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Geneva Timber and Forest Study Paper

The LVIV FORUM ON FORESTS IN A GREEN ECONOMY

Actions and Challenges for
the Countries of Eastern Europe
and Northern and Central Asia

32



UNITED NATIONS

Geneva Timber and Forest

Study Paper 32

The Lviv Forum on Forests in a Green Economy for Countries in Eastern Europe, Northern and Central Asia



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Note

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Abstract

The Lviv Forum on Forests in a green economy for countries in Eastern Europe, Northern and central Asia, a country led initiative in support of the UN Forum on Forests, reviewed experience and explored opportunities to enable the forest sector in this region to make a full contribution to the emerging green economy. Participants reviewed issues and challenges and made recommendations at the country group level on sustainable forest industries and products, forest ecosystem services and the role of forest in low carbon economies, employment and livelihood opportunities, and forest governance in a green economy. Finally the Forum approved the Lviv Vision and message on the forest sector in a green economy, including ten clear recommendations to governments and the forest sector in the region.

Keywords

Balkans, Eastern Europe, employment, forest ecosystem services, forest sector policy, green economy, governance, low carbon economy, North and Central Asia, sustainable forest management.

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Foreword by the Head of the State Forest Resources Agency of Ukraine (host country)

From 11 to 14 September 2012 the International Forum on "Forests in a Green Economy" for Eastern Europe, Northern and Central Asia was held in Lviv, one of the most famous Ukrainian cities. At the Forum over 130 forestry professionals from 34 countries, including representatives of forest administrations, scientific organizations, politicians and international experts gathered together to share experiences and identify opportunities for the application of the concept of a green economy in the forestry sector.

The Forum worked in both plenary sessions and working group discussions that made it possible for participants to get more deeply acquainted with the concept of a green economy, the related opportunities and emerging risks.

The Forum participants also had the opportunity to familiarize themselves with forest management in Ukraine in the following areas - close to nature forestry, forest recreational services and wood processing. The level of forest management was highly rated by the guests of the Forum. Among other things, the Lviv Forum on Forests in a Green Economy has become for Ukraine a solid foundation for enhancing the capacity of its forest sector representatives and by making available the advanced experience of the participating countries. The Forum also set the foundation for productive work on forming a consolidated dialogue that will ensure the development of the green economy, and strengthened mutual cooperation between countries in the region that are interested in systemic changes and the development of forest management.

The main results of the Forum's working group discussions and its Vision and Messages for Action have already been presented in the framework of the FAO Committee on Forestry in September 2012 and the UNECE Timber Committee meeting in October 2012. In order to disseminate the main results of the Forum a special event is being planned in the framework of the 10th UN Forum on Forests (UNFF) session to be held in April 2013 in Turkey.



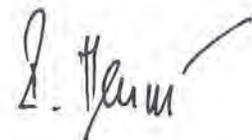
*Viktor Sivets
Head of State Forest Resources
Agency of Ukraine*

Foreword by the Head of Forest Division, Federal Office for the Environment, Switzerland

We are extremely pleased that the Governments of Ukraine and Switzerland could jointly prepare the Lviv Forum as a Country-led Initiative in support of the United Nations Forum on Forests UNFF. We thank all who have contributed to make the Forum happen and we are convinced that it will be of value for the entire region. It was a pleasure to work with the representatives of the Ukrainian Government, but also with the secretariat of UN-ECE/FAO in Geneva, UNFF in New York and with the Liaison Unit of Forest Europe in Madrid. Special thanks go to the Director of UNFF, Ms Jan McAlpine, for her continued support both before and during the Forum.

Switzerland has eight years of experience in collaborating on the FORZA project between the Ukraine Forest Administration and the Swiss Agency for Development and Cooperation (SDC), covering different issues in the field of forests in a green economy. The results of this successful collaboration were an excellent basis for preparing and implementing this workshop.

The Lviv Forum was an exciting platform to further clarify the concept of a green economy, how forests can contribute to it and whether it can be made operational in the countries of the region. The results will also be presented at different global processes, including the United Nations Forum on Forests, the climate change negotiations, the Committee on Forestry of FAO. Additionally this will be a contribution to the work programme of Forest Europe and the implementation of the action plan of the forest sector in a green economy, developed under the UNECE Timber committee and the European Forest Commission of FAO.



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Executive Summary

European forest sector policy makers are under increasing pressure.

Background and objectives

This book presents the results of the Lviv Forum on Forests in a Green economy: Actions and Challenges for the Countries of Eastern Europe and Northern and Central Asia, which took place in Lviv, Ukraine from 11 to 14 September 2012. The Forum reviewed what the emerging green economy means for the special circumstances of the countries in Eastern Europe and Northern and Central Asia, and agreed on a vision and message for the future. The Forum is a Country-Led Initiative of the United Nations Forum on Forests. Given the structure of the discussion, based on and led by the elements of the Action Plan for the Forest Sector in A Green Economy developed under ECE-FAO, it is also an important contribution to this work. Given the relevance of the topic at the global and regional level, the forum also contributes to the work undergoing under the FAO Committee on forestry (COFO) and Forest Europe.

The forest sector in a green economy

The forest sector in a green economy is a forest sector which contributes to the emerging green economy by improving human well-being and social equity while significantly reducing environmental risks and ecological scarcities. In every aspect of its activities, it minimises carbon emissions, uses resources efficiently and is socially inclusive. The Action Plan on the Forest Sector in a green economy in the ECE region, being prepared under the leadership of UNECE/FAO, proposes a series of objectives and possible actions to achieve these objectives, to be implemented by international





organisations, governments of member states, the private sector, civil society and other stakeholders. The Forum based its work on the Action Plan.

The forest sector in Eastern Europe and Northern and Central Asia (EENCA)

The region has a fifth of the world’s forests, mostly in one country, Russia, which accounts for 90% of the region’s forests. Much of central Asia has very low forest cover. With a few exceptions, the forest sector accounts for only a small part of the total economy, and most countries are dependent on imports for their supply of forest products. Almost all countries in the region were formerly part of the USSR or Yugoslavia and are in a transition process with far-reaching consequences for the economy and society.

The main issues and challenges for the forest sector in the region are:

- Remoteness and lack of infrastructure
- Transition and changes in structures and society, including the need to improve governance
- Illegal logging
- Lack of and threat to protective functions because of low forest cover
- Lack of priority for the forest sector in national development plans.

Conclusions and recommendations

Most of the time during the Lviv Forum was devoted to detailed and lively group work, participants split into four regional working groups: Balkans, Eastern Europe, North and

Central Asia, Ukraine. Each group prepared conclusions and recommendations under four themes:

- Sustainable forest industries and products
- Forest ecosystem services and the role of forests in low carbon economies
- Employment and livelihood opportunities in the forest sector
- Forest governance in a green economy

The conclusions of each group are reproduced in this publication.

The Forum adopted a Vision and message, which has ten main points:

1. Capture the true values of forests
2. Use all resources efficiently
3. Be energy-wise
4. Make jobs decent and green
5. Address threats to forests
6. Define governance principles and stick to them
7. Update skills
8. Innovate and build partnerships
9. Cooperate across boundaries
10. Make the case for the forest sector’s role in the green economy

Introduction

Background and objectives of the Forum

The forest sector can make a significant contribution to national sustainable development in the countries of Eastern Europe, Northern and Central Asia (EENCA). In particular, the forest sector can play a leading and exemplary role in the emerging green economy in the region. However there are many challenges to be overcome before this potential is reached. The objective of the Lviv Forum was to explore the challenges and possible solutions, at the regional level, by bringing together stakeholders, policy makers and international experts to share experiences and explore opportunities to implement the green economy in the forest sector of the region. The overall aim is to make the concept of the forest sector in the green economy meaningful, operational and beneficial for forest management and forest communities in the countries of Eastern Europe, Northern Europe and Central Asia.

The specific objectives of the Forum were:

- To share and discuss lessons learned from international and national experiences, including regional initiatives for the implementation of green economy concepts and requirements in the forest sector.
- To enhance the understanding of key trends and issues in: forest goods and services, income generation from forest-based activities, energy demands on forests, the role of forests in carbon economies, biodiversity conservation, the sustainable use of forests and related topics.
- To strengthen cooperation and to enhance partnerships among countries and key stakeholders as they address common challenges; and
- To recommend actions to strengthen forest policies, institutions and practices that support the green economy, in order to bridge the gap between the existing theoretical discussions and practical needs.

The Forum was a contribution to UNFF and the outcomes, especially the recommendations, will be presented to UNFF 10, 8-19 April 2013, Istanbul, Turkey and to a wider public in 2013. They will also be transmitted to national governments in the EENCA region. The outcomes (analysis, contributions by participants, discussions, recommendations) are being made available in a consolidated form to make them as useful as possible to Forum participants and a wider audience, over a longer period.

These proceedings will:

- Summarise the main concepts relevant to the forest sector in the green economy, notably through the Action Plan on the topic prepared under the leadership of ECE/FAO
- Describe briefly the main features of the forest sector in the EENCA region.
- Identify a few major issues and challenges to the forest sector in the region
- Present the conclusions of the regional working groups on the four topics addressed at the Forum
- Present the vision and message agreed by participants



Data sources and quality

The analysis in the paper is based on public international sources, mostly FAO, using international definitions, and so may not correspond exactly to data published at the national level, using national definitions. The main sources are the FAO Global Forest Resource Assessment 2010 (FRA 2010) and the FAO statistical database (FAOSTAT)¹. The annex tables 1-7 present data by country, which are summarised by country group in chapter 2. No attempt has been made to “correct” the published data by presenting subjective estimations, so that some anomalies are visible, including negative apparent consumption in a few countries (often due to under-reporting of production data). Data are particularly weak for wood energy use, and in countries where the forest sector accounts for a very small share of GDP. Shortages of information represent one of many obstacles to sustainable forest management in the region.

The term “forest sector” is used throughout this book to refer to the complex of activities related to, and dependent on, the forest, from silviculture and forest management to the production, trade, consumption and recycling of forest products. Conceptually the “forest sector” includes all activities and professions linked to the forest, including also management of forests in conservation areas, forest recreation and tourism, education and training of foresters and forest workers, application of forest law, communication on forest issues etc. However, when it is necessary to quantify the activities of the “forest sector”, notably to relate the sector to GDP or to measure employment or value added in the sector, it is necessary to describe certain groups of activities on the basis of official statistics. The definition of “forest sector” used internationally covers only the following ISIC/NACE headings;

02: Forestry, logging and related services

20: Manufacture of wood and articles of wood

21: Manufacture of paper and paper products.

Therefore estimates of economic activity or employment of the forest sector in this book are underestimates, although it is not possible to estimate the extent of this error.

Country groups

The countries of the region have been split into four country groups, for purposes of analysis, with quite different characteristics (as well as significant differences within the country groups). The four groups used in the descriptive part of this book are as follows:

¹ *Global Forest Resource Assessment 2010. FAO Forestry Paper 163. Statistics available for download at <http://faostat.fao.org/site/626/DesktopDefault.aspx?PageID=626#ancor>*

Balkans: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Montenegro, Romania, Serbia, The former Yugoslav Republic of Macedonia.

Eastern Europe: Belarus, Moldova, Russian Federation, Ukraine.

North and Central Asia: Kazakhstan, Kyrgyzstan, Mongolia, Tajikistan, Turkmenistan, Uzbekistan.

Caucasus and Turkey: Armenia, Azerbaijan, Georgia, Turkey.

Almost all of the countries in the region were part of the Soviet Union or the former Yugoslavia, so data series only start in the mid 1990s, later in a few cases, when the countries became independent.

Units and abbreviations

EENCA: Eastern Europe, North and Central Asia

FAO: Food and Agriculture Organisation of the United Nations

FAOSTAT: FAO Statistical database

FOWECA: FAO Forest sector outlook study for West and Central Asia²

FRA 2010; FAO Forest Resource Assessment 2010

Ha: hectare

M³: Cubic metre

M³ EQ: Cubic metre, equivalent wood in the rough³.

M³ ob: Cubic metre over bark

M.t.: Metric ton (1000 kg)

PES: Payment for Ecosystem services

SME: Small and medium size enterprises

SFM: Sustainable forest management

UNECE: United Nations Economic Commission for Europe

UNFF: United Nations Forum on Forests

Acknowledgements

The Forum was made possible by close cooperation between the host and donor countries, Ukraine and Switzerland, supported by

² *People, forests and trees in West and Central Asia. Outlook for 2020. FAO Forestry Paper 152*

³ *The volume of wood used to manufacture a product, estimated by using standard conversion factors. This is a standard technique to aggregate consumption or production of different forest products in terms of the raw material need to produce them*



international organisations led by UNECE/FAO, UNFF and Forest Europe.

The following individuals and organisations made major contributions to the success of the Forum.

Victor Sivets, Head of the State Forest Resource Agency led the organisation for the host country. A team from the forest agency led by Lyuba Polyakova, leader of the department of science and international relations, prepared the ground and took organisational responsibility for the Forum and the study visits.

The Ministry of Ecology and Natural Resources of Ukraine also contributed to the preparation.

Jürgen Blaser, global forest advisor of the Swiss Development Corporation, led the organising committee and shaped the Forum.

Guido Beltrani, the head of the Swiss Cooperation Office in the Ukraine for his support in the planning and implementation of the forum.

Christoph Duerr of the Swiss Forest Agency, Federal Office for the Environment, Vice-Chair of the UNECE Timber Committee, provided policy guidance and liaison for the Forum

Jelena Markovic of the Bern University of Applied Sciences assisted with the meeting organization and leading the working groups.

Lesya Loyko and her team from the NGO FORZA (Nataliya Voloshyna, Yuri Derbal, Radmila Ustych and Olga Kostyukova) made all the arrangements before, during and after the Forum, in close cooperation with HELVETAS Swiss Intercooperation, under the leadership of Patrick Sieber.

Jan McAlpine, Director of the UN Forum on Forests, sponsored the idea of the Forum and ensured close cooperation with UNFF, supported by Ryo Nakamura.

Paola Deda, Chief of the UNECE/FAO Forest and Timber Section, and her team (Dominique Reeb, Roman Michalak, Arnaud Brizay, Matt Fonseca, Kit Prins) prepared the background paper and organised and led the working groups. Dominique Reeb designed the H-form structure of the working groups. Kit Prins drafted the background paper and prepared this publication.

Irina Kouplevatskaya-Buttoud of FAO Forestry Department made essential input on governance issues

Ana Belen Noriega, Head of the Liaison Unit Madrid of Forest Europe, with Elena Estrade Wilkie, represented Forest Europe.

Finally, all the participants made a personal contribution to the success of the Forum, notably through active participation in the Working Groups. Their names can be found in the list of participants at the end of the publication.







2

Definition, concepts and Action Plan of the forest sector in a green economy⁴

2.1 What is the “green economy”?

The “green economy” has been the subject of intense debate, notably at the Rio + 20 Conference in June 2012. Some of the major challenges are to clarify the main green economy concepts and to define more clearly exactly how the green economy might be achieved in practice, with a specific approach for each sector.

The green economy, according to UNEP, is a system which results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. In its simplest expression, a green economy can be thought of as one which is low carbon, resource efficient and socially inclusive.

The forest sector in a green economy is, therefore, a forest sector which contributes to the emerging green economy by improving human well-being and social equity while significantly reducing environmental risks and ecological scarcities. In every aspect of its activities, it minimises its carbon emissions, uses its resources efficiently and is socially inclusive.

2.2 Action Plan for the Forest Sector in a Green Economy in the ECE region: background

Against this background an Action Plan for the Forest Sector in a Green Economy in the ECE region has been drawn up, after extensive stakeholder consultation and review, under the auspices of the UNECE Timber Committee and the FAO European Forestry Commission.

The Action Plan proposes a series of objectives for the forest sector in the ECE region, and possible actions to achieve these objectives, to be implemented by international organisations, governments of member states, the private sector, civil society and other stakeholders. It is not a work programme for those bodies but includes actions to be carried out by all actors, including governments, research, private sector and civil society and international governmental and non-governmental organisations. It is meant to inspire action and provide the basis for many organizations’ plans and activities to focus on forests in a green economy. The Action Plan may serve as the background to the Lviv Forum’s discussions of how the forest sector can contribute to the green economy in the EENCA region. It is being presented to the Timber Committee for review in October 2012 (ECE/TIM/2012/10). Its main features are summarised below and in the annex.

This Action Plan identifies an overall vision, strategies and a number of areas of activity (see annex 1). For each area of activity, it proposes specific actions, and identifies potential actors, who might contribute to achieving the stated objectives (see full document).

The Action Plan reflects the ideas of participants in the process but does not constitute a binding commitment by any participant.

The Action Plan addresses the forest sector in all of the UNECE region – Europe, including Russia, and North America – including how action in the region can contribute to solving global challenges, for instance addressing deforestation in the tropical regions through ECE region markets, but not actions undertaken by ECE region

⁴ The Action plan is still being developed. References here are of the version contained in document ECE/TIM/2012/10.



countries outside the region. For the purposes of the Action Plan, the “forest sector” includes the management of all forest functions, as well as the supply, consumption and trade of forest products and services: in other words, it is much wider than forest management and silviculture.

2.3 Vision and overall goal of the Action Plan

The Vision of the Action Plan is

In a green economy, the forest sector makes a maximum contribution to human well-being, through the supply of marketed and unmarketed forest goods and services, and the creation of revenue and livelihoods, while maintaining and developing forest ecosystem services on a sustainable basis within the context of a changing climate.

The forest sector protects the welfare of all stakeholders, including forest dependent indigenous peoples and the forestry workforce, uses all resources wisely and economically, and contributes to the mitigation of climate change through both sequestration and substitution.

Forest sector governance systems take into full account all of the ecosystem services provided by the forest, compensating suppliers for providing them whenever possible. Progress is monitored in a transparent way, and policies adjusted to reach agreed goals. The forest sector learns from other parts of the emerging green economy and shares its own experience with them, to mutual benefit.

The overall goal of the Action Plan is

The forest sector in the UNECE region makes the greatest possible contribution to the emerging green economy by improving human well-being and social equity while significantly reducing environmental risks and ecological scarcities. In every aspect of its activities, it minimises its carbon emissions, uses its resources efficiently and is socially inclusive.”

2.4 Strategies of the Action Plan

By 2020, the UNECE region forest sector is implementing all the following strategies:

- *It uses all its resources, especially those arising from the forest, wisely and economically, minimising waste, recovering, reusing and recycling as much as possible. It consumes only wood from forests which can demonstrate that they are managed sustainably.*
- *It contributes to mitigation of climate change by sequestering carbon in forests and forest products, and by substituting renewable wood-based products and fuels for non-renewable products and fuels.*
- *It cares for and builds up its workforce, developing the necessary skills and significantly improving the occupational safety and health of workers.*
- *It takes all externalities fully into account in policy making, introducing payment for forest ecosystem services when possible.*
- *It bases its governance on evidence-based decision making and the transparent monitoring of progress towards sustainable forest management. .*

2.5 What the Action Plan does

- 1) *It defines how the UNECE region’s forest sector should contribute to the development of a green economy and monitors progress in this respect.*
- 2) *It promotes the sharing and implementation of best practice concerning the green economy.*
- 3) *It promotes the development and implementation of policies for the forest sector which are effective in achieving goals, efficient in the use of resources and equitable in their treatment of all actors, both inside and outside the sector.*
- 4) *It communicates the potential of the UNECE region’s forest sector to policy makers, the general public and decision makers in other sectors.*

3

Overview of the forest sector in Eastern Europe and Northern and Central Asia

This chapter presents an overview of forests and the forest sector in the EENCA region.

3.1 Forest resources

The region includes a fifth of the world's forest resources, and the country with the single largest forest resource in the world – Russia, which, with nearly 810 million ha of forest, accounts for over 90% of the forests in the region. Nearly half of Russia is covered by forest, and in several other countries, many in the Balkans, forest cover is above the world average of 31%: Bosnia and Herzegovina, Belarus, Montenegro, Georgia, Bulgaria, Croatia and Serbia. However, many countries of the region are “forest poor”: all of the countries of Central Asia have forest cover below 10%, while in Armenia and Azerbaijan, forest cover is around 10%. According to available data, which are not always reliable, forest area is expanding in the Balkans (except Albania) and Turkey, and stable in Eastern Europe, but declining relatively fast in the Caucasus and Central Asia, except Kyrgyzstan. In parts of the region, notably Central Asia, there are large areas of range and pasture land with scattered tree growth which is under pressure from overgrazing and woodfuel demand.

Most of Russia's forests are remote, and natural, with very large areas of boreal forest. However, in the European part of the country, as well as in Belarus and Ukraine, the forests are managed more intensively. The southern limit of the Siberian forest is in northern Mongolia, which is otherwise mostly steppe and desert. Elsewhere in the region, forests are closely linked to mountains: the Carpathians, the Caucasus and the mountain ranges of the Balkan Peninsula. In the steppes of central Asia, as well as the Anatolian plateau in Turkey, there is little forest, leading to erosion and desertification.

The region's forests supply nearly 190 million m³ of industrial wood, but this is concentrated in a few producers: about 135 million m³ are produced in Russia, and 35 million m³ in another three countries (Romania, Ukraine and Turkey). Elsewhere, harvest of industrial wood is quite small. Woodfuel is important all over the region, although statistics are very weak. According to data supplied for FRA 2010, in 13 of the 27 countries in the region, woodfuel accounted for more than half of removals. Growing stock levels vary widely over the range, but are generally rather low, because of intense use, and, in many areas, harsh growing conditions (mountains, steppe, tundra). It is not possible to estimate the sustainability of wood supply by comparing removals with increment as FRA 2010 did not collect data on increment.

Even in forest-poor regions, many remote communities are dependent on wood for their energy needs. In many parts of the region, notably in the regions with low forest cover, the supply of environmental services is central to the forests' role. Many of the countries in the region reported that quite a high percentage of their forest area had protection of soil and water as its “primary designated function”⁵.

⁵ The concept of “primary designated function”, used in FRA 2010, is ambiguous, as forests have many functions, which are often supplied simultaneously, and without formal “designation”



Table 1 Forests and forest sector in the EENCA region

	Forest area	Forest cover	Annual rate of change	Growing stock per ha	Removals of industrial wood	Forest area per head	Share of forest sector in GDP
	million ha	%	%	m ³ /ha	million m ³	ha/capita	%
Balkans	19.6	32.8	0.7	176	23.2	0.4	1.35
Eastern Europe	827.8	48.1	0.0	103	152.9	4.1	0.87
North and Central Asia	23.0	4.2	-0.3	82	0.6	0.4	0.08
Caucasus and Turkey	15.3	16.1	0.7	141	12.0	0.2	0.68
EENCA Total	885.7	36.5	0.0	105	188.8	2.2	0.84

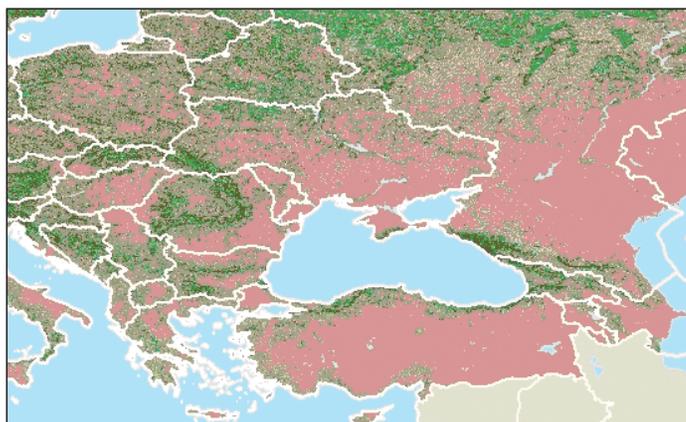
Source: FAO FRA 2010

Almost all the forests in the region are publicly owned and managed. However, some of the public land is leased or has been assigned to state farms or community management. According to the FAO outlook study for the region, ("FOWECA"⁶), commercial logging is forbidden in most countries of the Caucasus and central Asia and forest management is focused on the provision of environmental services, recreation and wildlife management.

Figure 1: the forests of Eurasia (source: FAO)



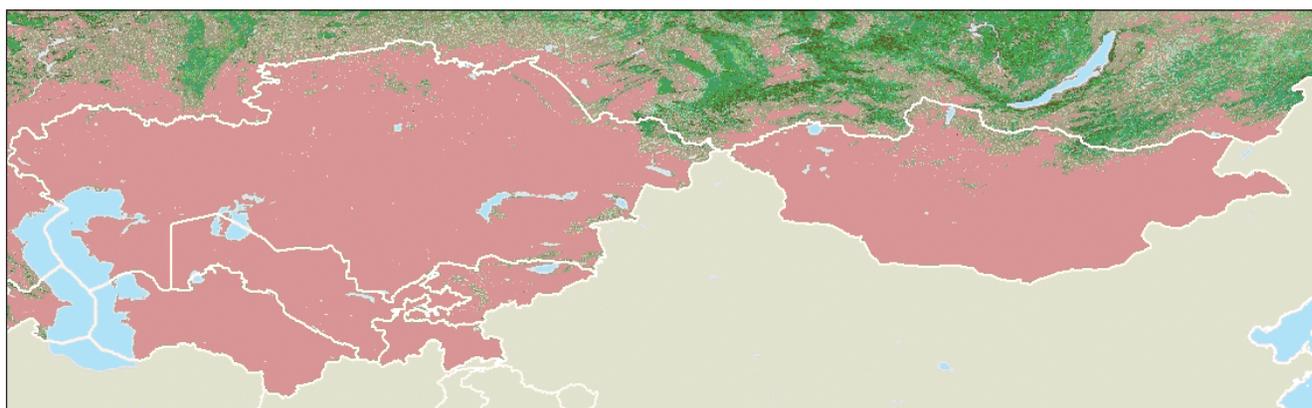
Figure 2: the forests of the Balkans, Eastern Europe, Caucasus and Turkey (source: FAO)



⁶ People, forests and trees in West and Central Asia. Outlook for 2020. FAO Forestry Paper 152



Figure 3: the forests of central Asia and Mongolia (source: FAO)



3.2 Forest products

Consumption of forest products in the EENCA region is quite low, at about 0.4 m³ EQ (cubic metres equivalent⁷)/head, compared

⁷ The amount of roundwood which would be needed to produce the sawnwood, panels and paper which are consumed, estimated by the use of conversion factors.

to the average for the UNECE region of about 1.1 m³ EQ/head. Although this may be an underestimate, as some production is not recorded, no country in the region is over the average for Europe. Consumption is very low in the poorest countries, in central Asia and the Caucasus.

Table 2 Apparent consumption of forest products in the EENCA region, 2009-2011 (3 year average)

	Sawnwood	Wood based panels	Paper and paperboard	Consumption forest products per head
	1000 m ³	1000 m ³	1000 m.t.	m ³ EQ
Balkans	3 261	3 622	2 438	0.40
Eastern Europe	14 524	11 354	8 559	0.38
North and Central Asia	2 939	1 042	806	0.17
Caucasus and Turkey	7 288	6 973	7 086	0.56
EENCA Total	28 013	22 992	18 888	0.39

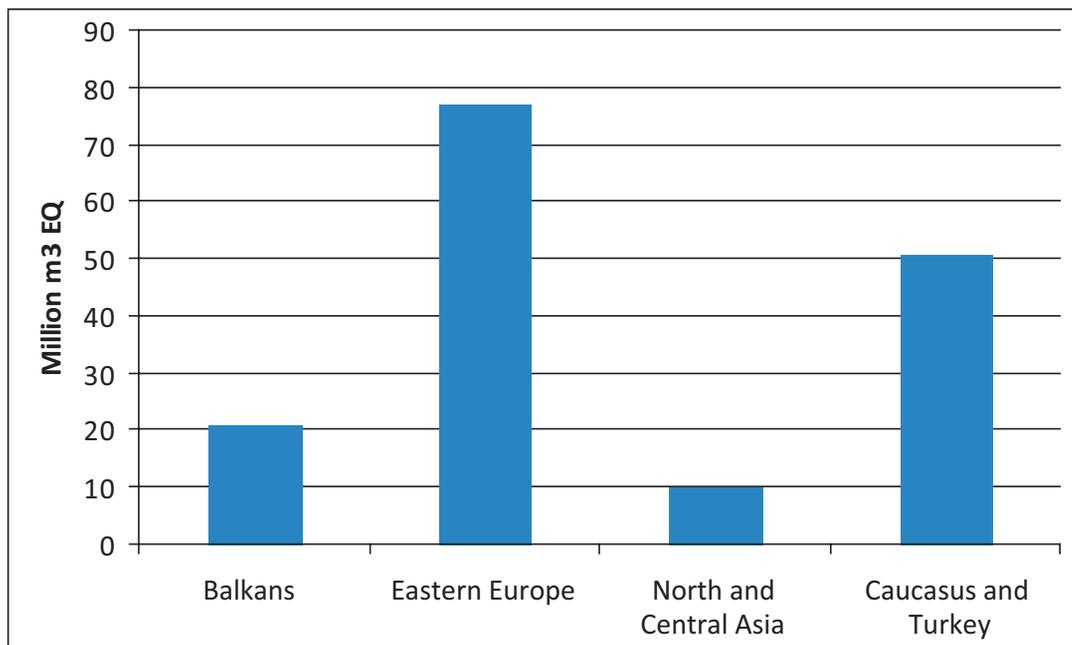
Source: FAOSTAT

As a consequence, most EENCA countries are dependent on imports for most of their consumption of forest products. In six countries, imports account for practically 100% of consumption. The region as a whole imports \$11.2 billion worth of forest products every year, compared to \$13.6 billion exports, a surplus of \$2.4 billion. However, if Russia is excluded, the region's net trade deficit is \$3.8 billion or about \$15 for each inhabitant. This pattern is partly the consequence of the development policies followed for

many years in the Soviet Union, where the production side of the forest sector was concentrated in Russia, while the forests of the central Asian and Caucasus republics were devoted to protection and biodiversity functions ("Group I" forests). Although it was not possible to compile direction of trade tables for the region, it is likely that many of the imports of Central Asia and the Caucasus are still supplied by Russia.



Figure 4 Consumption of forest products, total in the EENCA region, 2009-2011 (3 year average) (Source: FAOSTAT)



Production of forest products is concentrated in Russia and four other countries: Romania, Belarus, Ukraine and Turkey. These are the only countries whose industry produces more than 5 million m³ EQ of products.

Russia's main **exports** are of industrial roundwood (over 20 million m³, above all to China, but also to Finland), sawn softwood (mostly to western Europe, China, Japan and Egypt), wood based panels (world-wide), and pulp (world-wide, especially China). In 2010, Russian exports accounted for 4.7% of global forest products trade by value and 12% of world trade of sawn softwood. (Source: trade flow tables for UNECE/FAO Forest Products Annual Market Review). Elsewhere in the EENCA region, Belarus and Ukraine are significant exporters of industrial roundwood, Romania and Ukraine of sawnwood, Romania and Turkey of panels.

Table 3 Production of forest products in the EENCA region, 2009-2011 (3 year average)

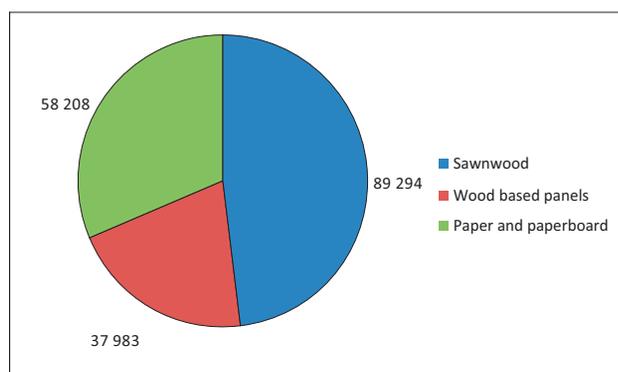
	Sawnwood	Wood based panels	Paper and paperboard
	million m ³	million m ³	million m.t.
Romania	4.1	2.9	0.3
Belarus	2.5	0.5	0.5
Russia	29.3 ⁸	10.2	7.5
Ukraine	1.8	1.8	0.9
Turkey	6.2	6.5	5.0
Other EENCA	3.4	1.3	1.9
Total	47.2	23.2	16.2

Source: FAOSTAT

⁸ It is quite likely that Russian production of sawnwood is significantly underestimated as many small to medium size mills producing for the domestic market are not included in the statistics. See ECE/FAO Forest Products Annual Market Review chapter on sawn softwood.



Figure 5 Production of forest products in the EENCA region, 1000 m³ EQ, 2009-2011 (3 year average) (Source: FAOSTAT)



Non-wood products are locally very important: nuts, apples, mushrooms and bay leaves are all mentioned, as well as a wide range of plant and animal based products. For instance there are 80 000 ha of pistachio forest in Turkmenistan, and Turkey produced 6626 tons of bay leaves in 2002. Russia reported over €250 million of marketed non-wood goods for the State of Europe's Forests 2011 (highest value for fruits and berries and wild honey). However, it is not possible to quantify the total value of non-wood forest products, or synthesize the data available.

3.3 The forest sector in society and the economy

The ratio between forest area and population strongly influences forest policy. There are 5.7 ha of forest for every Russian and

4.1 ha for every Mongolian, but elsewhere in the region the forest/population ratio is well below the world average of 0.6 ha/head.

In economic terms, compared to other sectors, the forest sector is not very important in most countries of the region. Those countries where the forest sector (defined as forestry and the forest industries, but not forest related activities like nature conservation, forest education, forest based recreation) accounts for more than 1% of GDP are all in the Balkans and Eastern Europe: Bosnia and Herzegovina (2.46%), Belarus (2.11%), Romania (1.74%), Montenegro (1.29%), Croatia (1.25%), Ukraine (1.16%). In Russia, the forest sector, although very large, only accounts for 0.79% of GDP, because of the size of other sectors of the Russian economy. Elsewhere the forest sector's share of GDP is very small, reducing its influence in overall development and budget decisions.

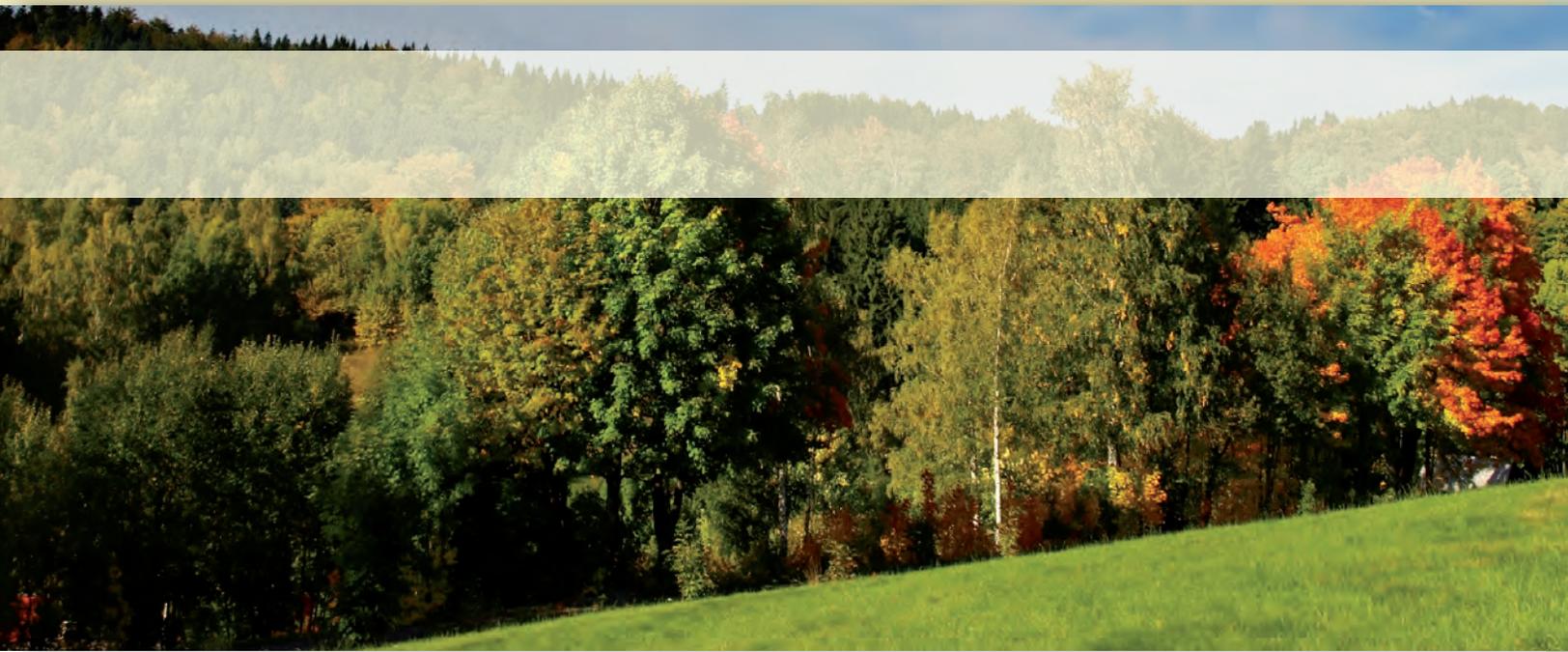
About 740 thousand people are reported as employed in forestry (i.e. forest management, logging and silviculture only) in the EENCA region, of which 383 thousand are in Russia and 152 thousand in Ukraine. If the forest sector as a whole (i.e. including forest industries as well as forestry) is considered, the reported total is 1.69 million people, of which 0.85 million in Russia. This does not take into account forest related employment (for instance nature conservation in forest areas, forestry education), nor forest dependent people, such as those living in "forest villages" in Turkey, who may number several million. Furthermore the ratio between number employed and forest area varies widely, and inexplicably⁹, so the workforce data are probably unreliable and may be considered minimum estimates.

Table 4 Trade in forest products in the EENCA region, 2009-2011 (3 year average)

	Net trade in m ³ equivalent	Exports by value	Imports by value	Net trade by value	Imports as % of apparent consumption
	1000 m ³ EQ	Million \$	Million \$	Million \$	%
Balkans	5 146	2 871	2 453	418	50.9
Eastern Europe	65 423	10 160	4 360	5 800	16.6
North and Central Asia	-7 565	19	1 019	-1 000	75.1
Caucasus and Turkey	-11 149	593	3 399	-2 807	27.2
EENCA Total	51 855	13 643	11 231	2 412	28.2

Net trade: + = net exports, - = net imports (Source: FAOSTAT)

⁹ For instance in the Balkans, a reasonably homogeneous region, the ratio ranges from 2 to 23 people employed per 1000 ha of forest.



4

Overview of the forest sector in Eastern Europe and Northern and Central Asia

Main issues and challenges in the region

4.1 Remoteness and lack of infrastructure

Large areas of the EENCA region are very sparsely populated: Russia is the largest country in the world, and both Mongolia and Kazakhstan have well over 100 million hectares of land area. In Russia, there are 12 ha of land per head, in Kazakhstan 17 ha and in Mongolia, 59 ha, although the average for the region without these three countries is 1.5 ha/head. Especially in Siberia and North and Central Asia, but also in other parts of the region, distances between settlements are very long, infrastructure is sparse and difficult to maintain. Large areas are inaccessible by normal means of transport. This poses serious problems to the societies in general, and to the forest sector in particular, as many forests are situated in these remote areas.

In remote regions, logistical difficulties significantly raise costs of all parts of forest management, from inventory to harvesting and transport of logs. Roads must be built, which may perhaps be used commercially only once in a rotation, transport of people and goods takes longer, the workforce is hard to hire and probably needs higher wages, fuel (for transport, but also for heating) must be brought in over long distances and so on. This leads to a situation where large areas of forest are not managed, and left in their natural condition. Russia reported to *State of Europe's Forests 2011* that 212 million hectares (26% of total Russian forest area) were "reserve forests", defined in a footnote to the enquiry as "remote forests which will not be developed in 20 and more years". These "reserve forests" provide many benefits including biodiversity conservation, non-wood products, recreation, scenic beauty and soil protection, but supply little revenue as this depends essentially on wood supply. These forests are not managed intensively.

There are various consequences of remoteness of forest resources:

- Costs are high, making the management of these forests uneconomic, depriving owners and society of revenue. The degree of economic inaccessibility may change over time, for instance if forest products prices rise, or technical solutions reduce costs, but this is unlikely to influence the basic situation in the short to medium term.
- Remote communities are deprived of the potential benefits of sustainable forest management, such as livelihoods and locally produced fuel and building material.
- Remoteness is usually positive for the biodiversity conservation functions. Protection functions are also preserved, except if there is large scale natural catastrophe, such as fire or insect infestation, which often cannot be addressed in very remote locations which have no significant human presence.

Taking all these aspects into account, the policy challenge for countries with large remote forest areas is to develop a strategy which achieves the real potential of the area and its inhabitants in a sustainable way, at an acceptable cost, and taking proper account of the environment. Such a strategy might identify areas which were to be left untouched, areas for intensive development (e.g. infrastructure creation, population, intensive management of forests and other resources), and areas where a less intensive approach is desirable. Such a strategy for remote forest areas would be included in a national forest programme.

With the collapse of Soviet era infrastructure, remote rural communities have been further isolated and measures should be taken to ensure the provision of essential services to limit and possibly reverse the rural migration towards urban centres. Without an adequate level of rural population, remote forest resources will be left unmanaged. One approach is to develop wood based energy systems in forested areas, thus simultaneously developing local markets for local wood, increasing local livelihoods, and reducing the need to import fossil energy over



long distances at high cost. However in forest poor regions, where energy demand is putting excessive strain on the forest resource (the situation in many parts of the EENCA region), the solution lies elsewhere, for instance in improved energy efficiency, making available affordable conventional fuels or in developing new wood sources (plantations).

Where wood production is part of the solution, the viability of markets must be considered. Sometimes, local or regional markets are not sufficient to absorb potential production. Where this is the case, the competitiveness of the products (quality, price) must be sufficient for them to be attractive on national or global markets. On world markets, it is very hard for wood from remote areas to compete with wood from well sited, intensively managed plantations with good growing conditions. This latter type of intensive plantation is accounting for an ever greater share of world wood production. If there is a forest resource, but the wood produced is not competitive on world markets, for instance because of excessive transport costs, consideration might be given to developing local markets, notably for wood energy.

The participants at the Lviv Forum identified the lack of infrastructure, notably forest roads, as one of the major obstacles to development of the forest sector and as a primary focus for investment.

4.2 Transition and changing structures and societies

All countries in the region, except Turkey, were centrally planned before 1990, and nearly all are former members of the USSR or Yugoslavia. The “transition” has taken different forms and gone at different speeds in different countries. Some EENCA countries are now fully market economies and members of the European Union, while others are still essentially centrally planned. The forest sector of course does not exist independently of wider social legal and economic changes, which cannot be discussed here. This section briefly outlines the main challenges of the transition process to the forest sector, as well as challenges for forest sector institutions.

- Forest ownership and tenure systems. In a few Balkan countries large areas of forest land have been returned to the original owners or their descendants or privatised. In most other countries of the EENCA region, however, all forests remain property of the state. However arrangements which are not centrally managed, notably long term leases of forest land (with obligations to the state, for instance for regeneration), or different types of community management, are sometimes possible. During the Lviv Forum, concern was expressed about the structure

of these arrangements (e.g. if they do not cover a whole rotation, allowing lessees to avoid regeneration obligations), and about weak monitoring and enforcement of leases. However, most regional working groups stressed the importance of keeping forests in public hands.

- Role of the state forest service. In the centrally planned system, the state forest agency played the central role both in developing forest policy and in managing publicly owned forests, often seeing forest management as a technical matter, to be determined by top down decision making, on the basis of forestry principles and ethics. Within the area designated as “Forest Fund” or similar, other agencies had little influence. The income from wood sales increased the influence of these agencies. During the Lviv Forum, participants mentioned that in many state forest services, management was still top-down, and centralised.
- In many countries, stakeholders, including local communities and environmental NGOs are increasing their influence on forest sector policy. Social consensus on major forest sector strategic issues is a necessity for the future of sustainable forest management. During the Forum, many participants stressed the importance not only of developing stakeholder participation, but also of improving communication with them, as well as strengthening their skills and knowledge, as in many parts of the region, stakeholders had little understating of forest sector issues.

According to FOWECA, while all countries in Central Asia and the Caucasus have developed appropriate legal frameworks, “poor implementation of policies and legislation remains the fundamental problem, which largely stems from weak institutional capacity”. Among the negative factors identified by FOWECA are centralisation, frequent reorganisations, particularly changes of the controlling ministry, and failure to separate policy and management functions. “Most forestry agencies continue to be responsible for both and this has often led to conflicts of interest. Moreover activities that generate income in the short term (including exploitation of wood and the use of state forest funds for agriculture) are given priority over conservation and rehabilitation.” FOWECA also mentions fragmented management responsibility between agencies (e.g. forest, protected areas, education, agriculture), as well as “insufficient financial resources due to economic hardship and inadequate human capacities” and “institutional instability”. The analysis by FOWECA for Central Asia and the Caucasus may also apply to other parts of the EENCA region. This analysis was generally in conformity with the opinions of the participants in the Lviv Forum. One group identified



an “implementation gap”, considering that laws and regulations were generally satisfactory, but implementation was often weak, often because of insufficient resources and skills.

A national forest programme should be the core strategy document underlying forest policy and institutions. All countries in the region, except five, reported to FRA 2010 that they have a recent national forest programme (see annex table 3). According to the Forest Europe work on NFPs, these plans should be iterative, participatory, involve other sectors, be subject to monitoring, evaluation and revision as necessary and be approved at a high political level. It is unfortunately not possible to see from FRA 2010 to what extent these requirements are met in the EENCA region.

“Governance” is a concept which is not well understood in the EENCA region¹⁰. According to a definition developed in FAO, “governance relates to formal and informal rules and processes through which public and private actors articulate their interests and decisions are made, implemented and sustained.” The FAO Governance Study Team considers that the key factors contributing to good governance in FAO’s mandated areas of work are:

- **Participation** – that people are able to participate freely, fully, actively and meaningfully in the planning, design, monitoring and evaluation of decisions affecting them;
- **Accountability** – that public officials are answerable within their organizations and to the people they serve, for their actions;
- **Transparency** – that holders of public office are as open as possible about all the decisions and actions that they take;
- **Equality and Fairness** – that all groups, particularly the most vulnerable, have equal opportunities to improve or maintain their wellbeing;
- **Efficiency and Effectiveness** – that processes and institutions produce results that meet the needs of society, while making the best use of resources at their disposal; and
- **Rule of law** – that governments are as bound by laws as the citizens, and that the laws themselves are consistent with international human rights.

This broad concept of governance is much wider than the notions of “management” or “administration”, which are often used in the region. The forest sector governance challenge facing the countries of the EENCA in their very different

social and institutional settings is to develop and put in place institutions, policies, attitudes and ways of behaviour for the forest sector which satisfy the definition above, and thereby put the forest sector, like the rest of society, on a truly sustainable basis.

4.3 Illegal logging

All over the region illegal logging is acknowledged to be a major challenge. At the Lviv Forum, it was identified as a problem by all regional groups. In 2005, the St. Petersburg Ministerial Declaration, adopted by 44 countries at the Europe and Northern Asia (ENA) FLEG Ministerial Conference, “expressed profound concern that criminal actions and corruption have significant negative impacts including a general weakening of the rule of law, loss of revenue to governments, the private sector and local livelihoods, and a reduction in the contribution of forests to the fulfilment of internationally agreed development goals aimed at reducing poverty”. A number of programmes, at the national and international level are actively addressing the challenge of improving forest law and governance in the EENCA region. One of these, arising from the 2005 ministerial conference, is ENPI-FLEG, “Improving Forest Law Enforcement and Governance in the European Neighbourhood Policy East Countries and Russia”, which covers most countries in the EENCA region, except the Balkans: most of the analysis in this section is based on information from ENPI-FLEG (<http://www.enpi-fleg.org/>).

By their nature, illegal activities are hard to measure or monitor, but it is estimated by WWF Russia, one of the ENPI-FLEG partners, that 10 to 35% of all logging in Russia is illegal. The NGO estimates that in some regions of Russia up to 50% of the harvested wood is either illegal or questionable, not confirmed by official documents of origin, while illegal logging and illegal timber trade are most common in the border areas of the country and especially on the border with China, because of the high demand for timber from China, as well as internal Russian issues.

WWF Russia identifies several types of illegal logging:

- Logging of rare and endangered species;
- Logging in protected areas where logging is prohibited;
- Commercial logging under the guise of thinning and sanitary felling;
- Logging carried out in violation of the rules and / or technologies;
- Commercial harvesting of timber under the guise of public use for their own needs.

¹⁰ No satisfactory translation into Russian of the term “governance” is available.



Even legally harvested timber can be «criminal» if violations of law occur during its processing and transportation - which often happens at customs when crossing the state border. To this list should be added poverty driven illegal logging by local people who harvest timber illegally for pressing personal needs, notably for fuelwood. This latter type of illegal logging is more prevalent in the forest poor regions, notably central Asia.

In the Balkans, a report by the Regional Environmental Center (REC) on illegal logging in south east Europe¹¹ analysed the issue and made comprehensive recommendations. It identified the main causes in the countries it covers (Albania and most countries of the former Yugoslavia) as uncontrolled privatisation, fuelwood demand and weak institutions. The main causes are social and economic, notably poverty, and the opportunity to derive income from illegal logging. Remedies proposed by REC include:

- Efficient administrative procedures based on a clear legal framework.
- Capacity-building training for the relevant professional services and the judicial sector.
- Bilateral and regional cooperation.
- Increased public participation and awareness.
- Support for the development of the private forestry sector.
- Development of control and monitoring mechanisms, as well as data collection (including an inventory and forestry registry).
- Regulation of the timber market and increased control over wood processing plants.
- Development of national strategies and related action plans, in coordination with an energy strategy (to reduce the impact of illegal firewood) and in line with an ecosystem preservation approach.
- Development of a concession system to exploit forestry produce.
- Sufficient funds for forest management.

One thread running through the literature on illegal logging is the importance of transparency in combating illegal logging, starting from improved forest inventory and forest statistics, through forest management objectives, harvesting licences and wood markets. Another thread concerns the importance of simple and

fair administrative processes: complex, expensive and unfair processes in many cases actually encourage corruption and illegal activities. Another aspect, perhaps the most important, is forest tenure. With different tenure systems, (private, community, lease, etc.), there can be a far better control over the resources than with central state control. Where such ownership types exist there is basically no illegal logging. Finally the importance of capacity building in all parts of the forest sector is vital.

In summary, illegal logging remains a serious problem all over the EENCA region, although its extent is still difficult to quantify. Causes vary widely, as do remedies. The issues have been extensively analysed over the past 5-10 years, and a consensus has emerged among experts about what action is desirable. It is not possible to monitor precisely progress in the action against illegal logging, in the EENCA region or elsewhere. However, the underlying causes have not disappeared, and it appears that the problem has not received enough political will or resources to make really significant progress.

4.4 Lack of and threat to protective functions because of low forest cover

All over the EENCA region, protection of soil and water is reported to FRA 2010 as the “primary designated function”¹² on very large areas. In Russia, 9% of forests are reported as having protection as primary designated function, about 73 million ha. If Russia is excluded, a third of the EENCA region forests have protection of soil and water as their primary designated function. In three countries (Azerbaijan, Turkmenistan and Uzbekistan), protection of soil and water is the primary designated function on more than 90% of forests. This is not surprising in mountainous and dry areas, where the potential for income from wood production is quite limited, and the danger of erosion is high, while water management poses major challenges.

The protection functions are threatened when the forests are under pressure, from illegal logging, fire or from overuse for local fuelwood needs, reducing forest area or causing degradation. The consequences of forest loss and degradation are many: loss of fertile soil, flood damage, erosion, increased rural poverty, loss of grazing land, fuel shortages. This is the case for many forests, especially in Central Asia and the Caucasus, leading to unsustainable situations and major social and environmental

¹¹ http://www.envsec.org/publications/illegal_logging_in_south_eastern_europe_regional_report_en_oct_2010.pdf

¹² The other possibilities were: production, conservation of biodiversity, social services, multiple use, and “other”. As almost all forests have many uses, it is often difficult to identify the “primary” use, and in many cases, no particular use is “designated”; this approach, although useful, presents many problems of definition and approach.



damage. Preventing such developments must clearly be a priority, for those responsible for forests, but also for society as a whole. In areas where protection forests exist, the sustainable management of existing protection forests, and the prevention of further damage, must be a priority

In areas where trees and forests are sparse, there is significant potential to improve local livelihoods by protecting and improving forest stands, and to use trees to control erosion, provide ecosystem services, mainly water, and wood for local needs. Where sustainable management of existing forest resources is in place, afforestation can contribute to enhance the benefit of these resources. However the difficulty of such programmes should not be underestimated: apart from technical problems of stand establishment, it is vital to mobilise social support, make fair and accepted arrangements for tenure of the forests or trees, and incorporate the new management responsibilities into the social structure of the local communities. Several working groups at the Lviv Forum recommended increasing forest area, for wood supply (for energy and industry), and for protection.

4.5 Lack of priority for the forest sector in national development plans.

In most countries of the EENCA region, the forest sector accounts for a relatively small part of both GDP and employment (see annex table 2). As a result, despite the importance of forests for their protective functions, biodiversity conservation, rural livelihoods and renewable energy, forest sector issues generally do not receive priority in national development strategies. A rapid survey was carried out for this paper of the UN Development Assistance Framework (UNDAF) documents for the EENCA countries¹³. The UNDAF is the framework for all development assistance by the UN family, agreed after discussion with the national authorities and all UN development agencies, usually signed at the level of head of government, and serves to set development priorities between sectors at the national level. The majority of these documents for EENCA countries do not mention forests at all, or only in passing as part of policies for environment or sustainable land use. The only commitments for the forest sector in the EENCA region discovered during this survey were as follows:

- Armenia: improve environmental management, including for forests, and increase forest cover
- Azerbaijan: approve forest programme and forest law through participatory process

- Belarus: improve capacity for sustainable forest management. Address forest management in radiation damaged area around Chernobyl
- Moldova: increase forest fund
- Mongolia: put forest policy in place and increase area of closed forest by 1%
- The former Yugoslav Republic of Macedonia: reduce rate of forest loss through sustainable forest management
- Tajikistan: prepare a national forest programme, with target to increase forest area by 4500 ha/year
- Turkey: develop strategy papers, including for forestry.

This relative lack of visibility, both in forest rich countries where the potential exists for higher income from forests, and forest poor countries where absence of or threat to forests is harming populations, is a result of failure by the forest sector (at the national and international levels) to make the case for the importance of sustainable forest management, and the social benefits which result from investing public funds in developing the forest sector. The causes for this are complex, and go beyond the relatively small share of forestry in GDP and employment in many countries. One factor is the difficulty forest sector specialists and institutions have in developing mutually beneficial partnerships with agencies in other sectors, notably environment, rural development, agriculture and energy. The traditional emphasis on trees, rather than people, is still apparent sometimes, including in traditional forestry education, although it has been criticised for many years.

Finally, the very weak state of the information on the forest sector in many EENCA countries weakens the case for investment in the forest sector. Several countries do not have a recent scientific forest inventory, and information is often lacking or very weak on other criteria of sustainable forest management, notably the workforce, incomes and livelihoods, protective functions and biodiversity. Without recent reliable information, presented in terms which high level policy makers can appreciate, the forest sector is unlikely to attract significant development funding. In most cases, the main challenges to sustainable forest management (e.g. illegal logging, overgrazing, excessive fuelwood demand) are well known to the forest managers. However the failure to generate objective relevant monitoring information is a symptom of the lack of political will and resources to address the issues.

In addition, it was recognised in all working groups at the Lviv Forum that much more should be done to raise awareness of forest related issues, through better communication: promotion of wood use, training in the supply and use of wood energy,

¹³ A few EENCA countries, including Russia and EU members, do not have UNDAF documents.



educational activities, promotion of payment of ecosystem services, creation of consultative forums for communication and information gathering, and so on.

The existence of national forest programmes (NFPs) in most countries of the region is however a positive step, especially where they are based on widespread participation of all stakeholders. The challenge is to transform NFPs from internal forest sector documents to influential inputs to the national development process.

One consequence of the low priority of forest issues in national development strategies is the institutional weakness mentioned above, notably the underfunding of state forest organisations.

5

Conclusions and recommendations

5.1 Background and process

Most of the time during the Lviv Forum was devoted to detailed and lively group work, focused on developing conclusions and recommendations on the role of the forest sector in a green economy. Participants split into four regional working groups:

- Balkans
- Eastern Europe
- North and Central Asia
- Ukraine

Each group prepared conclusions and recommendations under four themes:

- Sustainable forest industries and products
- Forest ecosystem services and the role of forests in low carbon economies
- Employment and livelihood opportunities in the forest sector
- Forest governance in a green economy

To develop these conclusions and recommendations, groups addressed 1-2 questions under each theme, using the so-called "H-form" approach: voting on the question on a scale of 1-10, identification of strong points and weak points in the country/region, identification of measures which would reinforce the strengths and counteract the weaknesses, all in a transparent and democratic process, facilitated by specialised moderators for each theme.

The moderators also summarised the main points for each theme, drawing on the discussion in all the groups.

This chapter presents the conclusions and recommendations of the working groups, and the summaries by theme prepared by the facilitators, as agreed during the Forum. There have only been editorial and presentational changes to the conclusions and recommendations approved by the working groups and presented by the group chairs and rapporteurs. As each group chose its methods of work and how to present its results, the format and coverage of the conclusions and recommendations differs between working groups.





Themes and questions for the working groups at the Lviv Forum

Sustainable forest industries and products

- How sustainable is the level of industrial wood harvest in your country?
- How sustainable is wood energy supply in your country?

Forest ecosystem services and the role of forests in low carbon economies

- To what extent does the forest sector in your country contribute to the low carbon economy?
- How effectively and efficiently are forest ecosystem services managed in your country?

Employment and livelihood opportunities in the forest sector

- To what extent is the forest sector workforce in your country able to contribute to achieving sustainable forest management?

Forest governance in a green economy

- How ready is your country's forest sector for the green economy?
- How meaningfully are stakeholders, inside and outside the sector, involved in policy formation?

5.2 Balkans: Working Group recommendations

Sustainable forest industries and products

Industrial wood supply

Positive aspects in the region	Negative aspects in the region
Good management plans for public and private forests	Illegal activities related to forest resources
Existing legislation	High influence of politics
Long tradition in forestry	Too much pressure on resources (near to roads)
Forest certification, traceability	Few value added products
	Low investment in forest infrastructure, especially roads

- Exclude political influence from forestry activities
- Develop and implement a clear strategy for forest products
- Improve selling system for industrial wood
- Improve financial support to the forest sector (forest roads)
- Improve communication between 'foresters' and 'wood processors'
- Improve awareness of wood usage in all fields of human activities

Wood energy supply

Positive aspects in the region	Negative aspects in the region
Traditional forestry, good forestry practices	Export of wood energy products (pellets) to Western Europe
Good quality of fuel wood	Underdeveloped domestic market
Increasing usage of wood biomass (residuals)	Lack of policy instruments for increasing investment in woody biomass energy infrastructure
Employment of rural population	



Improve policy instruments for increasing investments in woody biomass production:

- **ECONOMICAL:** Financial support for producers and users
- **REGULATORY :** Improve procedures for investments in wood energy field
- **COMMUNICATION (INFORMATION):** Increase activities that promote benefits of wood energy usage

Forest ecosystem services and the role of forests in low carbon economies

Contribution to the low carbon economy

Positive aspects in the region	Negative aspects in the region
Policy for increasing the forest area by afforestation in degraded agricultural lands	Lack of reliable data on wood production and consumption
High use of wood products including for energy generation (including heat for domestic use)	Small share of forestry in GDP
High forest cover in Balkans	Thinning not carried out in younger forest stands (production potential not used)
Greater sequestration of carbon than emitted by industry	Inconsistency in promoting the use of wood: mixed messages
Fuelwood is at the moment the most efficient fuel instead of electricity	Afforestation should be increased and less carbon emitted
Approved national plan for adaptation of forests to climate change	Lack of knowledge (at all levels) about role of forestry in generating carbon credits
Sustainable yield: harvest much less than increment	Lack of scientific research about interaction of forestry with mitigation of, and adaptation to, climate change
Intensive development of forest biomass	Inefficient use of wood and low use of wood residuals and recovered wood
Relevant international agreements signed (Kyoto, UNFCCC)	Forest residuals are left in forest
National regulatory and administrative infrastructure formed (national DNA,...)	
Some CDM projects (not in forestry) already created (documentation in process)	

- Carry out scientific research to define specific activities for generating carbon credits
- Try to establish private-public partnership to invest in low carbon economy projects
- Provide state support to large energy facilities which are going to switch fuel (to use biomass)
- Financial support to establish SME's dealing with renewable energy
- Cross-border cooperation in forest protection especially fires
- Focus on short rotation plantations for energy generation
- Organize small forest owners for joint production and sales
- Organize courses to train rural population how to use renewable energy



Management of forest ecosystems

Positive aspects in the region	Negative aspects in the region
Large area certified (Croatia over 2 million ha)	The process of evaluation and PES is still not established
Strategic documents, law on nature protection	Protected areas are not financially sustainable
Green tax (forest tax) prescribed by some laws (Croatia, Bosnia and Herzegovina, Serbia)	Ecotourism not developed
New integrated management plans	Lack of compensation for forests situated in protected areas
Increased percentage of protected areas	Lack of experience in evaluation of forest ecosystem services
Well-developed legislative framework concerning ecosystem services	Lack of knowledge about PES
Management planning both in forests and protected areas	
Experience in biodiversity conservation	
Large areas protected by NATURA 2000	
Great forest biodiversity	

- Satisfy preconditions for ecotourism activities
 - ◆ Support to SMEs
- Establish financial mechanisms for compensating ecosystem services providers for their activities
 - ◆ PES or State support or both
 - ◆ Secure finance for protection and nature conservation
- Develop a reliable methodology for evaluation of ecosystem services
- Cross-sectoral cooperation
- Improve supervision of all activities in the forests
- Increase the public awareness of the ecosystem services provided by forests
 - ◆ Educational activities
- Promotion activities focused on PES and possibilities for profit to the service providers



Employment and livelihood opportunities in the forest sector

Forest sector workforce

Positive aspects in the region	Negative aspects in the region
Secure employment for the rural population - Basis for jobs in rural areas	Low qualification of forest workers - Many injuries
Long tradition in forestry education - Qualified professionals	No strategy for 'green jobs'
Well distributed workforce in all areas	Insufficient staff in ministries responsible for forestry
Legislation – for protection of workers' rights	Low investment in machines
	Young people do not like to work in rural areas

- Create cross-sectoral strategy for green jobs based on need and capacities of sectors
- Improve management of resources
 - ◆ Increase investment
 - ◆ Create new organizational structure (public enterprises, ministries etc.)
- Popularization of forestry
 - ◆ Promotion activities,
 - ◆ Communication patterns
 - ◆ Education programs
- Vocational training for forestry workers
- Enhance safety of forestry workers

Forest governance in a green economy

Preparation for the emerging green economy

Positive aspects in the region	Negative aspects in the region
New regulatory framework	"Government" (top-down) approach
Strategy document exists	Lack of cross-sectoral cooperation
Involvement in global and regional processes (Forest Europe, ...)	Lack of implementation of existing documents

- Cross-sectoral cooperation
- Capacity building for public administration
- Involvement of all stakeholders (Governments, science, practice, NGO`s...)
- Strengthen monitoring of implementation process

Involvement of stakeholders in policy formation?

- Involve politicians in policy formulation for the green economy
- Ensure the responsibility of the stakeholders
- Increase the feeling of the stakeholders about the importance of their participation in the process of the policy formation
- Improve/establish cross-sectoral cooperation
- Capacity building in public administration
- Create a consultative forum (or similar body) as a channel for information gathering and consensus building for policy formation



5.3 Eastern Europe: Working Group recommendations

Sustainable forest industries and products

Industrial wood supply

- Improve forest infrastructure
- When setting allowable cut, maintain balance between ecological requirements and market needs
- Strengthen the struggle against illegal logging
- Create forest clusters based on the principles of green economy
- Create enabling conditions for investing in wood processing

Wood energy supply

- The State should regulate the use of wood for bioenergy
- A mechanism to stimulate the supply of wood for bioenergy is needed
- Using waste wood for energy needs from forest sites should not harm the ecological functions of the forest
- The location of suppliers and production units (forest resource) should be optimised for logistical reasons

Forest ecosystem services and the role of forests in low carbon economies

Management of forest ecosystem services

There was a clear understanding between the participants in the working group that these further measures should be put in place:

- Carry out research on identification of ecosystem services, mapping, modeling and economic evaluation; the main beneficiaries should be identified
- Communication with society and major stakeholders should be improved
- Appropriate legal and institutional mechanisms should be developed.

Contribution of the forest sector to the low carbon economy

- A policy for climate change adaptation and mitigation should be developed for the forest sectors in the region
- A policy for substitution of nonrenewable resources should be developed

- Apply innovative environmentally friendly technologies in forestry and wood processing
- Create model territories aimed at promoting close to nature forestry and using innovative environmentally friendly technologies
- Improve forest infrastructure to minimize environmental risks and promote different sectors of the green economy (tourism, bioenergy, agriculture etc)

Employment and livelihood opportunities in the forest sector

- Ensure a sufficient level of salaries and social guarantees for foresters at all levels
- Ensure stability of the regulatory system ("rules of the game") for SFM practice
- Elaborate and/or improve the quality of forest education and advanced training
- Decrease in a sustainable manner the level of control of forest managers and forest contractors
- Level of awareness raising about role of forest and forestry into sustainable development should be increased
- Support and/or promote forest certification

Forest governance in a green economy

Readiness for the emerging green economy

- Communication at all levels of governance should be improved
- Intersectoral cooperation should be improved
- Economic mechanisms (different types of incentives) for business and society in the green economy should be drawn up
- Governance criteria should be elaborated
- The methodology of stakeholder involvement should be improved

Involvement of stakeholders in policy formation

- Public awareness should be improved
- Improve capacity building, educational programmes and communication
- Mechanisms of cooperation in decision making process at different levels should be created



5.4 North and Central Asia: Working Group recommendations

Sustainable forest industries and products

Wood energy

Positive aspects	Negative aspects
Acceptable use patterns in rural areas	Inefficient biomass consumption
Potential for recovery of the resource	Illegal logging
	Demand for larger volumes

- Develop new technologies for harvesting in mountainous regions.
 - ◆ Improves access to hard-to-reach areas
 - ◆ Reduces harm to stands
 - ◆ Improves stand structure
 - ◆ Higher logging effectiveness
 - ◆ Improved regeneration

Develop plantations of fast growing species

- ◆ Partially satisfies demand for industrial wood and fuelwood
- ◆ Reduces pressure on natural forests
- ◆ Creates new jobs, funded by sale of wood

Introduce new technologies and equipment for complete processing of wood



Forest ecosystem services and the role of forests in low carbon economies

Management of forest ecosystem services

Positive aspects	Negative aspects
Creation of new protected areas	Lack of methods to evaluate forest services
Active civil society in this respect	Inadequate information on forest services
Government structures exist	Lack of mechanisms for payment of ecosystem services (except recreation)

- Develop scientifically based methods for evaluation of forest services and introduce mechanisms of payment for ecosystem services, at local, regional and global levels, defining revenues from forest services and implementation of better prices for wood resources
 - ◆ Makes it possible to define the amount of services delivered and provide a basis for income for protection and development of forests
 - ◆ Provides justification for reforestation
 - ◆ Creates new jobs
- Carry out studies on the influence of climate on forests
 - ◆ Gives the possibility to forecast possible damage and identify necessity and possibility of adaptation measures
- Increase forest area by innovative means, establishment of stands with different management objectives, on land of the forest fund, and on communal lands
 - ◆ Promotes sequestration of carbon
 - ◆ Satisfies a part of the local demand for wood
- Increase the use of secondary resources, such as non-wood forest products, (nuts and berries, medicinal plants, hunting products etc.)
 - ◆ Many non-wood forest products are used inefficiently, and there is no further processing

Employment and livelihood opportunities in the forest sector

- Improve training of staff to work in the sector, through higher educational institutions, vocational and professional training, continuing training, including in countries with a developed forest sector
 - ◆ Quality of work depends directly on skills of staff
- Review and develop mechanisms to optimise salaries and social security

- ◆ Adequate conditions (salaries and social security) increase work efficiency and improve economic performance

Forest governance in a green economy

- Raise awareness of the importance of forests among stakeholders
- Improve legislation as regards official accountability to all stakeholders
- Improve forest legislation in the light of international experience and recommendations for the transition to a green economy
 - ◆ Motivate all stakeholders
- Develop and approve at the highest level, a programme for the long term development of the forest sector
- Increase significantly the status and independence of the forest authorities, and optimise institutional structure
- Review and develop norms and standards for the use of forest resources
 - ◆ Most standards and norms date from the Soviet era

5.5 Ukraine: Working Group recommendations

Sustainable forest industries and products

Industrial wood supply

- Improve the regulatory framework
- Introduce economic incentives for sustainable forest management
- Improve coordination between the key actors in the forest sector
- Develop forest infrastructure



Wood energy supply

- Develop regulatory documents for the establishment of energy plantations and transition to target-oriented silvicultural principles
- Review international experience in the technology of utilization of wood energy and implement best practices
- Increase the area of new forests (afforestation)
- Streamline inventory of the forest resource and define standards for its rational management

Forest ecosystem services and the role of forests in low carbon economies

Management of forest services

- Develop standards for the use and valuation of forest ecosystem services
- Review relevant experience of other countries
- Implement science-based economic incentives to create protective plantings on abandoned land
- Consider the use of environmental funds for the maintenance and development of forest related territories and sites of natural protection fund

Low carbon economy

- Improve the regulatory framework of a low carbon economy; develop a methodology for economic stimulus of activities to reduce the level of CO₂ in the atmosphere

- Assess carbon sequestration by forests and the role of forests in mitigating climate change
- Encourage afforestation and reforestation
- Encourage the use of wood as a source of renewable energy and introduce energy-saving technologies

Employment and livelihood opportunities in the forest sector

- Maintain state ownership of forests
- Improve state economic and fiscal support
- Improve financial security and social protection of workers in the forest sector
- Empower managerial decision-making at the local level
- Involve professionals in developing the legal framework of forestry
- Increase the use of modern environmentally friendly technologies

Forest governance in a green economy

Readiness for a green economy

- Improve national priorities for forests and the forest sector as a basis for national forest policy
- Develop a legal and regulatory basis to move towards the green economy



- Encourage mutually beneficial cooperation to develop a green economy between Government, private sector, science, NGOs and other stakeholders
- Improve the quality of forestry education, science and training

Stakeholder participation

- Raise the status of forest sector institutions (create a ministry for forests)
- Improve mechanisms to involve stakeholders in discussion and resolution of forest sector issues

5.6 Sustainable forest industries and products: thematic overview by facilitators

Higher level issues

- Regional issues, challenges and needs are not well reflected in global agendas
- The convening power of international organizations should be used to promote progress in the sector at the regional level
- The concept of the green economy in the forest should be better mainstreamed in global and regional agendas

Issues in common to all EENCA regions

- Lack of long term planning and strategic vision
- Decisions are not always made at the appropriate level, or based on evidence and are sometimes the fruit of short term considerations.
- Physical infrastructure, especially roads, is not sufficiently developed
- Forest products are not sufficiently competitive
- Need to attract commercially based investments for manufacturing
- The sector is suffering from a lack of innovative products, processes and green technologies
- Illegal logging is still a challenge in the region and not adequately addressed
- There is a lack of transparency in processes and procedures in the forest sector and complex bureaucracy
- Residues and waste should be used and/or recycled to a maximum extent

Recommendations

Global and regional level

- Promote wood as a renewable and carbon neutral resource and material through campaigns and information exchange at the global, regional and national levels
- Create the appropriate conditions for investment through support mechanism, including by ensuring long term predictable wood supply and investment in physical infrastructure

National level

- Create framework conditions to welcome forest investments
- Review forest governance procedures
- Improve training of forest sector personnel at all levels
- A framework should be put in place to make sure that wood finds the best appropriate use, including use of residues
- Strengthen penalties against illegal logging and unsustainable forest practices
- Ensure consistency between the national energy strategy and the framework for wood energy

5.7 Forest ecosystem services and the role of forests in low carbon economies: thematic overview by facilitators

The understanding of concepts and the level of implementation varies within the region

Recommendations

- Increase forest area for the provision of goods and services, reflecting national conditions
- Create policies and strategies as a prerequisite for implementation
- The legal and regulatory framework does not yet sufficiently support these concepts
- Institutional capacity should be increased



- Data on products, services and consumption are insufficient for policy development.
- Research on valuation and implementation to support innovation should be enhanced
- When preparing new mechanisms, include the potential of both public and private investments
- Communicate with stakeholders and society for forest protection, forest functions and the role of forests in the carbon cycle
- Study and exchange best practices from Europe and beyond
- Increase productivity while maintaining environmental and social safeguards
- Health and safety standards not properly implemented as well as out-of-date technologies and equipment
- Obsolete and/or unstable institutions and legislation
- Low level of investment in general and limited public financing for forest management

5.8 Employment and livelihood opportunities in the forest sector: thematic overview by facilitators

Cross-cutting and common issues

- Lack of awareness among populations about the importance of forests (protection for the environment and job provider)
- Decrease of interest and attractiveness for careers in the forest sector (rural development)
- A long tradition of dedicated foresters
- Significant differences in the level of qualification between foresters and forest workers are observed
- Bad image of the forest profession for young generations:
 - ◆ Low wages in comparison to other sectors
 - ◆ Weak social security system
 - ◆ Work in rural areas, dangerous profession

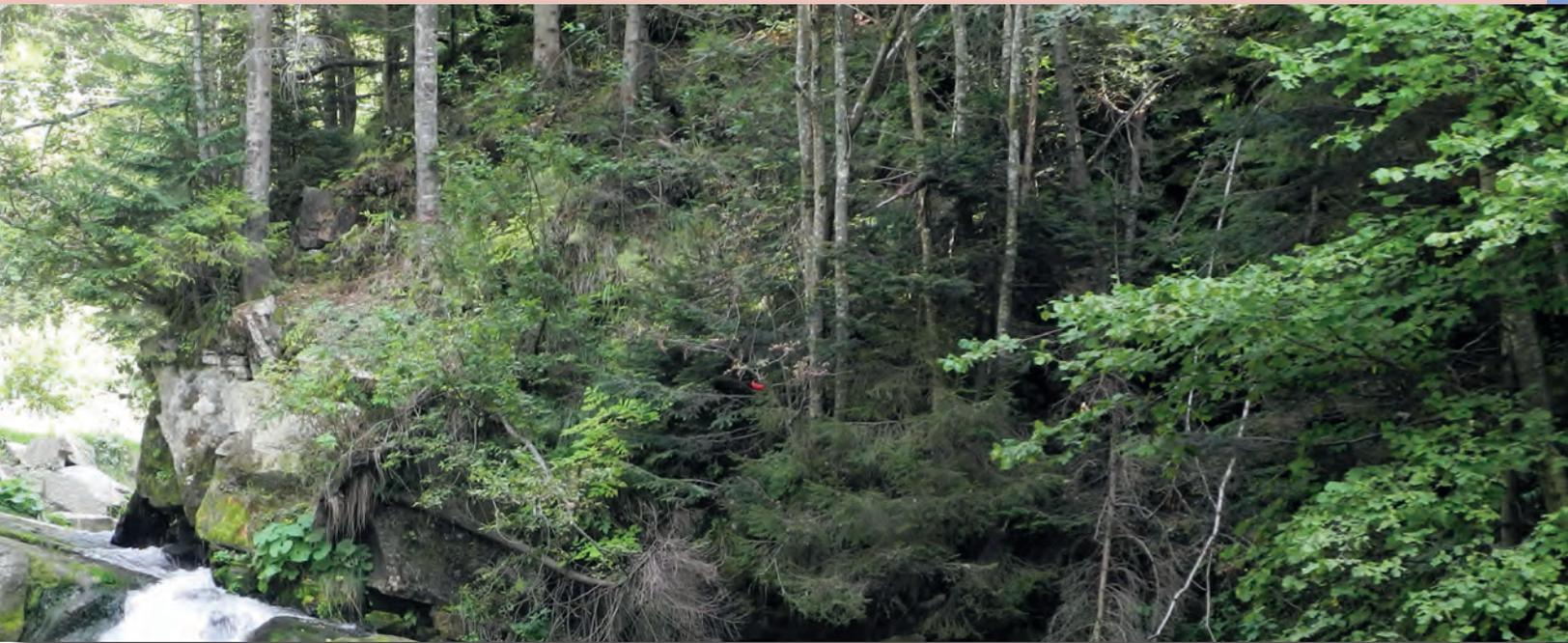
Recommendations

National

- Improve education of the workforce at all levels:
 - ◆ Forest workers: vocational and continuing training
 - ◆ Foresters (good initial education): continuing training
- Provide a decent level of wages and social guarantees
- Develop and implement safety and health regulations
- Involve specialists in policy making
- Provide more flexibility and responsibility for local staff in decision making within a clear national framework and guidance
- Increase transparency and stable regulation
- Improve public financing and reinforce investments in the forest sector
- Develop strategies for decent green jobs in the forest sector

Regional/ Global

- Develop guidance for governments wishing to establish a national strategy for decent green jobs



5.9 Forest governance in a green economy: thematic overview by facilitators

General

- Achieve global and regional common understanding of governance.
- Global guidance for regional principles on forests in a green economy.
- Global and regional common framework for policies and strategies related to the green economy

Common issues and conclusions

- Excessive state bureaucracy prevents efficient sustainable forest management performance.
- Weak institutions and low status of forest sector in the national political agenda.
- Excessive role of State and politicians prevents from innovation.
- There is space to improve cross-cutting cooperation and communication.
- Lack of comprehensive forest policy.
- “Implementation gap” (i.e. satisfactory laws and regulations, combined with inadequate implementation).
- Unsecured tenure of and access to forests goods and services for local population including at transboundary level.

Common recommendations

Global and regional level

- Open up vision of forest role in a green economy.
- Facilitate regional exchange of experiences.

National level

- Develop professional capacities required for governance in a green economy.
- Support and develop the potential of open minds.
- Promote harmonization and adaptation of legislation framework.
- Develop stakeholder capacities for meaningful participation

6

The Lviv Forum's Vision and Messages for Action

This message is based on the deliberations of the Lviv Forum and its Working Groups, whose conclusions and recommendations are included in the output of the Forum as well as feedback from participants after the Forum. The Forum wished to identify and convey a message to the international level, for instance the UN Forum on Forests.

Introduction

The Lviv Forum discussed the opportunities and challenges of the region to realize the full potential of forests, and developed the following vision. The Forum based its discussion on the Action Plan for the forest sector in a green economy¹⁴.

The region is moving towards the realization of the full potentials of forests and their role in economic development in the context of a green economy. The functions of forests are rich and complex and are at the heart of ecological, social and economic development. Forests provide wood, protect soil and water, store carbon, shelter biodiversity, supply energy and non-wood forest products, and help prevent disasters. Forests are critical for the well-being of people in Eastern Europe and North and Central Asia and throughout the world as they provide livelihoods and employment.

The countries in the region will be able to achieve the full potential of their forests by continuing to increase the understanding of the key roles and functions of forests and trees outside forests to fully integrate them into the economic and development frameworks, and by increasing their contribution to the green economy, for instance by implementing the actions proposed in the Action Plan, to make the sector more low carbon, resource efficient and socially inclusive.

The member organizations of the Collaborative Partnership on Forests as well as regional and subregional organizations are invited to facilitate implementation of the actions identified by the Lviv Forum.

The Lviv Forum approved ten key messages:



6.1 Capture the true values of forests

The true economic value of forests including all its biological and social functions and the full spectrum of forest activities and related economic exchanges needs to be

¹⁴ ECE/TIM/2012/10. The Action Plan is still in the process of consultation.



captured, reflected and integrated in decision making including for investment. The capture of non-monetary values is an integral part of the green economy.

To maximize the profitability of forests, valuation of forest goods and services needs to be based on sets of data and information which capture all forest functions, products and services and related transactions.

Possible actions include:

- Identify parameters and collect data which will better capture the entire spectrum of monetary and non-monetary values of forests and their functions, including wood and non-wood forest products and their markets, as well as services. Then collect high quality information usable as a basis for decision-making. One example of an area of potential improvement is eco-tourism, where better data would reflect the social and economic impacts of forests on local communities. Use the information collected to develop policies and management plans.
- Target public and private investment to stimulate forests and the forest sector and develop structural regional plans to realize all the priorities and potential of forests.



6.2 Use all resources efficiently

The full economic potential of non-wood forest products and recreational and social functions is left untapped. Also wood residues and waste are underused. The opportunities to realize the full potential of forest products and services should not be wasted. This is a vital contribution to a low carbon economy, as efficiency in resource use contributes to climate change mitigation. Payment for ecosystem services encourages and protects the supply of services which are often at present threatened or provided free of charge at the cost of the forest owner.

Investment in updated and green technologies and innovation will make industry, transport and forest management more efficient and more competitive.

Possible actions include:

- Identify the economic, social and environmental functions which can be provided by forests, and then develop strategies to develop and integrate systems for payment for ecosystem services, including at the regional level.
- Invest in transport infrastructure.



6.3 Be energy-wise

Forests provide a key source of renewable energy in many countries in the region and in many cases wood energy is essential to livelihoods in rural areas and contributes to poverty alleviation. There is a big potential to develop the supply and use of wood-based energy on a sustainable basis. However, despite the fact that wood energy, when sustainably produced, is renewable and carbon neutral, making a significant contribution to the emerging green economy, the production and use of wood energy should never be at the expense of essential forest functions.



Thus, conflict with other wood uses as well as resource scarcity should be considered when deciding to what extent forest resources should be used for energy. Use for energy of wood which is not required as raw material should be encouraged.

Possible actions include:

- Develop a national energy policy, including the framework for wood energy, and ensure that potential use and relative scarcity of wood fuel are addressed, according to each country's situation.
- Adopt modern and clean¹⁵ energy technology, with high efficiency.



6.4 Make jobs decent and green

A sustainable workforce is necessary to achieve sustainable forest management, yet workforce issues have often been ignored at the policy level. The forest sector workforce will need new skills to meet the challenges of the green economy, but there is much to achieve before all forest sector jobs are "decent green jobs", defined as jobs which promote the green economy and provide productive work for women and men in conditions of freedom, equity, security and human dignity¹⁶.

Possible actions include:

- Put in place effective control of implementation of labour law and regulations.

¹⁵ Specifically with low emissions of micro-particles

¹⁶ According to the ILO, "decent work" involves opportunities for work that is productive and delivers a fair income; provides security in the workplace and social protection for workers and their families; offers better prospects for personal development and encourages social integration; gives people the freedom to express their concerns, to organize and to participate in decisions that affect their lives; and guarantees equal opportunities and equal treatment for all.

- Improve social conditions of those employed in the forest sector.
- Improve occupational safety and health, notably for forest workers.



6.5 Address threats to forests

Only healthy forests can provide goods and services sustainably and can contribute to a green economy in the long term. However, increasingly the forests in the region are threatened by a changing climate, including increased frequency and intensity of storms, droughts and related forest fires, pests and diseases, and invasive species, as well as by human actions. Some forests in the region might even be changed from carbon sinks to carbon sources.

Possible actions include:

- Include adaptation of forests to climate change, and their contribution to climate change mitigation, in forest management planning, research and forestry practice.
- Enhance trans-boundary cooperation in forest protection.

6.6 Define governance principles and stick to them

Good governance of the forest sector is a prerequisite for its sustainable development and for its contribution to the green economy as a whole. "Governance" relates to formal and informal rules and processes through which public and private actors articulate their interests and decisions are made, implemented and sustained. Key factors contributing to good governance in FAO's mandated areas of work are:



- Participation – that people are able to participate freely, fully, actively and meaningfully in the planning, design, monitoring and evaluation of decisions affecting them;
- Accountability – that public officials are answerable within their organizations and to the people they serve, for their actions;
- Transparency – that holders of public office are as open as possible about all the decisions and actions that they take;
- Equality and Fairness – that all groups, particularly the most vulnerable, have equal opportunities to improve or maintain their well-being;
- Efficiency and Effectiveness – that processes and institutions produce results that meet the needs of society, while making the best use of resources at their disposal; and
- Rule of law – that governments are as bound by laws as the citizens, and that the laws themselves are consistent with international human rights.

These principles should be applied all over the region.

Sticking to these principles is essential to develop necessary institutional capacities to improve sustainable management of forests. This also facilitates the updating of forest laws and regulations, their application and forest law enforcement, including FLEG.

Possible actions include:

- Decentralize decision making power to the local level as appropriate.
- Implement the commitments of the St Petersburg Declaration on Forest Law Enforcement and Governance in Europe and North Asia and the Framework Convention for the Protection and Sustainable Development of the Carpathians.
- Draw up criteria for evaluating governance performance.
- Combat illegal logging and related trade.
- Modernise the legal and regulatory framework for the forest sector in the region.



6.7 Update skills

Training and education needs to embrace and facilitate a comprehensive view of the multiple functions of forests in order to understand and manage traditional and new activities, and to address emerging challenges, notably those relating to the forest sector in a green economy.

While qualified foresters in the region generally have been well trained, often their skills have not been updated in the light of recent trends, including in other sectors. Manual forest workers in the region have often received only rudimentary training. Access to continuing training, for all employed in the forest sector, is an essential element of a sustainable approach to forest management and realization of the full potential of forests in a green economy. There is also a need to improve linkages with other sectors in the field of education and training. Continuing learning will also contribute to the regular updating of knowledge on biodiversity conservation and green production.

Possible actions include:

- Reform and implement comprehensive and multi-level training and education programmes which reflect all values and functions of forests at the national level.
- Strengthen and raise the level of vocational training in the region



6.8 Innovate and build partnerships

Innovative products and services can create new markets and promote a greener and more equitable economy. In order to promote and support innovation in forest and forest based activities, new opportunities can be created by joining forces with other sectors, including those working on renewable energy, water and food and agriculture. Partnerships should also address bio-based products, green technologies and recycling, which can facilitate innovation and creation of new markets, as well as long standing issues such as the lack of infrastructure, notably forest roads. Public-private partnerships in the forest sector and other forms of cooperation between the public and private sectors should be developed.

Possible actions include:

- Facilitate and support new cross-sectoral partnerships through initiatives in priority areas such as agriculture, wood-related energy and water.
- Facilitate the transfer of innovative technologies.

6.9 Cooperate across boundaries

The Lviv Forum confirmed that there are common regional issues for the forest sector in a green economy, and that countries and stakeholders can benefit from cooperation across boundaries, between neighboring countries, or indeed at the regional and global levels, to develop common strategies and exchange knowledge and experience. Several regional and international structures, including those which supported the Lviv Forum, are available to support this work.

Possible actions include:

- Develop regional guidelines for the forest sector in a green economy, based on the experience and results of the Lviv Forum, and taking account of specific national circumstances



6.10 Make the case for the forest sector's role in the green economy

The forest sector can and should play an exemplary and leading role in the move towards a green economy. However, the sector itself is not yet aware of the full potential, and does not receive priority in most country's strategic plans for sustainable development, partly because of the weakness of many of its institutions. There is a need to make the case for the forest sector in a green economy, starting by explaining, on the basis of objective evidence, the values contributed by the forest sector, as well as the role of forests in contributing to clean water, food supply, renewable energy and poverty alleviation, and other essential parts of the green economy.

Possible actions include:

- Take the lead in raising awareness at all levels of society of the forest sector's potential and challenges.
- Contribute to implementing the Action Plan for a forest sector in a green economy



Action Plan for the UNECE Region Forest Sector in a Green Economy (as of August 2012)

This annex presents the main structure of the Action Plan, as well as a selection of items of interest to policy makers in the EENCA region, organised according to the thematic sessions. The full text (ECE/TIM/2012/10) may be downloaded from http://www.unece.org/fileadmin/DAM/timber/meetings/20121015/ECE_TIM_2012_10_E_Action_Plan.pdf.

Structure of the Action Plan

The Action Plan consists of 5 pillars with their respective areas of activity:

- A. Sustainable production and consumption of forest products
 - 0. Strategy for sustainable production, consumption and trade of forest products
 - 1. Certification and labelling of sustainable forest management, and other standards for sustainable forest management
 - 2. Procurement practices, public and private
 - 3. Wood mobilisation and increasing the potential sustainable wood supply
 - 4. Innovation in forest management and in production and use of forest products
 - 5. Life Cycle Assessment (LCA)
 - 6. Policies and standards for green building
 - 7. Trade in wood and forest products
- B. The low carbon forest sector
 - 0. Strategy for the low carbon forest sector
 - 1. Substitution of non-renewable materials and energy
 - 2. Efficient production and use of wood: eliminating waste from forest to consumer
 - 3. Adaptation of the forest to a changing climate
 - 4. Carbon sequestration and storage
- C. Decent green jobs in the forest sector
 - 0. Strategy for decent green jobs in the forest sector
 - 1. A skilled workforce
 - 2. Safety and health of the forestry workforce
 - 3. Forest operations
 - 4. Socio-economic impacts of green economy policies
- D. Valuation of and payment for forest ecosystem services
 - 0. Strategy for valuation of and payment for forest ecosystem services
 - 1. Valuation of forest ecosystem services
 - 2. Payment for forest ecosystem services: moving from theory to practice
 - 3. Forests and human health



- E. Monitoring and governance of the forest sector in the green economy
- 0. Strategy for monitoring and governance of the forest sector in the green economy
- 1. Implementation and improvement of criteria and indicators of sustainable forest management
- 2. Assessment of sustainable forest management in the region
- 3. Policy instruments and institutional framework for the forest sector in a green economy
- 4. Communication and promotion of sustainable forest management and the green economy
- 5. Communication and outreach to and cooperation/coordination with other parts of the green economy

Selected areas of activity of the Action Plan on the forest sector in the Green Economy, arranged according to the topics of the thematic sessions

Sustainable forest industries and products

Pillar A addresses sustainable production and consumption of forest products. Its objective is *To develop and communicate realistic and ambitious strategies for sustainable patterns of production, consumption and trade of forest products.*

The areas of activity in Pillar A which are most relevant to the Lviv Forum are:

- *Strategy for sustainable production, consumption and trade of forest products*, notably developing strategies for sustainable production and consumption in the green economy, including, but not only, forest products (A.0.1)
- *Certification and labelling of sustainable forest management, and other standards for sustainable forest management*, notably developing national standards which satisfy more than one certification system (A.1.4).
- *Procurement practices, public and private*, notably harmonisation of public and private procurement policies and practice to ensure that sustainability considerations are adequately taken into account and do not discriminate against forest products (A.2.2)
- *Wood mobilisation and increasing the potential sustainable wood supply*, notably carrying out national studies

on opportunities to increase the potential sustainable wood supply (A.3.2) and investing in infrastructure for mobilisation (A.3.4)

- *Innovation in forest management and in production and use of forest products*, notably creation of conditions and approaches which promote innovation (A.4.4)
- *Life Cycle Assessment (LCA)*, notably promoting the development and use of environmental declarations on labels (A.5.4) and using LCA tools to assess options in a comprehensive way (A.5.5)
- *Policies and standards for green building*, notably promoting development and implementation at a national level of green building standards which treat all material equitably (A.6.5)
- *Trade in wood and forest products*, notably exchanging national experiences with regulations on illegal logging (A.7.1)

Forest ecosystem services and the role of forests in low carbon economies

Pillar B addresses the low carbon forest sector. Its objective is that *The forest sector makes the best possible contribution to mitigation (sequestration, storage and substitution) of, and adaptation to, climate change*

The areas of activity in Pillar B which are most relevant to the Lviv Forum are:

- *Strategy for the low carbon forest sector*, notably reviewing national climate change mitigation and adaptation strategies in order to ensure the forest sector is playing an optimum role (balance between sequestration and substitution) and that NFPs address climate change adequately, with consistency between the two. (B.0.2)
- *Substitution of non-renewable materials and energy*, notably promoting the use of wood in construction (B.1.4) and promoting wood mobilisation by improving the functioning of the wood energy market (B.1.8)
- *Efficient production and use of wood: eliminating waste from forest to consumer*, notably developing productive uses for landscape care wood and recovered wood products (B.2.4) and avoiding wherever possible landfill as a final destination for wood and paper waste (B.2.5)
- *Adaptation of the forest to a changing climate*, notably developing strategies for the use of forests as a tool for adaptation of society and the environment to climate



change (B. 3.7) developing and implementing risk management and adaptation strategies for forests (B.3.8)

- *Carbon sequestration and storage*, notably improving monitoring of carbon stocks in forests and harvested wood products (B.4.2) and constructing national legal and institutional frameworks which make it possible for forest owners and industries to be rewarded for carbon sequestration and storage (B.4.6)

Pillar D addresses valuation of, and payment for forest ecosystem services. Its objective is to *identify and value forest functions and to establish payment for ecosystem services (PES), encouraging sustainable production and consumption patterns.*

The areas of activity in Pillar D which are most relevant to the Lviv Forum are:

- *Valuation of forest ecosystem services*, notably undertaking national reviews of forest ecosystem services and assessing their values (D.1.4)
- *Payment for forest ecosystem services: moving from theory to practice*, notably building capacity for PES at the national level and incorporating PES into existing strategies (D.2.2) and developing guidelines for policies and instruments that will provide a framework for PES and identify potential PES funding options (D.2.3)

Employment and livelihood opportunities in the forest sector

Pillar C addresses decent green jobs in the forest sector. The goal is that “the workforce is able to implement sustainable forest management, and the forest sector contributes to achieving the social goals of the green economy by providing decent jobs”

The areas of activity in Pillar C which are most relevant to the Lviv Forum are:

- *Strategy for decent green jobs in the forest sector*, notably reviewing forest sector workforce issues to recommend priorities (C.0.1)
- *A skilled workforce*, notably reviewing and discussing at policy level the main threats to sustainability of the workforce and possible countermeasures (C.1.2), developing tripartite (government/unions/employers) approaches to green jobs in the forest sector, using tools such as regulations, minimum standards, certification

etc. (C.1.3), increasing investment in the education and training of contractors, forest workers and forest owners (C.1.4), encouraging associations, such as contractors’ associations, as a means to improve access to training (C.1.5)

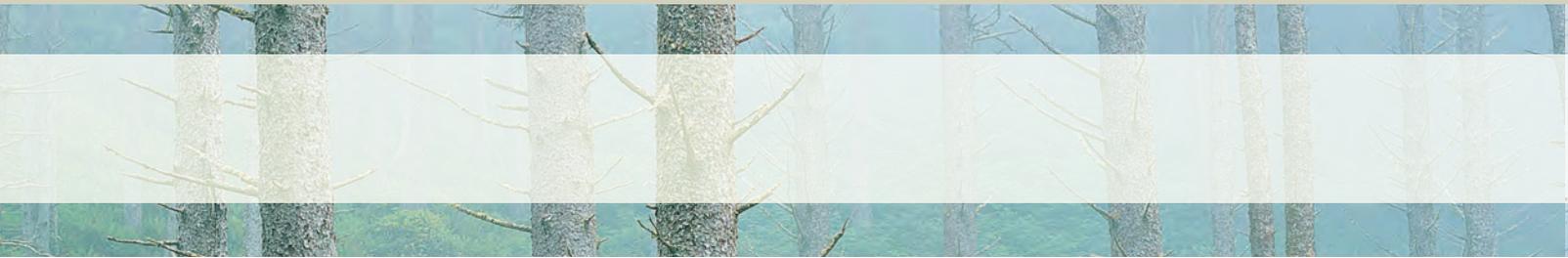
- *Safety and health of the forestry workforce*, notably improving the monitoring of occupational safety and health of the forestry workforce (C.2.2), enforcing relevant legislation and developing regulations, if necessary, to take account of changing technology and social conditions (C.2.4) and funding extension work to make employers and workers sensitive to safety and health issues (C.2.5)
- *Forest operations*, notably developing and sharing best practice for environmentally-efficient and sustainable forest operations (C.3.1)

Forest governance in a green economy

Pillar E of the Action Plan addresses Monitoring and governance of the forest sector. The objective of Pillar E is “To ensure that the forest sector in the region has policies and institutions which promote sustainable forest management, that policy making is evidence-based, policy instruments are effective, efficient and equitable, and that monitoring is adequate in order to mainstream the green economy in forest sector policies”.

The areas of activity in Pillar E which are most relevant to the Lviv Forum are:

- *Strategy for monitoring and governance of the forest sector in the green economy*, notably reviewing national forest sector governance and the adequacy of available supporting information (E.0.2), and development of capacities of all stakeholders (E.0.4)
- *Implementation and improvement of criteria and indicators of sustainable forest management*, notably developing the capacity to supply usable data for all indicators (E.1.2) and producing regular fact based reports on sustainable forest management, based on international and national criteria and indicators (E.1.4)
- *Assessment of sustainable forest management in the region* notably assessing the sustainability of forest management at the national level (E.2.3)
- *Policy instruments and institutional framework for the forest sector in a green economy* notably preparing na-



tional level studies of policy instruments in place and their appropriateness for the green economy (E.3.4) and promoting sustainable forestry in rural communities (entrepreneurship, capacity building and innovation) (E3.5)

- *Communication and promotion of sustainable forest management and the green economy* notably improving the forest sector's capacity to communicate (E.4.1) and implementing communication to promote the idea

of wood as an ecologically preferred construction material (E.4.2)

- *Communication and outreach to and cooperation/coordination with other parts of the green economy* notably ensuring the participation of forest stakeholders in cross sectoral processes and initiatives related to the green economy (E5.3) and adding "forests and the green economy" to the educational curriculum (E.5.5)



Annex table 1: The forest resources of Eastern Europe, northern and central Asia

	Forest area	Forest cover	Annual change rate, 2005-2010	Share of public ownership	Protection "primary designated function"	Growing stock	Growing stock per ha	Share of forest in protected areas
	1000 ha	%	%	%	% of forest area	Million m ³	m ³	%
BALKANS	19 635	32.8	0.7	78	18	3 452	176	
Albania	776	28.3	-0.1	98	17	75	97	21
Bosnia and Herzegovina	2 185	42.7	0.0	79	0	358	164	
Bulgaria	3 927	36.1	1.4	89	12	656	167	8
Croatia	1 920	34.3	0.2	73	4	410	214	3
Montenegro	543	40.4	0.0	67	10	72	133	2
Romania	6 573	28.6	0.5	80	39	1 390	211	27
Serbia	2 713	31.0	1.7	51	7	415	153	17
The former Yugoslav Republic of Macedonia	998	39.2	0.5	90	0	76	76	
EASTERN EUROPE	827 811	48.1	0.0	100	9	85 270	103	
Belarus	8 630	41.6	0.5	100	19	1 580	183	14
Moldova	386	11.7	1.3	100	10	48	124	17
Russian Federation	809 090	49.4	0.0	100	9	81 523	101	2
Ukraine	9 705	16.8	0.3	100	31	2 119	218	
NORTH AND CENTRAL ASIA	22 974	4.2	-0.3	100	55	1 881	82	
Kazakhstan	3 309	1.2	-0.2	100	0	364	110	
Kyrgyzstan	954	5.0	1.8	100	75	45	47	8
Mongolia	10 898	7.0	-0.8	100	45	1 426	131	47
Tajikistan	410	2.9	0.0	88	11	5	12	11
Turkmenistan	4 127	8.8	0.0	100	97	15	4	
Uzbekistan	3 276	7.7	-0.1	100	93	26	8	6
CAUCASUS AND TURKEY	15 274	16.1	0.7	100	33	2 153	141	
Armenia	262	9.3	-1.5	100	46	33	126	
Azerbaijan	936	11.3	0.0	100	92	127	136	
Georgia	2 742	39.5	-0.1	100	79	467	170	20
Turkey	11 334	14.7	1.0	100	17	1 526	135	100
EASTERN EUROPE NORTH AND CENTRAL ASIA TOTAL	885 694	36.5	0.0	99	11	92 756	105	

Source: FAO FRA 2010



Annex table 2: Removals in Eastern Europe, northern and central Asia

	Removals industrial roundwood	Removals woodfuel	Removals total	Share of woodfuel in removals
	1000 m ³ ob	1000 m ³ ob	1000 m ³ ob	%
BALKANS	23 249	9 711	32 960	29
Albania	27	164	191	86
Bosnia and Herzegovina	3 006	1 337	4 343	31
Bulgaria	3 772	1 938	5 710	34
Croatia	3 077	1 181	4 258	28
Montenegro	221	305	526	58
Romania	12 012	3 000	15 012	20
Serbia	1 002	1 306	2 308	57
The former Yugoslav Republic of Macedonia	132	480	612	78
EASTERN EUROPE	152 869	57 568	210 437	27
Belarus	6 571	1 074	7 645	14
Moldova	41	299	340	88
Russian Federation	134 870	50 905	185 775	27
Ukraine	11 387	5 290	16 677	32
NORTH AND CENTRAL ASIA	603	859	1 462	59
Kazakhstan	535	231	766	30
Kyrgyzstan	9	16	25	64
Mongolia	50	574	624	92
Tajikistan	0	7	7	100
Turkmenistan	0	10	10	100
Uzbekistan	9	21	30	70
CAUCASUS AND TURKEY	12 031	10 468	22 499	47
Armenia	11	76	87	87
Azerbaijan	4	4	8	50
Georgia	111	666	777	86
Turkey	11 905	9 722	21 627	45
EASTERN EUROPE NORTH AND CENTRAL ASIA TOTAL	188 752	78 606	267 358	29

Source: FAO FRA 2010

Annex table 3: The forest in society in Eastern Europe, northern and central Asia

	Forest/ head	Forest area/ rural population	Share of forest sector in GDP 2006	Employment in forestry	Employment in the forest sector (incl. Forestry)	Ratio of forest sector employment to forest area	National Forest Programme (date)
	ha/capita	ha/capita	%	persons	persons	people/1000ha	
BALKANS	0.4	0.8	1.35	101 525	279 896	14	
Albania	0.2	0.5	0.15	1 571	2 129	3	No
Bosnia and Herzegovina	0.6	1.1	2.46	7 362	14 161	6	na
Bulgaria	0.5	1.8	0.88	15 446	48 957	12	2003
Croatia	0.4	1.0	1.25	9 283	25 936	14	2003
Montenegro	0.9	2.2	1.29	711	3 226	6	na
Romania	0.3	0.7	1.74	56 872	151 329	23	2000
Serbia	0.3	0.6	0.63	5 782	25 698	9	2005
The former Yugoslav Republic of Macedonia	0.5	1.5	0.44	4 498	8 460	8	2006
EASTERN EUROPE	4.1	14.4	0.87	571 899	1 193 166	1	
Belarus	0.9	3.3	2.11	33 200	102 800	12	2007
Moldova	0.1	0.2	0.73	3 707	5 907	15	na
Russian Federation	5.7	21.2	0.79	382 920	849 294	1	2003
Ukraine	0.2	0.7	1.16	152 072	235 165	24	2010
NORTH AND CENTRAL ASIA	0.4	1.2	0.08	24 225	32 102	1	
Kazakhstan	0.2	0.5	0.08	9 894	14 072	4	2004
Kyrgyzstan	0.2	0.3	0.18	3 301	4 596	5	2005
Mongolia	4.1	9.6	0.23	501	1 178	0	2002
Tajikistan	0.1	0.1	0.03	2 195	2 524	6	2008
Turkmenistan	0.8	1.6	0.01	2 200	2 310	1	No
Uzbekistan	0.1	0.2	0.10	6 134	7 422	2	2006
CAUCASUS AND TURKEY	0.2	0.5	0.68	43 295	182 990	12	
Armenia	0.1	0.2	0.12	2 378	3 373	13	Yes
Azerbaijan	0.1	0.2	0.03	2 084	3 884	4	No
Georgia	0.6	1.4	0.24	5 984	8 884	3	2006
Turkey	0.2	0.5	0.73	32 849	166 849	15	2004
EASTERN EUROPE NORTH AND CENTRAL ASIA TOTAL	2.2	6.8	0.84	740 944	1 688 154	2	

Source: FAO FRA 2010 and FAO



Annex table 4: Production of forest products, 2009-2011 (3 year average)

	Industrial roundwood	Sawnwood	Wood based panels	Paper and paperboard
	1000 m ³	1000 m ³	1000 m ³	1000 m.t.
BALKANS	19 431	6 872	4 052	1 560
Albania	80	8	11	0
Bosnia and Herzegovina	2 330	967	29	119
Bulgaria	3 546	518	797	253
Croatia	3 546	695	146	542
Montenegro	0	0	0	0
Romania	9 827	4 121	2 851	266
Serbia	0	558	217	359
The former Yugoslav Republic of Macedonia	104	4	0	21
EASTERN EUROPE	148 953	33 622	12 512	9 037
Belarus	7 621	2 507	474	550
Moldova	43	34	0	98
Russian Federation	134 053	29 285	10 206	7 516
Ukraine	7 236	1 795	1 833	874
NORTH AND CENTRAL ASIA	140	493	91	522
Kazakhstan	73	101	86	210
Kyrgyzstan	9	83	0	310
Mongolia	49	300	2	0
Tajikistan	0	0	0	0
Turkmenistan	0	0	0	0
Uzbekistan	8	10	3	2
CAUCASUS AND TURKEY	15 567	6 259	6 506	5 050
Armenia	2	1	6	8
Azerbaijan	3	2	1	3
Georgia	105	70	5	2
Turkey	15 457	6 186	6 494	5 037
EASTERN EUROPE NORTH AND CENTRAL ASIA TOTAL	184 090	47 246	23 161	16 169

Source: FAOSTAT

Annex table 5: Consumption of forest products, 2009-2011 (3 year average)

	Industrial roundwood	Sawnwood	Wood based panels	Paper and paperboard	Total consumption	Consumption per head, total
	1000 m ³	1000 m ³	1000 m ³	1000 m.t.	1000 m ³ EQ	m ³ EQ/cap
BALKANS	18 653	3 261	3 622	2 438	20 880	0.40
Albania	80	10	123	17	282	0.09
Bosnia and Herzegovina	2 236	313	193	106	1 289	0.34
Bulgaria	3 194	301	531	436	3 011	0.40
Croatia	3 014	394	273	629	3 457	0.78
Montenegro	NA	NA	26	6	NA	NA
Romania	9 949	1 431	2 041	609	8 245	0.39
Serbia	59	794	393	597	4 295	0.44
The former Yugoslav Republic of Macedonia	135	65	43	37	326	0.16
EASTERN EUROPE	123 245	14 524	11 354	8 559	76 884	0.38
Belarus	5 676	2 455	617	616	7 871	0.81
Moldova	79	174	0	147	857	0.24
Russian Federation	113 036	11 484	8 956	6 308	59 103	0.42
Ukraine	4 453	411	1 782	1 487	9 054	0.20
NORTH AND CENTRAL ASIA	503	2 939	1 042	806	10 163	0.17
Kazakhstan	148	584	462	382	3 237	0.21
Kyrgyzstan	17	263	91	331	1 839	0.34
Mongolia	50	301	29	15	668	0.25
Tajikistan	0	58	0	1	112	0.02
Turkmenistan	0	24	2	1	52	0.01
Uzbekistan	289	1 709	458	76	4 256	0.19
CAUCASUS AND TURKEY	16 673	7 288	6 973	7 086	50 720	0.56
Armenia	2	40	83	26	304	0.10
Azerbaijan	12	540	275	54	1 666	0.19
Georgia	121	21	94	29	299	0.07
Turkey	16 537	6 688	6 522	6 977	48 452	0.66
EASTERN EUROPE NORTH AND CENTRAL ASIA TOTAL	159 074	28 013	22 992	18 888	158 647	0.39

Source: FAOSTAT



Annex table 6: Imports and exports of forest products in Eastern Europe and Northern and Central Asia

	IMPORTS				EXPORTS			
	Industrial roundwood	Sawnwood	Wood based panels	Paper and paperboard	Industrial roundwood	Sawnwood	Wood based panels	Paper and paperboard
	1000 m ³	1000 m ³	1000 m ³	1000 m.t.	1000 m ³	1000 m ³	1000 m ³	1000 m.t.
BALKANS	779.0	841.8	1 976.8	1 391.5	1 557.5	4 452.0	2 407.0	513.3
Albania	0.6	23.9	111.8	18.0	0.5	21.4	-	1.1
Bosnia and Herzegovina	92.3	43.5	181.3	73.5	185.7	697.5	17.3	87.0
Bulgaria	44.6	54.0	351.6	264.9	396.4	270.8	618.4	81.0
Croatia	6.7	240.3	244.7	224.8	538.0	541.3	117.7	137.7
Montenegro	-	3.9	26.7	6.6	14.5	51.7	0.7	0.4
Romania	517.3	48.0	759.1	425.1	395.3	2 738.0	1 569.8	81.4
Serbia	85.4	347.3	255.0	348.0	26.0	111.7	79.5	109.4
The former Yugoslav Republic of Macedonia	32.1	80.7	46.6	30.7	1.2	19.6	3.6	15.3
EASTERN EUROPE	142.6	189.9	2 167.0	2 426.0	25 850.4	19 287.2	3 324.8	2 904.5
Belarus	24.9	8.8	503.4	276.1	1 969.9	60.3	360.4	209.6
Moldova	39.0	143.4	0.1	55.1	2.5	4.0	0.3	5.7
Russian Federation	20.6	26.5	1 142.9	1 270.0	21 037.1	17 827.3	2 392.9	2 477.7
Ukraine	58.1	11.2	520.6	824.8	2 840.8	1 395.6	571.1	211.4
NORTH AND CENTRAL ASIA	368.7	2 446.1	956.2	297.2	5.4	0.5	5.0	14.0
Kazakhstan	74.3	483.8	377.3	179.7	0.1	0.3	0.9	8.1
Kyrgyzstan	7.6	180.7	90.8	21.3	-	-	0.0	0.3
Mongolia	2.1	0.8	27.2	14.5	1.2	0.1	0.1	0.0
Tajikistan	-	57.7	-	1.0	-	0.0	-	0.1
Turkmenistan	-	23.8	2.9	1.0	-	0.0	0.9	0.0
Uzbekistan	284.7	1 699.2	458.0	79.7	4.1	0.1	3.1	5.5
CAUCASUS AND TURKEY	1 117.0	1 178.3	1 385.0	2 266.9	10.5	149.2	917.4	230.5
Armenia	1.2	42.5	76.6	17.5	0.2	4.1	0.1	0.0
Azerbaijan	9.1	538.6	274.1	51.6	0.0	0.7	0.1	0.5
Georgia	16.7	2.1	91.7	27.8	0.9	51.3	3.1	0.0
Turkey	1 090.0	595.0	942.6	2 170.0	9.3	93.1	914.1	230.0
EASTERN EUROPE NORTH AND CENTRAL ASIA TOTAL	2 407.4	4 656.0	6 485.0	6 381.5	27 423.8	23 889.0	6 654.1	3 662.3

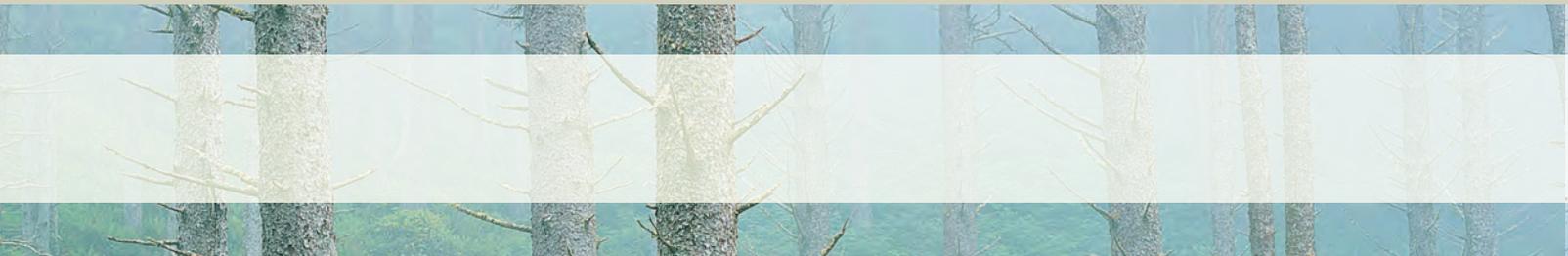
Source: FAOSTAT

Annex table 7: Trade in forest products in Eastern Europe and northern and central Asia: net trade and value of trade

	NET TRADE	TRADE BY VALUE			RATIO
	Total	Exports	Imports	Net trade	Imports as % of apparent consumption
	1000 m ³ EQ	Million \$	Million \$	Million \$	%
BALKANS	5 146	2 871	2 453	418	51
Albania	-249	7	26	-19	104
Bosnia and Herzegovina	1 109	308	189	119	57
Bulgaria	537	353	380	-27	56
Croatia	579	531	401	130	48
Montenegro	40	17	18	-1	
Romania	5 055	1 415	812	602	41
Serbia	-1 652	229	573	-344	56
The former Yugoslav Republic of Macedonia	-272	12	55	-43	114
EASTERN EUROPE	65 423	10 160	4 360	5 800	17
Belarus	1 568	400	599	-199	24
Moldova	-477	26	99	-73	59
Russian Federation	61 058	8 667	2 472	6 195	11
Ukraine	3 274	1 066	1 190	-123	43
NORTH AND CENTRAL ASIA	-7 565	19	1 019	-1 000	75
Kazakhstan	-2 223	12	502	-490	70
Kyrgyzstan	-574	0	76	-76	31
Mongolia	-99	0	18	-18	15
Tajikistan	-112	0	11	-11	100
Turkmenistan	-52	1	4	-3	103
Uzbekistan	-4 505	6	407	-401	107
CAUCASUS AND TURKEY	-11 149	593	3 399	-2 807	27
Armenia	-262	0	65	-65	89
Azerbaijan	-1 659	1	155	-154	100
Georgia	-168	22	61	-39	91
Turkey	-9 060	570	3 118	-2 549	24
EASTERN EUROPE NORTH AND CENTRAL ASIA TOTAL	51 855	13 643	11 231	2 412	28

Note: Net trade = exports - imports

Source: FAOSTAT



List of participants

Last name	Name	Institution	Position
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Shahnazaryan	Kamo	Lalvar Forest Enterprise	Director
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AZERBAIJAN			
Abbasov	Agil	Ministry of Ecology and Natural Resources	Lead Advisor
Mammadova	Gulnara	Ministry of Ecology and Natural Resources	Lead Advisor
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Ventrubova	Katerina	Ministry of Agriculture	Senior Officer
FINLAND			
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KAZAKHSTAN			
Atymtayev	Zhanat	Forest and Hunting Committee of Ministry of Agriculture of Republic of Kazakhstan	Expert
Bayzakov	Sabit	Forestry Research and Innovation Institute	Director, National Academy of Sciences



KOREA			
Jeon	ChulHyun	Korea Forest Research Institute	Researcher
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Aliev	Mairambek	Department of ecosystems of State Agency on environment protection and Forestry	Chief Specialist
Osmonov	Kanatbek	The Forestry and Wood Workers Union of Kyrgyzstan	President
Razhapbaev	Muslim	National Academy of Sciences of Kyrgyz Republic	Academic Secretary of Forest Institute
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MOLDOVA			
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Talmaci	Ion	Forest Research and Management Institute	Deputy Director
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MONTENEGRO			
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Gutorenko	Oleg	Timber and Related Industries Workers Union of Russia	President
Korchagin	Oleg	Research Institute of Forests Genetics and Breeding	Director
Laletin	Andrej	Friends of the Siberian Forests	Chairman
Martynyuk	Alexander	Russian Research Institute for Silviculture and Mechanization of Forestry	Director
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Novotný	Julius	Forest Consult	Projects Manager
Szőke	Štefan	Rokosan s.r.o.	Co-owner



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USA				
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	Sukhina	Oksana	U.S. Embassy to Ukraine	Environment, Science and Technology Analyst
UZBEKISTAN				
	Mirzaev	Olimkhon	Jomboy Forestry Organization	Director
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	Korzhov	Volodymyr	Ukrainian Scientific-Research Institute of Mountain Forestry	Deputy Director
	Krynytsky	Hryhoryy	Ukrainian National Forestry University	Vice Rector
	Lakyda	Petro	National University of bioresources and nature use, Training-scientific institute of forest management and garden architecture	Director
	Matushevich	Lyubov	National University of bioresources and nature use, Chair of forest taxation and forest inventory	Associate Professor
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	Parpan	Vasyl	Ukrainian Scientific-Research Institute of Mountain Forestry	Director
	Paslavsky	Mykhail	Ukrainian National Forestry University	Chair of Environment
	Shparyk	Yuri	Ukrainian Scientific-Research Institute of Mountain Forestry	Head Laboratory of ecology



	Soloviy	Ihor	Ukrainian National Forestry University	Associate Professor
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The Lviv Forum on Forests in a green economy for countries in Eastern Europe, Northern and central Asia, a country led initiative in support of the UN Forum on Forests, reviewed experience and explored opportunities to enable the forest sector in this region to make a full contribution to the emerging green economy. Participants reviewed issues and challenges and made recommendations at the country group level on sustainable forest industries and products, forest ecosystem services and the role of forest in low carbon economies, employment and livelihood opportunities, and forest governance in a green economy. Finally the Forum approved the Lviv Vision and message on the forest sector in a green economy, including ten clear recommendations to governments and the forest sector in the region.



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