

**ENSURING SUSTAINABILITY OF FORESTS AND
LIVELIHOODS THROUGH IMPROVED
GOVERNANCE AND CONTROL OF ILLEGAL
LOGGING FOR ECONOMIES IN TRANSITION**



**Working Document - Kyrgyz Republic
for
The World Bank**

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PREFACE AND ACKNOWLEDGEMENTS

This report has been prepared as part of a study being carried out by Savcor Indufor on ensuring sustainability of forests and livelihoods through improved governance and control of illegal logging for economies in transition and has been prepared in cooperation and consultation with individual experts and representatives of government/non governmental organizations (Annex 1).

I would like to express my sincere thanks to all who made their invaluable input while finalizing this document.

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ACRONYMS AND ABBREVIATIONS

cum	cubic meters
FAO	Food and Agriculture Organization of the United Nations
Gcal	Giga calorie
GDP	Gross Domestic Product
GEF	Global Environment Facility
ha	hectare
SFF	State Forest Fund
SFS	State Forest Service of Kyrgyz Republic
som	National currency of the Kyrgyz Republic
USD	United States Dollars
WB	World Bank
WWF	World Wide Fund for Nature

Kyrgyz National Bank's exchange rate: 1 USD = 41.3 som

1. INTRODUCTION

1.1 Forest Resources

Kyrgyz Republic has a total land area of about 20 000 km², of which about 90 per cent is covered by mountains. About 40 per cent of the territory is unsuitable for living. Cultivated lands including fields and settlements, roads and industrial installations cover about 7 per cent. Highly productive farming is possible only in the irrigated areas, which account for about 2/3 of the total arable land. Climate is generally arid and continental but due to topographic variation, local variation is significant.

Of the total population of 5.4 million 35 percent are urban and 65 per cent rural. In recent times, the living standards in the country have improved; poverty level has decreased from 50 per cent in 1997-2000 to 40.8 per cent in 2004.

The forests of Kyrgyz Republic are state property and form a unified State Forestry Fund (SFF), which includes forests and lands that are not covered with forest but earmarked for the forestry needs. In 2003, the total area of SFF lands was reported at 3.3 million ha. Forests cover 4.3 per cent or 865 000 ha of the territory of the republic. Forests are divided into four types: walnut-fruit, coniferous – firry, archa (juniper) and flood plain forests. SFF lands are located in scattered patches in the remote mountain areas (except from flood-plain forests).

Total growing stock in the Kyrgyz Republic is 28.9 million cum, of which Tien Shan spruce (*Peacea Shrenkiana*) represents 53 per cent, Turkestan, Zeravshan and Hemisphere juniper (*Juniperus*) 13 per cent, walnut-fruit, walnut (*Juglans regia*) 13 per cent, hard-leaf (oak, ash-tree, maple) 5 per cent, soft-leaf (birch, poplar, willow) 4 per cent, and bushes 8 per cent (Abdykaimov et al. 2003).

The forest area has changed in terms of location, species, composition, and structure of forests (Dynamic of Timberland...). From 1930 to 1966, forest area decreased 2.9 per cent or 574 200 ha mainly because continuous logging led to forest degradation. In contrast, between 1966-2000 the forest area increased 1.2 per cent or 245 100 ha as a result of stopping continuous logging, natural regeneration of forests and tree planting. The main agents of environmental damage and forest degradation include illegal logging, pests, forest diseases and fire.

Forestry Code of Kyrgyz Republic of 1999 provides the forests with an exceptional protection status assign them mainly soil-protecting, water-protecting, ecological, health, sanitary, and other similar functions; industrial logging is prohibited.

According to the State Forestry Service of Kyrgyz Republic, the *total volume of all types of legal logging*, was in 2002-2004 on average 33 000 cum per year (see Annex 3). Fuelwood accounts for about 70 per cent of total volume. Besides logging, the local people are given permits to collect residues which represents about 15 000 cum annually. Thus, the average volume of legal logging on the SFF's territory is 48 000 per annum. Annual forest growth is 449 000 cum.

1.2 Socio-economic Contribution of Forest Sector

The economic contribution of the forest sector in monetary terms - equity of forestry (leskhozoes) – is about 50.0 million som (USD 1.2 million), which is approximately 0.05% of country's GDP (102.8 billion som or USD 2.5 billion). However, forests and forest resource management play a major role in protection of watershed and biodiversity resources within fragile mountainous ecosystems, and this contribution is excluded from the available estimates.

Timber exports from Kyrgyzstan are limited to products of exceptional value (walnut timber etc.) but the volumes of such products are small as they are extracted as by-products of activities such as sanitary harvesting. The annual authorized volume of logging of walnut is about 1 500 cum, and value of exported value is insignificant compared to total exports from the country. In January and February 2005, the export value of all types of commodities was USD 100.4 millions, import - USD 160 millions.

According to the data of State Forestry Service of Kyrgyz Republic, the number of staff in the public forest sector is 2 550 people. Taking into account all the temporary and seasonal workers, the average number of employees in the forest sector reaches 6 000 people or 0.2% of able population of the republic.

Traditionally, the Kyrgyz people living in rural areas use wood for heating but it is not the main energy source. Most of them use electricity for cooking and heating, as well as coal, gas, and alternative resources such as “kiziak” (dried livestock excrement), “ken” (residues of hay and excrement pressed by livestock), stiffened stems of crops (sunflower, corn, cotton) and different kinds of brushwood.

However, because of poverty and other social problems people in the rural areas experience difficulties in covering the increased cost of principal energy sources (electricity, gas, coal, and firewood). As a result, people in the remote are forced to use illegally harvested firewood. The proportion and number of people, depending on firewood for heating has not been properly surveyed yet but there are about 1.2 million people settled near or around forests (22 per cent of total population), and about 150 000 people live within forest areas (3 per cent of total population) (EXSSD 2002).

In urban areas, fuelwood is not consumed in large quantities. If gas and central heating are unavailable, the most common alternative is electricity, thermal energy from coal combustion. The government provides poor families coal free or charge.

The future trend in the country's energy supply is uncertain, between 2001-2003 the production of natural gas and coal and lignite decreased by 17.4 per cent and 13.5 per cent, respectively. During the same period, the production of energy for heating purposes declined by 6.5 per cent.

1.3 International Cooperation

State Forestry Service cooperates with international organizations in order to support and reform the forest sector of the republic, develop the protected areas and conserve biodiversity. It is the executive agency implementing the following projects:

- Kyrgyz-Swiss support program of the forestry of Kyrgyzstan;
- Central-Asian Transboundary Project GEF\WB on the Western Tien-Shan Biodiversity Conservation;
- German Technical Cooperation Agency (GTZ);
- TACIS;
- FAO, TSP/KYR/2904 project “Legal frameworks of the forest and game sector development”.

The Central-Asian Transboundary Project GEF\WB on the Western Tien-Shan Biodiversity Conservation carries out specific work on the territory of three reserves and adjacent villages in order to reduce a man-made pressure on natural resources, including the forest. The assessments of World Bank missions and a social survey of the population indicate that the small grants program aimed to promote reforestation and identification of alternative income sources for the local population has had a positive impact.

A UNDP program implementing a functional analysis of all state institutions is supporting efforts on good governance and could be relevant to the forest sector. The outcome of this programme will directly influence the structural reform of the forest sector.

2. DEFINITION OF ILLEGAL LOGGING

Generally, illegal logging may be perceived in different ways depending on domestic legislation. Considering the format required in ToR the definition covers all timber harvesting activities that fail to respect national laws and norms that regulate such harvesting operations. Thus the national definition of illegal logging should cover every element of illegal activity occurring in forests.

Forest Code of the Kyrgyz Republic from July 8, 1999 No. 66 contains the following regulations of relevance to illegal logging:

- Definition of “forest logging ticket” as document authorizing the forest user to cut secondary forest materials;
- Article 58 defining the logging order;
- Article 59 defining the Forest Logging Fund and logging volume;
- Article 60 defining harvesting age and logging turnover;
- Article 96 indicating that “individuals violating the Forest Code are subject to disciplinary, administrative or criminal liability pursuant to the legislation of the Kyrgyz Republic”;
- Article 97 stating that “legal and physical persons, foreign citizens and individuals without citizenship are obliged to compensate damage harmed to the forest and hunting funds in the order provided by the legislation of the Kyrgyz Republic”.

The Administrative Code of the Kyrgyz Republic from August 4, 1998 # 114 is relevant to illegal logging in following terms:

- Article 127 of the sets up an administrative liability for illegal logging, damage and destruction of trees, forest cultures and saplings, and;
- Article 128 defines administrative liability for forest logging which is not in accordance with goals and conditions provided in the logging ticket, order or the tree ticket.

Article 279 of the Crime Code of the Kyrgyz Republic from October 1, 1997 # 68 (CC of the KR) sets up the crime liability for illegal logging of trees and shrubbery, and Comments to CC of the KR indicates that:

- Logging is a saw down, cutting, grubbing or other actions leading to death or threat to trees. Illegal logging is implemented without appropriate permit or with infringement of its conditions (logging of larger number of trees, other species, in other place and etc.).

Resolution of the Government of the Kyrgyz Republic from August 17, 1992 # 403 fixed the material liability for damage caused to forests. Material liability has been created if enterprises, organizations (including collective and cooperative entities), institutions and citizens (including foreign) are guilty of following offences:

- illegal logging and damaging of growing trees and shrubbery (cutting or damage to trees and shrubbery at site not assigned for logging);
- cutting of underwood without the forest ticket (order) or tree ticket (order), or harvesting in sites and/or quantities or of species that are not indicated in the ticket;
- appropriation of felled trees, and wind-fallen trees and shrubberies or unauthorized cutting of dead-wood; and etc.

Thus, based on analysis of regulatory-legal acts of the Kyrgyz Republic regulating issues of illegal logging, we can make conclusion that local definition of illegal logging is:

«Cutting of growing trees without permit or in violation of conditions set in the ticket with respect to site, quantity or species».

Logging in a protected or prohibited area can be assumed to be illegal when a permit has not been issued. Various other laws and regulations cover all other legal violations. Only statistics under the national definition of illegal loggings are available.

3. ILLEGAL LOGGING

3.1 Volume of Illegal Logging

3.1.1 Official

The number of incidents of illegal logging as well as their volume are provided in the report, submitted every quarter by the subdivisions of the State Forest Service of the Kyrgyz Republic (SFS) – leskhozes – to oblast forest departments, and from there further to the

national level. Incidents of illegal logging are discovered a result of operative actions of forest guards and scheduled (fall, spring), unscheduled and monitoring inspections.

During last three years (2002-2004) the forest inspection discovered illegal logging in the amount of 7482 cum, which represents 7.5 per cent of legal logging in that same period. The annual average is about 2 500 cum and only about 20 per cent of it is confiscated (Table 3.1).

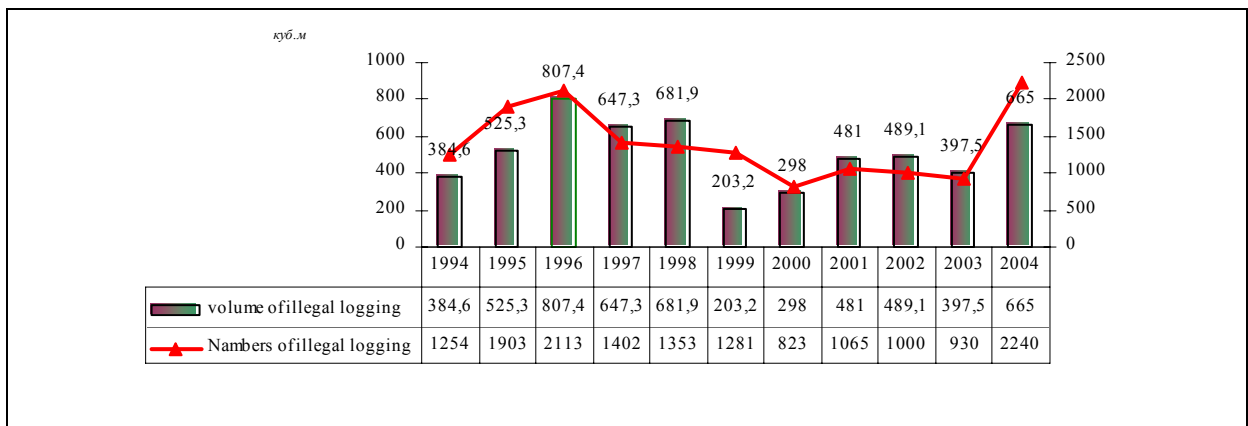
The most sought-after species was fir which account for some 70 per cent of total illegal logging volume. Walnut and the hard-leaf trees represented 15 per cent, acra (juniper) 5%, and the balance, about 10 per cent, consisted of trees growing on floodlands and bushes.

Table 3.1 Official volumes of legal and illegal logging

Year	Legal logging m ³	Illegal logging m ³			Illegal of legal logging %
		Not confiscatec	Confiscatec	Total	
2002	35 765.7	2 093.9	489.1	2 583.0	7.2
2003	36 063.3	1 709.0	397.5	2 106.5	5.8
2004	27 277.7	2 127.5	665.0	2 792.5	10.2
Total	99 106.7	5 930.4	1 551.6	7 482.0	7.5
Annual average	33 035.6	1 976.8	517.2	2 494.0	7.5

Over the last ten years, there has been no clear trend in the number of incidents and volume of illegal logging. The peak was reached in 1996 after which the volumes substantially declined. In 2004, the volume and number of incidents have surged anew (Figure 3.1).

Figure 3.1 Illegal Logging (only confiscated volume)



Walnut burls (wood-knobs) are in high demand in the world markets and illegal extraction of them has been on the increase. The illegal extraction of walnut wood-knob was at its peak in 1998-2000. In the last four years (2001-2004), 517 wood-knobs weighing over 15 tons were seized and confiscated.

3.2 Estimated Volume

To assess the reliability of official data, an alternative estimate based on consumption of fuelwood was derived. The analysis was conducted separately in Jalalabad (walnut-fruit zone), Issyk-Kul (fir zone), Naryn (flood-land and fir zones) oblasts.

Interviews of leskhoze managers responsible for the State Forestry Fund areas of the Jalalabad oblast suggest that a family consisting of 8-9 people and living within forests areas consumes 6-8 cum of timber a year. This demand is mainly satisfied with wood collected in the forests when cleaning the forest from litter (brushwood, branches, and sprig).

Thus, it was estimated that the wood consumed for heating purposes by the population living within the forest areas is 0.6 cum per person per year. The total consumption for the country is estimated at 90 000 cum per year. Those who live on adjacent territory have more opportunities to use alternative energy sources and their consumption was estimated to be lower, 0.2 cum per person yielding a total of 240 000 cum per annum. The population settled far from the timberland usually uses only limited amount of firewood and as a rule do not extract it from forest areas because this would be laborious and time consuming and would involve a transportation cost. Instead, they utilize wood from the nearest plantations, gardens, forest belt etc.

The total consumption of timber from forest areas adds up to 330 000 cum per year. This is considerably more than the official volume of illegal logging recorded at 2 500 cum per year or even the recorded volume of legal logging, 48 000 cum per year (including residues, see Ch. 1.1.). It also exceeds by a large margin the annual allowable cut from SFF lands fixed at 40 000 cum of timber per year (excluding residues) (State Program 2001). The annual forest growth in all types of forests is estimated at 449 000 cum.

3.3 Types of Illegal Logging

Poverty-related illegal logging involves much larger volumes than commercially oriented illegal activities. The main factors pushing the population to illegal logging are social; poverty and unemployment. The poor typically harvest small quantities of easily cut poles and branches and transport them by carrying the load on one's back or on carts pulled by animals. Area close to settlements such as flood-plain forests, shelterbelts, tree lines along roads are vulnerable to illegal logging.

Illegal logging with commercial purposes has another target, fir and walnut trees. Illegal logging of walnut timber and walnut wood-knob is typical of Jalalabad oblast. High profits and lack of effective enforcement encourage these types of activities.

In the past easily accessible sites suffered serious damage from illegal logging. Therefore lately, the sites of approved logging are situated, as a rule, in remote areas which are difficult to access. In such remote places, illegal logging of fuelwood is not economically viable due to high transportation cost.

Forests under local administrations often suffer from high intensity of illegal logging. The probable reasons include lack of responsible and competent management, non-transparent

management structure which does allow local population to have control over local administration as well as tight social networks fostering corruption.

Table 3.2 Checklist on Poverty Driven Illegal Activities in the Forest Sector

Statement	True/ False	Comment
Almost all (more than 80%) of rural people depend on fuelwood for energy needs	false	
The majority (more than 50%) of rural people depend on fuelwood for energy needs	true	
There is no feasible alternative energy source available for the rural people who depend on fuelwood, especially the poor	false	
Almost all (more than (80%) of urban people depend on fuelwood (and/or charcoal) for energy needs	false	
The majority (more than 50%) of urban people depend on fuelwood (and/or charcoal) for energy needs	true	
There is no feasible alternative energy source available for the urban people who depend on fuelwood (and/or charcoal), especially the poor	false	
Almost all (more than (80%) fuelwood (and charcoal) production and trade is done outside of the formal economy/ without legal authorisation	false	
The majority (more than 50%) of fuelwood (and charcoal) production and trade is done outside of the formal economy/ without legal authorisation	true	
The legally extractable supply of fuelwood (and charcoal) is sufficient to meet the subsistence needs of rural and urban populations.	false	
Almost all (more than 80%) of wood used in local construction in the rural areas in harvested and transported without legal authorisation	false	
Most (more than 50%) of wood used in local construction in the rural areas in harvested and transported without legal authorisation	true	

3.4 Export of Illegal Timber

Anecdotal evidence suggests that only the most valuable wood products such as walnut burls (wood knobs) are exported illegally. Smuggled goods are often passed across the Uzbek-Kyrgyz border.

3.5 Impact on Government Finances

In 2002-2004, the total allocation from state budget was on average 56 million som (USD 1.3 million), and other part, 50 million som (USD 1.2 million), are “own” funds i.e. self-financing component of the budget (Table 3.3). Revenue is generated mainly by selling timber, seedlings, beekeeping, and rental of land areas and pastures.

In 2002-2004, timber revenue contributed 13.4 million som (USD 325 000). This amount was generated almost exclusive from timber sales; a minor amount was collected from granting rights to collect residues when cleaning forests. The average volume of timber sales was 34 031 cum per year, which is estimated to be evenly split between industrial timber and fuelwood.

The contribution of the timber revenue represents 0.08% of the total state budget of 16.1 billion som (USD 400 million). Proceeds of wood of private lands were not examined in this study. Similarly, the fees related to wood grown on the local administrations' lands are paid to the budget of local administrations, and they were not analyzed.

Table 3.3 Funding of Public Forest Sector

Funding for public forest sector	2002	2003	2004	Annual average
	som 1 000			
Total allocation from state budget	51 258	58 779	58 660	56 232
- Of which, "own funding"	n/a	n/a	n/a	50 000
- Of which timber revenue	n/a	n/a	n/a	13 445
- <i>Revenue from granting rights to collect residues</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>161</i>
- <i>Revenue from timber sales</i>	<i>13 442</i>	<i>13 537</i>	<i>12 873</i>	<i>13 284</i>
- <i>(volume of timber sales m³)</i>	<i>(35 719.0)</i>	<i>(36 999.8)</i>	<i>(29 375.2)</i>	<i>(3 4031.3)</i>

Taking the official volume of illegal timber as a basis, the "lost" market value would be 309 000 som per year (Table 3.4). However, if the value were derived based on the estimated on fuelwood consumption, it would be much larger. The estimate on fuelwood consumption from the state forest fund was 330 000 cum, and assuming that the market price would be the average price set in Ortok and Kara-Alma forest regions, 50 som per 1 cum, the market value of illegal timber would be 16.5 million som (USD 400 000). This is more than the revenue from legal timber sales.

It is stressed that these sums refer to the amount that should have been collected if all harvested timber had been legal. It does not imply that timber revenue could be increased in the future. If the legal supply remains at the present level, no additional income will be generated.

Table 3.4 Market Value of Illegal Timber Based on Official Data

Species	Official volume of illegal logging		Unit prices Som per cum ^b	Total Som
	cum ^b	%		
Walnut	375	15	408.3	153 112.5
Fir	1 750	70	89.2	156 100.0
Juniper	125	5	n/a	n/a
Poplar	250	10	n/a	n/a
Total	2 500	100		309 212.5

a. Based on estimated proportions of the total

b. Average Tariffs for wood sold on stump in the Kyrgyz Republic approved by the Resolution of the Government of the Kyrgyz Republic dated July 7, 1995

3.6 Threats to Environment

The seriousness of environmental threat from illegal logging is evidenced by the large margin by which the actual harvesting volume exceeds the level considered sustainable. The total consumption of timber from forest areas was estimated at 330 000 cum per year (including residues), while the annual allowable cut is 40 000 cum of timber per year (excluding residues).

Moreover, the territory of Kyrgyzstan has specific natural and climatic conditions with a high risk of natural disasters. For example, 27 mudflows, 16 floods, 47 landslides, 11 earthquakes, 25 avalanches and 40 other dangerous occurrences were registered in 2003 (Statistical Data ... 2003). Illegal logging concentrates on the most accessible sites and may result in deforestation and irretrievable damage. For instance in At-Bashi region, during cold spells (-45°C) the population was forced to use wood in remote regions, and in 1994 more than 3 000 ha of floodland forest located near the settlements, was logged completely. In this case, however, the forest is being restored as it has regenerated through coppicing.

The forests most vulnerable to illegal logging are those located around settlements, shelterbelts, tree lines along the roads and settlements, gardens and parks.

4. GOVERNANCE

4.1 Policy Framework

4.1.1 Forest Policy

Decree of the President of KR “On new national forest policy in the republic” from October 6, 1998 became a basis to develop a new forest policy for Kyrgyzstan. The decree states that it is important to develop a new National Forest Policy ensuring creation of the required conditions in 2000-2005 to conserve, dynamically increase, and rationally use the forests. The forest complex must be developed in a sustainable manner, and the protection of the unique nature of Kyrgyzstan must be improved taking into account the extremely important role of forests for hydrology and recreation. The modern national forest policy is directed towards systematically addressing forest-related problems and providing a transition from forest use to

their efficient management aiming to conserve the forest and increase the national forest welfare.

In accordance with the above-mentioned Decree of the President of Kyrgyz Republic, the Concept of the Forest Sector Development (up to 2025), and the State program “Forest” were developed and approved by the resolution of the Government of the Kyrgyz Republic from April 14, 2004 No 256. These two political documents set up the goals and Action Plan defining measures and funds required to implement them.

The forest policy of Kyrgyzstan is based on three fundamental components, “Forest – Man - State”, and building on them, the Concept of Forestry Development defines 10 strategic directions.

- (1) Ensure all forests and biodiversity conservation in the country.
- (2) Determine technical norms for sustainable forest management.
- (3) Delegate part of production functions to the private sector.
- (4) Improve the system of joint forest management and rental relations.
- (5) Rationalize the forest service structure at the territorial and national level.
- (6) Conduct the fiscal reform in structural divisions of State Forestry Service.
- (7) Promote status of forest sector workers.
- (8) Improve forest science and education.
- (9) Increase effectiveness of the forest sector financing system.
- (10) Increase awareness on the forestry sector.

The approval of the national forest program (up to 2015) by the resolution of the Government of Kyrgyz Republic from November 25, 2004, #858 was the next step to implement the Concept of Forestry Sector Development of Kyrgyzstan. The national forest program presented a set of measures needed to implement the forest policy. They aim to establish conditions ensuring (i) sustainable forest management in compliance with continuous, rational and sustained use of the forest fund and its flora and fauna; (ii) timely and high-quality reproduction of the forests and their fauna and flora, and, (iii) conservation of forest resources, their recreational and environmental capacity as well as their biological diversity.

4.1.2 Policy on Illegal Logging

Article 4, provision 4 of the Constitution of Kyrgyz Republic defines the forest as an object, which is under a special protection of the state. The key approach to improve forest protection is the introduction of community-based forest management. Both the Forestry Development Concept and the National Forestry Program promote this approach directed to increase the interest of local communities in forest development. Since 1995, innovative methods of community-based forest management have been implemented by the Government together with the Kyrgyz-Swiss support program (Box 4.1). Simultaneously, more severe punishments for illegal logging are introduced and the agencies protecting and controlling the forest resources are strengthened.

The most harmful damage to the forest fund is the illegal logging of walnut and walnut burl (wood-knob). To investigate illegal logging and export of walnut and conservation of walnut forests a special commission of the Parliament of Kyrgyz Republic was created. As a result,

logging of walnut trees was temporarily prohibited through a Parliamentary decree. Accordingly, in 2001 SFS suspended harvesting of walnut trees.

Box 4.1 Community-based forest management

The participation of the local population in forest management has been increased by developing a renting system involving community based forest management (CBFM). The concept was introduced with the assistance of the Kyrgyz-Swiss support program for the forest sector of Kyrgyzstan.

The objectives of CBFM are:

- to assist in the sustainable use, guarding and protection of forest areas through rational use, strengthening protection from self-inflicted deforestation, fire, conflagrations and other occasions; assist in the protection against pests, diseases and other negative factors;
- increase the living standard of rural population, especially the population living in and around forest areas, by meeting their needs for forest products without jeopardizing rational and sustainable use of existing forest resources and by encouraging tree planting;
- increase forest cover by restoring forests in the State Land Fund, in the redistributed land fund and in private lands, which are not used for agriculture, but are suitable for reforestation through initiatives of the local population;
- support the initiatives of local population to create forest cultures, gardens and nurseries;
- achieve a wide involvement of the local population in forest management.

According to the CBFM concept, the local population acquires the right to use the forest products in an assigned area in return for carrying out silvicultural works: afforestation/reforestation, cultivation of underwood, forest harvesting etc.

However, the measures undertaken by the Government cannot provide full protection of the forest because the problems of social character: poverty of rural dwellers, lack of affordable energy caused by increase in energy prices (coal, gas, electricity), population growth, unequal access to forest resources, lack of housing, high cost of construction material and several other reasons pushing the population to violate the agreed rules of forest use to meet their basic needs.

4.1.3 Relevance of the Government's Response

The current policy still suffers from inadequate attention to the gap between demand and supply of timber resource, which is the main driver for illegal activities. The Concept of Forestry Development states that the annual volume of wood obtained by forestry services will constitute approximately 50 000 cum, and it is obvious that such volume will not meet the needs of the country.

The introduction of community-based forest management is an appropriate response in a situation where timber supply is inadequate and government lack capacity to protect forest resources. Community-based management is expected to encourage increased production of timber resources, fuelwood and industrial timber, and mobilization of the communities has already improved forest protection. In both ways, the CBFM concept is likely to contribute to reduced illegal logging.

Energy policy seems not to be directly linked to measures aiming to reduce illegal logging. The priority areas for enhancing the energy supply are not the more remote areas where lack of alternative energy sources is encouraging illegal logging of fuelwood.

4.2 Legal Framework

The State Forestry Service of the Kyrgyz Republic fights against illegal logging relying on the following normative and legal acts:

- The Forest Code of the KR from June 29, 1999 regulating the forest relations in the Kyrgyz Republic is directed towards creating conditions for the rational use, reproduction, guarding and protection of forests, increasing the environmental and resource capacity of forest;
- Law of the KR from June 17, 1999 #59 “On Fauna”, which sets the legal relations in the sphere of guarding, use and reproduction of the objects of fauna;
- Law of the KR from June 16, 1999 #53 “On Environmental Protection”, that defines the policy and regulates legal relations in the sphere of nature management and environmental protection in the Kyrgyz Republic;
- Law of the KR from May 28, 1994 # 1562-XII “On Protected areas”, which regulates relations in the sphere of organization, guarding and use of protected areas in order to conserve unique natural complexes and objects, remarkable natural formations, genetic pool of fauna and flora, studying natural processes in the biosphere and control the changes of its conditions;
- Law of the KR from June 20, 2001 #53 “On Protection and Use of Flora”, which sets legal basis for providing effective protection, rational use and reproduction of resources of flora, including forests;
- Law of the KR from June 16, 1999 # 54 “On Environmental Expertise”, which regulates legal relations in the sphere of environmental expertise aimed to implement constitutional right of the citizens for favorable environment by preventing negative environmental consequences, arising as a result of performing economic or other activities;
- Code of the Kyrgyz Republic of administration liability, which regulates relations and envisages administrative liability for the law violation in the sphere of nature protection, particularly for the illegal harvesting of wood;
- Crime Code of the Kyrgyz Republic which envisages the crime liability for ecological violations including illegal harvesting of wood;
- Civil code of the Kyrgyz Republic from August 1, 1992 #403 “On Material Liability for damage, caused to forestry”, which approves taxes and norms of losses and damage calculation to be reimbursed by violators;
- Regulation on the State Forestry Service of the Kyrgyz Republic, which sets the rights and responsibilities of state authorities for the forest sector management;
- Other regulatory-legal acts.

Due to the grave situation regarding illegal logging in walnut forests, the Parliament of Kyrgyz Republic adopted amendments to the Forest Codex concerning tree species of exceptional value in May 2003. The “Rules of cutting of valuable wood species in Kyrgyz Republic” were developed and are they have been submitted to the Government of Kyrgyz Republic for their consideration. There are also amendments and additions made to the Criminal and Administrative Codes of Kyrgyz Republic that are also being considered by the Parliament of Kyrgyz Republic.

Transition to the market economy without a significant change of legal basis of the forest management system is impossible. Current changes in the republic accompanied by the increase of the number of land users and entrepreneurs call for a change in the legal structure,

In particular, it would be necessary to separate the two key functions of the leskhozoes, control and economic functions. The dependence of leskhozoes on the revenue generated from timber harvesting creates a conflict of interest and makes unbiased control of the harvesting activities difficult.

Also, the present legal framework provides inadequate support to establishment of private land property and community-managed land property. Legislative norms are lacking with respect to their responsibility to create shelterbelts around fields and along roads, and to establish coastal protection forests, the wood of which could be used by local communities to meet their needs of firewood and partially of construction materials. In the past, when the collective farms existed, they were responsible to use no less than 10% of cultivated lands for shelterbelts and reforestation aiming for land improvement.

4.3 Monitoring and Control System

4.3.1 Monitoring and Control in Forest Administration

In accordance with the current legislation of the Kyrgyz Republic, the State Forestry Service of the Kyrgyz Republic (SFS) established in 2001, is responsible for state control on protection, use and reproduction of the flora and fauna of the Kyrgyz Republic including protection of the forests from fire, illegal logging and other violations.

SFS territorial agencies include oblast forest services, state forest enterprises (leskhozoes), state reserves (zapovedniks), state and national parks, state reserves, and other organizations. Leskhozoes are the main structural unit of the SFS. The administrative chain of command within leskhozoes goes from directors and engineers down to forest wardens and foresters. The staff of the State Forestry Service is 2 550 people of which 43 per cent are directly involved in forest protection activities: foresters – 898 people, forest wardens – 164 people, and engineers of forest protection – 46 people.

Leskhoz foresters have direct responsibility for protecting forests from illegal harvesting. The size of the forest area they supervise varies between 1 000–5 000 ha depending on the forest type and distance to inhabited areas. Forest wardens manage a unit consisting of 5-6 sites supervised by individual foresters. They control forest condition and the quality of work by foresters. Planned controls are carried out twice a year, in the spring and in the autumn. In addition, unannounced and extraordinary controls may be conducted.

SFS undertakes measures to prevent violation against forests – special teams are set up for operational response. All the actions are coordinated with local law enforcement agencies. However, the State Forestry Authorities have limited authority. For example, they are not entitled to stop and examine the auto transport out of range SFF lands. Also, their responsibility is confined to SFF territory.

The material and technical resources are generally limited and outdated. Privatization of state property in 1990-1995 caused huge damage to the material and technical equipment. Forest protection is not funded from state budget except for salaries and contribution to the Social Fund. Fuel and equipment etc. are financed from leskhozoes “own” funds. Systems for financial management and information management are outdated.

Foresters have comparatively low salaries, 600-800 soms per month (USD 15-20), and they lack material resources and technical equipment (vehicles, means of communications, personal security facilities). The incentives are limited considering the fact that the work can pose a risk for their lives. The foresters often take advantage of their official position to gain extra earnings with which to feed their families.

4.3.2 Transparency of Timber Sales

Timber is sold at markets, stores for building materials and leskhozoes. Timber sales in leskhozoes are not fully transparent, as the procedure for bidding could be substantially improved (Table 4.1). Selling at the markets and stores is transparent and open. Wood is cheaper in the forest than at the markets and stores. For example, coniferous building timber in forests costs only 1 200 soms per 1 cum, and at markets – from 2 000 to 3 500 soms per cum.

Concession agreements in the Kyrgyz Republic in the forest sector are not applied. Currently, some of the economic functions in leskhozoes (reforestation, collecting fruits, improvement and sanitary cutting and others) are being delegated to the private sector on a competitive (tender) basis. Appropriate regulation acts are being developed with the assistance of the Kyrgyz-Swiss Forestry Program.

Table 4.1 Transparency of Timber Sales

Statement	True/ false	Comment
<i>Awarding concessions/selling timber</i>		
Concessions are awarded/timber is sold predominantly through competitive bidding	false	Leskhozoes establish the prices on the basis of cost of wood on a root, accounting of expenses, taxes and will coordinate to antimonopoly bodies
The public has notice and opportunity to bid before awards	false	
Several bids are presented as a rule in the bidding processes	false	
Bids are made public after awards	false	Only in leskhozoes
Award rules are publicly available	false	
Unsuccessful bidders and other interested parties may challenge awards	false	
An independent internal government watchdog polices the process	true	Financial police, antimonopoly bodies
Forest officials must disclose financial interests in the forest sector (own and those of family members/close relatives)	true	
<i>Timber harvesting and sales from valid concessions</i>		
Concession contracts, inventories and plans are publicly available	n/a true	For concession contracts for inventories and plans
Rules regarding forest practices concerning concession areas are publicly available	true	
Citizens may bring lawsuits or file administrative complaints to enforce concession requirements	true	
<i>Timber harvesting and sales from private forests</i>		
Forest officials have a procedure for controlling in the field timber harvesting and sales from private forests	false	There are no private forests

Statement	True/ false	Comment
Rules regarding forest practices on private lands are publicly available and accessible to private forest owners	false	There are no private forests
Transport of timber		
Government officials have a procedure for controlling the transport of timber	false	Only GAI – Governmental Auto Inspection (Police) have
Government officials have a procedure for verifying the origin of timber being transported	false	
Sales of confiscated timber		
Records are kept on volumes and assortments of illegally procured or transported wood captured by officials	true	In the leskhoz
Captured wood is sold in public auctions or through other kinds of public bidding	false	
Records are kept on volumes confiscated and sold as well as on prices obtained	true	In the leskhoz
Processing of forest products		
Law requires licensing or registration of commercial processing facilities	true	
Government performs regular inspections of processors	true	
Export or import of forest products		
Customs officials trained to recognize restricted/prohibited species	true	
Concealing revenue from forest activities		
Forest revenue system (royalties, taxes etc.) establish a clear basis for monitoring revenue collection (volume or area based)	false	
Records are kept on logging volumes and revenue collection by defined geographic areas	true	
Periodic audits are carried out to verify that revenue collected matches with logging volumes/ areas under production	true	
Civil services, social, and institutional factors that influence illegal activity		
Forestry officials regularly trained to upgrade law enforcement skills	true	
Judges and prosecutors trained in forest sector issues	false	
Forest agency is subject to independent audits	true	
Civil service has ethical code-of-conduct (e.g. regarding acceptance of gifts and benefits)	true	
Ombudsman or other independent mechanism responds to public complaints	true	

4.3.3 System of Law Enforcement

The procedural norms for law enforcement can be considered inadequate. After the reform of judicial system of the republic, the state forest inspectors lost their right to impose administrative levies – fines for violation of law, envisaged by the Administration Code, particularly for illegal destruction or damage of trees. The imposing of fines is done by courts, the procedures of which require a lot of work and time on completing special statements – from one to nine months. Because of the length of this procedure and the administrative burden it creates, it is pointless for the state inspectors to call violators harvesting small volumes of fuelwood to administrative liability.

In addition, illegal harvesting of fuelwood is often driven by poverty, which makes it difficult for inspectors to act. Typically, even if the perpetrators are caught, they are given only a notice as the inspectors are aware that the poor are unable to pay fines.

The efficiency of courts is low. Currently, there are 120 unresolved criminal cases in judicial bodies. The total amount of damage involved in these cases reaches 6 549 300 soms (USD 160 000). Only a limited portion of the damage compensation ordered by the courts can actually be collected: in 2002 - 30.4%, in 2003 – 58%, and in 2004 -42%.

According to the representatives of judicial bodies, cases regarding illegal harvest of walnut burls (wood-knobs) are difficult to conduct because sufficient evidence is usually lacking. The Criminal Code of Kyrgyz Republic is applicable only to illegal deforestation (article 279) and stealing (articles 164, 169). Typically, the suspects claim that the walnuts in their possession were obtained from unknown persons and that they were simply practicing a legitimate entrepreneurial activity, resale of goods. Usually, the suspects are acquitted or they are obliged to pay small fines.

Overall, the efficiency of the enforcement chain is low. Based on control surveys, the probability of detection is 0.3. Based on administrative records, the probability of arrest – 0.6, and probability of prosecution – 0.4. The average duration of legal process from detection to prosecution is about nine months (Box 4.2).

The law enforcement system is also weakened by the fact that the law enforcement staff themselves sometimes engage in protecting criminals. Those engaged in commercial illegal logging are practically never punished (Box 4.3).

Box 4.2 Profitability of Illegal Logging Versus Legal Logging

The motives behind illegal activities may be illustrated by assessing the “profitability” of illegal logging for a private forest owner. The basic data for the calculation below was derived from available statistics and the results of the questionnaire survey. In the calculation a “disenforcement incentive” is calculated based on the probability that illegal loggers have to pay a fine. This is considered one of the “costs” of illegal logging (along with other costs). According to the calculation, the “disenforcement incentive” for private forest owners is negligible, USD 0.15 per m³.

The profitability is estimated by comparing the benefits and costs of illegal logging to those of illegal logging. The results shows, that for an average private forest owners the profitability ratio is 1.16. In other words, the profit from illegal logging is 16% higher than for illegal logging. The model assumes a rationality oriented solely towards profit-making and it is therefore more relevant to commercial illegal activities and less for illegal activities that are driven by subsistence needs.

COMPARISON OF ENFORCEMENT OF DISINCENTIVE AND PROFIT FROM ILLEGAL LOGGING

ENFORCEMENT DISINCENTIVE	
Average timber volume involved in illegal logging incident (m ³)	100
Probability of detection of illegal logging	0.3
Probability of prosecution given detection	0.6
Probability of conviction given prosecution	0.4
Probability of enforcement of penalty given conviction	0.5
Average value of penalty (USD)	500
Enforcement disincentive (non-discounted)	18.0
Average time elapsed from detection to conviction (days)	270
Discounting factor	25
Enforcement disincentive (USD)	15.3
<i>Enforcement disincentive (USD per m³)</i>	<i>0.15</i>
NET PROFIT FROM ILLEGAL LOGGING	
Average sales price of illegally harvested timber (USD per m ³)	200
Average cost of illegal felling and transport (direct cost + corruption, USD per m ³)	75
Average net profit for illegally harvested timber (USD per m ³)	125
<i>Profit from illegal logging (\$ per m³)</i>	<i>124.85</i>
NET PROFIT FROM LEGAL LOGGING	
Average sales price of legally harvested timber (USD per m ³)	180
Average cost of legal felling and transport (USD per m ³)	60
Average fees and taxes in legal logging (USD per m ³)	12
<i>Average net profit for legally harvested timber (USD per m³)</i>	<i>108</i>
<i>Profitability ratio (illegal vs. legal logging)</i>	<i>1.16</i>

Box 4.3 Example of Corruption-related Illegal Logging

During a raid conducted on June 12 2004, inspectors of Jalalabad forest service and the Ministry of Internal Affairs arrested two trucks transporting nine walnut burls (wood-knobs) in Beshik-Jon village of Bazarkorgon district in the southern region of the Kyrgyz republic. Shortly after the arrest the district head of the government's auto inspection service arrived on the scene preventing the arrest and allowing the truck to continue its journey.

At this moment, one of the forest inspectors called the chief of Jalalabad forest administration and the Jalalabad chief of the Ministry of Internal Affairs and informed them of the situation. They decided to intervene and managed to stop the truck in another village, Besh-Kepe, of the Bazarkorgon district. The driver was arrested and taken to the militia office.

Surprisingly, in the following developments the Department of Internal Affairs in the Bazarkorgon district pressed charges against the staff of the forest district and militia in Jalalabad who provided assistance in stopping the truck and arresting the suspect. The charge was based on article 341 of the clause 2 of the Criminal Code of Kyrgyz Republic. The case was passed on to the Special Office of the Public Prosecutor in Osh, Jalalabad and Batken oblasts for further consideration. These charges were in the end dropped, but the suspect driver was never prosecuted.

5. CONCLUSIONS AND RECOMMENDATIONS

Illegal logging in the Kyrgyz Republic is of two types. Poverty drives people to harvest fuelwood illegally to meet their energy needs. People involved in more commercially oriented activities seek to increase their wealth.

Illegal logging exceeds the legal logging by a wide margin. The annual legal logging on the lands of SFF constitutes in average 48 000 cum but a theoretical estimate on the actual consumption is 330 000 cum per year. The demand for fuelwood may even increase because the supply of basic energy, electric power, coal, gas, and oil is decreasing.

The republic lacks programs supporting populations residing inside or around forest areas to have access to alternative sources of income and energy. Such programs would be conducive to reducing forest damage.

Current legislation does not oblige private land owners and land users to create and cultivate shelterbelts around fields or coastal areas or plantations of fast growing trees, the wood from which could be used by the local population to satisfy their needs for firewood and partially for construction materials. Increased supply could alleviate the problem of illegal logging.

Commercially oriented illegal logging is done under the protection of the authorities and practically all violators avoid punishment.

The legal basis of forest sector does not fully meet the recent requirements. Foresters and forest inspectors perform both controlling functions as well as economic activities, which creates a conflict of interest. It is necessary to reorganize and strengthen the state control service, guarding and protecting the forests. The supervision functions should be increased and strengthened.

The specificity of forest sector was not taken into account while main administrative and legislative documents were developed. The forest inspectors do not have authority outside the

SFF territories, and are not duly equipped with the necessary means of transportation, communication and personal security.

There is no doubt that the most important role in combating illegal logging will be played by the holders of user rights – local population entitled to rent forests for long periods and responsible for their protection.

To fulfill the primary tasks the following is needed:

For prevention of illegal logging with commercial objectives:

- Revise the basic normative legal documents related to forest management and nature protection including the Forest Code and respective subordinate legislations, and to introduce the norm which obliges the private land owners and other land users to create and manage shelterbelts. All the necessary regulations should be developed systematically; this work has been supported by the World Bank and the Kyrgyz-Swiss Forestry Program.
- Create an effective information and communication network inside the forest sector, including a modern database system. Improve further the system of financing forest economy, the development which is supported by Kyrgyz-Swiss Forestry Program.
- Conduct an analysis of legislative acts and regulations of the Government of Kyrgyz Republic, particularly with respect to those sanctioning legal violations. This work is supported by FAO, and the Central Asian Trans-boundary Project GEF/WB on conservation of biodiversity of Western Tien-Shan.

For prevention illegal logging, caused by poverty:

- Introduce the principles of joint administration of forests and improve the system of land rent to take into account the specific features and conditions of different regions; define the various forest works that can be carried out by tenants, and define the areas which can be transferred to community forest management. This work is supported by Kyrgyz-Swiss Forestry Program;
- Increase awareness of forest sector by providing the public with the right to access environment-related information and participate in decision-making;
- Develop programs and projects with donor support to generate alternative sources of income and energy (manure, gas, solar panes etc.) for rural populations; This is expected to reduce the pressure on forests;
- Develop projects with donor support to enhance the resources available to SFS forest protection staff (means of transportation, communication and personal security);
- Organize at the national level a structural unit for coordinating the activities related to illegal logging, especially by facilitating widespread involvement of population into joint administration of forests;
- Promote the establishment of shelterbelts around fields and river banks and erosion-prone areas, as well as plantations of fast growing trees.

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ACCOMPLISHED AND ONGOING PROJECTS SUPPORTED BY INTERNATIONAL PARTNERS

- The Kyrgyz-Swiss Program of the Forestry Support was launched in July 1995 and it is aimed to establish necessary conditions for various institutes and the private persons who carry out activity in wood sector of Kyrgyzstan, for forests and their biodiversity conservation, increase in a forest cover and use of wood resources on a steady basis.
- Since 2000, the Central Asian Transboundary Project GEF/WB on the West Tien-Shan biodiversity conservation is implemented. The project supports three states - Kazakhstan, Kyrgyzstan and Uzbekistan in their aspiration to conserve vulnerable and unique biological environment in region and recognizes following problems (tasks):
 - . Legal and financial reform;
 - . Strengthening a network of protected areas;
 - . Sustainable use of biodiversity;
 - . Strengthening local and national opportunities through awareness and training;
 - . Participation of the public in biodiversity conservation.
- The Interstate Project on the West Tien-Shan Biodiversity Conservation (TACIS) was launched in January 2001 to provide assistance to Kazakhstan, Kyrgyzstan and Uzbekistan in biodiversity and landscape conservation, in creation of transboundary park and social and economic development of the communities living in a buffer zone of protected natural territories. Work is conducted in following spheres:
- Since 1997, the GTZ project «Biosphere territory Issyk-Kul» is performed. Within the framework of the project the following activity is carried out:
 - . Development of legal and institutional basis to establish biosphere territory;
 - . Support of the biosphere territory management;
 - . Support of the public and their work;
 - . Support of ecological tourism;
 - . Support of agricultural sector.

Figure 1

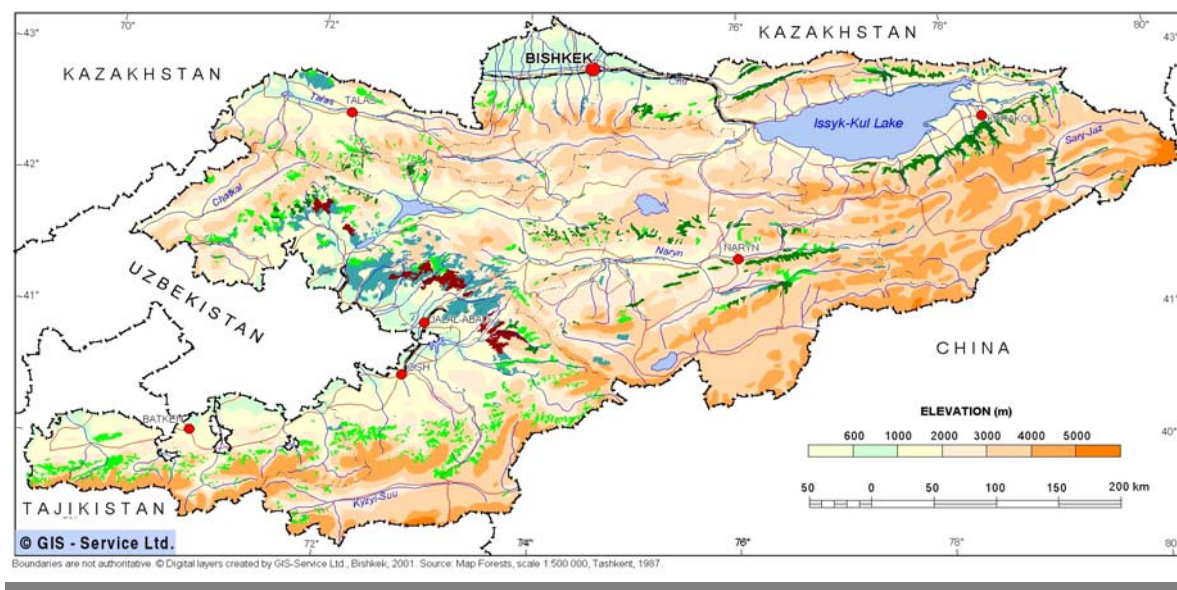


Table 1 Changes of the area of republic covered with a forest for 1930-2003

#	Years of the account	The general area covered with a forest. 1 000 ha	Republics Lesistost. %		
			Parameter	Changes	
				+	-
1	1930	1 194.0	6.0		
2	1956	691.6	3.46	-	2.54
3	1966	619.8	3.09	-	0.37
4	1978	654.1	3.27	0.18	-
5	1988	796.6	3.98	0.71	-
6	1993	843.0	4.22	0.24	-
7	1998	849.5	4.25	0.03	-
8	2003	864.9	4.32	0.07	
	Sum			1.23	2.91

Figure 2

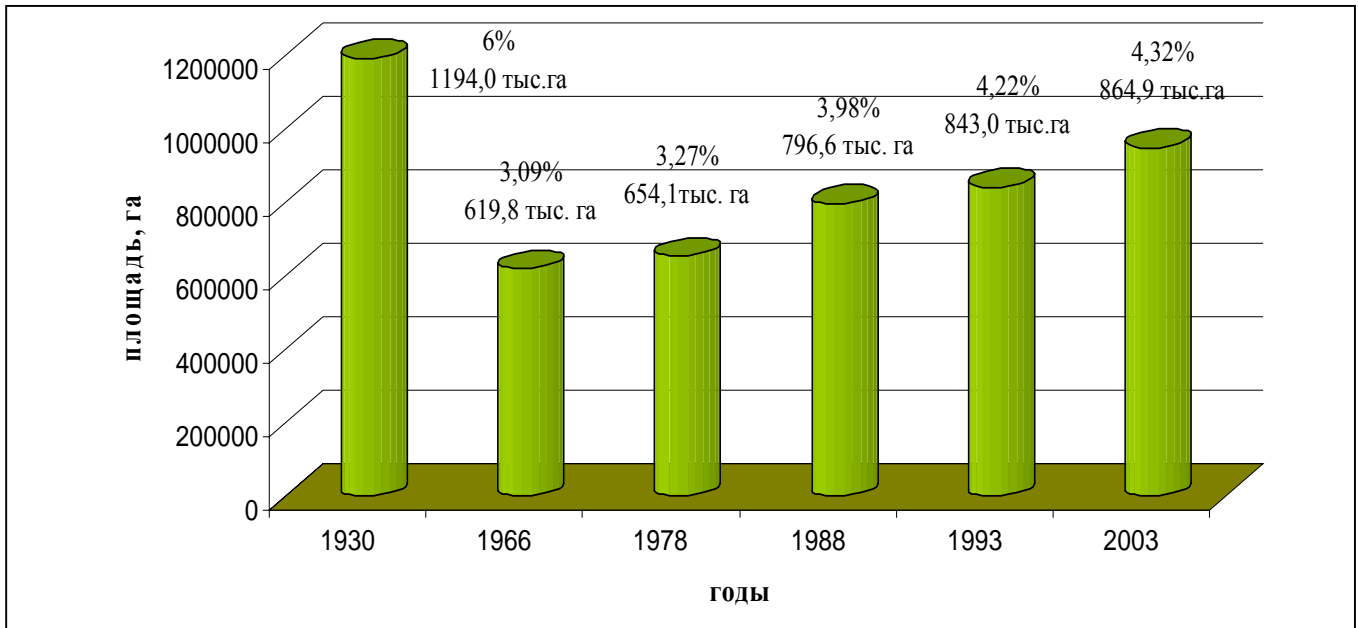


Table 2 Movement of the Wood SFS

№	Name of oblast	Logging			Sale			Rest		
		Sum	Wood	Fire wood	Sum	Wood	Fire wood	Sum	Wood	Fire wood
2001										
1	Issyk Kul	20 339.0	8 611.0	11 728.0	20 728.8	8 728.8	12 020.0	6564.1	2 074.4	4 484.6
2	Naryn	3 026.2	1 944.9	1 081.3	3 024.3	1 915.9	1 108.6	435.3	154.5	280.8
3	Chui	1 963.6	549.2	1 414.4	1 717.8	519.0	1 198.8	606.5	30.2	576.3
4	Talas	2 501.5	776.9	1 724.5	2 542.6	745.6	1 797.0	90.5	32.5	58.0
5	Jalalabad	13 220.0	1 433.6	11 786.9	15 440.3	1 736.6	10 225.0	6 719.5	490.4	6 229.1
6	Osh	1 960.0	214.9	1 745.1	2 721.5	581.6	2 139.9	528.6	72.3	456.3
7	Batken	-	-	-	-	-	-	-	-	-
	Sum	43 027.0	13 346.6	29 480.2	46 195.5	14 227.6	28 489.0	14 771.4	3 560.4	11 212.1
2002										
1	Issyk Kul	15 502.6	6 389.5	9 113.5	15 927.5	7 951.2	7 976.3	6 139.2	1 253.7	4 885.7
2	Naryn	3 379.0	1 662.0	1 717.0	2 851.1	1 574.9	1 276.2	963.2	241.6	721.6
3	Chui	2 527.6	870.2	1 657.4	2 187.0	733.7	1 453.3	947.1	166.7	780.4
4	Talas	1 766.6	344.8	1 421.8	1 766.4	369.0	1 397.4	90.7	8.33	82.4
5	Jalalabad	11 675.8	1 728.6	9 947.2	12 069.2	1 506.5	10 562.7	6 326.1	712.6	5 613.6
6	Osh	856.0	66.0	790.0	856.0	66.0	790.0	351.8	37.3	314.5
7	Batken	58.1	-	58.1	62.3	-	62.3	-	-	-
	Sum	35 765.7	11 061.1	24 704.6	35 719.0	12 201.3	23 518.5	14 818.1	2 420.2	12 398.2
2003										
1	Issyk Kul	16 800.0	7 037.5	9 762.0	16 926.0	7 363.3	9 562.8	6 013.8	1 484.1	4 528.7
2	Naryn	2 675.7	1 259.0	1 416.5	2 985.2	1 165.2	1 820.0	653.0	335.6	318.0
3	Chui	1 987.1	586.6	1 400.5	2 385.6	615.8	1 769.8	548.7	137.5	411.2
4	Talas	1 836.1	478.1	1 357.9	1 872.3	470.3	1 401.9	54.5	16.1	38.4
5	Jalalabad	11 441.9	1568.	9 873.8	11 539.3	1 502.8	10 036.5	6 228.7	777.8	5 450.9
6	Osh	1 273.1	218.5	1 054.6	1 242.0	187.8	1 054.2	382.9	68.0	314.9
7	Batken	49.4	12.0	37.4	49.4	12.0	37.4	-	-	-
	Sum	36 063.3	11 159.9	24 902.7	36 999.8	11 317.2	25 682.8	13 881.0	2 262.0	11 618.1
2004										
1	Issyk Kul	13 097.0	5 520.6	7 576.4	13 506.2	5 687.0	7 819.2	5 594.2	1 314.8	4 279.4
2	Naryn	2 771.2	1 330.0	1 441.2	2 993.9	1 647.0	1 346.9	430.4	17.7	412.7
3	Chui	2 231.0	881.7	1 349.2	1 679.7	805.0	874.7	1 100.0	214.2	885.7
4	Talas	1 398.2	327.6	1 070.6	1 427.1	346.1	1 081.0	42	14.7	27.3
5	Jalalabad	5 934.9	1 244.3	4 690.6	8 369.0	1 270.0	7 099.0	3 794.6	752.1	3 042.5
6	Osh	2 135.3	265.9	1 869.4	1 800.7	261.4	1 539.3	717.5	72.5	645
7	Batken	171.9	-	171.9	-	-	-	171.9	-	171.9
	Sum	27 277.7	9 265.7	18 012.0	29 375.2	9 771.3	19 619.9	11 850.6	2 386.0	9 464.5

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