



Forestry Sector Analysis

of the Republic of Tajikistan

gtz



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for Economic Cooperation
and Development



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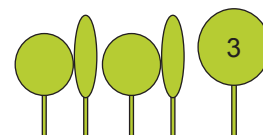
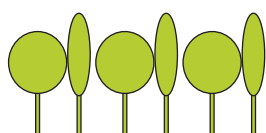
Photos

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Dushanbe, September 2010

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1 Abbreviations

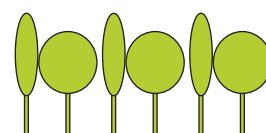
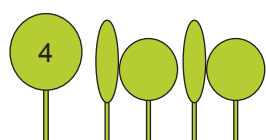
1.1 Institutions and terms

AAC	annual allowable cut
AKF	Aga Khan Foundation
ADB	Asian Development Bank
APO	annual plan of operation
BMU	Bundesministerium für Umwelt (German Federal Ministry of the Environment)
BMZ	Bundesministerium für wirtschaftliche Zusammenarbeit (German Federal Ministry for Economic Cooperation)
CACILM	Central Asian Countries Initiative on Land Management
CBD	Convention on Biodiversity
CEP	Committee on Environmental Protection
CITES	Convention on the International Trade in Endangered Species of Wild Fauna and Flora
CIM	Centre for International Migration and Development
DED	Deutscher Entwicklungsdienst (German Development Service)
FAO	Food and Agriculture Organization
FMP	forest management plan
FSA	Forestry Sector Analysis
GBAO	Gorno-Badakhshan Autonomous <i>oblast</i>
GDP	gross domestic product
GEF	Global Environmental Fund
GIFT	Green Initiative for the Forestry Sector in Tajikistan
GoT	Government of Tajikistan
GTZ	Deutsche Gesellschaft für technische Zusammenarbeit (German Technical Cooperation)
ICA	institutional capacity analysis
IMF	International Monetary Fund
ISO	International Organization for Standardization
JFM	Joint Forest Management

MNP	Ministry for Nature Protection
NBSAP	National Biodiversity Strategy and Action Plan
NEAP	National Environmental Action Plan
NFP	National Forestry Program
NTFP	non-timber forest product
PPCR	Pilot Program for Climate Resilience
PRSP	Poverty Reduction Strategy Paper
SFE	state forest enterprise
SLM	sustainable land management
THS	<i>Tojikistoni Hamesha Sabz</i> or “Green Tajikistan Initiative”
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
UNCCD	United Nations Convention on Combating Desertification
WWF	World Wide Fund for Nature

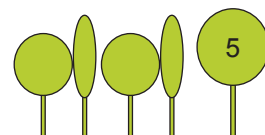
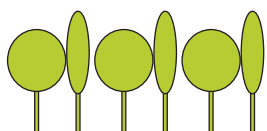
1.2 Units

asl	above sea level
cm	centimeter
cu m	cubic meter
EUR	euro
kg	kilogram
m	meter
mil	million
ha	hectare
km	kilometer
TJS	Tajik <i>Somoni</i> (local currency)
USD	United States dollars



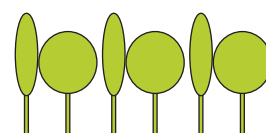
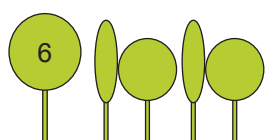
2 Tajik and Russian terms

<i>dekhan</i>	landowner
<i>diram</i>	1/100 of a <i>Somoni</i>
<i>jamoat</i>	communal administration
<i>hokimyat</i>	authorities
<i>khukumat</i>	local government
<i>leskhoz</i>	Russian abbreviation for state forest enterprise
<i>oblast</i>	province
<i>qyshloq</i>	village
<i>rayon</i>	district
<i>shibliak</i>	stands of deciduous trees and shrubs
<i>viloyat</i>	province
<i>zakaznik</i>	temporary protected area, located within a <i>leskhoz</i>
<i>zapovedniki</i>	strictly protected areas



3 Glossary¹

afforestation	the act of converting bare or open land that had been without forest vegetation for at least 50 years into a forest	sustainable management	a management system which maintains all the functions and benefits of forests and minimizes the adverse impacts of harvesting so as to ensure the availability of forest goods and services for the use of present and future generations
annual allowable cut	the volume of wood that is authorized to be cut in a forest each year (not exceeding the annual increment)		
deforestation	the complete destruction of existing forests and their replacement by other types of land use		
forest degradation	biological, chemical and physical processes (logging, shifting cultivation, pasture, etc.) that result in the loss of the productive potential of forests		
ecosystem	the complex of a community of organisms and its environment functioning as an ecological unit in nature		
forests	an ecosystem with a minimum of 10 percent crown cover of forest trees/or bamboos generally associated with wild flora, fauna, natural regeneration and natural soil conditions that is not subject to agricultural practices		
lease	the privilege granted by the State to occupy and possess a specific area of forest land belonging to the public domain and to undertake any authorized activity therein		
natural forest	forest vegetation that has been established or would have been established in an area without any influence of human activities		
reforestation	the act of planting trees on bare or open land which was covered with forest growth within the last 50 years		



4 Foreword

Almost all forests in Tajikistan have been destroyed. By all standards of reasonableness, it seems to be high time to take steps to rehabilitate the country's forest resources and put them to rational use. GTZ - German Technical Cooperation - is working in Tajikistan on behalf of the German Federal Ministry for Economic Cooperation and Development, and in the framework of the Regional Program "Sustainable use of Natural Resources in Central Asia". GTZ began its forestry activities in Tajikistan in the 1990ies and successfully developed the Joint Forest Management approach in the Pamirs. Later on GTZ has been invited by the Tajik Government to contribute to the review and revision of the country's Forestry Code.

The present analysis was commissioned by GTZ on request of the Tajik Government and prepared by Hessen-Forst, a professional Consultants Office on Forest Management from Germany. The analysis provides a comprehensive analysis of the forestry sector in Tajikistan and will serve as a valuable reference for future work in the sector. The analysis provides statistical data and information on the role of forestry in the economy, on institutional and policy issues, on development constraints and potential as well as on a strategy for future investments and operations in the Tajikistan's forestry sector. The analysis will be useful to all those interested in forestry development in Tajikistan and regardless of whether it is done under a narrow perspective of forestry sector development or under the broader angle of maintaining biodiversity, combating land-degradation and adaptation to climate change: the Tajik forestry sector occupies a key position for all these concerns.

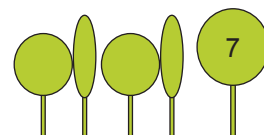
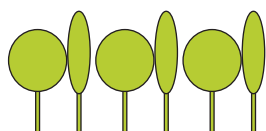
I would like to thank the Tajik Government for having invited us to contribute to the country's development in such a prominent manner. I thank the authors for their energetic and skilful work in putting this analysis together. Further to giving merits to the authors, I would like to gratefully acknowledge the contributions of Mr. Safarov, Mr. Saidov, Mr. Davlatov, Mr. Abdunazarov, Ms. Gaude, Ms. Costa, Ms. Sabzalieva, Mr.

Dinkelaker, Mr. Michel and Ms. Uhlemann.

However, opinions and judgements expressed in this analysis are those of the authors and do not necessarily reflect the views of GTZ.

Dr. Reinhard Bodemeyer

Director of GTZ Regional Programme "Sustainable Use of Natural Resources in Central Asia"



5 Introduction

The few remaining forest resources in Tajikistan are under severe threat. Overexploitation, combined with uncontrolled grazing, continues to diminish the country's remaining forest cover at an alarming rate.

The purpose of this Forestry Sector Analysis is to:

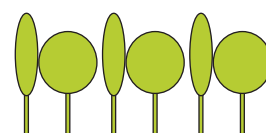
- identify principal sector constraints,
- evaluate the lessons learned,
- compile reliable data on the forestry sector,
- make recommendations regarding policy changes, institutional reforms, capacity building and financial investments and
- prepare the groundwork for more donor participation in the forestry sector.

Sustainable, managed forests play important roles in the environment and economy, and also have social and climatic significance. Such forests are a necessary part of the development strategy for Tajikistan. Reliable, up-to-date information on the state of the forestry sector and its forest resources is indispensable for making decisions about policies, strategies and programs, as well as for developing the forestry sector in a sustainable fashion.

This analysis will enable politicians, the international donor community and other stakeholders to make strategic decisions to halt forest degradation and destruction in Tajikistan, with the ultimate goal of sustainable management of the country's forests.



A degraded small-leaved forest in Tajikistan, which mainly consists of populus and salix species.



6 Background²

Tajikistan is a mountainous, land-locked country that borders Afghanistan, Uzbekistan, Kyrgyzstan, and the People's Republic of China. The frontier follows an irregular path that reflects the topography and specific events in the history of the Tajik people. Over 70 percent of the country is high mountains, more than half of which rise 3,000 m above sea level. The east is covered by the *Pamir Mountain Range*; across the North stretches the *Alay Range*. Only in parts of Khatlon province and in the *Ferghana Valley*, near the border to Uzbekistan, are small portions of intensively farmed lowland areas.

After the Soviet Union broke up in 1992, a brutal civil war spread throughout the country, causing tremendous physical damage and heavy human losses.³ A peace deal between the Government of Tajikistan (GoT) and the United Tajik Opposition ended the civil war and brought political stability. Although Tajikistan's economy suffered during the war, it eventually recovered: between 2000 and 2008, economic growth averaged around 8 percent.

Due to its location and geography, Tajikistan's natural environment is highly vulnerable to biotic and abiotic influences. Disruptions of mountain ecosystems (e.g. overgrazing or deforestation) have disastrous consequences, with signs of erosion visible everywhere. The need for ecologically sound and sustainable pasture and forestry management is obvious. Suitable instruments to combine these two forms of land utilization are available (e.g. land-use planning) but are not part of the official regional planning process.

6.1 Physical Features

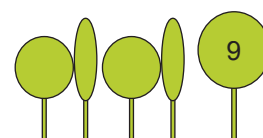
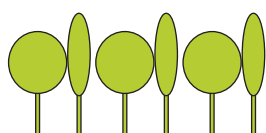
Tajikistan covers a total area of 143,000 square kilometers. The territory stretches 700 km from east to west and 350 km from north to south. It is divided into four administrative regions that are also known as "provinces" (*viloyat*), including *Sughd* and *Khatlon*, the autonomous province of *Gorno-Badakhshan* with its capital, *Khorog*, and the former Garm province now called the *Region of Republican Subordination* (RRP - *Raiony Respublikanskogo Podchineniya* in transliteration from Russian). Each region is divided into several districts, which in turn are subdivided into *jamoats* (village-level self-governing units) and villages (*qyshloqs*). As of 2006, there were 58 districts and 367 *jamoats* in Tajikistan.

Tajikistan's east is marked by the *Pamir* mountain chain with its highest peak, the *Pik Ismoil Somoni*, rising 7,495 meters. The *Pamir Mountains* are formed from the junction of the *Tian Shan*, *Karakoram*, *Kunlun* and *Hindu Kush* ranges. Most of the *Pamir* range is located in Tajikistan, in the *Gorno-Badakhshan Autonomous Oblast* (an administrative term used in the Soviet Union), or GBAO. The average elevation of the *Pamir* range is between 3,600 and 4,400 m.

Tajikistan has many glaciers. The *Fedchenko Glacier*, stretching almost 80 km, is one of the longest glaciers outside of the polar region. It has a depth of 800 m and contains an enormous water reservoir. The glaciers contribute to the network of fast-flowing streams, most of which empty into Tajikistan's two major rivers - the *Syr Darya* and the *Amu Darya* - which are the main

	ISO 3166-2	Capital	Area (km2)	Population (2008)
Sughd	TJ-SU	Khujand	25,400	2,132,100
Region of Republican Subordination	TJ-RR	Dushanbe	28,600	1,606,900
Khatlon	TJ-KT	Kurgan Tyube	24,800	2,579,300
Gorno-Badakhshan	TJ-BG	Khorog	64,200	218,000

Table 1: Population and area of Tajikistan (Source: State Statistical Committee of Tajikistan)



sources of the Aral Sea. Because of its geographical location, physical features and specific climate, Tajikistan is prone to frequent natural disasters, including earthquakes, floods, mudflows, landslides, avalanches, droughts and epidemics.

6.2 Climate

Tajikistan's climate ranges between continental, subtropical, semiarid and arid. It generally has cold winters and hot summers, with temperatures that can reach 45°C. Temperature differences at high and low elevations can be huge. Annual rainfall is influenced by topography, and is often a constraining factor for agriculture.

At lower elevations, the average temperature range is from 23° to 30°C in July and from 1° to 3°C in January. In the eastern *Pamirs*, the average July temperature is 5° to 10°C, while January's average temperature drops to between -15° and -20°C.

Average annual precipitation for most of the *Pamir* mountain range is between 700 and 1,600 millimeters. Most precipitation falls at the *Fedchenko Glacier*, which

averages 2,200 mm per year; the lightest precipitation is in the eastern *Pamirs*, which average less than 100 mm per annum. Most precipitation occurs during winter and spring.

In short, Tajikistan is highly vulnerable to global climate change, a fact that has been confirmed in recent donor reports.⁴

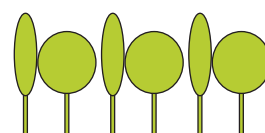
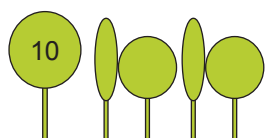
6.3 Agriculture and Forestry

The agricultural sector accounts for about 27 percent of the country's GDP.⁵ Tajikistan's agricultural output is dominated by the cotton sector that makes use of considerable agricultural inputs but produces only 9 percent of its agricultural outputs (2008). Tajikistan's cotton sector faces serious problems. Large debts⁶, the absence of competition in input- and output-marketing, and very gradual land reform have led to the sector's decline. As a result, many experts are questioning cotton's financial and economic feasibility.

According to UN data⁷, total agricultural land amounts to 4.6 million ha. Arable land is limited to some 690,000 ha; permanent crops can be grown on



Map of Tajikistan. Tajikistan is a completely land-locked country.



about 100,000 ha. Most of Tajikistan's lowlands are in the north. They are farmed intensively.⁷ The *Syr Darya* river provides water for irrigation, permitting intensive agriculture. The rest of Tajikistan's land area is not suitable for intensive crop farming; it is only suitable for extensive livestock farming. Livestock is reared throughout the country and contributes significantly to rural residents' income.

Livestock breeding is an important part of Tajikistan's traditional agriculture. After the break-up of the Soviet Union, numbers decreased. However, the total number of cattle, sheep, goats and horses has been steadily increasing in recent years⁹, resulting in greater meat and dairy production. Livestock provides regular income (e.g. milk products), which is important for rural livelihood. It also serves as "living" capital (a savings bank) that can be easily converted to cash when needed.

It should be noted, however, that the livestock sector and its impacts on forestry are not the focus of this analysis. They deserve a comprehensive, separate study, with a stakeholder analysis to help elaborate and highlight links between livestock, water issues, soil degradation, watershed management and forestry.

In general, Tajikistan's agricultural production capacity and capability is not fully utilized. In this context, it should be noted that forestry could help enhance the value of land. The potential of this sector has thus far been neglected. Precipitation and soil permitting, forest vegetation grows to the timberline (about 3,700 m) almost everywhere in Tajikistan. There is ample scope to expand Tajikistan's forest vegetation.

The forest area in Tajikistan is officially calculated at 410,000 ha (or 3 percent of the total land area).¹⁰ As in other mountainous countries, livestock numbers and management considerably influence forest composition. Livestock must be considered an essential factor in forest degradation and destruction in Tajikistan. Moreover, the elaboration of forest management plans and silvicultural systems will have to mitigate the livestock factor through better pasture management and/or improvement of pastures.

Livestock is a complex issue, which needs more in-depth analysis. For instance, the UNDP/GEF Sustainable Land Management pilot project¹¹ indicates that sustainable access to grazing can be an incentive for smallholders to protect forest areas. Moreover, local communities can be drawn into forest management (see Section "11.1.2 The UNDP").

6.4 Demography and Population

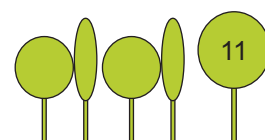
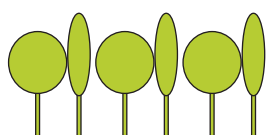
Tajikistan's total population is about 6.84 million¹², with an average annual growth of 2 percent. Twenty-seven percent of the population lives in urban areas. According to the Asian Development Bank (ADB)¹³, 44 percent of the population lives below the national poverty line (see Section "6.7 Poverty-Reduction Measures"). Current life expectancy is 70 years for females and 64 for males.¹⁴

Tajiks are a Central Asian people who are culturally, linguistically and ethnically closely related to the Persians. Tajikistan's population density is around 44 people per square kilometer. Most are Tajiks, about 80 percent of the total population, followed by Uzbeks, at 15 percent. Other minorities include Russians, Tatars, Ukrainians and Germans.

Tajiks are mainly Muslims. About 80 percent of the total population is *Sunni* Muslim, 5 percent is *Shia* Muslim and the remaining 15 percent belongs to other religions. Most of the population speaks Tajik, with Russian used in government offices and for business purposes. However, in 2009 a new law made Tajik the official language, replacing Russian.

The 2003 Census indicates that 88 percent of the population is educated (illiteracy is put at less than 1 percent) and the vast majority of educated Tajiks live in cities. A more significant statistic reveals that over 72 percent of Tajikistan's population lives in rural areas¹⁵ where they mostly work in the agricultural sector. Clearly, the agricultural sector and the people depending on it greatly influence the environment.

Tajikistan's annual population growth rate is 2 percent. The birth rate is 27 per 1,000 and the death rate is 6.8



per 1,000. The net migration rate is -1.28 migrants per 1,000 people.¹⁶

Almost 70 percent of the population is under age 30. Tajikistan's youth will be the main factor determining the country's economic future and assuring its stability. Given these statistics, it is surprising to discover that mostly older people staff public agencies.¹⁷

6.5 The Economy

In 2008, Tajikistan's per-capita GDP was 702 USD, with 5 billion USD for the entire economy.¹⁸ The country experienced strong economic growth between 2000 and 2008, averaging about 8 percent per year. In the last two years (2009 and 2010) the economy faced a number of setbacks mainly caused by deficiencies in macroeconomic management, severe energy shortages in winter, international food price hikes, and impacts from the global finance crisis.

Tajikistan's economy depends heavily on exports of cotton and aluminum, as well as remittances of Tajik labor migrants working in other countries - Russia in

particular. Of utmost importance for the economy, 2008 remittances were estimated at 2.3 billion USD, or 46 percent of GDP.

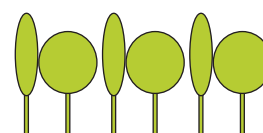
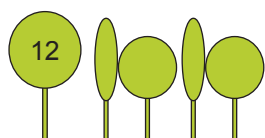
Soaring food and energy prices pushed inflation up to 20 percent in 2007. Since mid-2008, as a result of the global financial crisis and decreasing remittances, inflation was reduced by almost 7.8 percent.¹⁹

6.6 Recent Economic Performance

Tajikistan's economy faces difficult challenges arising from its geography, recent history, institutional weaknesses and the global economic crisis. Remittances have become the State's most important source of income. These remittances help finance the huge trade deficit and reduce poverty in remote and disadvantaged areas by providing additional revenue for families. The current slowdown in Russia's construction and service sectors will probably result in decreasing remittances since most of the Tajik migrant labor force works in the Russian construction industry.



Hay is important for smallholders to feed their livestock during winter time.



Tajikistan's fiscal deficit, including its public investment program that is financed abroad, has remained at the 2008 level (5.5 percent of GDP), while public-debt stock declined to 29 percent of GDP.

Foreign direct investment is likely to decline, affecting large infrastructure projects. For its part, the GoT took some steps to adjust balance of payments by allowing the *Somoni* (the local currency, or TJS) to depreciate by almost 30 percent over the last nine months (ending in 2009).

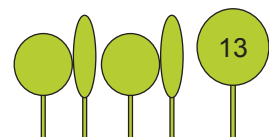
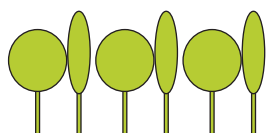
6.7 Poverty-Reduction Measures

According to data from the World Bank²⁰, in 2007 some 17 percent of the population lived below the extreme poverty line of 26 USD per month. This is considered a significant improvement over 2003, when 64 percent lived below the nationally defined poverty line (in 1999 it was 83 percent).²¹

It should be noted that some 75 percent of the poor and 72 percent of the extremely poor live in rural areas. Tajikistan remains one of the world's poorest countries. All social indicators reflect poor public-service delivery, weak governance, persistent energy shortages and low per-capita incomes. According to the World Bank, it is unlikely that Tajikistan will be able to achieve most of its Millennium Development Goals (MDGs).²²

Based on this data, it is obvious that policy and institutional reforms in the agricultural sector (including the forestry sector) are urgently needed to create framework conditions that will permit long-term tenure and access to forests, thereby creating the conditions for sustainable use by individuals and communes. Larger private-sector investments are especially needed to build up new forests.

Forestry-sector reforms should also be considered a fundamental part of the overall poverty-reduction strategy, which will both improve sector performance and help reduce poverty, in particular in remote and disadvantaged areas.



7 The forestry sector in the economy

Beyond forestry's environmental and ecological concerns, forestry should be considered an important part of the economy. The public and private sectors, as well as households, all rely on timber imports, which impact negatively on the country's foreign-exchange reserves. For rural households, firewood is the most important energy source but the existing forest resources cannot meet demand. Tajikistan needs a comprehensive afforestation program that caters to the production of wood for both construction and fuel. Besides fuelwood, non-timber forest products (NTFPs) are important by-products that contribute to the rural population's livelihood.

Tajikistan's forest resources, like those of other Central Asian countries, are relatively small and do not play a major role in the export trade. Tajikistan's transition from a centrally planned to a market-oriented economy has not reduced the demand for timber and wood-related products. Timber from Russia is more expensive these days than it was in the past. It is hard to obtain realistic figures for timber demand, supply and consumption at the various processing stages. For that reason, figures in this analysis should be considered approximations, which can only indicate trends.

Since more than two-thirds of the population lives in rural areas, forest resources are major economic, social and environmental factors in the livelihood and well-being of rural residents. NTFPs²³ in particular contribute significantly to rural residents' livelihood.

A more ecological - and economic - aspect of forests is the ability of forest vegetation to alleviate, and even stop, wind and water erosion. Removal of forest cover results in various effects of erosion that often require tremendous financial investments to mitigate the adverse impacts, e.g. measures to protect against sand dunes that destroy human settlements and walls against mudflows that threaten villages and towns.

A good example of forests' protective function is the *tugai* forests characterized by thick undergrowth that

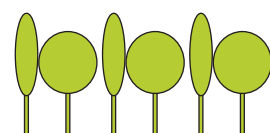
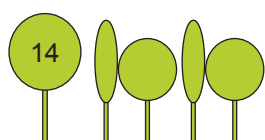
grow along rivers. Once they are destroyed, dangerous mudflows occur more frequently, threatening settlements with tremendous destruction - and forcing the GoT to carry out comprehensive protective measures. Proper protection, preservation and management of Tajikistan's forest resources will reduce GoT expenditures on risk-management, prevention and emergency measures.

Another concern is the forestry sector's impact on the trade balance since the demand for timber must be met through costly imports. This is because commercial logging has been prohibited in Tajikistan since 1950.²⁴ In order to lower the country's dependence on timber imports, an increase of forest resources should be envisaged which will positively impact the trade balance. A nationwide afforestation program is necessary.

7.1 The Demand for Timber Products²⁵

Currently, there is no timber industry in Tajikistan. Before 1992, one furniture factory in Dushanbe processed imported timber. Now, as a result of wood shortages, none of Tajikistan's woodworking industries is operating.²⁶

In the 1970s and 1980s, Tajikistan imported an average annual volume of 400,000 cu m of timber from the Union of Soviet Socialist Republics, of which 350,000 cu m was processed to create products with added value, while some 50,000 cu m was used for fuelwood. Only recently has the Russian Federation reduced its timber exports²⁷ to Tajikistan, meaning that only about 109,000 cu m of commercial timber - mainly for construction - is imported each year, at a cost of more than 20 million USD.²⁸ This results in an average annual per-capita timber consumption of 0.15 cu m. Compared with the average annual per-capita timber consumption in Europe of 1.15 cu m, this figure is extremely low, pointing to an unofficial timber trade.



Private firms with access to logging operations in Russia run Tajikistan's timber trade. Businessmen survey the cutting, processing and transport of products. Transport costs are high, exceeding 50 percent of the retail price in Dushanbe.

Construction timber is a precious product with high demand. Building houses in the typical *Pamiri* style requires lots of wood. Strips of wood (4 x 4 cm) of relatively poor processing quality (*conifers*) cost 3.5 TJS per running meter, while one cu m of construction wood (*populus sp.*) costs 254 TJS (40 EUR).

7.2 Non-Timber Forest Products²⁹

In this analysis, NTFPs are considered to be *any* commodity obtained from forest areas; they do not imply tree harvesting. NTFPs include game animals, furbearers, seeds and nuts, berries, mushrooms, oils, foliage, medicinal plants, peat, fuelwood, honey and the production and sale of seedlings. In Tajikistan, NTFPs play a huge role in the rural economy and are essential to the daily lives of Tajiks: not only do they contribute to their subsistence, but they can also be traded for cash.

Investigations for this analysis revealed that the survival of state-owned forest enterprises (SFE, or *leskhoz*) depends on NTFPs. In other words, the *leskhoz* in Tajikistan rely on the harvesting and sale of NTFPs to survive financially since their operational budgets are minimal. Of particular importance for some SFEs is the production of fruit trees (in state-owned nurseries), which are sold to private customers or planted on *leskhoz* land. In some regions of the country, nursery revenue is crucial.³⁰ In general, the demand for fruit trees is higher than that for forest trees. Most seedling production in Tajikistan is of *exotic* tree species.

Seedling production in state-owned nurseries uses obsolete technologies: Seedlings are not raised in containers and are usually sold fairly large (more than a meter high) and planted bare root. But long transport routes result in low seedling survival rates.

It has been noted that fruit-tree plantations are count-

ed as “forests” in Tajikistan's official statistics. Because the Committee for Environmental Protection (CEP) instructed the *leskhoz* not to conduct regular maintenance cuts on fruit trees, there is no real maintenance of fruit-tree plantations. In general, the recorded average annual fruit yield in *leskhoz* plantations is low, compared to the potential of such sites.

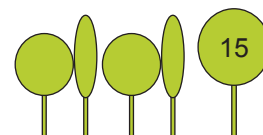
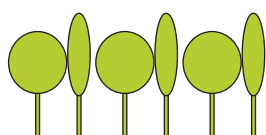
The importance of NTFPs and their prices vary from region to region. An essential factor is that during the last 20 years new markets have developed for different products. These impact on the demand for NTFPs. If current trends continue and projections are reached, the trade and use of NTFPs will grow substantially in the next decade.

At present, there is little understanding of the potential of NTFPs in Tajikistan, in particular in terms of their volume, the range of products, policies, markets and their economic value to the whole country - as well as to the *leskhoz* and to rural communities - and the effectiveness of regulation, sustainability, and so forth. Focused research on the importance and potential of NTFPs is urgently needed. More effort to integrate NTFPs into national policy is required to ensure sustainability and maximum economic benefit.

7.2.1 Fuelwood

Firewood for cooking and heating is in high demand throughout Tajikistan. For rural households, fuelwood is considered the most important energy source; demand outstrips supply. It is estimated that some 70 percent of the country's population depends on firewood. Wherever wooden vegetation is available, fuel is collected and used immediately (usually without drying). Just using properly dried fuelwood would significantly increase the efficiency of this energy source.

Official data (FAO, 2008³¹) states that Tajikistan needs some 168,000 cu m of fuelwood per year. Since more than 70 percent of the population lives in rural areas, one can assume that about 5 million Tajiks use fuelwood as their primary source of household energy. This results in an average per-capita consumption of 0.03 cu m. Given the long, cold winter, poorly insu-



lated houses and the inefficiency of many stoves, the annual demand for fuelwood in Tajikistan is estimated to be much higher - some 15 to 20 million cu m. But since the current forest cover cannot deliver this amount of fuel, people are forced to dry and burn dung instead of fuelwood.

The annual per-capita consumption of fuelwood is estimated at 3 to 4 cu m. In an average village of 150 households³² the annual demand for fuelwood is between 2,700 and 3,600 cu m. Assuming an average increment of 10 cu m per year and ha, such a village would need a plantation area between 270 and 360 ha to cover its immediate needs for fuelwood. It is obvious that the availability of energy efficiency technologies and alternative energy sources would reduce fuelwood consumption.

There is no market for firewood. Potential customers approach the *leskhoz* staff when they want to purchase firewood. But there are also *unofficial* ways to procure firewood. The prices for firewood vary considerably from region to region and generally reflect the cost of labor and transport.

Firewood is sold in cu m³³, usually at the roadside. In GBAO, for instance, there are two prices for firewood (including the cost of cutting):

Firewood with thicker branches:	1 cu m costs 70 TJS
Firewood with small coppice twigs (mainly <i>salix</i>):	1 cu m costs 40 TJS

There are no official figures available about how *much* firewood can be harvested (or has been harvested) annually per hectare, so there's no way of knowing the sites' production potential. Given an average annual

increment of 10 cu m per ha³⁴ (for *salix* and *populus* species on sites with adequate water supply) following a sustainable annual coppice cut not exceeding 10 cu m per ha³⁵, it is estimated that the potential annual income (for firewood only) is between 400 and 700 TJS (63 to 111 EUR) per ha.

There is an urgent need to increase Tajikistan's usable forest area in order to satisfy the energy needs of its rural population. The establishment of fuelwood (energy) plantations around villages on suitable sites would also serve to reduce the negative impacts of wind and water erosion and protect the remaining natural forests.

A crucial point to mention in this context is that the importance of fuelwood is not adequately reflected in current national policy or planning, despite fuelwood's key role as a source of energy and despite the fact that the primary economic value and practical use of forests is for *fuel*. The fuelwood/energy issue must be advanced at the national policy level so that its full economic and social importance can be integrated into national planning for energy and forestry.

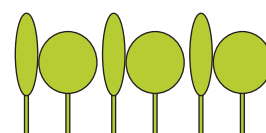
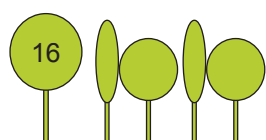
7.2.2 Grass/Hay

Cutting grass and processing it into hay during the summer can also provide regular income. This could be regular cash income - assuming the area is completely free of grazing.

One bundle of hay (5 kg) costs 50 *Diram*³⁶ in Khorog. In areas like Ishkashim a bundle can fetch 1 TJS. The *leskhoz* forests under a loose canopy of *salix/populus* trees with sufficient water supply and with no grazing can produce 1,500 kg of hay per ha and year³⁷, which yields an annual income of up to 300 TJS per ha (about 50 EUR).

Species	Product of Species	Processing (locally/factory)	Demand	Remark
Sea buckthorn	berries	juice, oil	high	plays a great role in leskhoz forests
<i>Berberis vulgaris</i>	berries	jam, juice	high	plays a minor role
<i>Rosa canina</i>	rose hip	Juice	high	plays a role in some regions

Table 2: Fruits available at markets all over Tajikistan.



7.2.3 Fruit Trees and Shrubs

Markets in Tajikistan offer a wide range of seasonal fruits, which are generally in high demand. Fruit trees are usually planted in gardens and local people harvest either for their own consumption or for selling at local markets. In autumn a variety of locally grown nuts is also available. Smallholders would like to plant more fruit trees and expand the area for fruit-tree cultivation.

Table 2 compiles a number of fruits available at markets all over Tajikistan. Fruits are often dried or processed for storage so that they can be consumed during winter, supplying important vitamins and adding considerable nutritional value to the normal food staples. Villagers generally would like to plant fruit trees on *leskhoz* land, provided they have full land tenure. It should be noted, however, that fruit trees require certain site conditions and most cannot be planted in areas that are regularly flooded, swampy or waterlogged.

The species presented in table 2 are favored in some regions and are often included in the *leskhoz* forest-management concept:

When establishing new plantations, most *leskhoz* favor fruit trees.³⁸ The production goal is formulated as the harvesting and sale of fruits. It should be noted that the CEP does not permit maintenance cuts of trees, which would increase the crop volume.

In general, processing facilities are underdeveloped. Most of them closed after independence. Processing NTFPs would add value to the products, thus increasing revenues.

7.2.4 Honey

In many areas honey harvesting is an essential part of the daily livelihood of the *leskhoz* and smallholders. Demand is high and prices vary according to quality and location. On average, one kg of honey fetches 30 TJS.

Honey production and processing facilities can be significantly improved.

7.2.5 Herbal Medicinal Products³⁹

Health-food stores and pharmacies offer a wide range of herbal medicinal products, and in some areas of Tajikistan, these NTFPs contribute significantly to the local and regional economies. The use and trade of herbal medicines deriving from forest products has a long history in Central Asia and may constitute the highest-valued segment of Tajikistan's entire NTFP trade. For some *leskhoz*, revenues from the collection and sale of herbal products are essential.

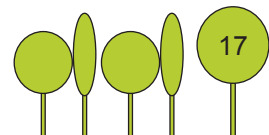
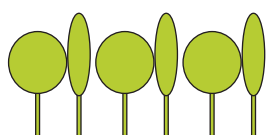
Customers are either local businessmen or international companies. No official data is available on the extent of trade in medicinal products.

7.2.6 Wildlife use

Most of Tajikistan's wildlife that is important for hunting is not bound to forest habitats.⁴⁰ Some such species (e.g. *Marco Polo sheep* and *ibex*) are found only in areas without forest vegetation, while others use habitats which have at least some shrub and tree vegetation and/or are interlinked with forests (e.g. *urial*, *markhor*, *chukar*). Some game species, like the wild boar and the Bukhara deer, clearly prefer woodlands and forests. However, due to their mobility and use of different types of habitat, it is difficult to consider wildlife from the point of view of forestry. Wildlife management and hunting should be covered in a separate study.

Wildlife is not just used by rural residents living close to wildlife habitats, but also by people from more remote rural areas, and even by people from cities. Wildlife is an important source of nutrition - especially in remote rural areas. The sale of game provides licensed hunters with income.

Species most commonly hunted for meat include *chukar*, *ibex* and *Marco Polo sheep*. Species like *urial* and *markhor*, which are almost extinct in Tajikistan, are also consumed. Marmots are occasionally hunted for their fat, which is used as a medicine. The same applies

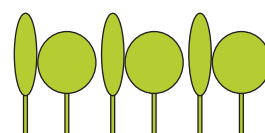




The urial is a species which uses habitats interlinked with forests.

to bears that are hunted for the medicinal use of their gall bladders, as well as for their meat. The use of reptiles for medicine is rather limited and mostly concerns the sand boa.

In addition to the direct benefits of wildlife for their own consumption or sale, some local hunters make a living from the international tourism hunting of *ibex*, *Marco Polo sheep* and, illegally, *urial* and *markhor*. Local hunters are hired to be hunting guides, guards for camps and, by the more responsible hunting companies, wildlife wardens.



8 Forest resources

It is difficult to obtain reliable and scientific data on the size of forest areas, stocking volumes, species composition, annual forest-destruction rates, and so forth in Tajikistan. All the official statistics are rough estimates, based on inventories dating back to the Soviet era. These figures are now at least 20 years old. Yet it has been noted that the *leskhoz* still rely on this outdated data and maps for planning measures. Up-to-date maps are not available.

Authentic data has been found in these two official sources (by the same author):

1. Akhmadov, K., Geneva Timber and Forest Discussion Paper 46. Forest and Forest Products Country Profile: Tajikistan. New York: United Nations (2008).
2. Akhmadov, K., Global Forest Resources Assessment. Country Reports. Tajikistan. Rome: FAO (2005).

It should be mentioned, however, that these reports are based on official data and records provided by Tajik authorities - and prior to finalization, both reports had to be validated by forestry authorities in Tajikistan.

The data provided in these reports has not been updated or confirmed through satellite images, aerial photographs and/or ground inventories, and does not take an average annual deforestation rate into consideration. Therefore, the data does not reflect the *actual* forest cover and must be corrected. The data has been corrected as necessary, using the authors' own estimates.

It can be concluded that official statistics overestimate the total forest area in Tajikistan. All official figures on forestry should therefore be regarded with suspicion. Corrections are indispensable.

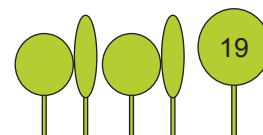
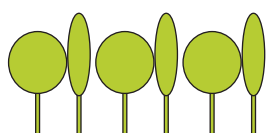
8.1 Historical Background

Old records testify that about a hundred years ago forests covered approximately 25 percent of Tajikistan. Huge forest areas - in particular, the *tugai* forests - were cut in order to make more land available for cotton production. This expansion greatly reduced Tajikistan's forests. During the Soviet era, the state recognized the negative impacts of large-scale forest destruction and forbade further cutting of forests. It declared them to be protected nature, anti-erosion and anti-mudflow zones.

To cover timber shortages, contracts to procure timber in Russia were drawn up with the government of the USSR, which allocated Tajikistan forest sites in Siberia. The few remaining forests in Tajikistan were managed and protected according to cyclical management plans and Annual Plans of Operation (APOs) that were based on inventories of forests. These plans were implemented for a period of 10 years, after which they were updated and then served another 10 years as the most important instruments for forest management. However, after Tajikistan became independent, these APOs were discontinued and human pressure on forest resources increased.

Until independence in 1991, forest-management schemes were based on the principles of sustainable forest management. This means that forest inventories, forest-management plans and a control system tailored to local conditions guided the forest managers, who used APOs to implement all the necessary measures. After independence, this form of forest-management planning in Tajikistan was practically discontinued. In the years that followed, the data system, well-developed forestry research and law enforcement deteriorated.

It should be noted that the lingering degradation and destruction of Tajikistan's remaining forests started immediately after independence, and accelerated during the civil war from 1992 to 1997. In the post-



Soviet era, rural households were not guaranteed coal, oil or gas for their daily energy needs - which led to the ecological disaster of the near-total destruction of Tajikistan's forests.

8.2 Forest Area

Generally, forests in Tajikistan are State property. According to official data, slightly more than 3 percent of the country's total surface area is covered with forests - or some 430,000 ha. Official Food and Agriculture Organization (FAO) statistics state that between 1990 and 2005 the forest area in Tajikistan increased from 408,000 to 410,000 ha, that is, the increase was insignificant.

Tajikistan has no central database for forests and forest-related activities⁴¹ for the following reasons:

- Reliable information on forest resources is not available.
- Monitoring of forest resources is inadequate.
- SFEs lack the facilities and infrastructure to compile such information.
- There is no central network for processing and collecting information.
- All the cartographic material is outdated.

In order to calculate the actual forest cover in Tajikistan, the average annual global deforestation rate of 1 to 2 percent was used to recalculate the country's forest cover. In Tajikistan, the four main factors in deforestation are illegal cutting, conversion to agricultural land, fuelwood harvesting and overgrazing.

Considering an annual deforestation rate of 2 percent⁴², some 172,000 ha of forests have been destroyed since 1990. The annual afforestation area could not compensate for forest loss, since the *leskhoz* had no operational fund for reforestation. Based on these assumptions, Tajikistan's current forest area is estimated at some 250,000 ha, which reflects less than 2 percent of the country's total forest area. Moreover, these few remaining forests are heavily degraded and the stocking volume does not exceed 30 cu m per ha.⁴³

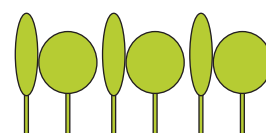
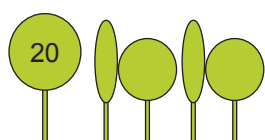
Tajikistan's forests have more or less disappeared. They

are limited to very small relicts in remote and sparsely populated areas.

8.3 Issues and Constraints in the Forestry Sector

The main issues and constraints in the forestry sector in Tajikistan are summarized as follows:

1. Open access triggers the exploitation of forest resources, mainly for fuelwood and through overgrazing.
2. Fuelwood is in high demand, in particular during the winter in rural areas.
3. Inefficient heating and cooking devices in poorly insulated houses exacerbate the pressure on forest resources.
4. There is a lack of land-tenure security and forest-ownership awareness.
5. The legal framework in place is unclear regarding responsibilities and jurisdiction.
6. Reliable forestry data is lacking - although policy-makers urgently need it.
7. The *lezkhoz* have generally weak administrative and managerial capacities that are inadequate to surmount these issues.
8. The law-enforcement capacities are weak.
9. Forest policies need to be tailored to actual development (especially regarding energy and fuelwood).
10. Sustainable forest-management schemes are long overdue. Such reforms would trigger positive impacts on the global and local environment, especially improving the economies of remote and disadvantaged areas.
11. In addition, the establishment of sustainable forest-management schemes in Tajikistan can-



not be separated from the issues of pasture and fuelwood.

8.4 Natural Forests

Almost all the forests in Tajikistan⁴⁴ are state-owned and classified as “*protective forests*” that are an essential part of the country’s watersheds. But most of Tajikistan’s natural forests have been destroyed, and the few remaining resources are under severe threat because of illegal felling and overgrazing.

Officially, felling is forbidden; only so-called “sanitary cuttings” are permitted.⁴⁵ Most of the forests are managed by the *leskhoz*, with some 50,000 ha of forests managed by collective farms.

Natural forests are divided into five types:

- broadleaved *mesophilous* forests,
- hard-leaved *xerophilous* light forests (*shibliak*),
- small-leaved *microthermous* mountain forests,
- *juniperus* forests and
- *tugai* forests.⁴⁶

8.4.1 Broadleaved Forests

These forests mainly consist of such species as *Juglans regia*, *Malus* sp., *Acer regeli*, *A. turkestanicus* and *Platanus orientalis*, and find their ecological optimum at between 1,200 and 2,300 meters. The species composition varies from location to location; in some stands, maple trees (*Acer* sp.) predominate, while in others walnut trees (*Juglans regia*) prevail. Usually, broad-leaved forests do not form large compact stands, but rather alternate with shrubs and a number of forest tree species. At upper altitudes, forests are interlarded with grassland (and tend to grow alongside *Juniperus*).

These forests are under heavy threat: overgrazing, in particular, prevents natural regeneration and negatively influences the biodiversity of this important ecosystem. A pasture-management system and participation of the rural population is urgently needed to ensure the natural regeneration of these forests.

8.4.2 Hard-leaved Xerophilous Light Forests

In Tajikistan, “*shibliak*” consist of deciduous trees and shrubs, mainly occurring in light stands with a pronounced grass cover. *Shibliak* stands are well adapted to long, dry summers with a brief hibernation period. The dominant species in these forests include *Amygdalus bucharica*, *Pistacia vera*, *Calophaca grandiflora*, *Cercis Griffithii* and *Rhus coriaria*. Pistachio formations occur extensively on slopes and foothills in southwestern Tajikistan. In the 1930s, pistachio forests covered vast areas but these declined sharply in the 1940s and 1950s.⁴⁷

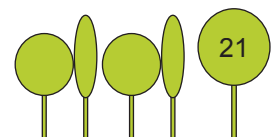
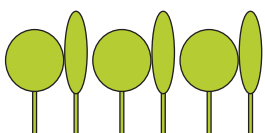
The few remaining forests are thinly stocked, with large gaps, and rarely form comprehensive stands. Fuelwood gathering and uncontrolled grazing killed the young seedlings and prevented natural regeneration - destroying these forests.

8.4.3 Small-leaved Forests

These are forest associations with a preponderance of deciduous *mesophytic* and *microthermophilous* trees. They are widespread in the flood-belts next to the rivers in all the mountain ranges, from altitudes of 1,500 m to the timberline. Small-leaved forests include species from families like the *Betulae*, *Populus*, *Salix*, *Hippophae*, and *Fraxinus*. These forests are often invaded by a variety of shrubs and other forms of grassland vegetation that form fairly thick, impenetrable vegetation.

These forests have great biodiversity, providing habitat for a wide range of mammals and birds. In addition, this ecosystem is important for erosion control along riverbanks. In the western *Pamirs*, remnants of these forests still exist. Small-leaved forests are under heavy pressure, mostly from fuelwood gathering and overgrazing. Their potential to produce firewood is considered great because of the high annual increment and the ability of the tree species (*salix* sp. and *populus* sp.) to coppice.

The *Leskhoz* GBAO and the *Deutsche Gesellschaft für*





Almost intact small-leaved forests in the Pamir mountains in Eastern Tajikistan.

Technische Zusammenarbeit (GTZ) are implementing “Joint Forest Management” (JFM) schemes in selected target districts of GBAO⁴⁸ (see Section “11.1.1 Deutsche Gesellschaft für technische Zusammenarbeit (GTZ)”). Interested smallholders can enter into lease arrangements with the *leskhoz*. Specific benefit-sharing arrangements ensure that leaseholders receive full land-tenure security, thus protecting and managing these forests.

Since these forest resources can simultaneously halt water erosion and serve as the principal energy source for rural households, these forests should be included in the priority list for a comprehensive forest-rehabilitation program for Tajikistan.

8.4.4 Juniperus Forests

These forests are dominated by conifer species of the *Juniperus* family. The following species of this plant family are endemic to Tajikistan: *Juniperus sibirica*, *J. turkestanica*, *J. Seravschanica*, *J. semiglobosa*, and *J. schugnanica*. In general, stands do not grow taller than 15 m, forming dwarf forests at the highest forested altitudes. These forests prevent soil erosion, protecting

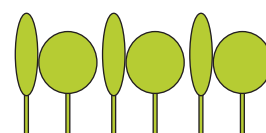
the hillsides from landslides and the soil from being washed away.

Juniperus forests are drought resistant and light-loving. Stands are either semi-sparse or dense. Stands of *J. turkestanica* also occur in mixed forests with other locally adapted species. Usually stands are opened up, mainly as a result of fuelwood gathering. In the summer, herders live in remote areas with their livestock that browses on the natural regeneration, destroying the juvenile growth.

8.4.5 Tugai Forests

These forests form an unusual system of dense forests with thick undergrowth along rivers. In the early nineteenth century, there were about 1 million ha of alluvial *tugai* forests in Tajikistan.⁴⁹ Most of these forests have been converted to agricultural use, primarily the cultivation of cotton, leaving only a few remaining areas of *tugai* forests, which are currently under heavy pressure due to overgrazing, firewood cutting and illegal felling.

Tugai forests are the best natural instrument to reduce



the risk of mudflows and flooding. The protection and sustainable management of this important ecosystem should be listed as a priority in all programs for “re-greening Tajikistan”, such as the *Tojikistoni Hamesha Sabz* (THS) initiative.

Preliminary results of a UNDP project⁵⁰ indicate that protection and management can be achieved by handing over *tugai* forests to communities residing in the immediate neighborhood of these forests. Illegal cutting was stopped and grazing was only allowed for community members (see Section “11.1.2 The UNDP”).

8.4.6 Urgent Measures

Sustainable forest management is the basis for economic prosperity and social stability in forest resource-based communities. Measures for achieving this include improving land-management efficiency through land-use planning, ecosystem management and watershed development. The integrated development of other economic activities that impact the forestry sector (e.g. livestock) needs to be considered. Establishing consultation procedures among stakeholders is crucial for achieving sustainable forest management.

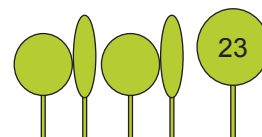
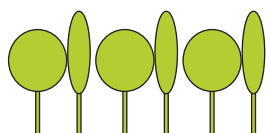
Given the state of Tajikistan’s forests, which have only fragments of their formerly rich vegetation, the GoT must develop a comprehensive concept for forest rehabilitation with the international donor community. This concept should prioritize:

- rehabilitation and management of the remaining forest associations,
- preparation of a comprehensive afforestation program to include fuelwood plantations and
- refinement of forest management schemes like the JFM that are suitable for community and smallholder forestry.

Based on the current degree of forest destruction and degradation, *tugai* and small-leaved forests should be given priority since:

- their ability to regenerate is greater than other forest associations,
- they are closer to human settlements,

- these forest resources serve as an important source of firewood for the rural population and
- they could be managed through forest management plans (FMPs) and APOs, as demonstrated in the GTZ project in GBAO.



9 Forestry institutions

Before 1991, the control and monitoring of natural resources was shared by several ministries and departments such as the Ministry of Water Supply, the Ministry of Agriculture, the Ministry of Healthcare, the State Forest Authority, the Administration on Geology and the Committee on Industry. Since coordination and cooperation among these ministries turned out to be inefficient, the need arose for a single higher-level state agency to regulate both the use of natural resources and environmental protection. The Committee on Environmental Protection (CEP) was established in 2008.

At the national level, the *leskhoz* are an integrated part of the CEP, responsible for managing forests and wildlife all over Tajikistan. District-level *leskhoz*, responsible for forest management and protection, operate on state-owned land that has been assigned to them. The *leskhoz* are the technical authorities that have sovereign functions (e.g. enforcement of the Forest Law), while at the same time, they must manage forests in Tajikistan (and act as entrepreneurs).

These dual functions of the *leskhoz* characterize their State mandate. In their sovereign function, the *leskhoz* can establish checkpoints and control vehicles for illegal wood or wildlife. *Leskhoz* staff members are authorized to investigate and hand over suspects for official prosecution. As entrepreneurs, the *leskhoz* are responsible for managing the *leskhoz* forests, developing technical guidelines and forest management planning.

9.1 The Committee on Environmental Protection (CEP)

9.1.1 History

Today's CEP⁵¹ evolved from the State Committee on Nature Protection, which was founded in 1988 (the Soviet era). It was later transformed into a ministry, and eventually reverted to being a committee. Table 3 gives an overview of the changing history of the CEP

over the last two decades.

9.1.2 Main functions

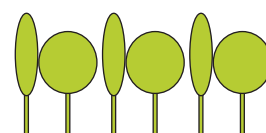
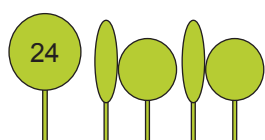
Since the latest reorganization in 2008, the following tasks have been assigned to the CEP:

- control of nature protection and conservation activities
- development and implementation of scientific and technical policies for nature protection and forestry
- state control of land preservation, surface and ground water, atmospheric air, flora and fauna, forests and fish resources
- preparation of mid- and long-term state programs for nature protection and the rational use of natural resources.

The CEP carries out sovereign functions that focus on monitoring, control, approval and sanctioning of activities in sub-offices. The CEP also has been observed issuing technical guidelines that explain technical measures in great detail.

The *leskhoz* receive requests for annual quotas of fuelwood to be harvested and areas to be planted and/or rehabilitated. But the CEP allocates very few financial resources to the *leskhoz* offices. The State Forestry Agency in Dushanbe (which is directly under the CEP) has overall responsibility for Tajikistan's state forest resources and has two departments, one for forest restoration and the other for forest protection. At the *leskhoz* office in Khorog, representatives from these two departments ensure that national interests are represented and standards upheld in GBAO. Every three months, the *leskhoz* director reports in person to Dushanbe.

All the *leskhoz* have problems meeting the quotas set by the CEP in Dushanbe, which are usually made without prior consultation with the *leskhoz* staff and/or any field inspections. In addition to the quota requests from Dushanbe, the *leskhoz* have to fulfill the



fuelwood demands of local schools, the army and other public institutions. The entire GBAO requires a total of 19,000 cu m of fuelwood each year, as demanded by the *khukumat* (local governments).⁵² Consequently, the *leskhoz* in Khorog has two masters, the CEP in Dushanbe and the Governor of GBAO. Clearly the pressure on forest resources is tremendous and there are many overlaps with other agencies. Timber extraction must urgently be adapted to the current needs for silviculture, and more coherent mechanisms for decision-making and managing natural resources must be implemented.

In Dushanbe, high staff turnover creates difficult conditions for cooperating with other partners. Staff replacements often lack the technical background in

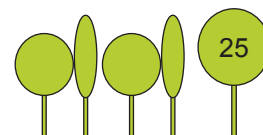
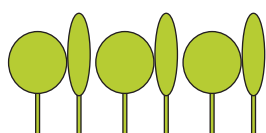
forestry and make their decisions with greater concern for bureaucratic arrangements than for the ecological, economic and forestry conditions in GBAO.

In March 2010, the Focal Points of all Multilateral Environmental Agreements (MEA) were assigned to the CEP. Although this is clearly a positive move in that it facilitates coordination between the various environmental concerns, as a result of the dismissal of the former focal points, considerable experience and know-how will be lost that will have to be reconstructed in the CEP.

The Central Asian Countries Initiative on Land Management (CACILM) is about to start its second phase in 2010. The newly configured National Secretariat is likely to be hosted by the CEP, which is expected to

Date	Official name	Remarks
1998	State Committee on Nature Protection	State Committees on Nature Protection were set up throughout the Soviet Union and upon its dissolution, briefly became independent committees. In 1991, the Committee's staff numbered 900.
1992	Ministry of Environmental Protection	The Ministry included 11 small, core offices with administrative and technical support. The main offices of Hydrometeorology, Central Inspection of Fish Control and the Militarized Hail Prevention Service were integrated into the Ministry. The Research Laboratory for Nature Protection was founded in 1993, tasked mainly to collect information and assess the environmental situation in Tajikistan (20 employees, working in close cooperation with other institutions, were based at Tajik Hydromet).
1994	Ministry for Nature Protection	<i>Mr. Shokirov</i> became minister. Fewer than 250 people worked in the Ministry.
2004	State Committee on Environmental Protection and Forestry	The regulation regarding the State Committee was approved by a governmental resolution in March 2004. Due to the addition of the former State Forestry Enterprise known as " <i>Tajikles</i> ", the total staff of the Committee increased from 74 to 2,400. <i>Mr. Karimov</i> , formerly Chairman of <i>Gissar</i> District, was appointed Chairman of the Committee.
2006	Ministry of Agriculture and Nature Protection	A Presidential Decree of 30 Nov. 2006 merged the State Committee on Environmental Protection and Forestry with the Ministry of Agriculture.
2008	Committee on Environmental Protection	<i>Mr. Zikirov</i> became Chairman of the Committee. He was also the GEF Political and Operational Focal Point. State control inspections were restructured and the number of staff was significantly reduced.

Table 3: History of the State Committee on Nature Protection. (Source: Source: Dorer, C. and Kasperek, M., Identifying Fields of Cooperation between the Committee on Environmental Protection under the Government of the Republic of Tajikistan and the GTZ, The Committee on Environmental Protection (CEP) and Related Institutions - Results of a Project-Finding Mission (2009).)



profit handsomely from this arrangement. The secretariat has three locally recruited technical staff members who are paid with ADB and GTZ funds.

Concurrently, a regional capacity-building project that is jointly executed by the GTZ and UNDP is being launched under CACILM. The Tajik component of this project will add two more technical staff, one of who will be an international expert for capacity building. (See also Section “11.1.5 The Central Asian Country Initiative for Land Management (CACILM)”)

9.1.3 The Structure and Organizational Set-up of CEP

The CEP has four departments to control the use and protection of natural resources. They work under the guidance of the CEP chairman, in close cooperation with the offices for environmental policies and environmental standards. The control departments are responsible for the determination of, and compliance with, guidelines and norms.

Three institutions located outside the CEP building work under the Administration of Protected Areas and Forestry: the State Department of Forestry and Hunting (the institutional head of the SFEs), the State Department of Protected Areas (that manages protected areas, nature parks and national parks) and the Scientific Institute of Forestry (in cooperation with the

Academy of Sciences).

At the local level, the CEP is represented in the *khumats* of all *oblasts* (regions) and *rayons* (districts) in order to control and implement the programs. The CEP organizational chart is shown in *Annex 2*. Within the apparatus of the President of the Republic of Tajikistan, the “Executive Office for Environment and Emergency Situations” is responsible for supervising the CEP.

9.1.4 The State Department for Natural Protected Areas

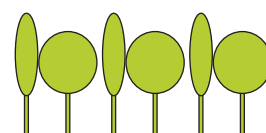
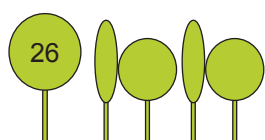
This department is part of the CEP’s Administration for Protected Areas and Forestry. Based in a separate office outside the CEP administrative building, it consists of three subdivisions:

- division for strictly protected reserves (*zapovedniks*) and nature parks,
- international relations and tourism
- ecological monitoring, science and public relations.

It should be noted that out of a total land area of 14,300,000 ha, some 2.6 million ha (18 percent) have been set apart under various degrees of protection. This does not just indicate the GoT’s political will to contribute to the protection and conservation of natural resources, it is also an opportunity for the international

Name	Size in ha	Year established
Strictly protected areas (zapovedniki)		
<i>Tigrovaya Balka</i> (“Tiger Place”)	49,786	1983
<i>Romit</i>	16,100	1959
<i>Dashtidzhum</i>	19,700	1983
<i>Zorkul</i>	87,700	2000 (originally established in 1972 as <i>zakaznik</i>)
Nature Parks		
Historical - Nature Park of <i>Shirkent</i>	3,000	1991
<i>Sari-Khosor</i> Nature Park	3,805	2003
National Parks		
<i>Tajik</i> National Park	2,600,000	1992

Table 4: Protected Areas of Tajikistan⁵³



donor community to support Tajikistan's environmental sector.

9.1.5 The State Department for Forestry and Hunting

Until 2004, this institution was called “The Union of Forestry Enterprises of the Republic of Tajikistan”. It currently comprises 40 *leskhoz*, 5 tree nurseries and 13 temporary protected areas (*zakazniks*, usually located within a *leskhoz*).

The State Department of Forestry and Hunting has the following subdivisions:

- Directorate
- Division for Afforestation
- Division for Forestry, Fauna and Flora Protection and Hunting
- Division for Agriculture and Wild-Growing Forest Products
- And another four divisions for finances, accounting, legal issues and construction

Quotas on wildlife use are first established by the CEP and then, via the State Agency for Forestry and Hunting, are allocated to the *leskhoz* that are authorized to sell the quotas to hunters or to hunting concessions.

The quotas have no relation to monitored data and significant parts of quotas may go unused.⁵⁴ For instance, for 2010, a total of 30 *ibex* was allocated to the *leskhoz* GBAO. The CEP must agree upon the quota for Red Book species with a commission that includes members of the Academy of Science.

Certain issues related to quota settings and issuances of permits remain unclear. Fees are regulated by governmental decree and there seems to be no difference between hunting charges for locals and for tourists. Some of the fees are unrealistically high, resulting in low revenues for protection and local development (a *markhor* costs about 37,000 USD and a *Marco Polo sheep* about 11,300 USD). Other fees are more realistic (for a *wild boar*, 14 USD and for an *ibex*, 90 USD), but in practice, fees 10 to 15 times higher are charged. Another point is the issuance of hunting permits for specific animals: While officially this is the purview

of the local *leskhoz*, the State Agency on Forestry and Hunting can also issue permits. Other uncertainties include the allocation of hunting grounds and the appointment of public (voluntary) rangers.

It should be noted that these 40 *leskhoz* are supervised by the State Department for Forestry and Hunting, but not by local governments. The wisdom of decentralizing forest management comes to the fore and will have to be discussed within the framework of more - and better - capacity and capability building.

The main tasks of this department are:

- forest protection
- reforestation/afforestation and establishment of tree nurseries
- forest-fire protection measures
- protection of wild animals and hunting
- supervision of the management of *zakazniks*

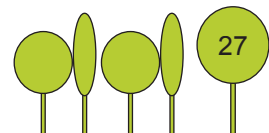
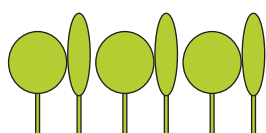
The issue of decentralization is particularly relevant in the context of timber quotas, fuelwood allocation and determination of the annual allowable cut (AAC). Such decisions should be based on sivilcultural requirements. They are subject to field assessments in the respective *leskhoz*.

9.1.6 The Scientific Research Institute for Forestry and Nature Use

This Institute is supervised and mainly financed by the CEP, with additional financing and cooperation from the Tajik Academy of Sciences. The 2008 budget was some 86,000 TJS (approx. 18,000 EUR) and in 2009, 63,000 TJS (approx. 13,000 EUR). This budget is about enough to pay the salaries of 55 institute employees, including 18 scientific experts (eight of whom have PhDs). In the Soviet era, the Institute had a staff of 125 employees. The salary of scientific employees is approximately 50 USD per month, and approximately 25 USD per month for technicians.

The Institute is active in four areas:

- sorting, selection and distribution of the genetic pool of pistachios, walnuts and dog roses in



Tajikistan

- improvement of technologies for conifer cultivation
- assessment of the condition of rare and endangered species in the protected area “*zapovednik Tigrovaya Balka*”
- pest control (biological research on a silk moth and other pests)

The Institute conserves and studies the genetic pool of local and exotic (tree) species such as walnut, pistachio, and almond. Scientific work is conducted in six experimental regions: *Dangara, Khuroson, Vahdat (Loshkharf), Pamir, Varzob (Navobod)* and *Jilikul*.

In addition to scientific research, employees are involved in projects such as the “Conservation and Use of Agro-biodiversity (cultured fruits and their wild predecessors) in Central Asia” and “The National Program for Reforestation in Tajikistan”. Experts have taken part in monitoring Marco Polo sheep (funded by the WWF).

The World Bank is using the Institute for a project on bird flu in Tajikistan (bird monitoring). The Institute also works with the “Biological Compounds” company on developing protective measures against zoonoses (such as *leptospirosis* and foot-and-mouth disease). The Institute of Zoology and Parasitology and the Scientific Institute of Forestry have overlapping mandates regarding wildlife and/or endangered species and research on zoonoses.

9.1.7 Evaluation of the CEP’s Role, Capacity and Capability

Although the CEP is responsible for managing all Tajikistan’s environmental and natural resources, it has limited authority to influence policy in the environmental and natural resources sector. The CEP shares its functions with the Executive Office of the President that is responsible for the environment and emergencies. The modality and intensity of interaction between these two agencies depends on:

- the competency of the staff involved in the subject,

- their powers of persuasion,
- their access to the President and
- having a good network.

The CEP’s mandate includes the responsibility for setting and controlling environmental standards with the help of a decentralized network of inspectors to monitor compliance with environmental limits and rules, e.g. water, air pollution, hunting and forestry. This network of inspectors is affiliated with the *oblast* and *rayon* administrations. The CEP also has overall responsibility for all protected areas (1 national park, 4 *zapovedniks* and 2 nature parks) and for those forests that are managed by the 40 *leskhoz*. It should be noted, however, that due to the lack of vehicles and other means of transport, it is extremely difficult to perform these tasks.

Circumstances indicate that in recent years the importance of the CEP within the GoT has been decreasing. Frequent changes to the agency’s structure⁵⁵ indicate its instability and decreasing influence. But such changes are not unusual for the GoT: they also occur in other sectors. Continual rearranging, along with high turnover of key staff, considerably hampers the CEP’s work.

Through its Scientific Forestry Institute, the CEP has a scientific base to carry out research and provide expertise. In addition to the Scientific Forestry Institute, the CEP also cooperates with other institutes such as the Institute of Zoology and Parasitology, and Hydromet.

In general, the CEP staff is fairly old, with relatively few junior members. Working for the CEP does not appeal to the younger generation, probably because of the low salaries - which means that the CEP is not able to attract new, highly qualified staff. Moreover, the low government salaries compounded by their irregular payment force many CEP employees to look for additional sources of income.

The CEP has had limited experience with international donors or NGOs, in particular in the forestry sector. It has been involved in two Global Environment Fund (GEF) protected-areas projects, one implemented by

the World Bank, the other by the UNDP. Currently, Germany is the only bilateral donor that is more broadly supporting the forestry sector. This includes deployment of a CIM expert with the CEP to advise its day-by-day management. There are few field inspections to project sites that are carried out by qualified staff in order to discuss concepts and implementation arrangements.

Although the development of sector policies and strategies ought to be one of the CEP's basic tasks, preparation of sector policies is currently not high on its agenda. Neither the National Biodiversity Strategy and Action Plan (NBSAP) nor the National Environmental Action Plan (NEAP) was prepared by the CEP or by its predecessor. Instead, the National Biodiversity and Biosafety Center, which is not under the auspices of the CEP, did most of the work. Budget constraints hamper implementation of policies and strategies: donor support is urgently needed. Yet the act of concentrating all the focal points for the UN conventions on the environment under the umbrella of the CEP⁵⁶ in 2010 must be regarded as a positive political step.

Substantial capacity-development inputs are required, given the CEP's limitations in terms of its personal and institutional capacities, its capability to absorb and manage international funding and its capacity for implementing large-scale projects and programs. But the need for policy and institutional reforms is not necessarily high on the agenda of the CEP leadership. It will be necessary to make key staff more aware of the need for adequate support and suitable instruments for building general, and specific, capacity and capability. Donors will have to address shortcomings in the CEP policy as well as institutional issues.

9.2 The State Forest Enterprises (leskhoz)

The *leskhoz*, or “State Forest Enterprises”, are engaged in forest protection, restoration, conservation and management throughout the country. The *leskhoz* are also in charge of wildlife (including hunting and fisheries) in the forests. The legal basis for all their actions is the Forestry Code of 24 June 1993, which is currently

being revised by the GoT.

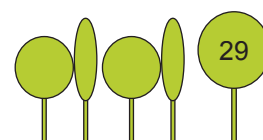
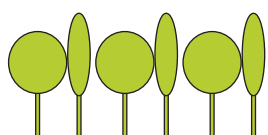
Considering the institutional set-up and the tasks assigned to the *leskhoz*, all deliberations concerning future investments in the forestry sector will have to include the *leskhoz*. Policy reforms will be implemented through them, and institutional capacity building will affect all *leskhoz*. Therefore, the overall capacity⁵⁷ and capabilities of the *leskhoz* must be carefully analyzed before any forestry investment program can be initiated.

9.2.1 Institutional Capacity Analysis

An essential precondition for envisioned future support for the forestry sector is a careful analysis of forestry institutions, in particular those working at the district level. For this purpose, the framework for institutional capacity analysis (ICA) of the Asian Development Bank (ADB) was used (see Annex 3).

A comprehensive institutional-capacity analysis is needed to assess the efficiency and effectiveness of the *leskhoz* in terms of the results (outputs and impacts) that they actually deliver, and to evaluate variances from the expected levels of performance. Should negative variances of performance be identified, it will be necessary to determine those variables responsible for the poor performance. These can be grouped into three broad categories:

- constraints in available resources (staff, budgets, technology and equipment)
- variables in institutional management (policies, strategies, operating systems, management style or leadership, organizational structure and the institution's value system)
- external factors over which the institution has varying degrees of control.



9.2.2 Results of the Institutional Capacity Analysis (ICA)⁵⁸

9.2.2.1 Staff

The number of staff varies from *leskhoz* to *leskhoz* and depends on the area's size. Staff include:

- technical staff,
- administrative staff (accountant and economist)
- and workers and forest guards.

Between 20 and 40 staff members are assigned to each *leskhoz*.

The staff list of the GBAO forestry administration in Khorog totals 36. With just 12 technical staff for more than 85,000 ha, there is 1 technical staff per 7,083 ha. There are only 17 forest guards for the entire area, which corresponds to 1 guard per 5,000 ha. It should be noted that guards are not equipped with horses, vehicles or motorbikes. In general, the *leskhoz* staff members are not young, and almost all the technical staff received their professional education in the Soviet Union. The director of the *leskhoz* - who is only 40 years old - only took office in 2006.

Conclusion: The *leskhoz* are not staffed and equipped to fulfill their assigned functions, namely the management and protection of the *leskhoz* forests.

9.2.2.2 Educational background

Only a few *leskhoz* employees studied forestry at the university, and almost all of them studied only in Tajikistan. The few staff members who have degrees in forestry received them in Russia or in the Ukraine under the old Soviet system. Technical forestry is still not taught in Tajikistan, which means that the *leskhoz* have few professional foresters.

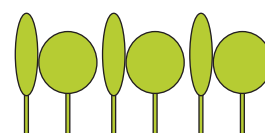
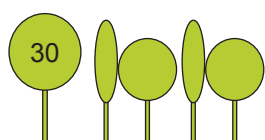
Conclusion: The professional capability of the average *leskhoz* staff is very limited and does not meet the requirements necessary for sustainable forestry.

9.2.2.3 Salaries

The salaries of *leskhoz* employees are extremely low - although they do include health insurance.



Leskhoz staff in Ishkashim (Gorno-Badakhshan Autonomous Region, Tajikistan).



The staff of the GBAO forestry administration in Khorog receive salaries between 172 TJS per month⁵⁹ for the director and 56 TJS per month for a forest guard, 50 percent of which is paid out of the ordinary budget, and the other half out of the Dushanbe budget. Staff salaries are not regularly paid, which forces the staff to look for other income-generating activities - and that means that valuable working time cannot be used for the the *leskhoz* staff's original tasks!

Conclusion: It is obvious that no family can survive on such a low salary⁶⁰ and the *leskhoz* staff members are forced to seek other sources of income.

9.2.2.4 Vehicles/transport

All *leskhoz* are inadequately equipped with means of transport - cars, trucks, tractors, motorcycles, boats and horses. In most cases, there is just one old Soviet-era car that can still run. That means that since the *leskhoz* forest area covers several thousand ha, patrols have to be carried out by foot - which takes a number of days for such big areas.

Conclusion: The *leskhozi* (the *leskhoz* staff) are not equipped to protect the huge *leskhoz* forests, which cannot be patrolled by foot.

9.2.2.5 Other equipment

Virtually all *leskhoz* offices have just a desk and a few chairs. There are rarely any computers or table calculators. Nor is there a filing system - which makes any serious accounting or auditing work impossible.

Guards also are *not equipped* with sturdy shoes, outdoor gear, radio transmitting sets, binoculars, and so forth.

Conclusion: The *leskhoz* staff members do not effectively patrol the area because they lack the necessary equipment.

9.2.2.6 Working experience with participatory approaches

The *leskhoz* staff is not prepared to involve rural residents in the planning and decision-making processes. They are used to the traditional top-down approach - the typical command structure of the Soviet era - and have never been exposed to participatory approaches like JFM.

Conclusion: An intensive training program in JFM-type participatory approaches must be given to competent staff before any measures can be implemented.

9.2.2.7 Technical capability

The technical capability of the *leskhoz* staff is limited because:

- they lack professional technical training in forestry and
- the current quota system limits their scope to make technical decisions and forces the staff to simply execute orders.

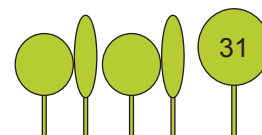
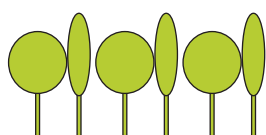
No technically sound guidelines for forestry exist that serve as the basis for sustainable forest management.

More capacity building is urgently needed. Further development of this type should rank high on the agenda of any agency interested in supporting Tajikistan's forestry sector.

Conclusion: The *leskhoz* staff members are not equipped to protect and manage their forests.

9.2.2.8 Modern technologies

There is virtually no technology (e.g. a specific software) available to conduct area management, forest management planning, monitoring tasks and control work in a transparent and comprehensive fashion. Product sales cannot be verified because there is hardly any transparent bookkeeping.



The *leskhoz* staff members work with obsolete maps - often dating back to 1981 - which do not reflect the actual condition of the forests.

Conclusion: The *leskhoz* staff members are not equipped with the necessary instruments and technologies to protect and manage their forests.

9.2.2.9 Operational budget

A substantial operational budget does not exist, which means that the *leskhoz* staff is forced to spend a lot of time developing and implementing “internal survival strategies”. Apart from forestry, the *leskhoz* are engaged in agriculture, livestock, agro-forestry, hunting and other businesses that ensure a regular income for staff who cannot count on being paid regularly. NTFPs provide an essential part of the revenues that permit the economic survival of the *leskhoz*.

Conclusion: The *leskhoz* does not have an adequate budget for staff.

9.2.2.10 Leadership, roles and responsibilities

The directors of the *leskhoz* tend not to be used to being - or allowed to be - proactive, or to initiate solutions and plan independently. In general, leaders are compelled to wait for instructions from Dushanbe.

Given this scenario, it is crucial to provide good, strong leadership to guide the *leskhoz* to become a modern, market-oriented service enterprise. The implementation of participatory approaches, such as JFM, calls for strong leadership, with backing from the CEP in Dushanbe. Within the institution, roles and responsibilities with obvious lines of command will have to be clearly defined, in order to make all actions transparent and comprehensible, and to hold staff accountable for their work.

Only in the *leskhoz* GBAO were proactive initiatives, albeit limited, observed. That *leskhoz* director was well disposed to implementing the JFM approach there. A

special workshop held for *leskhoz* representatives from all over Tajikistan revealed great interest in this approach, and the CEP Deputy Director, *Mr. Davlatov*, was also enthusiastic.

Conclusion: Roles and responsibilities are not clearly defined and the *leskhoz* follow the principle: Better do nothing than make a wrong move!

9.2.2.11 Organizational structure

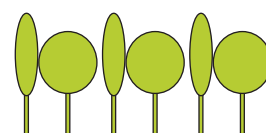
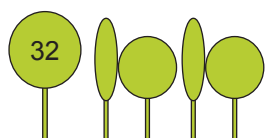
The *leskhoz* are more or less line agencies of the CEP that operate in almost all the districts of Tajikistan, where the old hierarchical system does not permit any independent action. They enjoy hardly any scope to make decisions and implement sustainable forest-management practices in *leskhoz* forests.

While the staff is charged with certain tasks, many of these have nothing to do with what the *leskhoz* are supposed to do - that is, manage and protect the *leskhoz* forests. Many tasks concern identifying and implementing financial survival strategies needed to pay staff and laborers.

9.2.3 Evaluation of the Role, Capacity and Capability of the Leskhoz

Based on the results of the comprehensive ICA, the conclusions can be summarized as follows:

- The *leskhoz* are not adequately equipped (with staff, budget, expertise or technology) to implement sustainable forest-management schemes.
- They are not in a position to protect the existing *leskhoz* forests.
- The existing hierarchy, leadership and organizational structure do not permit proactive and independent decision-making at the level of the individual *leskhoz*.
- Capacity development for all *leskhoz* will have to cover all aspects of institutional capacity building: (i) office equipment, (ii) recruitment of qualified staff, (iii) staff training, (iv) transport facilities, (v) remuneration, (vi) changes to the existing organization and its respective structures



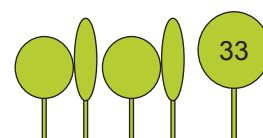
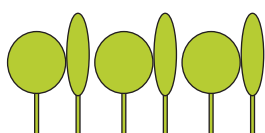


Almost destroyed forests which mainly consist of shrubs. Sand dunes will threaten human settlements.

and (vii) enhancement of the legal framework (studying the issue of decentralization!).

The current set-up permits the *leskhoz* staff to somehow survive. But regarding the official functions the *leskhoz* are supposed to fulfill - particularly the protection and management of *leskhoz* forests - the agencies are condemned to inactivity.

The current institutional weakness of these agencies makes the successful implementation of donor-funded projects difficult. The Tajikistan *leskhoz* urgently need institutional support from outside the country. Under *leskhoz* supervision the GTZ has initiated a capacity-building program for the *leskhoz* GBAO in Khorog and prepared a business plan for the forests. The results clearly indicate remarkable potential for revenues for the *leskhoz* GBAO⁶¹, which would make the institutions independent of Dushanbe. But investment in office infrastructure, training and transport and recruitment of qualified staff is urgently needed. An institutional capacity-building program must be part of any investment in Tajikistan's forestry sector.



10 Policy and legislation

Tajikistan's few remaining forest resources, which include not just forest land but also forest products, including NTFPs, are under heavy pressure from a number of users. The main factors that cause forest degradation and destruction are:

- illegal timber cutting,
- fuelwood gathering,
- overgrazing and
- use of suitable forestry land for agriculture.

The GoT has reacted with a number of legal instruments and programs to halt deforestation and protect the country's natural resources. The most important are:

1992	Law on Nature Protection
1993	Forestry Code
2005	State Program for Development of Protected Areas
2005	Law on Biological Safety
2006	National Forestry Program
2008	Law on the Animal World

The GoT's main strategies for the environment and forestry sector are:

- the National Biodiversity Strategy and Action Plan (NBSAP),
- the National Environmental Action Plan (NEAP) and
- the National Forestry Program (NFP)⁶².

10.1 Access to Forest Resources

The Forestry Code of 1993 remains the legal basis until enactment of the new code. All forests are state-owned, with the State alone responsible for the management of these forests. It should be noted, however, that the 1993 Forestry Code expressly permits leasing to individuals, although the instrument for leasing forest resources to individuals has rarely been used. Only the GTZ project on "Sustainable Rehabilitation and Development of Flood Plain Forests in Gorno-Badakhshan" made extensive use of the instrument, testing

a new and innovative approach towards forest management called "Joint Forest Management" (JFM).⁶³

To promote increased participation of the people in the use of, and benefits from, the few remaining forest resources, in 2005 the GoT initiated a National Forestry Program (NFP).

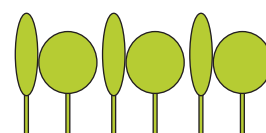
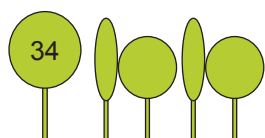
10.2 The National Forestry Program (NFP)

The National Forestry Program 2006-2015 was formulated with such key players as the *leskhoz* staff in Dushanbe, the FAO⁶⁴ and the relevant ministries in Dushanbe. Published in Russian in 2005, with an official serial number and an introduction by the President, this document serves as the basis for Tajikistan's future engagements in forestry.

The contents of the Russian-language version of the NFP 2006-2015 is briefly summarized as follows:

- forest management is mostly concerned with the protective functions of forests and notably excludes timber extraction,
- harvesting and processing of NTFPs is emphasized and explicitly permitted,
- reference is made to the new forestry code that is still pending and its respective by-laws (which are still to be drafted),
- leasing contracts with private persons and organizations are expressly permitted,
- the CEP is named as the agency in charge of forestry nationwide and
- the establishment of some 150,000 ha of industrial forest plantations is envisaged to meet the country's future demand for timber.

The CEP, with other ministries, offices and representatives from the district level, was appointed to implement the program. Measures for the rehabilitation of areas used as rangeland are to be jointly carried out by the State Land Use Committee, the CEP and the Ministry of Agriculture (MoA).



The NFP does not always clearly formulate the objectives of the forest policy. It emphasizes the protection, rehabilitation and sustainable use of forests—but without explaining the strategies to achieve these aims. Most notably, questions regarding implementation and financing arrangements and institutional reforms are not addressed. The NFP, as currently formulated, has a number of gaps to be filled.

A number of interventions that the NFP calls for implementing by 2015 are summarized in Annex 4. It is worth pointing out that:

- the *leskhoz* are not mentioned in the planning and implementation process of these measures,
- the GoT allocated a considerable amount of funding for these interventions, in particular for planting activities,
- forestry has been rediscovered as a subject worthy of study at the University of Dushanbe and
- the GoT provides funds for the rehabilitation of the *leskhoz* buildings and equipment.

It is obvious that the GoT cannot finance all these measures and is envisaging donor support!

10.3 The Forestry Code

The main legal framework for forest management in Tajikistan is the Forestry Code of the Republic of Tajikistan approved by the Chairman of the Supreme Soviet of the Republic of Tajikistan.⁶⁵ In 2003, the GoT initiated a complete revision of this law - which is still awaiting parliamentary approval. It should be noted that the GTZ and other bilateral and multilateral organizations have commented on the revised draft. It appears that relevant comments have been incorporated into the draft Forestry Code.

In 2009, a “Working Group on Forest Code Formulation” was established with support from the GTZ and the UNDP to analyze the latest version of the revised Forestry Code. The review and revision process was entirely conducted by forestry officials from the *leskhoz* in Dushanbe. The GTZ assistance focused on giving specific technical and legal advice for the review/revision process, with the aim of writing a modern forest

code.

The objective of the working group was to accelerate and streamline the entire reform process. The review and revision of the draft Forestry Code were carried out in conjunction with the regular meetings of the working group, which discussed specific issues, potential conflicts, possible solutions, and so forth. Special attention was given to the lessons learned during the implementation of the JFM in GBAO. A copy of the Federal German Forest Law, translated into Russian, was given to each member of the working group to help orient them to internationally recognized best practices.

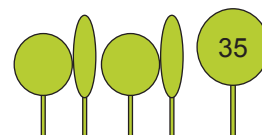
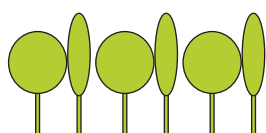
The draft prepared by the working group includes all the principles that should be in a good forest code. It has been noted that the new code is committed to multipurpose forestry. It also recognizes the importance of the rural population’s participation in the protection, preservation and management of forests, and gives them better access to forest resources.

Final approval of the new Forestry Code is awaited. It will have taken at least six years from the first revision to the final endorsement.

10.4 International Obligations

Tajikistan has signed most of the international environmental conventions, in particular the Rio Declaration (CBD, UNFCCC, UNCCD). However, it is not party to the Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Table 5 provides an overview of the Republic of Tajikistan’s accession to these conventions.



Name of the Convention	Date of Accession
Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (UNECE)	17.07.2001
United Nations Convention to Combat Desertification (UNCCD)	16.7.1997
United Nations Framework Convention on Climate Change (UNFCCC)	7.1.1998
Vienna Convention for the Protection of the Ozone Layer	6.5.1996
Montreal Protocol on Substances that Deplete the Ozone Layer	7.1.1998
Convention on Biological Diversity (CBD)	29.10.1997 (CBD)
Cartagena Protocol on Biosafety of 2000	12.2.2004 (Biosafety)
Convention for the Protection of the World Cultural and Natural Heritage	28.8.1992
Bonn Convention on the Conservation of Migratory Species of Wild Animals (CMS)	1.2.2001
Signatory of the MoU on <i>Bukhara</i> Deer	
Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat	18.11.2001
Stockholm Convention on Persistent Organic Pollutants (POPs)	8.2.2007

Table 5: Accession of the Republic of Tajikistan to international conventions (Source: Dorer, C. and Kasparek, M., Identifying Fields of Cooperation between the Committee on Environmental Protection under the Government of the Republic of Tajikistan and the GTZ, The Committee on Environmental Protection (CEP) and Related Institutions - Results of a Project-Finding Mission (2009))

11 Government and donor initiatives in the forestry sector

Donor involvement and support for the forestry sector is scarce in Tajikistan. Given the regional and global threats that are triggered by deforestation, it is hard to comprehend the lean donor support.

There are basically four donors active in Tajikistan's forestry sector: the GTZ, the UNDP, the Aga Khan Foundation (AKF), and the Deutsche Welthungerhilfe (German AgroAction).

11.1 Donor Assistance to the Forestry Sector

11.1.1 Deutsche Gesellschaft für technische Zusammenarbeit (GTZ)

The GTZ project in Tajikistan on “Sustainable Rehabilitation and Development of Flood Plain Forests in Gorno-Badakhshan” assists in the elaboration of joint forestry management (JFM) schemes between the *leskhoz* and interested villagers (*tenants*) in *Gorno-Badakhshan Autonomous Oblast* (GBAO).

It is complementary to the project activities of the GTZ/DED/CIM “Regional Programme on Sustainable Use of Natural Resources in Central Asia” which, in addition to promoting participatory forestry, also supports household-based energy efficiency as well as water harvesting, storage and irrigation measures in Gorno-Badakhshan. At the national level, it supports scaling up best practices and efforts for forestry-sector reform.

The project, which started in April 2009 with the fielding of two experts on forest management⁶⁶, is financed by two German sources, the Federal Ministry for Economic Cooperation and Development (BMZ) and the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU). The BMU participation will end in September 2011.

Project activities are embedded in the structures of the

Central Asian Countries Initiative on Land Management (CACILM).⁶⁷ The project aims to enable state and civil society organizations in GBAO to rehabilitate and develop the degraded flood-plain forests with the participation of the local population. This is to be achieved under JFM schemes, agreed by local users (tenants) and the *leskhoz* through long-term leases.⁶⁸

JFM is expected to establish principles of “better ownership” on the part of forest users so as to put an end to the “open-access scenario”. JFM is considered necessary to trigger mid- and long-term investments in the rehabilitation and development of degraded forest resources.

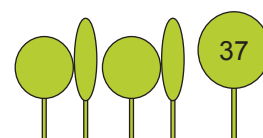
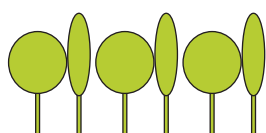
The projects cover:

- assistance in the elaboration of leases,
- preparation of individual forest management plans (FMPs) and annual plans of operation (APOs) for tenants,
- support through start-up investments in irrigation, water supply or fencing (if necessary and feasible),
- establishment of an extension service at the district level,
- dissemination of JFM schemes and
- implementation of sustainable forest-management practices.

The JFM approach was successfully tested in an earlier pilot project in the *Roshtkala* district⁶⁹ and is considered to be a promising instrument for halting “open access” and introducing sustainable forest-management systems.⁷⁰

To date, a total of 292 FMPs and APOs, covering 1,400 ha, have been prepared and signed. The projects are intended to cover some 4,500 ha before the end of 2010 and 6,000 ha by the middle of 2011.

The focus of activities is to make the whole system economically, institutionally and socially sustainable.



Since the GTZ introduced JFM schemes in GBAO, a number of specific lessons have been learned that are summarized as follows:

- “Open access” has been stopped in areas with JFM schemes.
- Fuel and fodder availability increased within two years of implementing JFM.
- Incidences of theft and other illegal activities have decreased.
- More employment has been generated in villages.
- The natural regeneration of forests has improved.
- The harvest of non-timber forest products (NTFPs) has increased, resulting in more income from collecting fuelwood, fodder and other products.
- Identification of “honest” tenants is key to achieving better performance in the sector.
- Leases with “errant” tenants must be cancelled in order to increase awareness of sustainable forest management.
- Basic technical-forestry training is needed to: (i) foster forestry awareness among stakeholders, (ii) execute fieldwork more efficiently and (iii) maintain a high standard of technical work.
- A system of financial incentives is needed to promote engagement and investment on marginal sites.

Based on this experience, the projects are continuing to help the *leskhoz* overcome the issues and constraints cited above, with the long-term objective of improving sector performance by implementing sustainable forest-management schemes (e.g. JFM).

The GTZ intends to compile the lessons learned in GBAO to assist the ongoing national forestry-reform process.

The GTZ program on “Sustainable Use of Natural Resources” cooperates with the Tajik NGO “Nature Protection Team” project in implementing activities regarding the conservation and management of mountain ungulates. This joint effort focuses on improving wildlife management in model areas in collaboration with local community-based groups, as well as private

hunting managers and includes development of a monitoring system and population assessments (a kind of “wildlife census”). It helps improve national policies and their respective legal frameworks.

11.1.2 The UNDP

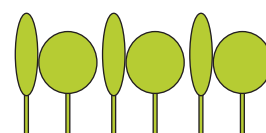
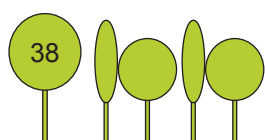
The UNDP emphasizes sustainable land management (SLM) practices. In the project, “Demonstrating Local Responses to Combating Land Degradation and Improving Sustainable Land Management in SW Tajikistan”, abandoned land is used for plantations, mainly of fruit trees. Trees are also planted along rivers and in special demonstration areas. Participating villagers who form village associations are trained in land management. The board of an association represents the will of the villagers.

Planting abandoned land is entirely undertaken by landowners (*dekhans*) for their own purposes. The project intends to demonstrate to *dekhans* and *hokimiyats* (authorities) that such land can be brought into productive use and produce multiple benefits. On land of adequate quality, they have established intercropping systems with alternating rows of fruit trees and vegetables at 10 m intervals and poplar trees for wind-breaks. In areas with high salt content where farming is impossible, only salt-tolerant tree species (e.g. *Russian Olive*) are planted.

One component of the project is the protection of *tugai* forests. A leasehold agreement for some 130 ha of *tugai* forests forms the legal basis of forest allocation to adjacent communes whose “village committees” represent the rural population and function as an administrative body. A district tax of 7.8 TJS per ha is collected from the villagers.⁷¹

Utilization of *tugai* forests follows certain rules and regulations that are decided and enacted by the village committees. Following a quota system, only village members are permitted to graze their cattle in the *tugai* forest area. Each head of cattle costs 0.70 TJS.

The *tugai* forest is considered to be the induced institutional-development of a common property resource



belonging to three villages. This resource is apportioned in separate leases with local government structures of, respectively, 34 ha, 51 ha and 41 ha. Such arrangements can also be applied to plantations (e.g. *saxaul*). These areas are characterized by:

- clearly defined boundaries
- sustainable management practices (considering the carrying capacity of the site)
- rules for decision-making that allow all villagers to participate
- a monitoring system
- fines for errant users
- conflict-resolution mechanisms
- land-tenure security (GoT recognition of their rights)

The small-scale UNDP project is in the forefront of piloting forest management in Tajikistan.

11.1.3 The Aga Khan Foundation (AKF)

In 2004, the AKF started a tree-planting project in Shartuz, which involves rural households partnering with the local government and village associations. Its main focus is the establishment of small demonstration forests of 600 sq m per household in order to show that adequate household fuelwood can be produced on small plots. Each plot can produce a sustainable supply of about one cu m of fuelwood per year - provided the annual cut doesn't exceed the annual increment.

These forest plots are fenced to keep out cattle. The AKF funds training, seedlings and fencing material. This approach has been tested on some 10 ha (37 forest blocks and slope plantations). Preliminary results indicate that these plantations have been successful: Villagers recognize that plantations can survive if they are managed and protected. The AKF intends to extend the project and focus on erosion-prone sites to enhance the ecology and biodiversity, and increase the revenues of participating villagers.

The AKF also seeks to improve the marketing chances for NTFPs, and plans to conduct special training sessions, which will also teach techniques for marketing.

The AKF is operating in relatively small areas, collecting results before expanding to bigger operations. However, the general lessons learned by the UNDP and the GTZ (see Section "11.1.1 Deutsche Gesellschaft für technische Zusammenarbeit (GTZ)") also apply to the AKF projects.

11.1.4 German AgroAction (Deutsche Welthungerhilfe)

German AgroAction, operating in six target villages, focuses on integrated watershed management with the aim of reducing erosion and rehabilitating vegetative cover through afforestation, contour-line planting and appropriate crop rotation. The main issue in the target area is pasture management.

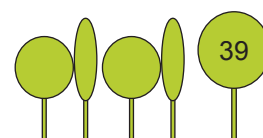
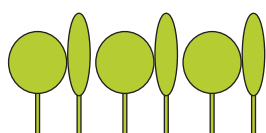
The project operates on state-owned land that has been heavily degraded through overgrazing. With the help of local residents, a land-use plan (LUP) will be prepared. After the LUP has been discussed with all the villagers, on signing, the Plan will be binding.

The project only started in 2009 and no results are yet available. However, it appears that land-use planning does help bring the pasture issue under control.

11.1.5 The Central Asian Country Initiative for Land Management (CACILM)

CACILM is being implemented within a multi-country framework, which includes a 10-year program (2005-2015) of activities in each country, based on their respective national-programming frameworks. Financing for the whole program (2006-2015) totals \$1.4 billion USD.

The Strategic Partnership Agreement for UNCCD implementation in Central Asian countries includes: the Asian Development Bank (ADB), the Canadian International Development Agency (CIDA), the GTZ, the Global Mechanism of the United Nations Convention to Combat Desertification (GM), the International Center for Agricultural Research in Dry Areas (ICARDA), the International Fund for Agricultural



Development (IFAD), the Swiss Agency for Development and Cooperation (SDC), the UNDP, the United Nations Environment Program (UNEP) and the World Bank.

Forest degradation can be regarded as one of three major “hot spots” regarding massive land degradation in Central Asia. The other two are degradation of pastures and land under irrigation agriculture. CACILM addresses current forestry problems in Tajikistan, Kyrgyzstan and Turkmenistan.

CACILM interventions are usually designed to begin by using good practices that work well at field level and produce benefits that can be shared between land users and state agencies or government institutions. In the second step, the government agencies responsible for fighting degradation are invited to study the case and consider transferring its good or best practices to other areas of the country. The third step consists of assisting government institutions in a process of legislative reform, trying to build on these best practices and aiming to scale up successful experiments.

Using this approach, CACILM has developed 15 learning cycles (3 hot-spots x 5 countries), thus covering some 80 percent of all land degradation issues in Central Asia. The regional CACILM program management is sustaining these processes by actively fostering knowledge management and experience pooling among some 20 projects in Central Asia.

The Central Asia regional capacity-building project addresses cross-cutting issues between the various hot spots and the various countries, such as how to adapt participatory land-use approaches to specific situations. It also enables institutional learning and knowledge transfer between the various agencies in Central Asia so as to profit from those countries that are more advanced in a particular learning cycle.

11.1.6 Opportunities for Forestry Reforms

In Tajikistan, forest destruction and the ensuing land degradation is a major environmental constraint. To

date, the international donor community has undertaken only a few attempts to halt the ongoing process of forest destruction in the country. One of the good practices in the framework of the GTZ's Regional Program on Sustainable Use of Natural Resources demonstrates opportunities for rehabilitating and sustainably managing forest resources. Based on the JFM approach, these lessons encourage continued rehabilitation of Tajikistan's forest resources.

The Forest Sector Analysis (FSA) states that donors have a number of opportunities to participate in the entire reform process of the forestry sector. More and more donors are beginning to recognize the environmental, social, economic and climatic importance of the forestry sector.

The FSA calls for urgent investment in the sector, most especially for afforestation, which would immediately trigger a number of positive impacts:

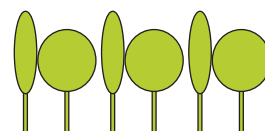
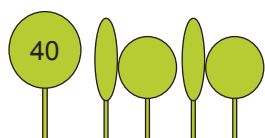
- additional employment and income for villagers,
- enhanced energy supply for villages,
- carbon dioxide absorption that will mitigate the impacts of climate change,
- stabilization of land resources and
- villagers' increased access to NTFPs.

Fortunately, Tajikistan's government is also aware of the importance of the forestry sector and its positive long-term impacts on all other natural resources. It has demonstrated commitment by instigating the NFP. The GoT has actively supported the Forestry Code reform, and is currently seeking more donor support for the forestry sector.

Multi-national funded programs like CACILM and the Pilot Program for Climate Resilience (PPCR) should also pay attention to forestry, especially its significance for all climate-related questions and in particular, how forests are able to mitigate the negative impacts on land degradation.

11.2 General Lessons Learned

The few donors that are involved in Tajikistan's forestry



sector have responded positively to critical concerns arising from the rapid disappearance of the country's forest cover due to illegal logging, fuelwood cutting and overgrazing. The most pressing challenge is to develop appropriate policies and institutional arrangements to implement programs, such as the NFP 2006-2015, to halt forest degradation and destruction. The revision of the country's Forestry Code is overdue. Once appropriate participatory sustainable management schemes have been agreed, substantial financial assistance will be needed to finance fuelwood plantations to cover the rural population's demand for firewood and reduce the risk of erosion.

All the donors engaged in Tajikistan's forestry sector have learned the same general lessons:

- The *leskhoz* are not able to manage and protect the country's forests.
- Handing over forest land to individuals, households or communes ensures forest protection and better management.
- FMPs and APOs - JFM - guarantee sustainable forest management.
- Forests can provide substantial income for rural households.
- Land-use planning is an essential instrument for the long-term development of the forestry sector.
- Large-scale afforestation must be accompanied by pasture-management concepts.
- Pasture-management concepts are urgently needed to reduce the risk of erosion.

A number of specific lessons learned could guide donors interested in supporting Tajikistan's forestry sector:

- 1. Security of Tenure:** It is imperative to assure long-term tenure to the beneficiaries involved in forest management and reforestation activities in order to secure proper forest management and the protection of forest areas. Such security should be in place at the start of any tenure agreement. JFM - initiated with the GTZ's help - is a tenure instrument that caters to the interests of all stakeholders.

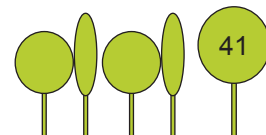
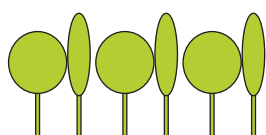
- 2. Forest Regulations:** The existing forest rules are complex and often contradictory - and do not prevent illegal cutting and poaching. Strict enforcement of forest regulations is essential. Adequate facilities and salaries or awards are also necessary to ensure law enforcement. Law enforcement is critical but the *leskhoz* cannot address this problem alone: The Department of Justice and other government departments must be actively involved.

- 3. Community Participation:** Community participation is an important means of protecting and preventing deforestation. The UNDP approach in tugai forests is a good example of successfully delegating forest protection to a committee that represents the adjacent communes. This approach should be extended to other tugai forest areas.

- 4. Policy Instruments:** Forestry-sector policies require constant revisions to reflect the changing socioeconomic and political environment, in particular in a formerly centralized economy that is changing over to a market-oriented economy. Forest policies must evolve on the basis of cumulative knowledge and information, including that from the grassroots. Close coordination and cooperation between aid agencies is essential for ensuring consistent policies that are geared to achieving long-term goals.

- 5. Land-Use Planning:** Participatory land-use planning (PLUP) is a new instrument that involves the rural population in the decision-making process and ensures sustainability in ecologically sound forms of land use. PLUP should be introduced in Tajikistan-

- 6. Reforestation Concept/Strategy:** The country has no nationwide reforestation concept that mitigates the negative impacts of forest degradation and destruction. A nation-wide concept that considers the need for sustainable pasture management and the enhancement of grasslands should be developed to increase forest cover from the current less than 2 percent to 5 percent.



7. Extension Service: A technical extension service that provides advice to interested stakeholders does not exist at either the *leskhoz* or the national level. Increased investments in the forestry sector require a qualified extension service.

8. Government Reforestation/Afforestation: In the past, investments in reforestation programs were only marginal. But the NFP 2006-2015 envisages afforestation activities on a much larger scale. Lessons learned from other countries teach that reforestation through state-owned enterprises is slow and inefficient. It also further burdens the government, which already has inadequate budgets and insufficient manpower for proper maintenance and protection.

9. Private/Corporate Sector: Private/corporate-sector participation by individuals, small firms and companies is a viable means for accelerating reforestation. It has also proven effective and efficient for the conservation and sustainable use of wildlife. But political stability, firm policies and suitable incentive packages are required to promote private-sector participation.

10. Decentralization: Using a centralized bureaucracy for reforestation and forest management is inimical to accelerated activities: Decentralization of powers to regional (or district) levels is necessary to enable efficient field-level operations.

11. Training: Adequate technical training for all stakeholders at all levels is indispensable in Tajikistan. Training should include enhancement of organizational and management skills. Attitudinal changes and better motivation of staff at the field level are important for facilitating collaborative work with smallholders, communities and NGOs.

12. Involvement of NGOs: Field observations indicate that NGOs are especially helpful in mobilizing communities and implementing projects. One example is the “Nature Protection Team” NGO that emphasizes involving local (informal) hunters in wildlife management. So far, three

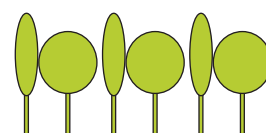
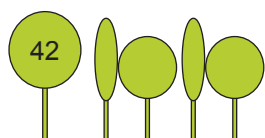
non-governmental organizations have successfully started protection and monitoring activities. This approach has great potential for being replicated in other areas.

13. Watershed Rehabilitation: In view of the scarce forest vegetation in Tajikistan and the widespread, intensive grazing, a comprehensive policy on watershed management is urgently needed. Current livestock farming practices hamper reforestation, forest management and all watershed protection measures. Unless a system of sustainable pasture management is put into place, it will be difficult to protect and develop watershed areas.

14. Site and Species Selection: State-owned nurseries focus on cultivating seedlings of exotic and fast-growing species, which by definition risks failure and low survival rates. Species must be correctly selected to match planting sites in order to ensure successful plantation and long-term sustainability.

15. Monitoring: The monitoring and implementation of forestry programs should be separated to ensure objectivity in reporting and identification of fraudulent practices. Independent, scientific and simple procedures for monitoring should be used, and should include monitoring of impacts.

16. Nurseries: Because seedlings are not raised in containers, successful output in larger areas is impossible. A nation-wide afforestation program requires a seed bank with a central nursery that caters to small, decentralized nurseries located close to planting sites. Nursery techniques must focus on indigenous species grown in small containers.



12 Strategic priorities for the forestry sector

12.1 General Remarks

So far, donor support to the forestry sector in Tajikistan has concentrated on a few small projects conducted in selected areas, and focused on relatively small areas (at village or commune level). In general, the impacts concentrated on communities, so the benefits were limited to a few villages. Only the GTZ project on “Sustainable Rehabilitation and Development of Flood Plain Forests in Gorno-Badakhshan” has achieved relatively high area accomplishments with significant impacts on the regional-forest cover (see Section “8.1.1. Deutsche Gesellschaft für technische Zusammenarbeit (GTZ)”).

It has been noted that there is no operational strategy with overall strategic objectives and thematic priorities for the forestry sector in Tajikistan. In 2009, the UNDP⁷² launched the draft concept paper of the “Green Initiative for the Forestry Sector in Tajikistan” (GIFT)⁷³, which was later renamed “*Tojikistoni Hamesha Sabz* (THS)”. As an immediate consequence of THS, GoT and donors acknowledged the need for a coordinated strategic planning process in order to govern operations and investments in the forestry sector.

An operational strategy for the forestry sector must be prepared: It could become the driving focus of donor support. The purpose of this operational strategy is to clarify:

- the strategic focus and agenda for donors in the next few years
- the policies and development approaches to be adopted in response to specific issues and constraints in the forestry sector
- the priorities for interested donors
- the strategic profile for the forestry sector

With regard to the forestry sector in Tajikistan, donor strategies should emphasize systematic efforts to protect, conserve and restore forest cover, and to realign the management of forest resources on a sustainable basis. Donor interventions will have to include:

- policy and institutional reforms
- capacity/capability building
- financial investments

The policy and institutional agenda must address (at the very least):

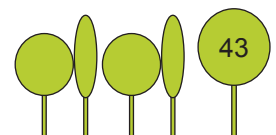
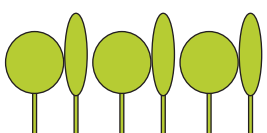
- the appropriate roles of government,
- private-sector involvement in forestry,
- community forestry,
- land tenure and tenure arrangements that permit access to forest land for rural residents,
- land-use planning,
- legislation and
- law enforcement.

Tajikistan’s forestry sector needs a comprehensive investment program, most especially a program for nationwide afforestation. The introduction and use of appropriate, long-term tenure arrangements will trigger investments that focus on JFM, community-based reforestation and forest management, rehabilitation of threatened watersheds, agro-forestry, conservation of biodiversity and entire ecosystems, and multipurpose forest and wildlife management.

12.2 Priorities for Forestry Sector Support

The key constraints in Tajikistan’s forestry sector have been identified and discussed in this report. Specific sector goals and objectives will have to take into account the major causes of these problems and the constraints in addressing them, including the lessons learned from the country’s few donor-financed forestry projects. These are the priorities:

- protecting and conserving the few remaining natural forests from further degradation and destruction
- managing these forests with an aim to sustainable production of fuelwood and a halt to the process of deforestation and degradation
- supporting the implementation of sustainable



reforestation through a concept that is tailored to the districts so as to ensure a future timber supply that will eliminate the balance-of-trade deficit

- developing a policy for watershed and pasture management to sustain the agricultural water supply and prepare the ground for afforestation in larger areas
- cataloguing the criteria for “good forest policy” in order to assure improved, long-term forest protection, management and law enforcement.

for future investments in forestry

- supporting the introduction of more effective technologies for forest management
- actively supporting community involvement in forest management
- preparing a watershed-rehabilitation-cum-pasture-management program as an integrated approach - while taking into account the potential for conflict between highlanders and lowlanders
- strengthening the CEP, particularly with regard to information management, decentralization, inter-agency coordination, and technical extension work.

12.3 Key Strategic Approaches to the Sector

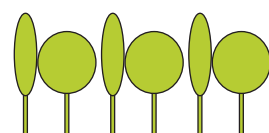
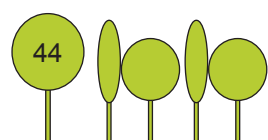
Donors’ current strategies for Tajikistan’s forests emphasize systematic efforts to conserve and restore forest cover and to realign the development and management of forest resources on a sustainable basis. All donors focus on:

- approaches that include the local population in planning and decision-making
- environmental protection
- income-generating activities for the rural population
- the need for policy to further support the sector
- capacity building to overcome institutional weaknesses

Future interventions in the sector should build on experience and give clear priority to the protection and conservation of the remaining forests through management schemes that can appropriately respond to anticipated production needs.

More specifically, the strategic approaches in the country’s forest-policy reform will have to focus on:

- preparing, strengthening and streamlining policies and regulations, particularly with respect to tenure rights and incentives to sustainable forest management by both the private sector and communities (e.g. JFM)
- assisting the GoT and executing agencies in more effective enforcement of regulations
- introducing and applying general principles of multipurpose forestry as the guiding mechanism



13 Conclusions

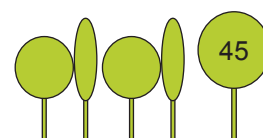
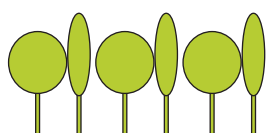
The findings of the Forestry Sector Analysis indicate that there is an urgent need and sufficient potential to develop the forestry sector of Tajikistan. Moreover, it is high time to intervene with intelligent concepts that do not strain the government and the executing agencies.

The establishment of sustainable forestry in Tajikistan must be based on approaches that include rural residents in the decision-making process. The private sector must also be involved in forest management. There are many lessons learned from good practices that can be applied.

The GoT has indicated support and the political will to initiate, lead and carry out a comprehensive reform process for the forestry sector. The NFP 2006-2015 indicates that Tajik politicians recognize forestry's potential and are ready to work to realize it.

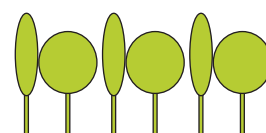
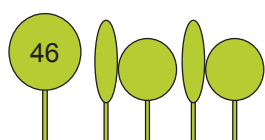
It is now up to the international donor community to respond. A strategic profile of Tajikistan's forestry sector should be prepared as quickly as possible. This must include:

- compilation of a policy-reform agenda,
- institutional reforms including a concept for enhancing capacity and capability,
- a comprehensive afforestation program and
- the development of a concept for sustainable forest management including silvicultural systems.



14 Endnotes

1. Principle Source: Terminology of Forest Science, Technology Practice and Products, The Society of American Foresters (1971).
2. Figures are cited from the following documents: (i) ADB Fact Sheet of 31 December 2008, (ii) The World Bank Country Brief (2009) and (iii) United Nations Statistics Division (2009). See References at the end of this document.
3. The conflict is reported to have claimed more than 60,000 lives.
4. Joint Mission Report Pilot Program for Climate Resilience Tajikistan, The World Bank (2009).
5. The State Statistics Committee (2005).
6. Estimated at 553 million USD (at the end of 2008).
7. Akhmadov, K., Geneva Timber and Forest Discussion Paper 46. Forest and Forest Products Country Profile Tajikistan, New York: United Nations (2008).
8. Irrigated areas are also found in the southeast, in Kafirnigan and Vakhsh.
9. The following figures are cited in the Akhmadov, K., op. cit. (2008).
10. Based on UN/FAO statistics from 2007.
11. Community Tugai Forest Management.
12. It is interesting to note that within the sources some figures vary, for instance, the ADB reports a population of 7.28 million in 2008, whereas UN and World Bank figures put the population at 6.84 million (a difference of 440,000 people).
13. ADB & Tajikistan Fact Sheet (2008).
14. The World Bank Country Brief (2009). The WHO figures 70 years for males and 74 years for females. WHO, Europe: Making Pregnancy Safer.
15. ADB & Tajikistan Fact Sheet (2008).
16. Economy Watch (2009).
17. The extremely low salaries of public servants do not attract young people.
18. The World Bank Country Brief (2009).
19. Ibid.
20. Tajikistan Country Brief (2009).
21. Reference is also made to: IMF, Poverty Reduction Strategy Paper 2010-2012 (2010).
22. The World Bank Country Brief (2009),
23. Including fuelwood.
24. The only logging that is permitted in Tajikistan's forests is for forest improvement and maintenance purposes.
25. Akhmadov, K., op. cit. (2008).
26. Ibid.
27. As a result of a tremendous increase in export taxes for timber.
28. About 20 million USD per year accounts for sawed and processed timber, and 1.2 million USD for paper and cardboard (FAO 2008).
29. Reference is made to the FAO: Akhmadov, K., op. cit. (2008).
30. State-owned nurseries produce between 50,000 and 300,000 seedlings per year. If the average price per seedling is 0.50 USD, the annual turn-

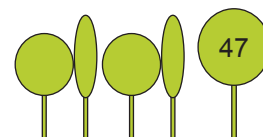
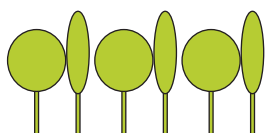


over can amount to 150,000 USD.

31. Akhmadov, K., op cit. (2008).
32. The average household consists of six people.
33. The reference unit for firewood is the cubic meter (cu m). For firewood that consists only of twigs and branches it's an unusual measurement because firewood measured that way is normally sold in bundles or priced according to weight.
34. These are average sites, fully stocked, with adequate water supply, including during periods without surface water.
35. The increment cu m is not equal to the cu m used for the sale of firewood, but there is no other unit available.
36. 1 Somoni (TJS) = 100 Diram; 1 EUR = 5.9 TJS (as of February 2010)
37. The author's estimates.
38. Fruit-tree plantations are recorded as forests in Tajikistan statistics.
39. Reference is made here to "Nutzung wild wachsender Heilkräuter, Früchte und Gemüse in Tadschikistan" by Kathrin Uhlemann (April 2010).
40. "Forests" in this analysis are based on the legal definition of forests in Tajikistan's current legislation.
41. Akhmadov, K. op. cit. (2008).
42. Given the enormous pressure on Tajikistan's forests, this is a realistic estimate.
43. Akhmadov, K. op. cit. (2008).
44. There are some forests on community land. In general, these forests are better managed than the state forests.
45. The annual allowable cut (AAC) is estimated

at 6,700 cu m. Reference is also made here to SAVCOR INDUFOR OY, Ensuring Sustainability of Forests and Livelihood through Improved Governance and Control of Illegal Logging for Economies in Transition. Working Document Tajikistan, for The World Bank (2005).

46. Akhmadov, K., op. cit. (2008).
47. Ibid.
48. Sustainable Rehabilitation and Development of Flood Plain Forests in Gorno-Badakhshan.
49. Akhmadov, K., op. cit. (2008).
50. Tugai Forest Joint Management Pilot is a CACILM project (GEF/UNDP) located in Shartuz.
51. The main facts compiled in this section are from a recent report by Dorer, C. and Kasperek, M.: Identifying Fields of Cooperation between the Committee on Environmental Protection under the Government of the Republic of Tajikistan and the GTZ, The Committee on Environmental Protection (CEP) and Related Institutions - Results of a Project-Finding Mission. Updated by the author in February 2010.
52. But the CEP authorizes the official cutting of just 2,000 cu m per year.
53. Dorer, C. and Kasperek, M., op. cit. (2009).
54. In 2000, the quota was set at 257 wild boars, 259 badgers, 977 hares, 14,546 chukar, 1,492 waterfowl and 48 ibex—but only about 50% of the quota was caught.
55. Merger with and subsequent splitting from the Ministry of Agriculture, raising the organization to the level of a ministry, then changing it to a state committee—before downgrading it to an ordinary committee.
56. This relates to the Convention on Biological



Diversity, the Aarhus Convention and Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer and its London Amendment, Convention to Combat Desertification, the Stockholm Convention on Persistent Organic Pollutants, the U.N. Framework Convention on Climate Change, the Bonn Convention on the Conservation of Migratory Species, the Ramsar Convention on Wetlands.

57. “Capacity” is understood as the ability of the agency or institution to carry out certain tasks in a given time frame; “capability” addresses the ability of the human factor working in such an agency or institution to carry out certain functions in a given time frame.

58. The ICA was performed using the leskhoz GBAO in Khorog. The results are more or less representative of all the leskhoz in Tajikistan.

59. 1 EUR = 5.90 TJS (as of February 2010)

60. The absolute minimum for the survival of a household of four in GBAO is between 80 and 100 EUR per month.

61. See Kirchhoff, J-F. (2009).

62. Issued in 2006 started implementation with national sources and seeks donor support.

63. In other regions of Tajikistan leasing is common but forest management is carried out without management plans and APOs.

64. The role of the FAO in the entire review process is not clear, since no official documentation about the FAO’s role could be found.

65. E. Rahmonov, No 769, 24 June 24 1993, Dushanbe.

66. Ms. Gaude/DED and Mr. Neusel/CIM (June 2010).

67. Under the aegis of the CACILM a working group on forests meets regularly meets as a kind of “think tank” to exchange views on decentralized, community-based management approaches.

68. According to the current land code, leases are limited to 20 years. They can, however, be renewed for another 20 years. A comprehensive benefit-sharing agreement, which specifies in detail the distribution of revenues, is attached to the lease.

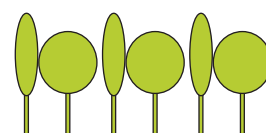
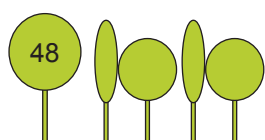
69. The pilot project in Roshtkala began in 2003 and included an area of some 100 ha.

70. The establishment of JFM schemes on some 6,000 ha of leskhoz forest land is envisaged within 2 years.

71. The Tugai Forest Joint Management Pilot Project (GEF/UNDP), located in Shartuz, is part of CACILM.

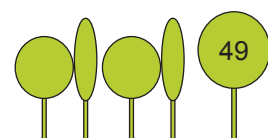
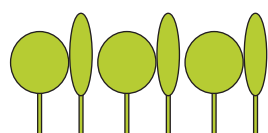
72. Including the FAO, the WFP and other partners of the UN family.

73. A Concept Paper.

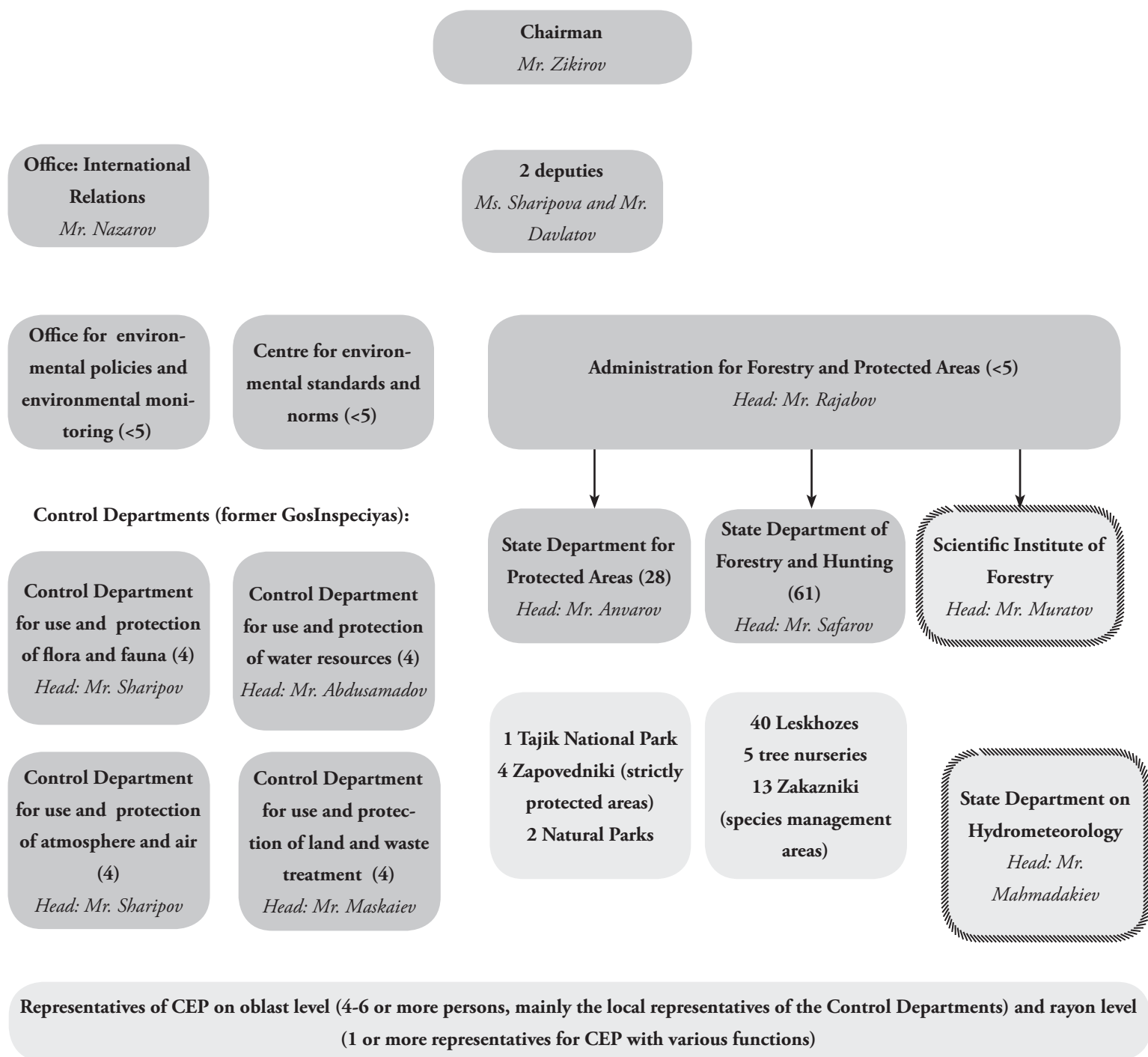


Annex 1: Compilation of seasonal fruits from the region

Local Name	Botanic/English Name	Use/Processing	Period of Harvest	TJS/unit	Specific Features
<i>Gelos</i>	Prunus avium, Sweet cherry	Jam, juice	May, June	5,-/kg	Tree mainly found in home gardens
<i>Olubolu</i>	Sour cherry	Jam, juice	July, August	3,-/kg	Tree mainly found in home gardens
<i>Zardolu</i>	Apricot	Jam, juice, drying	July	4,-/kg	Trees along houses, irrigation channels, and in gardens, also in field areas. Dried fruits were eaten in winter; the seeds are also sold.
<i>Olucha</i>	Yellow plum	Jam, juice, drying	July, August	4,-/kg	Trees along houses and in gardens, also in field areas. Dried fruits were eaten in winter.
<i>Tut</i>	Mulberry	Drying and mainly for eating	July, August	5,-/kg	Trees found everywhere, along houses and in gardens, occasionally in field areas. Dried fruits were eaten in winter. Different varieties deliver fruits with varying taste and sweetness.
<i>Chormagz</i>	Walnut	Drying and mainly for eating	September, October	3 to 10,-/kg	Trees only found in gardens of villages, not widespread in Pamir, only in protected places, Juglans regia is sensitive to strong frost.
<i>Sib</i>	Apel	Jam, juice, drying, storage for winter	August, September	4,-/kg	Widespread fruit tree species, in particular in gardens
<i>Pista</i>	Pistacio	For eating and oil	September	18,- to 30,-/kg	Widespread fruit tree, mainly from plantations
<i>Bodom</i>	Almond	For eating	September	18,- to 30,-/kg	Widespread fruit tree, mainly from plantations



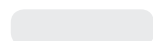
Annex 2: Organizational chart of CEP



Legend:



Department of CEP



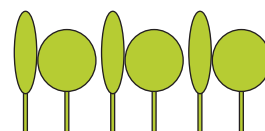
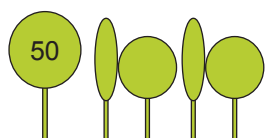
Oblast or rayon level



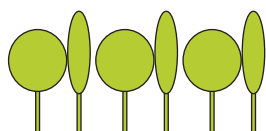
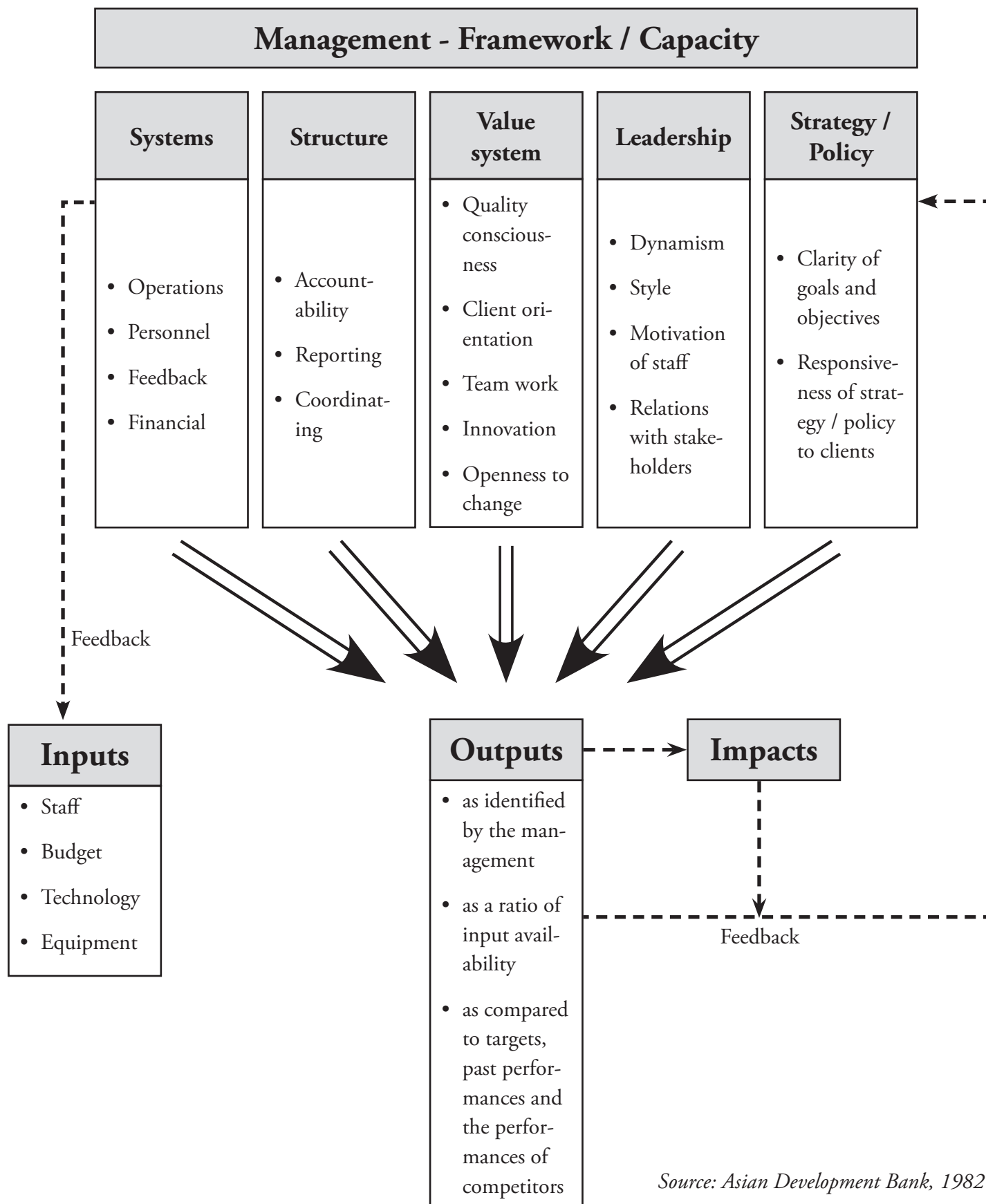
Under supervision of CEP

(4)

number of staff members



Annex 3: Framework for institutional analysis

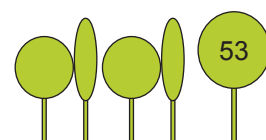
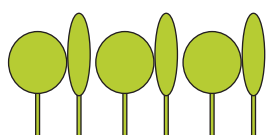


Annex 4: Planned measures under the Forestry Program

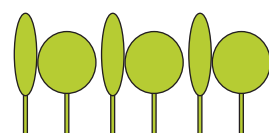
Measure	Year of implementation	Carried out by	Funding (in TJS)	Funding Source
Preparation of soils for reforestation with walnuts, pistachios, almonds, dog roses and preparation of forestry projects	2006	CEP, State Land Use Committee, local governmental organs	4,000	CEP
Land registry of 167 500 ha of GosLesFond (Baljuan, Mastjoh, Gissar, Istaravshan, Rogun)	2006-2010	CEP, MoF, Academy of Agriculture	-	-
Regulation for GosLesFond (State Forestry Fund) land with agricultural and pasture use	2006/2007	CEP, State Land Use Committee, MoF, MoA, local governmental implementing organs	2 x 2,000	State budget
Land Use Certificates for Leskhozi (State Forestry Enterprises), hunting farms and tree nurseries	2006/2007	State Land Use Committee, CEP, local governmental organs	20,000 50,000	State budget
Drawing up of a new Forestry Code for Tajikistan according to international standards	2009	CEP, MoJ, Academy of Agriculture	2,000	CEP
Establishment of a new temporary protected area (<i>Zakaznik Sari-Khosor</i>)	2006	CEP, local governmental organs of <i>Khatlon</i>	-	CEP
Establishment and reforestation of pistachio plantations, erosion protective tree belts, total 10,100 ha (1,010 ha p.a.)	2006-2015	CEP, MoF, local governmental organs	6,140,000	State budget: 1,600,000 TJS; CEP: 3,070,000 TJS
Poplar plantations (source of building timber), 3000 ha	2006-2015	CEP, local governmental organs	According to projects	CEP and international organizations
Seeding of <i>saxaul</i> (for pastures), total 2550 ha	2006-2015	CEP, local governmental organs	765,000	Land users
Walnut plantations (<i>Vahdat</i>)	2008-2015	CEP, MoF, local governmental organs	192,000	State budget
Doge rose plantations in GBAO (800 ha) and <i>Sogd</i> (400 ha)	2006-2015	CEP, MoF, local governmental organs	280,000	State budget
300 ha pines	2006-2015	CEP, MoF, local governmental organs	540,000	State budget

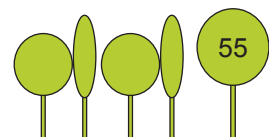
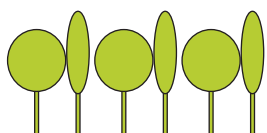
Protective tree belts along of agricultural areas		CEP, MoA, MoT, local governmental organs	1,197,000	Agricultural enterprises, road construction agency
Reintroduction of “Forestry” as subject of study at the Technical University of Dushanbe		MoE		MoE
Construction of <i>Leskhoz</i> buildings	2008-2013	Ministry of Economy and Trade, CEP	1,600,000	1,000,000 TJS by international organizations, 600,000 TJS by other sources
Equipment for <i>leskhozi</i>		Ministry of Economy and Trade, CEP	1,200,000	1,000,000 TJS by international organizations, 600,000 TJS by other sources
Pest control measures	2007-2010	CEP	640,000	CEP, international organizations
Increase of bee colonies (up to 8000 colonies)	2006-2015	CEP	440,000	CEP
Organization of shops for sale of NTFP (<i>Dushanbe, Kurgan Tyube, Kulyab, Khujand, Khorog</i>)	2007	CEP	110,000	CEP

Table 6: Planned Measures under the Forestry Program, updated 2010 (Source: DORER, C. and KASPAREK, M. (2009): Identifying fields of cooperation between the Committee on Environmental Protection under the Government of the Republic of Tajikistan and the GTZ. The Committee on Environmental Protection (CEP) and related institutions - Results of a Project Finding)



Notes

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[illegible]



Deutsche Gesellschaft für
Technische Zusammenarbeit (GTZ) GmbH

- German Technical Cooperation -

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