

# **NATIONAL FOREST POLICY AND STRATEGY OF THE REPUBLIC OF ARMENIA**

## **CHAPTER 1: INTRODUCTION**

### **Introduction**

The main goal of the National Forest Policy of the Republic of Armenia is to ensure sustainable management of forests and forest areas. According to Resolution N1 adopted in June 1993 by European Ministerial Conference in Helsinki sustainable management is defined as "The stewardship and use of forests and forest lands in a way and at a rate, that maintains their biological diversity, productivity, regeneration capacity, vitality, and potential to fulfil, now and in the future, relevant ecological, economic and social functions, at a community, national and global levels, and that does not cause damage to other ecosystems."

The Government of the Republic of Armenia will have to balance the environmental and society's interests, establish conditions for the economic prosperity of the country protecting ecological and social values of forests. The forest policy in an important tool to facilitate the governance of the Armenian forests, being a national asset, and to make the interests of the forest sector consistent with other national policies, especially those concerning the environment, rural development, agriculture and forest industries.

After Armenia gained its independence in 1991 the first efforts to develop a forest policy were made (1994 - 1995). With the support of the Food and Agriculture Organization "Forestry Sector Development" project "A Strategy for the Development of the Armenian Forest Sector" was presented in 1996, which mainly was of declarative nature. On May 27, 1996 the Ministry of Nature Protection and Underground Resources approved the strategy document. However, until 2003 no further steps have been initiated.

This document has been developed in a cross-sectoral participatory process in Armenia since February 2003. It was funded and governed by the Forest Institutional Support Project. The Forest Institutional Support Project is a grant project from Sida (Sweden) and constitutes a part of the Forest Management Component of the World Bank Natural Resources Management and Poverty Reduction Project to Armenia.

Natural Resources Management and Poverty Reduction Project and Forest Institutional Support Project envisage that this National Forest Policy and Strategy should be implemented by the process of National Forest Program development, which started in the beginning of 2004. It will serve as a basis for an immediate revision of the Forest Code of the Republic of Armenia of 1994.

Strategy document provides directions of the national forest policy of the Republic of Armenia.

When developing a National Forest Policy for Armenia, the principle saying that the forests are a national property and should benefit the present generations as well as the future was taken into account.

The forest has indispensable environmental and social significance. However, significant forest territories have been subjected to degradation due to negative anthropogenic, biotic and abiotic impacts.

The National Forest Policy is aimed at the restoration of deteriorated forest ecosystems, emphasizing the conservation and development of environmental, social and economic properties of forests, for the benefit of the people and the prosperity of the country.

National Forest Policy and Strategy is consistent with the Constitution of the Republic of Armenia, international conventions ratified by the Republic of Armenia, covenants and is based on modern forestry achievements and positive experience.

## **Objective**

The objective of the National Forest Policy and Strategy of the Republic of Armenia is to ensure restoration of degraded forest ecosystems, sustainable use and development of useful properties of the forests.

To achieve this objective the National Forest Policy and Strategy of the Republic of Armenia will ensure:

1. Long-term and scientifically justified sustainable forest management;
2. Implementation of institutional and legislative reforms to support sustainable forest management;
3. Application of international indicators for sustainable forest management and quality standards for forest certification and assessment.

The resources of the forest ecosystems will be professionally managed to retain their ecological, social and economic functions. The extent and productivity of the Armenian forests will grow significantly. The forest sector will be overseen by state bodies with public support, mutual trust and integration of the interests of all stakeholders.

### **1. Strategic Objectives**

The strategic objectives of the National Forest Policy are:

1. The provision of strategic ways for the processes of restoration of forest ecosystems, development of useful forest properties and sustainable forest use;
2. The provision of the main strategic ways for the strengthening and improvement of institutional capacities of sustainable forest use, including the strengthening of “Hayantar” capacities, as well as the establishment of forest guarding and protection services, seed stations, nurseries, hunting enterprises, training and educational centers for human resources and an informational network;
3. The development of scientifically proven forest management plans (long-term and short-term) to ensure sustainable forest management;
4. The provision of the development of non-wood forest products use;
5. The improvement of the legislative basis contributing to sustainable forest management, including the provision of strategic ways for definition of scientifically proven mechanisms (methodologies, standards, indicators, etc) with the application of international experience (international standards, classifications, etc. in sustainable forest management).

### **2. Strategic Actions**

To achieve the strategic objectives it is necessary to:

1. Develop a new Draft Forest Code of the Republic of Armenia;
2. Develop and implement a National Forest Program, which involves the activities and mechanisms of the National Forest Policy (restructuring of forest management structures, improvement of legislative framework regulating the forest sector and others).

## **CHAPTER II**

### **Institutions and Forest Legislation**

#### **Short Description of the Current Situation**

##### **1. Forest Sector Institutions**

During 1992-2003 the forest management body of Armenia - the "Hayantar" underwent numerous restructurings and in the result of each restructuring it lost a part of its authorities and eventually became an organization within the structure of the Ministry of Agriculture of the Republic of Armenia. Each restructuring resulted in neglecting of the roles of Armenian forests, non-controlled situation, incomplete management which resulted in increase of illegal loggings, reduction of forest guarding, protection and rehabilitation activities, and deterioration of forests. The legal status of "Hayantar" is not clear yet: "Hayantar" State Non-commercial Organization was established by the Governmental Resolution N 1054-N (25.07.2002), though it still functions on the basis of the State Close Joint Stock Company charter. In fact, until 2004 the same body simultaneously implemented both forest control and forest management. Consequently, it was difficult to implement appropriate control. It is obvious that the described management system could not provide for sustainable forest management and prevention of illegal loggings. Consequently, radical structural changes were needed in the sphere of forest management.

According to the Governmental Resolution of the Republic of Armenia N 7 (15.01.2004) the Ministry of Agriculture is a state authorized body for the guarding, protection, regeneration and use of the forests of the Republic of Armenia and the authority for control is vested with the Ministry of Nature Protection of the Republic of Armenia.

According to the Governmental Resolution N 96-N (29.01.2004) the Forest Management Agency was established in the structure of the Ministry of Agriculture of the Republic of Armenia as a separate sub-division (see Table 2 for the main subordinate bodies related to forest management and their functions, as well as the analysis of institutional issues).

##### **2. Forest Legislation**

The Armenian Forest Code (1994), being based on the Soviet time Forest Code, in fact is a "State Forest Fund Lands Management Code". Issues such as social-economic relations, transition to a market economy, different forms of ownership and others are not reflected in the Forest Code of the Republic of Armenia.

*Forests are state property.* There are provisions (for example, Article 3) securing exclusive state ownership of forests, which hampers the forest management development based on other forms of ownership. The Constitution of the Republic of Armenia does not provide exclusive right of state ownership towards forests, thus other forms of forest ownership should be set forth in the legislation. Articles 134, 175 and 202 of the Civil Code of the Republic of Armenia regard forests as immovable property which can be subject to different forms of ownership.

*Long-term lease agreements.* According to the Forest Code of the Republic of Armenia the period for state forest use agreements is too short (up to 10 years); taking into account Article 49 of the Land Code of the Republic of Armenia long-term lease of state forest lands is an option.

*Forest Code* in future must be applicable to all forests of Armenia irrespective of the form of ownership or the respective classification by significance. From the forest legislation perspective the state must not be more than just another forest owner.

*Legal regulations regarding ownership.* Management features of both state and non-state forests need to be clearly regulated by the Forest Code of the Republic of Armenia. Provisions on state forest management should be stated under a separate section on State Forest Lands Management.

*Definition of forest.* A clear and practically applicable definition of forest and, consequently, a technically logical land use categorization system, based upon that definition, are missing. The definition of forest should be based on clear criteria (minimum areas, minimum crown coverage, etc.)

*Production forests.* In the Forest Code of the Republic of Armenia the concept of “production forests” is not reflected in the classification of forests by significance. In order to reflect actual ecological as well as the potential economic situation, clear criteria for forest classification need to be developed and applied. As a result, regular and target-oriented forest management will be improved, which will bring to more effective forest guarding.

*Local self-governing bodies.* Local self-governing bodies are vested with certain rights in forest guarding and use. Article 45 of the Republic of Armenia Law on Local Self-Governing Bodies states that the head of the community organizes the guarding of lands regarded as community property, forest and water areas as well as the environment which runs counter Article 3 of the Forest Code of the Republic of Armenia. The nature and scope of these rights are unclear. Mechanisms by which communities should fulfill authorities delegated to them by the state are not mentioned either. Therefore, the role and authorities of the local self-governing bodies within the system of forest administration need to be clearly defined.

*Participatory forest management.* The legislation should provide for public participation in decision-making process in the field of forestry.

In general, the legislation of forest sector is incomplete, needs amendments and should be based on the National Forest Policy and Strategy.

The vast majority of articles of the Forest Code of the Republic of Armenia require enforcement by-laws, which are not developed yet.

The changes in the status of forest management bodies and structure, and the changes in separate laws and by-laws can not have a positive result unless the existing problems are solved in the context of the entire social-economic development.

### **3. Problems**

The main institutional and legislative problems constraining the development of the forest sector are:

1. Absence of a national forest policy;
2. Absence of a national forest programme, including the measures and mechanisms for implementation of the national forest policy;
3. Absence of an appropriate Forest Code and, thus, of a number of basic required provisions;
4. Incomplete institutional structures of forest management and measures required to improve sustainable forest management (see Table 2. Analysis of Institutional Issues of Forest Management);
5. Incomplete legislative framework regulating the activities of the forest sector (the legislative framework of the forest sector is incomplete and needs amendment, it does not support the solution of the strategic issue of sustainable forest management);
6. Existing contradictions of the legislative framework regulating the activities of the forest sector;
7. Irrational use of revenues from the use of forest resources;
8. Insufficiency of financial (technical) support being allocated from the state budget to the forest sector;
9. Organizational-legal status of entities running forest economy.

#### **4. Strategic Objectives**

Short-term and long-term strategic objectives include:

1. Legal regulation of forest relations to ensure sustainable forest management and to stimulate non-state forestry and equitable distribution of the benefits from forest management (including reallocation of funds from the state budget to “Hayantar”), and to secure forest sector governing.
2. Stable forest institutions to ensure management, monitoring, control and support for state and non-state forestry, as well as continued development of policy and legislation.
3. Responsibilities of state forest institutions: clearly defined functions without duplications of roles, which will result into a clear split between state forest management and control functions.
4. Safeguarding of state forest policy on a commercially, socially and environmentally sound basis.
5. Cooperation between different forest institutions and other relevant governmental institutions.

#### **5. Strategic Actions**

Strategic actions are as follows:

1. Adoption of legal acts regulating forest relations;
2. Clear redefinition of roles of the state forest institutions by establishing state forest management and forest control authorized bodies independent from each other.
3. Clarification of “Hayantar”’s organizational-legal status.
4. Enhancement of public participation in decision-making process.

## 5. Development of a National Forest Program.

# Chapter III

## Social-Economic Issues (Illegal Logging)

### Analysis of Current Situation

#### 1. Economic Issues

The financial-economic policy of the forest sector is based on the concept of exclusive state forest ownership. The role of the Government of the Republic of Armenia in the forest sector of the Republic of Armenia is not clarified by by-laws.

According to expert assessments about 80% of annually used forest resources (wood) is used illegally, namely without paying taxes. The main legal forest user in the Republic of Armenia is “Hayantar” State Closed Joint Stock Company/State Non-Commercial Organization. Currently the fees for nature use (for the use of bioresources) are collected and enter the state budget according to the provisions of the Republic of Armenia Law on Nature Protection and Nature Use Fees, which contradicts Article 51 of the Forest Code of the Republic of Armenia. Nature Use Fees are not distributed by communities and as a result the sums collected from one region may be directed to quite another region losing the main meaning of “nature use fees”.

The Republic of Armenia as the only and exclusive owner of forests in Armenia, currently faces financial difficulties to fulfil appropriately its ownership right. The state budget funding is limited, in particular for forest management and at present the forests of Armenian are in great need of the state support. Furthermore, the limited state budget support forces the state forest manager to utilize the forests to as high degree as it possible and to reduce the expenses for forest rehabilitation. This leads to over-utilisation of forests in accessible areas, reduction of the forest rehabilitation process and non-observance of good forest management principles.

At present there are no state budget allocations for the improvement of forest infrastructure, maintenance of forest cadastre, implementation of forest inventory or forest monitoring. This fact to some extent explains different illegitimate and illegal activities in the forest economy. As a result, the forestry sector and the state lose financial resources which are difficult to calculate.

The main forest management actor in the country is “Hayantar”, which according to its present status does not differ from any other profit-making organization. The financial contribution of “Hayantar” to the state budget is about three times more than the state budget funding allocated to “Hayantar” (see Table 1).

Table 1.

Payments of “Hayantar” to the state budget and state budget funding to “Hayantar”, 2000-2002 (million AMD)

Flow of Funds	2000	2001	2002	2003	2004	2005	2006
Funds allocated to “Hayantar” from the state budget of the Republic of Armenia	99.7	90.0	114.0	114.0	188.7	300.0	300.0
Sums paid by “Hayantar” to the state budget of the	262.7	258.4	308.8	327.0	-	-	-

Republic of Armenia							
Ratio of the amount paid to the amount allocated (coefficient)	2.68	2.87	2.70	2.87	-	-	-

The financial requirements of the current legislation keep “Hayantar” in the situation of the deepening financial crisis, which forces “Hayantar” to undertake a drastic cost reduction and to liquidate or declare bankrupted 14 out of 22 forest enterprises. The situation requires urgent governmental and political solutions in the nearest future.

The wood processing industry in the Republic of Armenia is weak with several small producers. Recently, there have not been much investments into the industry. The equipment and machinery are often old and worn-out. Armenia, as a land-locked country, does not offer the industry good export opportunities. Consequently, the market knowledge is poorly developed in the forest sector. The largest domestic wood consumer has a niche product (oak wood barrels).

The domestic market for fuel wood is well developed; however, a part of it is based on illegal logging.

## 2. Social Issues

Present short-term social consequences of current unsustainable forest use seem to be positive, as they ensure the survival of the population in the difficult social-economic conditions of the transition period, but the long-term consequences are extremely negative.

The main reasons and mechanisms for the anthropogenic impact on the forests caused by local communities are as follows:

- a) Very high unemployment;
- b) Inaccessible prices of electroenergy and energy carriers for the majority of population;
- c) Overgrazing in the forests due to the lack of fodder and inaccessibility of pastures and hay-lands.

Massive forest exploitation by individuals and entities with logging permits is a factor out of the responsibilities of communities.

It is known that in the sphere of illegal forest use there is a certain link between communities and state authorized bodies.

Armenian forests are rich in biodiversity with numerous representatives to be used as non-wood forest products. There is a potential for further sustainable development of the non-wood forest products production, in particular in the form of rural small businesses.

Rich fauna and flora, the peculiarities of beautiful mountainous landscape of Armenia as well as ancient historical-cultural values offer unique opportunities for ecotourism development. Particularly, forested areas of the country may attract foreign visitors and reduce the unemployment rate in rural areas.

## 3. Illegal Logging

The current legislation and regulatory acts are contradictory and inconsistent. To date the concept of materially liable person in the forest enterprise is not regulated by any normative act (the former acts are not applicable). For example, neither the responsible persons for non-investigated illegal activities, nor how to

estimate the damage caused can be clarified in the present legislation. Finally, the activities initiated by the juridical-legal bodies do not lead to the desired result.

The current management system and imperfect legislative framework can not objectively contribute to the investigation of illegal activities. Due to insufficiency of financial and material-technical resources as well as low professional level of specialists the inspection and monitoring systems do not operate fully.

Illegal forest logging has a number of objective and subjective reasons, which have their roots both inside and outside of the forest sector.

Measures undertaken by competent state institutions to mitigate illegal activities, particularly in regions rich in forests, are insufficient and do not address the wide range of problems.

Positive dynamics in the forest sector can be expected in case of sustainable forest use based on modern forest management plans, which simultaneously will support the mitigation of main causes of illegal loggings.

The current imperfect legislative framework, use of forest resources by the communities close to the forests and forest management system do not allow to estimate accurately the real scale of forest resources use. The administrative statistics considerably underestimates domestic consumption of fuel wood.

Illegal loggings can be driven by commercial or economic gain, poverty and inefficient forest management. Illegal activities result from the factors such as over-exploitation of forest resources, underestimation of amounts logged, discrepancy between collected forest use (nature use) fees with actually used resources and a lack of regulated domestic market.

Poverty driven illegal loggings are undertaken often for subsistence use, as well as to provide fuel wood and a source of income. In many cases, the alternative fuel is too expensive and employment opportunities are limited. Where livestock farming is the main source of income for communities, conflicts often occur in terms of use of grazing and forested areas.

A lack of efficient forest governance and resulting levels of corruption contributing to illegal use of the forest resources are obvious in the sector.

## **Problems**

### **1. Economic Issues**

1. Low commercial capacity and insufficient funding level of "Hayantar".
2. Timber sales methods not conducive to the development of free and fair market relations.
3. Low level of mechanization in forest operations.
4. Difficult financial situation of "Hayantar".
5. The outdated accounting system of "Hayantar".
6. Inefficient use of international financial mechanisms.
7. Lack of market research for fuel wood and other wood products.
8. Lack of forest management plans ensuring sustainable forest management with an appropriate degree of utilization and revenues.
9. Lack of material-technical and financial resources needed for forestry sector development.

## **2. Social Issues**

1. High unemployment and poverty.
2. Lack of sources of alternative energy.
3. Low level of education and awareness about environment and forestry in the society.
4. Overgrazing in forests.

## **3. Illegal Logging**

1. Poor forest employee's salaries and corruption.
2. Lack of economic, legal and other mechanisms/tools preventing illegal forest use.
3. Financial/economic, environmental and other damages caused to state/society from illegal forest use.
4. Inefficient system for registration of infringements of illegal forest use and enforcement of sanctions.
5. Lack of functioning/efficient mechanisms/system for economic control and investigation of illegal forest use.
6. Non-coordinated and inefficient measures by forest enterprises and communities in the process of investigation and mitigation of illegal forest use.
7. Massive illegal forest use by communities close to the forest.
8. Inadequate information on cases and volumes of illegal forest use.
9. Low level of material and technical support to the system.
10. Low prices of fuel wood in the local market compared with international prices.

# **Strategic Objectives**

## **1. Social-Economic Issues and Illegal Loggings**

The mid-term objectives of the forest policy should serve as a basis for the long-term objectives and should be aimed at the elimination of all deficiencies and gaps, which were mentioned in section 5.1 "Analysis of the current situation". Moreover, forest economic forest policy should be an inseparable part of forest policy to ensure the implementation of its main objectives.

Forests having economic, ecological and public importance are an asset and have a unique value. The state as the owner of this asset (the state's ownership function) should ensure the fulfillment of the socially sound ecological and social functions of the state forests, the protection and increase of forest value and revenue to the forest owner. Furthermore, the state should support activities to increase forested areas and improve the quality composition of the forests and their productivity.

The strategic objectives are:

1. Develop fair and legal methods for timber sales, which will support the reduction of corruption and provide resources to local communities.

2. Encourage the establishment of community or inter-community forest users units or associations.
3. Establish forest sector market economy based on an appropriate legal system allowing free and transparent competition among market actors.
4. Ensure a predictable business environment for forest users encouraging investments in forest sector and production facilities.
5. Development of accredited forest management rights provided obligatory preceding thorough training of the state forest manager's and users' staff based on developed standards for best practice.
6. Ensure forest sector profitability and encourage investments (tax and other privileges) in forest rehabilitation.
7. Create favorable provisions for "Hayantar" to reinvest revenues from commercial forest operations into "public good" measures of forest management.
8. Encourage the efficient timber use, reduce the amount of waste, develop wood waste processing opportunities and stimulate the use of modern wood-processing technologies.
9. Make provisions for implementation of a continuous process of forest inventory and stock-taking of the forest fund which will support sustainable and controlled use of forests.
10. Develop sustainable hunting as a potential source of income for forest sector.
11. Ensure sustainable state financing for the following activities: technical and academic forest education, development of forest extension and consultancy systems, forest inventory, extension of statistical and information systems, development of silviculture, establishment of forest fire control service, forest monitoring, and pest and disease control.
12. Maintain monitoring and information databases.

## **Strategic Activities**

### **1. Economic Issues**

In Armenia the system for forest resource sales and funding to the forest sector needs to be revised. This forest policy and strategy document includes proposals for changes of the system based on the principles of market economy and the future existence of also other than state forest owners.

The required economic-strategic activities are as follows:

1. Develop and implement financial stabilization program including pricing policy for forest use.
2. Improve normative basis.
3. Optimization of scales, prices and costs for the activities being implemented.
4. Supervision of quantitative and qualitative indicators of the activities being implemented.

Development of a financial system considering seasonal character of forest management, development of new financial mechanisms/procedures contributing to the implementation of forest rehabilitation and forest management activities:

Improvement of economic mechanisms:

Improvement of payment rates for nature use fees, the orders of payment and calculation in respect to timber use:

1. Analysis of timber market prices, optimization of payment rates of nature use fees based on surveys and improvement of calculation and payment orders.
2. Setting additional nature use fees for imported timber, considering the timber prices in the international markets.
3. Development of new economic mechanisms applicable to Armenian pre-conditions based on international experience.

Application of mechanisms contributing to legal forest use and impeding illegal forest use:

1. For all forms of forest use/forest management concerning:
  - a) wood harvest;
  - b) regular timber transport to market;
  - c) wood-processing;
  - d) sale of forest products (sales form and procedures);
2. Introduction of forest certification system.
3. Development of standards for the best practice in forest utilization.

Maximal use of international financing mechanisms for forests including:

1. Financing mechanisms envisaged by the Kyoto protocol.
2. "External Debt of Armenia - Nature" compensation scheme, e.g. for forest rehabilitation.

Other activities

1. Development of a system of material stimulation for forest protection staff and introduction of an insurance system.
2. Introduction of an insurance system for forest as a property to protect from fire, other disasters and illegal logging.

## **2. Social-Economic Issues**

Measures directed to the improvement of the social-economic situation of communities close to forest areas:

1. Establish units for the collection of non-wood forest products close to villages, from where products can be sold and/or transported.
2. Establish processing units locally for agricultural products and non-wood forest products.
3. Assist in settlement of current agricultural problems (irrigation, seeds, fertilizers, provision of technologies and others).
4. Assist to the process of rehabilitation of those local small enterprises where villagers already have professional experiences.

5. Establish a basis for recreation and sustainable tourism, particularly agro-ecotourism.
6. Provide the communities with energy carriers:
  - a) Solve the problems of advance payment for gas and of achieving accessible prices for electroenergy and fuel.
  - b) Assist the communities to develop alternative sources of energy.
  - c) Improve waste-wood sale mechanism taking into consideration not only the social role, but also the sanitary importance for the forest.
7. Support bee-keeping.
8. Revise the pricing system for the use of non-wood forest products reducing considerably the nature use fees for non-wood forest products.
9. Assist in solving the problem of the use of hay-lands and pastures.

Measures directed to increase of public ecological awareness:

1. Organize courses on environmental issues for local communities, emphasizing the necessity of sustainable forest use and importance for the prosperity of local communities.
2. Assist in providing ecological education at all levels.
3. Publicity and accessibility of information.

### **3. Illegal Logging**

1. Perform studies of the situation in all phases and at all levels of forest utilization.
2. Pay special attention to the solution of forest management problems in the anticorruption programme of the Government.

Social security of forest workers and application of working safety rules for the forest staff.

# Chapter IV

## Forest Management and Biodiversity Conservation

### Forest Management

#### 1. Current situation

The inefficient forest management and forest utilization practice applied during the last ten years have brought forests and forest ecosystems in a critical situation.

Incorrect forest management has resulted in aging and over-mature forests in some areas, and degradation and deforestation in others.

Due to the energetic and economic crisis as a result of massive cuttings of various intensity about 40000 ha of forests and green zones were cut, out of which about 7000 ha in form of clear-cut. Undesirable change of species is in place when high value beech and oak stands are replaced by hornbeam and others. Due to cuttings protection capacities of forests have been reduced, erosion and other negative processes activated and ecological balance of environment disturbed.

#### 2. Problems

1. Insufficient investments and incomplete mechanisms of their implementation in the forest sector.
2. Lack of forest management plans to ensure sustainable forest management.
3. Inefficiency of management system.
4. Incomplete guarding and control systems.
5. No cadastre maintenance of forest fund lands, which restricts possibilities of forest use increasing additional revenues.
6. Absence of forest inventory/stock-taking and monitoring.
7. Absence of legal acts regulating the forest sector.
8. Non-transparent decision-making process.
9. Insufficient participation of communities in the process of forest management.
10. Inadequate mechanisms for the recruitment of specialists in the forest sector.
11. Low level of public control and understanding of the forest sector.
12. Low level of public awareness about forest management issues.
13. Lack of indicators for sustainable forest management.
14. No alternative owners and/or managers (for example, communities, citizens or legal persons).
15. Incomplete establishment of forest monitoring and information databases.

#### 3. Strategic Objectives

1. Rehabilitation of formerly degraded forests.
2. Expansion of forested areas.

3. Enhancement of forest productivity.
4. Establishment of a sustainable financial basis.
5. Integration of the forest sector economy with the country's overall economic sector.
6. A forest management policy consistent with the best accepted international practice.
7. Conservation of the environmental values and biodiversity of the forests.
8. Proper provision of forest resources to the Armenian people.
9. Forests management according to the approved management plans.
10. Certification of pilot forest areas according to developed national standards.
11. Establishment and maintenance of information databases.

#### **4. Strategic Activities**

1. Develop a system of indicators for sustainable forest management.
2. Strengthen the capacities of national forest management structures.
3. Develop and implement proper forest planning and forest management plans.
4. Carry out growth and yield studies.
5. Reconcile current forest use with the forest planning and forest management plans.
6. Increase the scale of forest rehabilitation activities.
7. Assist in the organization of community forests and develop an appropriate forest management system.
8. Establish sustainable financial mechanisms.
9. Develop national certification standards for forests and forest products.
10. Establish a Geographic Information System for the forest sector.
11. Carry out an accurate inventory of timber resources and a monitoring of other important parameters of forest ecosystems.
12. Establish new forms of forest ownership (e.g. non-state forests - community, citizens or legal bodies).

## **Forest Protection and Guarding**

### **1. Problems**

1. Widespread pests and diseases.
2. Lack of necessary technical equipment for forest protection staff.
3. Insufficient professional capacities of forest protection staff.
4. Large-scale illegal forest use (e.g. logging, land occupation, grazing, hay-making etc).
5. Forest protection staff with low salaries and an absence of social security.
6. High level of corruption in the whole chain of timber use.

7. Insufficient application of penalties and fines.
8. Lack of fire control capacities.
9. Inadequate guarding and control system and inefficient implementation.
10. Illegal fishing and poaching.
11. Lack of an independent public monitoring system.

## **2. Strategic Objectives**

1. Prevention of pests and diseases.
2. Provision of equipment for the fire control and forest protection staff.
3. Increased efficiency of forest protection and guarding.
4. Training of protection and guarding specialists.

## **3. Strategic Activities**

1. Ensure implementation of all forest protection and guarding by the forest supervisory authority.
2. Assess, monitor and study the damage caused to the forests.
3. Develop an integrated approach to forest protection.
4. Prevent illegal logging, grazing and land occupation.
5. Involve communities, citizens and legal persons including NGOs in forest guarding activities.
6. Prevent illegal fishing and poaching.
7. Provide equipment for fire control.
8. Provide logistics for the staff of forest guarding and protection (radios, means of transportation, uniforms, arms, etc).
9. Retrain human resources for protection and guarding.

# **Forest Use**

## **1. Problems**

1. Non-coordinated forest use, taking place without planning and proper forest management plans.
2. Large-scale illegal activities.
3. Use of inefficient, unsafe, wasteful and damaging methods, techniques and equipment for forest operations and wood-processing.
4. Inefficient and irrational use of harvested timber (e.g. the extensive use of construction wood as fuel wood).
5. Insufficient forest road density and very poor state of forest roads.
6. Low professional level of the staff implementing harvest operations.

7. Poor adaptation of logging technologies and instructions to the economic and environmental (stand, site, etc.) conditions.
8. Lack of a proper timber marketing system.
9. Unregulated use of wild fruits and plants.
10. Incomplete use of the forest's recreational and touristic capacities.
11. Unregulated use of hay-lands and pastures.

## **2. Strategic Objectives**

1. A properly regulated forest use with modern methods, equipment and safe working technologies, meeting standards for sustainable utilization.
2. An efficient use of non-wood forest products.
3. An efficient use of the forest's recreational capacities and ecotourism development.

## **3. Strategic Activities**

1. Introduce a system where logging and other forest use can take place only with the existence of approved forest management plans.
2. Strengthen the technical infrastructure for the forest sector.
3. Support the introduction of modern, safe and efficient work techniques.
4. Implement a site-adapted and sustainable model for forest utilization.
5. Improve the existing forest road network.
6. Establish a transparent, competitive framework for timber harvest and sale.
7. Enhance the forest recreational potential, develop eco-tourism and bee-keeping.
8. Develop human resources.

# **Forest Rehabilitation, Re-/afforestation and Agro-forestry**

## **1. Problems**

1. Large areas of over-logged and degraded forests and forests exposed to erosion, landslides and desertification.
2. An increased level of forest vulnerability due to climate change.
3. A drastic decrease of forest rehabilitation and re-/afforestation activities.
4. Poor state of seed station and nursery capacities.
5. Lack of modern efficient technologies.
6. Lack of long-term and short-term forest rehabilitation programs.
7. A decreased quantity of stored carbon from the atmosphere in the forest and a decrease in the forest's absorption role.
8. Mass destruction of forest protection belts and a cease of agro-forestry activities.

## **2. Strategic Objectives**

1. Rehabilitation of over-logged and degraded forests.
2. Properly functioning seed stations and nurseries.
3. Widespread use of new technologies for forest rehabilitation, re-/afforestation.
4. Prevention of erosion, landslides and desertification.

## **3. Strategic Activities**

1. Develop mid- and long-term forest rehabilitation, re- and afforestation programs.
2. Rehabilitate logged and degraded forests.
3. Rehabilitate the forest's capacity to absorb carbon from the atmosphere.
4. Rehabilitate forest protection belts and establish new ones (use as well xerophile tree and bush species).
5. Implement measures to alleviate the consequences of climate change and to strengthen the resilience of forest in forest rehabilitation activities.
6. Implement internationally funded projects for forest rehabilitation and re-/afforestation.
7. Assist in natural forest regeneration.
8. Establish seed stations and nurseries.

## **Biodiversity Conservation**

Armenia is rich in biodiversity. The forest biodiversity is also rich there are about 320 species of trees and bushes. Data on the current situation of the forest biodiversity is not systematic and is fragmented. They exist in different documents linked to the conventions ratified by Armenia (Convention on Climate Change, Convention on Biodiversity, Convention to Combat Desertification, etc).

In general, the reduction of forested areas, especially the degradation of beech and oak forests, has led to a decline in the ecological functions of the environment. Forest biodiversity has also decreased and many habitats have been damaged. This has resulted in the danger of extinction of a great number of rare species. The degradation of natural forest ecosystems has had a negative impact especially on the habitats of ecologically sensitive endemic and relict species, thereby threatening their existence. Habitats of many Red Data Book registered species are declining drastically.

### **1. Problems**

1. Decrease of biodiversity in forest ecosystems.
2. Degradation of forest landscapes.
3. A drastic decline in areas occupied by valuable rare and threatened species (walnut, wild fruit species, yew etc.).
4. Lack of biodiversity monitoring and information databases.
5. Lack of professional knowledge among the forestry staff dealing with biodiversity conservation.
6. Irregular implementation of biodiversity oriented research.

## **2. Strategic Objectives**

1. Ensure biodiversity monitoring and information databases.
2. Provide reliable and efficient biodiversity conservation.
3. Ensure rehabilitation of degraded forest landscapes and their protection.

## **3. Strategic Activities**

1. Train forestry staff in biodiversity conservation.
2. Establish a system of biodiversity monitoring and information databases.
3. Develop ecotourism.
4. Rehabilitate degraded forests, which will enhance the improvement of the state of threatened species, populations and ecosystems.
5. Implement environmentally sound forest utilization methods.

# **Chapter V**

## **Education, Science, Training, Information and International Relations**

### **Education**

The analysis of human resources in the Armenian forest sector shows that it does not have a sufficient number of qualified specialists. Out of about 1000 staff members of “Hayantar”, only 40 (4%) have forestry education. Only 30 (10%) out of 300 engineer-technical staff have higher professional education.

The situation is extremely bad among the management staff. None of the 22 executive directors of the forest enterprises has higher professional education.

The low level of education among “Hayantar” staff members can be explained by the fact, that during 1950-1990s no academic forestry education was provided in the Soviet Republic of Armenia. Starting from 1991 the today’s Armenian Agricultural Academy (AAA) has been providing forestry education.

There are no educational institutions in Armenia for medium-level staff (forest technical staff) or for vocational education in forestry work.

#### **1. Current Situation**

1. Awareness of forestry education practice of advanced countries.
2. Assistance of relevant international organizations and development projects (e.g. Swedish support) for the development of forestry education.
3. Assistance and collaboration with the forestry sector.
4. Existence of young researchers to fulfill educational tasks.
5. Forestry education development at the Armenian Agricultural Academy currently prioritized by the Ministry of Education and Science of the Republic of Armenia.

## **2. Problems**

1. Insufficient number of students invited for state scholarships (under state order).
2. Imperfect mechanisms for graduated students under the state order to find relevant jobs in the forest sector.
3. Lack of qualified researchers for education in specific subjects.
4. Lack of textbooks and training manuals in Armenian language.
5. Lack of appropriate equipment and tools in laboratories.
6. Insufficient training in commercial forest use.
7. Absence of practical training and a field training center.
8. Absence of a system for retraining of specialists.

## **3. Strategic activities**

1. Strengthen the collaboration with interested international institutions.
2. Develop educational programmes.
3. Establish a Forestry Chair at the Armenian Agricultural Academy (established in 2003), establish and develop laboratories.
4. Develop a system for retraining and improvement of qualification of lecturers at the Armenian Agricultural Academy.
5. Establish and provide practical education at a training center for purpose-oriented and sustainable forest use based in Zikatar.
6. Provide educational information.
7. Establish textbook (in mother tongue) and educational-methodological basis.
8. Allocate state scholarships for students from marzes (regions) for getting higher forestry education.
9. Apply mechanisms for the provision of professional job opportunities in the forestry sector to the graduates supported by state scholarship.
10. Cooperate with international donors and educational institutions on academic forestry education.
11. Establish medium-level forestry education with the emphasis on practical forest management.
12. Develop a system for vocational forestry education in Armenia.

## **Science**

Since the 1950s forest related scientific researches in Armenia have mainly been conducted by the Forestry department of the Institute of Botany of the National Academy of Sciences of the Republic of Armenia. Forest research is also among the tasks of the Forest Research-Experimental Center and Armenian Agricultural Academy.

## **1. Problems**

1. The inconsistency of forest related themes implemented by scientific institutions with the Convention on Biodiversity.
2. Insufficient funding of scientific work.
3. Outdated and physically worn-out laboratory equipment.
4. Lack of publications of the research results due to the lack of financial resources.
5. Specialists getting low salaries.
6. Aging of qualified specialists and insufficient number of young specialists.
7. Insufficient collaboration between the Institute of Botany of the National Academy of Sciences of the Republic of Armenia, the Forestry Chair of the Armenian Agricultural Academy and the Forest Research-Experimental Center in the process of forest resource and biodiversity monitoring.

## **2. Current Situation**

1. A rich network of experienced institutions.
2. International funding of a number of projects.
3. Numerous publications serving as a basis for biodiversity research.
4. Active collaboration between scientific and educational institutions and the governmental authorities, namely the Ministry of Agriculture and the Ministry of Nature Protection of the Republic of Armenia.
5. Active involvement of the scientific society in the implementation of international grant and other projects.
6. Existence of environmental non-governmental organizations.
7. Active participation of non-governmental organizations in the measures directed to the conservation of forest biodiversity and sustainable management of forest resources.

## **3. Strategic activities**

1. Enhance natural regeneration of the main forest species and enhance their growth and fertility.
2. Researches on the forest dendro-biodiversity to ensure the conservation of rare and threatened tree species.
3. Develop ways for the enhancement of forest productivity.
4. Identify and assess the entire structure of forest ecosystems, their interrelations and succession changes.
5. Develop scientific bases for the rehabilitation of degraded forest areas.
6. Study the impact of climate change on forest ecosystems.
7. Assess the capacity of forest ecosystems for carbon absorption.

## **Training**

Until 1990 managers and specialists at all levels of the forest sector received specialized technical training once in five years. During the last 12 years such training has not been provided. Thus, currently there is a considerable need for human resource development and retraining in the Armenian forest sector.

Skills development training organized for the retraining and improvement of the qualifications of the existing staff and specialists of the forest sector is a component of the forest sector activities which provides necessary knowledge and skills for the upgrading of forest policy and practices, as well as sustainable forest management. According to the policy developed the Government will provide financial resources for the implementation of this training. It will also assist in identifying and securing other financial sources.

For the improvement of the forestry training, it is necessary to establish a sustainable training system, which will include the following components:

1. Retraining of the existing human resources in the forest sector.
2. Development of relevant training programs for the staff of different qualifications and status.
3. Development of training programs by specialists with pedagogical skills, which will stimulate active learning processes and contain both theoretical and practical issues.
4. Annual training activities focused on different important issues, taking into consideration that the vast majority of participants of the envisaged training do not have basic forestry education.

The envisaged reestablishment of “Zikatar” as a regional forestry training center will offer facilities to implement training needed for the sector.

Practical technical training also needs to be carried out for the technical staff performing different forest operations in forest enterprises, other organizations and communities.

## **Information**

The main principles of the forest information system are periodical updating and validation of the data, information protection and confidentiality of personal data.

An efficient and functional information system should include the following components:

1. A centralized database to store all information from forest management plans, growth and yield models, removals and biodiversity.
2. A web-based access to the data sets, some of which can be available to public, but with some data being available only to restricted users.
3. Efficient use of mass media.
4. Publication of scientific-popular materials.
5. Establishment of an integrated regional and sub-regional information network.

Forest system related information should be accessible and open. The financial and institutional set up should be organized by the appropriate governmental body. Accurate and purposeful information is necessary to change the public opinion and behavior regarding forests and ensure recognition of the multiple functions of the forest.

## **International Relations**

### **1. International Cooperation**

The establishment and strengthening of international cooperation in the forest sector can be implemented in the following directions:

1. Through inter-governmental covenants.
2. Through implementation of grant and investment projects.
3. Through scientific cooperation between the relevant regional, national and international structures and scientific-educational institutions.
4. Through participation of forestry sector representatives of all levels in conferences, seminars, study tours and exchange programs.
5. Through cooperation with the centers of technical development and practical forestry.
6. Through activities initiated by the private sector, NGOs, forest industry or individuals.
7. Through the support to and encouragement of foreign language education, taking into account that at present the low level of foreign language knowledge among sector representatives considerably hampers and reduces the scale of international cooperation.

### **2. International Conventions**

After adopting the international Convention on Biodiversity, Convention to Combat Desertification and Convention on Climate Change, the Republic of Armenia has implemented and is implementing a number of international projects, which are derived from the requirements of the international conventions. A number of Armenian state institutions and non-governmental organizations within the environmental and forestry sphere participate in these projects. Some of the implemented projects based on the Convention on Biodiversity. These are the followings: "Development of the Forest Sector" (1996-1997), "Assessment of Forest Resources" (1998), "First National Report on Biodiversity of Armenia" and "Biodiversity Strategy and Action Plan of the Republic of Armenia" (1998-2000), and "Conservation and Rational Use of Forest Genetic Resources in the Transcaucasus" (2001). The World Bank funded "Natural Resources Management and Poverty Reduction Project" has been under implementation since 2001.

## **Analysis of Institutional Issues of Forest Management**

The general weaknesses of forest management in the Republic of Armenia are the followings:

- a) Absence of forest seed stations, forest protection, forest reclamation, as well as scientific experimental stations, and other subsidiary structures within the composition of "Hayantar", though the majority of them existed previously.
- b) Non-implementation of some obligations of international covenants due to objective and subjective reasons.
- c) Incompleteness and absence of the basis of normative legal acts (normative-legal and normative-technical) needed for the forest management.

## **Recommendations**

### **Improvement of the Forest Legislation**

The improvement of the forest legislation will ensure:

1. The regulation of forest management based on long term and sustainable principles.
2. Elimination of contradictions and duplications in different (forestry related) legal acts of the Republic of Armenia.
3. Harmonization of the forest legislation of the Republic of Armenia with the relevant international legislation, e.g. that of the European Union.
4. Legal regulation of prevalent and possible future forest management structures, which includes institutional changes.
5. Provision of basic tools (such as technical definition of forests) to clarify the applicability of the Forest Code or other legal acts.
6. Legal regulation of existing and possible future external impacts on the forests and of the demand.
7. Clarification of the functions of management bodies in marzes and communities in the fields of forest management and control.
8. Definition of responsibilities and contributions with respect to forest rehabilitation and other forest management activities.
9. Regulation of status and management of forests under different types of ownership (including state forests).
10. Strengthening the legal basis for the provision of an integrated forest fund.
11. Definition of various types of forest categories (production forests, protection forests, forests of special significance) including definitions of the respective management objectives.
12. Provision of a legal basis to ensure the development of a competitive market for all kinds of forest products.
13. Provision of a legal basis to support international investments in forest economy.
14. Provision of mechanisms for involvement of non-state structures and citizens in forest rehabilitation and afforestation activities, as well as for public participation in decision-making processes.
15. Establishment of a legal basis for introduction of an insurance system.
16. Provision of mechanisms to secure control and supervision of the implementation of established norms and rules of forest management.
17. Provision of a legal basis and rules for restriction, prevention, cancellation and termination of activities having negative impact on forests, as well as compensation for damages or for the restriction “public goods” functions of forests.