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Forestry Sector Public Expenditure and Institutional Review

Final Report

Republic of Armenia
Ilia Kvitaishvili

December 2015

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European Neighborhood Partnership Instrument (ENPI)
Forest Law Enforcement and Governance (FLEG) II Program

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Contents

ABBREVIATIONS AND ACRONYMS

AAC	-	Annual Allowable Cut
AMD	-	Armenian Dram (currency)
APA	-	Georgian Agency of Protected Areas
ArmForest	-	SNCO “Hayantar”
BMA	-	Bio resources Management Agency
ENA	-	Europe North Asia (region)
ENPI	-	European Neighborhood Policy Initiative
FREC	-	Forest Research Experimental Centre
DP	-	Development Partner
FAO	-	Food and Agriculture Organization
FD	-	Forest District
FE	-	Forest Enterprise
FLEG	-	Forest Law Enforcement and Governance
FMP	-	Forest Management Plan
FREC	-	Forest Research Experimental Center
FW	-	Fuel-Wood or Firewood
GEL	-	Georgian Lari (currency)
ICAS	-	Moldova Forest Research and Management Institute
LPA	-	Local Public Authorities
MENRP	-	Ministry of Environment & Natural Resources Protection
MoA	-	Ministry of Agriculture
MoE	-	Ministry of Environment
MoF	-	Ministry of Finance
MoNP	-	Ministry of Nature Protection
NFA	-	Georgia National Forest Agency
NFC	-	Georgia National Forest Concept
NFF	-	Moldova National Forest Fund
NGO	-	Non-Governmental Organization
NPAC	-	National Program Advisory Committee
NTFP	-	Non-Timber Forest Products
NSS	-	Armenia National Statistics Service
PA	-	Protected Area
PER	-	Public Expenditure Review
RoA	-	Republic of Armenia
SFMC	-	State Forest Monitoring Center
SNCO	-	State Non-Commercial Organization
SNPA	-	Specially Protected Nature Areas
USD	-	United States Dollar (currency)
WB	-	World Bank
WWF	-	World Wildlife Federation

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EXECUTIVE SUMMARY

The objective of Forest Sector PER in Armenia is to contribute to a better understanding among government decision-makers and sector planners of expenditure in the sector and to encourage discussion and exchange between key stakeholders on sector priorities and their fiscal implications.

Armenia is a small (29,800 km^2), lower-middle income country with a population of about 3 million and an average per capita Atlas Gross National Income (GNI) of US$3,810 in 2014. In the decade preceding the global economic and financial crisis, real Gross Domestic Product (GDP) growth was more than 10 percent per annum. In 2009, there was a substantial contraction of 14.1 percent. Since 2010, growth has resumed averaging 4.2 percent through 2014. In 2014 the largest components of GDP were services, including tourism and travel (51 percent); industry, including mining and energy (29 percent); and agriculture (21 percent).

Armenia is a highland country within the Caucasus Eco-region with a relief altitude range from 375 meters to 4,095 meters above sea level. Within its geography, Armenia has five distinguishable landscape types including: steppes, semi-deserts, forests, sub-alpine meadows, and alpine meadows. According to official statistics, Armenia's total forest area is currently calculated to be around 332,000 hectares. Forested lands comprise about 11 percent of Armenia's total land area. Of total forest lands, about 82 percent are forests with the additional 18 percent considered to be other wooded lands. About 70% of Armenia's forest cover is considered to be high forests, with coppice forests and shrub forests comprising the remaining 22% and 7%, respectively. Deciduous trees dominate these forests with beech being the most populous species. Beech and oak constitute nearly 68 percent of the country's forest species composition.

The forestry sector represents only a small share of the total economy of Armenia. Based on official statistics, the forest sector's contribution to Armenia's GDP has been about USD 3 million, which represents only about 0.03% of total GDP and the underlying trend of forestry's share in GDP is negative. In 2007, it represented about 0.06% dropping to 0.04% in 2008-2009. Since then, it has consistently trended at less than 0.03%.

Armenia's state forests are primarily managed by the Ministry of Agriculture through the Department of Forestry, the "State Forest Monitoring Centre" SNCO, and Hayantar SNCO. Hayantar is the main institutional actor in the forest sector whose functions are: implementing state policy on forest conservation, forest reproduction and usage, providing guarding and resource protection, and assuring effective use of Armenia's forests. The Ministry of Nature Protection manages the system of Specially Protected Nature Areas through its Department of Environmental Protection, the State Environmental Inspectorate, and Bioresources Management Agency.

Findings

The primary finding of this Public Expenditure Review is that the forest sector in Armenia is not currently being managed in an environmentally and economically sustainable manner. This is based on three main reasons, which are: insufficient financial resources committed to the sector; an overall lack of institutional capacity, best practices, and skill sets; and high demand for a limited amount of wood resources.

Government financing currently serves as the major source of funding for the forest sector. This level of financial support has remained relatively constant at USD 2-2.5 million annually for the past five years; however, from 2007 through 2009, public financing for the sector ranged from USD 3.7-5.2 million. The current level of public financing is not enough to carry out all of the necessary activities for sustainable forest management. Self-generated annual revenues from the sector have remained within a range of about USD 1.3-1.9 million; therefore, the financial gap created by decreased public financing cannot be overcome by Hayantar's revenue generating capacity.

The current expenditure structure of the forest sector raises concerns because almost no funds are spent on long-term investment priorities. Recurrent expenditures currently represent from 80-90% of total expenditures. Salaries and wages alone accounted for 70% of total expenditures in 2014, while in 2004 salaries and wages only represented 28% of total expenditures. Funds, allocated to reforestation and afforestation, have also been significantly reduced in recent years. The high level of recurrent expenditures essentially leaves no funds in the sector to carry out needed, long-term investments to increase the efficiency of the forest sector. Real capital investment into the forest sector has been minimal for the past 5 years. Without a long term, comprehensive capital investment, the forests could become further degraded.

The current capacity of Armenian institutions, at all levels, is not sufficient to manage the forest sector effectively. The institutional structure of the sector complicates proper forest management. Hayantar is responsible for conducting two conflicting functions, which are managing the forests and also using the forests to generate sector revenues. These conflicting mandates limit their ability to excel at either function.

Hayantar's existing institutional capacity cannot ensure sustainable management of the sector. Available human resources and skill levels limit the organization's ability to implement the changes needed within the sector. The organization's internal processes and procedures need to be upgraded to a level, which would allow them to become more efficient managers of the forests. There is a need to improve budgetary planning and monitoring processes, financial and management information systems, and internal human resource development and training processes. The wage disparity, which exists between the forestry sector and the general economy, is of concern as it prevents forest sector institutions from attracting the highly skilled professionals needed to improve the management of the forestry sector. Currently, the average salary rate in the forestry sector remains at 58% that of the national average nominal salary in Armenia.

There is no current inventory data on the forest sector. The most recent inventory was carried out in 1993. Forest management planning was carried out between 2004 and 2008 but it covered only part of the Forest Fund. After 10 years of intensive forest usage, the inventory data can no longer be used as a reliable forest management tool.

Due to a lack of recent capital investment, the current road infrastructure in the forest area is insufficient to conduct commercially sustainable harvesting operations. Additionally, the technologies and equipment currently used in the Armenian forest sector are outdated and need to be replaced with newer, more efficient ones.

The forest resource base in Armenia is too small to meet ongoing demand trends for timber and fuel wood. A large share of the resources is used unofficially, thereby bypassing existing official institutions. The current level of felling exceeds environmentally allowable cut levels by several times.

Over the past five years, a very limited amount of activities have been carried out to support the natural regrowth of the forests. Afforestation and reforestation activities occurred with regularity from 2004-2008, but have been declining since 2009. For example, during the 2004-2008 time-period, forest planting and sowing and coppice re-growth assistance activities were conducted on about 2,000 hectares annually, since that time the amount dropped to only a few hundred hectares and have on two occasions not reached even 50 hectares annually.

Recommendations

The current state of forest sector management in Armenia should be improved in order to become more sustainable. As it is currently operating, the forest sector is incapable of generating sufficient revenues to assure sustainability of the forests without substantial public sector investment in institutional capacity and long-term priorities. Focused institutional streamlining and policy refinement is required to improve the operational functionality of the sector to a more optimal level. A significant increase in investment into forest inventory, forest management, and infrastructure is also required.

Investment into updated forest inventory data is essential to fully benefit from existing forest resources and prevent further degradation. In order to identify high potential areas and environmentally sustainable methods to maximize the benefits received from those forest areas, investment should be made for the development of international standard forest management plans. The necessary amount of funds should be allocated for successful implementation and monitoring of the forest management plans.

The government should develop a more efficient revenue generation model for the sector, based on transparent and sustainable principles. A large amount of potential revenues are currently lost to unofficial harvests; therefore, the revenue generation model should include a method for capturing more of those lost revenues. For example, if legal fuel wood can be made easily available, it would undermine the economic value of illegal cutting and facilitate the regrowth of accessible forest areas near populations.

A comprehensive Business Process Review of all major processes within Hayantar SNCO should be conducted to identify opportunities to reduce costs and improve the quality and performance of the organization.

Long-term investment should be made into the development and upgrade of forest roads, forestry infrastructure, machinery and equipment in order to increase the efficiency and effectiveness of forestry operations.

Investment in afforestation and reforestation efforts will allow the forest sector to recover and grow. A sustained program is required, which rehabilitates degraded forest areas, establishes new forest areas, and provides environmental benefits for local populations.

INTRODUCTION

ENPI-FLEG II program

The Forest Law Enforcement and Governance (FLEG) II Program focuses on improving forest governance in seven countries that are included in the European Union's (EU) European Neighborhood and Partnership Instrument (ENPI) East region: Armenia, Azerbaijan, Belarus, Georgia, Moldova, Ukraine, and the Russian Federation.

The ENPI FLEG II Program, funded by the European Union is free-standing, single-donor, hybrid Trust Fund, financed by a grant of €9 million ($11.21million). The four-year Program builds upon the successes from Phase I, by deepening reforms in sector policy, legal and administrative matters. The vision for the end of the Program in 2016 is that the participating countries have clear sector policies and implementation capacity to fight against illegal logging and associated trade, take into account the full social, environmental and economic value of forests, state-of-the-art forest sector laws, and modern forest sector institutions. In addition, these reforms are supported through institutionalized dialogue, expert cooperation, and well-targeted financial support, where needed. The ENPI FLEG Phase II is in line with the EU's ENPI Regional East Programme 2010-2013, which mentions FLEG and strives as one of its specific objectives to facilitate policy development and implementation of strategies in various environment sub-sectors.

The overall development objective of the Program is to promote sustainable forest governance, management, and protection of forests in the participating Program countries, ensuring the contribution of the region's forests to climate change adaptation and mitigation, to ecosystems and biodiversity protection, and to sustainable livelihoods and income sources for local populations and national economies. Implementation of the Program is led by the WB, working in partnership with the International Union for Conservation of Nature (IUCN) and the World Wide Fund for Nature (WWF). The level of detail of the Program's Phase-2 priorities varies from country to country.

The ENPI FLEG II Program has three Development Objectives (PDO):

1) To make progress implementing the 2005 St. Petersburg FLEG Ministerial Declaration in the participating countries and support the participating countries commit to a time- bound action plan to ensure its implementation and follow-up activities (regional level).
2) To review or revise (or establish a time-bound action plan to review or revise) forest sector policies and legal and administrative structures; improve knowledge of and support for sustainable forest management and good forest governance (including the impact of related EU regulations) in the participating countries (national level).
3) To test and demonstrate best practices for sustainable forest management and the feasibility of improved forest governance practices at the field-level on a pilot basis in all participating countries (sub-national level).

Country FLEG Context

The following priority areas were identified and included under the Program in result of stakeholder consultations:

- Need for Legal and Institutional Review and Reforms (currently there are quite large discrepancies in different legislative documents regarding the forestry field).

- Need for education and experience exchange: the need for training and educating forestry specialists, journalists, university lecturers and students in the field of forestry was highlighted during the meeting. Inviting relevant specialists, as well as sending local specialists for the training of trainers is very important at this stage, as lack of well-educated specialists is obvious. Experience exchange with FLEG member countries and EU member states can play a positive role in amending sustainable forest management and governance issues in Armenia.
- Public awareness and public monitoring: although a huge work has been done in the first phase of the Program still public awareness is an issue, which needs constant follow up and enhancement.

Forest Sector Public Expenditure Review

This Forest Sector Public Expenditure Review (PER) is designed to provide an overview of the sector's performance, as well as review the sector's institutional arrangements and the decision-making processes that support these arrangements. As a measure of performance, the PER assesses how planned spending contributes to the achievement of long term sectoral goals and objectives.

The objective of Forest Sector PER in Armenia is to contribute to a better understanding among government decision-makers and sector planners of expenditure in the sector and to encourage discussion and exchange between key stakeholders on sector priorities and their fiscal implications. A PER can also play an important role in improving dialogue between government and development partners on sector policy and relative funding contributions from government and external partners, as well between the sectoral ministries (Ministry of Agriculture, Ministry of Natural Protection) and Ministry of Finance responsible for finance and planning.

Due to the potential of forests to contribute to economic growth, poverty reduction, and environmental improvement, this review is an attempt to evaluate the patterns of public expenditure in the forest sector in Armenia during last 10-15 years in terms of its relevance, effectiveness, and efficiency, and, where suitable, recommends more effective approaches to funds allocation.

Given that forestry bodies have, in general, been ineffective in making claims on limited national budget resources, a forest sector PER can help provide clear, comprehensible, and relevant information to enable the sector to make a more effective case for appropriate levels of budgetary allocation.

Objective of the Assignment

The overall objective of the Public Expenditure Review (PER) is to assess the effectiveness of public resources use in the forestry sector, and to evaluate the appropriateness of budgetary allocations (from domestic and donor sources) relative to important forestry issues, and policy priorities.

Specific tasks under the Public Expenditure Review (PER) will cover analysis of: main sources of financing, state financing volume and share of total, qualitative assessment of the ways in which budget resources are channeled to institutional actors within the sector, revenue-generation sources within the sector, the methods of selling goods (e.g. timber, firewood, and non-timber products such as berries and mushrooms) and services; Expenditure composition, examination of the structure of expenditures covering capital (development) vs. recurrent (revenue) budget balance; wage vs. non-wage; trends (since 2000). PER should assess the reasons behind any weaknesses identified and make clear recommendations for improvements, and an assessment of the resources needed (financial and non-financial) to remedy the weaknesses. The PER should be undertaken with strong collaboration from stakeholders and the Consultant, and efforts should be made to ensure ownership of the conclusion and recommendations by the Government.

FORESTRY SECTOR OVERVIEW

Armenia is a highland country within the Caucasus Eco-region with a relief altitude range from 375 meters to 4,095 meters above sea level at its highest peak. The climate of the country is principally arid with annual precipitation ranging from 250 to 1,000 millimeters. Within its geography, Armenia has five distinguishable landscape types including: steppes, semi-deserts, forests, sub-alpine meadows, and alpine meadows.

According to official statistics from Hayantar SNCO and FAO, Armenia's total forest area is currently calculated to be around 332,000 hectares. Forest land comprise approximately 11 percent of Armenia's total land area. Of total forest lands, about 82 percent of these are forests with the additional 18 percent considered to be other wooded lands. Approximately 70% of Armenia's forest cover is considered to be high forests, with coppice forests and shrub forests comprising the remaining 22% and 7%, respectively. Deciduous trees dominate these forests with beech being the most populous species. Beech and oak constitute nearly 68 percent of the country's forest species composition.

Table 2-1: RoA Total Forest Area – 1990 – 2015, '000 hectares

Area	1990	2000	2005	2010	2015
Forest	335	333	332	331	332
Other Wooded Land	41	52	58	63	63

Source: FAO – FRA 2015

In 2011, the GIZ Sustainable Management of Biodiversity Program conducted a high-resolution, multispectral assessment of the forest area utilizing satellite imagery to assess the total forested area of the Republic of Armenia. Their findings were as follows:

> For the first time reliable data (with 96% of accuracy) have been obtained on the forest cover of Armenia. These results have been analyzed and compared with the state inventory data of forest management plans.
>
> According to the state inventory data, the forested area of forest lands of "Hayantar" SNCO of the Ministry of Agriculture forms 277,133 ha. Based on the data from remote sensing this area is 28,009 ha smaller and encompasses 249,124 ha. According to the state inventory data, the forested area of environmental lands (state reserves, sanctuaries, national parks) of RA Ministry of Nature of Protection forms 66,277. Remote sensing methods reveal 5,977 ha less, i.e. 60,300 ha.
>
> Thus, remote sensing results demonstrate that the whole forested area of RA (309,424 ha) incorporates 33,987 ha less than what state official data indicate (343,411 ha).
>
> In addition to the above, 22,908 ha of forests have been discovered, which are registered in the state cadaster not forests but as lands of other significance (specifically hay fields, pastures, etc.). As a result, the total forest cover of RA has been measured to be 11.1%, which is equal to 332,332 ha.
>
> *Source: GIZ - Sustainable Management of Biodiversity (SMB), South Caucasus: BioFacts: Forest Cover of Armenia Based on Remote Sensing Methodology (April 2014)*

Table 2-2: Growing Stock in Forests – million M³

Forest	1990	2000	2005	2010	2015
Total Growing Stock	42.01	41.12	40.67	40.22	40.67
Other Wooded Land	0.8	0.8	0.8	0.8	0.8

Source: FAO – FRA 2015

Over the past 22 years, the most important issue in the Armenian Forest Sector has been the non-controlled (illegal) cuttings and unsustainable logging, which have taken place since the State Forest Account 1993 was completed. This has led to basic changes in the country's forest ecosystems. Thus, it has been difficult to provide reliable estimation of the current status and conditions of the Armenian forests. From 2004-2008, the forest management planning process was undertaken for approximately 250,000 hectares of forests, which are under the management of Hayantar. However, forest management plans have not been implemented since that time due to a lack of financing.

According to current official data, the Total Growing Stock of Armenian forests is about 41 million m³ and the Net Annual Increment of forests is 440 thousand m³. A very important factor is that more than half of the forests are located on steep slopes and in inaccessible areas. This should be taken into consideration when determining Total Allowable Annual Cut volumes.

From 1993-2000, FAO estimates that Felling and Cutting exceeded, by more than 10 times, the Allowable Annual Cut on over 75% of all forested areas in the Republic of Armenia. Proper forest management planning on the comprehensive territory of the country was last implemented between 2004 and 2008, and the Forest Fund Account, was last completed in 1993. Therefore, baseline information on the overall growing stock and species distribution is intermittent and inconsistent on both a quantitative and qualitative level. Relatively reliable data exists for only 250,000 hectares of Armenia's forests in the areas where forest management planning was implemented during 2000-2007.

Table 2-3: Production Forest versus Multiple Use Forest, (000 ha)

Categories	2010	2015
Production Forest	68.2	68.2
Multiple Use Forest	133	133

Source: FAO – FRA 2015

The designation distribution of forests by functional categories and corresponding areas was originally established based on the Forest Code of the Republic of Armenia (1994), and the results of the State Forest Fund Account (1993). Given the mountainous landscape, strong relief fragmentation, the danger of erosion, and the need for biodiversity conservation, Armenia's forests all provide protective functions irrespective of their current or historical functional designations. Thus, by governmental decree, main cuttings are forbidden on the total forest land of Armenia. In fact, there are no sufficient areas for the main cuttings, but still some small plots may correspond to demands of commercial felling.

Share of the Forestry Sector in the Total Economy

The forestry sector represents only a small share of the total economy of Armenia. According to official statistics, the forest sector's contribution to Armenia's GDP has been about USD 3 million, which represents only about 0.03% of total GDP. It is important to note that the underlying trend of the forestry share in GDP is a negative one. In 2007, it represented about 0.06% dropping to 0.04% in 2008-2009. Since that time it has consistently trended at less than 0.03%. Assessments by international organizations and experts estimate the sector's share of GDP to be much

higher. According to a Global Forest Watch assessment, the forestry sector contributed USD 17 million to the economy in 2011, which represented about 0.2% of GDP.

Table 2-4: Forestry GDP as a Share of Total GDP

	2007	2008	2009	2010	2011	2012	2013	2014
Total GDP, mln. USD	9206	11662	8648	9260	10142	9958	11121	11644
Agriculture, hunting, forestry and fishing, mln. USD	1680	1902	1463	1577	2061	1902	2050	2150
Agriculture, hunting, forestry and fishing % of GDP	18.2	16.3	16.9	17.0	20.3	19.1	18.4	18.5
Forestry[1], mln. USD	5.1	4.9	3.6	3.2	2.7	2.5	3.0	3.2
Forestry % of GDP	0.06	0.04	0.04	0.03	0.03	0.03	0.03	0.03
Forestry % of Agriculture	0.30	0.26	0.25	0.20	0.13	0.13	0.14	0.15

Source: Staff calculations based on NSS data

Forest Sector Harvests

The primary organization conducting forest sector management in Armenia is Hayantar SNCO, operating under the Ministry of Agriculture. This organization is responsible for implementing state policy on forest conservation, forest reproduction and usage, providing guarding and resource protection, and assuring effective use of Armenia's forests. Hayantar is responsible for timber harvesting activities in the country and they manage almost all of the legally harvested timber and fuel wood.

According to harvest data provided by Hayantar, the amount of annual cuts during the past 15 years has ranged between 30-75 thousand cubic meters. This amount includes timber as well as fuel wood. Fuel wood has represented about 80% of the total harvest over the past five years. From 2008 through 2014 the total harvest amount stayed more or less the same, at around 30-35 thousand cubic meters. In addition to that amount, the local population in the vicinity of the forests were allowed to collect deadwood for fuel wood at no charge. These collections occurred in the range of 10-48 thousand cubic meters annually over the same 15-year period.

Table 2-5: Hayantar Total Harvest, 2004 – 2014, M³

Year	Harvest Cuts	Deadwood	Annual Total
2004	74,588	25,120	99,708
2005	55,571	16,397	71,968
2006	58,701	15,973	74,674
2007	41,125	9,716	50,841
2008	33,092	13,966	47,058
2009	34,859	23,417	58,276
2010	36,754	19,807	56,561
2011	32,533	24,457	56,990
2012	37,103	48,421	85,524
2013	31,671	42,622	74,293
2014	29,023	38,118	67,141

Source: Hayantar SNCO, and staff calculations

[1] Data is presented in accordance with administrative register data of the Ministry of Agriculture.

Illegal Logging

During the last 20 years illegal logging is the main cause of forest area degradation, especially in the areas that are located in relative proximity to population centers. According to the National Environmental Action Plan for Armenia, 1997 -- the volume of the illegal cutting reached 700,000-1,000,000 m3 of wood in each of three 1992-1995 years. Research conducted on illegal logging from 2002-2004, funded by the World Bank, shows that in 2003 alone there were 847 thousand M^3 of industrial wood and fuel-wood removed from the forests. From this amount, only 63 thousand M^3 was legally documented.

Other reports also suggest figures from 600,000 to 1,000,000 during the last 10 years. It should be admitted that all experts agree that amount of illegally harvested timber has decreased compared to 1990's levels; however, the amount is still several times higher than sustainable harvest volume for Armenia and exceeds officially declared volumes about 10 times.

Afforestation and Reforestation Activities

There is significant potential that can be realized to increase the country's forest cover through afforestation and reforestation. The "National Forest Program", adopted in 2005, aimed to carry out afforestation and reforestation activities on 5,000 hectares annually to increase the forest cover and to ensure positive sustainable social, environmental, and economic effects through forest management. However, due to the lack of sufficient financing for these activities, very little progress has actually been achieved.

From 2004 through 2009, much more attention was focused upon afforestation and reforestation activities with about 500 hectares of new planting and from 1,000 to 2,000 hectares provided with coppice regrowth assistance annually. Additionally, mineralization and fencing activities supporting natural growth were conducted on almost 20,000 hectares in the same time period.

After 2009, the situation radically changed with afforestation and reforestation activities dropping down to a couple of hundred hectares or less annually. In some years, such as 2011 and 2014, forest planting activities were conducted on only 28 and 48 hectares, respectively.

Table 2-6: Afforestation and Reforestation implemented by Hayantar SNCO, ha

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Forest planting and sowing	584	523	321	689	418	453	157	28	106	265	48
Coppice regrowth assistance	1648	1115	2107	1103	1700	0	0	0	166	184	0
Supporting to natural growth of forest via mineralization	411	2435	2000	0	940	0	0	0	0	0	0
Supporting to natural growth of forest via fencing	0	0	5032	5000	4000	0	0	0	0	0	0
Total, ha	**2643**	**4073**	**9460**	**6792**	**7058**	**453**	**157**	**28**	**272**	**449**	**48**

Source: Hayantar SNCO

Non-Timber Forest Products

Many rural households rely on the forest for Non-Timber Forest Products, such as: hay making, grazing, wild fruits and berries, nuts, medicinal herbs, honey, etc. Fodder grass is the largest known use of NTFPs as many of the rural households own cattle.

Many of these products provide rural households with additional food and cash during the agricultural offseason, providing improved food security. It is challenging to evaluate the total benefits received by local communities due to the fact that most of the resources are diffuse and consumed by local households or sold at local levels. Only a small part of NTFP has been sold to processors or local middlemen.

Due to above mentioned factors; the annual total revenues generated from Non-Timber Forest Products have not been fully quantified. According to expert assessments and sectoral reports, this figure is estimated between USD 10-20 million; however, reliable data is not available and no detailed analyses have been conducted.

Trade and Commerce

The wood processing sector in Armenia is mostly represented by small companies, which lack modern equipment and technologies and most of their production is designed for the local market. Over the past five years, the level of manufacturing production has remained relatively stable generating around USD 3-4 million annually.

Table 2-7: Manufacture of Wood Products[2]

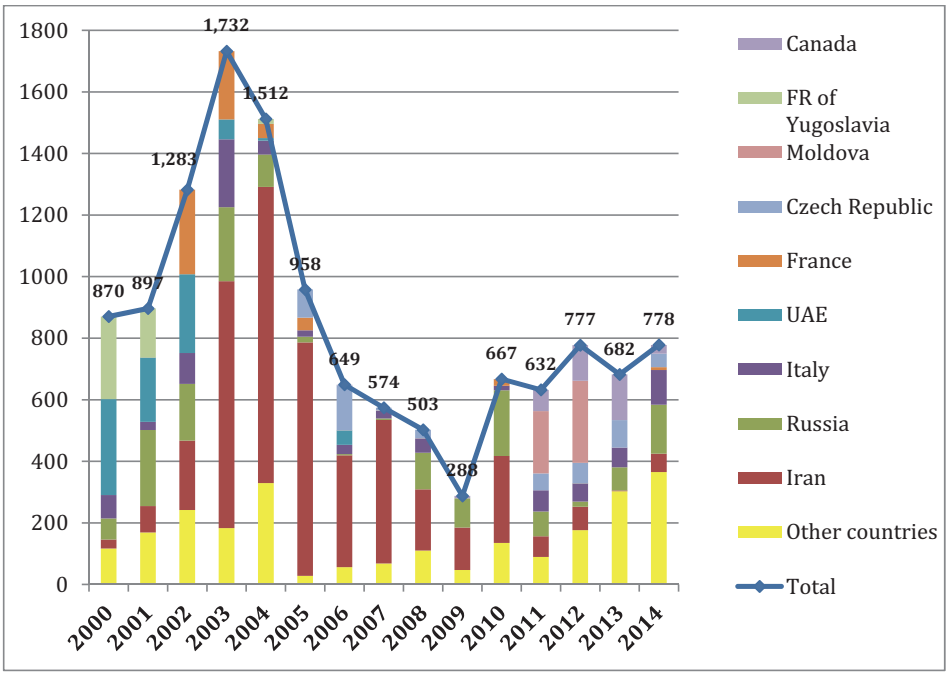
	2009	2010	2011	2012	2013	2014
Manufacture of wood and of products of wood and cork, except furniture: manufacture of articles of straw and plaiting materials, mln. AMD	792.8	1,419.2	1,434.4	1,372.1	1,122.2	1,514.2
Manufacture of wood and of products of wood and cork, except furniture: manufacture of articles of straw and plaiting materials, mln. USD	2.2	3.8	3.9	3.4	2.7	3.6

Source: NSS and Staff Calculations

Armenian wood exports remained relatively the same over the past five years within a range of USD 0.6-0.8 million.

[2] Data is only provided from 2009-2014 due to a change of definition in the Armenian classification code, which makes data from 2000-2008 incomparable with the more current data.

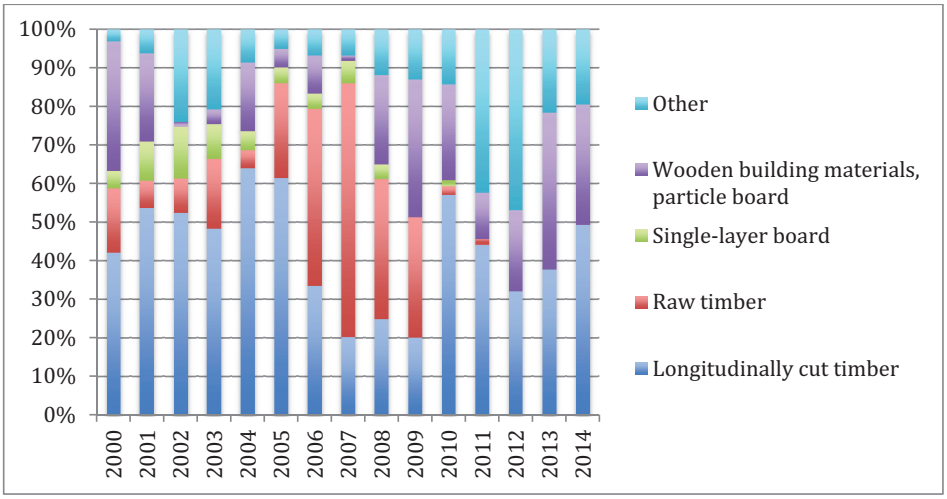
Figure 2-1: Wood Export Revenues by Destination– 2004–2014 (000 USD)



Source: NSS and Staff Calculations

One of the positive developments in the forest sector was the October 2009 government prohibition of raw timber exports, which represented 30-50% of total wood exports in 2005-2009.

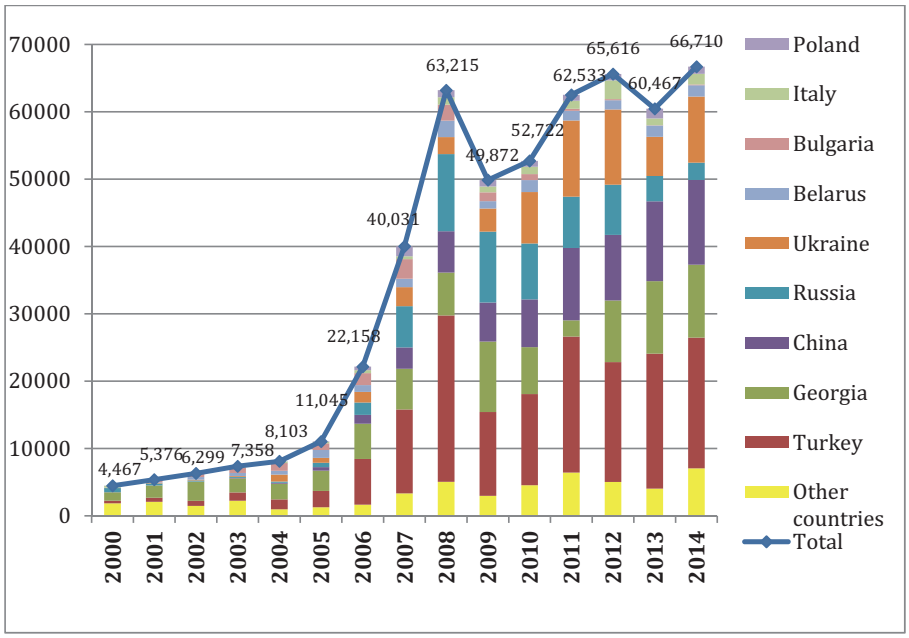
Figure 2-2: RoA Wood Export by Product, %



Source: NSS and Staff Calculations

Demand for wood products is quite high in the country. Import of wood products increased substantially from USD 8 million in 2005 up to USD 63 million in 2009.

Figure 2-3: RoA Wood Imports by Origin, 2000-2014, mln USD



Source: NSS and Staff Calculations

STRATEGIC, POLICY AND INSTITUTIONAL FRAMEWORK

Legal Structure – Armenia Forest Code

The Forest Code of Armenia was developed and passed in 2005 in order to achieve the strategic objectives of the RA National Forest Policy. This Code provides the legal structure and regulatory interface within the Forestry Sector.

The Forest Code establishes that forests in Armenia are state property[3] to be managed by state structures. These forests are further classified therein by their purpose-oriented significance as:

1) Protection forests
2) Forests of special significance
3) Production forests

[3] Article 4 of the Forest Code also allows for the possibility of community and private forests.

The Code establishes legal forest use forms as:

1) Harvesting of wood and secondary forest products
2) Usage of non-wood forest products
3) Implementation of scientific and research activities
4) Activities on the reproduction of fauna
5) Forest usage for health, sport, recreation and tourism purposes.

The Code also cedes the forest use in the forests designated within specially protected nature areas to the distinct and specific Armenian body of law on specially protected nature areas.

Law on Specially Protected Nature Areas (SNPAs)

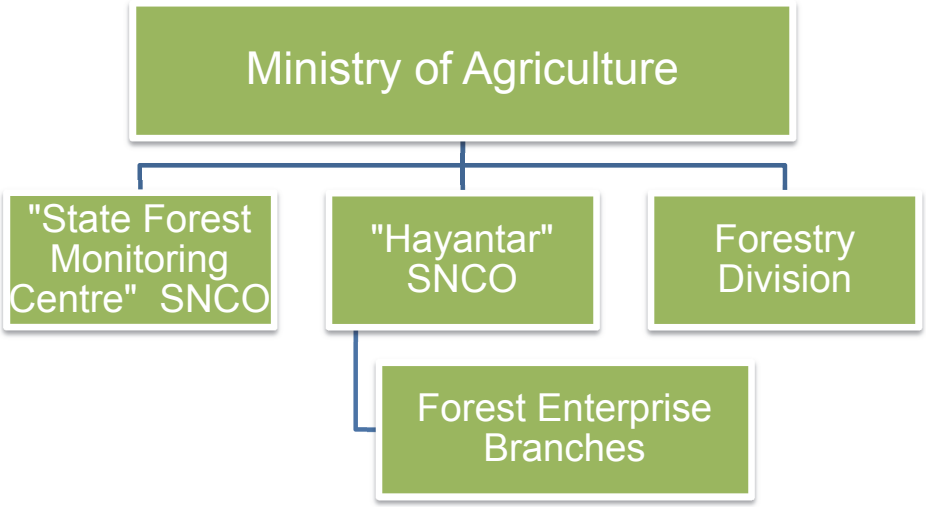
Established in 2006, the Law on Specially Protected Nature Areas (SNPAs) provides the legal basis for state policy in the realm of natural development, rehabilitation, conservation, reproduction and use of Armenia's specially protected nature areas. The values of these SNPAs is identified on the basis of their status as ecosystems, nature complexes, as well as individual objects of economic, social, scientific, environmental, historical, educational, cultural, health, recreational, and aesthetic values. The state body established to oversee SNPAs is the Ministry of Nature Protection and its subsidiary agencies and divisions.

Institutional Framework - Forest Management

Armenia's state forests are primarily managed by the Ministry of Agriculture, and the Ministry of Nature Protection that includes the system of Specially Protected Nature Areas (SNPA).

The Ministry of Agriculture is the authorized state management agency charged with the protection, guarding, reproduction and use of the nation's forest resources. Hayantar State Non-Commercial Organization (SNCO) and its 19 branches (Forest Enterprises) manage approximately 75% of forest areas under the Ministry of Agriculture. This includes 13 from a total of 27 sanctuary areas.

Diagram 3-1: Ministry of Agriculture: Forest Related Organizations



RoA Ministry of Agriculture: Department of Forestry

The Ministry of Agriculture's Department of Forestry is the primary institution that develops state policy on the protection, reproduction and use of Armenia's forested lands. This also includes development of needed legislation and overall strategy for the forest sector.

"State Forest Monitoring Centre" SNCO

The "State Forest Monitoring Centre" SNCO was established to provide Armenia with systemic recordkeeping, certification, analysis and provision of data on harvesting, the production and transportation of wood and non-wood forest products. Further, it was designed to establish a base of information for state supervision of sustainable forest management. A mandated function of the Centre includes monitoring forest state for illegal loggings; however, this role is not clearly defined and duplication exists with other institutions such as "Hayantar" SNCO, the Ministry of Nature Protection's State Environmental Inspection and Bioresources Management Agency.

Hayantar SNCO

Hayantar SNCO is the primary institutional actor in the forest sector and was established in 2002 by RoA Government Decree through a restructuring of the existing "Hayantar" CJSC. The organization's primary functions are implementing state policy on forest conservation, forest reproduction and usage, providing guarding and resource protection, and assuring effective use of Armenia's forests.

Diagram 3-2: Hayantar SNCO Departmental Structure[4]

Source: Hayantar SNCO

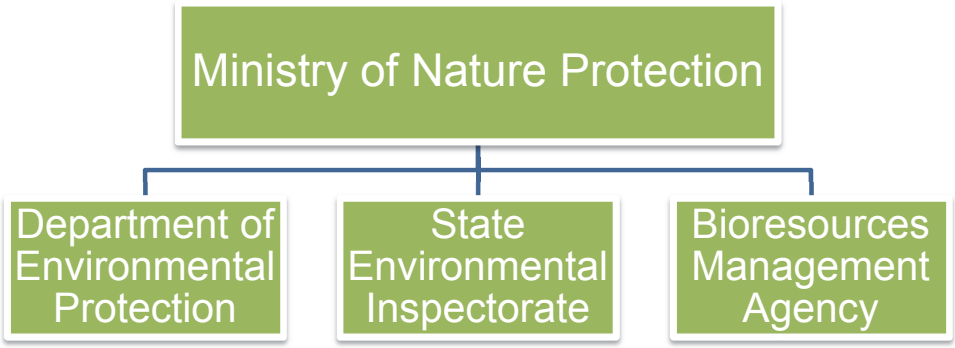
[4] Diagram is provided for the purpose of explaining organizational divisional structure and does not represent any authority, detailed management structure, or relationships below top management.

As the primary forest management organization in the sector, Hayantar is also the largest employer in the sector. Between 2004 and 2014, the Hayantar's number of total staff has varied from a high of 1,102 employees in 2008 to a low of 999 employees in 2014.

RoA Ministry of Nature Protection

Within Armenia's Ministry of Nature Protection there are several structural subdivisions and SNCOs that are directly or indirectly related to both wood and non-wood forest uses, specifically with regard to the specially protected nature areas.

Diagram 3-3: Ministry of Nature Protection Forest Related Organizations



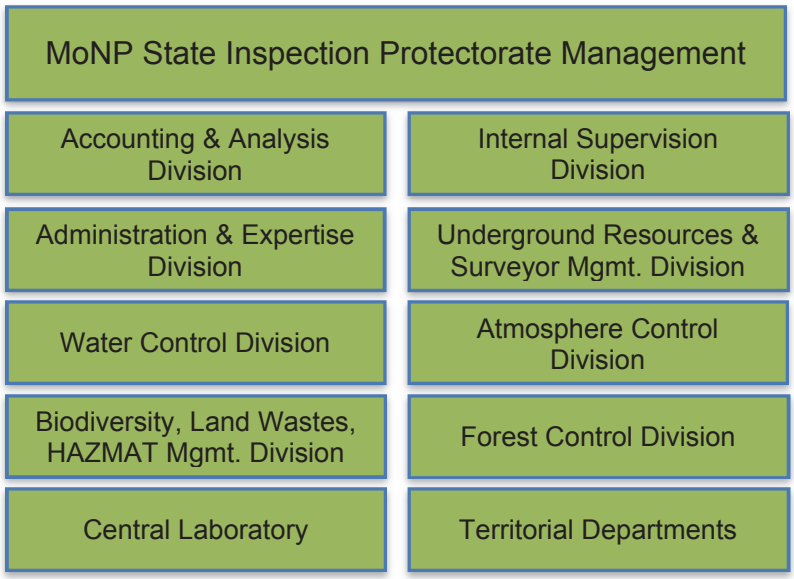
RoA Ministry of Nature Protection: Department of Environmental Protection

The Ministry of Nature Protection's Department of Environmental Protection is the state policy making department with regard to the environment, reproduction, biodiversity and use within the sphere of SNPAs.

State Environmental Inspectorate

The Ministry of Nature Protection's State Environmental Inspectorate (subdivision) assures implementation of all rules and requirements established in the environmental legislation. This includes specific oversight of the norms and contractual responsibility with regard to the use of biological resources

Diagram 3-4: MoNP: State Inspection Directorate Divisional Structure[5]



Source: Staff compilation from MoNP website (Retrieved 29 October 2015)

Bioresources Management Agency (BMA)

The Bioresources Management Agency (BMA) was established in 2002. The primary task of the BMA is to provide scientific research, conservation, reproduction, sustainable use of lands and forests, and biological diversity of natural ecosystems, flora and fauna in support of state policy making and management within these areas of specialization. The BMA maintains a database and cadaster which includes the state registry, inventory and monitoring of flora and fauna resources of the Republic of Armenia. Additionally, the BMA coordinates SNPA conservation and sustainable use activities and provides justification for the approval of legal utilization volumes of flora and fauna natural resources.

[5] Diagram is provided for the purpose of explaining organizational divisional structure and does not denote any authority, detailed management structure or relationships below top management.

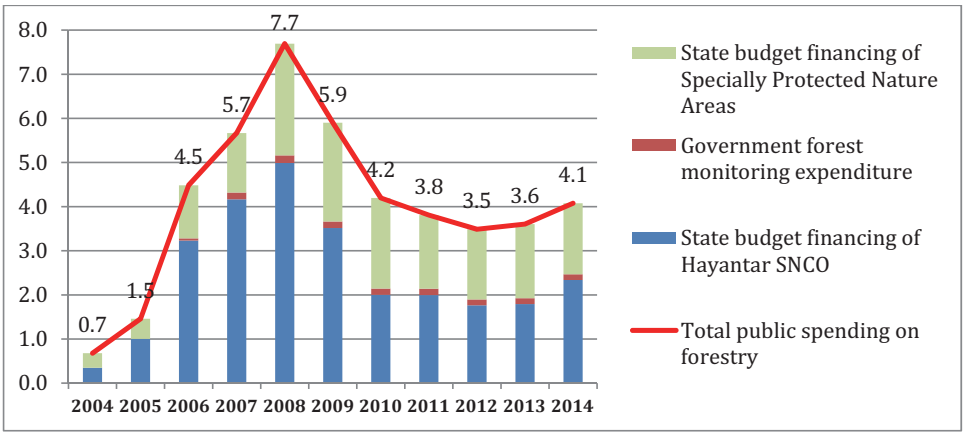
FINANCIAL ARRANGEMENTS AND PERFORMANCE

Forest Sector Financing

Governmental funds to manage and protect forest areas in Armenia are channeled through two ministries, the Ministry of Nature Protection and the Ministry of Agriculture, and to their relevant subordinate institutions responsible for forestry sector management and protection.

Under the Ministry of Nature Protection, the Department of Environmental Protection is the agency that receives the most public financing for management of the Specially Protected Nature Areas in Armenia. From the total funds received by this agency those funds, which are specifically devoted to forest areas within the Specially Protected Nature Areas (SPNAs) are included within the total public financing of the forest sector in Figure 4-1 below.

Figure 4-1: Total Public Financing of the Forest Sector[6], 2004-2014, mln. USD



Source: RoA Ministry of Finance, NSS

As shown in the previous figure, total public financing for the sector reached its peak in 2008 with a total amount of USD 7.7 million. However, during the past 5 years that amount has decreased by about half and has remained within a range of USD 3.5-4.2 million[7].

Public financing for SPNAs decreased from USD 2.5 million in 2008 to USD 1.6 million in 2014. According to data provided by the Ministry of Finance, all of these funds were directed to cover current expenditures. As the financial data procured for the Ministry of Nature Protection is consolidated, the more detailed financial analysis for the sector is focused primarily on the revenues and expenditures of Hayantar SNCO, the institution singularly focused on the management of the forestry sector.

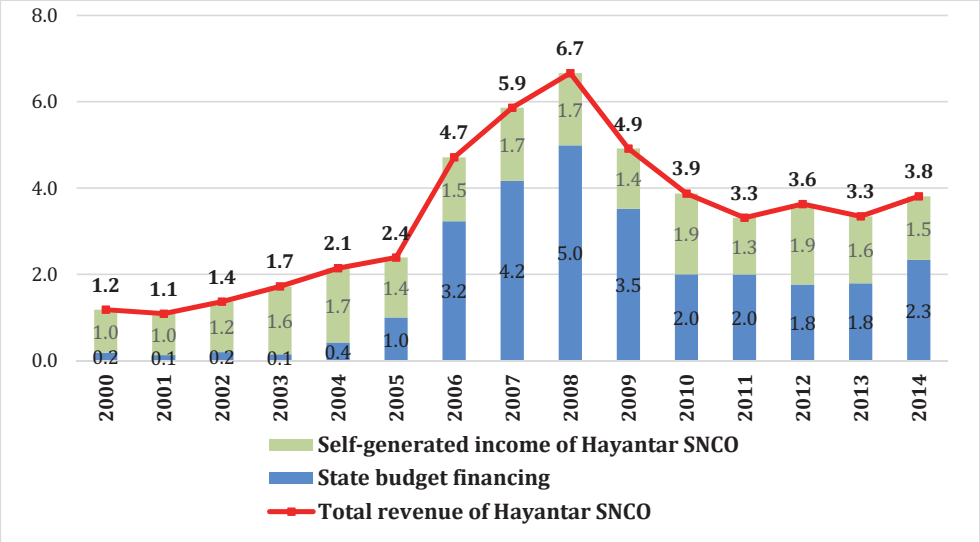
[6] State budget financing of Specially Protected Nature Areas includes allocations for both forest and non-forest activities, such as research, monitoring, etc.
[7] Financing provided by local governments is almost nonexistent and inconsequential.

Hayantar SNCO Financing

The overall quality of investment in Armenia's forest sector is hindered by two major factors: the government's limited budget resources directed into the sector and Hayantar's inability to generate high enough revenues to ensure proper functioning of the organization. Both of these factors lead the current situation, whereby financing of the sector fails to meet the recurrent funding requirements necessary to properly provide operations and maintenance as well as capital investment spending.

Financing of Hayantar SNCO comes primarily from two major sources: one is the state budget[8] that is the single most significant provider of funds to the sector and the second is its own revenues generated by the sector.

Figure 4-2: Total Financing of Hayantar SNCO – 2000-2014, mln. USD



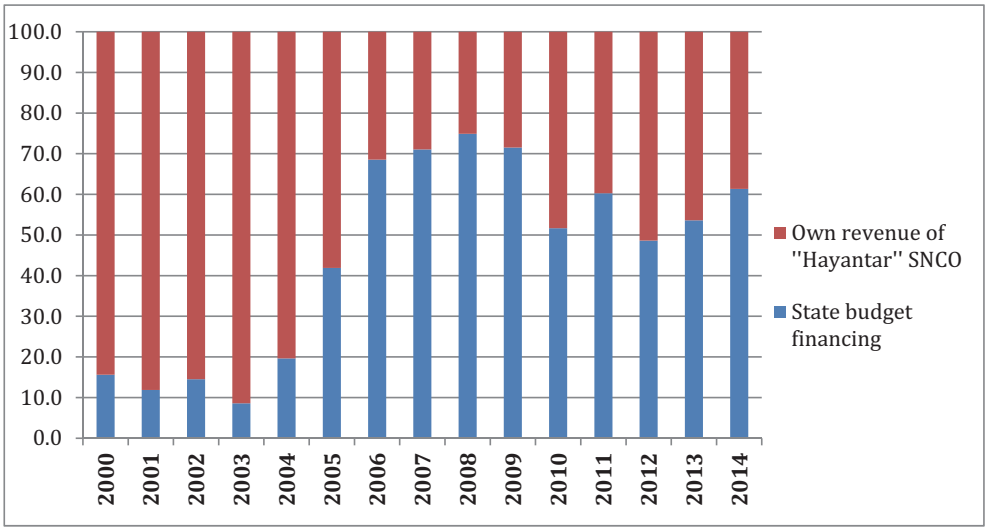
Source: Staff calculations based on MoF and Hayantar SNCO data

In 2000-2005, Hayantar's self-generated income[9] exceeded budget financing. From 2005 forward, the Government increased financing of the sector reaching a peak in 2008 with a total budget of USD 6.7 million. However, total budget decreased again to USD 3.9 million in 2010 and has stayed within the same range over the past 5 years.

During the years 2000-2004, state budget financing of Hayantar remained within the margins of 10-20% of Hayantar's total budget. Beginning in 2005, the share of state financing increased to a high of 75% in 2008. That amount began to decrease in 2009 and has accounted for around 50-60% for the past 5 years.

[8] This figure includes funds provided by big international institutions/donors, such as: World Bank, Japanese Government, etc.
[9] Financial data from Hayantar provided after 2006 is considered to be more reliable due to consolidation and an upgraded reporting structure.

Figure 4-3: Forest revenue vs. State budget financing as % of Total Financing of Hayantar SNCO – 2000 - 2014.

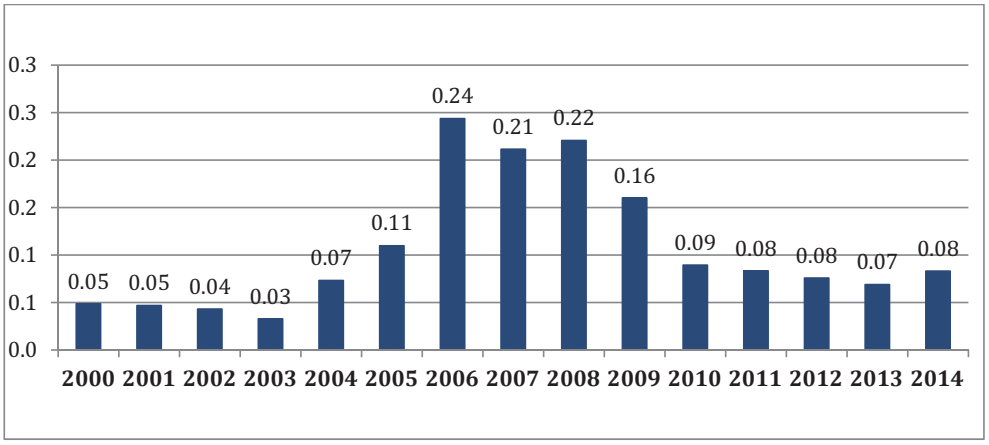


Source: Staff calculations based on Hayantar SNCO data

State Financing of Hayantar SNCO

Forest sector expenditures as a share of overall state budget expenditure has remained low for the past 5 years at less that 0.1% of total expenditure, an amount three times less than the expenditure during 2006-2008.

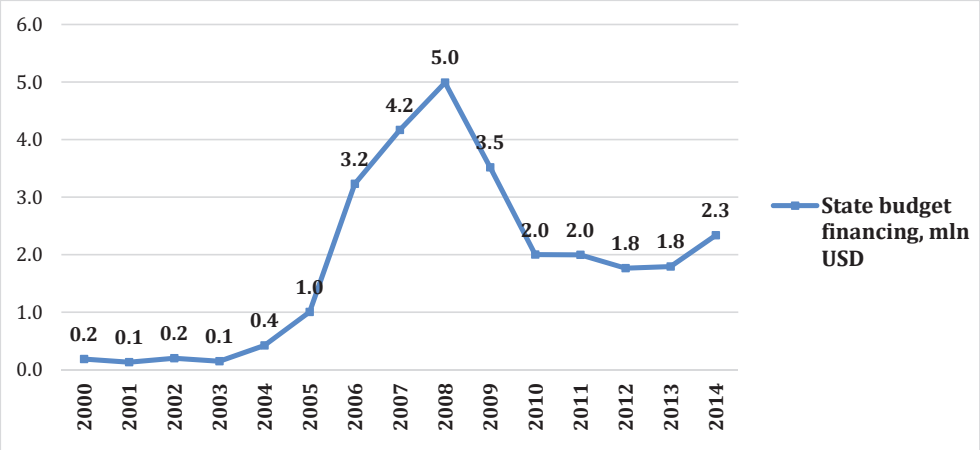
Figure 4-4: Forest Sector Expenditure as % of Total Expenditure – 2000-2014.



Source: Staff calculations based on MoF and NSS

The Government's support for the forest sector has remained relatively constant over the past five years in USD terms. This amount has fallen within a range of about USD 2 million, as shown in Figure 4-5. From 2000 through 2004, state budget financing was quite low at about USD 0.1-0.2 million. This amount increased exponentially from 2006 through 2009, peaking in 2008 at USD 5.0 million.

Figure 4-5: State Budget Financing in 2000-2014, mln. USD

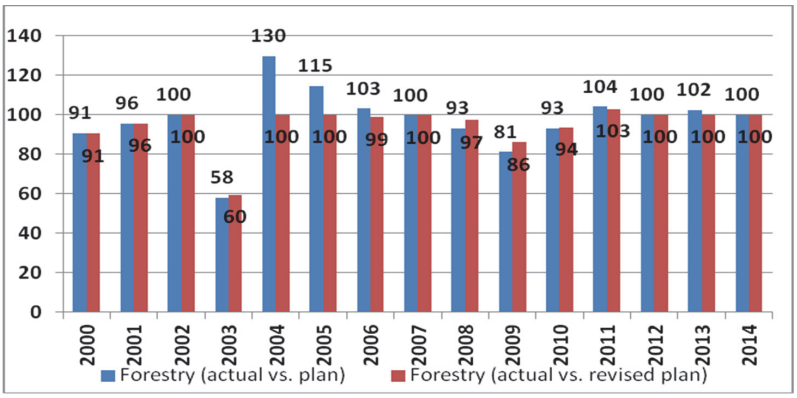


Source: Staff calculations based on Hayantar SNCO data

The budget is planned on an annual basis. The budget process starts about 9 months before the start of the new fiscal year and includes several rounds of discussions between the Ministry of Finance, Ministry of Agriculture, and Parliament. The budget is approved in December and it defines financial allocations to the sector for following year. Budgetary funds are allocated to Hayantar on monthly basis.

For proper management of the sector it is important to determine whether or not the funds are received in a predictable manner. Expenditure predictability is particularly significant for effective planning and operational efficiency. The budget implementation rate in Armenia's Forestry sector, presented in Figure 4.6, is an important indicator of the credibility of the budget in terms of allowing the Ministry of Agriculture and Hayantar SNCO to plan activities and deliver the public services in sustainable manner.
The PEFA framework scores the highest for this indicator, when "in no more than one out of the last three years has the actual expenditure deviated from budgeted expenditure by an amount equivalent to more than 5% of budgeted expenditure" (PEFA Secretariat 2006).

Figure 4-6: Budget Implementation Rate in the Forestry Sector (%)



Source: Staff calculatio

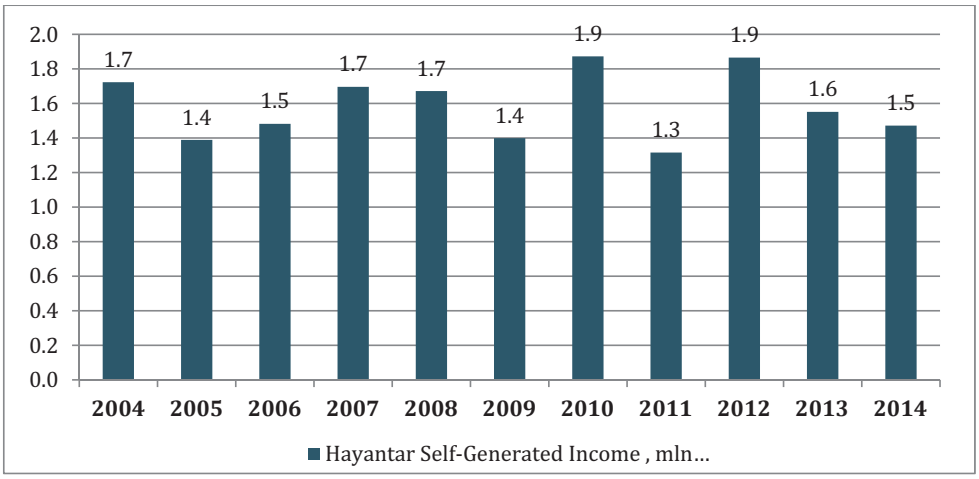
As can be seen from figure above, Armenia had the worst execution rate in 2003 with about a 40% deviation from the revised amount planned. The implementation rate was low in 2009-2010 (86% and 94% respectively) and this was common across all sectors due to a global economic and financial crisis' affects on the Armenian economy. During the last four years budget implementation rate stayed at very high level.

Revenues of Hayantar SNCO

Since 2000, revenues generated by Hayantar have remained within a range of USD 1.3-1.9 million with slight fluctuation over the years. In 2014, Hayantar's self-generated revenue reached USD 1.5 million.

About 70-75% of the revenues of Hayantar have been generated from the sale of wood and wood products. Hayantar, on the one hand, has to protect the forest through government funding, on the other hand, it has not had sufficient budget to protect the forests because its funding has been cut since 2010. Therefore, Hayantar has to generate funding by cutting trees.

Figure 4-7: Hayantar Self-Generated Income – 2004-2014, mln. USD



Source: Staff calculations based on Hayantar SNCO data

Table 4-1: Hayantar Revenue Structure – 2004-2014, mln. USD

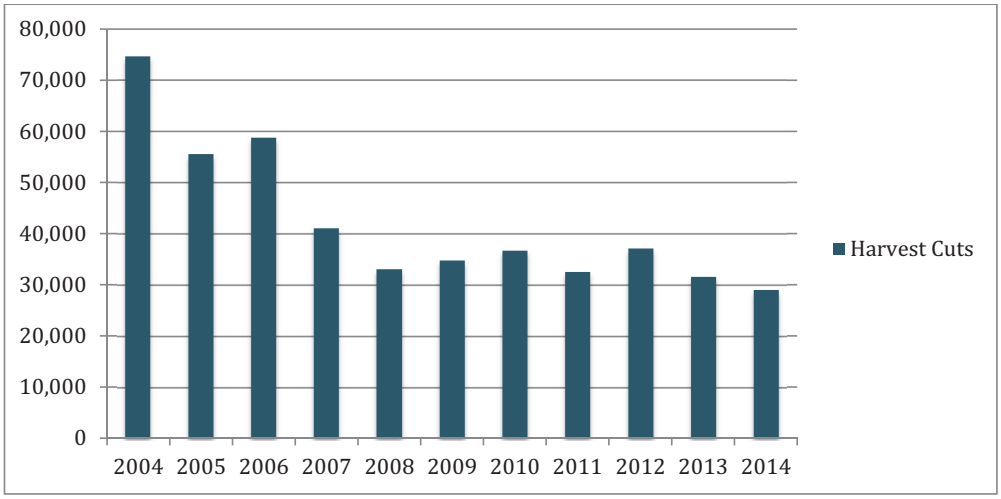
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Forest revenue of Hayantar	**1.7**	**1.4**	**1.5**	**1.7**	**1.7**	**1.4**	**1.9**	**1.3**	**1.9**	**1.6**	**1.5**
Fuel wood	1.0	0.8	0.9	0.7	1.1	0.8	0.8	1.0	1.1	0.8	0.9
Construction wood	0.3	0.2	0.2	0.6	0.4	0.2	0.1	0.1	0.2	0.2	0.1
Other wood products	0.3	0.4	0.3	0.2	0.0	0.1	0.3	0.1	0.0	0.0	0.1
Revenues from afforestation and reforestation activities	0.0	0.0	0.0	0.2	0.1	0.3	0.6	0.1	0.6	0.5	0.4

Source: Hayantar SNCO and staff calculations

According to harvest data provided by Hayantar, the amount of annual cuts during the past 10 years has ranged between 30-75 thousand cubic meters. This amount includes timber as well as fuel wood. Fuel wood represented

about 85-90% of the total harvest during the same period. From 2007 through 2014, the amount of total harvest cuts stayed more or less the same, at around 30-40 thousand cubic meters.

Figure 4-8: Total Annual Harvest Cuts (m^3) – 2004-2014

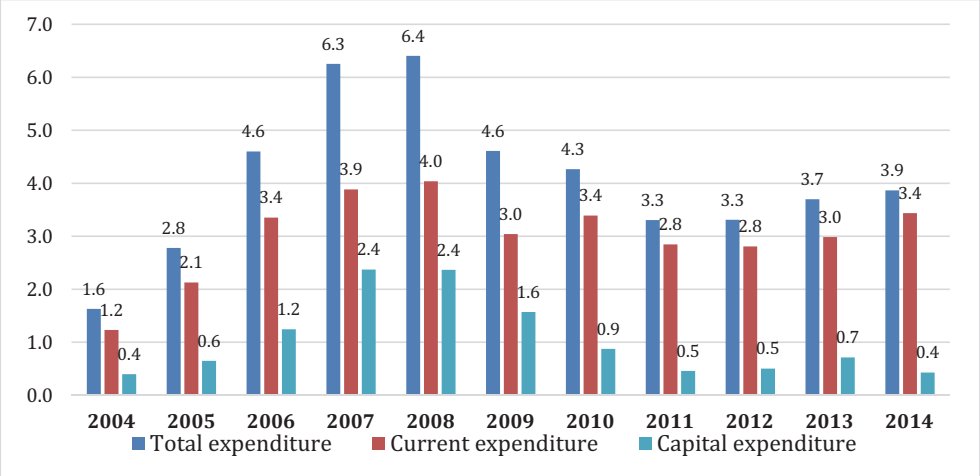


Source: Hayantar SNCO, and staff calculations

Forest Sector Expenditures

The current expenditure structure of the forest sector raises concerns because almost no funds are spent on long-term investment priorities. Current expenditures have represented from 80-90% of total expenditures over the past 5 years. Salaries and wages alone accounted for about 70% of total expenditures in 2014, while in 2004 salaries and wages only represented 28% of total expenditures. The level of recurrent expenditures effectively leaves no funds in the sector to carry out needed long-term investments to increase the efficiency of the forest sector.

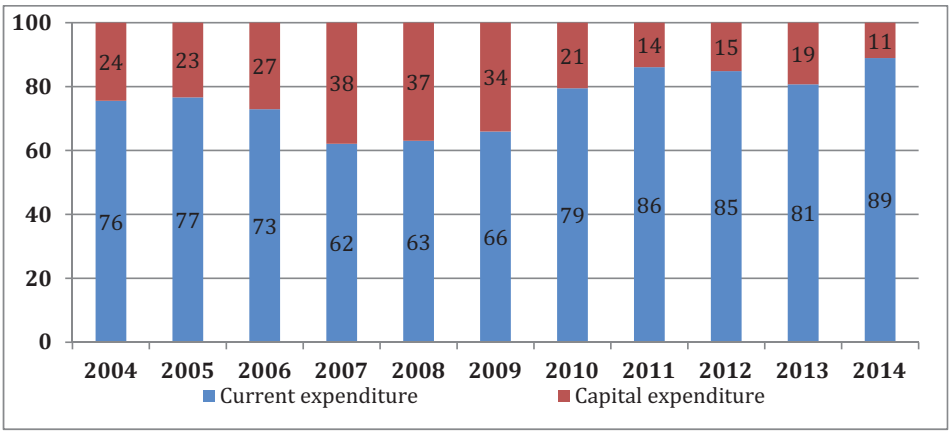
Figure 4-9: Expenditure Structure of Hayantar SNCO in 2004-2014, mln. USD



Source: Staff calculations based on Hayantar SNCO data

The current and capital expenditure trend raises concerns. During 2004-2009, the share of current expenditure fell within a range around 60-75% of total expenditure. Since that time, the share of current expenditures has drastically increased to a level of 89% in 2014.

Figure 4-10: Current vs. Capital Expenditures as a % of Total Expenditures

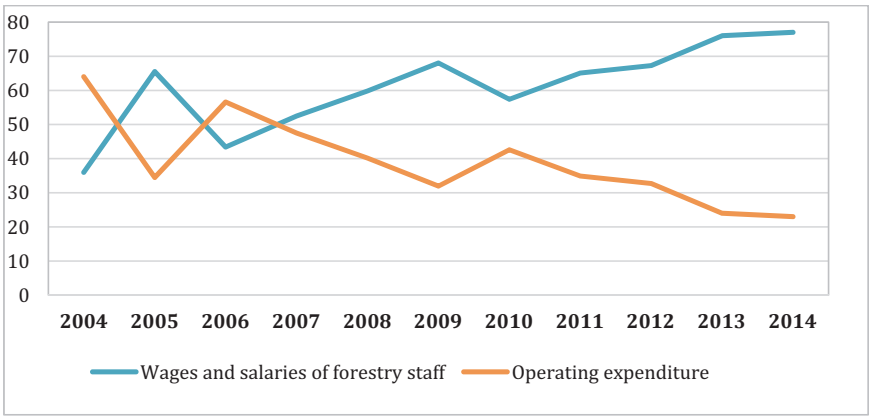


Source: Staff calculations based on Hayantar SNCO data

Wages and Salary Expenditure

A deeper analysis of current expenditures, broken down into its constituent categories of operating expenditures and wage and salary expenditures, reveals that the share of expenditures dedicated to wages and salaries of Hayantar staff has increased while operating expenditure's share has remained flat. In 2004, operating expenditures equalled USD 0.8 million and salary expenditures were USD 0.4 million. By 2014, after ten years, operating expenditures remained at USD 0.8 million, while salary expenditures had increased more than six fold to USD 2.6 million.

Figure 4-11: Wages and Salaries vs. Operating Expenditures, as % of Current Expenditures

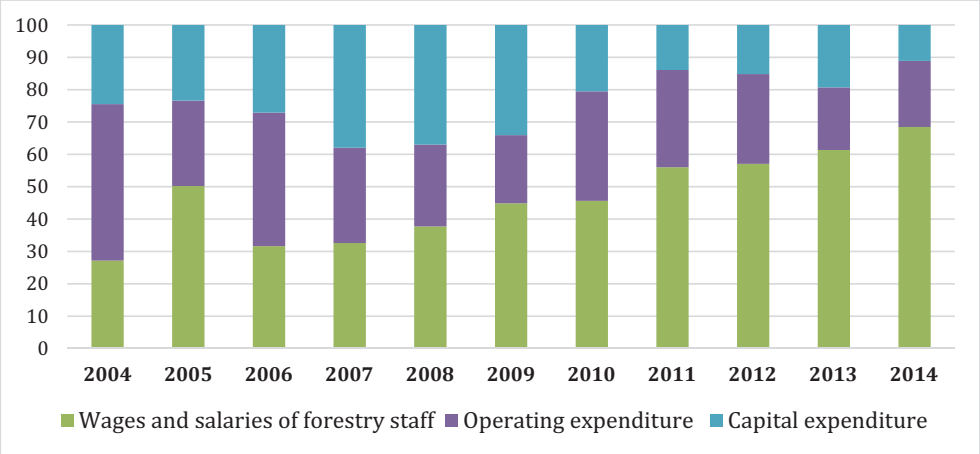


Source: Staff calculations based on Hayantar SNCO data

The share of salaries in recurrent expenditure provides a useful indicator to measure the effectiveness of expenditures. It is a generally accepted approach, that if salary costs exceed 60% of current expenditures it will lead to compromising the effectiveness of the service delivery[10]. For the Armenian forestry management sector expenditures, this ratio reached about 80% and the salary expenditure ratio to total expenditures is near 70%. These ratios clearly identify that the expenditure structure of the sector is not efficient, nor sustainable. Spending such a high proportion of the recurrent budget on staff salaries provides an indication that unless operational resources are made available, the forestry sector is not being managed productively and will remain so for the foreseeable future.

A comparison of capital expenditures, operating expenditures, and salary expenditures from 2004 through 2014 shows the shares of capital expenditures and operating expenditures were declining while the share of wages and salaries were increasing, as a percentage of total expenditures.

Figure 4-12: Capital Expenditures vs. Operating Expenditures vs. Wages and Salaries as a % of Total Expenditures

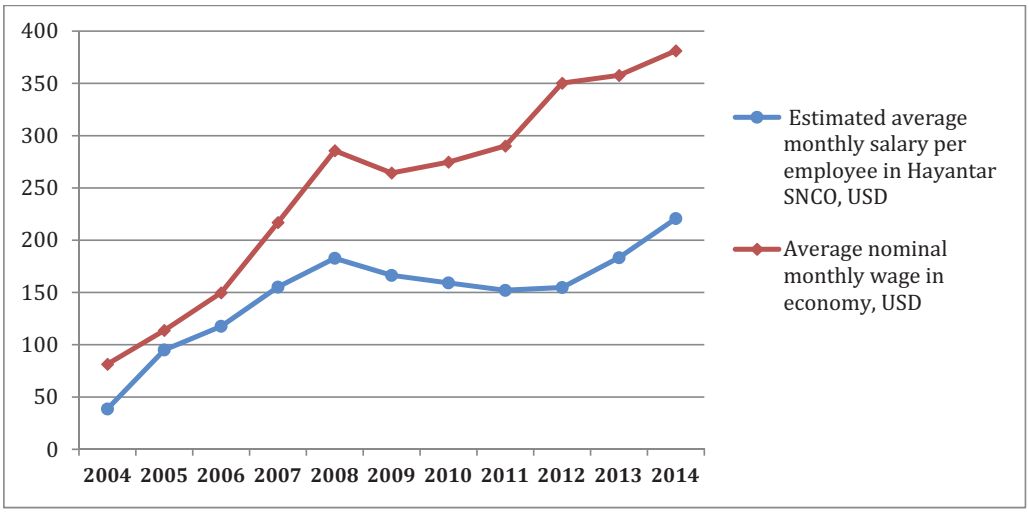


Source: Staff calculations based on Hayantar SNCO data

As previously mentioned in the analysis of expenditure structure, the share of salary expenditure has been steadily increasing over the years. Despite the fact that the share of current expenditures has increased, the salary levels in the forestry sector have remained much lower than the national average nominal salary in Armenia. The average salary in the forestry sector was only 58% of the national average nominal salary in 2014.

[10] Profor – "Forest Sector Public Expenditure Reviews." Govereh et al. 2008; Hoole and Duncan 1998

Figure 4-13: Estimated Average Hayantar Monthly Wage versus Average Monthly Nominal Wage in the Armenian Economy, 2004-2014, USD



Source: Staff calculations based on Hayantar SNCO and NSS data

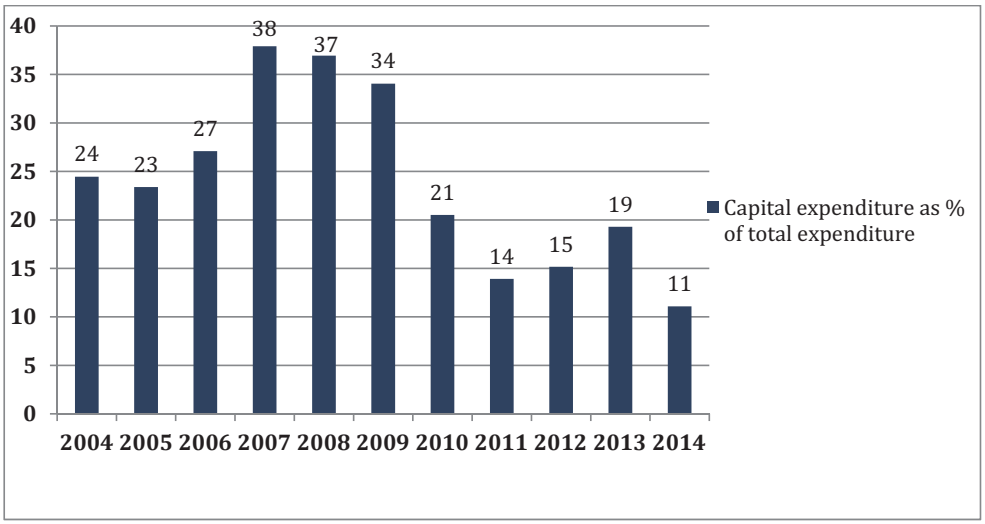
Capital Expenditures

The trend of capital expenditures as a share of total expenditures has decreased over the past 10 years. In 2004, capital expenditure represented about 25% of total expenditures. That amount increased to 35-40% in 2007-2009, but sharply decreased over the following years. As of 2014, capital expenditure accounted for only 11% of total expenditures.

Only expenditures classified as capital expenditures are related to afforestation and reforestation activities. The funds allocated for afforestation and reforestation have been significantly reduced in recent years. Additionally, the total areas upon which such activities are carried out have also declined. Over the past four years, the annual average capital expenditure was approximately USD 0.5 million, as compared with USD 2.4 million annually which occurred in 2007-2008.

The Ministry of Finance records all expenses directed to afforestation and reforestation activities as capital expenditures. This includes the expenditures on wages, cost of irrigation, electricity and transportation, which are current expenditures by their very nature. If one calculates only those types of capital expenditures, as defined by international expenditure classifications, then the total amount of capital expenditures and the capital expenditure to total expenditure ratio with be much lower.

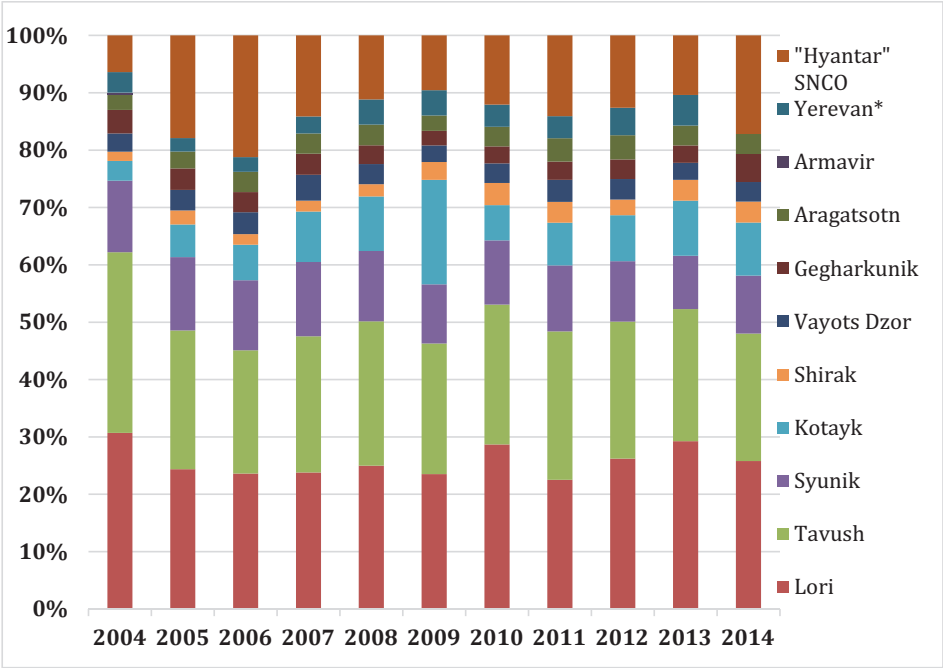
Figure 4-14: Capital Expenditures as % of Total Expenditures



Source: Staff calculations based on Hayantar SNCO data

Regional distribution of expenditures for the forestry sector show that expenditures are much higher in the Lori and Tavush Marzes as would be expected based upon forest concentrations. The third largest recipient of funds is the Hayantar SNCO head office.

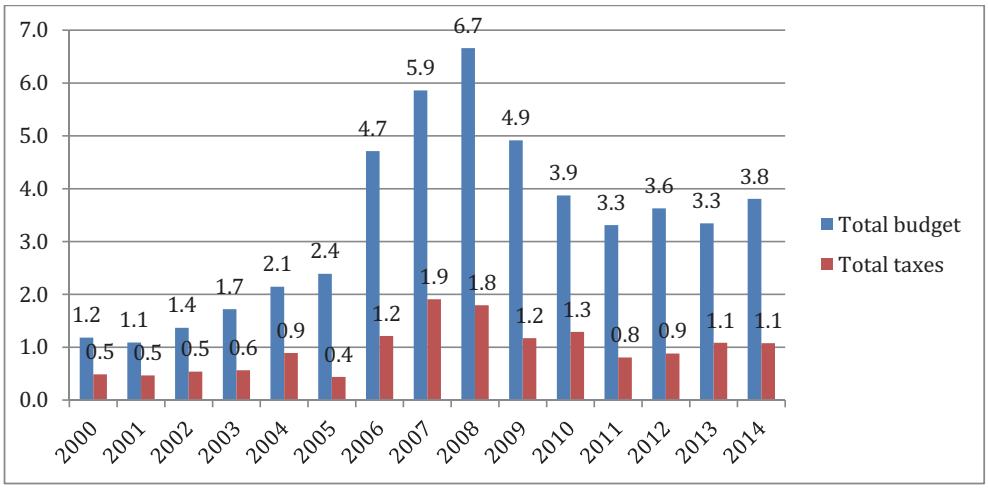
Figure 4-15: Structure of expenditure of Hayantar SNCO by Marzes in 2004-2014, %



Source: Staff calculations based on Hayantar SNCO data

From the limited financial resources allocated to the sector, which are insufficient to cover all necessary costs, Hayantar is also obliged to pay taxes, such as: income tax, profit tax, VAT and custom duties. Over the past five years, taxes represented between 25-30% of total revenues, leaving even less resources in the sector available for forest management activities.

Figure 4-16: Total Budget vs. Total Taxes – Hayantar SNCO – 2000 -2014, mln. USD



Source: Staff calculations based on Hayantar SNCO data

Regional ENPI-FLEG II Forestry Systems: Georgia and Moldova

Georgia Forestry System

Georgia is a country located on the Eastern shore of the Black Sea, straddling Eastern Europe and Western Asia. With a total land area of 69,700 square kilometers, the country has one of the most varied topographies in Eurasia and lies mostly in the Caucasus Mountains. The country's northern border being mostly defined by the Greater Caucasus range and its southern border rests within the Lesser Caucasus range. The Imereti and Surami ranges connect the Greater and Lesser Caucasus ranges forming natural barriers that create Georgia's unique microclimatic variations.

As of 2014, Georgia's population stood at a little over 3.7 million people with an average population density of 53.5 people per square kilometer.

Georgia - Forest Sector Overview

Georgia's forest resources extend from floodplain forests along the Black Sea coast to sub-alpine stands. These forests lie within 9 climatic regions that range from glacier zones and permanent snowcap to wet and sub-tropical

zones. Georgia's forest area covers a total of 3,046,600 hectares[11], or about 40% of the country's territory. Of these, almost 600,000 hectares are virgin forests according to expert estimates. Protected areas in Georgia represent about 7.5% of the country's overall territory. Forests located within the Protected Areas cover about 450,000 hectares, which is nearly 16% of the total forest cover of the country.

Approximately 98% of the forests in Georgia are mountainous forests located primarily on the slopes of the Greater and Lesser Caucasus mountain ranges with the remaining 2% located within the valleys of eastern Georgia and the Kolkheti lowlands. Of these mountainous forests, about 80% are located on steep slopes of 21% or greater. Nearly 50% of the forest area is covered by beech, with large areas of the country's forests also covered by fir, hornbeam, oak, spruce, alder, pine and other tree species. The forests of Georgia are a very important resource for the country both economically and environmentally as they provide a valuable ecosystem regulation function in the areas of water regulation, natural disaster mitigation, climate stabilization, and soil erosion prevention, as well as providing an important habitat for biodiversity.

Non-timber forest products including nuts, berries, mushrooms and medicinal plants are important direct sources of Georgian forests playing key role of sustenance and well being for the rural population. Tree seeds, in particular *abies nordmaniana,* are exported from Georgia to many European countries for the production of Christmas trees, which serves as an important source of income for rural economies.

The total growing stock of Georgian forests is estimated at 454 million m^3, which yields an average of 161 m^3 per stocked hectare. Of the total growing stock, 310 million m^3 are broadleaved species and 124 million m^3 are coniferous species. The total annual increment is estimated at about 4.0 million m^3. Annual volume of sustainable allowable harvests for all types of logging in Georgian forests is estimated to be 1 million m^3, or 25% of the total annual increment. The net annual natural increment is equal to 1.8 m^3 per hectare, per year.

The total annual harvest from Georgian forests in 2013 was 626,250 m^3. From this amount, industrial round wood equaled 120,000 m^3, two thirds of which were hardwood species and the remaining were softwood species. While prior to 2006, the majority of hardwood species were exported unprocessed, sawmills currently process most logs into sawn wood for both domestic and export markets and a very small amount of round wood is being exported. From 2006-2013, approximately 30% of the sawn wood products were exported.

The forest sector in Georgia currently faces many problems due to unsustainable management practices and an overall lack of transparency. At present, the forests of Georgia are not being fully utilized for their optimum economic potential. This potential for a large scope of increased harvesting on a sustainable basis and processing for export and domestic use could greatly increase the economic benefit of the sector.

Illegal Logging

The volume of illegal logging in Georgia has dropped significantly in recent years. It was 21,331 m^3 in 2008 and 5,283 m^3 in 2013, based on official statistics; however, there are a number of factors which undermine the reliability of official data and create situations under which illegal logging may be a challenge to properly identify.

The most prominent of these factors is the existence of a long-term forest-licensing regime, which has allowed the transfer of land by state forest authorities without first conducting an updated forest inventory. Other factors include the absence of effective legislative and procedural instruments to properly monitor forest resource use on lands leased by private investors holding logging licenses. The second prominent factor is the high demand for fuel wood in the local areas as a result of rural poverty and insufficient heating alternatives to firewood. Approximately

[11] Source: National Statistics Office of Georgia, *Natural Resources of Georgia and Environmental Protection: Statistical Publication*, 2014

80% of rural households and 17% of urban households depend upon firewood for cooking and heating. Additionally, forest ranger staff limitations are the third most prominent factor.

In 2013, the National Forest Agency detected 2,746 violations that resulted in biodiversity loss and deforestation damages calculated at a cost to the country of USD 2.525 million.

Georgia - Strategic, Policy, and Institutional Framework

Legal and Legislative Framework

The National Forestry Concept (NFC) in Georgia was adopted by Parliament in December 2013 to change the strategic framework of forest management. This was followed by the initiation of the National Forest Program (NFP) with the support the German Society for International Cooperation (GIZ). Utilizing the NFP, the government began working on the development of a new Forest Code in 2014. The country's NFP promotes sustainable forest management by strengthening biodiversity protection and efficient use of forests' economic potential while taking into account their ecological value; improving the quantitative and qualitative indices of the Georgian forests; and to expand public participation in forest management and equitable distribution of benefits. While the existing Forest Code allows for private ownership of forests, the code does not adequately provide a mechanism for a transfer of ownership of such forests and there has not been any legislation adopted on the privatization of forests.

Institutional Framework

The Ministry of Environment and Natural Resources Protection (MENRP) is the primary environmental authority in Georgia. Within the MENRP, two institutions have the assigned responsibility for managing the country's forests forest resources. These are the National Forestry Agency, and Agency for Protected Areas. The Tbilisi Municipality manages those forest ecosystems existing within the administrative boundaries of the city of Tbilisi. Additionally, a small portion of the forest fund is assigned to the Patriarchate of Georgia.

National Forestry Agency

The National Forestry Agency (NFA) was established under the MENRP in 2013 as an LEPL, or "legal entity of public law". The primary functions of the National Forestry Agency is to manage the Forest Fund and carry out forest management and protection, restoration measures, implementing forest regulation and control, forest care and recovery, forest monitoring and data processing, accounting and planning for the Forest Fund, as well as developing and implementing preventative measures to stop illegal forest practices. The NFA is responsible for managing about 2 million hectares of Georgia's forests.

The National Forestry Agency is the primary employer in the forest management sector as of 2014 with a total of 869 employees. Of this workforce, there are 83 employees assigned to the central headquarters and 786 employees assigned to nine regional branch offices. Of the 786 regionally assigned employees, 569 serve as forest rangers.

Agency of Protected Areas

The Agency of Protected Areas (APA) has the mandate of managing Georgia's strict nature reserves, national parks, natural monuments, managed reserves, protected landscapes, biosphere reserves, world heritage sites and wetland sites of international importance. The Agency's primary objective is to improve the management of protected areas, assure that territorial administrations remain functional, and to supervise the process of legally established regulations as well as planning, creating and developing new protected areas. The APA is responsible for managing about 520,000 hectares of forest area.

Georgia - Financial Arrangements and Performance

Budget financing for the forestry sector in Georgia in 2014 was USD 4.1 million and an additional USD 3.6 million in self-generated sector revenues.

Moldova Forestry System

The Republic of Moldova is small landlocked country lying between the Ukraine and Romania in South Eastern Europe. With a total land area of 33,850 square kilometers, the country's topography exhibits primarily hills with elevations less than 430 meters. With long and warm summers averaging about 20 degrees Celsius and relatively mild and dry winter averaging about -4 degrees Celsius, Moldova has a moderate continental climate. Annual rainfall can vary as much as 200mm between the north and south of the country with long dry spells being a regular event.

In 2013, the population of Moldova was 3.56 million after experiencing a decrease of 6.6% since 1990, primarily as a result of emigration. Currently, the average population density of the country is 120.4 persons per square kilometer with the majority of the population concentrated in rural areas with around 54% and an urban density of 46%.

Moldova - Forest Sector Overview

Moldova's forest cover amounts to only 11% (or 379,300 hectares) of the country's total land area. However, during the past 20 years the forest area has increased from 333,900 hectares in 1993 to its current size of 379,300 hectares in 2014. The majority of Moldova's forests exist in the center of the country in hilly terrain. They are constituted by mainly broadleaf species including hornbeam, ash, oak, black locust, and poplar, with planted non-native conifer species accounting for 2% of the forest area. The forests provide critical environmental benefits such as carbon sequestration, water regulation, and soil protection as well as providing essential habitats for biodiversity. Additionally, Moldova's forests are very important as sources of local employment with up to 10,000 seasonal workers employed annually.

In 2010, the Moldovan forest sector's direct economic contribution reached 0.27% of GDP and thus is considered relatively small. The value of the direct forest ecosystem services is estimated to be approximately USD 28 million per year. This amount includes both wood and non-timber forest products (NTFPs). The total growing stock is estimated to be 46 million m^3, which yields an average of 124 m^3 per stocked hectare. The total annual increment is estimated at 1.25 million m^3, or a yield of 3.3 m^3 per stocked hectare. In those forests managed by Moldsilva, the annual allowable cut (AAC) was 32% of the annual increment in 2010.

Illegal Logging

Forests in Moldova are increasingly coming under pressure from several different sources. The biggest source of this pressure is from illegal felling primarily for fuelwood, which is occurring at unsustainable levels. The officially reported volumes of illegal harvesting are relatively small with most occurring in forests outside the management of Moldsilva, according to analysis of illegal logging conducted under the ENPI-FLEG. However, conflicting estimates on wood consumption contend that the annual usage of fuelwood is about 1 million m^3, which is almost three times the amount for reported firewood sales. Fuelwood and timber usage for energy consumption represents 80% of the estimated annual increment of forests and other forest vegetation.

Moldova - Strategic, Policy and Institutional Framework

Legal and Legislative Framework

The primary legal document governing forest management in the country is the Forest Code, which was adopted in 1996 and has been amended multiple times since its original passage.

The guiding vision for the forest sector is established in the "Environment Strategy 2014-2023" that was adopted by Governmental Decision Number 301 on April 24, 2014. This vision of this strategy is to create a functional system including institutional, administrative, management structures, which can ensure a sustainable environment and is, erstwhile, adjusted to fit within the EU policy framework.

Institutional Framework

The primary institutions and organizations involved in the forestry sector are the Ministry of Environment (MoE), the State Ecological Inspectorate, State Agency Moldsilva and its subordinate state entities, LPAs owning forests and other institutions owning minor forest vegetation such as the Ministry of Transport and Road Infrastructure.

Forest enterprise activities in Moldova are controlled, primarily, by the Ministry of Environment through the State Ecological Inspectorate. The MoE also controls and oversees protected areas management in natural reserves subordinated to Moldsilva. The central public authority, subordinated to the Government, responsible for implementing state policy in forestry and hunting is the State Agency Moldsilva.

Moldsilva

Moldsilva is responsible for providing the technical regulatory framework for forestry and is directly funded by the Government outside of the MoE. The Agency serves as the primary administrative organization for the sector with 25 subdivisions, which include 16 state enterprises for forest management, 4 state enterprises both for forest management and hunting, 4 natural reserves, Orhei National Park, and ICAS – the Forest Research and Management Institute. Below the level of the state enterprises there exists 80 forest districts (FD).

Moldsilva manages 83% of the National Forest Fund (NFF), which is 446,400 hectares of land and forests designated for afforestation, which covers 13.6% of the total area of the country. Of this amount, 349,300 hectares are forests with the remaining balance being comprised of forest areas under regeneration and those for administrative forest needs. Other state institutions including the Central Authority for Waters and the Botanical Garden manage an additional 4% of the forests and the remaining balance is owned and managed by Local Public Authorities (LPAs).

Moldova has developed good expertise and large-scale project implementation capacity in the areas of afforestation of degraded land and agricultural land, demonstrated by Moldsilva's and ICAS' success with at least two carbon sequestration projects. Moldsilva afforested around 60,000 hectares of land between 2008 and 2013. From this amount, 20,400 hectares were outside the NFF. The most recently approved National Plan for forest vegetation extension (2014 -2015) anticipates the afforestation of 13,050 hectares of degraded lands.

Moldsilva is the dominant employer in the forest sector with about 4,100 people employed since 2011. This amount is down from a high of 5,619 in 2008.

State Ecological Inspectorate

Moldova's State Ecological Inspectorate, subordinate to the Ministry of Environment, controls the law and forest region enforcement, which includes issuing authorizations for forest management plan (FMP) implementation and harvesting through its branches in each district.

Local Public Authorities – LPAs

In accordance with Article 9 of the Forest Code, Local Public Authorities have forest management obligations that include guarding, regeneration and protection of vegetation and organizing and coordinating usage of the forest areas that they administer. Nearly 100,000 hectares of community forests and protection belts are owned and administered by the LPAs. With regard to the community forests, the regulatory roles of the LPAs and Moldsilva lack a clear description other than to state that they have to cooperate towards the maintenance of community forest vegetation, erstwhile, failing to clearly the describe the scope and protocol for such cooperation. All forests managed by Moldsilva have up to date forest management plans (FMPs) whereas most LPAs do not have FMPs. Unlike Moldsilva, LPAs do not have sufficient forest management capacity and are limited by a lack of trained staff and resources.

Moldova - Financial Arrangements and Performance

Moldsilva is essentially a self-financing agency that had revenues of USD 20.46 million and expenditures of USD 21.51 million in 2013. While it operates at a loss, the State's financial contribution to support forest management is quite small.

Table 5-1: Moldsilva Financial Data, 2011-2013, mln. USD

Year	Total Revenue	Timber Revenue	Total Expenditure	Wages Expenditure	State Financial Contribution
2013	20.46	18.55	21.51	12.81	0.76
2012	17.28	15.56	18.28	9.40	0.35
2011	14.92	13.03	16.66	8.76	0.60

Source: World Bank: Republic of Moldova-Forest Policy Note, 2014

Moldsilva Financial Analysis Highlights for 2013:

- Timber revenue equaled 90.7% of total revenue.
- Wage expenditures equaled 59.6% of total expenditures.

FINDINGS AND RECOMMENDATIONS

Findings

The primary finding of this Public Expenditure Review is that the forest sector in Armenia is not currently being managed in an environmentally and economically sustainable manner. This is occurring based on three main reasons which are: insufficient financial resources committed to the sector; an overall lack of institutional capacity, best practices, and skill sets; and high demand for a limited amount of wood resources.

The financial analysis of Armenia's forest sector shows that there is currently insufficient financial resources flowing into the sector to even maintain the status quo and is leading to further forest degradation.

Government financing currently serves as the major source of funding for the Armenian forest sector. This level of financial support has remained relatively constant from USD 2-2.5 million annually for the past five years; however, from 2007 through 2009, public financing for the sector ranged from USD 3.7-5.2 million. The current level of public financing is not enough to carry out all of the necessary activities for sustainable forest management.

Self-generated annual revenues from the forest sector have remained within a range of about USD 1.3-1.9 million with only slight variations since 2004. Therefore, the financial gap created by decreased public financing cannot be overcome by Hayantar's sector revenue generating capacity.

All Armenian forests primarily serve a protective function, irrespective of their functional categories. As a significant portion of the forests is located on mountainous inclines, there are no large segments of the forests available or accessible for sustainable commercial logging with potentially attractive return on investment. Thus, there is no significant interest from large private sector operators to invest in the sector.

The current expenditure structure of the forest sector raises concerns because almost no funds are spent on long-term investment priorities. Recurrent expenditures currently represent from 80-90% of total expenditures. Salaries and wages alone accounted for about 70% of total expenditures in 2014, while in 2004 salaries and wages only represented 28% of total expenditures. Funds, allocated to reforestation and afforestation, have also been significantly reduced in recent years. The high level of recurrent expenditures essentially leaves no funds in the sector to carry out needed, long-term investments to increase the efficiency of the forest sector.

Real capital investment into the forest sector has been minimal for the past 5 years. Without a long term, comprehensive capital investment into the sector, the forests could eventually become further degraded.

The current capacity of Armenian institutions, at all levels, is not sufficient to manage the forest sector effectively. The institutional structure of the sector complicates proper forest management. For example, Hayantar is responsible for conducting two conflicting functions, which are managing the forests and also using the forests to generate sector revenues. The net result of these conflicting mandates is to effectively limit their ability to excel at either function.

An assessment of the institutional structure found that a very limited amount of information was being shared amongst the various government stakeholders in the forest sector. This situation prevents well-coordinated decision-making and efficient management of the sector.

Hayantar's existing institutional capacity cannot ensure sustainable management of the sector. Available human resources and skill levels limit the organization's ability to implement the changes needed within the sector. The organization's internal processes and procedures need to be upgraded to a level, which would allow them to become more efficient managers of the forests. There is a need to improve budgetary planning and monitoring processes, financial and management information systems, and internal human resource development and training processes.

The wage disparity, which exists between the forestry sector and the general economy, is of concern as it prevents forest sector institutions from attracting the highly skilled professionals needed to improve the management of the forestry sector. Currently, the average salary rate in the forestry sector remains at less than half that of the national average nominal salary in Armenia.

There is no current inventory data on the forest sector, as the most recent inventory was carried out in 1993. Forest management planning was carried out between 2004 and 2008 but it covered only part of the Forest Fund. After 10 years of intensive usage of forest resources, the inventory data is not valid and can no longer be used as a reliable forest management planning tool.

Due to a lack of recent capital investment, the current road infrastructure in the forest area is insufficient to conduct commercially sustainable harvesting operations. Additionally, the technologies and equipment currently used in the Armenian forest sector are outdated and need to be replaced with newer, more efficient ones.

The forest resource base in Armenia is too small to meet ongoing demand trends for timber and fuel wood. A large share of the resources is used unofficially, thereby bypassing existing official institutions. The current level of felling exceeds environmentally allowable cut levels by several times.

Over the past five years, a very limited amount of activities have been carried out to support the natural regrowth of the forests. Afforestation and reforestation activities occurred with regularity from 2004-2008, but have been declining since 2009. For example, during the 2004-2008 time-period, forest planting and sowing and coppice re-growth assistance activities were conducted on about 2,000 hectares annually, since that time the amount dropped to only a few hundred hectares and have on two occasions not reached even 50 hectares annually.

Recommendations

The current state of forest sector management in Armenia should be improved in order to become more sustainable. The forest sector, as it is currently operating, is incapable of generating sufficient revenues to assure ongoing sustainability of the forests without substantial public sector investment in institutional capacity strengthening and long-term priorities. Focused institutional streamlining and policy refinement is required to improve the operational functionality of the sector to a more optimal level. Further, a significant increase in capital investment into forest inventory, forest management, and infrastructure is required in order to move toward sustainability.

Investment into updated forest inventory data is essential to fully benefit from existing forest resources and prevent further degradation. In order to identify high potential areas and environmentally sustainable methods to maximize the benefits received from those forest areas, investment should be made into the development of international standard forest management plans. The necessary amount of funds should be allocated for successful implementation and monitoring of the forest management plans.

Long-term investment should be made into the development and upgrade of forest roads, forestry infrastructure, machinery and equipment in order to increase the efficiency and effectiveness of forestry operations.

Investment in afforestation and reforestation efforts will allow the forest sector to recover and grow. A sustained program is required, which rehabilitates degraded forest areas, establishes new forest areas, and provides environmental benefits for local populations.

The government should develop a more efficient revenue generation model for the sector based on transparent and sustainable principles. A large amount of potential revenues are currently lost to unofficial harvests; therefore, the revenue generation model should include a method for capturing more of those lost revenues. For example, if legal fuel wood can be made easily available, it would undermine the economic value of illegal cutting and facilitate the regrowth of accessible forest areas in the vicinity of populations. The extra revenues generated by the sector should be reinvested into better forest management.

A comprehensive Business Process Review of all major processes within Hayantar SNCO should be conducted to identify opportunities to reduce costs and improve the quality and performance of the organization.

The planning and implementation processes should be streamlined across the multiple institutions involved in sector management to limit redundancy and optimize the efficiency of decision-making and critical functions.

A new approach to budgeting should be introduced and adopted in order to link the planned state budget with the development indicators of the forest sector because existing forest budgets do not include indicators to monitor expected outputs and outcomes; therefore, performance cannot be measured against the budget.

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ATTACHMENTS

Attachment I: Forest Sector Data Tables

Attachment II: Structure of Hayantar SNCO

Attachment III: Total Public Sector Financing in the Armenian Forest Sector

Attachment IV: Financing Data Tables

Attachment V: Expenditure Data Tables

Attachment I: Forest Sector Data Tables

Table I-1: Forestry GDP as a Share of Total GDP (AMD)

	2007	2008	2009	2010	2011	2012	2013	2014
GDP, bln. AMD	3149	3568	3142	3460	3778	4001	4556	4843
Agriculture, hunting, forestry and fishing	575	582	531	589	768	764	840	894
% of GDP	18.2	16.3	16.9	17.0	20.3	19.1	18.4	18.5
Forestry[12], bln. AMD	1.8	1.5	1.3	1.2	1.0	1.0	1.2	1.3
Forestry % of GDP	0.06	0.04	0.04	0.03	0.03	0.03	0.03	0.03
Forestry % of Agriculture	0.30	0.26	0.25	0.20	0.13	0.13	0.14	0.15
GDP, mln. USD	9206	11662	8648	9260	10142	9958	11121	11644
Average exchange rate AMD/USD	342.08	306.0	363.28	373.66	372.5	401.76	409.63	415.92

Source: Staff calculations based on NSS data

Table I-2: Forestry GDP as a Share of Total GDP (USD)

	2007	2008	2009	2010	2011	2012	2013	2014
Total GDP, mln. USD	9206	11662	8648	9260	10142	9958	11121	11644
Agriculture, hunting, forestry and fishing, mln. USD	1680	1902	1463	1577	2061	1902	2050	2150
Agriculture, hunting, forestry and fishing % of GDP	18.2	16.3	16.9	17.0	20.3	19.1	18.4	18.5
Forestry [13], mln. USD	5.1	4.9	3.6	3.2	2.7	2.5	3.0	3.2
Forestry % of GDP	0.06	0.04	0.04	0.03	0.03	0.03	0.03	0.03
Forestry % of Agriculture	0.30	0.26	0.25	0.20	0.13	0.13	0.14	0.15

Source: Staff calculations based on NSS data

[12] Data is presented in accordance with administrative register data of the Ministry of Agriculture.
[13] Data is presented in accordance with administrative register data of the Ministry of Agriculture.

Attachment I: Forest Sector Data Tables (continued)

Table I-3: Volume of Armenian Wood Export in 2000-2014 by Country (ton)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total	**3082.0**	**2286.9**	**4840.7**	**10641.7**	**7298.9**	**5373.3**	**3077.6**	**3022.1**	**1290.3**	**977.2**	**1762.1**	**466.5**	**431.3**	**278.9**	**551.7**
Iran	246.8	864.0	2379.8	8702.9	6613.3	5048.3	2551.9	2887.9	1160.6	902.7	1531.2	295.7	290.3	11.2	276.3
UAE	1762.7	566.0	702.2	179.5	41.5	0.0	60.6	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
Turkey	29.0	0.5	993.2	1094.5	164.6	0.0	0.0	20.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Russia	97.9	344.8	371.3	198.9	130.8	22.5	9.3	3.4	21.4	27.8	125.4	66.5	10.3	15.9	33.9
Italy	413.8	151.0	52.4	136.1	142.9	41.8	96.5	79.5	39.3	0.0	14.6	25.9	20.8	25.0	54.6
Czech Republic	0.0	0.0	0.0	0.0	0.0	182.8	274.0	13.3	34.7	0.0	0.0	32.8	51.4	63.9	38.0
Spain	175.4	113.1	81.4	61.9	19.4	0.0	0.0	0.0	0.0	0.0	23.2	0.1	0.0	0.0	0.0
Georgia	0.0	4.1	3.7	79.0	35.8	0.1	2.7	1.1	28.3	22.1	28.6	16.2	11.2	96.5	69.4
France	0.0	0.1	144.2	120.1	25.3	20.6	0.2	0.2	0.0	0.0	38.1	0.0	0.0	0.0	12.8
Other countries	356.4	243.3	112.5	68.8	125.3	57.2	82.4	16.0	6.0	24.6	1.0	29.3	47.1	66.4	66.7

Source: Staff calculations based on NSS data.

Table I-4: Armenian Wood Export 2000-2014 by Country (000 USD)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total	**870.3**	**896.7**	**1282.5**	**1732.4**	**1512.0**	**958.2**	**649.0**	**574.1**	**502.5**	**287.6**	**667.0**	**632.1**	**777.4**	**682.3**	**777.9**
Iran	29.2	85.4	225.6	802.1	962.2	758.6	363.3	466.3	199.3	138.0	282.4	67.1	76.1	2.9	59.6
Russia	68.4	247.1	184.1	240.4	105.2	18.2	4.0	5.1	118.8	94.8	213.4	80.8	16.9	74.9	159.2
Italy	76.0	26.4	100.3	220.5	44.9	21.0	29.9	24.6	46.2	0.0	14.6	68.6	58.9	64.0	112.5
UAE	311.3	209.1	255.9	64.7	8.4	0.0	46.8	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
France	0.0	0.2	275.0	221.7	46.0	41.0	0.1	0.9	0.7	0.0	21.6	0.0	0.1	0.0	9.5
Czech Republic	0.0	0.0	0.0	0.0	0.0	91.4	146.5	9.3	27.6	0.0	0.0	55.1	66.6	89.6	43.8
Moldova	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	202.5	266.6	0.0	0.0
FR of Yugoslavia	268.5	159.4	0.0	0.0	15.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Canada	0.0	0.0	0.0	0.0	0.0	0.1	2.1	0.0	0.0	8.0	0.1	68.8	115.8	148.2	28.1
Other countries	116.9	169.1	241.6	183.0	329.4	27.9	56.3	67.9	109.9	46.8	134.9	89.2	176.3	302.7	365.2

Source: Staff calculations based on NSS data.

Attachment I: Forest Sector Data Tables (continued)

Table I-5: Volume of Wood Export in 2000-2014 (tons, by category)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Longitudinally cut timber	1840	1485	2267	5123	6285	3588	1484	431	105	234	1614	415	330.4	125.4	412.5
Raw timber	977	483	2158	5120	684	1584	1467	2553	1140	672	14.6	9.0	0.0	0.0	0.0
Single-layer board	46.1	112	243	207	85.6	66.9	27.8	30.7	15.7	0.0	0.3	0.0	0.0	0.0	0.0
Wooden building materials, particle board	148	187	25.9	57.4	109	42.1	52.4	3.1	21.0	29.7	52.9	8.7	17.9	36.3	51.9
Other	71.0	20.5	147	134.3	136	93.1	46.4	4.6	8.9	42.0	79.9	33.4	83.0	117.3	87.3
Total	**3082**	**2287**	**4841**	**10642**	**7299**	**5373**	**3078**	**3022**	**1290**	**977**	**1762**	**467**	**431.3**	**278.9**	**551.7**

Source: NSS

Table I-6: Wood Export in 2000-2014 (000 USD, by category)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Longitudinally cut timber	366	481	672	836	968	588	218	116	125	57.6	381	279	249	257	384
Raw timber	146	63.5	114	313	68.9	235	298	378	183	89.8	14.6	9.0	0.0	0.0	0.0
Single-layer board	39.2	90.6	173	158	75.7	40.1	25.3	33.3	19.1	0.0	10.8	0.0	0.0	0.0	0.0
Wooden building materials, particle board	292	206	15.6	64.5	269	45.8	63.7	7.8	116	103	164	76.1	163	278	242
Other	27.2	55.5	308	361	131	49.1	44.6	39.3	59.9	37.6	95.3	268	365	148	152
Total	**870**	**897**	**1283**	**1732**	**1512**	**958**	**649**	**574**	**502**	**288**	**667**	**632**	**777**	**682**	**778**

Source: NSS

Attachment I: Forest Sector Data Tables (continued)

Table I-7: Wood Export by Product, %

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Longitudinally cut timber	42.1	53.6	52.4	48.2	64.0	61.3	33.5	20.1	24.8	20.0	57.0	44.1	32.1	37.7	49.3
Raw timber	16.7	7.1	8.9	18.1	4.6	24.6	45.9	65.9	36.3	31.2	2.2	1.4	0.0	0.0	0.0
Single-layer board	4.5	10.1	13.5	9.1	5.0	4.2	3.9	5.8	3.8	0.0	1.6	0.0	0.0	0.0	0.0
Wooden building materials, particle board	33.6	23.0	1.2	3.7	17.8	4.8	9.8	1.4	23.1	35.7	24.9	12.0	21.0	40.7	31.1
Other	3.1	6.2	24.0	20.8	8.6	5.1	6.9	6.9	11.9	13.1	14.3	42.4	46.9	21.6	19.6
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: Staff calculations based on NSS data

Table I-8: Volume of Wood Import in 2000-2014 by Country (ton)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total	**13179**	**16445**	**26879**	**38459**	**39324**	**46454**	**69984**	**85411**	**90300**	**79489**	**87659**	**95954**	**99283**	**84452**	**96755**
Turkey	741	1482	3448	5796	8016	12784	22453	25206	32785	17213	24046	37066	29104	28752	28512
Georgia	5547	7999	16263	20762	16371	17988	24651	21107	14910	24292	15037	5174	17548	21666	21239
Ukraine	108	493	500	562	4378	2629	4087	7373	5203	7731	19940	26395	25474	11607	22186
Russia	2288	672	436	405	688	1432	5110	15189	21202	17024	12576	10939	11322	4510	2944
China	1	20	15	67	186	791	1885	3107	4920	4000	5832	10004	9015	11668	14194
Bulgaria	0	573	1538	2817	5095	4471	5256	5702	3386	2812	2320	616	236	30	262
Belarus	102	319	1663	1776	2542	3917	2905	2563	3220	2317	3399	1693	2106	2110	2218
Poland	7	0	1	186	264	870	1580	2076	1041	1303	1180	1045	975	1148	977
Iran	2388	1963	1654	153	52	97	126	861	128	21	1	44	71	171	69
Other countries	1997	2925	1363	5936	1732	1475	1931	2227	3506	2777	3329	2979	3432	2790	4154

Source: Staff calculations based on NSS data

Attachment I: Forest Sector Data Tables (continued)

Table I-9: Wood Import in 2000-2014 by Country (000 USD)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total	**4467**	**5376**	**6299**	**7358**	**8103**	**11045**	**22158**	**40031**	**63215**	**49872**	**52722**	**62533**	**65616**	**60467**	**66710**
Turkey	386	588	753	1224	1475	2416	6791	12478	24708	12441	13541	20201	17800	20036	19431
Georgia	1261	1820	2839	2084	2324	3025	5240	6046	6361	10475	6975	2410	9153	10774	10824
China	4	37	24	69	150	525	1306	3156	6140	5791	7088	10746	9731	11860	12589
Russia	615	276	156	162	177	636	1840	6133	11458	10537	8309	7615	7463	3763	2568
Ukraine	21	103	125	123	1039	734	1571	2826	2541	3422	7633	11321	11176	5815	9829
Belarus	47	71	392	451	561	1160	1016	1258	2446	1089	1778	1432	1374	1674	1661
Bulgaria	0	215	430	796	1155	992	1774	2913	2363	1326	892	300	163	40	128
Italy	277	184	110	148	221	201	447	422	1097	871	1085	1208	2790	1024	1580
Poland	8	0	0	57	46	89	527	1477	1054	952	881	880	939	1443	1062
Other countries	1850	2082	1470	2245	956	1268	1646	3321	5048	2969	4540	6419	5026	4040	7038

Source: Staff calculations based on NSS data

Attachment II: Structure of Hayantar SNCO

Management of Hayantar

Director
Chief Forester
3 Deputy Directors

Central Apparatus of "Hayantar" is comprised of the following 10 departments:

1. Forest Rehabilitation and Reforestation Department
Planning, implementation, coordination, management and implementation control of reforestation and afforestation, as well as seed growing, selection – expansion of seed production, and forest reclamation activities.

2. Forest Conservation and Protection Department
Ensure the protection of the state forest fund of the Republic of Armenia from unauthorized occupations, illegal logging, grazing, littering and other illegal activities that harm the forest biodiversity, and prevent infringements of forest code. Detect, extinguish and prevent forest fires, hold offenders of fire safety rules accountable in the manner defined by the law.

3. Department of Use of Forests and Forest Lands
Planning of reforestation, care, sanitary and other types of logging, and implementation control. Annual logging area stock accounting, based on the forestry plans.

4. Department of Forest Inventory and Cadaster Forest land
Maintenance of forest State registration activities, and the provision of data

5. Department of management of specially protected areas
Cconservation and reproduction of the diversity of ecosystems of Hayantar's specially protected areas and their bio-resources

6. General Logistics Department
Provision of accurate administrative service in the headquarters, in compliance with the administrative regulation. Ensure the acceptance and registration of the official and unofficial documentation in separate registration logs on timely basis, distribution and their delivery to the implementers.

7. Department of Economics, Finance and Analysis
Design present, annual and future Forestry management development plans. Prepare economic development and funding plans, develop work plans for forestry branches as well as production and subsistence companies, and control the volume of forestry activities expressed in AMD. Fund forest management activities, develop financial plans and balance sheets and control their further implementation

8. Accounting Department
The department manages the accounting and book-keeping of "Hayantar" SNCO pursuant to the Accounting Legislation, and coordinates the operations of Forestry Branches. Perform other assignments issued by the director of "Hayantar" SNCO and the deputy director coordinating the relevant area.

9. Human Resource Department
Compile and manage personal files of the employees of the Headquarters and "Forestry" branches, ensure archival storage of the aforementioned files. Prepare, register and manage employees' admission, transfer, vacation, contract termination, code of conduct and benefit package documents. Ensure signing of employment contracts, keep and maintain registration books

10. Inspection Department
Observance of logging regulations, timber harvesting and marketing, forest seed harvesting, processing and maintenance, growing of planting stock as well as other forest management activities. Prevent illegal timber haulage on highways and forest-adjacent roads, and keep accounting of timber movement by the types of timber

11. Department of Marketing and Commerce
Manage forest and forestland management activities after the receipt of the land examination report, prepare relevant draft contracts and keep records of the signed contracts. Manage timber sales and export activities, prepare relevant draft contracts, keep records of the signed contracts. Keep accounting of timber movement and residues based on the reports submitted by the branches.

12. Legal and Methodology Department
Draft legal and methodological documents on statutory functions of "Hayantal" SNCO upon the request of the Director of "Hayantar" SNCO. Issue opinions and recommendations on draft documents developed by other subdivisions or submitted to "Hayantar" SNCO upon the request of the Director of "Hayantar" SNCO. Prepare draft contracts on the functions of "Hayantar" SNCO, related to the provisions of the departments, based on professional recommendations submitted by the relevant departments. Prepare and submit claims to the courts based on the petitions and reports submitted by "Hayantar" SNCO departments and branches.

13. Department of management of Yerevan forest lands
Management of Yerevan forest lands.

Branches
19 Forest Enterprises

Attachment III: Total Public Sector Financing in the Armenian Forest Sector Data Tables

Table III-1: Total Public Sector Financing of the Forest Sector, million AMD

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
State budget financing of Hayantar SNCO	187.2	458.5	1343.9	1424.7	1526.8	1277.3	747.5	743.6	708.7	734.5	971.8
Government forest monitoring expenditure	0.0	0.0	21.6	52.6	52.6	53.9	54.0	54.0	54.0	54.5	54.6
State budget financing of nature protected forest areas*	175.5	208.9	500.0	461.4	774.7	812.5	766.8	621.2	638.4	688.2	668.5
Total public spending on forestry	**362.7**	**667.4**	**1865.6**	**1938.7**	**2354.0**	**2143.8**	**1568.2**	**1418.8**	**1401.1**	**1477.2**	**1694.9**
Average exchange rate AMD/USD	*533.5*	*457.7*	*416.0*	*342.1*	*306.0*	*363.3*	*373.7*	*372.5*	*401.8*	*409.6*	*415.9*

Staff calculations based on Hayantar SNCO, MoF, and NSS data

Table III-2: Total Public Sector Financing of the Forest Sector, million USD

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
State budget financing of Hayantar SNCO	0.4	1.0	3.2	4.2	5.0	3.5	2.0	2.0	1.8	1.8	2.3
Government forest monitoring expenditure	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
State budget financing of Specially Protected Nature Areas	0.3	0.5	1.2	1.3	2.5	2.2	2.1	1.7	1.6	1.7	1.6
Total public spending on forestry	**0.7**	**1.5**	**4.5**	**5.7**	**7.7**	**5.9**	**4.2**	**3.8**	**3.5**	**3.6**	**4.1**

Staff calculations based on Hayantar SNCO, MoF, and NSS data

Attachment IV: Financing Data Tables

Table IV-1: Revenues of Hayantar SNCO in 2000-2014, million AMD

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
State budget financing	100	72	114	86	225	459	1344	1425	1527	1277	747	744	709	734	972
Forest revenue	538	533	671	911	919	636	617	580	512	508	700	490	749	635	612
Total revenue	**638**	**605**	**785**	**996**	**1144**	**1094**	**1961**	**2005**	**2038**	**1786**	**1447**	**1234**	**1458**	**1370**	**1584**

Source: Hayantar SNCO

Table IV-2: Revenues of Hayantar SNCO in 2000-2014, million AMD in 2004 base prices

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
State budget financing	116	80	127	91	225	444	1245	1267	1282	1045	567	541	522	523	674
Forest revenue	627	597	746	968	919	616	571	516	429	416	531	357	552	453	425
Total revenue	**743**	**677**	**872**	**1059**	**1144**	**1060**	**1816**	**1783**	**1711**	**1461**	**1098**	**898**	**1074**	**976**	**1099**

Source: Hayantar SNCO

Table IV-3: Revenues of Hayantar SNCO in 2000-2014, million USD

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
State budget financing	0.2	0.1	0.2	0.1	0.4	1.0	3.2	4.2	5.0	3.5	2.0	2.0	1.8	1.8	2.3
Forest revenue	1.0	1.0	1.2	1.6	1.7	1.4	1.5	1.7	1.7	1.4	1.9	1.3	1.9	1.6	1.5
Total revenue	**1.2**	**1.1**	**1.4**	**1.7**	**2.1**	**2.4**	**4.7**	**5.9**	**6.7**	**4.9**	**3.9**	**3.3**	**3.6**	**3.3**	**3.8**

Source: Staff calculations based on Hayantar SNCO data

Table IV-4: Average exchange rate (2000-2014): AMD/USD

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
AMD/USD	539.5	555.1	573.4	578.8	533.5	457.7	416.0	342.1	306.0	363.3	373.7	372.5	401.8	409.6	415.9

Source: NSS

Attachment IV: Financing Data Tables (continued)

Table IV-5: Revenue Structure of Hayantar: Self-Generated Income, 2004-2014, million AMD and million USD

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Hayantar Self-Generated Income, mln. AMD	919	636	617	580	512	508	700	490	749	635	612
Average exchange rate AMD/USD	533.5	457.7	416.0	342.1	306.0	363.3	373.7	372.5	401.8	409.6	415.9
Hayantar Self-Generated Income, mln USD	1.7	1.4	1.5	1.7	1.7	1.4	1.9	1.3	1.9	1.6	1.5

Source: Staff calculations based on Hayantar SNCO data

Table IV-6: Revenue Structure of Hayantar: Self-Generated Income by Product/Service, 2004-2014, million USD

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Forest revenue of Hayantar SNCO	**1.7**	**1.4**	**1.5**	**1.7**	**1.7**	**1.4**	**1.9**	**1.3**	**1.9**	**1.6**	**1.5**
Fuel wood	1.0	0.8	0.9	0.7	1.1	0.8	0.8	1.0	1.1	0.8	0.9
Construction wood	0.3	0.2	0.2	0.6	0.4	0.2	0.1	0.1	0.2	0.2	0.1
Other wood products	0.3	0.4	0.3	0.2	0.0	0.1	0.3	0.1	0.0	0.0	0.1
Revenues from afforestation and reforestation activities	0.0	0.0	0.0	0.2	0.1	0.3	0.6	0.1	0.6	0.5	0.4

Source: Staff calculations based on Hayantar SNCO data

Table IV-7: State Budget Financing of Hayantar, million AMD and million USD

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
State budget financing of Hayantar, mln. AMD	100	72	114	86	225	459	1344	1425	1527	1277	747	744	709	734	972
State budget financing, mln USD	0.2	0.1	0.2	0.1	0.4	1.0	3.2	4.2	5.0	3.5	2.0	2.0	1.8	1.8	2.3
Average exchange rate AMD/USD	*539.5*	*555.1*	*573.4*	*578.8*	*533.5*	*457.7*	*416.0*	*342.1*	*306.0*	*363.3*	*373.7*	*372.5*	*401.8*	*409.6*	*415.9*

Source: Staff calculations based on MoF and Hayantar SNCO data

Attachment V: Expenditure Data Tables

Table V-1: Actual expenses of Hayantar SNCO in current prices, million AMD

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total expenditure	**870**	**1272**	**1914**	**2139**	**1960**	**1675**	**1594**	**1232**	**1331**	**1515**	**1608**
Current expenditure	**657**	**975**	**1395**	**1328**	**1236**	**1105**	**1267**	**1060**	**1129**	**1223**	**1429**
Wages and salaries of forestry staff	236	639	605	698	739	752	727	690	760	930	1101
Operating expenditure	421	336	790	631	496	353	540	370	369	293	329
Capital expenditure	**213**	**297**	**519**	**811**	**724**	**571**	**327**	**171**	**202**	**292**	**178**

Source: Staff calculations based on Hayantar SNCO data

Table V-2: Actual expenses of Hayantar SNCO in real terms (million AMD of 2004 base year prices)[14]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total expenditure	**870**	**1233**	**1773**	**1902**	**1645**	**1371**	**1210**	**896**	**980**	**1080**	**1115**
Current expenditure	**657**	**944**	**1292**	**1181**	**1037**	**904**	**962**	**772**	**831**	**871**	**991**
Wages and salaries of forestry staff	236	619	561	620	621	615	552	502	559	662	763
Operating expenditure	421	326	731	561	417	289	410	269	272	209	228
Capital expenditure	**213**	**288**	**480**	**721**	**608**	**467**	**248**	**125**	**149**	**208**	**124**

Source: Staff calculations based on Hayantar SNCO and NSS data

Table V-3: GDP Deflator and CPI

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
GDP deflator (accumulated)	100.0	103.2	107.9	112.5	119.1	122.2	131.7	137.4	135.8	140.4	144.2
GDP deflator, in % over previous year	106.3	103.2	104.6	104.2	105.9	102.6	107.8	104.3	98.8	103.4	102.7
CPI, in % over previous year	107.0	100.6	102.9	104.4	109.0	103.4	108.2	107.7	102.6	105.8	103.0

[14] Real terms data are figures adjusted to 2004 base year using GDP deflators. The deflators are calculated from data released by the National Statistical Service as of September 2015.

Source: NSS

Attachment V: Expenditure Data Tables (continued)

Table V-4: Actual expenditures of Hayantar SNCO, million USD[15]

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total expenditure	**1.6**	**2.8**	**4.6**	**6.3**	**6.4**	**4.6**	**4.3**	**3.3**	**3.3**	**3.7**	**3.9**
Current expenditure	**1.2**	**2.1**	**3.4**	**3.9**	**4.0**	**3.0**	**3.4**	**2.8**	**2.8**	**3.0**	**3.4**
Wages and salaries of forestry staff	0.4	1.4	1.5	2.0	2.4	2.1	1.9	1.9	1.9	2.3	2.6
Operating expenditure	0.8	0.7	1.9	1.8	1.6	1.0	1.4	1.0	0.9	0.7	0.8
Capital expenditure	**0.4**	**0.6**	**1.2**	**2.4**	**2.4**	**1.6**	**0.9**	**0.5**	**0.5**	**0.7**	**0.4**

Source: Staff calculations based Hayantar SNCO and NSS data

Table V-5: Forest Sector Expenditure and Total Government Expenditure, million AMD

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Forest sector	109	115	114	103	244	459	1,173	1,343	1,789	1,488	853	823	763	789	1,026
Agriculture, hunting, forestry and fishing	16,788	17,018	14,466	19,855	16,430	13,180	18,339	27,560	24,483	36,112	40,037	42,382	21,897	18,176	20,463
Total expenditure	222,886	244,381	263,912	312,698	333,970	417,506	481,183	634,735	810,575	929,109	954,317	986,509	1,006,102	1,142,890	1,235,053

Source: Staff calculations based on MoF and NSS data

Table V-6: Forest Sector Expenditure as % of Total Government Expenditure

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Forest sector % of Agriculture	0.6	0.7	0.8	0.5	1.5	3.5	6.4	4.9	7.3	4.1	2.1	1.9	3.5	4.3	5.0
Forest sector % of Total expenditure	0.05	0.05	0.04	0.03	0.07	0.11	0.24	0.21	0.22	0.16	0.09	0.08	0.08	0.07	0.08

Source: Staff calculations based on MoF and NSS data

[15] See Attachment IV, Table IV-4: Average Exchange Rate: AMD/USD

Attachment V: Expenditure Data Tables (continued)

Table V-7: Wages and Salaries vs. Operating Expenditures, as % of Current Expenditures

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Current expenditure	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Wages and salaries of forestry staff	36	66	43	53	60	68	57	65	67	76	77
Operating expenditure	64	34	57	47	40	32	43	35	33	24	23

Source: Staff calculations based on Hayantar SNCO data

Table V-8: Estimated Average Hayantar Monthly Wage versus Average Monthly Nominal Wage in the Armenian Economy, 2004-2014, USD

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total employees of Hayantar SNCO	**946**	**986**	**1,031**	**1,095**	**1,102**	**1,036**	**1,019**	**1,015**	**1,018**	**1,032**	**999**
Wages and salaries of forestry staff in Hayantar, mln AMD	233.9	514.9	605.5	697.5	739.4	751.6	727.2	690.1	759.5	930.0	1,100.7
Estimates of average monthly salary per employee in Hayantar SNCO, AMD	**20,611**	**43,501**	**48,940**	**53,083**	**55,914**	**60,456**	**59,470**	**56,661**	**62,175**	**75,097**	**91,818**
Estimated average monthly salary per employee in Hayantar SNCO, USD	38.6	95.0	117.6	155.2	182.7	166.4	159.2	152.1	154.8	183.3	220.8
Average nominal monthly wage in economy, USD	81.4	113.7	149.7	217.0	285.7	264.3	274.7	290.2	350.3	357.7	381.3
Average nominal monthly wage in economy, AMD	43,445	52,060	62,293	74,227	87,406	96,019	102,652	108,092	140,739	146,524	158,580
Average exchange rate AMD/USD	*533.5*	*457.7*	*416.0*	*342.1*	*306.0*	*363.3*	*373.7*	*372.5*	*401.8*	*409.6*	*415.9*

Source: Staff calculations based on Hayantar SNCO and NSS data

Attachment V: Expenditure Data Tables (continued)

Table V-9: Current Expenditure vs. Capital Expenditure as % of Total Expenditure

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Current expenditure as % of total expenditure	75.5	76.6	72.9	62.1	63.1	65.9	79.5	86.1	84.8	80.7	88.9
Capital expenditure as % of total expenditure	24.5	23.4	27.1	37.9	36.9	34.1	20.5	13.9	15.2	19.3	11.1

Source: Staff calculations based on Hayantar SNCO data

Table V-10: Actual Expenditure Breakdown of Hayantar SNCO, by category, %

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total expenditure	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Current expenditure	**76**	**77**	**73**	**62**	**63**	**66**	**79**	**86**	**85**	**81**	**89**
Wages and salaries of forestry staff	27	50	32	33	38	45	46	56	57	61	68
Operating expenditure	48	26	41	29	25	21	34	30	28	19	20
Capital expenditure	**24**	**23**	**27**	**38**	**37**	**34**	**21**	**14**	**15**	**19**	**11**

Source: Staff calculations based on Hayantar SNCO data

Table V-11: Tax Expenditure vs. Revenues of Hayantar, 2000-2014, million AMD

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
State budget financing	100	72	114	86	225	459	1344	1425	1527	1277	747	744	709	734	972
Self-generated income of Hayantar SNCO	538	533	671	911	919	636	617	580	512	508	700	490	749	635	612
Total revenue	**638**	**605**	**785**	**996**	**1144**	**1094**	**1961**	**2005**	**2038**	**1786**	**1447**	**1234**	**1458**	**1370**	**1584**
Total taxes	**263**	**258**	**309**	**327**	**476**	**201**	**504**	**653**	**549**	**426**	**482**	**300**	**354**	**444**	**448**

Source: Staff calculations based on Hayantar SNCO data for 2004-2014, and RoA National Forestry Policy and Strategy for 2000-2003.

Attachment V: Expenditure Data Tables (continued)

Table V-12: Tax Expenditure vs. Revenue of Hayantar, 2000-2014, million USD

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total budget	1.2	1.1	1.4	1.7	2.1	2.4	4.7	5.9	6.7	4.9	3.9	3.3	3.6	3.3	3.8
Total taxes	0.5	0.5	0.5	0.6	0.9	0.4	1.2	1.9	1.8	1.2	1.3	0.8	0.9	1.1	1.1

Source: Staff calculations based on Hayantar SNCO data

Table V-13: Expenditures by Hayantar by Marzes, million AMD

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total expenditure	**869.6**	**1272.1**	**1462.6**	**1537.4**	**1550.9**	**1619.7**	**1343.5**	**1150.8**	**1215.9**	**1456.8**	**1517.8**
Lori	267.0	310.2	345.3	366.0	385.9	380.8	385.6	259.3	318.7	426.2	391.7
Tavush	273.9	307.8	314.2	364.9	388.9	368.8	327.4	297.7	290.5	335.7	337.2
Syunik	108.5	162.6	178.8	199.2	189.6	167.3	150.3	132.4	128.2	135.4	153.2
Kotayk	30.0	72.2	90.5	135.1	147.0	294.8	82.8	85.7	97.5	140.0	140.4
Shirak	13.9	31.1	27.1	29.3	32.7	50.2	51.8	41.8	33.2	52.8	55.6
Vayots Dzor	27.7	45.5	55.9	69.2	54.4	47.0	45.7	44.1	43.3	43.1	51.6
Gegharkunik	35.6	47.7	51.4	56.6	50.7	41.1	40.0	36.5	41.7	44.3	74.4
Aragatsotn	23.2	37.6	51.7	54.4	55.4	43.3	46.0	47.2	51.1	50.6	52.7
Armavir	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yerevan[16]	31.3	29.7	37.4	45.3	68.1	71.4	51.7	44.0	58.4	77.5	0.0
Hayantar SNCO	55.5	227.7	310.2	217.3	172.4	154.8	162.2	162.1	153.3	151.3	260.9

Source: Staff calculations based on Hayantar SNCO and NSS data

[16] On 18 March 2014, "Yerevan forestry" branch was liquidated

Attachment V: Expenditure Data Tables (continued)

Table V-14: Expenditure by Hayantar SNCO by Marzes, %

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total expenditure	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Lori	30.7	24.4	23.6	23.8	24.9	23.5	28.7	22.5	26.2	29.3	25.8
Tavush	31.5	24.2	21.5	23.7	25.1	22.8	24.4	25.9	23.9	23.0	22.2
Syunik	12.5	12.8	12.2	13.0	12.2	10.3	11.2	11.5	10.5	9.3	10.1
Kotayk	3.4	5.7	6.2	8.8	9.5	18.2	6.2	7.4	8.0	9.6	9.3
Shirak	1.6	2.4	1.9	1.9	2.1	3.1	3.9	3.6	2.7	3.6	3.7
Vayots Dzor	3.2	3.6	3.8	4.5	3.5	2.9	3.4	3.8	3.6	3.0	3.4
Gegharkunik	4.1	3.8	3.5	3.7	3.3	2.5	3.0	3.2	3.4	3.0	4.9
Aragatsotn	2.7	3.0	3.5	3.5	3.6	2.7	3.4	4.1	4.2	3.5	3.5
Armavir	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yerevan	3.6	2.3	2.6	2.9	4.4	4.4	3.8	3.8	4.8	5.3	0.0
Hayantar SNCO	6.4	17.9	21.2	14.1	11.1	9.6	12.1	14.1	12.6	10.4	17.2

Source: Staff calculations based on Hayantar SNCO and NSS data

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http://www.enpi-fleg.org

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