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# WOOD-PROCESSING SECTOR SURVEY

**Report**

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## ACRONYMS AND ABBREVIATIONS

<b>AMD</b>	Armenian Dram
<b>CBMF</b>	Community Based Forest Management
<b>CJSC</b>	Closed Joint Stock Company
<b>EU</b>	European Union
<b>FAO</b>	Food and Agriculture Organization of the United Nations
<b>FLEG</b>	Forest Law Enforcement and Governance
<b>FREC</b>	Forest Research and Experimental Centre
<b>FSC</b>	Forest Stewardship Council
<b>GIS</b>	Geographic information system
<b>IUCN</b>	Union for Conservation of Nature and Natural Resources
<b>KFS</b>	Kenya Forest Service
<b>Ksh</b>	Kenyan Shilling
<b>KWS</b>	Kenya Wildlife Service
<b>LLC</b>	Limited Liability Company
<b>MDG</b>	Millennium Development Goal
<b>MoNP</b>	Ministry of Natural Protection of Armenia
<b>NFPS</b>	National Forest Policy and Strategy
<b>NGO</b>	Non-governmental organization
<b>NRMPRP</b>	Natural Resources Management and Poverty Reduction Project
<b>NSS</b>	National Statistical Service of the Republic of Armenia
<b>NTFP</b>	Non-timber forest products
<b>NWFP</b>	Non Wood Forest Products
<b>OJSC</b>	Opened Joint Stock Company
<b>R-PIN</b>	Forest Carbon Partnership
<b>SIDA</b>	Swedish International Development Cooperation Agency
<b>SLIMF</b>	Small or Low Intensity Managed Forests
<b>SME</b>	Small and medium enterprise
<b>SME-DNC</b>	Small and Medium Entrepreneurship Development National Center of Armenia
<b>SMFE</b>	Small and medium forest enterprise
<b>SNCO</b>	State Non-Commercial Organization
<b>SPD</b>	Sustainable Product Development
<b>UK</b>	United Kingdom
<b>UNDP</b>	United Nations Development Programme
<b>UNDP-GEF</b>	United Nations Development Program Small Grants Programme
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organization
<b>USD</b>	United States Dollar
<b>USDA</b>	United States Department of Agriculture
<b>WB</b>	World Bank
<b>WRN</b>	World Rain forest Movement
<b>WWF</b>	World Wide Fund for Nature

# 1 INTRODUCTION

## 1.1 PURPOSE OF THE WOOD-PROCESSING SECTOR SURVEY

The regional program Improving Forest Law Enforcement and Governance in the European Neighbourhood Policy East Countries and Russia – ENPI FLEG Program is aimed at putting in place improved forest governance arrangements through the effective implementation of the main priorities set out in the St. Petersburg Ministerial Declaration and Indicative Plan of Actions for the Europe and North Asia Forest Law Enforcement and Governance (ENA-FLEG) process. The ENPI FLEG program supports governments, civil society, and the private sector in participating countries in the development of sound and sustainable forest management practices, including the reducing the incidence of illegal forestry activities.

Implementation of the program is led by the World Bank, working in partnership with the International Union for Conservation of Nature and Natural Resources (IUCN) and the World Wide Fund for Nature (WWF) and in close coordination with governmental and nongovernmental stakeholders of the participating countries. Hereby, the WWF Armenia initiated the activity on *Strengthening Wood-Processing Private Sector* via implementing **Wood-Processing Sector Survey in Armenia** as initial step to facilitate immersion of the otherwise illegal wood processing operations into a legal field and create an environment of credible and socially responsible operations. Without the existence of a viable private sector, which is ready to operate in line with official rules, it will be impossible to enforce the law and promote regulation of the forestry sector. However, the private sector will operate more openly only if there is relevant environment and network, both in terms of a public opinion as well as in terms of business environment.

This assignment aims to contribute to the creation of favourable conditions for responsible wood processing industry in Armenia. **The objective of the assignment is to carry out the necessary research and preparatory work so as to achieve the pre-conditions for the private sector to become more cohesive and able to dialogue with authorities and the market.**

Specific activities suggested within the frame of current assignment are the following:

1. Identify logging and wood processing small and medium sized business and create relevant database;
2. Case study on a successful example from a country with conditions close to those in the forestry and private sector in Armenia;
3. Analyse wood-processing industry in Armenia with identification of existing problems with recommendations on their solution;
4. Identify possibility of establishment of industry association in Armenia; and
5. Develop draft Working Program for the Association, including the goal, objectives, activities, sustainability, etc.

## 1.2 METHODOLOGY

### 1.2.1 Identification of logging and wood processing practices

Currently a number of private business entities are engaged in logging and wood processing activities in Armenia. For the purposes of this survey three regions (Marzes) of Armenia were selected – Lori, Tavush and Syunik, where the forest cover is high and it was expected to find numerous wood-related enterprises. They are mainly concentrated at locations neighbouring forest areas, such as Ijevan, Dilijan, Kapan, Stepanavan, and Vanadzor as well as in villages next to forests. Identification of those

businesses was the first task completed within this assignment. Almost all of these businesses do cooperate with regional branches of the state forest management body – HayAntar State Non-Commercial Organization (SNCO) procuring wood (permit for logging) or otherwise. That is why HayAntar SNCO **became the first primary source of information**. Our consultants visited the HayAntar Headquarter and 13 regional branches and interviewed line managers and specialists of those branches (list of interviewed branches see Annex.6.5.2).

Regional Authorities (Marzpetarans) became the next source of information. There are departments of ecology, socio-economic development, agriculture, private business promotion in almost all Regional Authorities and Mayoralties of cities. **Heads of those departments and entities were also visited and interviewed by our surveyors.**

**Local business support entities** were the next source of information. These entities usually have databases of all active private businesses in their regions, and we asked them to share the information.

At the same time, there were logging and wood processing businesses that operate illegally, without any registration or licenses. It was a real challenge to identify such enterprises and interview them, although they were not very responsive and sometimes even rejected to respond.

This stage resulted in the **comprehensive database on wood processing enterprises in selected regions of Armenia**. The database contained the following information:

- Name of the business;
- Address and other contacts of activity;
- Names of owners/managers;
- Specific types of activities;
- Assortment of products.

Information was collected by groups of surveyors and analysts, via visits and meetings with various state agencies, business support entities, wood-related enterprises in Yerevan and regions of Armenia.

### **1.2.2 Analysis of wood-processing industry**

For the purposes of this study two separate questionnaires were designed to carry out interviews with HayAntar SNCO branches and wood private sector representatives (questionnaires see in Annex 6.4). During visits and interviews with abovementioned enterprises information was collected on **current economic, environmental, and social situation of forest industry in Armenia**. Additional sources of information for this topic were respective **representatives of the Ministries of Agriculture and Nature Protection, as well as ecological NGOs**. In parallel with collecting primary information our analysts reviewed available **secondary information**, which can be accessed via internet surfing, from various State Agencies, NGOs, as well as from databases of international organizations, such as the World Bank, UNDP, etc. Special attention has been paid to the following aspects:

- Major practices of wood processing in Armenia;
- Approximate volumes of industrial use of wood;
- Regional concentrations;
- Purposes and pre-conditions of wood processing;
- Official procedures and requirements of using the wood from forests;
- Economic, environmental, and social consequences of wood processing;
- Current challenges and mitigation measures.

All owners/managers of identified wood-processing businesses have been visited and interviewed with the major topics of interviews as follows:

- Volumes and types of processed wood;
- Volumes and types of final products;
- Financial information (if available);
- Number of employees;
- Access to wood; availability of informal relations;
- Bureaucracy issues;
- Access to market and impeding factors;
- Main sales locations, demand of specific products, major clients by type, etc.;
- Major problem of specific wood-processing businesses and of the forest industry in whole;
- Necessary measures to be applied urgently for overcoming specific problems.

On the basis of results from meetings and interviews conclusions were made and recommendations developed on how to solve identified problems.

### **1.2.3 Case study**

Forest management and cooperation with private sector in the field of wood processing is a general challenge for many countries with transition economy. This is legitimate since the issue addresses to crucial problems of current realities, i.e. ecological issues and private sector development. That is why this topic should be addressed by number of international (specialized and not only) organizations, such as the WB, UNDP, WWF, and other. Open secondary materials of mentioned organizations became the first source of information for the implementation of the case study. Those materials were accessed via internet surfing. HayAntar also contributed to the topic and provided some information. Kenya case was selected and used as an example of how wood-processing private sector can develop with benefits to both livelihoods and forests.

### **1.2.4 Possibility for establishment of Association**

Similar to almost all other sectors of economic activities in Armenia, wood processing sector also has a number of general problems of very different nature, i.e. economic, legislation and regulatory related, market accessibility, and other. The best practice of struggling with the wood processing sectoral problems is the establishment of sector-specific associations and acting via concentration of resources. At the same time, establishment of such entities requires strong commitments of sector representatives, and existence of the “enthusiastic” group of entrepreneurs that will operate as vehicle for the process.

Assessment of the attitude of local representatives of wood processing sector towards establishment of the Association was the next task of the survey group. All identified enterprises were asked about their readiness to get involved in the establishment of the association. They were asked about their understanding of the goal, mission, objectives, and responsibilities of this organization and possible contributions of member businesses.

## 2 CONDITION AND USE OF THE FOREST RESOURCES

### 2.1 GENERAL INFORMATION

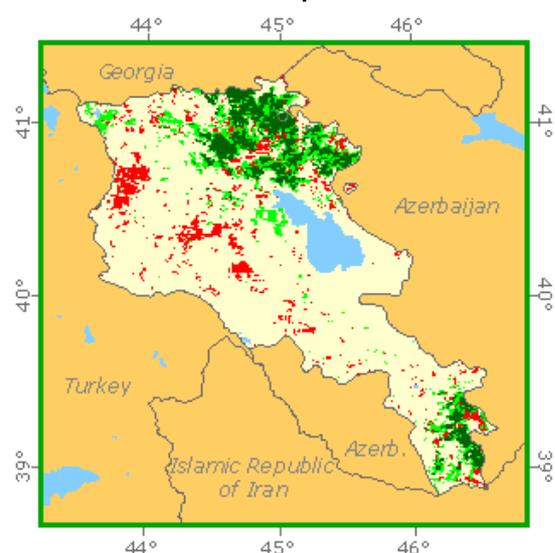
Despite a long history of forest conversion and forest degradation due to unsustainable logging, over-grazing and poor management practices the natural forests of Armenia still constitute a great renewable resource and provide vital contributions to the economic and social development of the country. International and domestic demand for timber is strong and there is no discrimination between sustainable and non-sustainable sources. Rural people and in some areas / to certain extent urban population depend on fuel wood for heating and cooking because there is no affordable alternative. Grazing is not controlled and the owners of livestock that use the forest have no alternative livelihoods. The forests for commercial purposes are overrated and management of forests and enforcement of (forest) law is weakened by low institutional capacity.

### 2.2 FOREST LAND AND COVER TYPES

Forests lands cover less than 11 percent of the country, where about 9 percent is forests and 2 percent is other wooded lands<sup>1</sup>. Forest cover types in Armenia are categorized as closed forest, open/fragmented forest and other wooded lands. There is no sub-classification of species by group, such as coniferous and deciduous (broadleaves). The forest cover map (Figure 2) shows the extent of forest cover.

Aborigin dendroflora of Armenia consists of 323 species, out of which 125 tree species and the rest - bush/shrubs and lianas<sup>2</sup>. The most significant portion of the forest cover lies in the northeast region (62,5%), following southeast (21,6%), central Armenia (13,5%); with the south region (2,4%) being the least.

Chart 1 - Forest cover map of Armenia



Source: <http://www.fao.org/forestry/country/18314/en/arm/>

Table 1 - Estimated forest cover in Armenia

Extent of forest and other wooded land 2010

	1,000 ha	Share
Forest	262	9%
Other wooded land	45	2%
Other land, of which with tree cover:	2,513	-
<i>Inland water</i>	160	-
<i>Country area</i>	2,980	-

Source: FAO, Global Forest Resources Assessment 2010

#### Legend

	Water
	Closed Forest
	Open/Fragmented Forest
	Other Wooded Lands
	Other land cover

<sup>1</sup> FAO, Global Forest Resources Assessment 2010

<sup>2</sup> Trees and Plants of of Armenia, Jirayr Vardanyan (2003, Hayastan)

About 70% of the forest area in 1991 was reported to consist of "high forest"<sup>3</sup>, where indigenous beech, oak and hornbeam were the dominating tree species. The remainder was comprised of coppice forest (22%) and shrub forest (7%). In early 90s, about 70% is covered by "high forests", where beech, oak and hornbeam together cover 85% of the area. The remainders are coppice forests (22%) and shrub forests (7%), which are poorly stocked and degraded<sup>4</sup>.

From the forest cover map and the data it can be seen that 98 percent of forests lies in Tavush, Lori and Syunik Marzes.

**Table 2 - Land distribution in 3 surveyed Marzes**

	ha	%
Forest	277,357.5	90%
Arable	22.9	0%
Meadow	1,978.4	1%
Pasture	4,843.6	2%
Other	25,642.9	8%
<b>Total</b>	<b>309,845.3</b>	<b>100%</b>

Source: Analysis of data provided by HayAntar regional branches

Species composition in Armenian forests is dominated by deciduous trees and within this group beech is the most populous species. Beech and oak alone account for almost 68% of the forest species composition in the country. Table 2 presents the species composition for the surveyed Marzes.

## 2.3 FOREST CONDITION

Data on the overall health of the forest provided by NSS is scarce. According to official data only 4,200 ha of forests were affected by diseases in 2004. In the same year, survey<sup>5</sup> conducted by USDA specialists already identified 4000 ha of infected and dead trees in two forestry regional branches (Aparan and Eghegis). In general, about 200 types of disease viruses are recorded in Armenia, which are capable of mass reproduction and according to various sources pests and diseases invade 15,000-25,000 ha of forests each year<sup>6</sup>.

The potentially greater problems in the forest areas are present close to Azerbaijan border, where they are contaminated by mines. The fact that these areas are now inaccessible also means that the risk of not being able to control disease or insect outbreaks within or deriving from these sites is also decisive. According to the NSS 15.2 ha of forests were affected by the fire.

Forest fires are a problem, burning from 10 to 15 hectares annually (299.2 ha in 2006<sup>7</sup>). HayAntar surveyed branches reported that no equipment and funds for fire prevention and control is available. They rely on community support surrounding forest areas. Dry material existing in inaccessible forests areas is prone to fires as well.

<sup>3</sup> High forest is a woodland or forest with a well-developed natural structure.

<sup>4</sup> Forest and Forest Products Country Profile: Republic of Armenia, UN, 1995

<sup>5</sup> Forest Insect and Disease Management in Armenia, G. Hertel and C. Snyder for USDA Forest Service

<sup>6</sup> Forest Insect and Disease Management in Armenia, <http://www.fs.fed.us/outernet/r6/nr/fid/iat/reports/europe-russia/2004-hertel-armenia-strategy.pdf>

<sup>7</sup> Climate change: most of Armenia's forest fires (84 percent) have taken place in arid Syunik Marz. In 2006, forest fires destroyed over 300ha causing 500 million AMD (\$2million) in damage. Source: [http://www.nature-ic.am/res/publications/brochures/CC%20Impact%20Assessment%20Report%20Armenia\\_Resized\\_2009.pdf](http://www.nature-ic.am/res/publications/brochures/CC%20Impact%20Assessment%20Report%20Armenia_Resized_2009.pdf)

But the foremost problem for Armenian forests remains illegal or unsustainable logging, which heavily disrupt ecological balance, resulting in the loss of biodiversity, accelerated erosion, floods, landslides, and weakening of the water protection function of forests. Depending on actors involved and purpose of use, illegal logging classified as: illegal logging of **industrial timber** for processing and sale into domestic and international markets; and unsustainable cutting of trees for **fuel wood** by or for rural people who have no affordable alternative.

**Illegal logging often takes the form of unofficial cutting of state-owned forests by local communities for subsistence purposes (estimated through surveys of rural households to be at least 568,000 solid m<sup>3</sup> per annum) and by commercial operators who sell firewood and high quality timber in urban centres (estimated at 150,000 solid m<sup>3</sup>, through transport and sawmill surveys). Logging for industrial wood products is also a major cause of deforestation. The wood processing industry mainly uses illegally harvested timber in amounts that are ten times higher than officially accepted figures. A significant portion (more than three times the official number) of unprocessed timber is exported.**

Source: Integrating Environment into Agriculture and Forestry Progress and Prospects in Eastern Europe and Central Asia, Volume II, 2007, World Bank

Estimated Armenian internal demand for solid wood varies from 700,000 to 980,000 m<sup>3</sup> per annum, from which 30% for commercial processing<sup>8</sup>. In comparison, official removals were just 51,000 m<sup>3</sup> in all surveyed Marzes. The difference can be considered as illegal logging. *All calculations are based on the assumptions and the actual figures can be different.* Considering wood processing industry current low utilization (8%), the volume of illegally processed timber may reduce slightly.

Official statistics and data collected from regional branches provide quantity of illegally logged trees, which is difficult to estimate in volume. However, provided data shows that positive changes were made to prevent illegal logging during 2004 – 2009.

**Table 3 - Number of illegally cut trees detected by the state agencies**

	HayAntar SNCO	State Environmental Inspection	Total
2004	27,157	5,609	<b>32,766</b>
2005	14,550	7,153	<b>21,703</b>
2006	3,544	2,240	<b>5,784</b>
2007	2,473	2,030	<b>4,503</b>
2008	1,214	866	<b>2,080</b>
2009	1,310	977	<b>2,287</b>

Source: M. Matevosyan, Head of HayAntar

Overgrazing heavily affects on herb regeneration, shrub and tree layers and causes damage to soils, resulting soil erosion, land slide and forest habitat loss. Although few regional forestry managers mentioned overgrazing as a problem, the issue is common for all forest surround settlements and requires preventive actions. The area of natural pasture land has declined from 1.4 million ha in 1940 to 808,000 ha today, and remaining areas have been degraded and have become dominated by rocks (87%), scrub (25%), and inedible (74%) or poisonous plants (47%), while diversity has declined from 70-80 to 15 in steppe areas.<sup>9</sup>

<sup>8</sup> WWF, Forest Strategy for the Southern Caucasus, 2005

<sup>9</sup> [http://www.nature-ic.am/biodiv/eng/national\\_report/first/6/index-2.html](http://www.nature-ic.am/biodiv/eng/national_report/first/6/index-2.html)

**Table 4 - Species composition of forested lands in Tavush, Lori and Syunik Marzes, ha**

	ha	%
Ash	1,123.5	0.4
Beech	90,831.9	35.8
Elm	47.0	0.02
Hornbeam	51,496.0	20.3
Juniper	740.0	0.3
Maple	656.1	0.3
O.Hornbeam	7,435.0	2.9
Oak	79,912.9	31.5
Pine tree	9,816.0	3.9
Walnut	304.8	0.1
Other	11,243.3	4.4
<b>Total</b>	<b>253,606.4</b>	<b>100%</b>

Source: HayAntar regional branches

Poorly planned and executed logging operations using inappropriate machinery reduces conservation values by causing damage to the remaining trees, herb and shrub layers and soil. Potential environmental impacts of logging operations are not always identified and/or steps taken to avoid or mitigate damaging impacts, thus regeneration, are not ensured.

## 2.4 FOREST INSTITUTIONS

All existing forests in Armenia are state property, however the Forest Code allows also community and private forests. “HayAntar” operates under the Ministry of Agriculture direct supervision since 2004, is the authorized management body for forest guarding, protection, reproduction, and use. Ministry of Agriculture is responsible for forest policy and legislation. HayAntar with Headquarter consisting of 5-6 departments located in Yerevan has also 22 regional branches located in respective Marzes. At the end of 2005 the Forest Monitoring Center within the Ministry was established to monitor overall activities of the forest sector, including illegal loggings.

Bio-resources Management Agency (BMA) of the Ministry of Natural Protection (MoNP) is responsible for establishment and management of SNCO cadastres, analysis of SNCO monitoring data, assistance to SNCOs in various aspects of PA management and financing, including program and project design, design and preparation for approval of SNCO codes and other. State Environmental Inspectorate subdivision is responsible for the inspection and verification regime, which is implemented based on the annual management plan. Forest Research and Experimental Centre (FREC) of MoNP provide inventory data and management plans for HayAntar. Key role of BMA is management of state National Parks, Reserves and Arboreta. Inspectorate controls utilization of natural resources, its legitimate utilization, and controls transportation and sale of timber and NWFP through check points.

Local self-governing bodies have certain rights and responsibilities over forests (set forth by different laws, including the Forest Code), but the exact area under their control is not clear<sup>10</sup> due to the tenure rights, legal transfer incompleteness and existing contradictions between different laws.

<sup>10</sup> According to the law “On local administration,” community majors organize conservation and protection of community lands, forest, and water territories. But there is no clear boundaries between HayAntar and community land

## 2.5 POLICY AND REGULATORY FRAMEWORK

Since 2004, forest rehabilitation and forest management improvement have become government priorities, and considerable legislative and institutional efforts have been made in this direction in collaboration with international organizations.

In the last few years, the following policy documents have been adopted: a National Forest Policy and Strategy (NFPS, 2004), a National Forest Program (NFP, 2005), and a new Forest Code (2005). *“The main goal of national forest policy for the Republic of Armenia is provision of sustainable management of forests and forest lands. The task for the Government of Republic of Armenia is balancing nature protection and public interests, by creating conditions for the country development, keeping at the same time ecologic and social values of forests”*. Overall, these documents aim at developing a framework for long-term sustainable forest management, by implementing institutional and legal reforms, and introducing international forest management and certification standards and forest evaluation criteria. The National Forest Policy makes the rehabilitation of degraded forest resources and protection of existing forests a priority for Armenia. Both the NFPS and the Forest Code set the groundwork for an illegal logging and timber removal monitoring system. During recent years a number of by-laws were developed and adopted (or in the stage of development/adoption) to support enforcement of the Forest Code. In addition the Illegal Logging Action Plan was developed and approved in 2004, which provides detailed actions on how to tackle illegal loggings in Armenia.

The strategy of the Forest Code emphasizes the following goals:

- Reforestation, development of useful features of forests and sustainable forest management;
- Institutional improvements and capacity building for the sustainable forest utilization, as well as establishment of forest conservation and protection services, seed, nursery and hunting farms, education and training centers and network;
- Scientifically proved, sustainable forest management plans (short and long term) creation;
- Provision of non-wood forest products sustainable utilization,
- Improvement of sustainable forest management legislative basis, including scientifically proved mechanisms (methodology, criteria, etc.), which take into account international experience.

There are objective and subjective reasons that cause illegal logging and forest degradation in Armenia. The major threats are:

**Markets.** Pressure from domestic and international demand for industrial wood forces forest managers to supply from unsustainable and illegal sources. Supply chain actors are not motivated to source from sustainably managed forests and even if they were they have no mechanism for distinguishing sustainable from unsustainable sources.

**Grazing.** Demand for grazing land is above carrying capacity. Graziers do not understand their long term impacts on forest values and grazing sustainability and besides they are pressed by economic necessity and lack of alternative livelihood options.

**Fuel wood.** Demand for fuel wood is over existing supply. Households do not have access to affordable alternatives energy sources, although gasification covers 93%<sup>11</sup> of Armenian territory. As with industrial wood forest managers are under pressure to supply from illegal sources.

**Capacity of forest management enterprises.** Forest management enterprises, particularly HayAntar, are not able to control excess demand for industrial wood, fuel wood and grazing and to

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<sup>11</sup> Source: <http://news.president.am/events/visits/eng/?id=50>

manage forests sustainability because they are not capacitated to implement sustainable forest management and prevent illegal activities. Low salary of forest managers creates additional incentives for illegal logging and corruption.

**Law enforcement.** Forest law enforcement bodies are under-resourced and breaches of legislation are not detected, prosecuted and publicized, so an important incentive to obey the law is missing. Anyway, the law is in many respects not supportive of sustainable forest management principles.

**Principles of sustainable forest management.** Sustainable forest management standards have not been developed or contain gaps. So, law makers have no benchmark against which to judge the quality of existing and draft laws and there is no basis for assessing the quality of forest management and distinguishing between well performing and poorly performing forest management enterprises.

**National policies and programs.** National policies and programs for forestry and subjects are not fully developed and not mutually supportive. Lack of transparency and lack of civil society participation in the development of policies and programs contributes to the problem.

**Financing.** The financing system for forestry is not able to guarantee sufficient funds for state forest management and law enforcement bodies. As a result, officials are paid poorly and are not motivated to manage forests in a more sustainable way. The current budget of HayAntar SNCO allocates only 710 million AMD for their maintenance. These funds are insufficient to pay salaries to the employees. Foresters at HayAntar are not equipped with uniform, rifle and transportation means and the average wage is 40,000 – 45,000 AMD per month to monitor 300 – 8,000 ha of forests<sup>12</sup>.

Among the global problems currently existing in Armenian forestry, there are many driving forces for illegal logging within HayAntar and the state in general:

- Very low commercial capacity of HayAntar, such as the lack of infrastructure, the lack of human resources and professional foresters;
- Existing wood selling methods, which do not support development of free and equal market relations (informal relationship, corruption among forest managers, etc.);
- Very limited mechanization level of forest activities (last upgrade of equipment was in 1956);
- Difficult financial state of HayAntar;
- Outdated and inadequate accounting system of HayAntar (no computerized accountancy system is recorded during the survey);
- Absence of the necessary equipment and financial resources for the forestry sector development.

The forest policy outlines the following reasons for illegal logging:

- Low salary of HayAntar employees (average monthly salary of foresters comprise \$120 – 140);
- Absence of economic, legislative and other mechanisms/tools to prevent illegal forest utilization;
- Absence of illegal logging damages to state, public, economy and environment measuring tools and the system;
- Ineffective system of illegal forest utilization registration and instructions;
- Nonexistence of proper economic control;
- Uncoordinated activities of local communities and forest enterprises to find and minimize illegal forest utilization;
- Insufficient level of awareness and information on illegal forest utilization volumes and events;
- Low level of material and technical promotion system;
- Local timber low prices versus international.

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<sup>12</sup> Source: M. Matevosyan, Head of HayAntar

## 2.6 USE OF FOREST RESOURCES

### 2.6.1 Commercial use

During the Soviet period Armenian wood-processing industry was based for years on imported wood raw material, reaching about 1 million m<sup>3</sup> (import in 1988). Most of the raw supply was transported by rail from Russia. The production included sawn wood, furniture, particle-board, and other products. The large size sawmills were highly mechanized and almost all drying was done in kilns.

In the early 1990's there were 31 primary processing enterprises (including HayAntar -18 sawmills) as well as 34 secondary manufacturers of wood products such as furniture and wood fixtures makers and one paper factory. Annual volume of processed wood was about 800,000 – 850,000 m<sup>3</sup> of wood logs, primarily softwood. After the independence the situation in wood industry dramatically changed due to the transportation cost increase, economic blockade and imported wood price increase, which made it difficult for the industry to survive, following the energy crisis.

The current output of the industry does not satisfy the domestic market demand and the capacity is underutilized. Production facilities for much of the primary and secondary industry face irregular supplies of raw materials, using outdated and antiquated equipment and a loss of significant amount of market share for their products due to out-of-date product ranges, low product quality and lack of flexibility. In addition, shortage of decent quality wood, lack of finance to purchase improved equipment, market access and information, lack of skilled specialists make the whole sub-sector unattractive and low profitable.

Official data from NSS estimated that the total domestic value of products from the wood processing industry in 2008 was about \$34.8 million, which contribute less than 3% of industrial output.

### 2.6.2 Wood for fuel

For many rural areas and some towns of Armenia fuel wood is the primary source of energy for heating and cooking. Some rural households consume as much as 15 m<sup>3</sup> of fuel wood annually and the average consumption is estimated at 6.8 m<sup>3</sup>(<sup>13</sup>). Although gasification covers 93% of the territory, rural population still rely on firewood from the forest due to adverse socio-economic conditions. Recent gas price increase will directly impact on firewood consumption and thus illegal logging. According to the data provided by NSS 26.6% (861,308 people) of Armenian rural population are poor (including extremely poor) assuming that the number of households will be 180,900. The minimum firewood consumption is therefore 861,084 m<sup>3</sup> using 70% solid wood conversion rate<sup>14</sup>. Data collected from surveyed HayAntar branches on marketed firewood totally was 32,613 m<sup>3</sup> in 2008.

High demand for fuel wood among the rural population and some portion of urban inhabitants results in serious degradation of the country ecosystem. Alternative and renewable energy systems need to be promoted by the government and donor organizations.

### 2.6.3 Subsistence and non-commercial use

Armenian forest resources are not limited to commercial and industry uses. Non-valued, and/or undervalued, uses such as watershed protection, recreation, hunting, and collection sites for non-timber forest products (NTFPs) also contributed to the betterment of livelihood conditions of the

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<sup>13</sup> Ensuring Sustainability of Forests and Livelihoods Through Improved Governance and Control of Illegal Logging for Economies in Transition, Savcor Indufor Oy, 2005

<sup>14</sup> 180,900 households multiply by average fire wood assumption multiply 70%

country population; requiring for benefits expected to accrue in future. They range from subsistence items to products traded on international markets. Insufficient information, mostly because of unorganized collection, processing and trade of these products, makes it difficult to assess the precise nature of their contribution. Often the information available is general and rather qualitative.

Non-wood forest products are particularly important at the local level. In most cases people allowed to collect them freely. Since the informal sector dominates the collection and trade in most of NTFPs, very little information is available on their actual economic significance, and this is possibly a result of negligence of their management.

The main non-timber forest products in Armenia include medical and aromatic plants, herbs and spices, mushroom, honey, berries, fruits and nuts. In some cases, fodder is also considered a non-timber forest product as a large number of livestock depend on it from forests and woodlands. Given the fact, that Armenian forests are in danger, NTFP will come more valuable than wood products. However, information on production, processing and marketing is poor. Overexploitation of resources is widespread due to the nonexistence and/or low application of harvesting and trade regulations.

#### **2.6.4 Illegal exploitation of forest resources**

It is a widely held belief that a substantial amount of timber is illegally harvested each year. Most of this is in the form of logs and timber that are transported across the borders to Iran, where higher prices for the raw materials are paid or utilized locally throughout legal or illegal operators. The forest neighbor communities are also involved in illegal logging as for their subsistence or for resale. Influence on illegal logging issues are achieving greater attention of local NGOs in the media and are recognized by state and donor authorities as a significant problem.

*According to the various sources volumes of illegally harvested timber may reach 1,000,000 m<sup>3</sup><sup>15</sup>. The topic is also addressed in various sections of this report.*

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<sup>15</sup> "The Economics of Armenia's Forest Industry" Economy and Values Research Center, 2007

## 3 WOOD PROCESSING

### 3.1 CURRENT STATE

Wood processors in Armenia currently are serving a wide range of customers and products using a large number of simple machines and tools. This results in an inefficient use of labor and a low ability to purchase improved equipment. Overall, the wood manufacturing companies in the country operate at a low level of profitability and have difficulties controlling manufacturing costs and generating profits. Two major factors affecting inefficient operation of wood subsector in Armenia as following:

- old and outdated equipment doesn't allow to produce quality products to meet current market demand and be competitive;
- industrial wood is expensive, low quality and difficult to acquire.

The survey was conducted in Tavush, Lori and Syunik Marzes of Armenia, where the concentration of forest is significant and covers approximately 40.3%, 37.7% and 20% of the territory respectively, to understand the current state wood processing industry and its trends. A number of wood processors from selected Marzes, from small scale to larger entities, were interviewed to understand core wood processing practices, volumes, main constraints for obtaining raw material, marketing and other sector specific issues. In this regard, HayAntar regional branches as primary source of roundwood supply in Armenia were also included in the list of respondents.

In 2007, approximately 300 small and medium scale processors were operating in Armenia<sup>16</sup>, which cease down to 79<sup>17</sup> in 2008 (Table 5) according to official statistics. However, though our survey 59 registered companies in just 3 Marzes were identified; in addition a number of business entities operate in Yerevan and other regions of Armenia. In our observation, the number of wood processors (legal and illegal) decreased due to the world financial crisis, difficulties to obtain raw wood, stricter control over forest resources and Civil Society/NGO active involvement in monitoring of illegal logging. At the same time, according to various sources, up to 60 illegal wood processors operate in each surveyed marzes. Their operation is limited to sawmilling and producing parquet from the waist or firewood. They mostly/mainly operate in their own premises, basements or houses and are very difficult to identify. The operation of such processors is limited and mainly order based, due to the absence of working capital, a risk to be caught by the police and other monitoring agencies. According to various sources, approximate volume of consumption by such processors is limited to 3-4 m<sup>3</sup> of wood per month depending on the season.

### 3.2 WOOD PROCESSING COMPANIES

The research was conducted on a sample of 100 companies, including HayAntar regional branches from Tavush, Lori and Syunik Marzes. As a result of the survey 42 companies and 13 regional branches of HayAntar were interviewed and database for totally 100 companies was produced. Basic information and major findings of wood processing sub-sectors are presented in this section.

**Table 5 - Geographical distribution of wood-processing companies**

Marz	Number of HayAntar branches	Number of private companies	Number of registered private companies	Number of interviewed private companies
Tavush	4	42	30	15

<sup>16</sup> "The Economics of Armenia's Forest Industry" Economy and Values Research Center, 2007

<sup>17</sup> NSS Yearbook, 2009, <http://www.armstat.am/en/?nid=45>

Lori	6	29	19	10
Syunik	2	18	10	12
TOTAL	12	89	59	37

The majority of surveyed private companies are small or mid-size companies with less than 10 employees (80%) or between 11 – 20 employees (14%). Regarding the principal activity, the majority of the companies involved in furniture production (38%) or parquet production (32%). Percentage of board and timber production is equal (22%). Only a small percentage of the companies from the sample are involved in beds and veneer production (5%). Due to the fact that the majority of companies are involved in either the final or primary production sector, it won't be possible to compare companies regarding the principal activity.

**Table 6 - Wood processors' characteristics by key variables**

		Number	Share
<b>Legal status</b>	OJSC	1	
	CJSC	2	
	LLC	15	
	Coop	1	
	SP	8	
	Not registered	10	
	<b>Total</b>	<b>37</b>	
<b>Number of employees*</b>	Less than 10	28	80%
	10 - 20	5	14%
	20 - 40	2	6%
	<b>Total</b>	<b>35</b>	<b>100%</b>
<b>Principal products</b>	Furniture	14	38%
	Furniture carved	4	11%
	Parquet	12	32%
	Board	8	22%
	Doors	7	19%
	Windows	4	11%
	Timber	8	22%
	Chairs	5	14%
	Tables	3	8%
	Beds	2	5%
	Veneers	2	5%
	Other	4	11%
	Semi-finished	3	8%

\*2 companies are currently not operating

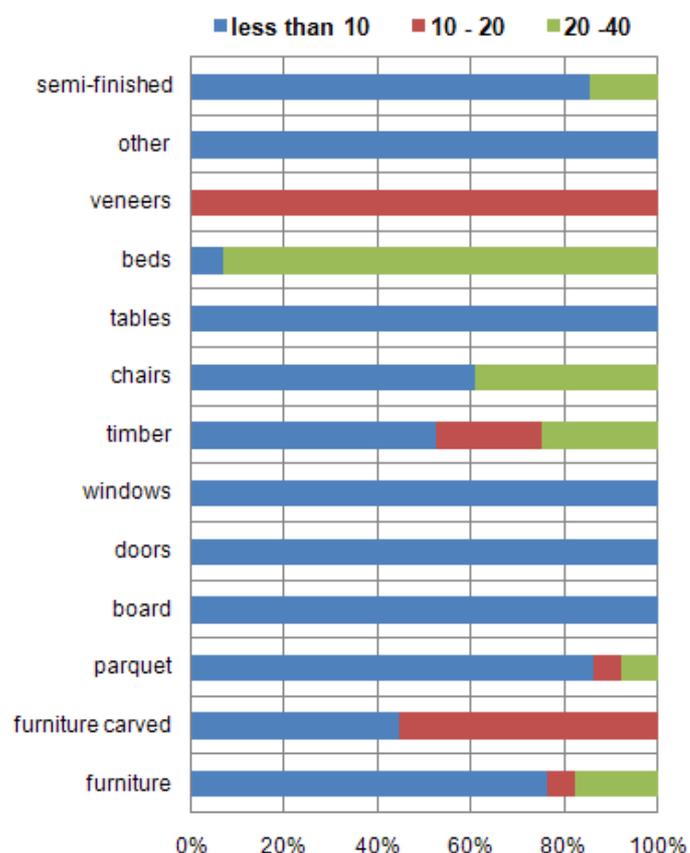
Regarding the ownership structure, all 37 interviewed companies are 100% private.

In terms of organizational structure, a large majority of businesses (15) are registered as limited liability companies (LLC). The number of identified self-proprietors is 8 and not registered 10. Only a

small number of companies are registered as share holding companies - CJSC (2) in Tavush and Syunik Marzes, OJSC -1 in Tavush Marz, and 1 production coop. in Lori Marz. Given the fact that the considerable amount of illegal activities exist in the field, the number of not registered entities exceeds the given figure few times in surveyed regions and can reach up to 60.

As for the principal products, most surveyed companies offer two types of product (39%), while some report offering just one type (33%) or more than three different products (28%). Taking into consideration the variety of wood products, the most common products produced by surveyed companies are timber (40.3%), semi-finished products (17%) and parquet products (10.4%). A lower percentage of companies, beside other products, are producing solid wood furniture (8.2%), other wooden products, not included in the group (6%), veneer (4.9%), boards (3.8%), chairs (3.1%), beds (2.2%), carved furniture (1.4%), solid and panel doors (1.3%). And the lowest percentage of companies' production comprises tables (0.8%) and then windows (0.5%). Chart 2 shows the relation between types of principal products and number of employees in the companies.

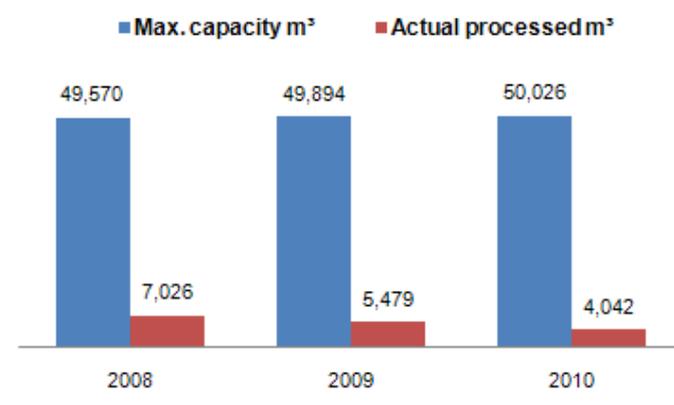
**Chart 2 - Principal products by company size (number of employees), in m<sup>3</sup>**



Looking at the companies' principal products in relation to their size, it becomes clear that the small companies produce 65.9% of total production, big companies (20-40 employees) – 18.1% and medium (10-20 employees) – 16% of production.

Maximal capacity utilization of surveyed companies varies from 0.8 to 570 m<sup>3</sup> (highest -“Shush” LLC, Tavush Marz) per month and annual utilization limited to 14% in 2008, 11% in 2009 and 8% in 2010. Data collected for 2010 includes first 3 quarters of operation, which results in low utilization. Several companies stated that due to some circumstances they stop production during winter period, so the level of utilization for 2010 is fairly realistic. During 2008-2010 maximum capacity of surveyed companies in 3 Marzes increased from 49,569.6 to 50,025.6 m<sup>3</sup>/annually.

**Chart 3 - Companies' maximum capacity and actual processing in m<sup>3</sup>**



One of the most important reasons for low utilization of capacities is insufficient input (i.e. wood) supply. The Annual Allowed Cut of HayAntar during the recent 5 years varied in the range of 35-45 thousand cubic meters. The construction wood volumes comprised about 10% of that volume. Obviously, the wood-

processing sector is strongly undersupplied with the most important input. If domestic raw wood provided by HayAntar is much less than the capacity of wood industry, then the industry has no chances to prosper (imported wood is expensive and not available to most of the producers).

Meanwhile it does not mean that AAC should be increased very much with the risk of damaging forests. Instead, Armenian producers should concentrate not on the mass product, but think about “niche” products. Jumping forward we would like to emphasize the following: even if specific measures are implemented (such as establishment of wood-processors association), the problem of input supply will not allow to develop the sector. This issue should be addressed beforehand, before the establishment of any entities.

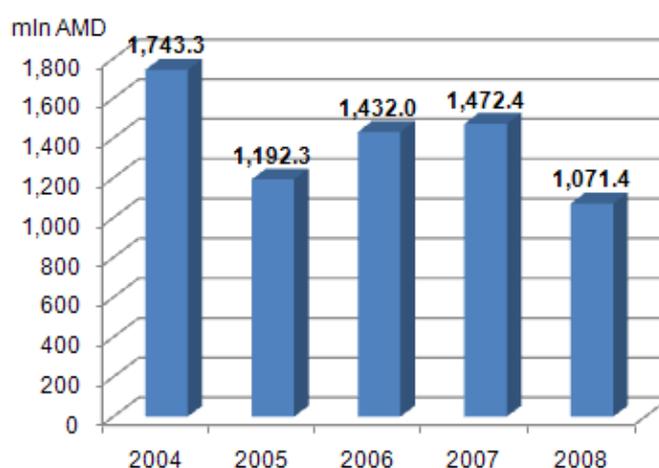
Comparison between Marzes in terms of capacity utilization is shown in Table 7. It reveals that the lowest utilization in 2008 was in Lori (11%) and highest in Syunik (38.9%). This dynamic continues over the survey period and still higher utilization remains in Syunik at the level of 17% and 10% in 2009 and 2010 respectively. Lowest utilization was in Lori, 6.5% in 2009 and 4.6% in 2010. *One of the reasons causing low utilization is world financial crisis; second is difficulties to obtain raw wood, including prices and quality.*

**Table 7 - Capacity utilization<sup>18</sup>**

Marzes	2008	2009	2010
Syunik	38,9%	17%	10%
Lori	11%	6,5%	4,6%
Tavush	13%	13%	10%

The same negative dynamics of wooden production is indicated in the national data. **Chart 3** shows the gross output value of woodworking sector for period 2004-2008, where 39% of volume decrease recorded for the given period. According to NSS for the period 2004-2008 production of construction wood reduced from 6,069 m<sup>3</sup> to 2,082 m<sup>3</sup>, which is almost three times a decrease. Similarly, the wooden doors and windows production decreased from 11,312m<sup>2</sup> in 2004 to 3,996m<sup>2</sup> in 2008. The rapid decrease indicated in sawn materials production for the same period from 2,473m<sup>3</sup> in 2004 to 247m<sup>3</sup> in 2008, reduction is 10 times. Only parquet production has positive dynamic and production volume increased almost 5 times, from 2,043m<sup>2</sup> in 2004 to 9,838m<sup>2</sup> in 2008. Although country industry recorded 38% growth for the period 2004-2008, productivity of the wood processing sub-sector still remains very low and according to NSS has decreased approximately 39%<sup>20</sup>.

**Chart 4 - Woodworking sector gross output value, 2004-2008<sup>19</sup>**



The wood working production of Armenia has a share nearly less of 3% of the total gross output of all manufacturer activities.

<sup>18</sup> Source: Survey of wood-processors

<sup>19</sup> NSS, Yearbook 2009

<sup>20</sup> NSS, Yearbook 2009

Import of wood and wood articles increased from 22,158,000 USD in 2006 to 63,215,000 USD in 2008 (285%), while export decreased from 649,000 USD to 503,000 USD for the same period.(Table 8)

**Table 8 - Import, export and trade balance of wood and articles of wood; wood charcoal in thousand, USD<sup>21</sup>**

	2006		2007		2008	
	Exports	Imports	Exports	Imports	Export	Imports
Wood and articles of wood; wood charcoal	649	22,158	547	40,031	503	63,215
Trade balance	21,509		39,484		62,713	

### **3.2.1 Existing equipment, facilities and processing practices**

Equipment from the 1970s and 80s designed for mass production has not been effective enough to be responsive to today's client-oriented production and marketing techniques. And, there is little familiarity with processing methods that can adapt to the latest trends in consumer tastes, or address international industry standards.

The majority of visited workshops are located inside the houses or nearby facilities, with very poor conditions appropriate for wood processing. Some of the not registered workshops share facilities with other producers. Generally, all processing operations conducted in a single facility, without proper ventilation or satisfactory safety conditions. Efficiency of conducted operations is very low due to the absence of material flow planning, sufficient space around the single equipment, etc. Relatively big companies with specialized facilities face the same problem, due to the low utilization. Usually, operations are conducted in one of the workshops to save electricity consumption.

Most of the surveyed companies have old single purpose manual equipment in very poor conditions and low efficiency. This results in poor labor productivity and poor product quality except in the hands of their master craft workers. Among the myriad of problems concerning equipment, dry kiln is the most vital for furniture manufacturers. Old dry kilns existing in the regions are power consuming and require high load volume to be cost effective. Air drying is the most common practice in the region. For instance, to overcome this problem in Dsegh village area (Lori Marz), where the most chair producers are operating, processors steam wood by self made equipment and then air-dry. This method somehow decrease moisture content, but still the quality of such wood is questionable. Small and illegally operating companies, when possible, use old stock for their production to overcome bending and shrinking problems. This is very important for beech, which is the most spread around the country and intensively used for furniture production.

Wood waste mostly used to heat the workshops or given for free to the employees and serves as firewood. Hardly any waste utilization was recorded during the survey, although the amount is great and can bring an additional income to the processors. According to the processors, approximately 50% of processed log is sawdust which directly affects the final price of the products. This is due to the low quality of the used raw material and the lack of technical skills and equipment applied in processing. However, the quantity of wood residue and the methods of utilizations are subject to feasibility study.

### **3.2.2 Input Supply**

HayAntar is the primary local source of roundwood supply, has annual approved planned logging (annual allowable cut – AAC) and offers boards, logs, parquet (only in Dsegh branch) and firewood.

<sup>21</sup> NSS, Yearbook 2009

The species includes beech, oak, walnut, hornbeam, oriental hornbeam, lime tree, pine and shrubs for firewood. The prices for industrial wood and firewood were set by the Government of Armenia in March, 2004 and are in force till present. Annex 1.1 presents the actual pricelist of HayAntar products.

HayAntar branches have a very limited or no capacity to process roundwood, so usually private sawmills are subcontracted to process logs down to timber and resell it. To obtain roundwood from the forest companies or individuals requires a license/permit and paying the state fee (see Annex 6.2 ). The signed contract with the Head Office of HayAntar is required for roundwood logging and export. Larger companies and individuals form brigades and provide transportation mean to log, transport and process wood. Obtaining the license, according to some respondents, is a matter of personal relationship with HayAntar and entails bribes to pay officials to access better logging area.

The following table summarizes the stages of procurement procedures and wood removal from HayAntar.

**Table 9 – Official procedure of using wood from forest**

Stage 1	Getting the permits (no restriction on legal status)	Obtaining valid permits from state authority, HayAntar
Stage 2	Logging (usually done with the brigade formed by the permit holder )	According to the forestry annual plan, logging is allowed at the approved sites. Trees for sanitation purposes are specially marked for cut. Mark left on stump. Special passport issued with the listing of quantity, types of trees, which is attached to HayAntar accountancy book.
Stage 3	Transporting	Truck with loaded logs should pass checkpoint to verify quantity and tree types.
Stage 4	Processing	Processing usually done at the workshop. Some HayAntar branches subcontract sawmills to process logs for further sale.

Secondary source of raw materials is imported coniferous timber from Russia and Georgia and primarily used as construction material. Limited quantity of imported coniferous boards used in wooden doors and windows productions. Local processors prefer imported coniferous boards versus Armenian due to their high quality (high density, narrow-ringed structure and knot-free).

Prices of broad leaved timber are largely depending on the quality, thickness, humidity, species and location. For beech board price varies from 50,000 to 100,000 AMD for 1 m<sup>3</sup> in the market. For oak and walnut prices may go significantly higher and reach up to USD 1000 for 1m<sup>3</sup>. Legally or illegally procured timber may affect the price significantly. Illegally procured oak board price comprises 10% of legally obtained timber<sup>22</sup>. The companies practice mixed procurement of raw wood, partially legal to prove documentary (20-30%) and acquire the rest illegally. Purchase invoice is required for log transportation and delivery of final products to the market. Decrease in wood processing industry has been impacted by those regulations and the strict control of illegally obtained industrial wood that the Government started to imply lately.

Recently, few companies, such as Vershina LLC, offer imported timber, like Canadian oak, poplar, walnut, bamboo boards and veneer production. Depending on wood species the prices vary from

<sup>22</sup> "The Economics of Armenia's Forest Industry" Economy and Values Research Center, 2007

**500,000 to 960,000 AMD** for 1m<sup>3</sup> of dry boards. The processed boards are used mainly for flooring elite construction blocks in Yerevan and rarely in furniture production. The import of high-priced timber was caused by the booming of construction industry in Armenia.

Generally, raw wood supply from HayAntar is unstable and low quality, due to the number of reasons, such poor conditions of Armenian forests, weather conditions (makes difficult access to log area), low AAC and its delayed approval (sometimes available in late March, even later), quality of log available at the planned area, etc. This stimulates illegal logging, improper production planning and capacity utilization, sales decrease and other negative factors which make the whole subsector low efficient and not competitive. However, *only 8% of surveyed companies find wood quality supplied by HayAntar unsatisfactory or badly processed (14%)*. Most of the company owners stated that the main problem with the raw wood is high price (62%), either local or transported from other regions of Armenia. For instance, Kapan processors specialize in joinery and carpentry production, such as windows and doors, find coniferous wood very expensive at the local market.

Majority of small companies buy raw from old stocks available in the community or from sawmill operating nearby and rarely from HayAntar due to the extra costs associated with log cutting, transporting and sawmilling. Order based manufacturers widely practice client's raw materials processing to avoid problems associated with wood purchasing, primary processing (dry kiln) and quality of the final products. Most of the surveyed companies would like to buy raw from regional specialized store and avoid problems with the wood quality, quantity and paperwork.

Small companies usually buy firewood or technological wood<sup>23</sup> from HayAntar, which is relatively cheaper and process down to semi-finished products, chairs, table legs, boards, etc. This trend is common for all surveyed companies and does not depend on scale or production range. This, somehow, allow to utilize existing capacity and be competitive in the local market.

Depending on the type of production, local processors use a range of tree types available locally, such as beech, oak, walnut, pine, hornbeam, lime-tree, ash and other. Comprising 35.8% of Armenian forest, beech is the most available industrial wood and used as primary raw among surveyed companies.

Significant share of processed wood over the period is beech, which reaches 82.9% of totally processed woods in 2010. It is noticeable that walnut processing was decreased rapidly from 12.4% in 2008 down to 2.4% in 2010 due to the strict control and special permission to cut the species (Table 10).

Due to the fact that the majority of companies produce range of products it was not possible to compare the companies in the context of their use of wood species against the type of products. At the same time it is worth to mention, that a certain type of wood is used to manufacture various products. For instance, carved furniture manufacturers primarily use walnut and oak, windows and doors producers – pine. But in general, most of the small companies use available dry wood with the reasonable price or the one provided by the customer in case of placing order.

**Table 10 – Processed wood by surveyed companies**

	2008		2009		2010	
	m <sup>3</sup> /annual	%	m <sup>3</sup> /annual	%	m <sup>3</sup> /annual	%
Beech	408.7	69.8	368.5	80.7	372.3	82.9

<sup>23</sup> Technological wood – construction or industrial roundwood, 100 – 120 cm length; relatively cheaper than industrial roundwood.

Oak	44.3	7.6	30.1	6.6	25.1	5.6
Walnut	72.6	12.4	1.9	0.4	11.0	2.4
Pine	51.7	8.8	21.6	4.7	21.7	4.8
Hornbeam	0.5	0.1	22.7	5.0	8.0	1.8
Lime-tree	5.3	0.9	5.6	1.2	5.6	1.3
Ash	0.1	0.0	4.5	1.0	4.5	1.0
Other	2.3	0.4	1.7	0.4	1.0	0.2
<b>Total</b>	<b>585.5</b>	<b>100</b>	<b>456.55</b>	<b>100</b>	<b>449.1</b>	<b>100.0</b>

Source: data analysis provided by the processing companies

Data collected from regional branches of HayAntar on the wood volume sold to individuals and companies contain some contradicting information, which makes it difficult to analyze. This is due to the methodology, accountancy, data collection and storing systems existing in HayAntar. Generally, the approved log plan (AAC) of HayAntar does not specify wood species, except those which are under protection or registered in National Red Book.

Table 11 presents the species and the quantity of wood sold for the period 2008-2010, in m<sup>3</sup>. Other types including lime-tree, maple, ash, oriental hornbeam and other comprise small percentage of total wood sold by HayAntar and due to improper record system it is difficult to calculate the exact amount. This is relevant also for the fuel-wood, which is usually sold bulk and the quantity is considered as a base for price calculation. Beech comprises the highest percentage (53%) of totally sold wood to the companies in 2010. The second largest is hornbeam, which is 25% and the lowest is pine, approximately 1%. Armenian coniferous trees are lower quality compared to the exported ones and hardly used in local production.

**Table 11 – Wood species sold by surveyed HayAntar branches to the companies and individuals, in m<sup>3</sup>**

	2008	2009	2010
Beech	16705.1	25599.3	15055.4
Oak	695.5	1005.7	497.2
Hornbeam	7212.2	10761.4	7216.8
Pine	1042.5	1160.1	375.2
Other	8447.9	10711.2	5234.6
<b>Total</b>	<b>34103.3</b>	<b>49237.6</b>	<b>28379.1</b>

Source: Surveyed HayAntar branches

### **3.2.3 Marketing and sales**

Most of the surveyed companies distribute their products through middlemen, independently or company owned stores making it the least profitable distribution channel. Small companies are purely order based and usually sell in the surrounding communities. The number of manufacturers involved in mass production, such as chair producers, sells through middleman with the low profit margin. In some cases the final price of the product doubles at the end market<sup>24</sup>. For instance, the chair price in region varies from 5,000 to 8,000 AMD depending on model, upholstery, and wood species and in Argavand furniture market (next to the Yerevan suburbs) the price can reach up to 15,000-18,000 AMD.

<sup>24</sup> Argavand market

Products exhibited in the specialized stores are poorly presented and usually do not contain any information on producers, type of used woods, etc. It is relevant both for regional and Yerevan based markets. Processors are not interested in high quality production especially in the regions they operate. They target low income, rural population. Carved furniture and parquet are exceptions, although transportation to Yerevan market for such products is associated with the number of difficulties (paperwork, road control, bribes, etc.).

The low control of forest recourses, illegal logging and countless number of illegal operators has caused distortions in the local market. Prices of forest products, namely roundwood, legally harvested by companies are much higher than those of illegally harvested because the latter do not entail forest charges.

In our observation, regardless of legal status, no marketing activities is undertaken to promote production either in region or in Yerevan. In terms of promotion, family and personal contacts are most commonly used by the companies in promoting sales. At the same time, the surveyed companies have lack of market information, sales channels, which result in underutilization, low value production and lack of incentives for capital investment. More than half of the surveyed companies have problems with sales. On the one hand, the main market is too far and processors do not possess the necessary information. On the other hand, wooden products are expensive for local customers and few of them can afford or prefer to buy imported laminate or veneered furniture. In fact many wood processors also shift from wood to other working materials (laminate, other non-wood raw materials) as this production is cheaper, demanded by buyers and easier to sell.

### **3.2.4 Exports**

Armenian forest is unique in terms of diversity and contain valuable species demanded at international market. Presently, key exporter of Armenian unprocessed wood still remains Iran. The following table shows the data on wood export. According to the Government Decree from 2009 log export was banned and the primary processed log is the subject of export. According to Martun Matevosyan, Director of HayAntar, the demand for beech timber decreased due to the quality and quantity of wood which impacted export reduction.

**Table 12 - Export of beech logs and timber to Iran**

	<b>Logs, m<sup>3</sup></b>	<b>Timber, m<sup>3</sup></b>
2005	4786	-
2006	3354	-
2007	3007	-
2008	1160	30
2009	451	241
2010	-	796

Source: Martun Matevosyan, Head of HayAntar

According to the official statistics more than 900 tons of wood was exported from the country in 2009. About 93% of this volume was registered as unprocessed or primary processed wood (Table 13).

The average export price was approximately 190 USD per 1m<sup>3</sup> of wood and article of wood. The annual export volume was estimated at around 1,300-1,400 m<sup>3</sup> (Table 13).

**Table 13 - The official statistical data on exports of wood and wood articles**

	<b>2009</b>	<b>2008</b>	<b>2007</b>

	ton	1000 \$	ton	1000 \$	ton	1000 \$
Wood in the rough or roughly squared	672	89.8	1140.2	182.5	2553.2	378.1
Wood sawn, chipped lengthwise, sliced or peeled	233.5	57.6	104.5	124.8	430.6	115.6
Veneers and sheets for plywood etc <6mm thick	0	0	15.7	19.1	29.7	32.7
Particle board, similar board, wood, ligneous material	19.2	11.8	0	0	0	0
Fiberboard of wood or other ligneous materials	22.0	9.7	0	0	0	0
Builders joinery and carpentry, of wood	29.3	100.6	20.1	113	0.4	3.3
Ornaments of wood, jewel, cutlery caskets and cases	0.3	12.3	0.9	31.3	0.6	27.2
Articles of wood	0.1	2.1	0.1	0.4	0.8	0.4
Wooden cases, boxes, crates, drums, pallets, etc	0	0	4.2	1.6	0.1	0.3
Wooden casks, barrels, vats, tubs, etc	0	0	3.1	20	0	0
<b>Total</b>	<b>976.4</b>	<b>283.9</b>	<b>1288.8</b>	<b>492.7</b>	<b>3015.4</b>	<b>557.6</b>

Poor situation in wood processing sub-sector, along with the high price for unprocessed timber, will stipulate for export of low value Armenian wood. *The export volume of unprocessed wood still remains high resulting in the substantial income loss for Armenia.*

### 3.3 INDUSTRY SPECIFIC PROBLEMS AND RECOMMENDATIONS

***Small and insecure markets, due to low rural incomes, seasonality, poor access to large markets, and severe competition***

**! Findings and recommendations:**

There are several strategies which SMFE<sup>25</sup> can pursue in order to respond to changing market conditions. They can concentrate on market niches in which factory products, local or imported, are not competitive, such as very low-cost basic furniture or high quality hand crafted furniture items. Alternatively, they can concentrate on products in which there is no competitive advantage from large scale or machine production, such as cultural handicrafts. Another approach is to specialize in a particular product, or product part, in order to get longer production runs. In most cases they can succeed in this only if several enterprises join efforts to share overhead costs (association).

However, the constraints most SMFE face in assessing, monitoring and developing their own markets means that they will often need assistance in doing so. Given that the existence of a market, and continuing market prospects, has to be the starting point for any enterprise development, it needs to be given first priority in any support program.

Rural SMFE, especially “micro” ones have lack of market information. The situation can be improved by greater use of mass media or market familiarization seminars in the rural areas. Providing information about rural SMFE products to potential urban consumers is also important as currently selling through word of mouth is predominant.

Where they wish to expand market share, or move into new markets, SMFE need to improve their products. Local and export markets are likely to require standard products of uniform quality. Even for special “cultural” or tourist products which are not as easily displaced by mass-produced items, it is necessary to improve design, quality, labeling, and presentation when competition increases.

<sup>25</sup> Small and medium forest enterprise

***Raw material shortages, unpredictable supply of domestic wood, often compounded by wasteful processing, restrictive regulations, poor distribution, and lack of working capital******! Findings and recommendations:***

Their small size and very limited income surpluses mean that entrepreneurs do not have the possibility to invest in long-term forest resource development. Any incentive to do so is usually reduced further by the fact that much of the profits generated by exploiting the resource accrues not to the processing enterprise but to those engaged in distribution and marketing. Therefore, SMFE solely cannot solve their own raw material problems; if they are to solve the issues of access and creation of supplies must involve other stakeholders as well.

Apart from suffering absolute shortages, small enterprises often experience difficulties in having access to raw materials due to distance or to legal, administrative, price or infrastructural barriers. Examples include harvesting controls; exclusive allocation to large companies; heavy deposits or other insoluble preconditions; high prices due to state monopolies; the presence of forests in locations too far distant, or served by too poor roads and monopoly distribution systems. In this connection, forestry regulations are major source of operational problems for SMFE.

In addition, forest raw material supplies may be unstable due to low AAC and its delayed approval, seasonal factors or uneven or inefficient application of forestry regulations. As small customers, SMFE's have little leverage on the resource owners. Furthermore, lack of working capital restricts their ability to buy when supplies are available and hold stocks to cover periods of shortage.

In seeking to solve their raw material supply problems, new approaches to forest resource management are needed which recognize that SMFE's constitute both an important part of the forest and forest products sector, and a major source of livelihoods to rural people. Investment in resource regeneration (for example, establishment of plantations, preferably fast-growing species) needs to be integrated with the development of entrepreneurship, products and markets.

Clearly there is a continuing need in many circumstances to control access to forests in the interests of achieving an appropriate balance between the environmental role of forests and production. However, by ensuring greater local community benefits from access to forests, and an increase in processing, forest services can harness greater local support for forest management.

***Shortage of finance******! Findings and recommendations:***

Credit, normally at high interest rates, is an important component in many programs designed to encourage SME growth and development. Shortage of finance may in fact be as much a symptom of other problems as it is a financing problem.

Most rural SMFEs have little choice but to rely on personal or family savings and/or the informal sector "moneylenders" for finance. These sources are inadequate and therefore improving rural SME's access to credit is important.

In order to improve rural forestry financial market performance, measures need to be designed to improve the mobilization of rural savings; to increase the competitiveness and institutional diversity of the financial market; and to increase the use of innovative financial technology appropriate to the rural environment. In particular, the formal financial sector should be encouraged to adopt some of the positive features of the informal sector, such as the low transaction costs, the limited collateral requirements, willingness to lend for short periods, and greater informality of procedures. Reduction in formal procedures would lessen one of the main barriers small enterprise entrepreneurs face. Greater convenience of services through expanded informal networks, more appropriate service hours, lower minimum deposits and loans, etc., could all improve accessibility to finance by SME's.

***Non-availability of appropriate technology in the form of suitable tools and equipment*****! Findings and recommendations:**

In general, as it has been already indicated, small rural enterprises are found to be operating in an environment characterized by difficult or weak market, lack of raw material and support situations. Within the SMFE, this process is further complicated by the extreme small size of the “micro” group of enterprises, which represents predominantly household based artisanal operations that often use no machinery.

While keeping in mind the different needs of “micro” and small enterprises, remedial action could follow two tracks. At the macro level, several actions could lead to improvement:

- regional technological cooperation organized and coordinated by a regional organization,
- ensuring that the vocational training systems include compulsory attachment or an internship component,
- encouraging village level basic technical education where emphasis is placed on basic technical skills and essentials of forest-based processing technology,
- encouraging agricultural and forestry extension officers to perform a technology advisory service and forestry for SMFE's,
- adopting a continuous consultancy approach to the problem of technological development,
- improving the technology transfer process,
- encouraging the involvement of venture capital in the commercialization of indigenous technology.

The particular problems of the “micro” entrepreneur can be approached in the following manner. First, by encouraging community or Marz level associations of manufacturers, which could cooperate in machinery and equipment acquisition and utilization, exchange technical advice and complement each others' processes. Secondly, the provision of mobile technical support units to visit the villages with the purpose of assisting in specific technical problems. Thirdly, the “community industry common facilities” where specific production equipment for industrial processes is made accessible to the small entrepreneur, which will ensure small units' access to equipment whose minimum capacity is too big or whose cost is too high for each of them individually.

***Managerial weaknesses*****! Finding and recommendations:**

Features of SMFE's which exacerbate management problems include: (a) personal managerial responsibility of the entrepreneur without specialist support, (b) heavy use of family labor, (c) lack of managerial training, and (d) poor working conditions which attract poor quality workers. It is necessary to develop packages geared to these particular needs and characteristics.

Managerial skills which apply to all SMFE's should probably be transferred by general training-extension agencies. Industry-specific aspects of forest-based activities which may require specialized advice would include raw material, technology, market or administrative-licensing considerations.

***Lack of organization of the enterprises in a manner which enables them to make effective use of available support service*****! Finding and recommendations:**

There is a wide range of support measures which donor agencies could take to promote SMFE development, the key ones of which are: (a) identification of growth opportunities for SMFE's; (b) sector market assessments; (c) technology development; (d) provision of finance at concessionary interest rates and sometimes with low collateral requirements; (e) raw material provision, reservation and price discounts; (f) equipment supply on easy terms; (g) skills development through training in all essential disciplines for SMFE's operations; and (h) continuous advisory services.

For the smallest enterprises, assistance can usually only be effectively delivered on a group basis. Such groups need to be well organized and motivated. Formation of such entrepreneur associations should thus be a priority function which official and non-governmental agencies should assist in implementing. Field experience suggests that clear benefits to both the community and the individual need to be demonstrated in order to attract sustained community participation in such associations.

### 3.4 CONCLUSIONS AND RECOMMENDATIONS

The current situation of Armenian forests resources and its misuse will continue to cause forest degradation, disappearance of valuable species, soil erosion, disruption of water cycle, loss of biodiversity and climate changes. Forest degradation can be mitigated through law enforcement; combating illegal logging and the associated trade; processing industry revamp and poverty reduction. Thus, a complex and cooperative approach to the solution of the aforementioned problems is needed.

Major findings derived from the nature of the study can be divided in two groups: general, which relates to the Armenian forest economy, and specific, describing industry specific problems and solutions.

#### Actions needed to address unsustainable fuel wood collection:

1. Promote alternative fuel usage (solar, wind, etc.) especially in rural areas, and introduce financial program for alternative energy through international and donor organizations. Study of best practices for alternative fuel will be useful in this case. Unfortunately, the price of gas was increased in 2010, which will cause higher demand for fuel wood.
2. Implement community forest activities: designate community forest land; develop and implement community forest management plans; ensure transparency in providing community benefits; provide training, as necessary, to community members; and monitor compliance. As part of this, capacity should be strengthened in the Ministry of Agriculture (HayAntar SNCO) to oversee community forest management; and capacity will have to be strengthened in communities to implement community forest management activities.
3. Improve protection of protected area resources, and introduce a program of sustainable, well monitored fuel wood collection by communities. This may have the potential to become a community enterprise that could generate income for communities.
4. Encourage use of wood lots for fuel wood.

#### Actions needed to address unsustainable commercial timber harvesting

1. Implement "industrial forests" category; require a sustainable forest management plan; and monitor for compliance with the Forest Management Plan;
2. Ensure a transparent process for appropriating industrial forest to commercial enterprises.
3. Consider community benefit component in industrial forests, where communities could form commercial enterprises and manage a forest for commercial purposes. In conjunction with this, capacity strengthening should be provided to communities and community-based organizations, so that they can implement or oversee commercial timber harvesting, including the negotiation and management of timber contracts.
4. Create an open access GIS including application of environmental/biodiversity monitoring criteria. This should incorporate accurate reforestation and deforestation data.

5. Provide training to target environmental NGOs that have the potential to serve as advocates for community interests and strengthen capacity in advocacy, management, and fundraising.

#### Actions needed to address inappropriate grazing practices

1. Reduce and prevent land degradation with anti-erosion, anti-landslide measures.
2. Implement restoration measures (re-cultivation) of degraded lands.
3. Define principles of privatized agricultural land consolidation to reduce land fragmentation.
4. Through land use planning exercises, strengthen and train local government authorities who will make decisions about the land use.

## 4 CASE STUDY

### 4.1 INTRODUCTION

Rather than dwelling on the many complex causes and far-reaching impacts of illegal forestry operations, this section attempts to identify the example of best practices to address the problem. Armenian case is not unique from the view of illegal logging, low value wooden products, alerting environmental conditions of the forests, unsustainable use of the forest resources-, corruption and the approaches implemented by donor organizations in different countries. However, because of the complexity of the issue it is crucial to prioritize remedial actions and use step-by-step approach. Presented case is based on the careful study of the best practices, focusing on Armenian social, economical and political feasibility. Financial cost and the potential source of the necessary funds was also considered.

Globally, two main approaches are used to support private sector in developing countries: poverty alleviation through supporting SMFE and creating market opportunities and incentives for wood processing industry to use sustainable and certified raw and access the international market. The presented case is a synergy of both approaches implied for Kenyan wood-carving industry.

### 4.2 KENYAN CARVING SECTOR

#### 4.2.1 Background

Kenya's forest covers a total area of 37.6 million hectares out of which 2.1 million hectares are woodlands, 24.8 million are bush lands and 10.7 million are wooded grasslands. Out of the total forest cover, only 1.7 million hectares are managed by Kenya Forest Service (formerly Forest Department)<sup>26</sup>. A total of 9.4 million hectares of a variety of tree coverage exists on farmlands, settlements areas and urban centers. Majority of the closed canopy forests are officially stated forest reserves managed by the Kenya Forest Service. There are also closed canopy forests as National Parks and National Reserves managed by the Kenya Wildlife Service (KWS).

**Before the ban in year 1999, it was estimated that the forestry sector contributed about Ksh.8 320 million per year to Kenya's GDP or approximately 1% of the monetary economy and 13% of**

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<sup>26</sup> KFS is in in-charge of forest inventory and monitoring in Kenya.

**non-monetary economy<sup>27</sup>. Direct use values in terms of timber, fuel wood and poles are estimated at Ksh. 3.64 billion or \$48.4 million.<sup>28</sup>**

The main types of forest in Kenya are a) natural high forests, b) dryland forests referred to as woodlands and c) forest plantations. Most of the forests (97.8%) are either state owned or managed by local authorities, only 2.3% are private forests. The woodlands are mainly on trust-land<sup>29</sup>, held in trust for residents by local authorities until formalization of rights. At present, land in Kenya falls under three classifications: 1) government land; 2) trust land; and 3) private land.

In the period of 2000-2003, forest cover of Kenya continued to change especially in significant forest ecosystem of Kenya. The remaining forests cover 3.5 million ha (6% of total land area) and other wooded land which is 35 million ha (60% of total land area). Productive forest plantations covered some 200,000 ha in 2005.

While the forests in Kenya have survived over the past decades these were not spared of deforestation and degradation due to over-exploitation and increasing demands for forest resource. These forests are threatened by deforestation and forest degradation through excisions, exploitation, illegal logging, pit-sawing, charcoal burning and forest fires. The increasing population of Kenya is likewise putting a strain on the natural resources. In 2003, Kenya's population was estimated to have reached 31,987,000, which placed it as number 34 in population among the 193 nations of the world. Below is an illustration of forest situation in Kenya published by World Rain forest Movement (WRN):

**Kenya's forests are rapidly declining due to pressure from increased population and other land uses. With B<sup>30</sup> of the country being arid and semi-arid, there is a lot of strain on the rest of the land since the economy is natural resource based. The productive area, which forms about 20% of the country falls in the medium and high potential agro-ecological zones and is under agriculture, forest and nature reserves. According to FAO Forest Resource Assessment 1990, Kenya is classified among the countries with low forest cover of less than 2% of the total land area. The dwindling forest cover has a severe effect on the climate, wildlife, streams, human population especially forest dwellers.**

According to FAO (2006), the annual deforestation rate in forests and other wooded land in Kenya was 0.3% between 1990 and 2005. The growing stocks, indicating forest degradation, decreased by 0.08m<sup>3</sup> per ha annually (which means, they are decreasing four times faster compared to the reported numbers in neighboring Uganda). Deforestation occurred at a rate of 12,000 ha/ annually during the period 2000-2005.

Some drivers of deforestation as mentioned in the R-PIN31 of Kenya were identified as described below:

*Unsustainable utilization:*

A partial presidential logging ban has been in place since 1999. With the partial ban still in place, only a few larger industries with Government shareholdings are allowed to harvest trees in state forest plantations. Harvesting operations are wasteful since the concessionaires are only paying a very low

<sup>27</sup> Currency of Kenya which is known as Kenyan Shilling. Current the exchange rate is 1USD to 75.25 Ksh or KES.

<sup>28</sup> World Bank (2000): Unpublished mission report. Third Forestry Project

<sup>29</sup> Tenure right system in most African countries: Communal lands which holds in trust by Country Councils on behalf of the communities. These lands neither owned by state or by individuals

<sup>30</sup> [http://en.wikipedia.org/wiki/Köppen\\_climate\\_classification](http://en.wikipedia.org/wiki/Köppen_climate_classification)

<sup>31</sup> Readiness Plan Idea Note. This is the document that government must submit to the World Bank in order to receive funds from the Forest Carbon Partnership Facility.

price for the extracted timber. There is no concession currently active in natural forests. However, despite the logging ban, unsustainable utilization continues for the reasons provided below.

*Institutional failures arising from:*

- 1) Governance structures;
- 2) Inadequate capacity to enforce the law;
- 3) Inadequate forest management plans; and
- 4) Lack of real community participation in forest management.

*Poverty and inadequate resource mobilization:*

Forest goods and services are largely public in nature and therefore depend on public resources. However the forestry sector in Kenya was marginalized during the last decade. In the 2007-08 financial years the budgetary allocation for forestry development was 0.3% of the national budget, which is hardly adequate for reforestation, afforestation and management activities. Incentives to support private sector investments are inadequate.

*Property rights in forest resources:*

In 2005, the Forest Act 2005 was approved by the parliament and provides the legal basis for the private sector, joint forest management and community participation in forestry.

*Pressure for expansion of agricultural land, settlement, and development:*

Compared to many other countries, there is a limited pressure to expand agricultural land and settlements. In Kenya it is widely recognized that increasing agricultural productivity and reforestation are the most promising options to sustain the growing population and to support rural development.

*Unsustainable charcoal production and marketing:*

Charcoal is the a) main source of energy for many households and industries, b) a leading cause of forest degradation in many communities (Lambreacht at al. 2003) and c) a livelihood system for more than 10,000 charcoal burners. However, currently most of the charcoal is unsustainably produced in woodlands and therefore sustainable charcoal production is not cost competitive.

*Overgrazing:*

Forest grazing is common practice in many deforested and degraded state forest reserves and a source of income for KFS as long as the partial logging ban is in place and resources for reforestation or other incomes are lacking. In the framework of the World Bank Green Belt Movement's Bio Carbon Fund, regulatory mechanisms to control grazing inside forest reserves and to support the establishment of fodder trees and zero grazing systems outside the reserve are promoted. Overgrazing can be controlled in a joint effort between community associations and government agencies.

*Forest fires:*

Forest fires continue to decimate the country's forests mainly due to lack of adequate preparedness and prevention measures arising from low resource allocation, lack of firefighting equipment and a lack of collective responsibility across government agencies in dealing with fire outbreaks. Elsewhere communities have traditionally used fire as management tool or a way to regenerate pastures, but due to disruption of grazing patterns (as a result of changing weather patterns and population pressure), this practice is no longer effective.

*Wildlife damage:*

In some areas like Mt. Kenya, Aberdares, Mt. Elgon and Arabuko-Soroke forests, large herbivores are a constant threat to young forest plantations-causing economic and biodiversity losses.

*Replacements of superior forest cover types:*

On the coast, some privately owned high-conservation natural forests have recently been converted into coconut plantations. Regulations, combined with Payments for Environmental Services for maintaining carbon stocks and biodiversity, can contribute to the reduction of these respective incidents in the future.

#### **4.2.2 Challenge**

The Kenyan wood-carving industry is expanding at a high rate both in the volume of trade, the number of people involved and the carving wood requirements. An estimated 80,000 carvers are currently active and their work feeds nearly half a million people. The annual export earnings from the wood-carving industry are as high as KSh. 264 million per year (approximately 30 million USD, People and Plans 1999).

Traditionally, Kenyan carvers have preferred a few selected hardwood tree species for carving. Unfortunately, these species tend to be slow growing and have become over-exploited because of increasing demands from harvesters seeking wood for construction, furniture and fuel purposes as well as for carving.

The challenge that Kenya is now facing is that the current demand for indigenous hardwoods far outstrips supply. Today, wood resources are in a critical state of over-exploitation. Carvers depend on wood from local forests and farms for their raw materials. So far, most of the wood used for carving comes from indigenous hardwood species such as mahogany (muhuhu, “*Brachylaena huillensis*”) and ebony (mpingo, “*Dalbergia melanoxylon*”) which are not produced on a sustainable basis. Selective harvesting of these species has a severe impact on forest structure and species composition and renders the populations of these species vulnerable as increasingly smaller, immature trees are being cut. The industry uses approximately 7,000 m<sup>3</sup> of wood per annum, and about 50,000 trees are felled each year to supply carvers. The future of the industry is at risk if the current products, consumption pattern and use of raw material don't change.

In order to satisfy current and future demand, efforts must be made to manage and utilize natural resources on a sustainable basis. To reverse this trend of progressive forest degradation and reduced incomes from sales of carvings, the implementation of a sustainable product development (SPD) strategy is essential. Within the wood-carving sector, producers and traders must work together to develop strategies that ensure a sustainability supply of raw materials if there is to be a future for this important sector.

#### **4.2.3 Project description**

The project, funded by the EU under the Micro Enterprises Support Program and implemented by the Mennonite Central Committee, focused on SPD as a main area of intervention. The project tackled three main areas simultaneously:

- Sustainable product development (SPD);
- Reforestation;
- Marketing.

The People and Plants Initiative therefore established a program of training and development aimed at promoting the use of alternative species such as neem, jacaranda and mango, collectively referred to as “Good Woods”.

Development has included workshops involving key stakeholders to identify key issues and strategic aims; training and promotion; detailed research into wood use by carvers and into the Good Woods

resource base in the coastal region of Kenya; the writing of management plan and harvesting plan for supply of timber to carving co-operatives; and the coordination of the group of farmers subject of this assessment, to supply the wood carving co-operatives on the coast of Kenya.

The options for eco-labeling of Good Woods to promote their marketing have been explored and the potential role for FSC32 certification recognized. In January 2000 a pre-assessment for FSC certification was carried out by Rainforest Alliance Smartwood program and a management plan and harvesting plan prepared. Main assessment for FSC certification was completed in January 2005.

In 2002 collaboration was formed between WWF-UK and Oxfam to assist Kenyan Wood carvers. As part of Oxfam's program in Kenya with farmer training and sensitization, including training on business management and tree management, development of international market links and overall business assessment, including exploration of marketing possibilities of industries from non-timber forest products. In addition Kenya Gasby Trust (WWF contract) assisted the Akamba Co-operative with Business development, which includes the development of a Product Manual standardizing production and work on quality assurance for the carving co-operative. This has led to the creation of a business, the Coastal Tree Products with functions relating to quality assurance and marketing of the carvings.

#### **4.2.4 Findings**

##### *Reforestation:*

In favorable conditions, "Good woods"<sup>33</sup> Project's tree seedlings can be harvested within 10-15 years after planting. Reforestation is urgent and needs to be done on a scale sufficient to ensure a sustainable source of raw materials for future generations. The project promoted the establishment of tree nurseries within each carver co-operative and distribution of seedlings to farmers and carvers. The reforestation approach enhanced the sense of ownership of the trees among the carvers. Reforestation of indigenous forest areas is not contemplated by the project because it is the exclusive work of the forestry department of the Kenyan government.

##### *Marketing:*

Securing a sustainable source of raw materials and achieving the necessary product innovations required by the alternative materials did not address the challenges facing the wood-carving industry unless there was a corresponding market demand for products made with the new materials. To this end, the project linked to the "Good woods" campaign to create awareness among costumers and producers. Furthermore, local and foreign market requirements were closely researched and followed.

#### **4.2.5 Intervention**

An important effort is being made by a group of organizations that have decided to embark on a campaign to promote "Good woods" carving to highlight the problem of over-exploitation and to identify possible solutions. The "Good woods" terminology comes from initial research efforts that concentrated on searching for and experimenting with fast-growing non-forest species as a substitute for endangered indigenous species. Research findings indicate the following species are best alternatives: neem (*Azadirachta indica*), mango (*Mangifera indica*), grevillea (*Grevillea robusta*) and jacaranda (*Jacaranda mimosifolia*). Other species such as coconut (*Cocos nucifera*), casuarinas (*Casuarina equisetifolia*), melia (*Melia azedarach*), eucalyptus (*Eucalyptus spp.*) and Prosopis spp.. As most of these species have multiple uses and are fast-growing they have a good potential for being raised in local farms and plantations. The principal use of these woods for carvings has shown that

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<sup>32</sup> Forest Stewardship Council (FSC) is an independent, non-governmental, not-for-profit organization established to promote the responsible management of the world's forests.

<sup>33</sup> The term "good wood" is the fast-growing non-forest specie as a substitute for endangered indigenous species.

they are equally good and - if accepted - will relieve the pressure from the declining and already over - exploited indigenous carving species. The main objective of “Good woods” campaign was to establish a market for sustainably sourced carvings. To achieve this it will concentrate on:

- The introduction of an independently certified “good woods” label for carvings from sustainable; supplies and a system to monitor the use and production of “good wood” carvings;
- The promotion of certified carvings within Kenya and abroad;
- Establishing a market share of 10% for certified carvings by 2004.

#### **4.2.6 Outcome**

In terms of reforestation activities, 11 tree nurseries have been established, over 35,000 seedlings planted and some 300 people trained in seedling raising and nursery management. The raised seedlings for each nursery are about 10,000 per annum.

FSC certification of 'Good Wood' carvings contributes to the conservation of threatened East African forests and helps improve livelihoods for poor farmers living on the coast of Kenya. The woodcarving industry in Kenya supports up to **60,000 carvers** and their dependants and generates an income of over **US\$10 million** per year, but has contributed to the decline of threatened hardwoods and the degradation of the globally important East African coastal forests. FSC certification is being used as a tool to promote responsible wood consumption within the Kenyan woodcarving industry by potentially offering new market opportunities.

The pilot co-operative of the Akamba Handicraft Society (c. 3000 carvers) and the newly set-up Coast Tree Product Company have been awarded the FSC Chain of Custody certificate. The certified neem wood is sourced through the newly formed Coast Farm Forestry Association, which has been certified under a FSC Group certification. 576 farmers have so far joined the group, which is set to grow to over 1000 farmers. These small farmers are growing neem on their farms and sell the certified logs to Akamba to produce certified carvings. This has opened up a totally new income source to coastal farmers, 60% of which live below the poverty line.

One major UK importer of African crafts and carvings (BESMO) imports the certified carvings; this company is selling through retailers such as Debenhams and House of Fraser.

#### **Major achievements**

- Improved conservation of threatened indigenous tree species;
- Farm incomes have been increased through timber sales;
- Substantial capacity building among farmers on how to run a business;
- Expanded markets for rural based forest products have emerged;
- Quality of products have been improved;
- Sustainably managed farm forests are now spreading;
- Good forestry management practices are better understood;
- Clearly identified sustainably produced goods are available in the market and some are sold to Fair Trade Organizations.

#### **4.2.7 Conclusion**

The carving industry in Kenya provides a clear example of many micro and small enterprises sectors in developing countries whose existence depends on rapidly degrading natural resources. Until recently very little had been done to protect indigenous forests and the job of thousands artisans that have no alternative source of income. In this context the implementation of SPD strategies can have a substantial social and economic effect.

The Kenyan woodcarving certification could set an important example for other developing countries where woodcarving is an important industry. This would set a precedent for a new type of certification – of Small/Low intensity Managed Forests in a group system; especially addressing the livelihood needs of low income families in the developing world.

However, effectively applying Kenya's experience in Armenia requires external support through providing relevant communication networks and implementing support programmes that can provide information and training on registration procedures, available finance, market trends, technological innovations, identifying niche products for local and international markets, etc. Another form of assistance can be participation in or organization of trade fairs, workshops, seminars. Supporting the wood sector members in finding the best market opportunities, niches for their products.

## 5 ASSOCIATION

### 5.1 OVERVIEW

The global importance of forest-based small and medium enterprise (SME) associations has been highlighted by the United Nations Millennium Project (Melnick *et al.*, 2005). Among the 10 key recommendations for achieving Millennium Development Goal MDG 7 (ensuring environmental sustainability) is the following statement (Melnick *et al.*, 2004):

*“Increase real income in informal forest sector activities by at least 200% by harnessing the entrepreneurial spirit of informal harvesters and users of forest products, through outreach from government agencies, civil society organizations and certification organizations; rationalizing institutional and regulatory frameworks; and creating incentives for conservation and sustainable management”.*

Considering the importance of the Armenian SMFE sub-sector for improving the livelihoods in rural areas and their potential to achieve sustainable forest management, in addition to tackling common problems, Kenyan experience can be considered practical for Armenia in a number of crucial areas, such as promotion and establishment of wood processors' association, conducting a research to identify fast-growing species which are best alternatives to the current raw materials, promotion of community-based forest management and private forest farming, identifying market opportunities for Armenian wood processors, active involvement of donors, international organizations and forest sector stakeholders in SMFE development and strategy implementation.

The SMFEs<sup>34</sup> in Armenia are facing a number of challenges. One of the greatest challenges is shortage of raw material, especially wood. For instance, the wood-carving enterprises in Syunik are facing a shortage of walnut and the joinery manufacturers are facing a shortage of coniferous wood. Many SMFEs operate below their installed capacity due to the limited market access and lack of financial resources. Many of SMFEs' capacity utilization is low than 10%. Another challenge is the common perception that the sector is responsible for forest destruction in many areas, which creates a negative image in society. A further key challenge is the increasing national and international competition as a consequence of economic liberalization.

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<sup>34</sup> SMFE is an industry-specific type of small and medium enterprise (SME) situated within the forest sector.

## 5.2 POSSIBILITY OF ASSOCIATION ESTABLISHMENT IN ARMENIA

Assessment of the attitude of local representatives of wood processing sector towards establishment of the Association is conducted to formulate mission, objectives, goals and participants' contribution and membership. Number of business representatives among surveyed group was identified to form the "Initiative Committee" on voluntarily basis. Main findings are summarized below.

It is obvious that majority of the surveyed companies (86%) support the idea of the association and 62% are ready to become a member. Only 8% of surveyed companies are indifferent and 5% are against the idea of creating such organization due to the mentality of local processors.

Representatives from 13 companies would like to be part of the initiative committee and 4 processors agreed to give advisory services and 4 to come up with legislative initiatives. Three companies' representatives are committed to seek technical support for association and one to support financially.

Interviewees prioritize the following objectives that to-be-established association needs to address to become viable structure for small and medium forest enterprises which are listed below in the order of their importance:

- Market access;
- Access to raw material, including price and quality;
- Technology and know-how;
- Access to modern equipment;
- Access to financial resources.

Although, the idea of association was supportive, its establishment will not solve all the problems existing in the forest sector. To achieve better results donor agencies will need to provide more effective support and streamline their efforts on addressing the current challenges faced by Armenian SMFE to prepare for a solid foundation for the association and sector stakeholders.

Supporting organizations shall use comprehensive approach to the existing problems focusing their activities on the following important areas of intervention:

### *Market for niche products*

Identify niche market, both locally and internationally, for added value wooden products, such as arts and crafts, kitchenware, etc., including products tailored for Diaspora, based on ethnical and cultural traditions. Tourism can be considered as another market outreach sector for local arts and crafts. For effective marketing strategy implementation a number of promotional activities, such as fair trades organization and participation, utilization of internet and other PR tools, should be considered. Further development stages will envisage FCS and Fairtrade certifications, as well as sustainable forest product labeling.

### *Raw supply*

Conduct research on appropriate species to substitute forest indigenous ones taking into account the peculiarities of the Armenian geography and climate. Encourage and assist in establishing the fast-growing tree farms by providing seedlings and management trainings to the farmers. Make trees from private lands available to ease the pressure on forests, thus nurturing and promoting private forestry and consistent raw supply.

### *Institutional reforms*

Effort should be channeled towards making government policies, programs and legislation more supportive of sustainable forest management. Advocate, support and engage in the development

and implementation of relevant mechanisms to assess the performance of forest management enterprises in line with the agreed standards in order to develop more effective operational modalities.

#### *Capacity building*

Design and deliver a series of trainings on sector specific topics, basic business administration and financial management to allow SMFEs to attract investments. Provide market information and links to service providers, ensuring sustainable partnership. Share best practice and knowledge among the value chain actors.

**Presented system problems are of the highest priority in Armenia, so far. Establishment of the wood-processors association should be considered only after the development of necessary base for it.**

### **5.3 GOAL AND MAIN OBJECTIVES OF WOOD PROCESSORS ASSOCIATION**

As it was mentioned, establishment of the association is not the first priority need for the wood-processing sector, so far. Nevertheless, some day this need will rise and initial understanding of the Goal and Objectives of that association will be useful. Here are some considerations to that end:

- Support development and improvement of wood-processing sector in Armenia;
- Assist its members to increase incomes, assist in solving current problems;
- Promote and assist in realization of ready product produced by its members, identification of new market opportunities;
- Create a marketing information database;
- Establish ties and cooperate with international and other organizations dealing with similar issues, exchange experience with the other countries throughout members and specialists exchange;
- Support introduction of modern wood processing technologies in Armenia, including sawdust recycling;
- Conduct professional and legal consulting to its members in accordance with an established order, promote establishment of consulting and educational field by organizing various events.
- Promote sustainable product development, including legal raw supply;
- Pursue fair trade and Forest Stewardship Council certification;
- Conduct other forest related activities that members can benefit.

### **5.4 BENEFITS OF ASSOCIATION**

Sets of the reasons and incentives for formation and some of the benefits that members of associations can receive based on the study of similar experience in other developing countries are summarized below. Importantly, associations with the long term objectives are sustainable and more successful. Keeping it simple at the start allows time for successful functions to develop, building on core expertise. **Most successful associations do a few things, but do them well.** Avoiding short-term single drivers improves long-term prospects. The risk is that once the association achieves its short-term aims, it can become redundant.

#### *Reducing transaction costs*

Grouping together allows forest linked enterprises to become more scale-efficient. Working together can drive down prices and reduce the time and costs of acquiring inputs, including training and information. Similarly, some assistance programs may require a certain scale in order to disperse funds. For instance, association can get better transportation rate for its members to deliver raw from

the forest or take the ready products to the market. Some projects or grant programs may require group participation in order to be awarded.

Cutting out unnecessary intermediaries increases the share of benefits for poor producers. Some intermediaries play an important role in matching supply from diverse producers with demand, but this position of power can often result in a poor deal for producers.

#### *Adapting to new opportunities*

Working together can open up new strategic opportunities that would not have been possible alone. Strong established association can expand its activities, such as collection and processing of wood waste to generate additional income. In many instances, forming an association helps to secure training opportunities with the greater impact on its members. Associations can also attract donor support that would be less likely for individual enterprises.

#### *Shaping the policy environment*

Decision-makers may ignore individuals, but it is more difficult to overlook large organized groups with people employed to agitate on their behalf. It can be expensive to campaign for rights through the courts. By working together, it may be possible to hire legal expertise to push for rights.

And as general rule to success whether the motivation springs from reducing transaction costs, or strategic adaptation or lobbying and advocacy work (or a mix of all three), effective group action requires strong collective interest.

Almost every study dealing with associations has highlighted the benefits of independent beginnings, free from external interference. However, association functionality can be both impaired and assisted by external intervention. The danger is that external support imposes structures and incentives that are not sustainable in the end. But support that responds to existing associations' expressed needs can be highly productive.

It is suggested to consider and carefully study lessons that affect group success when the association of wood processors is established.

**Table 14 - Pro-considerations towards establishment of the association**

<b>Factor</b>	<b>Lesson</b>
Successful past experience	Groups benefit from successful past experience
Wealth	Groups benefit from having some disposable income (low levels of poverty)
Political affiliation	Groups benefit from independence from political groups with the right to self organization
Size	Groups often (but not always) benefit from being small or medium-sized and central to the total economy in which they operate
Activities at inception	Groups benefit from focusing on one manageable activity, potentially diversifying over time but retaining focus
Participative or individual leadership	Groups benefit from either individual or participative leadership, provided it is home grown and fair
Shared background	Groups benefit from a homogenous background but can do without it if they have good leadership
Skills and abilities	Groups benefit from a mix of skills to achieve collective interests
Degree of external support	Groups should start without external support to prove competitive advantage
Social or financial objectives	Groups benefit from having broader objectives than merely financial ones

Boundaries to group	Groups benefit from clear boundaries defined by collective interests
Simple shared norms and rules	Groups benefit from initial flexibility but should then evolve simple rules and procedures based on local norms
Meetings with members	Groups benefit from regular and frequent meetings between members and leaders
Accountability and sanctions	Groups benefit from clear records, transparent decision-making and conflict resolution processes and graduated sanctions for non-compliance

## 6 ANNEXES

### 6.1 MINIMAL PRICES FOR GIVING OUT WOOD FROM RA FOREST FUND

Forest species	Standing								
	Industrial wood (3 meter long)						Small, diameter up to 12 cm	Technical wood (1 meter length)	Fuel wood 1 meter length (stacked m <sup>3</sup> )
	Big, diameter more than 25 cm			Medium, diameter 13-24 cm					
	Type			Type					
1	2	3	1	2	3				
Oak, ash, lime-tree	70	56	48	42	40	38	28	26	4
Pine, maple, elm	33	28	24	22	20	18	16	12	3
Beech	32	26	22	20	18	16	12	10	4
Hornbeam and other	18	15	13	12	11	10	6	5	4

\*Logging operations are done by population only under forest enterprise direct supervision

Forest species	Felled at stump								
	Industrial wood (3 meter long)						Small, diameter up to 12 cm	Technical wood (1 meter length)	Fuel wood 1 meter length (stacked m <sup>3</sup> )
	Big, diameter more than 25 cm			Medium, diameter 13-24 cm					
	Type			Type					
1	2	3	1	2	3				
Oak, ash, lime-tree	70	56	48	42	40	38	28	26	4
Pine, maple, elm	33	28	24	22	20	18	16	12	3
Beech	32	26	22	20	18	16	12	10	4
Hornbeam and other	18	15	13	12	11	10	6	5	4

\*Logging operations are done by population only under forest enterprise direct supervision

Forest species	Roadside								
	Industrial wood (3 meter long)						Small, diameter up to 12 cm	Technical wood (1 meter length)	Fuel wood 1 meter length (stacked m <sup>3</sup> )
	Big, diameter more than 25 cm			Medium, diameter 13-24 cm					
	Type			Type					
1	2	3	1	2	3				
Oak, ash, lime-tree	70	56	48	42	40	38	28	26	4
Pine, maple, elm	33	28	24	22	20	18	16	12	3
Beech	32	26	22	20	18	16	12	10	4
Hornbeam and other	18	15	13	12	11	10	6	5	4

\*Logging operations are done by population only under forest enterprise direct supervision

## 6.2 NATURE USE FEE TARIFFS

Species	Distance from forest, km	Tariffs (AMD)			
		Timber under bark diameter near stump (cm)			Fuel wood over bark
		More than 25 cm	13-24 cm	3-12 cm	
Beech	up to 10	3,640	3,220	2,800	700
	10-25	2,800	2,520	2,240	630
	25-40	2,520	2,240	1,680	560
	more than 40	2,240	1,960	1,680	420
Oak, ash	up to 10	3,920	3,640	2,800	700
	10-25	3,080	2,800	2,240	630
	25-40	2,520	2,240	1,680	560
	more than 40	1,960	1,680	1,400	420
Hornbeam, maple, elm	up to 10	1,260	1,120	840	700
	10-25	1,120	980	840	630
	25-40	980	840	700	560
	more than 40	840	700	420	120
Others	up to 10	980	840	700	420
	10-25	700	700	560	350
	25-40	560	560	420	280
	more than 40	420	420	260	210

Extraction from Government Decision N 864 of December 30, 1998.

## 6.3 USEFUL WEBSITES

### 1) Useful websites with academic information on support to small and medium enterprises

The International Institute for Environment and Development (IIED) Small and Medium Forest Enterprise pages:

[http://www.iied.org/NR/forestry/projects/sm\\_med\\_enterprise.html](http://www.iied.org/NR/forestry/projects/sm_med_enterprise.html)

<http://www.iied.org/NR/forestry/projects/associations.html>

<http://www.iied.org/NR/forestry/projects/forestconnect.html>

<http://www.iied.org/NR/forestry/projects/fairtradetimber.html>

The United Nations Food and Agriculture Organization (FAO) Small and Medium Forest Enterprise pages and FAO Agribusiness service

<http://www.fao.org/forestry/site/25491/en>; [http://www.fao.org/ag/agis/index\\_en.html](http://www.fao.org/ag/agis/index_en.html)

The Donor Committee for Enterprise Development

<http://www.businessenvironment.org/dyn/be/BEsearch.home> <http://www.sedonors.org/>

USAID's Microenterprise Learning Information and Knowledge Sharing (MicroLINKS)

[http://www.microlinks.org/ev\\_en.php?ID=1\\_201&ID2=DO\\_ROOT](http://www.microlinks.org/ev_en.php?ID=1_201&ID2=DO_ROOT)

The GTZ Competency based Economies through Formation of Enterprise (CEFE) program

<http://www.cefe.net/>

International Labor Organization's (ILO) boosting employment through small enterprise development (SEED)

[http://www.ilo.org/dyn/empent/empent.portal?p\\_prog=S](http://www.ilo.org/dyn/empent/empent.portal?p_prog=S)

The ILO International Training Centre inter-agency seminar on business development services

<http://learning.itcilo.org/entdev/BDSSEminar/pub/home.aspx?l=Eng&IdSezione=0>

The Small Enterprise Education and Promotion (SEEP) Network

<http://www.seepnetwork.org/>

The BDS Forum – an independent guide to business development services

<http://www.bds-forum.net/bds-reader/start.html>

The Rural Finance Learning Centre

<http://www.ruralfinance.org>

The World Bank's (WB) small and medium enterprise pages

<http://rru.worldbank.org/Themes/SmallMediumEnterprises/>

The International Finance Corporation (IFC) small and medium enterprise pages

<http://www.ifc.org/sme>

The Inter-American Development Bank's (IADB) micro, small and medium enterprise pages

[http://www.iadb.org/sds/MIC/index\\_mic\\_e.htm](http://www.iadb.org/sds/MIC/index_mic_e.htm)

The Organization for Economic Cooperation and Development (OECD) pages on small and medium enterprises

[http://www.oecd.org/department/0,2688,en\\_2649\\_34197\\_1\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/department/0,2688,en_2649_34197_1_1_1_1_1,00.html)

Enterprise Development Impact Assessment Information Service (EDIAIS)

<http://www.enterprise-impact.org.uk/index.shtml>

United Nations Industrial Development Organization (UNIDO) private sector development website

<http://www.unido.org/doc/18233>

The Swiss Agency for Development and Cooperation (SDC) small enterprise development website

<http://www.intercoop.ch/sed/main/>

**The Global Value Chains Initiative**

<http://www.globalvaluechains.org/>

**2) Useful websites that guide small and medium forest enterprises wishing to export to developed countries (Source: DIPP, 2007)****Denmark**

DIPP (Danish Import Promotion Programme) provides information on the Danish import market and some key trends for different product markets – plus a good links page from which this information is drawn.

<http://www.dipp.eu/en/linksen.aspx>

**Canada**

TFOC (The Trade Facilitation Office Canada) operates as a non-governmental, not-for-profit organization, and is the primary provider of information on the Canadian import market and a source of training for exporting and for investment attraction for developing and transition economy countries.

[www.tfoc.ca](http://www.tfoc.ca)

**Germany**

GTZ (Deutsche Gesellschaft für Technische Zusammenarbeit GMBH). GTZ is the German governmental organization for international cooperation with worldwide operations. GTZ offers technical assistance and information on business development and international trade.

[www.gtz.de](http://www.gtz.de)

**Italy**

ICE (Italian Institute for Foreign Trade). ICE is the public agency in Italy entrusted with promoting trade, business opportunities and industrial cooperation between Italian and foreign companies.

[www.italtrade.net](http://www.italtrade.net)

**Japan**

The Import Promotion Department of JETRO (The Japan External Trade Organization).

[www.jetro.go.jp](http://www.jetro.go.jp)

**The Netherlands**

CBI (The Centre for the Promotion of Imports from developing countries). The mission of CBI is to contribute to the economic independence of developing countries. To fulfill this mission, CBI aims at strengthening the competitiveness of companies in those countries on international markets, primarily the West-European market, by improving conditions in enterprises and business support organizations.

[www.cbi.nl](http://www.cbi.nl)

**Norway**

Norad (The Norwegian Agency for Development Cooperation) has signed an agreement with HSH (The Confederation of Norwegian Commercial and Service Enterprises) for cooperation on trade promotion services.

[www.hsh-org.no](http://www.hsh-org.no)

[www.norad.no](http://www.norad.no)

**Sweden**

SIDA (The Swedish International Development Agency) has signed an agreement with Swedish Chambers of Commerce and Industry for cooperation on trade promotion services. The objective is to increase and upgrade business contacts between Swedish companies and exporters in Africa, Asia and Latin America.

[www.cci.se/trade](http://www.cci.se/trade)

[www.chambertrade.com](http://www.chambertrade.com)

**Switzerland**

SIPPO (The Swiss Import Promotion Organization) promotes imports from emerging markets and markets in transition and operates under the patronage of the State Secretariat for Economic Affairs (SECO).

[www.sippo.ch](http://www.sippo.ch)

**Other trade support organizations**

ITC (International Trade Centre) is the technical cooperation agency of the United Nations Conference on Trade and Development (UNCTAD) and the World Trade Organization (WTO) for operational, enterprise-oriented aspects of trade development. ITC provides technical assistance and market information on various product groups, country information, including directories of trade promotion organizations, ITC publications and projects.

[www.intracen.org](http://www.intracen.org)

**Expanding Exports Helpdesk – Advice for Developing Countries Exporting to the EU.**

The Expanding Exports Helpdesk is an online resource, provided by the European Commission, to facilitate access for developing countries to markets within the European Union. The Expanding Exports Helpdesk provides relevant information required by developing country exporters interested in supplying the EU market.

<http://export-help.ec.eu.int>

## 6.4 QUESTIONNAIRES

### 6.4.1 Interview Guide → “ArmForest” branches → No \_\_\_\_\_ → \_\_\_\_\_ .2010

1. Branch name

\_\_\_\_\_

2. Address

\_\_\_\_\_

3. Telephone numbers

\_\_\_\_\_

4. Manager's name

\_\_\_\_\_

5. Respondent's name and position

\_\_\_\_\_

6. Forest area under the control of the branch! (! highlighted on the map)

7. Distribution of forest lands under the control of the branch

Forest lands by areas	Area surface
Forests	_____ ha
Arable lands	_____ ha
Grasslands	_____ ha
Pastures	_____ ha
Water areas	_____ ha
Other areas	_____ ha
<b>Total</b>	<b>_____ ha</b>

8. Distribution of forest areas by type of wood, ha / %

Type	Surface of share
Beech	_____ ha or _____ %
...	_____ ha or _____ %
...	_____ ha or _____ %
...	_____ ha or _____ %
...	_____ ha or _____ %
...	_____ ha or _____ %
<b>Total</b>	<b>_____ ha or _____ %</b>

9. Wood logging areas in the period of 2008-2010, ha

	2008	2009	2010

Legally	_____ ha	_____ ha	_____ ha
Illegally			

10. Re-forestation areas in the period of 2008-2010, ha

<b>2008</b>	<b>2009</b>	<b>2010</b>
_____ ha	_____ ha	_____ ha

11. Wood provision volumes of the branch (planned vs. actual)
- by their use**
- (firewood, construction wood, etc.) in the period of 2008-2010

Wood by its use	2008		2009		2010	
	Planned	Actual	Planned	Actual	Planned	Actual
Firewood, logging	_____ m <sup>3</sup>					
Firewood, collecting	_____ m <sup>3</sup>					
Construction wood	_____ m <sup>3</sup>					
...	_____ m <sup>3</sup>					
...	_____ m <sup>3</sup>					
<b>Total</b>	_____ m <sup>3</sup>					

12. Wood provision volumes (planned vs. actual) by
- type of wood**
- in the period of 2008-2010

Wood by type	2008		2009		2010	
	Planned	Actual	Planned	Actual	Planned	Actual
Beech	_____ m <sup>3</sup>					
...	_____ m <sup>3</sup>					
...	_____ m <sup>3</sup>					
...	_____ m <sup>3</sup>					
...	_____ m <sup>3</sup>					
<b>Total</b>	_____ m <sup>3</sup>					

13. The branch
- sales prices of the wood by its use**
- in the period of 2008-2010

Wood by its use	2008	2009	2010
Firewood, logging	_____ AMD/m <sup>3</sup>	_____ AMD/m <sup>3</sup>	_____ AMD/m <sup>3</sup>
Firewood, collecting	_____ AMD/m <sup>3</sup>	_____ AMD/m <sup>3</sup>	_____ AMD/m <sup>3</sup>
Construction wood	_____ AMD/m <sup>3</sup>	_____ AMD/m <sup>3</sup>	_____ AMD/m <sup>3</sup>
...	_____ AMD/m <sup>3</sup>	_____ AMD/m <sup>3</sup>	_____ AMD/m <sup>3</sup>
...	_____ AMD/m <sup>3</sup>	_____ AMD/m <sup>3</sup>	_____ AMD/m <sup>3</sup>

## 14. Sales prices' distribution by the type of wood in the period of 2008-2010

Wood by type	2008Ă.	2009Ă.	2010Ă.
	_____ AMD/m <sup>3</sup>	_____ AMD/m <sup>3</sup>	_____ AMD/m <sup>3</sup>
...	_____ AMD/m <sup>3</sup>	_____ AMD/m <sup>3</sup>	_____ AMD/m <sup>3</sup>
...	_____ AMD/m <sup>3</sup>	_____ AMD/m <sup>3</sup>	_____ AMD/m <sup>3</sup>
...	_____ AMD/m <sup>3</sup>	_____ AMD/m <sup>3</sup>	_____ AMD/m <sup>3</sup>
...	_____ AMD/m <sup>3</sup>	_____ AMD/m <sup>3</sup>	_____ AMD/m <sup>3</sup>

## 15. Wood procurers distribution by their status (population vs. private business entities) in the period of 2008-2010

2008		2009		2010	
Population (individuals)	Private businesses	Population (individuals)	Private businesses	Population (individuals)	Private businesses

## 16. Distribution of wood sales by the type of procurers in the period of 2008-2010

2008		2009		2010	
Population (individuals)	Private businesses	Population (individuals)	Population (individuals)	Private businesses	Population (individuals)
_____ %	_____ %	_____ %	_____ %	_____ %	_____ %

## 17. Distribution of the wood sales by the way of use in the period of 2008-2010

a) Sales to **population**

Wood by its use	2008	2009	2010
Firewood	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %
Construction wood	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %
...	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %
...	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %
...	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %
<b>Total</b>	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %

b) Sales to **private business entities**

Wood by its use	2008	2009	2010
Firewood	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %
Construction wood	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %
...	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %
...	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %
...	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %
<b>Total</b>	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %

## 18. Distribution of the wood sales by the type of wood in the period of 2008-2010

a) Sales to **population**

Types of wood	2008	2009	2010
Beech	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %
...	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %
...	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %
...	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %
...	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %
<b>Total</b>	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %

19. Sales to **private business entities**

Types of wood	2008	2009	2010
Beech	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %
...	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %
...	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %
...	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %
...	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %
<b>Total</b>	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %	_____ m <sup>3</sup> or _____ %

20. What specific problems do you have with **population** (concerning sales of wood, illegal logging, and other)

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21. What specific problems do you have with **private business entities** (concerning sales of wood, illegal logging, and other)

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## 22. What is the role (economic, social, etc.) of your branch in life of neighboring communities?

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## 23. What will be the impact of Wood-processors' Association establishment for sector enterprises and your branch?

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**6.4.2 Interview guide → Private business entities → No \_\_\_\_\_ → \_\_\_\_\_ .2010****Database questions**

24. Name of entity

\_\_\_\_\_

25. Address

\_\_\_\_\_

26. Telephone numbers

\_\_\_\_\_

27. Manager's name

\_\_\_\_\_

28. Respondent's name and position

\_\_\_\_\_

29. Established in \_\_\_\_\_, Number of employees \_\_\_\_\_ people

30. Annual production capacities and extent of their use

2008		2009		2010	
Maximum capacity	Actual use	Maximum capacity	Actual use	Maximum capacity	Actual use
_____ m <sup>3</sup>					

31. Product range in the period of 2008-2010ÄÄ.

Product range	2008	2009	2010
Board/plank	_____ %	_____ %	_____ %
...	_____ %	_____ %	_____ %
...	_____ %	_____ %	_____ %
Parquet	_____ %	_____ %	_____ %
...	_____ %	_____ %	_____ %
...	_____ %	_____ %	_____ %
Other _____	_____ %	_____ %	_____ %
...	_____ %	_____ %	_____ %
...	_____ %	_____ %	_____ %
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

32. What types of wood has been processed in the period of 2008-2010

Product range	2008	2009	2010
Beech	_____ %	_____ %	_____ %
...	_____ %	_____ %	_____ %

...	_____ %	_____ %	_____ %
...	_____ %	_____ %	_____ %
...	_____ %	_____ %	_____ %
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

**Sector problems and challenges**

1.1. What problems do you have concerning the **procurement/access of wood**?

1.1.1. \_\_\_\_\_

1.1.2. \_\_\_\_\_

1.2. What are **the reasons** of those problems concerning the **procurement/access of wood**?

1.2.1 \_\_\_\_\_

1.2.2 \_\_\_\_\_

1.3. What **solutions** would you suggest for solving problems with the **access to wood**?

1.3.1 \_\_\_\_\_

1.3.2 \_\_\_\_\_

2.1. What problems do you have concerning the **processing of wood**?

2.1.1 \_\_\_\_\_

2.1.2 \_\_\_\_\_

2.2. What are **the reasons** of those problems concerning the **processing of wood**?

2.2.1. \_\_\_\_\_

2.2.2. \_\_\_\_\_

2.3. What **solutions** would you suggest for solving problems with the **processing of wood**?

2.3.1 \_\_\_\_\_

2.3.2 \_\_\_\_\_

3.1. What problems do you have concerning the **marketing and sales of your wood products**?

3.1.1 \_\_\_\_\_

3.1.2 \_\_\_\_\_

3.2. What are **the reasons** of those problems concerning the **marketing and sales of your wood products**?

3.2.1. \_\_\_\_\_

3.2.2. \_\_\_\_\_

3.3. What **solutions** would you suggest for solving problems with the **marketing and sales of your wood products**?

3.1.3 \_\_\_\_\_

3.1.4 \_\_\_\_\_

4.1. What other problems do you have?

4.1.1. \_\_\_\_\_

4.1.2. \_\_\_\_\_

4.2. What are their reasons?

4.2.1. \_\_\_\_\_

4.2.2. \_\_\_\_\_

4.3. What are their solutions?

4.3.1. \_\_\_\_\_

4.3.2. \_\_\_\_\_

5. Have you ever tried to solve your problems in cooperation with other processors via joining your efforts?

If YES, how? \_\_\_\_\_

—

If no, why? \_\_\_\_\_

—

6. What is your perception towards establishment of the Wood-processors Association and further solution of sector problems via that association?

6.1. *Completely support the idea*

6.2. *Indifferent*

6.3. *Against the idea, why?*

\_\_\_\_\_

—

**Ask the question if the respondent supports the idea of Association**

7. How can you contribute to the establishment of Association?

7.1. *Participate in the Initiative Group and be a founder;*

7.2. *Manage the Association*

7.3. *Contribute financially;*

7.4. *Prepare legal amendments;*

7.5. *Support in finding technical assistance for the Association.*

7.6. \_\_\_\_\_

–

8. To your opinion what problems should the Association solve?

8.1. \_\_\_\_\_

–

8.2. \_\_\_\_\_

–

9. What is the role (social, economic, other) of your business in life and population of neighboring communities?

\_\_\_\_\_

\_\_\_\_\_

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## 6.5 WOOD-PROCESSING SECTOR

### 6.5.1 SME's Database

SME name	Legal status	Marz	Region	Community	Contact person	Contacts	Production	Interview	Support Association	Role in Association	Needs to address	Comments
1. Arsen Abovyan	SE	Tavush	Noyemberyan	v. Koghb	Arsen Abovyan	077 017100, 0266 52341	Furniture, board, parquet	Y	Y	initiative committee, tech. support programs	technical support, equipment, taxes	
2. Ashot Harutunyan	SE	Tavush	Noyemberyan	t. Noyemberyan	Ashot Harutunyan	094 806079		N				Not working
3. Gagik Khanesyan	SE	Tavush	Noyemberyan	v. Voskevan	Gagik Khanesyan	094 030907		N				
4. Kajik Ananyan	SE	Tavush	Noyemberyan	t. Noyemberyan	Kajik Ananyan	094 555955		N				
5. "Khor Armat"	LLC	Tavush	Noyemberyan	v. Berdavan	Arsen Budaghyan, Director	094 444450	Furniture, parquete, board	Y	Y	initiative committee	staff, technology, raw supply	
6. Serjik Khulijanyan	SE	Tavush	Noyemberyan	v. Koghb	Serjik Khulijanyan	091 774490	Board, timber	N				
7. Sergo Amiragyan	n/r	Tavush	Noyemberyan	v. Koti	Sergo Amiragyan			N				
8. Shush	LLC	Tavush	Noyemberyan	v. Koghb	Serjik Khulijanyan, Director	093 189649	Furniture, semi-finished products	Y				
9. Varujan Tsaturyan	n/r	Tavush	Noyemberyan	v. Koghb	Varujan Tsaturyan	091 621218						
10. n/a	n/a	Tavush	Noyemberyan	v. Voskepar	n/a	n/a		N				1 person
11. n/a	n/a	Tavush	Noyemberyan	v. Jujevan	n/a	n/a		N				1 person
12. Samvel Ghevondyan	SE	Tavush	Berd	v. Chinchin	Samvel Ghevondyan	093 433376	Table, chairs	Y	Y	member		
13. "Gor ev Armine"	LLC	Tavush	Berd	t. Berd	Gor Atoyan	093 018810	n/a	N				
14. Aram Atoyan	SE	Tavush	Berd	t. Berd	Aram Atoyan	094 050355	n/a	N				

15. Hamlet Kharambuzyan	SE	Tavush	Berd	t. Berd	Hamlet Kharambuzyan	077 539191	n/a	N				
16. Haykaz Badalyan	SE	Tavush	Berd	t. Berd	Haykaz Badalyan	077 523939	Parquet	N				
17. Henri Badalyan	SE	Tavush	Berd	22 A. Khachatryan, t. Berd	Henri Badalyan	093 590909	Chairs, semi-finished production	Y	Y	member	market, raw supply, info	
18. Sargis Papyan	n/r	Tavush	Berd	t. Berd	Sargis Papyan	0267 21775	n/a	N				
19. David Adyan	n/r	Tavush	Berd	t. Berd	David Adyan	0267 21381	n/a	N				
20. Samvel Abgaryan	n/r	Tavush	Berd	t. Berd	Samvel Abgaryan	0267 22911	n/a	N				
21. Gagik Abgaryan	n/r	Tavush	Berd	t. Berd	Gagik Abgaryan	0267 22637	n/a	N				
22. n/a	n/r	Tavush	Berd	v. Navur	n/a		n/a	N		1 person		
23. Derenik Yaralyan	SE	Tavush	Ijevan	v. Ditavan	Derenik Yaralyan	094 941162	Board, parquet	Y	Y	legislative issues	market	
24. Ijevan wood processing plant	CJSC	Tavush	Ijevan	40 Ankakhutyun, t. Ijevan	Robert Ghazaryan, Director	0263 31416	Veneer, furniture	Y	Y	initiative committee, lead, legislative, tech. support programs	raw supply, transparent environment	
25. Edgar Manukyan	SE	Tavush	Ijevan	29/12 Ankakhutyun, t. Ijevan	Edgar Manukyan	093 112131	Board, furniture	Y	Y	initiative committee	raw supply, consolidated transportation	currently not working
26. "Rubin"	LLC	Tavush	Ijevan	23/47 Ankakhutyun, t. Ijevan	Artur Mardanyan, Director	093 415330	Construction board	Y	Y	initiative committee	market, legislative	currently not working
27. "GAHARM"	LLC	Tavush	Ijevan	v. Achajur	Hamlet Gevorgyan	093 635333		Y	Y	initiative committee	market	currently not working
28. "Beritutun" Ijevani mijshranayin baza	OJSC	Tavush	Ijevan	v. Azatamut	Pavel Tsutsulyan, Director	091 013551	Board, parquet	Y	Y	initiative committee	market, finance, raw supply	
29. "MGAALAA"	LLC	Tavush	Ijevan	v. Getahovit	Grisha Sargsyan, Director	091 415395	Board, furniture	Y	Y	initiative committee	market, finance	

30. "MOES"	LLC	Tavush	Ijevan	2 A. Vasilyan, t. Ijevan	Karlen Ordinyan	0263 35363	Veneer	Y	Y	lead, legislative issues, seek for tech. support programs	market, equipment, training	
31. "Astghablur"	LLC	Tavush	Ijevan	n/a	n/a		n/a	N				
32. Tornik Ghalumyan	SE	Tavush	Ijevan	v. Sevqar	Tornik Ghalumyan		n/a	N				
33. Shamir Ordinyan	SE	Tavush	Ijevan	v. Lusadzor	Shamir Ordinyan		n/a	N				
34. "Astghasar"	LLC	Tavush	Ijevan	n/a	n/a		n/a	N				
35. Hrayr Mirumyan	SE	Tavush	Ijevan	v. Getahovit	Hrayr Mirumyan		n/a	N				
36. Armen Aslanyan	SE	Tavush	Ijevan	t. Ijevan	Armen Aslanyan		n/a	N				
37. Andranik Khojumyan	n/r	Tavush	Ijevan	t. Ijevan	Andranik Khojumyan		n/a	N				
38. Artur Zargaryan	n/r	Tavush	Ijevan	v. Ditavan	Artur Zargaryan		n/a	N				
39. Mkrtych Pashinyan	SE	Tavush	Dilijan	t. Dilijan	Mkrtych Pashinyan	077 342089	Parquet	Y	Y	member, experience exchange	finance, raw supply	
40. "ABSARAR"	LLC	Tavush	Dilijan	v. Haghartsin	Nina Hovhannisyan, Director	091 767734	n/a	Y	Y	member	raw supply, market	rented out
41. "Dilijan furniture plant"	LLC	Tavush	Dilijan	t. Dilijan	Anjelot Nalbandyan, Director	094 949749, 0268 24749	n/a	N	Y	member, experience exchange	finance, raw supply	
42. Ashot Aleksanyan	n/r	Tavush	Dilijan	t. Dilijan	Ashot Aleksanyan		n/a	N				
43. Benik Muradyan	n/r	Lori	Tumanyan	v. Dsegh	Benik Muradyan	094 142500	Chairs	Y				
44. Grigor Matoyan	SE	Lori	Tumanyan	v. Dsegh	Grigor Matoyan	093 809869	Chairs	Y	Y	member	raw supply	
45. Pashik Kharatyan	n/r	Lori	Tumanyan	v. Dsegh	Pashik Kharatyan	091 771262	Chairs	Y	Y	member	raw supply	

46. Garegin Arakelyan	SE	Lori	Tumanyan	v. Dsegh	Garegin Arakelyan	093 139333	Chairs	Y	Y	member	raw supply	
47. Suren Atyan	n/r	Lori	Tumanyan	v. Dsegh	Suren Atyan	094 222654	Chairs	Y	Y	member	raw supply	
48. Varujan Egikyan	n/r	Lori	Tumanyan	v. Dsegh	Varujan Egikyan	093 775593	Chairs	N	Y	member	raw supply	
49. Sos Vanyan	SE	Lori	Tumanyan	v. Dsegh	Sos Vanyan	091 212947	Chairs	N				
50. Sos Kocharyan	n/r	Lori	Tumanyan	v. Dsegh	Sos Kocharyan	094 212370	Chairs	N				
51. Kamo Kharatyan	n/r	Lori	Tumanyan	v. Dsegh	Kamo Kharatyan	094 010075	Chairs	N				
52. Babken Muradyan	n/r	Lori	Tumanyan	v. Dsegh	Babken Muradyan	094 27737	Chairs	Y				
53. Nikol Dalakyan	n/r	Lori	Tumanyan	v. Dsegh	Nikol Dalakyan	093 189299	Chairs	N	Y	member	raw supply	
54. Shmavon Sargsyan	SE	Lori	Tumanyan	n/a	Shmavon Sargsyan		n/a	N				
55. Gevorg Marukyan	SE	Lori	Tumanyan	n/a	Gevorg Marukyan		n/a	N				
56. "Pambaketsi eghbaymer"	LLC	Lori	Tumanyan	v. Pambak	Arayik Gevorgyan, Director	094 327777 (Artush)	Timber, parquet	Y				
57. Surb luys	Coop	Lori	Alaverdi	t. Alaverdi	Levon Paranyan, Director	091 797006	Carved furniture	Y	N			
58. Hanar	LLC	Lori	n/a	n/a	n/a	n/a	n/a	N				
59. "Vost"	LLC	Lori	Vanadzor	19A Dprots, t. Vanadzor	Yurik Tovmasyan, Director	091 711535	Furniture	Y		initiative committee, lead, finance support, legislative, tech. support programs	market, raw supply, technology	
60. "Hamlet ev Gevorg"	n/r	Lori	Vanadzor	t. Vanadzor	Hamlet Melkumyan	093 105055 (Hamlet) 093 087708 (Gevorg)	Dinning & coffee tables	Y				
61. "Grig ev Shin"	LLC	Lori	Vanadzor	10/33 Tigran Mels, t. Vanadzor	Arsen Torosyan, Director	091 267773	Timber, wooden boxes	Y	Y	initiative committee, advise	raw supply, market, staff, training	

62. "Anashar"	LLC	Lori	Vanadzor	t. Vanadzor	n/a		n/a	N	Y	member	raw supply, equipment	
63. "Alikhanyan Invest"	LLC	Lori	Vanadzor	t. Vanadzor	n/a		n/a	N	Y	member	network, info, raw supply	
64. "Arayik ev Artur Hakobyanner"	LLC	Lori	Vanadzor	67/B Narekatsi, t. Vanadzor	Samvel Hakobyan	077 257777	Timber, parquet	Y				
65. "Van Decor"	LLC	Lori	Vanadzor	t. Vanadzor	n/a		n/a	N				
66. "Va Ba"	LLC	Lori	Vanadzor	2 Gortsaranayin, t. Vanadzor	Olga Avagyan, Director	0322 40013	n/a	N	Y	initiative committee, lead, advise	market	
67. "Neruj"	LLC	Lori	Vanadzor	1/7A Demirchyan, t. Vanadzor	R. Voskanyan, Director		n/a	N				
68. Shahen Hakobyan	n/r	Lori	Vanadzor	Shahumyan, t. Vanadzor	Shahen Hakobyan	093 309460	Furniture, carving	Y				
69. "K. Arast"	LLC	Lori	Alaverdi	v. Shnogh	Vardan Petrosyan, Director	0253 62727	Timber, parquet	Y				Not working
70. "Argos"	LLC	Lori	Stepanavan	1 Baghramyan, t. Stepanavana	Samvel Margaryan, Director	091 117733, 099 999906	Furniture, doors, windows	Y	Y	member	equipment, market, promotion	
71. "Kabinet"	LLC	Lori	Stepanavan	t. Stepanavan	Marat Tokhyan		n/a	N				Working in Yerevan
72. Pioneer Palace workshop	CJSC	Syunik	Sisian	Pioneer Palace, t. Sisian	Armen Arakelyan, manager	094 369164	Board, beehives	Y	Y	experience exchange	finance, equipment, market	
73. Hrach Karapetyan	n/r	Syunik	Sisian	t. Sisian	Hrach Karapetyan	0283 3917, 094 166753	Furniture	Y	Y	member	raw supply	
74. Mikayel Simonyan	n/r	Syunik	Sisian	t. Sisian	Mikayel Simonyan	093 573772	Board, parquete, furniture	Y	Y	member	finance, equipment, training	
75. "Andranik"	LLC	Syunik	Goris	23 Orbelyanner, t. Goris	Sevada Malintsyan, Director	0284 21339	n/a	N				
76. Samvel Harutyunyan	SE	Syunik	Goris	39 Ashtoi, t. Goris	Samvel Harutyunyan	0284 24219, 093 343893	Parquete, furniture	Y	Y	member	market	

77. Nairi Mejlumyan	SE	Syunik	Goris	110 Khorenatsi, t. Goris	Nairi Mejlumyan	0284 22079, 093 923758	n/a	N			
78. Mher Badiryan	SE	Syunik	Goris	8 Tumanyan, t. Goris	Mher Badiryan	0284 23727, 093 022265	n/a	N			
79. "Eldogar"	LLC	Syunik	Goris	30 Yolyan, t. Goris	Edgar Elyazyan	0284 22866, 093 426693	n/a	N			
80. Artur Zakaryan	SE	Syunik	Goris	33 Kamar, t. Goris	Artur Zakaryan	0284 22893	n/a	N			
81. Karen Javahiryanyan	n/r	Syunik	Goris	2/11 Arevshat, t. Goris	Karen Javahiryanyan	0284 21630	n/a	N			
82. Vardan Khurshudyan	n/r	Syunik	Goris	t. Goris	Vardan Khurshudyan	077 307438	Parquete, furniture	Y	Y	member	market, raw supply
83. Mihran Mirumyan	n/r	Syunik	Goris	t. Goris	Mihran Mirumyan	0284 21041, 094 369260	Carved furniture	Y	Y	member	market, equipment
84. Karo Harutyunyan	SE	Syunik	Kapan	26/24 Minas Papyan, t. Kapan	Karo Harutyunyan, Samvel Harutyunyan	077 327930	Door, window, board	Y	Y	member	raw supply, experience exchange
85. Artur Khachatryan	n/r	Syunik	Kapan	10/40 Minas Papyan, t. Kapan	Artur Khachatryan	094 164713	Door, window, board	Y	Y	member	market, technology, equipment
86. Samvel Harutyunyan	n/r	Syunik	Kapan	16/40 Shahumyan, t. Kapan	Samvel Harutyunyan	099 131013	Doors	Y	Y	member	raw supply
87. "Kashkar"	LLC	Syunik	Kapan	t. Kapan	Varos Veziryanyan, Director	093 122067	Board	Y			
88. "Lapyur"	LLC	Syunik	Kapan	34/1 Gortsaranayin, t. Kapan	Marat Simonyan, Director	077 438522, 091 438522	Rifle but	Y	Y	member	raw import
89. Samvel Arakelyan	n/r	Syunik	Kapan	Shahumyan, t. Kapan	Samvel Arakelyan	094 357383	Door, window, board, furniture	Y	Y	initiative committee, advise	market

### 6.5.2 Surveyed HayAntar SNCO branches

Company	Legal status	Contact person	Address	Contacts	Production
HayAntar Dsegh branch	SNCO	Avagyan Martun, director	v.Dsegh, Lori marz	0253 62722, 093 753540	logs, parquet
HayAntar Gugark branch	SNCO	Anatoly Mkhitarian, director	1 Busabanakan str., t.Vanadzor, Lori marz	094 074424, 0322 22150	logs
HayAntar Lalvar branch	SNCO	Kamo Shahnazaryan, director	t. Akthala, r/w station, Lori marz	0253 61790	logs, timber
HayAntar Jiliza branch	SNCO	Aram Baroyan, director	t.Shamlukh, Lori marz	093 179997	logs
HayAntar Stepanavan branch	SNCO	Arsen Mikoyan, director	68 G.Njdehi str., t.Stepanavan, Lori marz	093 189573	logs, timber
HayAntar Tashir branch	SNCO	Nodar Baroyan	15 Yerevanyan str., t.Tashir, Lori marz	093 193507	logs, timber
HayAntar Noyemberyan branch	SNCO	Chilingaryan Vasil, director	v.Koghb, Tavush marz	0266 23920	timber
HayAntar Artsvaberd branch	SNCO	Adamyant Avetik, director	26 Taushi str., t.Berd, Tavushi marz	0267 21227, 0267 21283	lumber, timber, parquet
HayAntar Ijevan branch	SNCO	Artsrun Khaltakhchyan, director	28 Aghayan str., t.Ijevan, Tavush marz	0263 35797, 0263 36335, 093 184888	timber, lumber
HayAntar Sevkar branch	SNCO	Ashot Yeritsyan, director	v.Sevkar, Tavush marz	0263 61313, 093 189481	timber, lumber
HayAntar Syunik branch	SNCO	Grisha Hayrapetyan, director	2 lane Norkyanq str., t.Goris, Syunik marz	0284 22120, 093 189022	
HayAntar Kapan branch	SNCO	Vladik Mirzoyan, director	38/2 Gortsaranayin str., t.Kapan, Syunik marz	0285 60938, 093 217172	