CREEA - Compiling and Refining Environmental and Economic Accounts

Deliverable 5.2- Developing procedures for integrating national forest data into the proposed SEEA 2012 framework

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About CREEA

The main goal of CREEA is to refine and elaborate economic and environmental accounting principles as discussed in the London Group and consolidated in the future SEEA 2012, to test them in practical data gathering, to troubleshoot and refine approaches, and show added value of having such harmonized data available via case studies. This will be done in priority areas mentioned in the call, i.e. waste and resources, water, forest and climate change / Kyoto accounting. In this, the project will include work and experiences from major previous projects focused on developing harmonized data sets for integrated economic and environmental accounting (most notably EXIOPOL, FORWAST and a series of EUROSTAT projects in Environmental Accounting). Most data gathered in CREEA will be consolidated in the form of Environmentally Extended Supply and Use tables (EE SUT) and update and expand the EXIOPOL database. In this way, CREEA will produce a global Multi-Regional EE SUT with a unique detail of 130 sectors and products, 30 emissions, 80 resources, and 43 countries plus a rest of world. A unique contribution of CREEA is that also SUT in physical terms will be created. Partners are:

1. Nederlandse Organisatie Voor Toegepast Natuurwetenschappelijk Onderzoek (TNO), Netherlands (co-ordinator)
2. JRC -Joint Research Centre- European Commission (DG JRC IPTS), Belgium /Spain
3. Universiteit Leiden (Unileiden), Netherlands
4. Centraal Bureau voor de Statistiek (CBS), Netherlands
5. Norges Teknisk-Naturvitenskapelige Universitet (NTNU), Norway
6. Statistiska Centralbyran (SCB), Sweden
7. Universiteit Twente (TU Twente), Netherlands
8. Eidgenössische Technische Hochschule Zürich (ETH) Switzerland
9. 2.-0 LCA Consultants Aps (2.-0 LCA), Denmark
10. Wuppertal Institut Fur Klima, Umwelt, Energie Gmbh. (WI), Germany
11. SERI - Nachhaltigkeitsforschungs Und –Kommunikations Gmbh (SERI) Austria
12. European Forest Institute (EFI), Finland / Spain

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TABLE OF CONTENTS

1 Introduction

1.1 CREEA project

In 2003, a system of satellite accounts for environmental accounting was proposed, known under the name of System of Environmental and Economic Accounting – in short: SEEA 2003 (UN et al., 2003). This accounting system gives guidelines for setting up environmental accounts which are compatible with the system of national accounts. A revised and extended SEEA is planned to be published in 2012 (in short: SEEA 2012). The UNCEEA (UN Commission of Experts on Environmental and Economic Accounting) is responsible for this work, with most of the operational work being executed in the so-called 'London Group' (LG), a group of experts from statistical offices globally.

The CREEA project on Compiling and Refining Environmental and Economic Accounts has as a main idea to elaborate economic and environmental accounting principles, building upon decisions and discussions in the London Group, to test them in practical data gathering, and show added value of having such harmonized data available via case studies.

In conclusion, it is expected that the project will set up along the following lines and will make major contributions to SEEA 2012, and above all, its practical implementation:

1. Take the existing guidance developed by the London Group for SEEA 2012 as a starting point.
2. Focus on the key areas of relevance for sustainability policy making, and where there is a need for further methodological refinement, demonstration of how to implement practical data gathering, and showcasing the added value in policy making. As confirmed by London Group members contacted and/or part of our consortium, this concerns the following areas also mentioned in the Work item:
    a. Water accounts
    b. Waste accounts in relation to material flow accounts (including stocks)
    c. Forest accounts
    d. Climate change related issues
3. Elaborate where still needed the methodologies currently proposed by the London Group, and test practical data gathering according to these approaches. Do trouble shooting and suggest adaptations of methodologies to make them most effective and efficient with regard to data gathering.
4. Showcase the added value of this more complete accounting system by application in practical policy cases.

In short, such a program fills in remaining gaps in SEEA 2012, gives guidance into the most effective ways of practical implementation (particularly data gathering), and can build a case showing the added value of practically implementing SEEA 2012.

1.2 Forest accounts work package

The Work Package 5 is devoted to forest accounts and its objectives are:

- Revising, refining and testing the methodology for forest accounts as suggested in the existing draft of the SEEA 2012
- Develop a procedure for incorporating UNECE/FAO data and national forest statistics into the SEEA 2012 integrated economic and environmental accounts system

- Investigate the usefulness of the SEEA 2012 forest related indicators for the development of forest policies at the EU and national level
- Providing a dataset of SEEA 2012 indicators for two test regions.
- In short, such a program fills in remaining gaps in SEEA 2012, gives guidance into the most effective ways of practical implementation (particularly data gathering), and can build a case showing the added value of practically implementing SEEA 2012.

Harmonised data collection on forests allow quantifying some of the factors which are relevant for developing forest management strategies and steering forest related policies. They can help to identify risks of forest overexploitation, to develop forest regeneration policies, and to monitor the consumption of wood and other market forest products.

Standard forest accounts aim to bring forest sector information in contact with other type of statistics, allowing for a more generalised analysis that can be used on different levels. However, the forest accounts have not been a major priority in the EU environmental accounts so far. Furthermore, the information about forests deducible from standard national accounting is essentially limited to those forest resources that are exchanged on the market or that are the object of market transactions and, therefore, produce economic benefit and are associated with ownership right. However, we should recognise that forests provide a number of goods and services that are not traded on markets and have no established market prices. These goods and services contribute significantly to the human wellbeing.

1.2.1 Aim and method of this study

The aim of this study corresponds to the main objective of the second task in the Forest Accounts work package, which are:

- Exploring whether and how existing national data should be adapted to make them consistent with the proposed standards in SEEA forestry accounts.
- Proposing procedures that could be applied at the Member States or international level to make the existing data consistent with SEEA 2012 requirements.

For this purposes, a questionnaire was developed and submitted to statistical offices in particular in European countries, but also wider (e.g. Mexico, Canada). The intention of the questionnaire was to gather the statistical offices experiences with forestry accounts and the practitioners view on the SEEA 2012 methodology.

2 The forest account questionnaire

2.1 Introduction

The questionnaire submitted to statistical offices consisted of two main parts and an explanatory document with detailed information about the issues addressed in the questionnaire (see Annex I). The first part of the questionnaire was aimed at compiling information about conducted forest accounting studies. . The second part compiled information on respondents' opinion about the feasibility of proposed improvements of SEEA 2012. In this part of the questionnaire we mainly used closed-ended-questions (e.g., yes/no responses, Likert scale). However, we also provided space where respondents could express their comments, ideas or suggestions.

The questionnaire was delivered by the end of January 2012 to statistical offices of a group of selected countries, most of them European.

In total, we collected responses from seven European (Austria, Finland, Germany, Netherlands, Norway, Spain[1], Sweden and United Kingdom) and four non-European countries (Canada, Guatemala, India and Mexico). Further, also Eurostat was asked to complete the questionnaire. See Appendix 6.2 for basic forest data of the countries that responded on the questionnaire.

2.2 Part I

The first part of the questionnaire asked the countries to report on the different studies, if any, they may have conducted on forest accounts, in particular studies related to SEEA. This part also contained questions on user needs and purpose of the forest accounts.

Most of the questions were open-ended, so respondents could provide as detailed information as possible on their forest accounts. In general the responses were short and consistent, and in several cases the respondents provided links to reports of studies related to forest accounts in their countries.

The first question asked whether the country has established any environmental accounts for forestry and whether any detailed information (e.g., reports, studies) is available that could be of use for the CREEA project. Six countries responded that environmental economic accounts for forestry had been established (see Table 1 Q1). However, from the other answers it can be seen that all countries that received the questionnaire have developed, or are developing a methodology for forest accounts. According to Eurostat, five countries complete the whole set of tables from IEEAF. For the rest only table 3c is completed.

The fourth and fifth questions asked about data provision, i.e. the main source and provider of information for the forestry accounts. Mainly the respondents indicated that

[1] The information collected from Spain comes from the statistics department of the Ministry of Environment. The responsible didn't submit the questionnaire filled-in, but answered to key questions during the meeting held in Madrid with them to discuss about forest accounts in Spain. Furthermore, two Spanish researchers dealing with forest accounts were contacted and filled-in the questionnaire.

the forest statistics is based on forest inventories in combination with National Accounts. All the countries reported governmental agencies as their main data provider. There were also some exceptions, like Canada where for the physical timber asset account (until 2003) a government agency was the main data provider. However, for the current monetary timber asset account the main data source is the capital expenditure survey.

Questions six, seven and eight inquired about the use of forest account data, i.e. the main user and uses, and type of analysis prepared based on forest account information. The main data users seem to be statistical offices, either for country- or EU-level reporting. Some of the respondents stated that there is also interest from the research community; while only Norway reported that the forest industry is interested in the forest account data.

The forestry account data is mostly used for publications on environmental accounts, forest statistics or general environmental statistics. Some countries stated that the data is also used in the national greenhouse gas calculations.

Table 1 shows a detailed overall comparison on the responses.

Table 1. Summary of countries' responses on Part I of the Forestry Account Questionnaire - FORESTRY ACCOUNTS IN YOUR COUNTRY

	Austria	Canada	Finland	Germany	Guatemala	India	Mexico	Netherlands	Norway	Sweden	UK
Q1 Has your country established environmental economic accounts for forestry?	No (Except for Table 3c of the IEEAF, which is compiled annually).	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes
Q2 Is there any study or report on forestry accounts that you consider may be of help to support the forest accounts assessment in the CREEA project?	Pilot study of the Institute of Forest Sector Policy and Economics University of Agricultural Sciences (2002): Integrated Environmental and Economic Accounting for Forests - annual set of tables for ESA functions of forests [2]	Concepts, Sources and Methods of the Canadian System of Environmental and Resource Accounts, Statistics Canada, (2006), link included after table.	-	Yes. The European Framework for Integrated Environmental and Economic Accounting for Forests (IEEAF) Die Waldgesamtrechnung als Teil einer integrierten ökologischen und ökonomischen Berichterstattung [3] Economy and Use of Environmental Resources: Tables on Environmental-Economic Accounting[4]	Yes (no link given)	-	Yes. INEGI. Cuentas Económicas y Ecológicas de México (SCEEM), serie 2005-2009 México. 2011[5].	Yes. Data on standing timber, timber use, and type of forest are published annually by PROBOS. There is also a chapter in the in the "compendium for the environment" – forestry which contains information regarding ownership of forest, timber	-	-	-

2 http://sdb.statistik.at/superwebguest/autoLoad.do?db=defgr002

3 Bormann, K./Dieter, M./Englert, H./Küppers, J./Rosin, A. (2006): Die Waldgesamtrechnung als Teil einer integrierten ökologischen und ökonomischen Berichterstattung, Bericht, Bundesforschungsanstalt für Forst- und Holzwirtschaft, Institut für Ökonomie, Hamburg, Wiesbaden http://www.destatis.de/jetspeed/portal/cms/Sites/destatis/Internet/DE/Content/Publikationen/Fachveroeffentlichungen/UmweltoekonomischeGesamtrechnungen/Waldgesamtrechnungen,property=file.pdf

4 http://www.destatis.de/jetspeed/portal/cms/Sites/destatis/Internet/EN/Content/Publikationen/SpecializedPublications/EnvironmentEconomicAccounting/Forestaccounting,property=file.pdf. Part 14: Forest accounting

5 http://www.inegi.org.mx/sistemas/biblioteca/detalleSCNM.aspx?c=16880&upc=0&s=est&tg=47&f=2&pf=Cue INEGI. Cuentas Económicas y Ecológicas de México (SCEEM), serie 2005-2009 México. 2011

	Austria	Canada	Finland	Germany	Guatemala	India	Mexico	Netherlands	Norway	Sweden	UK
								balances, import of tropical wood.			
Q3 Which standard (methodology) is applied?	IEEAF	SEEA 2003, and what is provided in the report cited above.	IEEAF	IEEAF	SEEA 2003[6]	The methodology for natural resource accounting, which is being developed in India, would not deviate much from SEEA.	SEEA 2003 SEEA Forest 2004[7]	SEEA 2003	SEEA 2003	SEEA 2003 Economic accounts for forest (2001), Statistics Sweden and National institute for economic research [8]. MIR1999: 3 Forestry Accounts (in Swedish) Statistics Sweden [9].	Currently developing forestry account in the line with SEEA. However, Forestry Commission reports to the Eurostat in the integrated Environmental and Economic Accounting for Forests [10]

6 http://www.infoiarna.org.gt/red%20iarna/2011/Red%20Informa%2024/adjuntos/libro-bosque-bases.pdf

7 Manual for environmental and economic accounts for forestry: a tool for cross-sectoral policy analysis. Rome, Italy. 2004

8 http://www.scb.se/statistik/MI/MI1202/2000I02/MIFT0105.pdf

9 http://www.scb.se/statistik/MI/MI1202/2000I02/MI71%c3%96P9903.pdf

10 http://unstats. un.org/unsd/envaccounting/seearev/Chapter5v4.pdf

	Austria	**Canada**	**Finland**	**Germany**	**Guatemala**	**India**	**Mexico**	**Netherlands**	**Norway**	**Sweden**	**UK**
Q4 What is the main source of data for the environmental economic account for forestry in your country?	Annual timber felling report (BMLFUW – Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management; HEM = Holzeinschlagsmeldung) Statistics on Producer Prices in Agriculture and Forestry National Forest Inventory	*Physical Timber Asset Account (Terminated, in reference year 2003):* Canadian Forest service National Forest Inventory: CanFi1991 and CanFi2001; Timber Production data 1970-present National Forestry Database Program: Softwood and Broadleaved '000 Cubic Metres merchantable timber per yr 1970:2010. Other detailed sources are spelled out in the above documentation, please see link. *Monetary*	Forest statistics National Accounts	National Forest inventories 1987-2002. Net of test farms - forestry holdings National Forest Accounting Area Statistics Foreign trade statistics, production statistics National Accounting National and international Reporting on the state of forests		The 'State of Forest Report' published since 1987, and 'Forestry Statistics India' published by Indian Council of Forestry & Education.	Information from the National System of Environmental and Natural Resources, the Data Set Vector Charter of Land Use and Vegetation the National Forest and Soil Inventory 11	We do not formally have economic accounts for forestry. The forestry in the Netherlands consists primarily of the production of Christmas trees.	National forest inventory, forest statistics		Surveys Inventories

11 In Spanish: Sistema Nacional de Información Ambiental y de Recursos Naturales, Conjunto de Datos Vectoriales de la Carta de Uso de Suelo y Vegetación, Inventario Nacional Forestal y de Suelos

	Austria	Canada	Finland	Germany	Guatemala	India	Mexico	Netherlands	Norway	Sweden	UK
		Timber Asset Account (ongoing): Statistics Canada's Annual Survey of Manufacturing and Logging, Statistics Canada's Capital Expenditure Survey.									
Q5. Which organisation is the main data provider?	Till 2011 table 3c of IEEAF was compiled on behalf of Statistics Austria by the Institute of Agricultural and Forestry Economics of the University of Natural Resources and Life Sciences, Vienna. Since 2012 it is calculated by Statistics Austria.	Canadian Forest Service and Provinces and Territories for the Physical Timber Accounts; Statistics Canada for the Monetary Timber Asset Accounts	Finnish Forest Research Institute Statistics Finland	Ministry for nutrition, agriculture and forestry Johann Heinrich von Thünen-Institute (vTI) Federal Research Institute for Rural Areas, Forestry and Fisheries , Institute of Forest Based Sector Economics Statistical Office Germany Ministry for nutrition, agriculture and forestry UNECE/EU		Various departments under the Ministry of Environment & Forest, Government of India.	National Forestry Commission (CONAFOR, Spanish acronym) National Institute of Statistic and Geography (INEGI, Spanish acronym).		Statistics Norway, the division for primary industry statistics and also the division for national accounts.	Swedish Forest Agency Swedish University of Agricultural Sciences	Forestry commission
Q6. Which organisation is the main user of the forest account's data?	Internal users within Statistics Austria such as the National Accounts Division. External users such as the Austrian Federal Ministry of	Canadian public, academia, NGOs, other government departments, through	Eurostat	Eurostat; National Accounting the public students R&D associations		Ministry of Environment and Forest Central Statistics	Secretariat of Environment and Natural Resources (SEMARNAT, Spanish acronym)		National accounts Organizations from the forest industry	Swedish Forest Agency Statistics Sweden	ONS, Defram Forestry Commission, Woodland area

	Austria	Canada	Finland	Germany	Guatemala	India	Mexico	Netherlands	Norway	Sweden	UK
	Agriculture, Forestry, Environment and Water Management the Federal Ministry of Finance, provincial government departments, the Austrian Institute of Economic Research (WIFO) and universities.	Statistics Canada's website.				Office, various research institutes in India.	Research centres and the academy.		Eurostat		apparent consumption, imports/exports market value
Q7. What type of analysis (reports) do you prepare based on the forestry account data?	Summary reports (in German only) Printed publication "Statistik der Landwirtschaft Internet: Statistics Austria website – Economic Accounts for Forestry Statistical Database (SDB).	No regular analytical reports on this account alone. Annual (release vehicle) analytical write-ups are produced for all resource stock accounts data (link below), inclusive of Timber accounts. Occasional analytical articles are produced and published through our flagship quarterly and annual publications (link below).	Some of the IEEAF tables to Eurostat Statistics Finland web-publication on flows of timber	Environmental Economic Accounting Department of Statistics Germany provides a yearly report (Umweltnutzung und Wirtschaft / economy and use of the environment) Tables on Environmental-Economic Accounting. A reporting chapter on the current state of forestry accounting and the set of forestry table is part of this.		Forest Accounts form part of the GDP estimated by Central Statistics Office based on the System of National Accounts.	The Economic and Ecological Accounts of Mexico, annually presents the balances of forest resources, forest land use changes and soil degradation. Additionally, the most recent publications of has presented the following topics, in accordance to the implementation of the forest accounts: the use of non-timber forest		A yearly publication[12]	The forest accounts or not much used by the people that fill in the IEEAF.	

12 http://www.ssb.no/english/subjects/10/04/20/skogregn_en/

	Austria	Canada	Finland	Germany	Guatemala	India	Mexico	Netherlands	Norway	Sweden	UK
							resources, the supply and use tables of goods and services identified in the forest, and tables of non available wood in natural protected areas, in physical units.				
Q8. According to your knowledge, what is the main use of the forest accounts in your country?	The Economic Accounts for Forestry are the basis to depict the forestry industry within the National Accounts. Furthermore the results are published in reports on agriculture and forestry (like the annual "Green Report" of the Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management).	As part of the estimate of Canada's National Wealth inclusive of natural resource wealth, and as part of our monetary natural resource stock accounts estimates in general. Research and education organizations / NGOs have made use of natural resource stock accounts data and related	In national greenhouse gas calculation related to flows of wood	Provision of public accessible information on various aspects of forestry and the forests as ecosystems on the national level as a comprehensive framework; Combining aspects of economy and the environment		Forest data is used to assess carbon sinks, annual production of wood, annual production of fuel wood, consumption of wood in household construction and furniture, industrial construction and agricultural implements, total fodder consuming by	Part of the information considered of national interest and that is necessary for the generation of public policies. It is also considered in the General Law of Ecological Balance and Environmental Protection the sector plan, among others.		See above	Main users are the forest industry, the department for rural affairs and maybe research.	Policy

	Austria	Canada	Finland	Germany	Guatemala	India	Mexico	Netherlands	Norway	Sweden	UK
		indicators (including timber accounts) in the course of analysing environment economy linkages and in building related indicators.				livestock etc.					

Included links

Canada

Concepts, Sources and Methods of the Canadian System of Environmental and Resource Accounts
http://www.statcan.gc.ca/pub/16-505-g/16-505-g1997001-eng.pdf

Natural resource wealth, 2010
http://www.statcan.gc.ca/pub/16-002-x/2011003/part-partie4-eng.htm

Human Activity and the Environment
http://www.statcan.gc.ca/pub/16-201-x/16-201-x2011000-eng.htm

2.3 Part II

The first deliverable of CREEA revised the upcoming SEEA 2012 and identified four main topics that we considered relevant for forest accounts that could be improved:

i. Forest land classification
ii. Forest related hazards and Forest management account
iii. Non-wood forest products
iv. Depletion and indicators to assess it

Therefore, the second part of the questionnaire intended to test how the proposed improvements were perceived by practitioners. For each of the proposed improvements it was asked whether they are considered as appropriate, important and feasible.

The questionnaire provided a brief description of each of the proposed improvements and a general statement where the experts had to express their agreement/disagreement level on a Likert scale. Additional space was provided so they could in addition provide comments, ideas or suggestions.

2.3.1 Forest land classification

SEEA 2012 proposes a forest land classification that divides forest land into naturally regenerated (Primary and Other naturally regenerated forests) and planted forests:

- Naturally regenerated forest
  - Primary forest
  - Other naturally regenerated forest
- Planted forest

In the questionnaire it was proposed to expand the classification so that for each of these categories the main forest types would be reported:

- Conifers
- Broadleaves
- Mixed
- Bamboo and palms

Question 9 asked the respondents whether they considered this expanded classification useful; while, **Question 10** inquired whether such data already exists in their country or if it would be difficult to collect it.

As reported in the following table most countries disagree with the proposed forest classification improvement.

	Totally disagree	Somehow disagree	Slightly disagree	Slightly agree	Somehow agree	Totally agree	Don't know/ don't answer
I consider the proposed classification as appropriate for accounting purposes	Austria	UK Germany Mexico Norway Canada	Sweden		Finland Guatemala	India	NL

Further, the countries provided the following comments:
Austria disagrees with the expansion of the forest classification as they do not collect such information and they argue it would be very difficult to set a boundary to clearly distinguish “other naturally regenerated forests” from “planted forests”. They find it as an extra burden because they do not have to report such a difference in their annual report of table 3c for IEEAF. Also they claim most of the regeneration is natural and even a distinction between “other naturally regenerated forests” and “planted forests” would be difficult to make in older stocks. A manageable distinction they propose is to distinguish between forests with and without yield.

Canada points out the need for a more detailed set of definitions of forestland cover to be agreed before a set of forest resource accounts can be developed.

Finland does already collect such data.

Germany finds it appropriate but impossible to report because of lacking data. They state that satellite images or aerial views on land use/landcover compatible with the boundaries of the other data of the comprehensive account would be necessary.

Guatemala adds a detailed comment on the classification and suggests enriching it with an extra classification of forests in and outside of protected areas. Also, they raise the issue of having a combination of land and forest accounts. Their overall interest seems to be to reflect the pressures on the forest resources and ecosystems within the accounting environment.

India Forest Classification is slightly different from the FAO classification. It provides with 1. Total forest area and 2. Recorded forest area. The recorded forest area is further divided into Reserved forests, Protected forests, and No classed forests. However, they fully agree that a detailed classification becomes a necessary condition for India to cover the diversity of forests and its geo-climatic characteristics.

Netherlands mentions the information from PROBOS institute where information on several species is proportioned.

Norway admits that it would be difficult collecting this data as the guidelines and definitions need to be better.

Spain provides with comments on how they gather data for Eurostat, that is, they stick to the FAWS classification. The way they are able to tell about this difference is letting forests from protected areas out of the class “available for wood supply”. This criterion responds to the difficulty of applying homogeneous criteria along the territory where competencies are transferred to autonomous communities and these have not established their FAWS areas. Spanish researchers indicate that the National Forest Inventory provides more detailed information.

Sweden classifies its forest stands according to species and by the age of the trees in intervals. That might be difficult to translate into the above mentioned classes. Furthermore, they claim the proposed classification can be strongly connected to where the forest is located geographically.

UK claims that the proposed breakdown seems excessive and will put an unnecessary burden on respondents. However, the NFI that will conclude in 2015 will be able to produce estimates of area and growing stock for such a breakdown while data on removals, for example, will not be available.

Eurostat provides with general considerations on the classifications. They suggest including the classification considered in IEEAF of forest available/not available for wood supply. Despite SEEA classifications (that follows FAO's FRA assessment) doesn't include such classes, they are considered of most interest. Further, related to the proposed classification, they would keep the basic level of coniferous and broadleaved forest and another main category of "other land with tree cover" where short rotation coppices or trees planted in agricultural land (such as poplars) could fit in. Furthermore they pinpoint the important issue of separately account for agro-forestry for Mediterranean countries.

To summarise, most countries would find it difficult to report according to such classification as most of them lack this data. The disparities between SEEA and IEEAF became apparent as most countries in Europe that report to Eurostat do it accordingly to the Forest Available for Wood Supply (FAWS) classification. The initiative of SEEA to deliberately surpass the timber oriented classification of forest land somehow conflicts with the consideration of such FAWS classification as been of most interest according to some European countries and Eurostat opinion. On the contrary, non-European countries with their forest resources under threat of over exploitation might have a different perspective. An interest has been identified in expanding these classifications so as to reflect the existing pressures on forest resources through an accounting framework. Aspects like forest resources within protected areas or a combined classification of land accounts and forest accounts have been proposed in the responses. These different ideas show that, as Guatemala pointed out, obtaining a harmonized worldwide classification that encompasses these situations should be part of a bigger debate that is out of the scope of this consultation.

2.3.2 Hazards related to forests and forest management account

HAZARDS RELATED TO FORESTS

SEEA 2012 suggests that, because of increasing impact of hazards (e.g., storms, fires, diseases) on forests, the activities aimed to preserve and protect the environment from these events should be recorded. However, no additional guidance is provided in SEEA. Thus, in CREEA we proposed a classification to report these activities, according to four hazard types: fire, storms, wind and snow, insects and diseases, and wildlife. Furthermore, the activities undertaken would be further classified according to the aspect they focused on: prevention, mitigation or restoration.

Hence, the complete classification for the account on economic activities related to the minimisation of natural hazards is shown below. This account would be expressed both in monetary and in physical units (hectares or similar).

Activities aimed at the minimisation of natural hazards

* Fire
  - Prevention
  - Mitigation
  - Restoration
* Storms, wind and snow
  - Prevention
  - Mitigation
  - Restoration
* Insects and diseases
  - Prevention
  - Mitigation
  - Restoration
* Wildlife
  - Prevention
  - Mitigation
  - Restoration

Question 11 asked the respondents whether they considered it useful to apply the proposed classification on forest protection activities; while, **Question 12** asked whether they already collect such information or whether it would be difficult to collect it in the case they are not already doing it.

	Totally disagree	Somehow disagree	Slightly disagree	Slightly agree	Somehow agree	Totally agree	Don't know/ don't answer
I consider the proposed classification as appropriate for accounting purposes	Austria UK	Germany NL Mexico	Guatemala	Sweden	Canada Finland Norway		

The results show that Nordic countries are supportive to this proposal while the rest of the countries mostly disagree on elaborating such an accounting on hazards.

Further, the countries provided the following comments:
Austria completely disagrees with the set up of such a classification mainly because data are not available and the proposed allocation of activities to diminish natural hazards is regarded as impossible as many activities have a multi-purpose objective (e.g. thinning activities could contribute to the prevention of damages caused by storms, wind or snow, but also to the prevention of insects and diseases). However, they consider a good idea to set up a common framework to investigate the way different countries compile their accounts and to what extent information on mitigation of forest hazards are available from different countries.

Finland does not collect such data.

Germany considers it difficult to make such an account. Clear definitions would be needed to obtain comparable results amongst countries. Furthermore, the difficulty in allocating the expenses to one of the account items is shown with an example on climate change measures that could be connected to hazards like fire, storms and diseases. Hence, new surveys would be needed and also a problem of differentiation may arise.

Guatemala disagrees for several reasons. First of all, they do not regard wildlife as a threat for their forests. Second, and similarly to other countries, they raise the question of combined hazards and also the fact that forest interventions are often multi-purpose. Finally, they propose including illegal logging as a hazard. Again, these results stress the fact that agreeing on a obtaining a harmonized international classification that encompasses such situations that is out of the scope of this consultation.

India raises the conflict between man and animals as one of the hazards faced in forest land areas. They would like to have an indicator reflecting this fact as well as some indicators reflecting the deforestation processes. India collects info on physical and monetary units.

Mexico does already collect such information and does not consider such a classification necessary since this information could rather be included in the Environmental Protection Expenditures Account.

Netherlands statistics consider these issues not so relevant.

Norway considers it difficult to collect this data and points out that nobody is collecting any data like this at the moment. No one has a responsibility to report the damages in forests.

Spain follows the biannual report that ASEMFO (Forestry Industries Association) compiles on the expenditures related to the forest sector for each Autonomous Community. It does separate expenditures on forest management, fire prevention, diseases, and fire extinction. They rely on it although there is a risk of double counting for some of the items.

Sweden collects statistics on the extent of the hazards but not on the prevention of them, for instance damage caused by bark beetles. Sweden proposes to look for new sources of information on these expenses, possibly using the government budget/expenditure to find posts linked to certain efforts to prevent forest hazards.

UK states that the data is not available at such level of detail whilst some activities may be aimed at multiple purposes.

Eurostat office asks to clearly spell out what exactly should come under hazard prevention and what under forest management and hence points out the difficulty of telling the difference between these activities.

To summarise, most countries find it difficult to report according to the proposed classification. On one hand they lack the needed data, and on the other hand the multipurpose nature of forest management activities makes it difficult to separate forest and hazards management activities. Furthermore, some management activities are multi-hazard oriented, hence double counting would be likely to exist. However, some countries find it interesting to set up a common framework, which could contribute to achieving an agreement on definitions and classification of activities, enabling a comparison across countries.

Furthermore, what is considered as a hazard may vary greatly across regions. Even the same hazard could be seen differently. Thereby, wildlife represents a hazard for vegetation in many European countries, due to high populations of deer or wild boar, while they represent a threat for human populations in India or are not considered a hazard in other countries such as Guatemala. Again, obtaining a harmonized international classification will require more work and is out of the scope of this consultation.

FOREST MANAGEMENT ACCOUNT

SEEA 2003 recommends establishing a Forest Resource Management Account where the expenditures in forest management would be recorded. This specific account would comprise among others, the following activities: forest management, pest control and regulation, afforestation including net acquisitions of land forest inventories, development of forests for recreational use, forest-related research, education, training and information activities.

Question 13 asked the respondents whether they considered useful to develop such account while **Question 14** asked whether they already collect such information and whether it would be difficult to collect such data in case they are not already collecting it.

	Totally disagree	Somehow disagree	Slightly disagree	Slightly agree	Somehow agree	Totally agree	Don't know/ don't answer
I consider developing such an account would be useful for accounting purposes		Austria Germany NL Mexico	Sweden	UK	Canada Finland Norway	India Guatemala	

The results from the table show a well spread sample slightly moving to the agreement part of table.

Further, the countries provided the following comments:

Austria disagree on the development of such an account mainly because it would require a well defined structure that in Austria may be available for a small scale, but not for a national scope. Hence, specific data are not available at the moment but they support the launching of a structured Forest Management Account that could eventually contribute to answer the question on forest hazards.

Germany considers it is an interesting idea, but no data exists. If they were to do this they would need new surveys, as for the moment they have information from few forestry holdings but these are not representative.

Mexico does not consider critical to itemize this type of information, since the Environmental Protection Expenditures Account includes these aspects within the framework of the natural resources management, through the analysis of production accounts (production activities and intermediate consumption).

The Netherlands does not find it as being a high priority.

Norway finds it useful, but is not sure about the existing related data.

Sweden considers the proposed forest management account might provide a wider understanding of the sector compared to the usual forest data but it is not clear that these numbers are always comparable between countries. Hence, they suggest having clearer definitions of the items included in such account as well as on the units these estimations are supposed to be in.

UK finds it useful although it should be considered whether the benefits of this account could justify the resources required. They point out that government expenditure may be relatively easy to compile whereas private sector data may be tough to obtain as there is no established source for private sector expenditure on these activities.

To sum up, countries consider establish such account as an interesting idea. However, lack of data on a country scale and effort needed to complete such an account would hinder its set up.

2.3.3 Non wood forest products

The non wood forest products (NWFP) are a broad category of forest products (e.g., mushrooms, cork, berries) that are likely to represent a substantial source of income in many regions.

However, there are important challenges in measuring the flow and the economic contribution of these goods. However, a common situation in many countries is that the share of this products collected for own consumption purposes account a high share (even higher than this traded in the markets). Our proposal in the questionnaire was to include a specific entry for NWFP within the SEEA to reflect their relevancy to the economy.

Question 15 asked the respondents whether they considered useful to include NWFP in the SEEA 2012. **Question 16** asked whether they already collect such information and whether it would be difficult to collect such data in case they are not already collecting it.
Finally, **Question 17** asked respondents on the existence of studies assessing the self-consumption share of NWFP.

	Totally disagree	Somehow disagree	Slightly disagree	Slightly agree	Somehow agree	Totally agree	Don't know/ don't answer
I consider the proposed classification as appropriate for accounting purposes		UK Germany Mexico		Austria NL Sweden	Canada	Finland India Norway Guatemala	

Most of the countries are on the agree side of the table for the suitability of including NWFP in the accounting for forests. Agreement is higher among Nordic countries.

The countries that already collect this information are: Austria (physical and monetary units), Finland, Germany (game and Christmas trees and in physical units only), India, Mexico, Norway (Christmas trees, ornamental greenery and hunting),

Further, the countries provided the following comments:
Austria considers forest products and services as crucial elements in the modern understanding of sustainable forest management. They report for State of Europe's Forests (SoEF) information on both of them in monetary and physical units according to indicators 3.3 and 3.4 of SoEF, respectively. Furthermore, they are conducting pilot studies on the issue. Finally, reporting is done every 5 years, so annual data is not available.

Canada notes that it would be difficult to collect this information, especially the portion that is used for own consumption. Ad hoc surveys may exist that address this information in part.

Finland does collect information both in physical and monetary units of this consumption. They even collect information on self-consumption. Information on berries and mushrooms are collected by TNS Gallup Ltd. Food and Farm Facts.

Germany finds it useful but data are available only for game meat and for Christmas trees (and this not for every year). They collect some of this information in physical units and would definitely need new surveys to capture the rest of the data. They do not evaluate self consumption share.

Guatemala is currently working on collecting information on the household consumption share. Their source of information is the household diaries of the regions. Direct surveys are avoided as people don't recognize which is the array of non timber products when asked directly.

India collects data on NWFP, but not on the self-consumption share.

Mexico does not consider it necessary as the generated information belongs to a macroeconomic level, according to the National Accounts, given the global economic and environmental interactions.

The Netherlands states that these activities are not so substantial in their country and hence do not have a high priority.

Norway collects data on Christmas trees, greenery for ornamental purposes and hunting. They do not collect any data on the self-consumption share.

Spanish Ministry of Environment compiles data on production from the Autonomous Communities. The information has a variable quality through the years and amongst communities. In their case, they compile info on Mushrooms, cork, chestnut, and pine cones. No data on consumption, either quantities or prices.

Sweden has data on land cover for certain species producing NWFP, although mostly berries. Christmas trees are classified as agricultural land. Regarding the self consumption share and its monetary value, they argue it would be difficult to put a value on that as everybody is

allowed to access the forest and pick berries, mushrooms, etc. They pose in question whether market price would be optimal for valuation.

UK claims it is a low interest issue. Some data has partially being collected, but because it is an informal activity, it would be difficult to collect such data. No self-consumption estimated.

Eurostat is in favour of including own consumption but also notes that the economic relevance of the resulting number may not be high.

To summarise, the collected information on NWFP is very irregular among countries. The info is far from being collected on a yearly basis in some cases and self-consumption is rarely measured. Finland is the exception to this general situation as they collect data on self-consumption share and estimate both physical and monetary units. Guatemala also constitutes the exception as they are working on the estimating of self consumption shares through secondary data. We also found a high heterogeneity among the countries with some of them as UK or the Netherlands hardly interested in the issue.

2.3.4 Depletion issues

This last section of the questionnaire is devoted to the concept of depletion. SEEA 2012 assesses depletion of forest resources from the sustainable yield viewpoint. However, to properly assess depletion of resources, it is not only the quantity but the quality of these resources that matters. Hence, this section of the questionnaire gathers a list of indicators we proposed to enhance the assessment of depletion. The proposed list of indicators is based on State of Europe's Forest (SoEF) 2011 report.

For each of the indicators, a brief description was provided in the questionnaire, while the document with additional information provided a broader explanation of each of them.
Similarly to the previous sections, we provided them with a likert scale where they could rate the usefulness of each indicator in the assessment of depletion. Afterwards, they were asked whether they already collect such information related to the indicator and, not being the case, they were asked whether they would find it difficult to collect it.

2.3.4.1 Indicator 1- Basic sustainability of forests

The first indicator proposed measured the balance between net annual increment and annual felling and is a central criterion for assessing the sustainability of forests.
Share of harvested annual increment [in %] = Annual felling [in m^3] / annual increment [in m^3]. (SoEF indicator 3.1).

	Totally disagree	Somehow disagree	Slightly disagree	Slightly agree	Somehow agree	Totally agree	Don't know/ don't answer
I consider this indicator useful for depletion assessment.		Sweden			Austria Canada UK	Finland Germany Guatemala Mexico India Norway	

Most countries agree on the suitability of this indicator and collect these data. However, as Austria pointed out, data for some of the proposed indicators comes from forest inventories

and hence it is collected at planned intervals of a number of years. This is valid for not only Indicator 1 but also for the other indicators. Sweden underlines also that the data is not collected on an annual basis, but every four years. Furthermore, they consider this indicator too simplified and it may not give a fair estimation when comparisons are made between countries. Pablo Campos, one of the Spanish researchers that filled in the questionnaire, remarked that the depletion can only be assessed at the end of the growth cycle, which may not coincide with the growth and cutting in the accounting year.

The countries that already collect this information are: Austria, Finland, Mexico, Norway, Sweden,

2.3.4.2 Indicator 2- Forest and other wooded land

Other wooded land (OWL) covers only small percentages of the total land area of a country with the exception of Southern Europe. In this region the climatic and edaphic conditions favour scattered vegetation. Evaluating the share of OWL with respect to forest land could give insight on any change in the use of forest resources (e.g. forestation, deforestation processes).

Share of other-wooded land [in %] = Area of other wooded land [in ha] / total Forest and Other Wooded Land area [in ha]. (SoEF indicator 1.1)

	Totally disagree	Somehow disagree	Slightly disagree	Slightly agree	Somehow agree	Totally agree	Don't know/ don't answer
I consider this indicator useful for depletion assessment.	Austria	UK Germany			Guatemala	Finland Mexico India Norway Sweden	

Results for this indicator are on the extremes of the table, with strong agreements and disagreements.

The countries that already collect this information are: Austria, Finland, Spain, India, Mexico, Norway,
Further, the countries provided the following comments:
Austria, Finland, Guatemala and Mexico do already collect such data.

UK proposes some other indicators instead, such as stems/ha, to see if densities are reducing or forest area as a % of total land area, to see if there is more woodland loss than gain. They also ask for a definition of OWL. They do collect info on OWL area being very much an estimate.

In the case of Germany, OWL is of marginal interest and therefore it is not reported.

In Spain this class is of high relevancy as occupies more than 9 million hectares divided into two classes depending on tree coverage, whether it is between 5-10% or below 5% respectively.

Eurostat doubts on the usefulness of such indicator for measuring depletion. The changes in this area could hardly be interpreted without the help of supplementary data about this change.

To summarise, the importance of OWL seems to be very different from one country to the other. The area of OWL is more relevant in Mediterranean countries, and hence, these report it and even create different classes of OWL. In contrast, in central Europe OWL seems to be of marginal interest and it may even be not reported. However, including this class in the reports and in the accounting would give the opportunity of reporting it when relevant. Finally, as Eurostat and UK point out, solely the changes in the area of OWL may not be informative enough in terms of depletion, needing supplementary data to interpret such changes.

2.3.4.3 Indicator 3- Forest structure

This indicator allows understanding the background of the forest and its likely future development. It not only facilitates the assessment of harvesting potentials but also provide insight into biodiversity and recreational conditions which are generally more favourable in uneven-aged and old even-aged forests compared to young even-aged stands.

Area of forests according to age classes [in ha]: (SoEF indicator 1.3):

- *Un-even aged*
- *Even-aged:*
  - *<20 years*
  - *21-80 years*
  - *>80 years*

	Totally disagree	Somehow disagree	Slightly disagree	Slightly agree	Somehow agree	Totally agree	Don't know/ don't answer
I consider this indicator useful for depletion assessment.		Norway			Austria UK Germany	Finland Guatemala Mexico Sweden	India

Most countries agree on the suitability of age classes for assessing depletion aspects of the forest.

Further, the countries provided the following comments:
Austria, Germany and Finland already collect this information with the periodicity the NFI imposes.

Guatemala has some estimation on forest structure but data is poor.

Mexico and India do not collect such data.

Norway collects this info but forests are divided into development classes, not age classes. However, they can easily convert the data if needed.

Spain reports according to diametric classes only as these age classes are largely unknown due to the irregular nature of most stands. Spanish researchers state that the Spanish forest inventory provided with far more detailed information.

Sweden has available this classification but with smaller intervals. They argue that the intervals are too large to be of any use. It takes longer for forests to develop the characteristics of mature forests in northern areas. In fact, the highest interval they publish is > 160.

Eurostat asks for further division of the classes as lumping together 21-80 years trees would make impossible to tell whether the older age classes are disappearing fast, as some say.

To summarise, it seems in the Mediterranean there are some difficulties to report according to these standards due to the features of the stands. Something similar seems to experience in Norway, where they report differently. In addition, Eurostat's suggestion may be considered so as to provide with a better assessment of depletion of mature trees. It would mean break the class of 21-80 years in at least two more classes and, following Sweden classification, it may also be advisable to further break the oldest class.

2.3.4.4 Indicator 4- Protected forests

Area of forest protected to conserve biodiversity, landscapes and specific natural elements. Within these protected forest areas, specification could be provided on the specific management objective, i.e. conservation of biodiversity through no active intervention; conservation of biodiversity through minimum intervention, conservation of biodiversity through active management; landscape conservation.

Share of protected forest area [in %]= protected forest area [in ha]/total forest area [in ha] (SoEF indicator 4.9)

	Totally disagree	Somehow disagree	Slightly disagree	Slightly agree	Somehow agree	Totally agree	Don't know/ don't answer
I consider this indicator useful for depletion assessment.					Austria UK	Finland Germany Guatemala India Mexico Norway Sweden	

All the countries agree on the suitability of the indicator to assess depletion aspects and all of them record this information.

Further, the countries provided the following comments:

Germany highlights the fact that the IEEAF makes the distinction between "Available for wood supply/ Not available for wood supply", which places the focus on forests which are difficult to reach or use instead of focusing on protection aspects.

Guatemala highlights the fact that altough they have protected forests these are also likely to be depleted.

Sweden asks for a more neat definition on what is considered under this definition of protected forest. They seem to have a protection figure that allows for forests voluntarily protected by owners. However, these probably wouldn't be considered under such a classification.

To sum up, European countries do report this information to SOEF further disaggregated in 4 classes of protected forests. These classes are in contrast with these considered by the IEEAF that over protection issues encompasses forests which are difficult to reach or to use.

2.3.4.5 Indicator 5- Introduced species

Introduced species are tree species occurring outside their natural vegetation zone, area or region. Some of them make a significant contribution to wood production and supply in many countries.

Share of forest dominated by introduced tree species [in %] = area of forests dominated by introduced tree species [in ha]/ total forest area [in ha]. (SoEF indicator 4.4)

	Totally disagree	Somehow disagree	Slightly disagree	Slightly agree	Somehow agree	Totally agree	Don't know/ don't answer
I consider this indicator useful for depletion assessment.			Germany		Austria Canada	Finland Guatemala Mexico Norway India Sweden	UK

The countries that already collect this information are: Austria, Finland, Germany, Mexico, Sweden, and United Kingdom. The countries that don't collect it are India, Norway,

Further, the countries provided the following comments:
Finland claims that even it is not a relevant topic nowadays; it may be in the future due to climate change.

Germany explains that they do have data available in ha for 6-7 species, although not on an annual basis. They point out that 400 years ago is assumed as an historical fix point of time for the introduction of neophyte. They recall that a certain immigration and a deliberate change of species as well (e.g. by climate change mitigation and as a prevention measure for that) seems to be unavoidable. From this the indicator is ambivalent.

Guatemala states than there are no data on this issue and state that the illegal trading is very high.

Norway doubts on the existence of any data on this in their country.

Sweden collects this data on its NFI, most of it corresponding to Pinus contorta.

UK asks for a clearer definition of what is meant by "dominated ". Is it just more than 50% of coverage?

To summarise, the definition of introduced species should be further clarified if such an indicator is to be considered. Countries exposed their doubts on the definition regarding coverage and time period considered to include certain species as introduced. Despite these inconveniences, most of them agreed on the suitability of the indicator.

2.3.4.6 Indicator 6- Deadwood

The amount of deadwood in forests is seen as a valuable indicator to estimate biological diversity within forests for both current sate and development over time. Late development stages of natural forests are characterized by considerable amounts and types of deadwood.

Average volume of standing and laying deadwood [in m3/ha] (SoEF indicator 6.1)

The amount of deadwood in forests is seen as a valuable indicator to estimate biological diversity within forests for both current state and development over time.
Late development stages of natural forests are characterized by considerable amounts and types of deadwood. *Average volume of standing and lying deadwood [in m3/ha]*

	Totally disagree	Somehow disagree	Slightly disagree	Slightly agree	Somehow agree	Totally agree	Don't know/ don't answer
I consider this indicator useful for depletion assessment.				Austria	UK	Finland Germany Guatemala India Mexico Norway Sweden	

The countries that already collect this information are: Austria, Finland, Germany, Mexico, Norway, Sweden and United Kingdom.

India highlights the fact that some villages nearby the forest are dependent on dead wood as a source of fuel. They reckon it may be difficult to collect such information.

Guatemala collected this information within their forest inventory in 2004. To date, no new estimations exist.

To summarise, countries provide with little comments but they all seem to agree on the importance of the amount of deadwood as an indicator for assessing depletion aspects.

2.3.4.7 Indicator 7- Forest holdings

The number of forest holdings, their sizes and ownership types are assumed to have implications on forest management practices and the provision of forest goods and services. Therefore, monitoring changes of ownership structures may give indications about the

potential for Sustainable Forest Management, for example with respect to production of timber and other goods and services, employment and other socio economic developments.

Percentage of public and private forests [in %] (SoEF indicator 6.1)

	Totally disagree	Somehow disagree	Slightly disagree	Slightly agree	Somehow agree	Totally agree	Don't know/ don't answer
I consider this indicator useful for depletion assessment.	UK			NL	Canada Finland Germany	Austria Guatemala Mexico Norway Sweden	

The countries that already collect this information are: Austria, Finland, Germany, Mexico, and Norway.

Most of the countries show their agreement on reporting the share of public/private forests.

Further, the countries provided the following comments:
Austria has information and asks for precise descriptions of public and private forests.

Germany does have data available for area and holdings on a yearly basis. However, they ask for a clearer definition of the features of forest holdings as in Germany exist many small forest holdings which do not make their living by forestry.

Guatemala highlights the fact that they don't have data on the issue and that it would be almost impossible for them collect this info on ownership.

India explains that forests are under government control, except few cases. Hence, this indicator would provide with little information.

UK considers this is not a relevant indicator as ownership does not have any relation with depletion, provided a clear control exists over what the owner can do with the land and ecosystem services that need to be protected. They do not collect such information.

Eurostat would welcome some changes regarding the classification. The TBFRA 2000 grouping would be better than the one proposed here. Furthermore, forests holdings have little to do with the share of private/public forest area. They provide a link to have a look at the definitions of: Private and public ownership.

To summarise, countries ask for a concise definition of public and private forests. Furthermore, as UK, points out, maybe the inclusion of the share of public/private forests in an European context may not have much informative power on depletion aspects as a clear control exists on what the owners can do in their own land. Following EUROSTAT recommendations, we reflect here the definitions according to FRA 2010 (FAO, 2010):

- Public ownership: forest owned by the State; or administrative units of the Public Administration; or by institutions or corporations owned by the Public Administration.
- Private ownership: Forest owned by individuals, families, communities, private co-operatives, corporations and other business entities, private religious and educational institutions, pension or investment funds, NGOs, nature conservation associations and other private institutions. Included here are:
    1. Individuals: Forest owned by individuals and families
    2. Private business entities and institutions: Forest owned by private corporations, co-operatives, companies and other business entities, as well as private organizations such as NGOs, nature conservation associations, and private religious and educational institutions, etc.
    3. Local communities: Forest owned by a group of individuals belonging to the same community residing within or in the vicinity of a forest area. The community members are co-owners that share exclusive rights and duties, and benefits contribute to the community development.
    4. Indigenous / tribal communities: Forest owned by communities of indigenous or tribal people.

2.3.4.8 Indicator 8- Forest use

This indicator refers to the main use forests are dedicated to. The classification followed that proposed by Mukkonen to the London group for the revision of SEEA.

Primary use of forests [in ha] in accordance with the classification of the Forest Resource Assessment 2010:

Primary use of forests [in ha]:

- *Production and multiple use*
- *Protection (e.g., watershed management, erosion protection)*
- *Conservation (e.g., biodiversity protection)*
- *Social services (e.g., recreation, tourism, education, cultural heritage)*

	Totally disagree	Somehow disagree	Slightly disagree	Slightly agree	Somehow agree	Totally agree	Don't know/ don't answer
I consider this indicator useful for depletion assessment.		UK Germany Mexico Sweden		Austria	Canada	Finland Guatemala India Norway	

The countries that already collect this information are: Austria, Finland, India, Mexico,
Further, the countries provided the following comments:
Austria collects this information although find it difficult to obtain it. Furthermore, they claim that although data are available, there is a lack of coherence and reporting in this format would be very task-demanding.

Finland claims that this classification should follow the FAO TBFRA forest designation categories.

Germany finds it interesting but highlights the problem of double counting and recommends a reliable allocation of use or a decision on the main use to avoid double counting.

Guatemala proposes making more classes as the production and multiple use categories could lead to an allocation of all the data into that class.

Norway collects data on some of the items mentioned and these lacking would be useful to have in the future.

Sweden doesn't see the point in having this indicator as it seems some of these aspects are already estimated in other indicators above.

UK doesn't agree with the "multiple uses" part of the first category. Either the primary use is production or it should be recorded elsewhere. Furthermore, they do not see that it related to depletion. They do not collect such info.

To summarise, countries may find it interesting reporting these classes. However, even if these categories are set in both SoEF and FRA2010, countries may find it difficult to report the main function for some of the forests. As one of the Spanish researchers stated, primary use is an administrative category for classifying forest land with a "policy" metric that may not have a clear link with biophysical and landscape dynamics. Furthermore, double counting risks do exist. Finally, we would like to highlight that the classification proposed (based on an initial proposal of Mukkonen to the London group when preparing the latest version of SEEA) could be more accurately shaped, according to the definitions in FRA2010 where production and multiple use functions are separated. The classes for primary designated functions of forest according to FRA 2010 are:

- Production
- Protection of soil and water
- Conservation of biodiversity
- Social services
- Multiple use
- Other

2.3.5 Some additional indicators/comments

Guatemala points out that the millennium goals are highly relevant for developing countries. Hence, they propose introducing indicators for forest and land management for such goals/objectives would be very important.

India provides in Question 26 some ideas of additional indicators that could be useful and informative of forest state. These are:

- Deforestation
- Allocation of forest land for development and infrastructure projects
- Socio-economic status of forest dependant population

Sweden raises the question of assessing biodiversity issues and even if it is hinted by the proposed indicators above, they wonder whether it would be possible to create indicators on this and whether some research has already been done in this sense.

2.4 Overall comparison of the answers with SEEA requirements

The SEEA 2012 forest and forestry standards set minimum criteria of what should be reflected in the forest accounts regarding mainly forest land and timber. The collected data from the questionnaire mainly intended to test whether respondents find the proposed improvements on SEEA 2012 feasible.

In this respect, the first question in Part II proposes an improvement on the SEEA forest land classification. This classification divides the forest land into naturally regenerated and planted forest. The proposed improvement would introduce a more detailed classification, which also differentiates between conifers, broadleaves, mixed and bamboo forests. Most European countries stated they would find it difficult to apply the proposed classification as they mainly apply IEEAF forest land classification. Thus, applying the proposed classification would impose an extra burden.

However, the proposed SEEA classification may prove to not be so difficult to apply. Firstly, most EU countries have only a very limited amount of primary forests, and would only have to report according to the categories “other naturally regenerated forests” and “planted forests”. In this respect, most countries keep data about planted forest areas, (either in public forest or through permissions and afforestation projects on private land) the compilation of such data might not be so demanding.

On the other hand, some of the SEEA (either 2003 or 2012 version) proposals, (e.g., such as the establishment of an account on hazards, and account on forest management), seem to appeal more and gain the interest of the countries. However, reluctance is mainly triggered by the lack of specific data, double counting risks, high burden and resources needed to compile such data. Probably these are also the reasons why these accounts or initiatives are specified rather vaguely in the SEEA.

Finally, future initiatives in the field of forest accounts should put particular attention to clearly defining the account items to avoid double counting and enable cross countries comparisons.

3 Conclusions

This deliverable presents the results of the responses to a survey delivered to the statistical offices of several survey conducted in several countries, which explored:

i. what data is currently collected in national forest accounts and
ii. the practitioners opinion on a number of proposed improvements for SEEA 2012 forest accounts.

Six out of eleven surveyed countries reported that they had either ongoing studies or had done pilot studies. There is no international common forest policy or other legislation that would define the content of forest accounts. Thus, mainly the forest accounts related studies are conducted to provide the information for the Eurostat's IEEAF framework, which is done on a voluntary basis.
The surveyed countries also show reluctance to adopt and implement some of the proposed forest account classifications. Mostly this was because of lack of data. The countries consider that the collection of adequate data would require a disproportional amount of resources, compared to the importance of the forestry sector.

This reluctance was also expressed when asked about willingness to adopt the proposed SEEA forest land classification. SEEA 2012 abandons the division of forests according to forest's availability for wood supply (Forest Available vs. Not Available for Wood Supply (FAWS/No FAWS).and Instead, it classifies forest land on hand of the regeneration process (naturally regenerated vs. planted). In contrast, Eurostat maintains the FAWS classification currently applied in the IEEAF accounting framework. European countries stick to it and hence, they don't seem to be willing to move to the new classification proposed by SEEA.

Nevertheless, some of the CREEA proposals, such as establishing an account on forest hazards, a forest management account or considering forest use were regarded as interesting. However, before implementing such improvements, adequate solutions would be needed to avoid double counting.

The forest sector and forest ecosystems heterogeneity within the EU is clearly reflected in countries responses related to non-wood forest products (NWFP) and other-wooded-land (OWL). Interest on establishing this type of accounts was mainly related to the importance of this topic in the addressed countries. For example, NWFP are considered relevant in Finland, where even estimates on self-consumption exist, while; UK considers NWFP as very marginal. Thus, we can conclude that the heterogeneity of forests and the forest sector is also reflected in their needs and preferences for a forest account framework. A possible solution could be to establish a common forest account framework that could embrace the multiplicity and account for the diversity of situations, i.e. it would be better to have some gaps in the accounts because some countries do not find it relevant to report on some aspects than having misreported situations.

Finally, to make a forest account framework more operational concise definitions for indicators are needed, to facilitate their adoption and implementation.

4 References

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5 Annexes

5.1 Annex I: Forestry Accounts Questionnaire

This questionnaire is part of an ongoing European FP7 research project called CREEA - Compiling and Refining Environmental and Economic Accounts, lead by Arnold Tukker at TNO (Netherlands Organisation for Applied Scientific Research). The project runs from April 2011 to March 2014.

The project has been launched to contribute *to further implementation* of the system of integrated environment and economic accounts (SEEA), which is planned to be published in 2012. In this context, the *main objectives of CREEA project are:*

* *refining and elaborating economic and environmental accounting principles,*
* *testing them in practical data gathering, to troubleshoot and refine approaches,*
* *showing added value of having such harmonized data available via case studies.*

Part of the CREEA project is focused on forests and is intended to evaluate the proposed SEEA 2012 standards and to propose potential improvements. Furthermore, it will investigate **what parts of the very rich information that the forest sector is collecting could be used to improve the representation of the forest sector in the SEEA**.

Thus, the main objectives of this questionnaire are, to collect:

* **information on the experience with the implementation of forestry accounts in your country and to reflect your opinions about some of these issues**, so the CREEA project can reflect the experiences and pilot studies that have been done in the field so far.
* **your opinion about the proposed improvements of the SEEA standards**, so the CREEA project will not only propose improvements to the new SEEA 2012, but will also consider the opinion of those who would most likely implement such changes.

Following the objectives, the questionnaire has two main sections. A document with additional information on some of the items (definitions for forests and for proposed indicators) of the questionnaire is attached separately in case you would like to look it up.

- Part I: Experience with forestry accounts in your country;
- Part II: Proposed improvements of the SEEA 2012 methodology.

If you are not able to answer some questions we would kindly ask you to consult your colleagues who may have the expertise on the issue. Please note that you are asked for an "expert opinion" and not for an official governmental statement. The results of the questionnaire will be kept confidential and no person or organisation will be identified in the published results. The results obtained from the questionnaire will be used for the elaboration of the CREEA project deliverables.

We kindly ask you to complete the questionnaire and return it in **electronic form**, to the following address.

Mrs. Viveka Palm (viveka.palm@scb.se)

Thank you very much for your cooperation and important contribution.

Before proceeding, please note that the final date for answers is the 5th of March 2012.

GENERAL INFORMATION

COUNTRY/REGION[13]:

Date of submission:

Correspondent[14]:

Name:	
Organisation:	
Position:	
Address:	
Phone/Fax:	
E-mail:	
Web address:	

Other people contributing to the questionnaire:

Name:	
Organisation:	
E-mail:	
Name:	
Organisation:	
E-mail:	
Name:	
Organisation:	
E-mail:	

[13] Specify the country/region for which the answers are reported

[14] Disclaimer: Information provided by you on this page is only for the internal use of the study and possible follow-up need and will not be disclosed.

Part I: FORESTRY ACCOUNTS IN YOUR COUNTRY

In this part of the questionnaire we will ask for forest account studies made in your country and for experiences about users needs. In particular, we are especially interested in studies related to SEEA, the System of Economic and Environmental Accounts.

Question 1: Has your country established environmental economic accounts for forestry?

☐ Yes
☐ No

If answer to question 1 is YES go to question 3, if NO go to question 2!

Question 2: Is there any study or report on forestry accounts that you consider may be of help to support the forest accounts assessment in the CREEA project?

☐ Yes
☐ No

Question 2.1: If so, could you provide us with a bibliographic reference, a web link or attach/send the document itself?

Bibliographic reference:
Web link:

Question 3: Which standard (methodology) is applied?

☐ SEEA 2003
☐ Other: Please specify:

Question 3.1: Could you provide with a bibliographic reference, a web link or, attach/send the document itself where the methodology is described?

Bibliographic reference:
Web link:

Question 4: What is the main source of data for the environmental economic account for forestry in your country?

Question 5: Which organisation is the main data provider?

Question 6: Which organisation is the main user of the forest account's data?

Question 7: What type of analysis (reports) do you prepare based on the forestry account data?

Question 8: According to your knowledge, what is the main use of the forest accounts in your country?

PART II: PROPOSED ISSUES TO TEST IN CASE STUDIES

Forest related issues are addressed in four main areas of the SEEA:

1. Contribution of the forest industry to the economy
2. The consumption of wood and paper products
3. As a form of land cover and forestry is a category of land use
4. Timber resources are considered as an environmental asset

Nevertheless, we believe that the information provided by the proposed SEEA framework could be further enriched. In our review, four main topics and corresponding indicators have been identified as suitable to considerably improve the SEEA forest accounts. The identified issues are the following:

1. FOREST LAND: BOUNDARIES BETWEEN PRIMARY FORESTS, PLANTED FORESTS AND OTHER NATURALLY REGENERATED FORESTS

In SEEA two main categories are considered: (i) forest land and (ii) other wooded land. Both categories are defined according to the FAO Forest Resource Assessment 2010 definition.
For forests SEEA 2012 further distinguishes between naturally regenerated forest and planted forest.

Naturally regenerated forest is predominantly (more than 50% of the growing stock at maturity) composed of trees established through natural regeneration.

Two broad types of naturally regenerated forest are distinguished:
i. Primary forest is naturally regenerated forest of native species, where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.
ii. Other naturally regenerated forest is naturally regenerated forest with clearly visible indications of human activities.

Planted forests are predominantly composed of trees established through planting and/or deliberate seeding. Planted/seeded trees are expected to constitute more than 50% of the growing stock at maturity.

Refining this classification would allow for a better assessment of the sustainable yield and hence for a more accurate identification of the depletion processes for forest land. We propose to include for each of the above categories, the following classes:

* Conifers
* Broadleaved
* Mixed forests
* Bamboo, palms, etc.

Hence, the classification for forest land account would look like this:

Forests

Naturally regenerated

* Primary forest
  - Coniferous
  - Broadleaved
  - Bamboo, palms, etc.
  - Mixed forests
* Other naturally regenerated forests
  - Coniferous
  - Broadleaved
  - Bamboo, palms, etc.
  - Mixed forests

Planted forests

- Coniferous
- Broadleaved
- Bamboo, palms, etc.
- Mixed forests

Other wooded land

Question 9: Would you consider it useful to expand the forest land classification?

	Totally disagree	Somehow disagree	Slightly disagree	Slightly agree	Somehow agree	Totally agree	Don't know/ don't answer
I consider the proposed classification as appropriate for accounting purposes	1	2	3	4	5	6	
Free space for your comments, ideas or suggestions							

Question 10: Do you already collect this information?

☐ Yes ☐ No (If 'No' go to **Question 10.1**)

Question 10.1: Would it be difficult to collect this data?
☐ Yes (If 'Yes' go to **Question 10.1.1**) ☐ No (If 'No' go to **Section 2**)

Question 10.1.1: Could you explain why do you consider it difficult collecting this data?

Free space for your comments, ideas or suggestions

2. HAZARDS RELATED TO FORESTS and FOREST MANAGEMENT ACCOUNT

Hazards

In the proposed standard for the SEEA 2012 it is suggested that the economic activities aimed to preserve and protect the environment should be recorded. Among them a section is devoted to these activities intended to minimise natural hazards.

Considering the increasing impact of hazards (e.g., fires, storms, diseases) on forests, it is suggested to properly account for activities aimed at diminishing their impact. Our proposal would be to report these activities according to the following four classes of hazards:

* Fire
* Storms, wind and snow
* Insects and diseases
* Wildlife

Furthermore, the activities could be classified depending on the aspect they are focused:

* Prevention
* Mitigation
* Restoration

Hence, the classification for the account on economic activities related to the minimisation of natural hazards could be seen below. Furthermore, this account would be expressed both in monetary and in physical units (hectares or similar).

Activities aimed at the minimisation of natural hazards

* Fire
  - Prevention
  - Mitigation
  - Restoration
* Storms, wind and snow
  - Prevention
  - Mitigation
  - Restoration
* Insects and diseases
  - Prevention
  - Mitigation
  - Restoration
* Wildlife
  - Prevention
  - Mitigation
  - Restoration

Question 11: Would you consider it useful apply the proposed classification of forest protection activities?

	Totally disagree	Somehow disagree	Slightly disagree	Slightly agree	Somehow agree	Totally agree	Don't know/ don't answer
I consider the proposed classification as appropriate for accounting purposes	1	2	3	4	5	6	
Free space for your comments, ideas or suggestions							

Question 12: Do you already collect this information?

☐ Yes (If 'Yes' go to **Question 12.1**) ☐ No (If 'No' go to **Question 12.2**)

Question 12.1: Do you collect information in physical or monetary units?

☐ Physical units ☐ Monetary units ☐ Both

Question 12.2: Would it be difficult to collect this data?

☐ Yes (If 'Yes' go to **Question 12.2.1**) ☐ No

Question 12.2.1: Could you explain why do you consider it difficult collecting this data?

Free space for your comments, ideas or suggestions

Forest Management Account

SEEA 2003 (section for account on economic activities and products related to the environment) recommends establishing a Forest Resource Management Account where the expenditures (public and private) for forest resource management are collected. This specific account would comprise among others, the following activities: forest management, pest control and regulation, afforestation including net acquisitions of land forest inventories, development of forests for recreational use, forest-related research, education, training and information activities.

Question 13: Would you consider it useful to develop a Forest Management Account?

	Totally disagree	Somehow disagree	Slightly disagree	Slightly agree	Somehow agree	Totally agree	Don't know/ don't answer
I consider developing such an account would be useful for accounting purposes	1	2	3	4	5	6	
Free space for your comments, ideas or suggestions							

Question 14: Do you already collect this information in a separate account?

☐ Yes (If 'Yes' go to **Section 3**) ☐ No (If 'No' go to **Question 14.1**)

Question 14.1: Would it be difficult to collect this data?

☐ Yes (If 'Yes' go to **Question 14.1.1**) ☐ No (If 'No' go to **Section 3**)

Question 14.1.1: Could you explain why do you consider it difficult collecting this data?

Free space for your comments, ideas or suggestions

3. NON WOOD FOREST PRODUCTS

The non wood forest products (NWFP) are a broad category of forest products (e.g., mushrooms, cork, berries) that are likely to represent a substantial source of income in many regions. For example, The State of Europe's Forests 2011 Report identifies the following NWFP:

- plant products: Christmas trees; mushrooms and truffles; fruits, berries and edible nuts; cork; resins, raw material-medicine, aromatic products, colorants, dyes; decorative foliage, including ornamental plants; other plant products.
- animal products: game meat; living animals; pelts, hides, skins and trophies; wild honey and bee-wax; raw material for medicine, colorants; other animal products.

However, there are substantial challenges in measuring the flow and the economic contribution of these goods. Thus is mainly due to the fact that an important share of these products is used for self consumption (products consumed for the own need and not sold in the market): In some countries the self-consumption use of NWFP can be even higher as the part traded in the market. Our proposal would be to have a specific entry for NWFP within the SEEA (flow accounts) to reflect their relevancy to the economy.

For all these NWFP groups the report provides quantity and value; however it excludes NWGs harvested for self-consumption.

Question 15: Would you consider it useful to include NWFP in SEEA 2012?

	Totally disagree	Somehow disagree	Slightly disagree	Slightly agree	Somehow agree	Totally agree	Don't know/ don't answer
I consider the proposed classification as appropriate for accounting purposes	1	2	3	4	5	6	
Free space for your comments, ideas or suggestions							

Question 16: Do you already collect this information?

☐ Yes (If 'Yes' go to **Question 16.1**) ☐ No (If 'No' go to **Question 16.2**)

Question 16.1: Do you collect information in physical or monetary units?

☐ Physical units ☐ Monetary units ☐ Both

Question 16.2: Would it be difficult to collect this data?

☐ Yes (If 'Yes' go to **Question 16.2.1**) ☐ No

Question 16.2.1: Could you explain why do you consider it difficult collecting this data?

Free space for your comments, ideas or suggestions

As explained above, the current methodology applied in the State of Europe's Forests report only considers the traded NWFP, but excludes self-consumption. Thus, it is proposed to express the latter as a share of the reported (traded) quantities/values.

Question 17: Was there any study conducted in your country evaluating the self-consumption share of NWFP?

0 Yes (If 'Yes' go to Question 17.1) 0 No

Question 17.1 Could you provide us with the title, link or the document of the study?

4. DEPLETION ISSUES

SEEA 2012 considers the depletion of natural timber resources, which is related to the sustainable yield of timber resources from the forest land, other wooded land and other land on which natural timber resources are found. More precisely, the sustainable yield of timber resources is the quantity of timber that can be harvested at the same rate into the future while ensuring that the productive potential is maintained.

However, we believe that besides the quantitative indicators (timber yield) the sustainability of forests should also include quality indicators. Hence, we propose the following indicators that could serve as proxies to monitor changes in the quality of the forest resources. The proposed list of indicators is based on State of Europe's Forest 2011 report.

INDICATOR 1: BASIC SUSTAINABILITY OF FORESTS[15]

Share of harvested annual increment [in %] = Annual felling [in m^3] / annual increment [in m^3]. (SoEF indicator 3.1)

	Totally disagree	Somehow disagree	Slightly disagree	Slightly agree	Somehow agree	Totally agree	Don't know/ don't answer
I consider this indicator useful for depletion assessment.	1	2	3	4	5	6	
Free space for your comments, ideas or suggestions							

Question 18: Do you already collect this information?

☐ Yes (If 'Yes' go to **Question 18.1**) ☐ No (If 'No' go to **Question 18.2**)

Question 18.1: Do you collect already collect this information? ☐ Yes ☐ No

Question 18.2: Would it be difficult to collect? ☐ Yes (If 'Yes' go to Question **18.2.1**) ☐ No

Question 18.2.1: Could you explain why do you consider it difficult collecting this data?

Free space for your comments, ideas or suggestions

INDICATOR 2: FOREST AND OTHER WOODED LAND[16]

Share of other-wooded land [in %] = Area of other wooded land [in ha] / total Forest and Other Wooded Land area [in ha]. (SoEF indicator 1.1)

	Totally disagree	Somehow disagree	Slightly disagree	Slightly agree	Somehow agree	Totally agree	Don't know/ don't answer
I consider this indicator useful for depletion assessment.	1	2	3	4	5	6	
Free space for your comments, ideas or suggestions							

Question 19: Do you already collect this information?

☐ Yes (If 'Yes' go to **Question 19.1**) ☐ No (If 'No' go to **Question 19.2**)

Question 19.1: Do you collect already collect this information? ☐ Yes ☐ No

Question 19.2: Would it be difficult to collect? ☐ Yes (If 'Yes' go to **Question 19.2.1**) ☐ No

Question 19.2.1: Could you explain why do you consider it difficult collecting this data?

[15] Some additional information on the indicators could be found in the information sheet.
[16] Some additional information on the indicators could be found in the information sheet.

Free space for your comments, ideas or suggestions

INDICATOR 3: FOREST STRUCTURE[17]

Area of forests according to age classes [in ha]: (SoEF indicator 1.3):

- Un-even aged
- Even-aged:
  - < 20 years
  - 21-80 years
  - >80 years

	Totally disagree	Somehow disagree	Slightly disagree	Slightly agree	Somehow agree	Totally agree	Don't know/ don't answer
I consider this indicator useful for depletion assessment.	1	2	3	4	5	6	
Free space for your comments, ideas or suggestions							

Question 20: Do you already collect this information?

☐ Yes (If 'Yes' go to **Question 20.1**) ☐ No (If 'No' go to **Question 20.2**)

Question 20.1: Do you collect already collect this information? ☐ Yes ☐ No

Question 20.2: Would it be difficult to collect? ☐ Yes (If 'Yes' go to **Question 20.2.1**) ☐ No

Question 20.2.1: Could you explain why do you consider it difficult collecting this data?

Free space for your comments, ideas or suggestions

INDICATOR 4: PROTECTED FORESTS[18]

Share of protected forest area [in %]= protected forest area [in ha]/total forest area [in ha] (SoEF indicator 4.9)

	Totally disagree	Somehow disagree	Slightly disagree	Slightly agree	Somehow agree	Totally agree	Don't know/ don't answer
I consider this indicator useful for depletion assessment.	1	2	3	4	5	6	

Free space for your comments, ideas or suggestions

[17] Some additional information on the indicators could be found in the information sheet.
[18] Some additional information on the indicators could be found in the information sheet.

Question 21: Do you already collect this information?

☐ Yes (If 'Yes' go to **Question 21.1**) ☐ No (If 'No' go to **Question 21.2**)

Question 21.1: Do you collect already collect this information? ☐ Yes ☐ No

Question 21.2: Would it be difficult to collect? ☐ Yes (If 'Yes' go to **Question 21.2.1**) ☐ No

Question 21.2.1: Could you explain why do you consider it difficult collecting this data?

Free space for your comments, ideas or suggestions

INDICATOR 5: INTRODUCED SPECIES[19]

Share of forest dominated by introduced tree species [in %] = area of forests dominated by introduced tree species [in ha]/ total forest area [in ha]. (SoEF indicator 4.4)

	Totally disagree	Somehow disagree	Slightly disagree	Slightly agree	Somehow agree	Totally agree	Don't know/ don't answer
I consider this indicator useful for depletion assessment.	1	2	3	4	5	6	
Free space for your comments, ideas or suggestions							

Question 22: Do you already collect this information?

☐ Yes (If 'Yes' go to **Question 22.1**) ☐ No (If 'No' go to **Question 22.2**)

Question 22.1: Do you collect already collect this information? ☐ Yes ☐ No

Question 22.2: Would it be difficult to collect? ☐ Yes (If 'Yes' go to **Question 22.2.1**) ☐ No

Question 22.2.1: Could you explain why do you consider it difficult collecting this data?

Free space for your comments, ideas or suggestions

INDICATOR 6. DEADWOOD[20]

Average volume of standing and lying deadwood [in m3/ha]. (SoEF indicator 4.5)

	Totally disagree	Somehow disagree	Slightly disagree	Slightly agree	Somehow agree	Totally agree	Don't know/ don't answer

[19] Some additional information on the indicators could be found in the information sheet.
[20] Some additional information on the indicators could be found in the information sheet.

I consider this indicator useful for depletion assessment.	1	2	3	4	5	6	
Free space for your comments, ideas or suggestions							

Question 23: Do you already collect this information?

☐ Yes (If 'Yes' go to **Question 23.1**) ☐ No (If 'No' go to **Question 23.2**)

Question 23.1: Do you collect already collect this information? ☐ Yes ☐ No

Question 23.2: Would it be difficult to collect? ☐ Yes (If 'Yes' go to Question **23.2.1**) ☐ No

Question 23.2.1: Could you explain why do you consider it difficult collecting this data?

Free space for your comments, ideas or suggestions

INDICATOR 7. FOREST HOLDINGS[21]

Percentage of public and private forests [in %]. (SoEF indicator 6.1)

	Totally disagree	Somehow disagree	Slightly disagree	Slightly agree	Somehow agree	Totally agree	Don't know/ don't answer
I consider this indicator useful for depletion assessment.	1	2	3	4	5	6	
Free space for your comments, ideas or suggestions							

Question 24: Do you already collect this information?

☐ Yes (If 'Yes' go to **Question 24.1**) ☐ No (If 'No' go to **Question 24.2**)

Question 24.1: Do you collect already collect this information? ☐ Yes ☐ No

Question 24.2: Would it be difficult to collect? ☐ Yes (If 'Yes' go to **Question 24.2.1**) ☐ No

Question 24.2.1: Could you explain why do you consider it difficult collecting this data?

Free space for your comments, ideas or suggestions

INDICATOR 8: FOREST USE[22]

Primary use of forests [in ha]:

[21] Some additional information on the indicators could be found in the information sheet.
[22] Some additional information on the indicators could be found in the information sheet.

- Production and multiple use
- Protection (e.g., watershed management, erosion protection)
- Conservation (e.g., biodiversity protection)
- Social services (e.g., recreation, tourism, education, cultural heritage)

	Totally disagree	Somehow disagree	Slightly disagree	Slightly agree	Somehow agree	Totally agree	Don't know/ don't answer
I consider this indicator useful for depletion assessment.	1	2	3	4	5	6	
Free space for your comments, ideas or suggestions							

Question 25: Do you already collect this information?

☐ Yes (If 'Yes' go to **Question 25.1**) ☐ No (If 'No' go to **Question 25.2**)

Question 25.1: Do you collect already collect this information? ☐ Yes ☐ No

Question 25.2: Would it be difficult to collect? ☐ Yes (If 'Yes' go to **Question 25.2.1**) ☐ No

Question 25.2.1: Could you explain why do you consider it difficult collecting this data?

Free space for your comments, ideas or suggestions

Question 26: Do you consider there are other indicators useful for their application on a countrywide scale apart from those of SoEF and useful for addressing depletion issues?

☐ Yes (If 'Yes' go to **Question 26.1**) ☐ No

Question 26.1: Could you list some of them and indicate the source?

Free space for your comments, ideas or suggestions