unique alpine forests, however, and in particular the juniper and *tugai* stands, it is essential that urgent and decisive action be taken, otherwise the forested areas will be even further reduced over the next few years. Currently, the rates of forest depletion and reforestation are more or less the same so an analysis of trends in the areas under forests reveals no significant changes.

It is essential that ways be identified of providing different sectors of the population with fuel and building materials, thereby significantly lightening the pressure placed on forests by populations. Among these we could identify the establishment of private and communal farming

enterprises for the cultivation of fast-growing trees; the construction of small-scale hydroelectric stations, given that Tajikistan is rich in hydro-energy resources; and the promotion of the use of solar cells and other alternative energy sources.

The country's forest resources policy is laid down by the State and by the Government and is reflected in its constitution, the laws on nature protection, on the subsoil and its resources, on the use of animal resources and on specially protected nature reserves, and also in the Forest Code and other codes and decisions by the national Government. The development of the forestry sector is closely interrelated with other sectors of the economy. The government and State policy in this area is geared towards the conservation and restoration of the alpine forests, as one of the country's most important natural assets and a key component in protecting the soil against erosion. Notwithstanding the country's current economic hardship, the Government of Tajikistan is allocating funds for the restoration of forests of various kinds. In addition, to ensure the sounder use of forested land, the Government is allocating land from State forest areas to forest enterprises for their permanent use, in order to ensure the expansion of the country's forest stands. Development of the forestry sector is closely tied up with economic and social programmes being developed by the State.

In mountain areas, the forestry sector has an indispensable role to play in mitigating the poverty of local populations. On the basis of special agreements with representatives of the forestry sector, local inhabitants are able to gather forest products, including walnuts, pistachio, rosehip, medicinal plants and other products, some of which are surrendered to the State while most they are able to retain to market as they see fit. In addition, local populations are given the opportunity to buy firewood at a reduced cost and to graze their livestock in forested areas.

It is essential in the immediate future:

- To expand the area of the forest stands of walnuts, pistachio, juniper and *tugai*, in order to strengthen hillsides and riverbanks and, in general, to meet the needs of the forestry sector, in particular in areas where, until recent times, such forests used to be common and also in all areas suitable for the growing of forests;

- To step up control over livestock grazing, to ensure that tree seedlings are not destroyed and that grazing areas do not become choked with thorn bushes.

## 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 Organization), 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:

UNECE/FAO Timber Section
Trade and Timber Division
United Nations Economic Commission for Europe
Palais des Nations
CH-1211 Geneva 10, Switzerland

Fax: + 41 22 917 0041
E-mail: info.timber@unece.org

http://www.unece.org/trade/timber

## UNECE/FAO

## Publications

**Forest Products Annual Market Review, 2006-2007** **ECE/TIM/SP/22**

***Note**: Other market related publications and information are available in electronic format from our website.*

*Please note that the Timber Bulletin series has been completely discontinued. The above publication will from now on be issued under the Geneva Timber and Forest Study Paper series.*

***Geneva Timber and Forest Study Papers***

| | |
|---|---|
| Forest Products Annual Market Review, 2005-2006 | ECE/TIM/SP/21 |
| European Forest Sector Outlook Study: 1960 - 2000 - 2020, Main Report | ECE/TIM/SP/20 |
| Forest policies and institutions of Europe, 1998-2000 | ECE/TIM/SP/19 |
| Forest and Forest Products Country Profile: Russian Federation | ECE/TIM/SP/18 |
| (Country profiles also exist on Albania, Armenia, Belarus, Bulgaria, former Czech and Slovak Federal Republic, Estonia, Georgia, Hungary, Lithuania, Poland, Romania, Republic of Moldova, Slovenia and Ukraine) | |
| Forest resources of Europe, CIS, North America, Australia, Japan and New Zealand | ECE/TIM/SP/17 |
| State of European forests and forestry, 1999 | ECE/TIM/SP/16 |
| Non-wood goods and services of the forest | ECE/TIM/SP/15 |

***The above series of sales publications and subscriptions are available through United Nations Publications Offices as follows:***

*Orders from Africa, Europe and the Middle East should be sent to:*

Sales and Marketing Section, Room C-113
United Nations
Palais des Nations
CH-1211 Geneva 10, Switzerland
Fax: + 41 22 917 0027
E-mail: unpubli@unog.ch

*Orders from North America, Latin America and the Caribbean, Asia and the Pacific should be sent to:*

Sales and Marketing Section, Room DC2-853
United Nations
2 United Nations Plaza
New York, N.Y. 10017
United States of America
Fax: + 1 212 963 3489
E-mail: publications@un.org

Website: http://www.un.org/Pubs/sales.htm

* * *

**Geneva Timber and Forest Discussion Papers (*original language only*)**

| | |
|---|---|
| Mobilizing Wood Resources: Can Europe's forests satisfy the increasing demand for raw material and energy under Sustainable Forest Management? | ECE/TIM/DP/48 |
| Workshop Proceedings - January 2007 | |
| European Forest Sector Outlook Study: Trends 2000-2005 Compared to the EFSOS Scenarios | ECE/TIM/DP/47 |
| Forest and Forest Products Country Profile: Uzbekistan | ECE/TIM/DP/45 |
| Forest Certification - Do Governments Have a Role? | ECE/TIM/DP/44 |
| International Forest Sector Institutions and Policy Instruments: a Source Book | ECE/TIM/DP/43 |
| Forests, Wood and Energy: Policy Interactions | ECE/TIM/DP/42 |
| Outlook for the Development of European Forest Resources | ECE/TIM/DP/41 |
| Forest and Forest Products Country Profile: Serbia and Montenegro | ECE/TIM/DP/40 |
| Forest Certification Update for the UNECE Region, 2003 | ECE/TIM/DP/39 |
| Forest and Forest Products Country Profile: Republic of Bulgaria | ECE/TIM/DP/38 |
| Forest Legislation in Europe | ECE/TIM/DP/37 |
| Value-Added Wood Products Markets, 2001-2003 | ECE/TIM/DP/36 |
| Trends in the Tropical Timber Trade, 2002-2003 | ECE/TIM/DP/35 |
| The Policy Context of the European Forest Sector | ECE/TIM/DP/34 |
| Biological Diversity, Tree Species Composition and Environmental Protection in the Regional FRA-2000 | ECE/TIM/DP/33 |
| Forestry and Forest Products Country Profile: Ukraine | ECE/TIM/DP/32 |
| The Development of European Forest Resources, 1950 to 2000: A Better Information Base | ECE/TIM/DP/31 |
| Modelling and Projections of Forest Products Demand, Supply and Trade in Europe | ECE/TIM/DP/30 |
| Employment Trends and Prospects in the European Forest Sector | ECE/TIM/DP/29 |
| Forestry Cooperation with Countries in Transition | ECE/TIM/DP/28 |
| Russian Federation Forest Sector Outlook Study | ECE/TIM/DP/27 |
| Forest and Forest Products Country Profile: Georgia | ECE/TIM/DP/26 |
| Forest Certification Update for the UNECE region, summer 2002 | ECE/TIM/DP/25 |

| | |
|---|---|
| Forecasts of economic growth in OECD and central and eastern European countries for the period 2000-2040 | ECE/TIM/DP/24 |
| Forest Certification Update for the UNECE Region, summer 2001 | ECE/TIM/DP/23 |
| Structural, Compositional and Functional Aspects of Forest Biodiversity in Europe | ECE/TIM/DP/22 |
| Markets for secondary processed wood products, 1990-2000 | ECE/TIM/DP/21 |
| Forest Certification Update for the UNECE Region, summer 2000 | ECE/TIM/DP/20 |
| Trade and environment issues in the forest and forest products sector | ECE/TIM/DP/19 |
| Multiple use forestry | ECE/TIM/DP/18 |
| Forest Certification Update for the UNECE Region, summer 1999 | ECE/TIM/DP/17 |
| A summary of "The competitive climate for wood products and paper packaging: the factors causing substitution with emphasis on environmental promotions" | ECE/TIM/DP/16 |
| Recycling, energy and market interactions | ECE/TIM/DP/15 |
| The status of forest certification in the UNECE region | ECE/TIM/DP/14 |
| The role of women on forest properties in Haute-Savoie (France): Initial researches | ECE/TIM/DP/13 |
| Interim report on the Implementation of Resolution H3 of the Helsinki Ministerial Conference on the protection of forests in Europe (Results of the second enquiry) | ECE/TIM/DP/12 |
| Manual on acute forest damage | ECE/TIM/DP/7 |

**International Forest Fire News (two issues per year)**

***The above series of publications may be requested free of charge through:***

UNECE/FAO Timber Section
Trade and Timber Division
United Nations Economic Commission for Europe
Palais des Nations
CH-1211 Geneva 10, Switzerland
Fax: + 41 22 917 0041
E-mail: info.timber@unece.org

Downloads are available at: http://www.unece.org/trade/timber

**UNECE/FAO TIMBER AND FOREST DISCUSSION PAPERS**

The objective of the Discussion Papers is to make available to a wider audience work carried out, usually by national experts, in the course of UNECE/FAO activities. The Discussion Papers do not represent the final official output of the activity but rather a contribution which because of its subject matter or quality etc. deserves to be disseminated more widely than the restricted official circles from whose work it emerged. The Discussion Papers are also utilized when the subject matter is not suitable (e.g. because of technical content, narrow focus, specialized audience) for distribution in the UNECE/FAO Timber and Forest Study Paper series. Another objective of the Discussion Papers is to stimulate dialogue and contacts among specialists.

In all cases, the author(s) of the Discussion Paper are identified, and the paper is solely their responsibility. The designation employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries. The UNECE Timber Committee, the FAO European Forestry Commission, the Government of the author's country and the FAO/UNECE secretariat, are responsible neither for the opinions expressed nor the facts presented, nor the conclusions and recommendations in the Discussion Paper.

In the interests of economy, Discussion Papers are issued in the original language, with only minor languages editing and final layout by the secretariat. They are distributed automatically to nominated forestry libraries and information centres in member countries.

This Discussion Paper is available on the Timber Section website at: http://www.unece.org/trade/timber.

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

UNECE/FAO Timber Section
Trade and Timber Division
United Nations Economic Commission for Europe
Palais des Nations
CH-1211 Geneva 10, Switzerland
Fax: +41 22 917 0041
E-mail: info.timber@unece.org
http://www.unece.org/trade/timber

## *Forest and Forest Products Country Profile: Tajikistan*

This publication, *Forest and Forest Products Country Profile of Tajikistan*, prepared by a national expert contains information about the forest resources of the country and a description of the status, trends and developments taking place in the forest and forest products sector as a whole. It focuses on forestry activities over the past decade i.e. 1995-2005, with a brief reference to the historical and geographical background. For the forest sector, as for other branches of the Tajik economy, this period was heavily influenced by the reforms resulting from the change from a centrally planned to a market economy and, additionally, by efforts to achieve sustainable forest management. The profile contains some statistical data - tables, diagrams, graphs and a brief analysis of the evolution of the forest sector and data for the principal categories and volumes of goods and services in the forestry sector. The data are mainly collected from the government statistical sources of Tajikistan, literature and other recently published sources, including the data from research institutions and statistics from NGOs.

## 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.

UNECE/FAO Timber Section
Trade and Timber Division
United Nations Economic Commission for Europe
Palais des Nations
CH-1211 Geneva 10, Switzerland
Fax: + 41 22 917 0041
E-mail: info.timber@unece.org
http://www.unece.org/trade/timber

Printed at United Nations Geneva
GE.06-21682 - XXXXXX - xxx

United Nations publication

ISSN 1020-7228

ECE/TIM/DP/46