



# The Economics of Armenia's Forest Industry

## SYNOPSIS

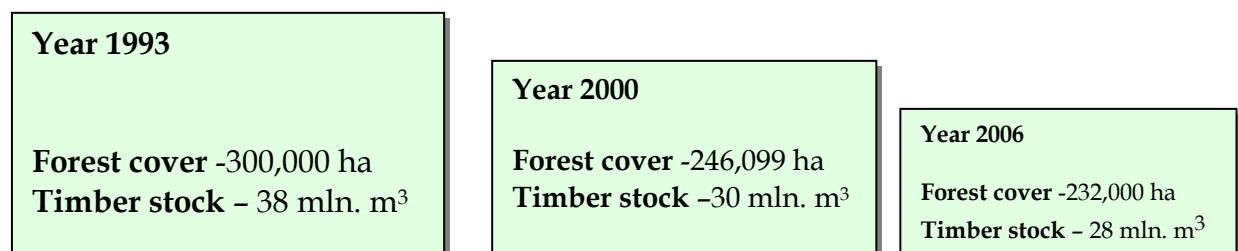
Armenia is one of the *low forest-covered countries*, as its forests cover less than 10% of the total land area. Hence the continuing deforestation of already scarce forest resources presents a significant environmental threat, combined with destroying consequences for habitats, irreversible losses of biodiversity, lost revenue of the government.

Logging for industrial wood products and fuelwood is a key cause of deforestation. Much of this logging takes place in violation of the Forest Code and other legislation designed to protect forests against exploitation. The illegal extraction and trade in wood is a multimillion dollar practice going on in the country for more than a decade.

This paper provides a perspective on the volume of illegal logging and describes how illegal logging is intertwined with the wood processing industry and the livelihoods of the households.

The following figure summarizes the dynamics of forest cover and timber stock according to a satellite image data analysis.

### Deforestation math:



	Period	Timber stock m <sup>3</sup>
The annual average net decrease of timber stock	1993 - 2000	1,140,000
	2000 - 2006	310,000
The <i>estimated</i> annual natural growth of timber stock volume	1993-2006	390,000

The legally permitted volume of annual timber harvest <sup>1</sup>	-	70,000
The officially recorded volume of fire disruptions (on average)	-	2,500
The <i>estimated</i> <b>annual</b> average illegal logging	1993-2000	1,460,000
	2000-2006	627,500

Source: The figures for the years 2000 and 2006 are the EV estimates according to the Landsat data, while the source of 1993 figure is Ter-Ghazaryan et al. 1995

The annual net decrease of timber stock (around 700,000 m<sup>3</sup> in 2000 - 2006) illustrates real volumes of logging, while the officially permitted logging volume is around 70,000 m<sup>3</sup>.

The following table is an illustration of the legal and illegal market for wood products in numbers. The official data is provided for the reasons of comparison.

	Timber processing / official/	Timber processing /estimate/	Timber exports / official/	Timber exports /estimate/	Fuelwood /official/	Fuelwood /estimate/
Average annual volume; (1,000 m <sup>3</sup> )	6,6	339	8	12	63	291
Average annual volume; (USD)	10 mln.	132 mln.	1 mln.	2,7 mln.	2,5 mln.	7,5 mln

Source: EV estimates of the real market volumes for the year 2005 compared to the official statistics provided by the National Statistical Service of the RA.

### Fuelwood consumption

The household consumption of fuelwood is driven primarily by poverty. According to the present study, about 9% of the total households consumed fuelwood for cooking and heating purposes in 2006.

Fuelwood is utilized for barbecue making purposes by the restaurant businesses of the country, which consume significant levels.

The consumption of fuelwood has a decreasing trend in accordance with the economic growth of the country: the main factors reducing the fuelwood consumption volumes are the increasing gas supply and growing levels of household prosperity, as well as the progressing remoteness of the forests.

### The wood processing industry

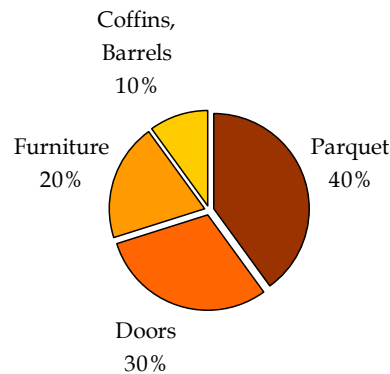
The wood processing industry is comprised of more than 300 small and medium-sized entities engaged in activities related to processing, production, trade and consumption of forest products.

The wood processing industry is mainly based on illegally harvested timber inputs. The real estimates of the industry exceed the officially accepted figures by more than 10 times. A significant portion of unprocessed timber is being exported from the country, the real figures exceeding the official numbers by more than three times.

<sup>1</sup> During the period of energetic crisis, the annual legal permitted harvesting volume (Ter-Ghazaryan, K. et al. 1995) was raised to 100,000 m<sup>3</sup> in 1993, of which about 45,000 m<sup>3</sup> was allocated for fuelwood. In addition, the plan called for the collection of snow-break trees in order to somehow relieve the energy needs of the population. In 1994 approximately 200,000 m<sup>3</sup> quota was allocated among the several forest enterprises.

The **wide gap in cost** (about 73,000 AMD per m<sup>3</sup> in case of industrial roundwood, and 1,500 AMD per m<sup>3</sup> of fuelwood) between legitimate, legally procured timber and illegal timber provides significant financial **incentives** for illegal logging.

The following figure illustrates the estimated structure of the wood processing industry, the average annual revenue of which was estimated \$132 mln.



### Proposed solutions

1. Ease the access of gas supply for the rural residents through micro credits and lessening the initial installment costs.
2. Exempt the industrial roundwood imports from VAT.
3. Establish an integrated timber market and wood industry association.
4. Impose an export ban on industrial roundwood.
5. Facilitate the tree farming.
6. Promote recycling and renewable energy production.
7. Enhance eco-tourism, NWFP and forest services sectors.
8. Develop green consumerism.
9. Establish an independent Monitoring and Information System Centre (MISC) on National Forest Resources or restructure and upgrade the current FSMC.
10. Implement forest certification and the chain of custody tracking procedures.
11. Tighten the policy and regulation enforcement.
12. Integrate forest sector development projects and initiatives.
13. Control financial flows of the wood processing industry.
14. Consider reorganizing the governance structure of Armenian State Forest Service (Hayantar) to include other key stakeholders in the decision-making process.