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The Forest Sector in a Green Economy**Measuring and communicating the contribution of the
Forest Sector to a Green Economy****Note by the secretariat***Summary*

This document describes the progress of work on measuring the contribution of the forest sector to a green economy in the UNECE region.

The Committee is expected to provide guidance on the scope and organization of work aiming to create a practical and relevant set of indicators to present to the joint meeting of the ECE Committee on Forests and the Forest Industry (COFFI) and the FAO European Forestry Commission (EFC) "Silva2015" to be held in Engelberg, Switzerland from 4 to 6 November 2015 so that the forest sector can be properly addressed in the rapidly emerging green economy measurement frameworks.

I. Background

1. The forest sector in a green economy is defined as 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 scarcities¹. Beyond their contribution as a source of wood, forests provide essential environmental and social services, such as biodiversity conservation; protection against erosion; watershed protection and employment in rural areas. The forest sector has a key role to play in the transition towards a greener and more sustainable economy; given its economic, social and environmental functions the forest sector is truly central for the realization of its objectives.

2. Since the contribution of the forest sector to an environmentally respectful and socially inclusive economy is not obvious to the general public, the concept of a green economy, which applies to all sectors, offers an interesting opportunity to demonstrate that relevance. The green economy reflects the importance of natural capital and non-marketed services (of primary importance for the forest sector) in the performance evaluation of all sectors.

3. To promote this opportunity, the UNECE Committee on Forests and the Forest Industry (COFFI) and the FAO European Forestry Commission (EFC), together with partners in the region, developed the Rovaniemi Action Plan for the Forest Sector in a Green Economy. This plan was adopted at the Joint Session of COFFI and EFC in December 2013 and proposes a wide range of possible actions.

4. Nevertheless, when putting in place ambitious plans, it is important to foresee how progress in achieving them can be measured, and how the forest sector is performing compared to other sectors in this regard.

5. First, when developing solutions for measuring the progress of the forest sector towards a green economy we should be mindful of the main stream of global work in this regard. Significant progress has been made in this direction by UNEP, OECD, the World Bank as well as other organizations working together in the framework of the Green Growth Knowledge Platform. The results of this work can certainly serve as a reference for the forest sector in its activities.

6. Second, preparing the forest sector for the green economy is compatible with making progress towards sustainable forest management. For instance, the Montreal Process criteria and indicators and the Pan-European criteria and indicators provide a mutual understanding and implicit definition of what is meant by sustainable forest management. They are tools for assessing national trends in forest conditions, and they provide a common framework for describing, monitoring and evaluating progress toward sustainability. As regards reporting, the State of Europe's Forest Reports, first issued in 2003 provide a comprehensive, up-to-date description of the status and trends of forests and forest management in Europe, and regular reports are issued under the Montreal Process (overview and national reports). These indicator sets and reports focus on sustainable forest management, but also provide much information relevant to the forest sector in the green economy. Sustainable Forest Management is fully compatible with, and a major element of, the green economy as well as sustainable development as a whole.

7. Although no agreement exists yet on an analytical framework or a set of indicators to monitor a green economy, the forest sector can contribute to the

¹ Definition as per Rovaniemi Action Plan for Forest Sector in Green Economy.

development of the overall work on green economy indicators as well as seize the opportunity to display its already functioning contribution to improving human well-being and social equity, while at the same time reducing environmental impacts and resource scarcities.

8. A forest sector which plays a leading role in a green economy is promoting sustainable development, in the forest sector and outside it. Thanks to sustainable forest management, the forest sector already displays many, although not all, characteristics of a green economy and has the potential to play a major role in the emerging low-carbon economy by increasing the provision of wood and non-wood products, in addition to ecosystem services in a sustainable way.

II. Mandate

9. The Integrated Programme of Work 2014-2017 of the ECE Committee on Forests and the Forest Industry (COFFI) and the FAO European Forestry Commission (EFC) was adopted by the joint session of the Committee and the Commission, "Metsä2013", held from 9 to 13 December 2013 in Rovaniemi, Finland. It addresses the linkages between sustainable forest management and a green economy, including: the contribution of forest products and services to a green economy; decent green jobs and employment in the forest sector.

10. The Programme of Work makes reference to the Rovaniemi Action Plan for the Forest Sector in a Green Economy, also adopted by the Committee and the Commission at "Metsä2013". Two of the Action Plan proposals address the measurement of progress towards the green economy: *Develop the forest sector's contribution to broader green economy indicator data sets* (E.2.3) and *Monitor green economy developments in the ECE region forest sector* (E.5.1). The Integrated Programme of Work also directly addresses monitoring and assessment of the Action Plan and assigned this work to the joint ECE/FAO Forestry and Timber Section for the period of 2014 -2017 under Work Area 1: Data, monitoring and assessment (paragraph 12).

III. Progress of work

11. In line with the Programme of Work guiding principles, the UNECE/FAO Forestry and Timber Section initiated work on this topic by organising a roundtable on "Measuring and communicating the contribution of the Forest Sector to a Green Economy", during "Metsä2013" on 11 December 2013. Participants agreed that the forest sector should contribute with its own input, in order not to be left out in the efforts to measure the green economy as a whole. In order to achieve that, quick action is needed.

12. Although the green economy is a broader concept intended to be applied across all sectors, some accomplishments in monitoring sustainable forest management could be applied to a new measurement system for forests. When designing indicators, attention needs to be given to defining the conceptual framework. Additionally, a participatory approach, involving all stakeholders, and in particular those beyond the forest sector, is critical for arriving at a relevant and practical system.

13. To support this discussion, the joint ECE/FAO Forestry and Timber Section invited Kit Prins, independent forest sector expert to prepare a background paper including some proposals for approaches to measuring progress of the forest sector towards a green economy.

14. The paper shows that the forest sector has achieved results in measuring sustainable forest management which are useful and relevant: for instance the series of reports on the State of Europe's Forests, each of which has been an improvement on its predecessor, and the on-going work on assessing the sustainability of forest management. On the other hand, many green economy dimensions, such as efficiency of resource use, integration of externalities and social balance, are not fully addressed when measuring sustainable forest management (SFM). In addition, some SFM concepts are approached in a highly focused way which is difficult to link to broader green economy questions. Hence, some, but not all, of the approaches and data for measuring sustainable forest management may be useful in measuring progress towards the green economy, some of the SFM data may have to be reinterpreted and put into a different context, and some new information may be needed.

15. The paper also identified questions that the new measurement system, when in place, might aim to answer:

- How much, and in what way, is the forest sector contributing to the green economy?
- How "green" is the forest sector? Is the forest sector becoming more "green"? Which parts of the sector (by country and activity) are more "green" and which less "green"?
- In which countries is the forest sector best integrated into (making the most contribution to) the green economy?
- How "green" is the forest sector compared to other (competing) sectors?

16. Two approaches were presented for measuring progress of the forest sector towards a green economy: one based directly on the Rovaniemi Action Plan – to identify which of the aspects/actions included in the Plan can be measured and to build a measurement system on them; and the other based on broader green economy indicator sets and concepts – to understand to what extent they can be applied to the forest sector. On this basis it is proposed that the measurement system be structured around six main areas, which are presented in annex 1, with some explanatory justifications. The six areas proposed are:

- Conservation of forest natural capital
- Multi-factor productivity and efficient use of resources
- Contribution to climate change mitigation
- Integration of externalities and payment for forest ecosystem services
- Sustainability of the forest sector work force
- Good governance and evidence based decision making

17. To stimulate discussion, and as an illustration of how measurement might be achieved, the background paper identified some indicators which might usefully be monitored, at the national level, to assess progress of the forest sector towards the green economy. This list, which is reproduced in annex 2, is not a formal proposal, but an illustration of the type of indicators which might be useful.

18. Green national accounts systems are being developed and continue to be implemented. The forest sector should take this development into account, while generating forest sector related information, so that it can contribute in a form which can be used by the emerging green accounts systems. The emergence of the green economy will probably give extra impetus and importance to these efforts.

19. A system which will be able to measure progress of the forest sector towards a green economy, in an objective, comparable and readable way, will need significant investment, of time, political will and resources, as well as flexibility and open minds from all. The possible stages could be:

- Consensus forming, at the pan-European or global level, on what should be measured, as well as concepts, definitions etc. (The “Metsä2013” paper was intended as a contribution to this initial discussion)
- Widespread consultation and briefing with national correspondents and other information providers, as well as the distribution of tasks between partners, along the lines already developed for SFM by the team of specialists on monitoring SFM.
- Data collection, analysis and reporting.

20. Finally a successful measurement system for the forest sector needs to be compatible with those from other sectors and easy to understand by those outside of the forest sector expert community. Participation in the measurement of the green economy presents an opportunity for the forest sector to be recognised as a key sector contributing to the green economy.

IV. Next steps

21. The Integrated Programme of Work 2014-2017 addresses data collection and monitoring of the role of the forest sector in a green economy (WA1. Data, monitoring and assessment) as do the monitoring and assessment components of the Rovaniemi Action Plan for the Forest Sector in a Green Economy through priority activities. Activities under WA1. are also expected to improve the quality of information by ensuring international compatibility, analysis and dissemination of information as well as by helping countries to strengthen their capacity in this area.

22. After the initial discussions during the roundtable on “Measuring progress of the forest sector towards a green economy” in Rovaniemi, there is a need to define and develop a framework for this work which would include a possible set of indicators for measuring the contribution of the forest sector to a green economy. The seventy-second session of the Committee on Forests and the Forestry Industry in Kazan is expected to set a framework of such consultations, the results of which will be presented to the Committee and the Commission at the joint session of the ECE Committee on Forests and the Forest Industry (COFFI) and the FAO European Forestry Commission (EFC) “Silva2015” in 2015.

23. The work on a system of measuring the contribution of forest sector to a green economy will take place in collaboration with a wide range of experts, including, in addition to forest sector experts, experts on information on the green economy as a whole, notably green national accounts, green jobs, payment for ecosystem services and natural capital measurement. A related workshop may be organised as one of the means of consultation among experts. The Committee and the Commission will be informed about the results of this work during “Silva2015” and may further decide on future work, notably the collection and analysis of data and implementation of monitoring systems, on the basis of the presented proposals.

Annex 1

Main areas of measurement for the forest sector in the green economy

The background paper for “Metsä2013” proposed that the measurement system be structured around six main areas, which are summarised below, with some explanatory justification.

1. ***Conservation of forest natural capital.*** The conservation over time of forest capital has always been at the heart of the concept of sustainable forest management, and is monitored by existing systems of criteria and indicators of sustainable forest management. This aspect will not lose importance in a green economy, and must continue to be measured. However, in the emerging green economy, this centuries old forestry concept will need to be expressed in terms which are understood by and compatible with emerging green accounting systems. The expression of the value of the forest natural capital in monetary terms should include not only wood stocks and flows but also the value of the non-market functions, and any increase or reduction in the forest’s capacity to supply them. This is well known to be a very challenging exercise.
2. ***Multi factor productivity and efficient use of resources.*** It is known that there is little waste in forest industries, as residues are used for other products or for energy and that recycling of paper and, increasingly, wood products, is widespread. However traditional analysis of the sector has focused on whether “enough” material is available, and less on how efficiently it is used. In a green economy, it will also be necessary to demonstrate the efficient use of all resources, notably wood, but also energy, labour and carbon.
3. ***Contribution to climate change mitigation.*** A green economy gives high priority to climate change mitigation, an area where the forest and forest products play an important and complex role, notably through carbon sequestration and storage, as well as substitution for non-renewable materials and energy sources. A “cascade” approach (using wood first as raw material, and only afterwards as an energy source) is often advocated. However, at the national level, the forest sector contribution to climate change mitigation varies widely according to circumstances: extent of forests, increment/harvest balance, size and efficiency of wood processing industries, importance of renewable energy, consumption and recycling patterns, etc. Furthermore this contribution can change over time, sometimes rapidly, for instance because of forest damage, market conditions or increased use of wood energy. The profile of each national contribution in this area should be described and any significant changes monitored.
4. ***Integration of externalities and payment for forest ecosystem services.*** The identification and costing of externalities, such as the recreational value of forests or the impact of deforestation on water and air quality, is an essential part of the green economy. By assigning costs to these externalities and reflecting them in adapted market mechanisms, the maintenance and development of positive externalities can be assured and incentives can be provided for correcting negative externalities. There are many externalities in the forest sector, notably as regards the ecosystem services provided by forests, usually without any monetary compensation. However, systems are being developed and put in place for payment for forest ecosystem

services. The quantification of these services and the monitoring of efforts to correct the impact of negative externalities are essential to measuring the forest sector's contribution to the green economy.

5. ***Sustainability of the forest sector work force.*** The development of “decent green jobs” and the reduction of social exclusion are part of all green economy strategies. The protection of the work force against occupational injuries and disease are part of this, as is appropriate education and training that will enable the work force to contribute to a green economy and address the new challenges which will emerge. High accident/injury rates and inadequate education and training would significantly hinder progress towards the green economy. Finally the creation or maintenance of “decent green jobs” as defined by ILO and mentioned in the Action Plan is an essential part of the green economy, and thus of the forest sector in a green economy.

6. ***Good governance and evidence based decision making.*** Good governance is an important part of the green economy. Although governance in the forest sector is already monitored by the criteria and indicators for sustainable forest management, the profound changes necessary in methods and attitudes to move towards the green economy make it necessary to monitor how the sector is responding to the emerging governance challenges. In a very real sense, the green economy is based on changes in governance and decision making, using modified information input (e.g. corrected for externalities). Therefore the quality of governance should also be measured as part of the transition to a green economy.

Annex 2

Some indicators which might be used to measure progress of the forest sector, at the national level, towards the green economy

To stimulate discussion, and as an illustration of how measurement might be achieved, some indicators were identified by the background paper which might usefully be monitored to assess progress, at the national level, of the forest sector towards the green economy. The list below is an initial set of ideas, structured according to the six areas of measurement presented in annex 1. It is not a formal proposal, but an illustration of the type of indicators which might be useful.

For these indicators, the forest sector should be consistently divided into: 1) forest; 2) wood products; 3) pulp and paper.

		Direction of “progress” ²
1	<i>Conservation of forest natural capital</i>	
1.1	Change in forest natural capital: physical parameters and monetary value of land and trees, adjusted for externalities and ecosystem services	Stability or increase
2	<i>Multi-factor productivity and efficient use of resources</i>	
2.1	Material productivity in the forest sector	Increase
2.2	Energy productivity in the forest sector ³	Increase
2.3	Recovery rates for paper and wood products	Increase
3	<i>Contribution to climate change mitigation</i>	
3.1	Carbon stocks and flows in forest ecosystems and harvested wood products	Increase in stocks and decrease in net emissions
3.2	Share of wood energy in total primary energy supply	Increase ⁴
3.3	A measure of substitution or cascaded use in the forest sector	Progress would be a relatively high share of use as industrial raw material compared to use for energy, provided wastage was kept low
3.4	Share of wood products which, at end of life, are recovered for use as raw material or energy	Increase
4	<i>Integration of externalities and payment for forest ecosystem services</i>	
4.1	Value of ecosystem services provided by forests	Increase
4.2	Systems in place for payment of ecosystem services: number of systems and total value of transactions	Increase
4.3	Value of forest related carbon markets	Increase
5	<i>Sustainability of the forest sector work force</i>	
5.1	Occupational safety and health of the forestry work force	Increase
5.2	Investment in education and training	Increase

² I.e. change in the direction indicated would constitute progress towards a green economy and change in the other direction would be movement away from the green economy. In many cases, there will be some maximum achievable level which should be defined, so “increase” would not be infinitely possible.

³ A distinction should be made between inputs of fossil energy and of renewable energy.

⁴ This requires further discussion and putting in context. Replacement of fossil fuel by sustainably produced wood energy is presumably “progress”, but if the wood energy is not sustainably produced, or, possibly, substitutes for material uses of the same wood (against the “cascade use” principle), it might not be considered progress. However, it is clear that the use of wood for energy is important and should be monitored, and compared to stated objectives.

5.3		Number of “decent green jobs” ⁵ in the forest sector (or share of decent green jobs in total employment by the forest sector)	Increase
6	<i>Good governance and evidence based decision making</i>		
6.1		National forest programme integrated into broader national policies and programmes for a green economy	Existence of an NFP which complies with agreed guidelines ⁶
6.2		Monitoring systems capable of supplying green economy indicators and data required for national green accounting systems	Existence of systems

⁵ The concept of “decent green jobs” is hard to define in practice: see Pillar C of the Action Plan and relevant ILO studies. According to the ILO, “Decent work sums up the aspirations of people in their working lives. It involves opportunities for work that is productive and delivers a fair income, security in the workplace and social protection for families, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men.” (<http://www.ilo.org/global/topics/decent-work/lang--en/index.htm>). In addition, “Jobs are green when they help reduce negative environmental impact ultimately leading to environmentally, economically and socially sustainable enterprises and economies.” (See http://www.ilo.org/global/topics/green-jobs/news/WCMS_220248/lang--en/index.htm).

⁶ For instance, those defined by Vienna Resolution V1 and the MCPFE Approach to National Forest Programmes in Europe.