

**Fourth (18<sup>th</sup>) meeting of the UNECE/FAO Team of Specialists (ToS) on  
“Monitoring of sustainable forest management”**

*(Saint Petersburg, Russian Federation, 22-24 May 2012)*  
Vedensky Room, Hotel Vedensky

***Meeting report***

***Item 1: Opening and welcome***

1. Mr. Andrey N. Filipchuk, Deputy Director of the All-Russian Research Institute of Silviculture and Forest Mechanization, and the Chairman of the FAO European Forestry Commission opened the meeting, welcomed participants and thanked them for coming to Saint-Petersburg. Welcoming speeches were also given by Mr. Alexander G. Tretyakov, General Director of the FSUE (Federal State Unitary Enterprise) Roslesinforg, Mr. Orjån Jonson, Forest Resources Officer at the FAO Forestry Department and Ms. Myriam Martin, Policy Adviser at FOREST EUROPE.
2. Mr. Roman Michalak, Forestry Officer at the ECE-FAO Forestry and Timber Section and Secretary to this ToS welcomed meeting participants and thanked them for joining the 18<sup>th</sup> meeting. In his welcoming remarks, Mr. Michalak expressed his utmost gratitude to Russian colleagues for their exemplary involvement and extraordinary contribution to the organization of this event. Mr. Michalak recalled the impressive work carried out by the ToS along the years and took the opportunity to thank his predecessor Mr. Alexander Korotkov for having organized the work of the Team 18 years ago, and for his continuous support towards it.
3. Mr. Kari Korhonen, ToS Leader, welcomed participants to the meeting and thanked the organizers for their hospitality in hosting this meeting before introducing the week programme.

### ***Adoption of agenda***

4. The agenda of the ToS meeting was adopted as proposed by the secretariat (Annex III). The list of participants is attached to this report (Annex IV).

### ***Item 2: Forest monitoring and assessment related developments since the last meeting of the Team***

#### **(a) Cooperation among the Criteria and Indicators for SFM processes**

4. Mr. Ichiro Nagame, Senior Policy Analyst for International Affairs, Montreal Process Liaison Unit Japan, presented the results of a workshop co-organised by FAO, ITTO, FOREST EUROPE in the margins of the Montréal Process 22<sup>nd</sup> Working Group meeting held in Victoria, Canada in October 2011. The outcome of the meeting included the need for pursuing efforts to streamline reporting requirements for the GFRA 2015; improve communication around sustainable forest management; and continue to work with other processes and improve collaboration. In addition, Mr. Nagame briefed participants on the upcoming Jacksonville meeting to be held on 20 August 2012. This meeting is organized by the US Forest Service, together with FAO, Forestry and Timber Section and major Criteria and Indicators processes. Its aim is to help develop international cooperation on collecting, analyzing and disseminating forest related data. On the margins of the workshop, the FAO Advisory Group on Forest Resources Assessment meeting will be organized to conclude on the scope and modalities of the Collaborative Forest Resources Enquiry.
5. Ms. Martin recalled FOREST EUROPE commitments to FRA 2015. She also briefed participants on the Oslo Ministerial Mandate for Negotiating a Legally Binding Agreement on Forests in Europe and the Oslo Ministerial Decision: European Forest 2020 which objective is to further develop SFM and its tools, highlight the multiple roles forest play in global challenges, further improve forest monitoring and reporting and harmonize processes.

(b) Cooperation in the pan-European region

6. Mr. Michalak presented the different reporting systems used in the pan-European region. Several obstacles were identified, including the existing difference in definitions, the use of different formats, as well as timing for data collection. In addition, the lack of communication between national correspondents reporting to different processes was also noted. Recommendations for improvements included dedicating more time to the exchange of information on on-going and planned reporting activities and more active participation in the activities of other organisations (than UNECE, FAO and FOREST EUROPE) involved in reporting work. Mr. Michalak also noted an increase in the representation of national correspondents in the Team would be beneficial, e.g. by organizing joint meetings of the Team and FAO National Correspondents from the region during the 2015 reporting.
7. Mr. Michalak recalled the ToS mandate which already provides a lot of opportunity for institutional cooperation and contribution among various forest monitoring processes. To further develop the cooperation and achieve the target, more exchange should be drawn into planning and on-going activities leading towards FRA 2015 and the next SoEF reporting period. In order to strengthen and further improve exchanges of information, Mr. Michalak proposed the development of a periodic jointly owned bulletin based on existing initiatives among organizations and among countries.
8. Participants welcomed the idea of developing a bulletin as it would serve various purposes including, reducing reporting burden; increasing interaction and communication among institutions and contributing to the harmonization of processes at the international level.
9. Participants also encouraged the organization of a joint meeting(s) with members of the ToS and National Correspondents, coordinated with the FRA and SoEF reporting process.

**Item 3:      *FAO Global Forest Resources Assessment***

(a) Information about FAO FRA long-term Strategy 2030; presentation of the concept and results of the preparatory process of the FRA 2015

10. Mr. Jonsson provided participants with the long term strategy which was recommended at the last COFO session in 2010. He explained the long-term strategy consists in providing the big picture of state and trends in global forests and forestry. The strategy also integrates remote sensing in national reporting.
11. Mr. Jonsson then presented an overview of the FRA 2015 and the Collaborative Forest Resources Questionnaire (CFRQ) initiated to reduce the reporting burdens for countries reporting to FAO and one or more regional bodies. He explained the CFRQ will be a subset of FRA variables.
12. To increase attention on FRA 2015, FAO developed a visual identifier and a banner which Mr. Jonsson encouraged participants to use. Also mentioned was the second edition of “Natural Inquirer the World’s Forests” which has recently been published. This second edition contains 5 inquiries, based on the results from the FAO Global Forest Resources Assessment 2010.

(b) Further work on the conclusions from the FRA Technical Consultation, Ispra I - reporting process in the UNECE region.

13. The meeting broke into three Working Groups in order to discuss and comment on the Collaborative Forest Resources Questionnaire and the different variables. Each groups covered 2 of 4 topics. Topic A - focused on Growing stock, Topic B - focused on Biodiversity and damages. Topic C - focused on Forest products and topic D - focused on Forest area, expansion and damage. The results of the Working Groups’ discussions (outcome) are presented in the *Annex I*.

**Item 4:      *FOREST EUROPE/UNECE/FAO report on State of Europe's Forest***

(a) Review of the main outputs, production, dissemination and use of the results of the SoEF 2011

14. Participants were informed on recent developments related to the finalization, dissemination and evaluation of the Forest Europe/UNECE/FAO report, State of Europe's Forests 2011 (SoEF2011). The final report and background material are available on the UNECE/FAO and Forest Europe websites. The results of the reporting process have been presented at various international and national meetings. Numerous topical presentations, videos, press conferences and interviews also contributed to dissemination and outreach activities.
15. Two specific dissemination tools, targeted at different audiences, have been developed: i) Forest Europe and UNECE/FAO interactive database on quantitative indicators that was released in December 2011, including, for the first time, a Russian-language version; ii) online educational kit with two entry points, one of which is for teachers and the other for 11-12 year old students which will be launched at the end of October 2012.
16. The report was found to be a good tool for stimulating communication between forest inventory practitioners, researchers and policy makers. Other tools, such as the educational tool-kit, were seen as a promising means for reaching new audiences and addressing new aspects of Sustainable Forest Management.
17. Ms. Eve Charles presented the results of a survey developed by the UNECE/FAO Forestry and Timber Section and circulated in April 2012 to review and evaluate the preparations and use of the SoEF2011 report. This survey's primary aim was to assess the level of satisfaction of its readers and contributors in order to provide recommendations for the next report. It also allowed comparing some results with those collected through the survey circulated after the release of the SoEF2007. The results of the survey are available at [http://www.unece.org/fileadmin/DAM/timber/other/Item4-a-SoEF\\_survey-final-ec.pdf](http://www.unece.org/fileadmin/DAM/timber/other/Item4-a-SoEF_survey-final-ec.pdf)

(b) Plans for future developments, in the context of UNECE/FAO and FOREST EUROPE work programmes.

18. In his introduction to activities that are planned on the regional level Mr. Michalak briefed participants about plans for future global reporting, i.e. for the FAO Global Forest Resources Assessment. The 2015 reporting for this report will be carried out as a collaborative activity between FAO and other actors, including the Montreal Process, FOREST EUROPE and the UNECE/FAO Forestry and Timber Section. Data collection will be organised so as to avoid duplication and multiple requests for data. Inconsistencies in definitions between the global and regional modules will also be avoided. The process of data production, collection and review should be streamlined and "single windows" created both at the national level and the international level for the collection of data.
19. As far as the pan-European level is concerned, a proposal to coordinate data collection on quantitative pan-European indicators with global data collection had been accepted by the FOREST EUROPE Expert Level Meeting on 14-15 February 2012 in Madrid and included in the FOREST EUROPE Work Programme for 2012-2015. FAO, UNECE/FAO and the Liaison Unit Madrid are the leading parties in this activity and already started working on the next reporting. An Advisory Group is being set up while authors and Coordinating Lead Authors will soon be identified. In terms of quantitative reporting, the close to final version of the enquiry should be ready by April 2013.
20. Participants reiterated the value and benefits of coordinated reporting in terms of increased impact and efficiency. It was foreseen that deadline for country responses will be December 2013. Checking, processing data will continue through to June 2014.
21. In terms of logistics, Mr. Michalak announced that with regards to FRA, reporting on the set of variables that are relevant at global scale will start in the first half of 2013; another set of variables that are

relevant at regional level will be reported in the second part of 2013. A joint meeting with National Correspondents, ToS and Authors, for the final review of the data and draft version of the SoEF report will be organized in 2014. In the preliminary phase of reporting, it is recommended, the Advisory Group, relevant experts and authors meet once a year. The frequency of meetings will then improve, but yet again, this will also depend on resources and funding.

***Item 5: Improvement of forest monitoring and assessment of SFM in the UNECE region, discussion on concepts, plan of work and ideas for cooperation***

(a) SFM assessment

22. Mr. Kit Prins gave a short introduction on SFM assessment work. He updated ToS on recent developments and plans for further work on developing the SFM assessment method. Mr. Prins formulated why SFM should be assessed and why it is very difficult to assess it using the current report as it stands as it is extremely complex and technical. As mentioned in the survey presented under agenda item 5, users preferred the overview chapter, the summary for policy makers, most probably as these parts are less technical. Whatever method we use will have to be reflected in the enquiry.
23. A core group has been set with the objective to propose an agreed method for assessing SFM by the next meeting of the ToS to be held next year.
24. The main conclusions from the meeting encouraged to continue work on assessment for many reasons, including demonstration of sustainability, transparency, orientation of policy, further improving the performance of the forest sector, understanding of trends and differences between regions, increasing impact through simplicity of message, analysis of tradeoffs between major objectives etc.
25. There was a most active discussion on the assessment approach, here are the main messages:

- i. Countries MUST be involved and consulted all through the process, national forest programs should do the assessment in depth with good expertise and must not be overlooked.
  - ii. National objectives and circumstances must be taken into account, although self-evaluations could be found as not credible.
  - iii. Choosing few key parameters which are both meaningful and measurable for assessment of each criterion is probably the way forward. Many of the parameters in SoEF 2011 were either meaningless<sup>1</sup>, or presented significant problems of data availability or comparability, including Part B of the qualitative indicators, or overlapped (e.g. growing stock and carbon). The final tables were intimidatingly complex. Limiting the number of parameters increases readability and transparency, and thereby impact, as well as avoiding problems of overlapping indicators. Of course how the limited set is chosen is crucial as it must cover all major aspects, and not be open to charges of “whitewash” (concealing problems).
  - iv. Furthermore, some parameters describe the unchangeable background situation or starting point, rather than the outcome of forest management: forest cover, naturalness, % of GDP. Status for these parameters may be considered “background information”, although trends may be important. When analyzing SFM, there must be a good understanding of the data.
  - v. Hence it is considered that the transparent process started at St. Petersburg; it will be continued on the forum of thematic (core) group (open to all ToS members) and reported back to the ToS plenary.
  - vi. In all cases there must be well-informed comments on the results to put them into context.
26. The meeting broke into three working groups in order to review the set of pan-European indicators, aiming at choosing variables that would be used for the purpose of assessment. Group A discussed “General indicators” and “Forest health and vitality”, Group B focused on “Productive functions” and “Socio-economic indicators” and Group C deliberated on “Protected and Protective functions”. The results of the work groups are presented in the Annex II.

---

<sup>1</sup> e.g. 1.3, 4.8, 5.1, 5.2, 6.1, 6.11

(b) Reporting on growing stock, increment and drain; including plans for reporting on IEEAF.

27. Mr. Boris N. Moiseev, Russia, presented the development of SFM indicators in the UNECE/FAO regions. In terms of the area and stock of the forest available for wood supply (FAWS), Mr. Moiseev suggested it was necessary to enter them into future global reporting. He recalled the importance of the total Net Annual Increment (NAI) as a parameter for SFM assessment, and further as it provides a basis for calculating the Net Ecosystem Productivity (NEP) in terms of carbon. Finally he reminded NEP is necessary to count on the Equation 3.2.5 IPCC Guidance method.
28. Mr. Stein Tomter delivered a presentation, prepared jointly with Mr. Andrius Kuliesis, on “Forest balance – what components are required and how can they be assessed?” Mr. Tomter explained complexity of parameters required for reporting on Indicator 3.1. of the SoEF 2011, and presented the differentiated pattern of responses received from countries as well as shortcomings resulting from the current definitions for forest available for wood supply (FAWS), and the way it was applied.
29. A special ToS sub-group has been created for working on this issue, one of the first activities of the sub-group will be approaching correspondents again about the data they provided for Gross Annual Increment (GAI) and NAI and criteria applied for determination of FAWS in their countries. In their work, possibilities for joining efforts and benefiting from COST FT1001 USEWOOD have to be examined.
30. Mr. Michalak presented on behalf of Mr. Csaba Mozes (Eurostat) their proposal of reporting within the framework Integrated Environmental and Economic Accounts for Forests (IEEAF). Results of this reporting, that could be carried out on annual basis, would satisfy internal needs of the European Union systems, furthermore they could be used for the facilitation of EU countries reporting to other regional and global schemes/systems.

31. In the following discussion of this proposal, the ToS members were unanimous in their opinion that they were not comfortable with delegating their reporting responsibilities to Eurostat. Moreover they were not in favour of increasing either scope or frequency of reporting on mandatory basis, also taking into account periodical nature of national forest inventories. The reason (purposes) of collection of such a detailed data was not also clear for the experts.

(c) review and developing the data for social and economic indicators, and on other (difficult) indicators

32. On behalf of Mr. Simon Gillam, Mr. Michalak presented the major issues that affected reporting on socio-economic indicators. Part of them was of general nature and applied to several indicators (e.g. current and real prices, currencies); while the rest of them were specific and linked to individual indicators (some indicators of Criterion 3 and most of indicators of Criterion 6). The future work should result in resolving these issues or proposing considering ceasing of an indicator that may provide meaningless information. The next steps include continuing work with the sub-group of relevant experts who will be able to help us complementing the data.

33. Mr. Prins reiterated the importance of continuing efforts to improving data and not withdrawing some of the areas where there are problems, areas that are often limited due to lack of resources, etc. Mr. Korhonen informed participants that Finland was ready to support the work of the sub-group including hosting of the meeting, later in the second part of the year.

(d) Plans for work on implementation of European Forest Types (EFT).

34. Ms. Annemarie Bastrup-Birk briefed participants on recent developments and results of the pilot reporting and plans for further work on EFT. The next steps in the EFT process include: conclude on pilot application and formulate recommendations through the joint EEA, Forest Europe and UNECE/FAO meeting in Copenhagen in fall 2012. The meeting will provide recommendations to Forest Europe who will decide through the Expert Level Meeting what future

activities on EFT, in particular related their possible application in the 2015 reporting, will take place.

***Item 6: Plans for future activities of the ToS. Other matters.***

35. Mr. Hubert N. Inhaizer presented a project coordinated by EFI in close cooperation with Forest Europe, UNECE/FAO, METLA and other partners. The project aims to analyse the implementation of C&I for SFM in the 46 signatory states of the Forest Europe process and strengthen the process and the use of C&I. The working definition of the “implementing C&I for SFM” will be developed, assessed and refined. There will be 4 related events to take place in spring 2013. The final report is planned to be released in November 2013, preceded by the plenary conference. There are some countries where the sub-national areas cannot be disregarded and the project hope that these areas will coordinate related activities with the UNECE/FAO national correspondents.
36. Mr. Michalak briefed participants on the next activities that are related to the ToS. The conference on inter Criteria and Indicator processes will take place in Jacksonville at the end of August. The conference aims to strengthen collaborative reporting, communication related to different processes and to C&I at the global level. The secretariat will circulate information related to the meeting in the coming weeks.
37. In terms of 2015 reporting process, it is envisaged that the first draft of the enquiry for reporting on pan-European indicators should be ready by the end of 2012/ beginning of 2013 to be revised and developed at the next meeting of the ToS, which will be organised at that time. Then the close to final version will be presented to national correspondents at the global meeting planned for April next year. The final draft has to be released by the end of July 2013, while the deadline for the submission of the national data/information according to this enquiry will be the end of that year. As discussed during the meeting, the number of preparatory meetings will be organised. The default venue for the next ToS meeting is Geneva. Members of the

Team are encouraged to examine possibilities of hosting the next or subsequent meetings.

38. The GFRA next meeting will be held in Bangkok (22 April 2013).

***Item 7: Closure of the ToS meeting***

39. The meeting was closed at 17:00 on 24 May 2012.

**Other matters**

40. Participants took part in a one-day field trip to forests organized by the hosts. Participants were introduced with National Forests Inventory methods currently being implemented in Russia. The exercise was demonstrated on a sample plot. Participants then visited the “Lintula Larch Forest” National Park near Saint Petersburg (oldest in Europe plantation of “European Larch” (*Larix decidua*)). This National Park had been established during the period 1738-1750.

41. The Team of Specialists expressed its sincere gratitude to the Russian hosts, FSUE Roslesinforg and VNIILM for the support extended to the international reporting, and for the outstanding hospitality they received during its stay in Russia. Special thanks were expressed to Professor Andrey N. Filipchuk and to his colleagues for the excellent work done in the preparation and running the ToS meeting, and thus for their important contribution to the international co-operation on FRA and regional reporting.

Annex I – CFRQ 2015 Variables (Terms and Definitions, Data sources)

Variable	Unit	Years	Definition/explanatory notes	Tier: State	Tier: Trend
Forest area	1 000 ha	1990, 2000, 2005, 2010, 2015	<p><b>Land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent, or trees able to reach these thresholds <i>in situ</i>. It does not include land that is predominantly under agricultural or urban land use.</b></p> <p><u>Explanatory notes</u></p> <ol style="list-style-type: none"> <li>1. Forest is determined both by the presence of trees and the absence of other predominant land uses. The trees should be able to reach a minimum height of 5 meters <i>in situ</i>.</li> <li>2. Includes areas with young trees that are expected to reach a canopy cover of 10 percent and tree height of 5 meters. It also includes areas that are temporarily unstocked and are expected to be regenerated within 5 years. Local conditions may, in exceptional cases, justify that a longer time frame is used.</li> <li>3. Includes forest roads, firebreaks and other small open areas; forest in national parks, nature reserves and other protected areas such as those of specific environmental, scientific, historical, cultural or spiritual interest.</li> <li>4. Includes windbreaks, shelterbelts and corridors of trees with an area of more than 0.5 hectares and width of more than 20 meters.</li> <li>5. Includes abandoned shifting cultivation land with a regeneration of trees that have, or is expected to reach, a canopy cover of 10 percent and tree height of 5 meters.</li> <li>6. Includes areas with mangroves in tidal zones, regardless whether this area is classified as land area or not.</li> <li>7. Includes rubber-wood, cork oak and Christmas tree plantations.</li> <li>8. Includes areas with bamboo and palms provided that land use, height and canopy cover criteria are met.</li> <li>9. Includes: Agroforestry systems that meet the definition of forest and are not primarily agricultural in purpose. Example include the “Taungya” system</li> </ol>	<p>Tier 3: Data sources: Either recent (5 years) National Forest Inventory or remote sensing, with ground truthing, or programme for repeated compatible NFI’s</p> <p>Tier 2: Data sources: Full cover mapping/remote sensing or old NFI (+5 years)</p> <p>Tier 1: Other data sources/estimates</p>	<p><b>Comment [RM1]:</b> Reporting according to management plans, what tier should it be assigned to? Inclusion of possible additional information on the NFI system (permanent plots, coverage etc.) The importance of change of definitions and inventory system over time. Tier 1, 2 or 3 may not be sufficient to describe all aspects of data quality.</p> <p>( Explanatory notes: Include a note on short-rotation energy plantations and plantations for production of pulp and paper? In some countries these are not considered forest. Plantations that are not going to reach 10 years are not considered forest according to some bodies under the European Commission.</p>

Variable	Unit	Years	Definition/explanatory notes	Tier: State	Tier: Trend
			<p>where crops are grown only during the first years of the forest rotation and grazing under forest canopy where the long-term land use is forests.</p> <p>10. <u>Excludes</u> tree stands in agricultural production systems, such as fruit tree plantations, olive orchards, oil palm plantations and agroforestry systems when non-forest crops are the primary system component.</p>		
Other wooded land	1 000 ha	1990, 2000, 2005, 2010, 2015	<p><b>Land not classified as “Forest”, spanning more than 0.5 hectares; with trees higher than 5 meters and a canopy cover of 5-10 percent, or trees able to reach these thresholds in situ; or with a combined cover of shrubs, bushes and trees above 10 percent. It does not include land that is predominantly under agricultural or urban land use.</b></p> <p><u>Explanatory notes</u></p> <p>1. The definition above has two options:</p> <ul style="list-style-type: none"> <li>The canopy cover of trees is between 5 and 10 percent; trees should be higher than 5 meters or able to reach 5 meters in situ.</li> </ul> <p>or</p> <ul style="list-style-type: none"> <li>The canopy cover of trees is less than 5 percent but the combined cover of shrubs, bushes and trees is more than 10 percent. Includes areas of shrubs and bushes where no trees are present.</li> </ul> <p>2. Includes areas with trees that will not reach a height of 5 meters in situ but have a canopy cover of 10 percent or more, e.g. some alpine tree vegetation types, arid zone mangroves, etc.</p> <p>3. Includes areas with bamboo and palms provided that land use, height and canopy cover criteria are met.</p>	<p>Tier 3: Data sources: Either recent (5 years) National Forest Inventory or remote sensing, with ground truthing, or programme for repeated compatible NFI's</p> <p>Tier 2: Data sources: Full cover mapping/remote sensing or old NFI (+5 years)</p> <p>Tier 1: Other data sources/estimates</p>	<p>Tier 3: Estimate based on repeated compatible tiers 1 (above)</p> <p><b>Comment [RM2]:</b> Ok</p> <p>Tier 2: Estimate based on repeated compatible tier 2 or combination tier 1: and 2 or 3 (above)</p> <p>Tier 1: Other estimates</p>
Other land	1 000 ha	1990, 2000, 2005, 2010, 2015	<p><b>All land that is not classified as “Forest” or “Other wooded land”.</b></p> <p><u>Explanatory notes</u></p> <p>1. Includes agricultural land, meadows and pastures, built-up areas, barren land, land under permanent ice, etc.</p> <p>2. Includes all areas classified under the sub-category “Other land with tree</p>	Not applicable	<p><b>Comment [RM3]:</b> Include some more examples, e.g. other land with tree cover and reporting on inland water.</p>

Variable	Unit	Years	Definition/explanatory notes	Tier: State	Tier: Trend
Land area	1 000 ha	1990, 2000, 2005, 2010, 2015	cover". <b>Official area figure reported by countries and maintained by UN Statistics Division and/or FAOSTAT</b>	Not applicable	<b>Comment [RM4]:</b> Include footnote that land area is equal to the sum of forest, OWL and other land.
Forest ownership	Supplementary term		<b>Generally refers to the legal right to freely and exclusively use, control, transfer, or otherwise benefit from a forest. Ownership can be acquired through transfers such as sales, donations, and inheritance.</b>  <u>Explanatory note</u> 1. For this reporting table, forest ownership refers to the ownership of the <u>trees</u> growing on land classified as forest, regardless of whether or not the ownership of these trees coincides with the ownership of the land itself.	Not applicable	<b>Comment [RM5]:</b> Long-term lease of forest? Ownership of OWL? Needs more detailed explanatory notes on ownership of trees and the right to harvest trees. Protected areas on private land sometimes occur, where cutting of any trees would be illegal. How to report on these?
Forest area under public ownership	1 000 ha	1990, 2000, 2005, 2010	<b>Forest owned by the State; or administrative units of the Public Administration; or by institutions or corporations owned by the Public Administration.</b>  <u>Explanatory notes</u> 1. Includes all the hierarchical levels of Public Administration within a country, e.g. State, Province and Municipality. 2. Shareholder corporations that are partially State-owned, are considered as under public ownership when the State holds a majority of the shares.	Tier 3: National forestry statistics/registers of land titles or maps on land ownership or all forest area under one ownership category that is five years old or less.  Tier 2: National forestry statistics/registers of land titles or maps on land ownership or questionnaires that are more than five years old.  Tier 1: Other data sources.	Tier 3: Estimate based on repeated compatible tier 1 (state)  Tier 2: Estimate based on repeated tier 2 or combination tier 1 and 2 or 3 (state)  Tier 1: Other estimates
Forest area under private	1 000 ha	1990, 2000,	<b>Forest owned by individuals, families, communities, private co-operatives, corporations and other business entities, private religious and educational</b>	Tier 3: National forestry statistics/registers of land	Tier 3: Estimate based on repeated compatible

Variable	Unit	Years	Definition/explanatory notes	Tier: State	Tier: Trend
ownership		2005, 2010	<b>institutions, pension or investment funds, NGOs, nature conservation associations and other private institutions.</b>	titles or maps on land ownership or all forest area under one ownership category that is five years old or less.  Tier 2: National forestry statistics/registers of land titles or maps on land ownership or questionnaires that are more than five years old.  Tier 1: Other data sources.	tier 1 (state)  Tier 2: Estimate based on repeated tier 2 or combination tier 1 and 2 or 3 (state)  Tier 1: Other estimates
<del>Unknown</del> Other ownership	1 000 ha	1990, 2000, 2005, 2010	<b>Unknown ownership</b>  <u>Eplanatory note</u> 1. Includes: unclear or disputed ownership.		
Deforestation	1000 ha/yr	1990, 2000, 2005, 2010	<b>The conversion of forest to other land use or the long-term reduction of the tree canopy cover below the minimum 10 percent threshold.</b>  <u>Explanatory notes</u> 1. Deforestation implies the long-term or permanent loss of forest cover and implies transformation into another land use. 2. It includes areas of forest converted to agriculture, pasture, water reservoirs, rangeland and urban areas. 3. The term specifically excludes areas where the trees have been removed as a result of harvesting or logging, and where the forest is expected to regenerate naturally or with the aid of silvicultural measures.	Tier 3: Data sources: Either recent (5 years) National Forest Inventory (permanent plots...), with ground truthing, or full cover mapping/ remote sensing survey with ground truthing or programme for repeated compatible NFI.  Tier 2: Data sources: Full cover mapping/remote sensing or old NFI (+5 years?)  Tier 1: Other data sources	Tier 3: Estimate based on repeated compatible tier 1 (above)  Tier 2: Estimate based on repeated tier 2 or combination tier 1: and 2 or 3 (above)  Tier 1: Other estimates
Afforestation	1000 ha/yr	1990,	<b>Establishment of forest through planting and/or deliberate seeding on land</b>	Tier 3: Data sources: Either	Tier 3: Estimate

Variable	Unit	Years	Definition/explanatory notes	Tier: State	Tier: Trend
		2000, 2005, 2010	that, until then, was not <b>legally</b> classified as forest.  <u>Explanatory note</u> 1. Implies a transformation of land use from non-forest to forest.	recent (5 years) National Forest Inventory or remote sensing, with ground truthing, data provided by official agencies  Tier 2: Data sources: Full cover mapping/remote sensing or old NFI (+5 years)  Tier 1: Other data sources/estimates	based on repeated tier 1 (above)  Tier 2: Estimate based on repeated tier 2 or combination tier 1: and 2 or 3 (above)  Tier 1: Other estimates
Reforestation	1000 ha/yr	1990, 2000, 2005, 2010	<b>Re-establishment of forest through planting and/or deliberate seeding on land legally classified as forest.</b>  <u>Explanatory notes</u> 1. Implies no change of land use. 2. Includes planting/seeding of temporarily unstocked forest areas as well as planting/seeding of areas with tree cover. 3. Includes coppice from trees that were originally planted or seeded. 4. <u>Excludes</u> natural regeneration of forest except from planned natural regeneration from seed trees.	Tier 3: Data sources: Either recent (5 years) National Forest Inventory or remote sensing, with ground truthing, data provided by official agencies  Tier 2: Data sources: Full cover mapping/remote sensing or old NFI (+5 years)  Tier 1: Other data sources/estimates	<b>Comment [RM6]:</b> Reforestation should not be reported in this context, since it implies no change in land use. Could be moved to some other topic in the questionnaire.  Tier 2: Estimate based on repeated tier 2 or combination tier 1: and 2 or 3 (above)  Tier 1: Other estimates
Natural expansion	1000 ha/yr	1990, 2000, 2005, 2010	<b>Expansion of forests through natural succession on land that, until then, was under another land use (e.g. forest succession on land previously used for agriculture or on other abandoned land).</b>  <u>Explanatory note</u> 1. Implies a transformation of land use from non-forest to forest.		

Variable	Unit	Years	Definition/explanatory notes	Tier: State	
Area of certified forest (International forest management certification scheme)	1000 ha	2000, 2005, 2010	<p><b>Area certified under a forest management certification scheme with published standards that is internationally recognized and independently verified by a third-party.</b></p> <p><u>Explanatory notes</u></p> <ol style="list-style-type: none"> <li>1. Areas under international and domestic certification should not be added together as they may overlap.</li> <li>2. This refers to only forest management certifications.</li> </ol>	<p>Tier 3: International certification body records or national registry for the designated year of reporting</p> <p>Tier 2: Data sources: International certification body records or national registry for a period of 1 to 5 years prior to the designated year of reporting</p> <p>Tier 1: Other data sources</p>	<p><b>Comment [RM9]:</b> In trends, Tier 3 “compatible with Tier 1” (applies for all Tier rows)</p> <p>Is there difference in Tiers between international and domestic schemes?</p> <p><b>Comment [RM7]:</b> - -Not applied for C&amp;I -Definition needed for internationally and domestically recognized -What is the role of EU FLEGT VPA – is it only legality process for markets? -How reporting is carried out: 1) as total, 2) by scheme, 3) for overlapping cases – not only between domestic and international (FSC, PEFC)? -Chain of custody should be specified -Whether e.g. the Swedish FSC is international or national when the framework is international but stand ... [1]</p> <p><b>Comment [RM8]:</b> Tier 2: are certification bodies able to recognize overlapping areas</p> <p><b>Comment [RM10]:</b> -Closest in C&amp;I: FAWS, what is relationship with FAWS? -Difficult to assess for forests managed for multiple functions. How to take into account multiple-use forestry? ... [2]</p> <p><b>Comment [RM11]:</b> Group B: Forest area designated for production does not apply well in the European context as a lot as many production areas are designated as “multiple use” which was viewed as a more relevant designation in the European context.</p> <p><b>Comment [RM12]:</b> Group B: Variable and definition relevant, not further change or comment.</p> <p>The working group suggested using laws, acts or codes for identifying different levels of Tiers.</p>
Area of certified forest (Domestic forest management certification scheme)	1000 ha	2000, 2005, 2010	<p><b>Area certified under a forest management certification scheme with published standards that are nationally recognized and independently verified by a third-party.</b></p> <p><u>Explanatory notes</u></p> <ol style="list-style-type: none"> <li>1. Areas under international and domestic certification should not be added together as they may overlap.</li> <li>2. This refers to only forest management certification.</li> </ol>		
Forest area designated for production	1000 ha	1990, 2000, 2005, 2010, 2015	<p><b>Forest area designated primarily for production of wood, fibre, bio-energy and/or non-wood forest products.</b></p> <p><u>Explanatory note</u></p> <ol style="list-style-type: none"> <li>1. Includes areas for subsistence collection of wood and/or non-wood forest products.</li> </ol>		
Protection of soil and water	1000 ha	1990, 2000, 2005, 2010, 2015	<p><b>Forest area designated or managed for protection of soil and water.</b></p> <p><u>Explanatory notes</u></p> <ol style="list-style-type: none"> <li>1. It may include areas that are primarily managed for other values such as timber production.</li> <li>2. National or state legislation or regulations often provide for the</li> </ol>		

Variable	Unit	Years	Definition/explanatory notes	Tier: State	Tier: Trend
			protection of soil and water values through land use zoning or prescriptions in management plans or other mechanisms for best practices. Areas covered by such regulations and plans should be considered as designated or managed for protection of soil and water.		
Forest area in protected status	1000 ha	1990, 2000, 2005, 2010, 2015	<b>Forest area within formally established protected areas independently of the purpose for which the protected areas were established.</b>  <u>Explanatory notes</u> 1. Includes IUCN Categories I – IV 2. Excludes IUCN Categories V-VI		
Forest area with management plan	1000 ha	1990, 2000, 2005, 2010, 2013	<b>Forest area that has a long-term (ten years or more) documented management plan, aiming at defined management goals, which is periodically revised.</b>  <u>Explanatory notes</u> 1. A forest area with management plan may be a single forest management unit or aggregated forest management units. 2. A management plan should include details on operations planned for individual operational units (stands or compartments) but may also be limited to provide general strategies and activities planned to reach the management goals. 3. Excludes areas covered only by chain of custody certification.	Tier 3: Government registration (national or sub-national) of management plans  Tier 2: Industry or other documented sources  Tier 1: Expert opinion	
...of which for production	1000 ha	1990, 2000, 2005, 2010, 2013	<b>Forest management plan mainly focused on production.</b>		
...of which for conservation	1000 ha	1990, 2000, 2005, 2010, 2013	<b>Forest management plan mainly focused on conservation.</b>		

**Comment [RM13]:** -  
-Conflict with Forest Europe C&I (4.9) if IUCN categories are applied. Check usefulness of the IUCN/Forest Europe matrix.  
-Relevance of IUCN or rather classification under categories?  
-"primarily" is missing in both  
-Soil & water close to C&I 5.1

**Comment [RM14]:** Group B: Variable relevant, definition accepted, perhaps explanatory note #1 with IUCN Categories 1-IV a bit too broad for reporting (view of some of the working group members). No suggestion for identifying different levels of Tiers.

**Comment [RM15]:** -Check the last year in the list ("2013" or the last available year)  
-Only difference with C&I related to equivalents, which exists in C&I (3.5)  
-"revised periodically" for all?  
-C&I does not separate; are the categories (conservation, production) exhaustive?  
Production land covered by a plan / conservation land covered by a plan? not vice versa

**Comment [RM16]:** Group B: Variable and definition relevant, not further change or comment.

**Comment [RM17]:** No tiers in C&I but equivalents accepted

**Comment [RM18]:** Group B: Sub-categories of management plans for production and conservation not part of Forest Europe reporting but ok to keep.

Variable	Unit	Years	Definition/explanatory notes	Tier: State	Tier: Trend
Forest area intended to be in permanent forest land use	1000 ha	1990, 2000, 2005, 2010, 2013	<p><b>Forest area that is designated or expected to be retained as forest and is highly unlikely to be converted to other land use.</b></p> <p><u>Explanatory note</u></p> <p>1. It is recognized that forests held by private owners or communities may in some countries be retained or converted at the decision of the owner rather than at the discretion of the government. For these lands, the best estimate of permanent forest on these lands should be included with the plans for lands more directly controlled by national or sub-national governments.</p>		<p><b>Comment [RM19]:</b> The variables: Forest area intended to be in permanent forest land use and ...of which permanent forest estate are not currently part of Forest Europe reporting. However the working group expressed that for the European context the variable Forest area intended to be in permanent land use was more relevant/useful than the sub category ...of which permanent forest estate. It was further suggested that legislation could be used as criteria for the Tiers.</p>
...of which permanent forest estate	1000 ha	1990, 2000, 2005, 2010, 2013	<p><b>Forest area that is designated to be retained as forest and may not be converted to other land use.</b></p> <p><u>Explanatory note</u></p> <p>1. If the PFE contains both forest and non-forest areas, the reporting should refer only to the forest area within the PFE.</p>		<p><b>Comment [RM20]:</b> The working group suggested rewording the explanatory note as it was very confusing.</p> <p><b>Comment [RM21]:</b> Not relevant/useful in the European context.</p>
Primary forest	1000 ha	1990, 2000, 2005, 2010, 2015	<p><b>Naturally regenerated forest of native species, where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.</b></p> <p><u>Explanatory note</u></p> <p>1. Some key characteristics of primary forests are:</p> <ul style="list-style-type: none"> <li>- they show natural forest dynamics, such as natural tree species composition, occurrence of dead wood, natural age structure and natural regeneration processes;</li> <li>- the area is large enough to maintain its natural characteristics;</li> <li>- major ecosystem processes including pollination, seed dispersal, landscape disturbances, landscape connectivity, species migration, etc. are occurring naturally in space and time.</li> </ul>		<p><b>Comment [RM22]:</b> Some discussion on this variable but consensus was that the definition was in line with the Forest Europe reporting. The group suggested that the variable name could be changed to Undisturbed by man to be more in line with Forest Europe.</p>
Naturally	Supplementary term		<b>Forest predominantly composed of trees established through natural</b>		

Variable	Unit	Years	Definition/explanatory notes	Tier: State	Tier: Trend
regenerated forest			<p><b>regeneration.</b></p> <p><u>Explanatory notes</u></p> <ol style="list-style-type: none"> <li>In this context, predominantly means that the trees established through natural regeneration are expected to constitute more than 50 percent of the growing stock at maturity.</li> <li>Includes coppice from trees established through natural regeneration. Includes naturally regenerated trees of introduced species.</li> </ol>		
Other naturally regenerated forest	1000 ha	1990, 2000, 2005, 2010, 2015	<p><b>Naturally regenerated forest where there are clearly visible indications of human activities.</b></p> <p><u>Explanatory notes</u></p> <ol style="list-style-type: none"> <li>Includes areas regenerating following selective logging and areas recovering from human-induced fires, etc.</li> <li>Includes forests where it is not possible to distinguish whether planted or naturally regenerated.</li> </ol> <p>Includes forests with a mix of naturally regenerated trees and planted/seeded trees, and where the naturally regenerated trees are expected to constitute more than 50 percent of the growing stock at stand maturity.</p>	<p>Tier 3: Data sources: Recent (5 years) National Forest Inventory or remote sensing with ground truthing or data provided by official agencies or programme for repeated compatible NFIs (every 10 years)</p> <p>Tier 2: Data sources: Full cover mapping/remote sensing or old NFI (+5 years)</p> <p>Tier 1: Other data sources</p>	<p>Tier 3: Estimate based on repeated compatible</p> <p><b>Comment [RM23]:</b> Proposed variable not in line with Forest Europe equivalent Semi natural forest. Was suggested deleting explanatory note #1.</p> <p>combination tier 1: and 2 or 3 (above)</p> <p>Tier 1: Other estimates</p>
Planted forest	1000 ha	1990, 2000, 2005, 2010, 2015	<p><b>Forest of native or introduced species predominantly composed of trees established through planting and/or deliberate seeding and/or coppicing.</b></p> <p><u>Explanatory notes</u></p> <ol style="list-style-type: none"> <li>In this context, predominantly means that the planted/seeded trees are expected to constitute more than 50 percent of the growing stock at maturity.</li> <li>Includes coppice from trees that were originally planted or seeded.</li> <li>Includes rubber-wood, cork oak and Christmas tree plantations.</li> </ol>	<p>Tier 3: Data sources: Recent (5 years) National Forest Inventory or remote sensing with ground truthing or programme for repeated compatible NFI (10 years)</p> <p>Tier 2: Data sources: Full cover mapping/remote sensing or old NFI (+5 years)</p>	<p><b>Comment [RM24]:</b> Proposed variable not in line with Forest Europe equivalent Semi natural forest.</p> <p>tier 1 (above)</p> <p>Tier 2: Estimate based on repeated tier 2 or combination tier 1: and 2 or 3 (above)</p> <p>Tier 3: Other estimates</p>

Variable	Unit	Years	Definition/explanatory notes	Tier: State	Tier: Trend
			4. <u>Excludes</u> self-sown trees of introduced species.	Tier 1: Other data sources	
Land area burned by fire	1000 ha	2000-2010	PRE-FILLED DATA. SOURCE GLOBAL REMOTESENSING BASED BURNED AREA PRODUCT (MODIS AND MERIS) FROM 2000-2010 (ANNUAL DATA) FOR COUNTRIES TO CHECK AND CORRECT IF NEEDED		<b>Comment [RM25]:</b> Will need more precise definitions. Small patches of burned area are not detectable by remote sensing. This system is hardly applicable for Europe. Use national data instead?
...of which forest area	1000 ha	2000-2010	SAME AS ABOVE BUT OVERLAY FOREST MASK.		
Major outbreaks of pests and disease	Species, area 1000 ha	Year of latest outbreak	LIST OF SPECIES		<b>Comment [RM26]:</b> Lacks proper definitions (extent, level, damaging agent etc.)
Net annual increment	m <sup>3</sup> /ha/yr	1990, 2000, 2005, 2010, 2015	Average annual volume of increment over the given reference period less that of natural losses on all trees, measured to minimum diameters as defined for "Growing stock".	Needs to be developed	Needs to be developed
Forest growing stock	1000 m <sup>3</sup>		<b>Volume over bark of all living trees with a minimum diameter of 10 cm at breast height (or above buttress if these are higher). Includes the stem from ground level up to a top diameter of 0 cm excluding branches.</b>  <u>Explanatory notes</u> <ol style="list-style-type: none"> <li>Diameter breast height refers to diameter over bark measured at a height of 1.3 m above ground level, or above buttresses, if these are higher.</li> <li>Includes laying living trees.</li> </ol>	Tier 3: Data sources: Recent (5 years) National Forest Inventory or remote sensing with ground truthing or programme for repeated compatible NFI (10 years)  Tier 2: Data sources: registers and statistics, modelling or old NFI (+5 years) or partial field inventory  Tier 1: Other data sources	Tier 3: Estimate based on repeated compatible tier 1 (above)  Tier 2: Estimate based on repeated tier 2 or combination tier 1: and 2 or 3 (above)  Tier 1: Other estimates
...of which coniferous			<b>Total growing stock of coniferous species.</b>		
...of which broadleaved			<b>Total growing stock of broadleaved species.</b>		

Variable	Unit	Years	Definition/explanatory notes	Tier: State	Tier: Trend
Forest above-ground biomass	Million tonnes	1990, 2000, 2005, 2010, 2015	<p><b>All living biomass above the soil including stem, stump, branches, bark, seeds, and foliage.</b></p> <p><u>Explanatory note</u> In cases where forest understorey is a relatively small component of the aboveground biomass carbon pool, it is acceptable to exclude it, provided this is done in a consistent manner throughout the inventory time series.</p>	<p>Tier 3: Country-specific (national or sub-national) biomass conversion expansion factors applied</p> <p>Tier 2: Application of country specific national or sub-national biomass conversion factors from other country with similar climatic conditions and forest types.</p> <p>Tier 1: International/regional default biomass expansion factors applied</p>	<p>Tier 3: Estimate based on repeated tier 1 (above)</p> <p>Tier 2: Estimate based on repeated tier 2 or combination tier 1: and 2 or 3 (above)</p> <p>Tier 1: Other estimates</p>
Forest below-ground biomass	Million tonnes	1990, 2000, 2005, 2010, 2015	<p><b>All biomass of live roots. Fine roots of less than 2mm diameter are excluded because these often cannot be distinguished empirically from soil organic matter or litter.</b></p> <p><u>Explanatory notes</u> 1. Includes the below-ground part of the stump. The country may use another threshold value than 2 mm for fine roots, but in such a case the threshold value used must be documented.</p>		
Dead wood	Million tonnes	1990, 2000, 2005, 2010, 2015	<p><b>All non-living woody biomass not contained in the litter, either standing, lying on the ground, or in the soil. Dead wood includes wood lying on the surface, dead roots, and stumps larger than or equal to 10 cm in diameter or any other diameter used by the country.</b></p> <p><u>Explanatory note</u> The country may use another threshold value than 10 cm, but in such a case the threshold value used must be documented.</p>		
Carbon in above-	Million	1990,	<b>Carbon in all living biomass above the soil, including stem, stump, branches,</b>	Apply same tiers as assigned	Apply same tiers as

Variable	Unit	Years	Definition/explanatory notes	Tier: State	Tier: Trend
ground biomass	tonnes	2000, 2005, 2010, 2015	<b>bark, seeds, and foliage.</b> <u>Explanatory note</u> 1. In cases where forest understorey is a relatively small component of the aboveground biomass carbon pool, it is acceptable to exclude it, provided this is done in a consistent manner throughout the time series.	for biomass	assigned for biomass
Carbon in below-ground biomass	Million tonnes	1990, 2000, 2005, 2010, 2015	<b>Carbon in all biomass of live roots. Fine roots of less than 2 mm diameter are excluded, because these often cannot be distinguished empirically from soil organic matter or litter.</b> <u>Explanatory notes</u> 1. Includes the below-ground part of the stump. 2. The country may use another threshold value than 2 mm for fine roots, but in such a case the threshold value used must be documented.		
Carbon in dead wood	Million tonnes	1990, 2000, 2005, 2010, 2015	<b>Carbon in all non-living woody biomass not contained in the litter, either standing, lying on the ground, or in the soil. Dead wood includes wood lying on the surface, dead roots, and stumps larger than or equal to 10 cm in diameter or any other diameter used by the country.</b> <u>Explanatory note</u> 1. The country may use another threshold value than 10 cm, but in such a case the threshold value used must be documented.		
Carbon in litter	Million tonnes	1990, 2000, 2005, 2010, 2015	<b>Carbon in all non-living biomass with a diameter less than the minimum diameter for dead wood (e.g. 10 cm), lying dead in various states of decomposition above the mineral or organic soil.</b> <u>Explanatory note</u> 1. Fine roots of less than 2 mm (or other value chosen by the country as diameter limit for below-ground biomass) above the mineral or organic soil are included in the litter where they cannot be distinguished from it empirically.	Tiers needs to be developed	Tiers needs to be developed
Carbon in soil	Million	1990,	<b>Organic carbon in mineral and organic soils (including peat) to a <u>specified soil</u></b>	Tiers needs to be developed	Tiers needs to be

Variable	Unit	Years	Definition/explanatory notes	Tier: State	Tier: Trend
	tonnes	2000, 2005, 2010, 2015	<p>depth <b>chosen by the country and of 30 cm</b> applied consistently through the time series.</p> <p><u>Explanatory note</u></p> <ol style="list-style-type: none"> <li>1. Fine roots of less than 2 mm (or other value chosen by the country as diameter limit for below-ground biomass) are included with soil organic matter where they cannot be distinguished from it empirically.</li> </ol>		developed
Non-wood forest product (NWFP)	Supplementary term		<p><b>Goods derived from forests that are tangible and physical objects of biological origin other than wood.</b></p> <p><u>Explanatory notes</u></p> <ol style="list-style-type: none"> <li>1. Generally includes non-wood plant and animal products collected from areas defined as forest (see definition of forest in table T1).</li> <li>2. Specifically includes the following regardless of whether from natural forests or plantations: <ul style="list-style-type: none"> <li>- gum arabic, rubber/latex and resin;</li> <li>- Christmas trees, cork, bamboo and rattan.</li> </ul> </li> <li>3. Generally <u>excludes</u> products collected in tree stands in agricultural production systems, such as fruit tree plantations, oil palm plantations and agroforestry systems when crops are grown under tree cover.</li> <li>4. Specifically <u>excludes</u> the following: <ul style="list-style-type: none"> <li>- woody raw materials and products, such as chips, charcoal, fuelwood and wood used for tools, household equipment and carvings;</li> <li>- grazing in the forest;</li> <li>- fish and shellfish.</li> </ul> </li> </ol>		<p><b>Comment [RM27]:</b> - - Closest C&amp;I 3.3 but there the value is of interest (here only the list of species); C&amp;I 3.4 (services) missing - Remove from CFRQ but FAO can include it in their own enquiry -If kept, instead of describing NWFP as “supplementary term” present the contents as definition for the actual variable (“most important NWFP species”)</p>
Most important NWFP species	List and NWFP category	2013	<p>List of most important non wood forest product species</p> <p><u>Explanatory note:</u></p> <ol style="list-style-type: none"> <li>1. Important</li> </ol>		<p><b>Comment [RM28]:</b> -Corresponds to C&amp;I 3.3 column “key species”? -Different information needs at global (most important species) and European levels (value) -Not meaningful for CFRQ even if meaningful for FAO who wants to monitor most important species</p>

Variable	Unit	Years	Definition/explanatory notes	Tier: State	Tier: Trend
Industrial round wood removals	1000 m <sup>3</sup>	1990-2011 (annual)	<p>DATA TO BE PRE-FILLED WITH JFSQ DATA AND CHECKED UPDATED BY COUNTRIES</p> <p><b>The wood removed (volume of roundwood <u>under</u> bark) for production of goods and services other than energy production (woodfuel).</b></p> <p><u>Explanatory notes</u></p> <ol style="list-style-type: none"> <li>The term "removal" differs from "felling" as it excludes trees that were felled but not removed.</li> <li>Includes removals from fellings in an earlier period and from trees killed or damaged by natural causes.</li> </ol>		
Woodfuel removals	1000 m <sup>3</sup>	1990-2011 (annual)	<p>DATA TO BE PRE-FILLED WITH JFSQ DATA AND CHECKED UPDATED BY COUNTRIES</p> <p><b>The wood removed for energy production purposes, regardless whether for industrial, commercial or domestic use.</b></p> <p><u>Explanatory notes</u></p> <ol style="list-style-type: none"> <li>Includes all wood collected or removed for energy purposes, such as fuelwood, wood for charcoal production, harvesting residues, stumps, etc.</li> <li>Includes removals from fellings in an earlier period and from trees killed or damaged by natural causes.</li> <li><u>Excludes</u> woodfuel which is produced as a by-product or residual matter from industrial processing of roundwood.</li> </ol>		

**Comment [RM29]:** -See C&I 3.1 (not fully consistent, note: fellings to be compared with increment) and 3.2 (consistent with the global)  
 -JFSQ does not pay attention to the end-use, therefore a separate enquiry is needed for the energy use  
 -Reporting overbark/under bark (fellings vs. removal)  
 -Where in the logistics chain the decision for end-use is made – does the reporting catch it => better to call them removals for (or contributing to) industrial purpose or for woodfuel

## Annex II – Outcome of ToS Meeting Working Groups on SFM assessment

### Outcome of Working Group 1: Criteria 1 and 2, (moderated by Kari Korhonen, rapporteur Roman Michalak)

	Key parameter	Comments
1.1	Forest Area	Use a as a forest parameter, both status and trends should be looked at. This information should be analysed in terms of political context. It was also reminded that in addition to quantitative indicators, we have qualitative indicators. Forest undisturbed by man as % of total forest
1.2	Growing stock	Growing stock: no support for any direct parameters coming out of the discussion. Possibility of reporting on volume per hectare in terms of volume/age classes
1.3	Age structure and/or diameter distribution	Broad support to propose reporting by development classes – regeneration, mature and remaining forests. To report in terms of area but also report in terms of growing stock per hectare.
2	Defoliation	Defoliation and damage were proposed. Damage was preferred though.
		In what way dealing with age structure help assess the sustainability, what would be the unit and how would it be used: The reason for this was related to the old forestry rule of balanced distribution of age. Unbalanced distribution of age would be seen as unsustainable.
		Forest available for wood supply as a parameter- but further discussion could be a good candidate for a parameter. Johannes. Age structure – it fits perfectly to even age structure, but how would it fit un-even aged structure.
		We are trying to tell simple stories to the policy makers not to the forest sector. Whether the age structure of a particular country is sustainable or not... Deliver a message to the policy makers

### Outcome of Working Group 2: Criteria 3 and 6, (moderated by Urs-Beat Brandli, Bernhard Wolfslehner)

	Key parameter	Comments
3.1	Increment and fellings	Further improvements to forest area How to deal with data on loss How to judge the assessment: under using forest

		resources came out as an important issues.
3.2	Roundwood	nominator of the parameter – relate it to the marketed cubic meters. Dealing about values about forest you need to create some cluster – but they need a common nominator. Value generated from forest are important but we cannot split the different dimensions.
3.3	Non-wood goods	need to consider non-forest wood product should be included in the cluster Wood, non-wood products and services.
6		more aggregated data per indicator might be helpful.
6.5	Forest sector workforce	very difficult to get data with it. Wood consumption in relation to wood trade and trade related to wood energy
6.7	Wood consumption	6.7 – 6.8- 6.9: Use as a cluster
6.8	Trade in wood	
6.9	Energy from wood resources	

#### Outcome of Working Group 3: Criteria 4 and 5, (moderated by Jari Parviainen, rapporteur Kit Prins)

Proposed key parameters for assessment

	Key parameter	Comments
4.3	Forest undisturbed by man as % of total forest	Discussion needed as to minimum size of “natural” forest: are very small “untouched” fragments acceptable?
4.5	Volume of deadwood per hectare	Need to explain that some ecosystems naturally have more deadwood
4.8	Number of threatened forest tree species as % of total forest tree species	Forest tree species are the only area where any usable data available. Need to be careful about significance of this parameter. A high % of threatened species could indicate negative trends, but could also result from good monitoring and research, or specific ecological circumstances (country at the limit of the natural range of certain species, with many ecosystem types etc.)
4.9	Area of forest strictly protected for conservation of biodiversity as % of total forest	Need to improve comparability of data (cf. responses from Germany and Sweden to SoEF 2011). Suggested supplementary parameter: “key biotopes” as % of forest available for wood supply. This would indicate biodiversity conservation in managed forest. New concept, possibly only Nordic, needs discussion.
5.1, 5.2	Area of forest designated as having protective functions, as % of total forest area	Need to discuss concept of “designation”, to take account of multi-functionality (areas which have protective functions alongside others, where protection is not the only or even primary

	function) as well as the different types of “designation”, which range from legal rules to management plans, possibly with the same outcome.
--	--

### Annex III - Agenda of the ToS Meeting

#### *Provisional Agenda*

1. Opening and welcome. Adoption of the Agenda.
2. Forest monitoring and assessment related developments since the last meeting of the ToS on monitoring SFM.
  - a. cooperation among the Criteria and Indicators processes
  - b. cooperation in the pan-European region
3. FAO Global Forest Resources Assessment
  - a. information about FAO FRA long-term Strategy 2030; presentation of the concept and results of the preparatory process of the FRA 2015
  - b. further work on the conclusions from the FRA Technical Consultation, Ispra I - reporting process in the UNECE region.
4. FOREST EUROPE/UNECE/FAO report on State of Europe's Forest:
  - a. review of the main outputs, production, dissemination and use of the results of the SoEF 2011,
  - b. plans for future developments, in the context of UNECE/FAO and FOREST EUROPE work programmes.
5. Improvement of forest monitoring and assessment of SFM in the UNECE region, discussion on concepts, plan of work and ideas for cooperation on:
  - a. SFM assessment,
  - b. reporting on growing stock, increment and drain,
  - c. review and developing the data for social and economic indicators, and on other (difficult) indicators,
  - d. plans for work on implementation of EFT.
6. Plans for future activities of the ToS. Other matters.
7. Closure of the ToS meeting

.....

## Annex IV – List of participants

	<b>Name</b>	<b>Surname</b>	<b>Organisation</b>	<b>Position</b>
1	Ivana	PEŠUT	Ministry of Agriculture, Directorate for Forestry, Hunting and Wood Industry	Advisor
2	Johannes	HANGLER	Federal Ministry of Agriculture, Forestry, Environment and Water Management, Forestry Department	Senior Counsellor
3	Annemarie	BASTRUP-BIRK	European Environment Agency, Biodiversity - Natural Systems and Vulnerability	Project manager Forest and Environment
4	Hubert Nimród	INHAIZER	European Forest Institute, Central European Regional Office and the Observatory for European Forests	Project leader
5	Örjan	JONSSON	FAO, Forestry	Forestry Officer
6	Roman	MICHALAK	UNECE/FAO Forestry and Timber Section	Forestry Officer
7	Eve	CHARLES (BARDELLI)	UNECE/FAO Forestry and Timber Section	Associate Economic Affairs Officer
8	Stein Michael	TOMTER	Norwegian Forest and Landscape Institute	Senior Adviser
9	John	REDMOND	Department of Agriculture, Food and the Marine, Department Forest Service	Forestry Inspector
10	Claude	VIDAL	National Institute for Geographical and Forest Information	Deputy General Director
11	Andrius	KULIEŠIS	Lithuanian State Forest Service, Department: Forest Use and Statistics	Chief specialist
12	Ichiro	NAGAME	Ministry of Agriculture, Forestry and Fisheries, Forestry Agency	Senior Policy Analyst for International Affairs
13	Jari	PARVIAINEN	Finnish Forest Research Institute (Metla) Department: Eastern Finland	Regional Director
14	Mika	MUSTONEN	European Forest Institute Department: North European Regional Office - EFINORD	Head of Office
15	Christopher	PRINS		Consultant to the secretariat
16	Marek	JABLŃSKI	Forest Research Institute Department of Forest Management	Researcher
17	Jesús	SAN-MIGUEL-AYANZ	European Commission Joint Research Centre, Forest Resources and Climate Unit	Scientific Officer
18	Karl	DUVEMO	Swedish Forest Agency Department: Policy and Analysis	Analyst
19	Jaroslav	KUBIŠTA	Forest management Institute Department: Forest management	Deputy Director
20	Kari	KORHONEN	Metla, Joensuu Unit	Senior Researcher
21	Myriam	MARTÍN VALLEJO	Liaison Unit Madrid	Policy Adviser
22	Tuula	NUUTINEN	Metla, Joensuu Unit	Researcher
23	Martin	MORAVČÍK	National Forest Centre Department: Forest Policy and Economics	Head of Department
24	Bernhard	WOLFSLEHNER	European Forest Institute Central-East European Regional Office	Head of Office

25	Angelo	MARIANO	Ministry of Agriculture, Food and Forest Policies, Department: Corpo Forestale dello Stato	Senior Forestry Officer
26	Urs Beat	BRÄNDLI	Swiss Federal Institute for Forest, Snow and Landscape Research WSL Department*: Forest Resources and Management	Dipl. Forest Engineer ETH, Leader Scientific Service Swiss NFI
27	Mati	VALGEPEA	Estonian Environment Information Centre, Department: forestry statistics	Head of department
28	Alexander V.	KOROTKOV	UNECE/FAO Forestry and Timber Section, Consultant	Former UNECE/FAO staff member
29	Anna	ŽORNACZUK-ŁUBA	Ministry of the Environment Department: of Forestry and Nature Protection	Chief Specialist
30	Mithat	KOC	General Directorate of Forestry Ankara, Turkey	Forest Engineer and Survey and Planning Division Director
31	Mehmet	DEMIRCI	Forest Management and Planning Department, Turkey	Forest Engineer
32	Andrey N.	FILIPCHUK	FBO VNIILM (Federal Budget Organization/ Institution - FBO)	Deputy Director
33	Marina	NEZHUKTO	FBO VNIILM	Specialist
34	Boris N.	MOISEEV	FBO VNIILM	Senior Researcher
35	Maria	PALENOVA	FBO VNIILM	Head of the Unit of International Reporting
36	Alexander G.	TRETYAKOV	FSUE ROSLESINFORG	General Director
37	Alexey V.	DAVYDOV	FSUE ROSLESINFORG Federal State Unitary Enterprise (FSUE)	Assistant Director-General
38	Roman V.	MUSIN	FSUE ROSLESINFORG, Section of Remote Sensing Monitoring of Forest Use	Head of the Section
39	Igor A.	KOROLEV	FSUE ROSLESINFORG, Department of International Relations, Section of scientific and methodological activities	Consultant
40	Dmitri V.	KHLJUSTOV	FSUE ROSLESINFORG, Department of Science and Innovation , Section for Science and Innovation	Deputy Director of the Department , - Head of Section
41	Igor V.	VOLKOV	FSUE ROSLESINFORG	Representative
42	Vladimir I.	ARKHIPOV	FSUE ROSLESINFORG, Department of Science and Innovation	Deputy Director General, Director of the Department
43	Dmitriy M.	CHERNIKHOVS KIY	FSUE ROSLESINFORG, Section for Science and Innovation	Senior Engineer
44	Sergey P.	KURYSHKIN	FSUE ROSLESINFORG, North-West Branch of State Forest Inventory - SEVZAPLES PROEKT	Acting Director

- 
- Not applied for C&I
- Definition needed for internationally and domestically recognized
- What is the role of EU FLEGTT VPA – is it only legality process for markets?
- How reporting is carried out: 1) as total, 2) by scheme, 3) for overlapping cases – not only between domestic and international (FSC, PEFC)?
- Chain of custodies should be specified
- Whether e.g. the Swedish FSC is international or national when the framework is international but standards are agreed nationally => list only a few international schemes that apply

- Closest in C&I: FAWS, what is relationship with FAWS?
- Difficult to assess for forests managed for multiple functions. How to take into account multiple-use forestry?
- Needs enquiry among managers for the ranking of functions if they conflict
- Are the categories (production, protection of soil and water, protected) exhaustive?
- Are the categories overlapping?
- What is the formal/legal basis for the designation of different functions?
- Collection -> harvesting