Lviv Forum on Forests in a Green Economy: Actions and challenges for the countries of Eastern Europe and Northern and Central Asia

Background paper

This background paper has been prepared by UNECE/FAO for the organisers of the Lviv Forum. It is being circulated to participants before the Forum to act as a basis for the discussions. Participants will be asked to review it and submit comments during the Forum. After the Forum it will be revised to include the outcomes of the Forum, notably the exchange of experience during the thematic sessions, and the conclusions and recommendations which will be prepared by participants. The revised paper, including the Forum recommendations, will be the major output of the Forum, and will be transmitted to UNFF and national governments.

1. 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 is 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 are:

- 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 is a contribution to UNFF and the outcomes, especially the recommendations, will be presented to UNFF 7 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) will also be compiled and made available in a consolidated form to make them as useful as possible to Forum participants and a wider audience, over a longer period.

This background paper 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
- Propose a structure for the four thematic sessions of the Forum, by outlining issues and posing questions to which participants will be invited to respond

2. Definition, concepts and Action Plan of the forest sector in a green economy

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 the entire 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 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 un-marketed 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 sequestrating 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 section presents an overview of forests and the forest sector in the EENCA region. It 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]. Annex tables' 1-7 present data by country, which are summarised by country group in this section. 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. Shortcomings for information represent one of many obstacles to sustainable forest management in the region.

The countries of the region have been split into four country groups, with quite different characteristics (as well as significant differences within the country groups). The four groups used are as follows:

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.

These country groups will be used throughout the Forum, notably to structure thematic sessions. 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.

[1] **Global Forest Resource Assessment 2010** (FRA); FAO Forestry Paper 163;statistics available for download at http://faostat.fao.org/site/626/DesktopDefault.aspx?PageID=626#ancor

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 may be 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 m^3 of industrial wood, but this is concentrated in a few producers: about 135 million m^3 are produced in Russia, and 35 million m^3 in another three countries (Romania, Ukraine and Turkey). Elsewhere, harvest of industrial wood is quite small. Wood fuel 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, and tundra). FRA 2010 did not collect data on increment, so it is not possible to compare removals with increment as a measure of sustainability of wood supply.

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"[2].

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/cap	%
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	23.0	4.2	-0.3	82	0.6	0.4	0.08

[2] 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"

Central Asia							
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: 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"[3]), 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)

[3] **People, forests and trees in West and Central Asia: Outlook for 2020**; FAO Forestry Paper 152 (2007)

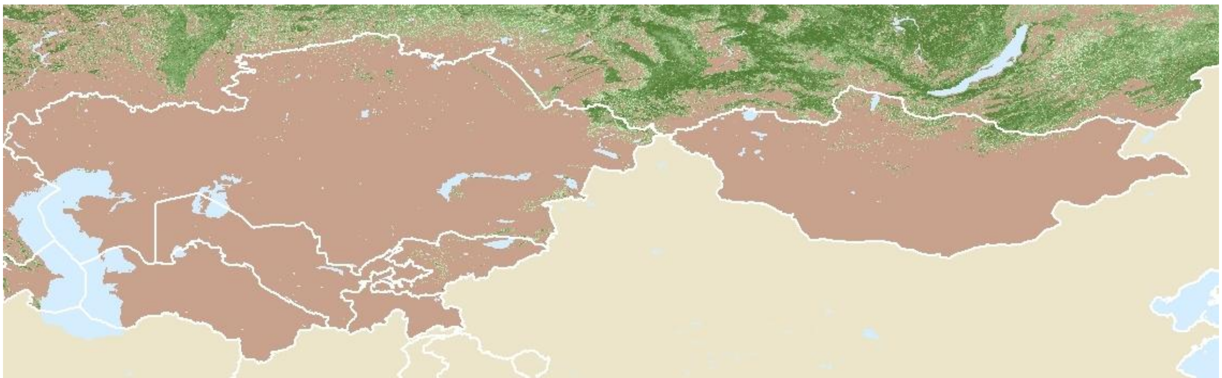

Figure 3: The forests of Central Asia and Mongolia (Source: FAO)

3.1. Forest products

Consumption of forest products in the EENCA region is quite low, at about 0.4 m^3 EQ (cubic metres equivalent[4])/head, compared to the average for the UNECE region of about 1.1 m^3 EQ/head. Although this may be an underestimate, as some production is not recorded, no county 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

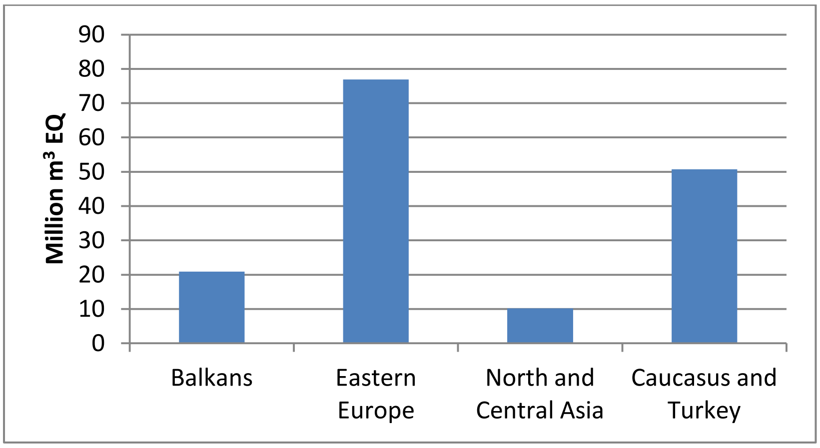

Figure 4: Consumption of forest products, total in the EECNA region, 2009-2011; 3 year average (Source: FAOSTAT)

[4] 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.

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 m^3 EQ of products.

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[5]	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

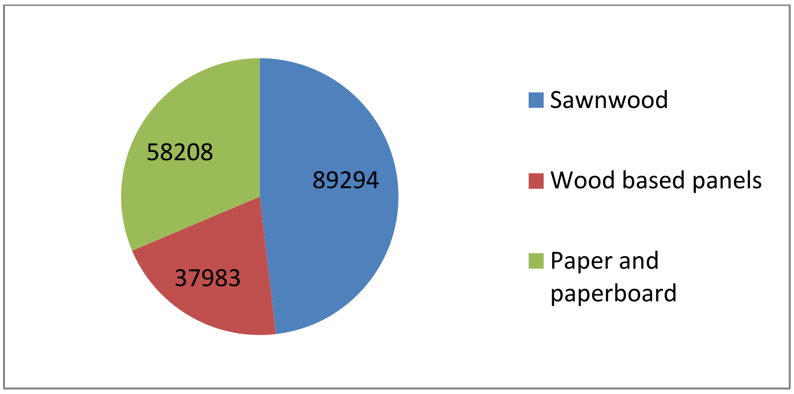

Figure 5: Production of forest products in the EENCA region, 1000 m^3 EQ, 2009-2011; 3 year average (Source: FAOSTAT)

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.

Russia's main exports are of industrial roundwood (over 20 million m^3, 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

[5] It is quite likely that Russian production of sawnwood is significantly under-estimated 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.

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 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	5146.0	2871.5	2453.4	418.1	50.9
Eastern Europe	65423.3	10160.0	4359.6	5800.5	16.6
North and Central Asia	-7564.8	18.9	1018.5	-999.6	75.1
Caucasus and Turkey	-11149.3	592.7	3399.2	-2806.5	27.2
EENCA Total	51855.1	13643.1	11230.7	2412.4	28.2

(Net trade: **+** = net exports, **-** = net imports) (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.

3.2. 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.

Economically, compared to other sectors, the forest sector is not very important in most countries of the region. Those countries where the forest sector (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 accounts for 0.79% of GDP, because of the size of other sectors of the 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 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 inexplicably[6], so the workforce data are probably unreliable and may be considered minimum estimates.

4. Main issues and challenges in the region

These « Main issues and challenges » have been chosen before the Forum, by the authors of the Background Paper. Participants are invited to consider whether there are other main issues and challenges, affecting a significant number of countries, which should be addressed by the Forum.

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. 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.

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 as "remote forests which will not be developed in 20 and more years".

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.

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

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 competitivity 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.

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 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. This does not exclude 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, but these are still very limited.
- 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.
- 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.

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.
All countries in the region, except five, reported to FRA 2010 that they have a recent national forest programme (see annex table 2), which should be the strategy document underlying forest policy and institutions. 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.

The governance challenge facing the countries of the EENCA in their very different social and institutional settings is to develop institutions and policies for the forest sector which are effective in achieving consensus-based goals, stable, transparent, efficient in their use of public funds, and above all, sustainable.

4.3. Illegal logging

All over the region, but especially in forest rich countries, illegal logging is acknowledged to be a major challenge. 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. In some regions of Russia up to 50% of the harvested wood is either illegal or questionable, not confirmed by official documents of origin. 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.

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 Europe[7] 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 opportunity to derive income from illegal logging. Remedies proposed by REC include:

- Efficient administrative procedures based on a clear legal framework.
- Capacity-building trainings 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, if not the most important one, 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

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

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" 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 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.

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 countries. 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[8] do not mention forests at all, or only in passing as part of policies for environment or sustainable land use.

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

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.

The existence of 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. The forest sector and the green economy in the EENCA region: background to the thematic sessions

The core of the Lviv Forum will be the thematic sessions where participants will discuss in small groups the forest sector and the emerging green economy, from the specific perspective of the EENCA region. The sessions will be structured according to four themes, and will use as a starting point the Action Plan for the forest sector in the green economy discussed in section 2, notably the possible actions to be carried out at the national level (summarised in annex 1). At each thematic session participants will be presented with some major challenges and the relevant parts of the Action Plan. They will then be asked to respond to 1-2 major questions on which the discussion will be based. This section presents, for the four thematic sessions, a summary of the relevant parts of the Action Plan, the challenges and the questions proposed for discussion.

The thematic sessions will prepare recommendations for the consideration of the Forum as whole which will be transmitted, after discussion by the Forum plenary, to UNFF 10.

Process for the thematic sessions at the Lviv Forum

Participants will divide into four groups, based on the country groups used in this paper (Balkans, Eastern Europe, Central Asia, Caucasus and Turkey), as the main issues are very different in the various regions.

Each group will address the four themes of the Forum:

- 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

Moderators will present the main issues, challenges and questions, along the lines set out below. Then the group will discuss the issues and form a consensus, through a structured process, as to recommendations and priorities. Taken together, and synthesized, these conclusions will be the main output of the Forum and presented to UNFF and national governments.

5.1 Sustainable forest industries and products

5.1.1 Parts of the Action Plan relevant to the thematic session

The Action Plan promotes sustainable production and consumption, and in particular a more intensive use of wood, as a renewable material and energy source, substituting for non-renewable fuels and materials. To be credible, promotion of wood supply and consumption must be based on transparency (certification, traceability), and objective assessments of the life cycle of forest products and their competitors. Forest products should also contribute to green policy goals including energy saving through green building and green public procurement (incorporating sustainability aspects into procurement rules).

5.1.2 Challenges for the EENCA region

- Achieve real sustainable potential of the forest sector (wood mobilisation, forest industries)
- Satisfy local needs for forest products
- Reduce import dependence
- Promote use of sustainably produced forest products, substituting other materials and fuels
- Promote wood energy in rural areas, using local resources on a sustainable basis

5.1.3 Suggested questions for the thematic sessions

- How sustainable is the level of industrial wood harvest in your country?
    - Are forests over-used or under-used for industrial wood supply?
    - Is full potential achieved for industrial wood?
    - Does the tenure system constrain wood supply?
- How sustainable is wood energy supply in your country?
    - How can unsustainable use of wood fuel be prevented?
    - Could more efficient use of woodfuel ease pressure on the resource?
    - Should sustainable use of wood energy be promoted, especially in remote, forest-rich areas?

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

5.2.1 Parts of the Action Plan relevant to the thematic session

The Action Plan promotes a balanced role for the forest sector in mitigation of climate change, through sequestration and storage of carbon and substitution of high carbon fuels and materials, as well as efficiency in use of material. It also promotes the development of forests' supply of ecosystem functions, including protection and biodiversity, and the development of innovative systems for payment of these ecosystem services.

5.2.2 Challenges for the EENCA region

- Maintain and develop protection functions of forests
- Develop systems for payment for ecosystem services
- Develop balanced strategies for the forest sector's contribution to mitigation of climate change, including both sequestration of carbon in forests and products and substitution of non-renewable fuels and materials
- Assess risks to the forest sector from a changing climate and develop adaptation strategies

5.2.3 Questions for the thematic sessions

- To what extent does the forest sector (i.e. including forest industries and consumption of forest products as well as forest management) in your country contribute to the low carbon economy?
    - Substitution of renewable forest products and fuels for non-renewable materials and fuels?
    - Sustainable consumption patterns for forest products (efficient use, recycling, reuse)?
    - Carbon sequestration in forests and products?
    - Adaptation of forest management to expected climate change?
- How effectively and efficiently are forest ecosystem services managed in your country?
    - Maintenance of protection functions (soil, water, desertification)?
    - Development of systems of payment for forest ecosystem services?
    - Conservation of biodiversity?

5.3 Employment and livelihood opportunities in the forest sector

5.3.1 Parts of the Action Plan relevant to the thematic session

The Action Plan promotes the development of "decent green jobs" in the forest sector: jobs which promote the green economy, and deliver adequate standards of occupational safety and health, alongside respect for ILO Conventions. It also aims to develop a forest sector workforce which has the skills for the new challenges of the green economy.

5.3.2 Challenges for the EENCA region

- Ensure all jobs in the forest sector are "decent green jobs": adequate pay, better health and safety, legal rights, according to relevant ILO Conventions.
- Improve livelihoods for forest dependent/rural communities through sustainable forest management

5.3.3 Suggested question for the thematic sessions

- To what extent is the forest sector workforce in your country able to contribute to achieving sustainable forest management?
    - Occupational safety and health?
    - Education and skills?
    - Remuneration and conditions of employment?

5.4 Forest governance in a green economy

5.4.1 Parts of the Action Plan relevant to the thematic session

Monitoring and governance are core parts of the Action Plan, which promotes evidence based decision making, based on recent and reliable information, and policy instruments which are effective, efficient and equitable, with excellent communication with and participation by other sectors and society as a whole.

5.4.2 Challenges for the EENCA region

- Put in place governance systems which are effective and efficient, less bureaucratic and more transparent than in the past.
- Reconsider and adapt as necessary the structure and mission of state forest services: improve funding, reduce corruption, increase stakeholder consultation, separate management from policy and administrative functions (avoiding conflicts of interest).
- Improve communication with other branches of government and with stakeholders (environmental NGOs, forest based communities).
- Improve information on all aspects of the forest sector, and base policy on objective analysis of good data.

5.4.3 Suggested questions for the thematic sessions

- How ready is your country's forest sector for the emerging green economy?
    - Are institutions, notably state forest services, and policies adapted to the emerging challenges?
    - Are policies based on reliable and objective data, and their success monitored?
- How meaningfully are stakeholders, inside and outside the sector, involved in policy formation?

6. Conclusions and recommendations

To be completed in the light of the outcomes of the Lviv Forum

7. Follow up to the Lviv Forum

The Lviv Forum will provide opportunities for intense and structured exchange of experience and opinion about sustainable forest management in the Eastern Europe, and Northern and Central Asia. The thematic sessions will result in recommendations, addressed to national governments and the international community, which will be compiled and presented to UNFF, as well as through a side event of the UNFCCC COP-18 in Qatar in December 2012. The recommendations and the underlying analysis will also be formally transmitted by the organisers to national governments of participating countries.

To make the Forum outcomes more available they will be compiled and made available as a formal publication. It is hoped to organise a follow up event in 4-5 years to monitor progress in implementing the recommendations of the Lviv Forum and identify the lessons learned from the experience

Annex 1

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 national 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 Source FRA 2010								
	Forest area	**Forest cover**	**Change 2005-2010**	**Share of public ownership**	**Protection "primary designated function"**	**Growing stock**	**Growing stock per ha**	**Share of forest in protected areas**
	1000 ha	%	%/year	%	% of forest area	Million m^3	m^3	%
Albania	776	28.3	-0.1	98	17	75	97	20.9
Bosnia and Herzegovina	2185	42.7	0.0	79	0	358	164	
Bulgaria	3927	36.1	1.4	89	12	656	167	8.0
Croatia	1920	34.3	0.2	73	4	410	214	2.8
Montenegro	543	40.4	0.0	67	10	72	133	2.4
Romania	6573	28.6	0.5	80	39	1390	211	26.6
Serbia	2713	31.0	1.7	51	7	415	153	16.7
The former Yugoslav Republic of Macedonia	998	39.2	0.5	90	0	76	76	
BALKANS	**19635**	**32.8**	**0.7**		**0**	**3452**	**176**	
Belarus	8630	41.6	0.5	100	19	1580	183	14.0
Moldova	386	11.7	1.3	100	10	48	124	16.6
Russian Federation	809090	49.4	0.0	100	9	81523	101	2.2
Ukraine	9705	16.8	0.3	100	31	2119	218	
EASTERN EUROPE	**827811**	**48.1**	**0.0**		**0**	**85270**	**103**	
Kazakhstan	3309	1.2	-0.2	100	0	364	110	
Kyrgyzstan	954	5.0	1.8	100	75	45	47	8.4
Mongolia	10898	7.0	-0.8	100	45	1426	131	47.3
Tajikistan	410	2.9	0.0	88	11	5	12	10.7
Turkmenistan	4127	8.8	0.0	100	97	15	4	
Uzbekistan	3276	7.7	-0.1	100	93	26	8	6.4
NORTH AND CENTRAL ASIA	**22974**	**4.2**	**-0.3**		**0**	**1881**	**82**	
Armenia	262	9.3	-1.5	100	46	33	126	
Azerbaijan	936	11.3	0.0	100	92	127	136	
Georgia	2742	39.5	-0.1	100	79	467	170	20.1
Turkey	11334	14.7	1.0	100	17	1526	135	100.0
CAUCASUS AND TURKEY	**15274**	**16.1**	**0.7**		**0**	**2153**	**141**	
EASTERN EUROPE NORTH AND CENTRAL ASIA TOTAL	**885694**	**36.5**	**0.0**		**0**	**92756**	**105**	

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

Source FRA 2010

	Removals industrial roundwood	**Removals woodfuel**	**Removals total**	**Share of woodfuel in removals**
	1000 m^3 ob	1000 m^3 ob	1000 m^3 ob	%
Albania	27	164	191	85.9
Bosnia and Herzegovina	3006	1337	4343	30.8
Bulgaria	3772	1938	5710	33.9
Croatia	3077	1181	4258	27.7
Montenegro	221	305	526	58.0
Romania	12012	3000	15012	20.0
Serbia	1002	1306	2308	56.6
The former Yugoslav Republic of Macedonia	132	480	612	78.4
BALKANS	**23249**	**9711**	**32960**	**29.5**
Belarus	6571	1074	7645	14.0
Moldova	41	299	340	87.9
Russian Federation	134870	50905	185775	27.4
Ukraine	11387	5290	16677	31.7
EASTERN EUROPE	**152869**	**57568**	**210437**	**27.4**
Kazakhstan	535	231	766	30.2
Kyrgyzstan	9	16	25	64.0
Mongolia	50	574	624	92.0
Tajikistan	0	7	7	100.0
Turkmenistan	0	10	10	100.0
Uzbekistan	9	21	30	70.0
NORTH AND CENTRAL ASIA	**603**	**859**	**1462**	**58.8**
Armenia	11	76	87	87.4
Azerbaijan	4	4	8	50.0
Georgia	111	666	777	85.7
Turkey	11905	9722	21627	45.0
CAUCASUS AND TURKEY	**12031**	**10468**	**22499**	**46.5**
EASTERN EUROPE NORTH AND CENTRAL ASIA TOTAL	**188752**	**78606**	**267358**	**29.4**

Annex table 3: The forest in society in Eastern Europe, Northern and Central Asia

Source: FRA 2010 and FAO

	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	NFP (date)
	ha/cap	ha/cap	%	persons	persons	people/1000ha	
Albania	0.2	0.5	0.15	1571	2129	3	No
Bosnia and Herzegovina	0.6	1.1	2.46	7362	14161	6	n.a.
Bulgaria	0.5	1.8	0.88	15446	48957	12	2003
Croatia	0.4	1.0	1.25	9283	25936	14	2003
Montenegro	0.9	2.2	1.29	711	3226	6	n.a.
Romania	0.3	0.7	1.74	56872	151329	23	2000
Serbia	0.3	0.6	0.63	5782	25698	9	2005
The former Yugoslav Republic of Macedonia	0.5	1.5	0.44	4498	8460	8	2006
BALKANS	**0.4**	**0.8**	**0.00**	**101525**	**279896**	**14**	
Belarus	0.9	3.3	2.11	33200	102800	12	2007
Moldova	0.1	0.2	0.73	3707	5907	15	n.a.
Russian Federation	5.7	21.2	0.79	382920	849294	1	2003
Ukraine	0.2	0.7	1.16	152072	235165	24	2010
EASTERN EUROPE	**4.1**	**14.4**	**0.00**	**571899**	**1193166**	**1**	
Kazakhstan	0.2	0.5	0.08	9894	14072	4	2004
Kyrgyzstan	0.2	0.3	0.18	3301	4596	5	2005
Mongolia	4.1	9.6	0.23	501	1178	0	2002
Tajikistan	0.1	0.1	0.03	2195	2524	6	2008
Turkmenistan	0.8	1.6	0.01	2200	2310	1	No
Uzbekistan	0.1	0.2	0.10	6134	7422	2	2006
NORTH AND CENTRAL ASIA	**0.4**	**1.2**	**0.00**	**24225**	**32102**	**1**	
Armenia	0.1	0.2	0.12	2378	3373	13	Yes
Azerbaijan	0.1	0.2	0.03	2084	3884	4	No
Georgia	0.6	1.4	0.24	5984	8884	3	2006
Turkey	0.2	0.5	0.73	32849	166849	15	2004
CAUCASUS AND TURKEY	**0.2**	**0.5**	**0.00**	**43295**	**182990**	**12**	
EASTERN EUROPE NORTH AND CENTRAL ASIA TOTAL	**2.2**	**6.8**	**0.00**	**740944**	**1688154**	**2**	

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

Source: FAOSTAT

	Industrial roundwood	**Sawnwood**	**Wood based panels**	**Paper and paperboard**
	1000 m^3	1000 m^3	1000 m^3	1000 m.t.
Albania	80	8	11	0
Bosnia and Herzegovina	2330	967	29	119
Bulgaria	3546	518	797	253
Croatia	3546	695	146	542
Montenegro	0	0	0	0
Romania	9827	4121	2851	266
Serbia	0	558	217	359
The former Yugoslav Republic of Macedonia	104	4	0	21
BALKANS	**19431**	**6872**	**4052**	**1560**
Belarus	7621	2507	474	550
Moldova	43	34	0	98
Russian Federation	134053	29285	10206	7516
Ukraine	7236	1795	1833	874
EASTERN EUROPE	**148953**	**33622**	**12512**	**9037**
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
NORTH AND CENTRAL ASIA	**140**	**493**	**91**	**522**
Armenia	2	1	6	8
Azerbaijan	3	2	1	3
Georgia	105	70	5	2
Turkey	15457	6186	6494	5037
CAUCASUS AND TURKEY	**15567**	**6259**	**6506**	**5050**
EASTERN EUROPE NORTH AND CENTRAL ASIA TOTAL	**184090**	**47246**	**23161**	**16169**

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

Source: FAOSTAT

	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
Albania	80	10	123	17	282	0.09
Bosnia and Herzegovina	2236	313	193	106	1289	0.34
Bulgaria	3194	301	531	436	3011	0.40
Croatia	3014	394	273	629	3457	0.78
Montenegro	-14	-48	26	6	-25	-0.04
Romania	9949	1431	2041	609	8245	0.39
Serbia	59	794	393	597	4295	0.44
The former Yugoslav Republic of Macedonia	135	65	43	37	326	0.16
BALKANS	**18653**	**3261**	**3622**	**2438**	**20880**	**0.40**
Belarus	5676	2455	617	616	7871	0.81
Moldova	79	174	0	147	857	0.24
Russian Federation	113036	11484	8956	6308	59103	0.42
Ukraine	4453	411	1782	1487	9054	0.20
EASTERN EUROPE	**123245**	**14524**	**11354**	**8559**	**76884**	**0.38**
Kazakhstan	148	584	462	382	3237	0.21
Kyrgyzstan	17	263	91	331	1839	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	1709	458	76	4256	0.19
NORTH AND CENTRAL ASIA	**503**	**2939**	**1042**	**806**	**10163**	**0.17**
Armenia	2	40	83	26	304	0.10
Azerbaijan	12	540	275	54	1666	0.19
Georgia	121	21	94	29	299	0.07
Turkey	16537	6688	6522	6977	48452	0.66
CAUCASUS AND TURKEY	**16673**	**7288**	**6973**	**7086**	**50720**	**0.56**
EASTERN EUROPE NORTH AND CENTRAL ASIA TOTAL	**159074**	**28013**	**22992**	**18888**	**158647**	**0.39**

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

Source: FAOSTAT

	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.
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	2738.0	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
BALKANS	**779.0**	**841.8**	**1 976.8**	**1 391.5**	**1 557.5**	**4452.0**	**2 407.0**	**513.3**
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	17827.3	2 392.9	2 477.7
Ukraine	58.1	11.2	520.6	824.8	2 840.8	1395.6	571.1	211.4
EASTERN EUROPE	**142.6**	**189.9**	**2 167.0**	**2 426.0**	**25 850.4**	**19287.2**	**3 324.8**	**2 904.5**
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	4.5	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
NORTH AND CENTRAL ASIA	**368.7**	**2 446.1**	**956.2**	**297.2**	**5.4**	**0.5**	**5.0**	**14.0**
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
CAUCASUS AND TURKEY	**1 117.0**	**1 178.3**	**1 385.0**	**2 266.9**	**10.5**	**149.2**	**917.4**	**230.5**
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**

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

Source: FAOSTAT

	NET TRADE	TRADE BY VALUE			
	Total	Exports	Imports	Net trade	Imports as % of apparent consumption
	1000 m^3 EQ	Million $	Million $	Million $	%
Albania	-249	7	26	-19	104
Bosnia and Herzegovina	1109	308	189	119	57
Bulgaria	537	353	380	-27	56
Croatia	579	531	401	130	48
Montenegro	40	17	18	-1	
Romania	5055	1415	812	602	41
Serbia	-1652	229	573	-344	56
The former Yugoslav Republic of Macedonia	-272	12	55	-43	114
BALKANS	**5146**	**2871**	**2453**	**418**	**51**
Belarus	1568	400	599	-199	24
Moldova	-477	26	99	-73	59
Russian Federation	61058	8667	2472	6195	11
Ukraine	3274	1066	1190	-123	43
EASTERN EUROPE	**65423**	**10160**	**4360**	**5800**	**17**
Kazakhstan	-2223	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	-4505	6	407	-401	107
NORTH AND CENTRAL ASIA	**-7565**	**19**	**1019**	**-1000**	**75**
Armenia	-262	0	65	-65	89
Azerbaijan	-1659	1	155	-154	100
Georgia	-168	22	61	-39	91
Turkey	-9060	570	3118	-2549	24
CAUCASUS AND TURKEY	**-11149**	**593**	**3399**	**-2807**	**27**
EASTERN EUROPE NORTH AND CENTRAL ASIA TOTAL	**51855**	**13643**	**11231**	**2412**	**28**