

# GLOBAL FOREST RESOURCES ASSESSMENT 2015

## COUNTRY REPORT

# **Finland**

Rome, 2014

FAO, at the request of its member countries, regularly monitors the world's forests and their management and uses through the Global Forest Resources Assessment (FRA). This country report is prepared as a contribution to the FAO publication, the Global Forest Resources Assessment 2015 (FRA 2015).

The content and the structure are in accordance with the recommendations and guidelines given by FAO in the document Guide for country reporting for FRA 2015 (<http://www.fao.org/3/a-au190e.pdf>). These reports were submitted to FAO as official government documents.

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### Introductory Text

Place an introductory text on the content of this report

# Introduction

The most important data source for FRA 2015 is the Finnish National Forest Inventory ( NFI ) at the Finnish Forest Research Institute (Metla). Another significant information source is the official Finnish forestry statistics (at Metla). It collects information from several sources, in addition to NFI , from other units of Metla, Metsähallitus, Finnish Forest Industries, Finnish Ministry of Environment and from other research institutes, e.g., **Finnish Game and Fisheries Research Institute**.

## **National Forest Inventory of Finland**

The National Forest Inventory of Finland has produced large-area forest resource information since 1921. So far (2013), 10 inventory cycles have been completed (1:1921-1924, 2:1936-38, 3:1951-53, 4:1960-63, 5:1964-70, 6:1971-76, 7:1977-84, 8:1986-1994, 9:1996-2003, 10:2004-2009). The 11th inventory cycle (NFI11) began in 2009 and the field work will be completed in 2013. FRA2015 reporting uses NFI11 data from years 2009-2012.

The design of the two latest NFI's (10<sup>th</sup> and 11<sup>th</sup>) has been changed from the previous inventory so that each year one fifth of the plots of the entire plot grid was measured. The previous inventories were done by regions. The traditional role of the NFI has been to produce objective and up-to-date information on the Finland's forests resources, forest health conditions, forest biodiversity, forest carbon pools and their development for national and regional decision making.

The number of field plots in the entire country in one inventory since 1964 has been about 85 000 on land and about 70 000 on forestry land. Field plots cover all land use classes. The plot density in the country is adapted to the variability of forests. About one fifth of the field plots have been measured as permanent since 1992. PPS sampling is applied for selecting the tallied trees using a Bitterlich relascope with basal area factor of 2 (Southern part of the country) and 1.5 (Northern part of the country). FAO FRA land use class definitions have been applied in the field measurements since 1998, simultaneously with the national definitions.

## **National Data and Reclassification**

The information collected in the National Forest Inventory is stored into a database. Inventory results are published by regions and for the entire country in the specific publications and in the Finnish Statistical

Yearbook of Forestry. National and international statistics are calculated for different purposes on the basis of definitions and requirements.

For the FRA 2015 reporting, there was no need for reclassification for 2000, 2005, and 2010 data for most tables due to the fact that FAO FRA Land Use Class definitions are applied in the field, parallel with national classifications. A reclassification of land use classes was applied to 1990 data in area and growing stock tables.

### **The Finnish Forest Research Institute (METLA)**

Metla (Finnish Forest Research Institute) is an impartial state research institute, founded in 1917. Metla is subordinated to the Ministry of Agriculture and Forestry.

Metla's duties are defined by the law and statute to promote, through research, the economical, ecological, and socially sustainable management and use of forests mission is to promote, through research, the ecologically, economically and socially sustainable development of the forests and forestry. Metla's activities are characterised by customer- and problem-orientation. Metla has a staff of about 750 people, 370 of these being researchers.

### **List of references**

#### **NFI10 results**

<http://www.metla.fi/metinfo/vmi/> [In Finnish]

Korhonen, K.T., Ihalainen, A., Viiri, H., Heikkinen, J., Henttonen, H., Hotanen, J-P., Mäkelä, H., Nevalainen, S., & Pitkänen, J. 2013. Suomen metsät 2004 – 2008 ja niiden kehitys 1921 – 2008. Metsätieteen Aikakauskirja 3B/2013.

#### **NFI9 results**

Tomppo, E., Heikkinen, J., Henttonen, H.M., Ihalainen, A., Katila, M., Mäkelä, H., Tuomainen, T. & Vainikainen, N. 2011. Designing and conducting a forest inventory - case: 9th National Forest Inventory of Finland. Managing Forest Ecosystems. Vol 21. Springer.

#### **NFI8 results**

Tomppo, E., Henttonen & Tuomainen, T. 2001b. Valtakunnan metsien 8. inventoinnin menetelmä ja tulokset metsäkeskuksittain Pohjois-Suomessa 1992-94 sekä tulokset Etelä-Suomessa 1986-92 ja koko maassa 1986-94. Metsätieteen aikakauskirja. 1B/2001: 99-248.

**NFI methods etc.**

Laasasenaho, J. 1982. Taper curve and volume functions for pine, spruce and birch. Seloste: Männyn, kuusen ja koivun runkokäyrä- ja tilavuusyhtälöt. Communicationes Instituti Forestalis Fenniae 108.

Marklund, L.G. 1988. Biomassafunktioner för tall, gran och björk i Sverige. Sveriges Lantbruksuniversitet, Rapporter-Skog 45, 1–73.

Mäkinen, H., Hynynen, J., Siitonen, J. & Sievänen, R. 2006. Predicting the decomposition of Scots pine, Norway spruce and birch stems in Finland. Ecological Applications 16(5): 1865-1879.

Tomppo, E., Heikkinen, J., Henttonen, H.M., Ihalainen, A., Katila, M., Mäkelä, H., Tuomainen, T., Vainikainen, N. 2011. Designing and Conducting a Forest Inventory – case: 9th National Forest Inventory of Finland. ISSN 1568-1319. Springer. 270 pp.

Tomppo, E., Varjo, J., Korhonen, K., Ahola, A., Ihalainen, A., Heikkinen, J., Hirvelä, H., Mikkela, H., Mikkola, E., Salminen, S. & Tuomainen, T. 1997. Country report for Finland. In: Study on European Forestry Information and Communication Systems. Reports on forestry inventory and survey systems. Vol. 1. European Commission, p. 145-226.

**Other statistics**

Finnish Statistical Yearbook of Forestry 2012. Finnish Forest Research Institute.

National Land Survey of Finland (Suomen pinta-ala kunnittain).

**Desk Study?**

Check "yes" if this survey is a Desk Study, "no" otherwise

|             |    |
|-------------|----|
| Desk Study? | no |
|-------------|----|

## 1. What is the area of forest and other wooded land and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 1.1 Categories and definitions

| Category  | Definition  |
|---|---|
| Forest  | Land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent or trees able to reach these thresholds in situ. It does not include land that is predominantly under agricultural or urban land use.   |
| Other wooded land   | Land not classified as "Forest" spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of 5-10 percent or trees able to reach these thresholds ; or with a combined cover of shrubs bushes and trees above 10 percent. It does not include land that is predominantly under agricultural or urban land use. |
| Other land  | All land that is not classified as "Forest" or "Other wooded land".   |
| ...of which with tree cover ( <i>sub-category</i> )             | Land considered as "Other land", that is predominantly agricultural or urban lands use and has patches of tree cover that span more than 0.5 hectares with a canopy cover of more than 10 percent of trees able to reach a height of 5 meters at maturity. It includes bothe forest and non-forest tree species.                        |
| Inland water bodies   | Inland water bodies generally include major rivers, lakes and water reservoirs.   |
| Forest expansion  | Expansion of forest on land that, until then, was not defined as forest.  |
| ...of which afforestation ( <i>sub-category</i> )               | Establishment of forest through planting and/or deliberate seeding on land that, until then, was not defined as forest.   |
| ...of which natural expansion of forest ( <i>sub-category</i> ) | Expansion of forests through natural succession on land that, until then, was under another land use (e.g. forest succession on land previously used for agriculture).  |
| Deforestation   | The conversion of forest to other land use or the longterm reduction of the tree canopy cover below the minimum 10 percent threshold.   |
| ...of which human induced ( <i>sub-category</i> )               | Human induced conversion of forest to other land use or the permanent reduction of the tree canopy cover below the minimum 10 percent threshold.  |
| Reforestation   | Natural regeneration or re-establishment of forest through planting and/or deliberate seeding on land already in forest land use.   |
| ...of which artificial reforestation ( <i>sub-category</i> )    | Re-establishment of forest through planting and/or deliberate seeding on land already in forest land use.   |

### 1.2 National data

#### 1.2.1 Data sources

|   | References to sources of information                                       | Variables   | Years           | Additional comments  |
|---|--|---|-----------------|--|
| 1 | 10th National Forest Inventory (NFI10). Finnish Forest Research Institute. | Forest, Other wooded land, Other land, Other land with tree cover Afforestation, natural expansion of forests | 2005: 2004-2007 | Data collected in the NFI10 last field season, 2008, has not been used to report 2005 results. |

|   |  |  |   |   |
|---|--|--|---|---|
| 2 | 9th National Forest Inventory (NFI9). Finnish Forest Research Institute.   | Forest, Other wooded land, Other land, Other land with tree cover Afforestation, natural expansion of forests  | 2000: 1996-2003   | The NFI9 data permit direct calculation of data according to the FRA categories and definitions for 2000. These data were used also to re-classify the NFI8 data for FAO land use classes |
| 3 | 8th National Forest Inventory (NFI8). Finnish Forest Research Institute.   | forest land, scrub land, waste land, other forestry land, agricultural land, build up land, traffic lines, power lines Afforestation, natural expansion of forests | 1990: 1986-1994   | Reclassification to FRA categories for 1990 data applying 1996-2003 NFI9 data and the distribution of national classes in NFI9 data into FRA categories.                                  |
| 4 | NATIONAL LAND SURVEY OF FINLAND. SUOMEN PINTA-ALA KUNNITTAIN.              | Land area, Inland water bodies   | 1990: 1.1. 1990 2000: 1.1. 2004 2005 and 2010: 1.1.2008   | Areas of inland waters by municipalities.   |
| 5 | 11th National Forest Inventory (NFI11). Finnish Forest Research Institute. | Forest, Other wooded land, Other land, Other land with tree cover Afforestation, natural expansion of forests  | 2010 and 2015: NFI11 data from years 2009 - 2012. In addition, NFI10 data were used for Åland Islands | N/A   |

## 1.2.2 Classification and definitions

| National class | Definition |
|----------------|------------|
| N/A            | N/A        |

## 1.2.3 Original data

Data extracted directly from the NFI database.

## 1.3 Analysis and processing of national data

### 1.3.1 Adjustment

#### Forest area

In the FAOSTAT official statistics the land area of Finland is 30 390 000 hectares. In NFI11 the reference land area is 30 389 000 hectares. FRA2010 reported results were adjusted to this total land area of 30 390 000 hectares.

The calibration factors for the 1990, 2000, 2005 and 2010 reference years were

|           |          |          |         |
|-----------|----------|----------|---------|
| 0.9977347 | 0.998121 | 0.999181 | 1.00003 |
|-----------|----------|----------|---------|

, respectively.

When results from FRA2010 report were converted to 2015 report, different calibration factors were needed (because FRA2010 reporting already included calibration to land area 30 408 686 hectares). These conversion factors for 1990, 2000, and 2005 were

|  |          |
|--|----------|
|  | 0.999386 |
|  | 0.999386 |
|  | 0.999385 |

, respectively

Calibration was done after reclassification for each class with the same reference year specific calibration factor.

### 1.3.2 Estimation and forecasting

|  |
|--|
| <p><b>Forest area</b></p> <p>The NFI 8 data measured in 1986 – 1994 was regarded to represent the reference year 1990. The NFI 9 data measured in 1996 – 2003 was regarded to represent the reference year 2000, NFI 10 data measured in 2004 – 2007 the reference year 2005, NFI 11 data measured in 2009-2012 was regarded to represent reference year 2010. No forecasting was done for the year 2015. Thus, 2015 result equals to 2010 result.</p> |
|--|

### 1.3.3 Reclassification

|  |
|--|
| <p><b>Forest area</b></p> <p>No reclassification was needed for reference years 2000, 2005 and 2010. For the reference year 1990 reclassification was done using partly aerial photographs and partly regression models.</p> |
| <p><b>Forest expansion, reforestation</b></p> <p>For 1990, past 10 year average was used due to data.</p>  |

## 1.4 Data

Table 1a

| Categories  |                              | Area (000 hectares) |          |          |          |          |
|---|------------------------------|---------------------|----------|----------|----------|----------|
|   |                              | 1990                | 2000     | 2005     | 2010     | 2015     |
|  | Forest                       | 21875               | 22445    | 22143    | 22218    | 22218    |
|  | Other wooded land            | 926                 | 823      | 1111     | 801      | 801      |
|  | Other land                   | 7589                | 7122     | 7136     | 7371     | 7371     |
|  | ... of which with tree cover | 183                 | 183      | 183      | 231      | 231      |
|  | Inland water bodies          | 3452                | 3452     | 3452     | 3452     | 3452     |
|   | TOTAL                        | 33842.00            | 33842.00 | 33842.00 | 33842.00 | 33842.00 |

Table 1b

| Categories  |  | Annual forest establishment / loss (000 hectares per year) |      |      |      | ...of which of introduced species (000 hectares per year) |      |      |      |
|---|--|--|------|------|------|---|------|------|------|
|   |  | 1990   | 2000 | 2005 | 2010 | 1990  | 2000 | 2005 | 2010 |
|  | Forest expansion                         | 6  | 10   | 5    | 4    | 0   | 0    | 0    | 0    |
|  | ... of which afforestation               | 2  | 7    | 3    | 3    | 0   | 0    | 0    | 0    |
|  | ... of which natural expansion of forest | 3  | 3    | 2    | 2    | 0   | 0    | 0    | 0    |
|  | Deforestation                            | 17   | 8    | 16   | 22   | 0   | 0    | 0    | 0    |
|  | ... of which human induced               | 17   | 8    | 16   | 22   | 0   | 0    | 0    | 0    |
|  | Reforestation                            | 162  | 173  | 168  | 140  | 0   | 0    | 0    | 0    |
|  | ... of which artificial                  | 126  | 112  | 134  | 112  | 1   | 0.76 | 0.08 | 0    |

## Tiers

| Category          | Tier for status | Tier for reported trend |
|-------------------|-----------------|-------------------------|
| Forest            | Tier 3          | Tier 3                  |
| Other wooded land | Tier 3          | Tier 3                  |
| Forest expansion  | Tier 3          | Tier 3                  |
| Deforestation     | Tier 3          | Tier 3                  |
| Reforestation     | Tier 3          | Tier 3                  |

## Tier criteria

| Category  | Tier for status  | Tier for reported trend  |
|---|--|--|
| <ul style="list-style-type: none"> <li>• Forest</li> <li>• Other wooded land</li> <li>• Afforestation</li> <li>• Reforestation</li> <li>• Natural expansion of forest</li> <li>• Deforestation</li> </ul> | <p><b>Tier 3</b> : Data sources: Either recent (less than 10 years ago) National Forest Inventory or remote sensing, with ground truthing, or programme for repeated compatible NFIs <b>Tier 2</b> : Data sources: Full cover mapping / remote sensing or old NFI (more than 10 years ago) <b>Tier 1</b> : Other</p> | <p><b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other</p> |

## 1.5 Comments

| Category                   | Comments related to data definitions etc | Comments on the reported trends   |
|----------------------------|--|---|
| Forest                     | N/A                                      | The Forest area in Finland has increased during the past 50 years mainly due to peatland drainage and to some extent due to afforestation of low productive and abandoned farm land. Large areas of Other land and Other wooded land has been converted to Forest land by draining mires and open fens and bogs (by lowering groundwater level). An intensive drainage operation began in late 1950's and lasted until the mid of 1970's. Between 1990 and 2000 the forest area increased by 560 000 hectares and between 2000 and 2005 decreased slightly. Between 2005 and 2010 forest area has again increased. Between 1990 and 2010 the increase was 400 000 ha. |
| Other wooded land          | N/A                                      | N/A   |
| Other land                 | N/A                                      | N/A   |
| Other land with tree cover | N/A                                      | N/A   |
| Inland water bodies        | N/A                                      | N/A   |
| Forest expansion           | N/A                                      | Afforestation is mainly on arable land. Highest figures were on early 90's, since then afforestation has decreased and is around 3 000 hectares annually.   |
| Deforestation              | N/A                                      | Change estimates are quite small. Therefore, the relative sampling error is large. This explains why the forest area shows increase but the change matrix decrease of forest area.  |
| Reforestation              | N/A                                      | N/A   |

## Other general comments to the table

N/A

## 2. What is the area of natural and planted forest and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 2.1 Categories and definitions

| Term  | Definition  |
|---|---|
| Naturally regenerated forest                              | Forest predominantly composed of trees established through natural regeneration.  |
| Naturalized introduced species                            | Other naturally regenerated forest where the tree species are predominantly non-native and do not need human help to reproduce/maintain populations over time.  |
| Introduced species  | A species, subspecies or lower taxon occurring <i>outside</i> its natural range (past or present) and dispersal potential (i.e. outside the range it occupies naturally or could occupy without direct or indirect introduction or care by humans). |
| Category  | Definition  |
| Primary forest  | Naturally regenerated forest of native species where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.   |
| Other naturally regenerated forest                        | Naturally regenerated forest where there are clearly visible indications of human activities.   |
| ...of which of introduced species ( <i>sub-category</i> ) | Other naturally regenerated forest where the trees are predominantly of introduced species.   |
| ...of which naturalized ( <i>sub-sub category</i> )       | Other naturally regenerated forest where the trees are predominantly of naturalized introduced species.   |
| Planted forest  | Forest predominantly composed of trees established through planting and/or deliberate seeding.  |
| ...of which of introduced species ( <i>sub-category</i> ) | Planted forest where the planted/seeded trees are predominantly of introduced species.  |
| Mangroves   | Area of forest and other wooded land with mangrove vegetation.  |
| ...of which planted ( <i>sub-category</i> )               | Mangroves predominantly composed of trees established through planting.   |

### 2.2 National data

#### 2.2.1 Data sources

|   | References to sources of information                                       | Variables  | Years           | Additional comments  |
|---|--|--|-----------------|--|
| 1 | 10th National Forest Inventory (NFI10). Finnish Forest Research Institute. | Forest, Other wooded land, Other land, Other land with tree cover, stand age, accomplished cuttings and other operations | 2005: 2004-2007 | Data collected in the NFI10 last field season, 2008, has not been used in this report. The NFI10 data permit direct calculation of data according to the FRA categories and definitions for 2005 and 2010. |

|   |  |  |                                |   |
|---|--|--|--------------------------------|---|
| 2 | 9th National Forest Inventory (NFI9). Finnish Forest Research Institute.   | Forest, Other wooded land, Other land, Other land with tree cover  | 2000: 1996-2003 2005: Forecast | The NFI9 data permit direct calculation of data according to the FRA categories and definitions for 2000. These data were used also to re-classify the NFI8 data for FAO land use classes |
| 3 | 8th National Forest Inventory (NFI8). Finnish Forest Research Institute.   | forest land, scrub land, waste land, other forestry land, agricultural land, build up land, traffic lines, power lines | 1990: 1986-1994                | Reclassification to FRA categories for 1990 data applying 1996-2003 NFI9 data and the distribution of national classes in NFI9 data into FRA categories.                                  |
| 4 | 11th National Forest Inventory (NFI11). Finnish Forest Research Institute. | N/A  | 2010 and 2015: 2009-2012       | N/A   |

### 2.2.2 Classification and definitions

| National class | Definition |
|----------------|------------|
| N/A            | N/A        |

### 2.2.3 Original data

Data extracted directly from the NFI database.

## 2.3 Analysis and processing of national data

### 2.3.1 Adjustment

Figures for 1990, 2000, 2005 have been adjusted to the new land area data.

### 2.3.2 Estimation and forecasting

Other naturally regenerated forest is forest that are classified as naturally regenerated in the field, excluding primary forest. Primary forest is forest where structure of growing stock is near natural, continuum of dead wood exists, no remarkable signs of human activity, stand age 120 years in South and 160 years in North Finland, and forest is part of protection programme or protected area. Reason for applying different age limit in North and South is that stand development is very different.

Planted forest is forest that is classified as planted in the field. For mature forests it is in most cases impossible to say if the forest is planted or not, therefore, these forest appear as non-planted in these tables. Introduced species are species that have not naturally spread to Finland, Larch (*Larix* spp.) are regarded as introduced species as well.

For 1990, 2000, and 2005 we can not reliably classify Primary forest. So, other naturally regenerated forest include primary forest.

For 2010 (and thus 2015) we have NFI10 data where we have directly in the field classified if the plot is in natural or near natural condition in respect to growing stock structure, dead wood and signs of human activity. We classified as Primary forest those plots that are in natural or near natural condition (in respect to all these 3 variables) are at least 160 years in South and 200 years in North Finland.

### 2.3.3 Reclassification

## 2.4 Data

Table 2a

| Categories  |                                    | Forest area (000 hectares) |           |           |           |           |
|---|------------------------------------|----------------------------|-----------|-----------|-----------|-----------|
|   |                                    | 1990                       | 2000      | 2005      | 2010      | 2015      |
|  | Primary forest                     | N/A                        | N/A       | N/A       | 230.207   | 230.207   |
|  | Other naturally regenerated forest | 17485.3                    | 17492.076 | 16242.292 | 15212.251 | 15212.251 |
|  | ... of which of introduced species | 0                          | 0         | 0         | 0.3       | 0.3       |
|  | ... of which naturalized           | 0                          | 0         | 0         | 0         | 0         |
|  | Planted forest                     | 4390.033                   | 4952.678  | 5900.865  | 6775.401  | 6775.401  |
|  | ... of which of introduced species | 20.952                     | 21.559    | 22.082    | 28.301    | 28.301    |
| TOTAL   |                                    | 21875.33                   | 22444.75  | 22143.16  | 22217.86  | 22217.86  |

Table 2b

| Primary forest converted to (000 ha) |         |            |                            |         |            |                            |         |            |
|--------------------------------------|---------|------------|----------------------------|---------|------------|----------------------------|---------|------------|
| 1990-2000                            |         |            | 2000-2010                  |         |            | 2010-2015                  |         |            |
| Other natural regeneration           | Planted | Other land | Other natural regeneration | Planted | Other land | Other natural regeneration | Planted | Other land |
|                                      |         |            |                            |         |            |                            |         |            |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| N/A |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|

Table 2c

| Categories                 | Area (000 hectares) |      |      |      |      |
|----------------------------|---------------------|------|------|------|------|
|                            | 1990                | 2000 | 2005 | 2010 | 2015 |
| Mangroves (forest and OWL) | 0                   | 0    | 0    | 0    | 0    |
| ... of which planted       | 0                   | 0    | 0    | 0    | 0    |

## Tiers

| Category                           | Tier for status | Tier for reported trend |
|------------------------------------|-----------------|-------------------------|
| Primary forest                     | Tier 3          | Tier 1                  |
| Other naturally regenerated forest | Tier 3          | Tier 1                  |
| Planted forest                     | Tier 3          | Tier 3                  |
| Mangroves                          | Tier 3          | Tier 3                  |

## Tier Criteria

| Category   | Tier for status   | Tier for reported trend  |
|--|---|--|
| Primary forest/Other naturally regenerated forest/Planted forest | <p><b>Tier 3</b> : Data sources: Recent (less than 10 years) National Forest Inventory or remote sensing with ground truthing or data provided by official agencies or programme for repeated compatible NFIs</p> <p><b>Tier 2</b> : Data sources: Full cover mapping/ remote sensing or old NFI (more than 10 years) <b>Tier 1</b> : Other</p> | <p><b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other</p> |

## 2.5 Comments

| Category                            | Comments related to data definitions etc  | Comments on reported trend |
|-------------------------------------|---|----------------------------|
| Primary forest                      | For 1990, 2000, 2005 we do not have proper definition that could be applied in the field. | N/A                        |
| Other naturally regenerating forest | Primary forests have been included in this category for 1990 - 2005.                      | N/A                        |
| Planted forest                      | N/A   | N/A                        |
| Mangroves                           | Not applicable  | N/A                        |

**Other general comments to the table**

We have no data to estimate table 2b

### 3. What are the stocks and growth rates of the forests and how have they changed?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

#### 3.1 Categories and definitions

| Category                       | Definition   |
|--------------------------------|--|
| Growing stock                  | Volume over bark of all living trees with a minimum diameter of 10 cm at breast height (or above buttress if these are higher). Includes the stem from ground level up to a top diameter of 0 cm, excluding branches.  |
| Net Annual Increment (NAI)     | Average annual volume of gross increment over the given reference period less that of natural losses on all trees, measured to minimum diameters as defined for "Growing stock".   |
| Above-ground biomass           | All living biomass above the soil including stem stump branches bark seeds and foliage.  |
| Below-ground biomass           | All biomass of live roots. Fine roots of less than 2 mm diameter are excluded because these often cannot be distinguished empirically from soil organic matter or litter.  |
| Dead wood                      | All non-living woody biomass not contained in the litter either standing lying on the ground or in the soil. Dead wood includes wood lying on the surface dead roots and stumps larger than or equal to 10 cm in diameter or any other diameter used by the country.               |
| Carbon in above-ground biomass | Carbon in all living biomass above the soil including stem stump branches bark seeds and foliage.  |
| Carbon in below-ground biomass | Carbon in all biomass of live roots. Fine roots of less than 2 mm diameter are excluded because these often cannot be distinguished empirically from soil organic matter or litter.  |
| Carbon in dead wood            | Carbon in all non-living woody biomass not contained in the litter, either standing, lying on the ground, or in the soil. Dead wood includes wood lying on the surface, dead roots and stumps larger than or equal to 10 cm in diameter or any other diameter used by the country. |
| Carbon in litter               | Carbon in all non-living biomass with a diameter less than the minimum diameter for dead wood (e.g. 10 cm ) lying dead in various states of decomposition above the mineral or organic soil.   |
| Soil carbon                    | Organic carbon in mineral and organic soils (including peat) to a soil depth of 30 cm.   |

#### 3.2 National data

##### 3.2.1 Data sources

|   | References to sources of information   | Variables                   | Years           | Additional comments  |
|---|--|-----------------------------|-----------------|--|
| 1 | 10th Finnish National Forest Inventory (NFI10). Finnish Forest Research Institute. | Growing stock and dead wood | 2005: 2004-2007 | The NFI10 data permit direct calculation of data according to the FRA categories and definitions for 2005. Biomass converted to carbon by dividing by 2. |
| 2 | 9th Finnish National Forest Inventory (NFI9). Finnish Forest Research Institute.   | Growing stock and dead wood | 2000: 1996-2003 | The NFI9 data permit direct calculation of data according to the FRA categories and definitions for 2005. Biomass converted to carbon by dividing by 2.  |

|   |   |  |   |   |
|---|---|--|---|---|
| 3 | 8th Finnish National Forest Inventory (NFI8). Finnish Forest Research Institute.  | Growing stock                              | 1986-1994   | Land use classes forest and OWL for 1990 are reclassified using national classes and additional information, see Question1. No data on dead wood. Biomass converted to carbon by dividing by 2. |
| 4 | Mäkinen, H., Hynynen, J., Siitonen, J. & Sievänen, R. 2006. Predicting the decomposition of Scots pine, Norway spruce and birch stems in Finland. Ecological Applications 16(5): 1865-1879. | Conversion of dead wood volume to biomass. | N/A   | N/A   |
| 5 | 11th Finnish National Forest Inventory NFI11  | N/A  | 2010 and 2015: NFI11 data from years 2009 - 2012. In addition, NFI10 data were used for Åland Islands | N/A   |

### 3.2.2 Classification and definitions

| National class | Definition  |
|----------------|---|
| Growing stock  | 0 cm and up to the top of the three (0 cm), includes bark, excludes branches " /> All living trees on all Forest areas (see Question1) and all living trees on all Other wooded land areas; Growing stock according to terms and definitions FRA 2010. Stem volume above stump of living trees with breast height diameter > 0 cm and up to the top of the three (0 cm), includes bark, excludes branches |
| N/A            | N/A   |
| N/A            | N/A   |
| N/A            | N/A   |

### 3.2.3 Original data

|  |
|--|
| Data extracted directly from the NFI database. |
|--|

## 3.3 Analysis and processing of national data

## 3.3.1 Adjustment

**Growing and biomass stock**

Calibration to correct the total land area was done with the same correction factors as for Question 1. Same correction factors were used for Forest and Other wooded land.

## 3.3.2 Estimation and forecasting

## 3.3.3 Reclassification

**Growing stock**

No reclassification was needed for growing stock definitions. For land use class definitions, see Question 1.

## 3.4 Data

Table 3a

| Category  |                          | Growing stock volume (million m <sup>3</sup> over bark) |          |          |          |          |                   |      |      |      |      |
|---|--------------------------|---|----------|----------|----------|----------|-------------------|------|------|------|------|
|   |                          | Forest  |          |          |          |          | Other wooded land |      |      |      |      |
|   |                          | 1990  | 2000     | 2005     | 2010     | 2015     | 1990              | 2000 | 2005 | 2010 | 2015 |
|  | Total growing stock      | 1876.739  | 2080.832 | 2187.8   | 2319.851 | 2319.851 | 7                 | 5    | 10   | 8    | 8    |
|  | ... of which coniferous  | 1544.294  | 1685.972 | 1755.051 | 1850.81  | 1850.81  | 6                 | 4    | 9    | 7    | 7    |
|  | ... of which broadleaved | 332.445   | 394.861  | 432.749  | 469.041  | 469.041  | 1                 | 1    | 1    | 1    | 1    |

Table 3b

| Category/Species name |                         |               | Growing stock in forest (million cubic meters) |         |          |          |
|-----------------------|-------------------------|---------------|--|---------|----------|----------|
| Rank                  | Scientific name         | Common name   | 1990   | 2000    | 2005     | 2010     |
| 1 st                  | <i>Pinus sylvestris</i> | Scots pine    | 855.319  | 992.221 | 1084.876 | 1146.527 |
| 2 nd                  | <i>Picea abies</i>      | Norway spruce | 688.168  | 692.802 | 668.293  | 701.94   |

|           |                  |                       |         |         |         |         |
|-----------|------------------|-----------------------|---------|---------|---------|---------|
| 3 rd      | Betula pubescens | Downy birch           | 211.518 | 248.311 | 263.94  | 284.389 |
| 4 th      | Betula pendula   | Silver birch          | 63.541  | 75.08   | 96.608  | 103.402 |
| 5 th      | Populus tremula  | European aspen        | 23.746  | 32.423  | 33.29   | 40.495  |
| 6 th      | Alnus incana     | Grey alder            | 20.553  | 21.924  | 19.113  | 19.111  |
| 7 th      | Salix caprea     | Goat willow           | N/A     | 6.111   | 6.648   | 7.098   |
| 8 th      | Sorbus aucuparia | European mountain-ash | N/A     | 5.077   | 5.658   | 6.234   |
| 9 th      | Alnus glutinosa  | Black alder           | 3.991   | 4.789   | 6.199   | 6.881   |
| 10 th     | Prunus padus     | European Bird Cherry  | N/A     | 0.431   | 0.506   | 0.592   |
| Remaining |                  |                       | 10.205  | 1.664   | 2.67    | 3.182   |
| TOTAL     |                  |                       | 1877.04 | 2080.83 | 2187.80 | 2319.85 |

**THE PRE-FILLED VALUES FOR GROWING STOCK REFER TO THE FOLLOWING THRESHOLD VALUES (SEE TABLE BELOW)**

| Item  | Value | Complementary information  |
|---|-------|----------------------------|
| Minimum diameter (cm) at breast height of trees included in growing stock (X)     | 0     | We calculated down to 0 cm |
| Minimum diameter (cm) at the top end of stem for calculation of growing stock (Y) | 0     | N/A                        |
| Minimum diameter (cm) of branches included in growing stock (W)                   | N/A   | Not included               |
| Volume refers to above ground (AG) or above stump (AS)                            | AS    | N/A                        |

**PLEASE NOTE THAT THE DEFINITION OF GROWING STOCK HAS CHANGED AND SHOULD BE REPORTED AS GROWING STOCK DBH 10 CM INCLUDING THE STEM FROM GROUND LEVEL UP TO A DIAMETER OF 0 CM, EXCLUDING BRANCHES.**

Table 3c

| Category  |                         | Net annual increment (m <sup>3</sup> per hectare and year) |      |      |      |      |
|---|-------------------------|--|------|------|------|------|
|   |                         | Forest   |      |      |      |      |
|   |                         | 1990   | 2000 | 2005 | 2010 | 2015 |
|  | Net annual increment    | 3.2  | 3.6  | 4.2  | 4.4  | 4.4  |
|  | ... of which coniferous | 2.5  | 2.8  | 3.3  | 3.4  | 3.4  |

|   |                          |     |     |     |   |   |
|---|--------------------------|-----|-----|-----|---|---|
|  | ... of which broadleaved | 0.7 | 0.8 | 0.9 | 1 | 1 |
|---|--------------------------|-----|-----|-----|---|---|

Table 3d

| Category  |                      | Biomass (million metric tonnes oven-dry weight) |         |         |         |         |                   |       |       |       |       |
|---|----------------------|---|---------|---------|---------|---------|-------------------|-------|-------|-------|-------|
|   |                      | Forest  |         |         |         |         | Other wooded land |       |       |       |       |
|   |                      | 1990  | 2000    | 2005    | 2010    | 2015    | 1990              | 2000  | 2005  | 2010  | 2015  |
|  | Above ground biomass | 975.7   | 1093    | 1137.5  | 1193    | 1193    | 3.161             | 3.118 | 4.29  | 3.811 | 3.811 |
|  | Below ground biomass | 290.3   | 338.1   | 352.4   | 367     | 367     | 0.993             | 1.146 | 1.581 | 1.375 | 1.375 |
|  | Dead wood            | 30.2  | 30.2    | 33.1    | 33      | 33      | 0.817             | 0.812 | 0.884 | 0.882 | 0.882 |
| TOTAL   |                      | 1296.20   | 1461.30 | 1523.00 | 1593.00 | 1593.00 | 4.97              | 5.08  | 6.76  | 6.07  | 6.07  |

Table 3e

| Category  |                                      | Carbon (Million metric tonnes) |        |        |        |        |                   |       |       |       |       |
|---|--------------------------------------|--------------------------------|--------|--------|--------|--------|-------------------|-------|-------|-------|-------|
|   |                                      | Forest                         |        |        |        |        | Other wooded land |       |       |       |       |
|   |                                      | 1990                           | 2000   | 2005   | 2010   | 2015   | 1990              | 2000  | 2005  | 2010  | 2015  |
|  | Carbon in above ground biomass       | 487.8                          | 546.5  | 568.7  | 596.5  | 596.5  | 1.581             | 1.559 | 2.145 | 1.906 | 1.906 |
|  | Carbon in below ground biomass       | 145.1                          | 169    | 176.2  | 183.6  | 183.6  | 0.496             | 0.573 | 0.791 | 0.687 | 0.687 |
|  | <i>Subtotal Living biomass</i>       | 633                            | 715.5  | 744.9  | 780.1  | 780.1  | 2.1               | 2.1   | 2.9   | 2.6   | 2.6   |
|  | Carbon in dead wood                  | 15.1                           | 15.1   | 16.6   | 16.5   | 16.5   | 0.408             | 0.406 | 0.442 | 0.441 | 0.441 |
|  | Carbon in litter                     | 226.8                          | 242.7  | 247    | 251.3  | 251.3  | 9.27              | 9.95  | 10.31 | 10.79 | 10.79 |
|  | <i>Subtotal Dead wood and litter</i> | 241.9                          | 257.8  | 263.6  | 267.8  | 267.8  | 9.7               | 10.4  | 10.8  | 11.2  | 11.2  |
|  | Soil carbon                          | 4057.7                         | 4068.6 | 4061.5 | 4055.8 | 4055.8 | 488               | 481   | 479.8 | 478.2 | 478.2 |

|       |         |         |         |         |         |        |        |        |        |        |
|-------|---------|---------|---------|---------|---------|--------|--------|--------|--------|--------|
| TOTAL | 4932.50 | 5041.90 | 5070.00 | 5103.70 | 5103.70 | 499.76 | 493.49 | 493.49 | 492.02 | 492.02 |
|-------|---------|---------|---------|---------|---------|--------|--------|--------|--------|--------|

## Tiers

| Variable/category              | Tier for status | Tier for trend |
|--------------------------------|-----------------|----------------|
| Total growing stock            | Tier 3          | Tier 3         |
| Net annual increment           | Tier 3          | Tier 3         |
| Above ground biomass           | Tier 3          | Tier 3         |
| Below ground biomass           | Tier 3          | Tier 3         |
| Dead wood                      | Tier 3          | Tier 3         |
| Carbon in above-ground biomass | Tier 3          | Tier 3         |
| Carbon in below ground biomass | Tier 3          | Tier 3         |
| Carbon in dead wood and litter | Tier 3          | Tier 3         |
| Soil carbon                    | Tier 3          | Tier 3         |

## Tier criteria

| Category             | Tier for status   | Tier for reported trend   |
|----------------------|---|---|
| Total growing stock  | Tier 3: Data sources Recent 10 years National Forest Inventory or remote sensing with ground truthing or programme for repeated compatible NFI 10 years Domestic volume functions Tier 2: Data sources/registers and statistics modelling or old NFI 10 years or partial field inventory Tier 1: Other data sources   | Tier 3: Estimate based on repeated compatible tiers 3 (tier for status) Domestic growth functions Tier 2: Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 tier for status Tier 1: Other |
| Net annual increment | Tier 3: Scientifically tested national volume and growth functions Tier 2: Selection of volume and growth functions as relevant as possible Tier 1: Other   | Tier 3: Confirmation/adjustment of functions used through scientific work Tier 2: Review work done to seek alternative functions Tier: 1 Other  |
| Biomass              | Tier 3: Country-specific national or sub-national biomass conversion expansion factors applied or other domestic or otherwise nationally relevant biomass studies Tier 2: Application of country specific national or sub-national biomass conversion factors from other country with similar climatic conditions and forest types Tier 1: International/regional default biomass expansion factors applied | <b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other |

|   |  |  |
|---|--|--|
| <ul style="list-style-type: none"> <li>• Carbon in above ground biomass</li> <li>• Carbon in below ground biomass</li> <li>• Carbon in dead wood and litter</li> <li>• Soil carbon</li> </ul> | <p>Tier 3: Country-specific national or sub-national biomass conversion expansion factors applied Tier 2: Application of country specific national or sub-national biomass conversion factors form from other country with similar climatic conditions and forest types Tier 1: International/regional default biomass expansion factors applied</p> | <p><b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other</p> |
|---|--|--|

### 3.5 Comments on growing stock biomass and carbon

| Category                                | Comments related to data definitions etc | Comments on the reported trend  |
|---|--|---|
| Total growing stock                     | N/A                                      | We did not do extrapolation over time. Therefore 2015 growing stock equals to the 2010 growing stock. In recent years, cuttings have been less than increment, thus the 2010 figure is probably an underestimate. |
| Growing stock of broadleaved coniferous | N/A                                      | N/A   |
| Growing stock composition               | N/A                                      | N/A   |
| Net annual increment                    | N/A                                      | Increment is increasing due to age structure and forest improvement work done in past decades.  |
| Above-ground biomass                    | N/A                                      | We did not do extrapolation over time. Therefore 2015 growing stock equals to the 2010 growing stock. In recent years, cuttings have been less than increment, thus the 2010 figure is probably an underestimate. |
| Below-ground biomass                    | N/A                                      | N/A   |
| Dead wood                               | N/A                                      | N/A   |
| Carbon in above-ground biomass          | N/A                                      | N/A   |
| Carbon in below-ground biomass          | N/A                                      | N/A   |
| Carbon in dead wood                     | N/A                                      | N/A   |
| Carbon in litter                        | N/A                                      | N/A   |
| Soil carbon                             | N/A                                      | N/A   |

#### Other general comments to the table

N/A

## 4. What is the status of forest production and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 4.1 Categories and definitions

| Term                           | Definition  |
|--------------------------------|---|
| Primary designated function    | The primary function or management objective assigned to a management unit either by legal prescription documented decision of the landowner/manager or evidence provided by documented studies of forest management practices and customary use. |
| Non wood forest product (NWFP) | Goods derived from forests that are tangible and physical objects of biological origin other than wood.   |
| Commercial value of NWFP       | For the purpose of this table, value is defined as the commercial market value at the forest gate.  |
| Category                       | Definition  |
| Production forest              | Forest area designated primarily for production of wood, fibre, bio-energy and/or non-wood forest products.   |
| Multiple use forest            | Forest area designated for more than one purpose and where none of these alone is considered as the predominant designated function.  |
| Total wood removals            | The total of industrial round wood removals and woodfuel removals.  |
| ...of which woodfuel           | The wood removed for energy production purposes, regardless whether for industrial, commercial or domestic use.   |

### 4.2 National data

#### 4.2.1 Data sources

|   | References to sources of information                  | Variables | Years | Additional comments |
|---|---|-----------|-------|---------------------|
| 1 | Finnish Forest Research Institute, Forest Statistics. | N/A       | N/A   | N/A                 |
| 2 | N/A   | N/A       | N/A   | N/A                 |
| 3 | N/A   | N/A       | N/A   | N/A                 |
| 4 | N/A   | N/A       | N/A   | N/A                 |

#### 4.2.2 Classification and definitions

| National class | Definition |
|----------------|------------|
| N/A            | N/A        |
| N/A            | N/A        |

---

|     |     |
|-----|-----|
| N/A | N/A |
| N/A | N/A |

#### 4.2.3 Original data

|  |
|--|
|  |
|--|

---

#### 4.3.2 Estimation and forecasting

---

## 4.3.3 Reclassification

## 4.4 Data

Table 4a

| Categories  |                     | Forest area (000 hectares) |       |       |         |         |
|---|---------------------|----------------------------|-------|-------|---------|---------|
|   |                     | 1990                       | 2000  | 2005  | 2010    | 2015    |
|  | Production forest   | 20476                      | 19546 | 18949 | 18851.2 | 18851.2 |
|  | Multiple use forest | 20476                      | 19546 | 18949 | 18851.2 | 18851.2 |

Table 4b

| Rank  | Name of product | Key species                                    | Commercial value of NWFP removals 2010 (value 1000 local currency) | NWFP category |
|-------|-----------------|--|--|---------------|
| 1 st  | Wild berries    | Cowberry ( <i>Vaccinium vitis-idaea</i> )      | 125000   | 1             |
| 2 nd  | Bags of game    | Moose ( <i>Alces alces</i> )                   | 83000  | 12            |
| 3 rd  | Christmas trees | Spruce ( <i>Picea abies</i> )                  | 25000  | 6             |
| 4 th  | Reindeer meat   | Reindeer ( <i>Rangifer tarandus tarandus</i> ) | 17000  | 12            |
| 5 th  | Lichens         | <i>Cladina</i> spp.                            | 1000   | 6             |
| 6 th  | N/A             | N/A  | N/A  | N/A           |
| 7 th  | N/A             | N/A  | N/A  | N/A           |
| 8 th  | N/A             | N/A  | N/A  | N/A           |
| 9 th  | N/A             | N/A  | N/A  | N/A           |
| 10 th | N/A             | N/A  | N/A  | N/A           |
| TOTAL |                 |  | 251000.00  |               |

|                        |      |
|------------------------|------|
| 2010                   |      |
| Name of local currency | Euro |

|                                      |
|--------------------------------------|
| <b>Category</b>                      |
| <b>Plant products / raw material</b> |

|  |
|--|
| 1 Food   |
| 2 Fodder   |
| 3 Raw material for medicine and aromatic products    |
| 4 Raw material for colorants and dyes                |
| 5 Raw material for utensils handicrafts construction |
| 6 Ornamental plants                                  |
| 7 Exudates   |
| 8 Other plant products                               |
| <b>Animal products / raw material</b>                |
| 9 Living animals                                     |
| 10 Hides skins and trophies                          |
| 11 Wild honey and beeswax                            |
| 12 Wild meat   |
| 13 Raw material for medicine                         |
| 14 Raw material for colorants                        |
| 15 Other edible animal products                      |
| 16 Other non-edible animal products                  |

Table 4c Pre-filled data from FAOSTAT

| Year | FRA 2015 category (1000 m <sup>3</sup> u.b.) |                      |
|------|--|----------------------|
|      | Total wood removals                          | ...of which woodfuel |
| 1990 | 43230  | 2984                 |
| 1991 | 34863  | 2922                 |
| 1992 | 38482  | 2878                 |
| 1993 | 42244  | 4161                 |
| 1994 | 48745  | 4101                 |
| 1995 | 50219  | 4095                 |
| 1996 | 46597  | 4094                 |

|      |         |         |
|------|---------|---------|
| 1997 | 51329   | 4041    |
| 1998 | 53660   | 4119.12 |
| 1999 | 53637   | 4044    |
| 2000 | 54261.9 | 4114.78 |
| 2001 | 52210   | 4483    |
| 2002 | 53388.6 | 4859.57 |
| 2003 | 54240.4 | 4994.43 |
| 2004 | 54398.3 | 5117.41 |
| 2005 | 52250.2 | 5134.2  |
| 2006 | 50811.6 | 5290.31 |
| 2007 | 56612.2 | 5206.45 |
| 2008 | 50670.5 | 4705.21 |
| 2009 | 41653.1 | 4952.3  |
| 2010 | 50951.5 | 4974.85 |
| 2011 | 50766.8 | 5240.58 |

## Tiers

| Category            | Tier for status | Tier for reported trend |
|---------------------|-----------------|-------------------------|
| Production forest   | Tier 3          | Tier 3                  |
| Multiple use forest | Tier 3          | Tier 3                  |

## Tier Criteria

| Category                              | Tier for status  | Tier for reported trend   |
|---------------------------------------|--|---|
| Production forest Multiple use forest | Tier 3: Updated including field verifications national forest maps including functions Tier 2: Forest maps older than 6 years including forest functions Tier 1: Other | <b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other |

## 4.5 Comments

| Category | Comments related to data definitions etc | Comments on the reported trend |
|----------|--|--------------------------------|
|----------|--|--------------------------------|

|                          |   |     |
|--------------------------|---|-----|
| Production forest        | Definition is not applicable to Finland. We classified here all forests except the forests that are protected for biodiversity-   | N/A |
| Multiple use forest      | Definition is not applicable to Finland. Practically all forests are in multiple use, except for strictly protected areas. Therefore, we only excluded the forests protected for biodiversity   | N/A |
| Total wood removals      | Correction to the pre-filled 2011 figures for Total removals and Wood fuel. Data source: Finnish Forest Research Institute, Forest Statistics. Data on removals are collected annually from roundwood buyers (companies), added with data from state forests. All removals are included.  | N/A |
| Commercial value of NWFP | All NWFP are on forest, scrub and waste land according to national land use classification. Values are defined as market values of the products except that for berries is defined as 9 times the picking incomes and for mushrooms 6 times the picking incomes. These factors (9 and 6) has been estimated to describe the value of products used by households (never coming to markets). | N/A |

**Other general comments to the table**

N/A

## 5. How much forest area is managed for protection of soil and water and ecosystem services?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 5.1 Categories and definitions

| Category   | Definition   |
|--|--|
| Protection of soil and water   | Forest area designated or managed for protection of soil and water   |
| ...of which production of clean water ( <i>sub-category</i> )                        | Forest area primarily designated or managed for water production, where most human uses are excluded or heavily modified to protect water quality.                                 |
| ...of which coastal stabilization ( <i>sub-category</i> )                            | Forest area primarily designated or managed for coastal stabilization.   |
| ...of which desertification control ( <i>sub-category</i> )                          | Forest area primarily designated or managed for desertification control.   |
| ...of which avalanche control ( <i>sub-category</i> )                                | Forest area primarily designated or managed to prevent the development or impact of avalanches on human life assets or infrastructure.   |
| ...of which erosion, flood protection or reducing flood risk ( <i>sub-category</i> ) | Forest area primarily designated or managed for protecting communities or assets from the impacts of erosion riparian floods and landslides or for providing flood plain services. |
| ...of which other ( <i>sub-category</i> )  | Forest area primarily designated or managed for other protective functions.  |
| Ecosystem services, cultural or spiritual values                                     | Forest area primarily designated or managed for selected ecosystem services or cultural or spiritual values.   |
| ...of which public recreation ( <i>sub-category</i> )                                | Forest area designated or managed for public recreation.   |
| ...of which carbon storage or sequestration ( <i>sub-category</i> )                  | Forest area designated or managed for carbon storage or sequestration.   |
| ...of which spiritual or cultural services ( <i>sub-category</i> )                   | Forest area designated or managed for spiritual or cultural services.  |
| ...of which other ( <i>sub-category</i> )  | Forest area designated or managed for other ecosystem services.  |

### 5.2 National data

#### 5.2.1 Data sources

|   | References to sources of information | Variables | Years | Additional comments |
|---|--------------------------------------|-----------|-------|---------------------|
| 1 | NFI8-NFI11                           | N/A       | N/A   | N/A                 |
| 2 | N/A                                  | N/A       | N/A   | N/A                 |

|   |     |     |     |     |
|---|-----|-----|-----|-----|
| 3 | N/A | N/A | N/A | N/A |
| 4 | N/A | N/A | N/A | N/A |

### 5.2.2 Classification and definitions

| National class                      | Definition  |
|-------------------------------------|---|
| Suojametsät (high altitude forests) | Forests in higher altitudes in Lapland are protected by law because regeneration of these forests is difficult. In Table 5a, these forests have been included in the category ...of which other |
| N/A                                 | N/A   |
| N/A                                 | N/A   |
| N/A                                 | N/A   |

### 5.2.3 Original data

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## 5.3 Analysis and processing of national data

### 5.3.1 Adjustment

|                |
|----------------|
| As in Table 1a |
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### 5.3.2 Estimation and forecasting

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### 5.3.3 Reclassification

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## 5.4 Data

Table 5a

| Categories  |  | Forest area (1000 hectares) |          |          |        |        |
|---|--|-----------------------------|----------|----------|--------|--------|
|   |  | 1990                        | 2000     | 2005     | 2010   | 2015   |
|  | Protection of soil and water           | 1595.378                    | 1595.996 | 1603.686 | 1631.7 | 1631.7 |
|  | ... of which production of clean water | N/A                         | N/A      | N/A      | N/A    | N/A    |

|   |   |          |          |          |        |        |
|---|---|----------|----------|----------|--------|--------|
|  | ... of which coastal stabilization                              | 0        | 0        | 0        | 0      | 0      |
|  | ... of which desertification control                            | 0        | 0        | 0        | 0      | 0      |
|  | ... of which avalanche control                                  | 0        | 0        | 0        | 0      | 0      |
|  | ... of which erosion, flood protection or reducing flood risk   | 0        | 0        | 0        | 0      | 0      |
|  | ... of which other (please specify in comments below the table) | 1595.378 | 1595.996 | 1603.686 | 1631.7 | 1631.7 |

#### Other

We have included the high altitude forests (suojametsät) here.

Table 5b

| Categories   | Forest area (1000 hectares) |          |          |          |          |
|--|-----------------------------|----------|----------|----------|----------|
|  | 1990                        | 2000     | 2005     | 2010     | 2015     |
| Ecosystem services, cultural or spiritual values               | N/A                         | 686.8073 | 1013.47  | 1042.731 | 1042.731 |
| ...of which public recreation                                  | N/A                         | 97.41554 | 217.022  | 249.0074 | 249.0074 |
| ...of which carbon storage or sequestration                    | 0                           | 0        | 0        | 0        | 0        |
| ...of which spiritual or cultural services                     | N/A                         | 453.2469 | 451.63   | 452.9134 | 452.9134 |
| ...of which other (please specify in comments below the table) | N/A                         | 136.1438 | 344.8175 | 340.8101 | 340.8101 |

## Tiers

| Category   | Tier for reported trend | Tier for status |
|--|-------------------------|-----------------|
| Protection of soil and water                     | Tier 3                  | Tier 3          |
| Ecosystem services, cultural or spiritual values | Tier 3                  | Tier 3          |

## Tier criteria

| Category   | Tier for status   | Tier for reported trend   |
|--|---|---|
| Protection of soil and water   | Tier 3: High reliability data derived either from high intensity sample survey or data obtained from national or state agencies responsible for regulations or legislation relating to soil and water protection. Tier 2: Approaches based on low intensity or incomplete sample-based surveys or studies that provide data for specific areas that is extrapolated through statistical analysis to national level estimates. Tier 1: Other | <b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other |
| <ul style="list-style-type: none"> <li>• Cultural or spiritual values</li> <li>• Public recreation</li> <li>• Spiritual or cultural services</li> <li>• Other</li> </ul> | Tier 3: High reliability data derived either from high intensity sample survey or data obtained from national or state agencies responsible for regulations. Tier 2: Approaches based on low intensity or incomplete sample-based surveys or studies that provide data for specific areas that is extrapolated through statistical analysis to national level estimates. Tier 1: Other  | <b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other |

## 5.5 Comments

| Category   | Comments related to data definitions etc               | Comments on the reported trend |
|--|--|--------------------------------|
| Protection of soil and water                     | N/A  | N/A                            |
| Production of clean water                        | N/A  | N/A                            |
| Coastal stabilization                            | N/A  | N/A                            |
| Desertification control                          | N/A  | N/A                            |
| Avalanche control                                | N/A  | N/A                            |
| Erosion, flood protection or reducing flood risk | N/A  | N/A                            |
| Other protective functions                       | N/A  | N/A                            |
| Ecosystem services, cultural or spiritual values | Some elements of this category are missing in our data | N/A                            |
| Public recreation                                | N/A  | N/A                            |
| Carbon storage or sequestration                  | N/A  | N/A                            |
| Spiritual or cultural services                   | N/A  | N/A                            |
| Other ecosystem services                         | N/A  | N/A                            |

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| <b>Other general comments to the table</b> |
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| N/A |
|-----|

## 6. How much forest area is protected and designated for the conservation of biodiversity and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 6.1 Categories and definitions

| Category                           | Definition   |
|------------------------------------|--|
| Conservation of biodiversity       | Forest area designated primarily for conservation of biological diversity. Includes but is not limited to areas designated for biodiversity conservation within the protected areas. |
| Forest area within protected areas | Forest area within formally established protected areas independently of the purpose for which the protected areas were established.   |

### 6.2 National data

#### 6.2.1 Data sources

|   | References to sources of information                                       | Variables  | Years           | Additional comments   |
|---|--|--|-----------------|---|
| 1 | 10th National Forest Inventory (NFI10). Finnish Forest Research Institute. | Forest, Other wooded land, Other land, Other land with tree cover  | 2005            | Data collected in the NFI10 last field season, 2008, has not been used in this report. The NFI10 data permit direct calculation of data according to the FRA categories and definitions for 2005. |
| 2 | 9th National Forest Inventory (NFI9). Finnish Forest Research Institute.   | Forest, Other wooded land, Other land, Other land with tree cover  | 2000: 1996-2003 | The NFI9 data permit direct calculation of data according to the FRA categories and definitions for 2000. These data were used also to re-classify the NFI8 data for FAO land use classes         |
| 3 | 8th National Forest Inventory (NFI8). Finnish Forest Research Institute.   | forest land, scrub land, waste land, other forestry land, agricultural land, build up land, traffic lines, power lines | 1990: 1986-1994 | Reclassification to FRA categories for 1990 data applying 1996-2003 NFI9 data and the distribution of national classes in NFI9 data into FRA categories.  |
| 4 | 11th NFI   | N/A  | 2010 and 2015   | N/A   |

#### 6.2.2 Classification and definitions

| National class               | Definition   |
|------------------------------|--|
| Conservation of biodiversity | Conservation of BD areas include the protected areas listed below, excluding research and gene reserve forests |

|                 |  |
|-----------------|--|
| Protected areas | - Protected areas include areas protected by nature protection law, wilderness areas, other legally protected areas, areas protected by the owners own decision, research and gene reserve forests, areas reserved for protection programmes, special habitats protected by forest law, habitats of threatened species, Natura2000 areas protected due to natura habitat directive |
| N/A             | N/A  |
| N/A             | N/A  |

### 6.2.3 Original data

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## 6.3 Analysis and processing of national data

### 6.3.1 Adjustment

|                |
|----------------|
| As in Table 1a |
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### 6.3.2 Estimation and forecasting

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### 6.3.3 Reclassification

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## 6.4 Data

Table 6

| Categories  |                                    | Forest area (000 hectares) |          |          |          |          |
|---|------------------------------------|----------------------------|----------|----------|----------|----------|
|   |                                    | 1990                       | 2000     | 2005     | 2010     | 2015     |
|  | Conservation of biodiversity       | 1398.824                   | 2898.944 | 3193.583 | 3366.8   | 3366.8   |
|  | Forest area within protected areas | 1398.824                   | 3622.182 | 3862.235 | 3928.816 | 3928.816 |

### Tiers

| Category                           | Tier for status | Tier for reported trend |
|------------------------------------|-----------------|-------------------------|
| Conservation of biodiversity       | Tier 3          | Tier 3                  |
| Forest area within protected areas | Tier 3          | Tier 3                  |

### Tier criteria

| Category   | Tier for status   | Tier for reported trend   |
|--|---|---|
| <ul style="list-style-type: none"> <li>• Conservation of biodiversity</li> <li>• Forests within protected areas</li> </ul> | Tier 3: Data obtained from national or state agencies responsible for conservation and protected area or legislation relating to area protection. Tier 2: Studies that provide data for specific areas that is extrapolated through statistical analysis to national level estimates Tier 1 Other | <b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other |

## 6.5 Comments

| Category                           | Comments related to data definitions etc | Comments on the reported trend  |
|------------------------------------|--|---|
| Conservation of biodiversity       | N/A                                      | Since 1990 area has clearly increased. This is partly due to classification problems in NFI8 data but mostly due to establishing new protection areas and due to decisions of Metsähallitus to increase protection of biodiversity. |
| Forest area within protected areas | N/A                                      | N/A   |

### Other general comments to the table

N/A

## 7. What is the area of forest affected by woody invasive species?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 7.1 Categories and definitions

| Category         | Definition   |
|------------------|--|
| Invasive species | Species that are non-native to a particular ecosystem and whose introduction and spread cause, or are likely to cause, socio-cultural, economic or environmental harm or harm to human health. |

### 7.2 National data

#### 7.2.1 Data sources

|   | References to sources of information | Variables | Years | Additional comments |
|---|--------------------------------------|-----------|-------|---------------------|
| 1 | N/A                                  | N/A       | N/A   | N/A                 |
| 2 | N/A                                  | N/A       | N/A   | N/A                 |
| 3 | N/A                                  | N/A       | N/A   | N/A                 |
| 4 | N/A                                  | N/A       | N/A   | N/A                 |

#### 7.2.2 Classification and definitions

| National class | Definition |
|----------------|------------|
| N/A            | N/A        |

#### 7.2.3 Original data

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### 7.3 Analysis and processing of national data

#### 7.3.1 Adjustment

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## 7.3.2 Estimation and forecasting

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## 7.3.3 Reclassification

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## 7.4 Data

Table 7

| Scientific name of woody invasive species | Forest area affected (000 ha) |      |
|---|-------------------------------|------|
|   | 2005                          | 2010 |
| N/A                                       | N/A                           | N/A  |
| Total                                     | N/A                           | N/A  |

## Tiers

| Category         | Tier for status | Tier for reported trend |
|------------------|-----------------|-------------------------|
| Invasive species | Tier 3          | Tier 3                  |

## Tier Criteria

| Category | Tier for status | Tier for reported trend |
|----------|-----------------|-------------------------|
|----------|-----------------|-------------------------|

|                  |  |   |
|------------------|--|---|
| Invasive species | Tier 3: Systematic assessment in forest inventory or other survey (e.g. by conservation department) within the last 5 years) Tier 2: Systematic assessment in forest inventory or other survey (e.g. by conservation department conducted more than 5 years ago) Tier 1: Other | <b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other |
|------------------|--|---|

### 7.5 Comments

| Category         | Comments related to data definitions etc | Comments on the reported trend |
|------------------|--|--------------------------------|
| Invasive species | No invasive woody species in Finland     | N/A                            |

| Other general comments to the table |
|-------------------------------------|
| N/A                                 |

## 8. How much forest area is damaged each year?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 8.1 Categories and definitions

| Category              | Definition  |
|-----------------------|---|
| Number of fires       | Number of fires per year  |
| Burned area           | Area burned per year  |
| Outbreaks of insects  | A detectable reduction in forest health caused by a sudden increase in numbers of harmful insects.  |
| Outbreaks of diseases | A detectable reduction in forest health caused by a sudden increase in numbers of harmful pathogens, such as bacteria, fungi, phytoplasma or virus. |
| Severe weather events | Damage caused severe weather events, such as snow, storm, drought, etc.   |

### 8.2 National data

#### 8.2.1 Data sources

|   | References to sources of information                   | Variables                    | Years     | Additional comments |
|---|--|------------------------------|-----------|---------------------|
| 1 | 1 Ministry of the Interior, Emergency Services College | Number of fires, area burned | 2003-2012 | N/A                 |
| 2 | N/A  | N/A                          | N/A       | N/A                 |
| 3 | N/A  | N/A                          | N/A       | N/A                 |
| 4 | N/A  | N/A                          | N/A       | N/A                 |

#### 8.2.2 Classification and definitions

| National class   | Definition |
|--|------------|
| Number of fires and area burned are according to the FRA definitions | N/A        |
| N/A  | N/A        |
| N/A  | N/A        |
| N/A  | N/A        |

## 8.2.3 Original data

## 8.3 Analysis and processing of national data

## 8.3.1 Adjustment

## 8.3.2 Estimation and forecasting

## 8.3.3 Reclassification

## 8.4 Data

Table 8a

| Category  |                                 | 000 ha, number of fires |      |        |      |        |      |        |      |        |      |
|---|---------------------------------|-------------------------|------|--------|------|--------|------|--------|------|--------|------|
|   |                                 | 2003                    |      | 2004   |      | 2005   |      | 2006   |      | 2007   |      |
|   |                                 | 000 ha                  | #    | 000 ha | #    | 000 ha | #    | 000 ha | #    | 000 ha | #    |
|  | Total land area burned          | N/A                     | 3842 | N/A    | 2197 | N/A    | 2631 | N/A    | 6290 | N/A    | 2813 |
|  | ... of which forest area burned | 0.666                   | 1734 | 0.358  | 816  | 0.495  | 1069 | 1.617  | 3406 | 0.576  | 1204 |
| Category  |                                 | 2008                    |      | 2009   |      | 2010   |      | 2011   |      | 2012   |      |
|   |                                 | 000 ha                  | #    | 000 ha | #    | 000 ha | #    | 000 ha | #    | 000 ha | #    |
|  | Total land area burned          | N/A                     | 3161 | N/A    | 2746 | N/A    | 2997 | N/A    | 2770 | N/A    | N/A  |
|  | ... of which forest area burned | 0.83                    | 1456 | 0.576  | 1242 | 0.52   | 1412 | 0.589  | 1262 | 0.089  | 437  |

Table 8b

| Outbreak category | Description/name | Year(s) of latest outbreak | Area damaged (000 hectares) |
|-------------------|------------------|----------------------------|-----------------------------|
|-------------------|------------------|----------------------------|-----------------------------|

|     |     |     |     |
|-----|-----|-----|-----|
| N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A |

### Outbreak category

- |                         |
|-------------------------|
| 1 Insects               |
| 2 Diseases              |
| 3 Severe weather events |

### Tiers

| Category   | Tier for status | Tier for trend |
|--|-----------------|----------------|
| Area affected by fire  | Tier 3          | Tier 3         |
| <ul style="list-style-type: none"> <li>• Insects</li> <li>• Diseases</li> <li>• Severe weather events</li> </ul> | N/A             | N/A            |

### Tier criteria

| Category   | Tier for status   | Tier for reported trend  |
|--|---|--|
| Burned area  | <b>Tier 3</b> : National fire monitoring routines<br><b>Tier 2</b> : Remote sensing surveys <b>Tier 1</b> :<br>Other                              | <b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> :<br>Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other |
| <ul style="list-style-type: none"> <li>• Insects</li> <li>• Diseases</li> <li>• Severe weather events</li> </ul> | <b>Tier 3</b> : Systematic survey (e.g. via inventory or aerial damage assessment)<br><b>Tier 2</b> : Management records <b>Tier 1</b> :<br>Other | <b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> :<br>Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other |

**8.5 Comments**

| <b>Category</b>       | <b>Comments related to data definitions etc</b> | <b>Comments on the reported trend</b> |
|-----------------------|---|---------------------------------------|
| Burned area           | N/A   | N/A                                   |
| Insects               | N/A   | N/A                                   |
| Diseases              | N/A   | N/A                                   |
| Severe weather events | N/A   | N/A                                   |

**Other general comments to the table**

We assess the area of damaged forests, but not the area of annual outbreaks

## 9. What is the forest area with reduced canopy cover?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

| Category                  | Definition   |
|---------------------------|--|
| Reduction in canopy cover | Forest that has undergone a reduction of canopy cover of more than 20% between the years 2000 and 2010 within the forest canopy cover range of 30-80% as detected by the MODIS VCF sensor. |

Table 9

| Category                  | Area of forest with reduced canopy cover (000 ha) |
|---------------------------|---|
| Reduction in canopy cover | 0   |

Tiers

| Category                  | Tier for reported trend |
|---------------------------|-------------------------|
| Reduction in canopy cover | Tier 1                  |

Tier criteria

| Category                  | Tier for reported trend  |
|---------------------------|--|
| Reduction in canopy cover | <b>Tier 3</b> : Remote sensing with ground truthing and/or Landsat imagery <b>Tier 2</b> : Remote sensing using Modis (using pre-filled data provided by FAO) <b>Tier 1</b> : Expert opinion |

Comments

| Category                  | Comments related to data definitions etc  |
|---------------------------|---|
| Reduction in canopy cover | The concept is irrelevant in describing development of Nordic forests. Thinnings may temporarily reduce canopy cover by 30 %, but surely thinnings should not be handled under the title forest degradation |

Other general comments

|  |
|--|
|  |
|--|

## 10. What forest policy and regulatory framework exists to support implementation of sustainable forest management SFM?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 10.1 Categories and definitions

| Category   | Definition   |
|--|--|
| Policies supporting sustainable forest management                    | Policies or strategies that explicitly encourage sustainable forest management.                      |
| Legislation and regulations supporting sustainable forest management | Legislation and regulations that govern and guide sustainable forest management, operations and use. |

### 10.2 National data

#### 10.2.1 Data sources

|   | References to sources of information   | Variables | Years | Additional comments |
|---|--|-----------|-------|---------------------|
| 1 | Forest Act 1997 (under revision in 2013)   | N/A       | N/A   | N/A                 |
| 2 | Act on the Financing of Sustainable Forestry 1997  | N/A       | N/A   | N/A                 |
| 3 | National Forest Programme 2015 and recommendation to forest management, forest certification | N/A       | N/A   | N/A                 |
| 4 | N/A  | N/A       | N/A   | N/A                 |

#### 10.2.2 Classification and definitions

| National class                             | Definition   |
|--|--|
| SFM as understood by FOREST EUROPE PROCESS | FOREST EUROPE; Helsinki resolution 2/1993, and the C&I for SFM |
| N/A  | N/A  |
| N/A  | N/A  |
| N/A  | N/A  |

## 10.2.3 Original data

## 10.3 Data

Table 10

| Category   |          |              |                  |       |
|--|----------|--------------|------------------|-------|
|  | National | Sub-national |                  |       |
|  |          | Regional     | Provincial/State | Local |
| Policies supporting sustainable forest management                    | yes      | yes          | yes              | yes   |
| ... of which, in <u>publicly</u> owned forests                       | yes      | yes          | yes              | yes   |
| ... of which, in <u>privately</u> owned forests                      | yes      | yes          | yes              | yes   |
| Legislation and regulations supporting sustainable forest management | yes      | no           | no               | no    |
| ... of which, in <u>publicly</u> owned forests                       | yes      | no           | no               | no    |
| ... of which, in <u>privately</u> owned forests                      | yes      | no           | no               | no    |

## 10.4 Comments

| Variable / category  | Comments related to data definitions etc   |
|--|--|
| Policies supporting sustainable forest management                    | Forest area under sustainable forest management and monitored. All forest area are covered by Forest Act. It is obligatory to make an announcement for the forest authorities (Forestry Center) when forest owner is aiming to make a cutting. By regeneration cuttings, new forest on the same place must be established within required time defined in legislation. Thinnings have to be done according to official regimes. Key biotopes must be protected when delineating the cutting area, as well as protection zones near the waterways |
| Legislation and regulations supporting sustainable forest management | Forest Act 1997, see above 10.2.1.   |

## Other general comments

## 11. Is there a national platform that promotes stakeholder participation in forest policy development?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 11.1 Categories and definitions

| Category                      | Definition  |
|-------------------------------|---|
| National stakeholder platform | A recognized procedure that a broad range of stakeholders can use to provide opinions, suggestions, analysis, recommendations and other input into the development of national forest policy. |

### 11.2 National data

#### 11.2.1 Data sources

|   | References to sources of information  | Years              | Additional comments |
|---|---|--------------------|---------------------|
| 1 | <a href="http://www.mmm.fi/attachments/metsat/kmo/5yGFtgJQ5/Finlands_National_Forest_Programme_2015_final.pdf">http://www.mmm.fi/attachments/metsat/kmo/5yGFtgJQ5/Finlands_National_Forest_Programme_2015_final.pdf</a> | 2008, revised 2012 | N/A                 |
| 2 | <a href="http://www.metla.fi/metinfo/sustainability/SF-2.htm">http://www.metla.fi/metinfo/sustainability/SF-2.htm</a>   | 2011               | N/A                 |
| 3 | N/A   | N/A                | N/A                 |
| 4 | N/A   | N/A                | N/A                 |

Table 11

|   |     |
|---|-----|
| <b>Is there a national platform that promotes or allows for stakeholder participation in forest policy development?</b> | yes |
|---|-----|

### 11.3 Comments

| Category                      | Comments related to data definitions etc   |
|-------------------------------|--|
| National stakeholder platform | The National Forest Programme was prepared in extensively broad-based cooperation with interest groups (over 50) and drawing on the operating strategies of those interest groups under the Finnish Forest Council. Six working groups prepared the various aspects of SFM |

Other general comments

|  |
|--|
|  |
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## 12. What is the forest area intended to be in permanent forest land use and how has it changed over time?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 12.1 Categories and definitions

| Category  | Definition  |
|---|---|
| Forest area intended to be in permanent forest land use     | Forest area that is designated or expected to be retained as forest and is highly unlikely to be converted to other land use. |
| ...of which permanent forest estate ( <i>sub-category</i> ) | Forest area that is designated by law or regulation to be retained as forest and may not be converted to other land use.      |

### 12.2 National data

#### 12.2.1 Data sources

|   | References to sources of information                                       | Variables  | Years                    | Additional comments  |
|---|--|--|--------------------------|--|
| 1 | Tapion vuositolastot   | Forests with management plan   | 1990, 2002, 2005         | N/A  |
| 2 | 10th National Forest Inventory (NFI10). Finnish Forest Research Institute. | Forest, Other wooded land, Other land, Other land with tree cover  | 2005 and 2010: 2004-2007 | Data collected in the NFI10 last field season, 2008, has not been used in this report. The NFI10 data permit direct calculation of data according to the FRA categories and definitions for 2005 and 2010. |
| 3 | 9th National Forest Inventory (NFI9). Finnish Forest Research Institute.   | Forest, Other wooded land, Other land, Other land with tree cover  | 2000: 1996-2003          | The NFI9 data permit direct calculation of data according to the FRA categories and definitions for 2000. These data were used also to re-classify the NFI8 data for FAO land use classes                  |
| 4 | 8th National Forest Inventory (NFI8). Finnish Forest Research Institute.   | forest land, scrub land, waste land, other forestry land, agricultural land, build up land, traffic lines, power lines | 1990: 1986-1994          | Reclassification to FRA categories for 1990 data applying 1996-2003 NFI9 data and the distribution of national classes in NFI9 data into FRA categories.   |

#### 12.2.2 Classification and definitions

| National class | Definition |
|----------------|------------|
|----------------|------------|

|     |     |
|-----|-----|
| N/A | N/A |

### 12.2.3 Original data

|  |
|--|
|  |
|--|

## 12.3 Analysis and processing of national data

### 12.3.1 Adjustment

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|--|
|  |
|--|

### 12.3.2 Estimation and forecasting

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|  |
|--|

### 12.3.3 Reclassification

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|--|
|  |
|--|

## 12.4 Data

Table 12

| Categories  |   | Forest area 2010 (000 ha) |
|---|---|---------------------------|
|  | Forest area intended to be in permanent forest land use | 22218                     |
|  | ... of which permanent forest estate                    |                           |

### Tiers

| Category  | Tier for status |
|---|-----------------|
| Forest area intended to be in permanent forest land use | Tier 3          |
| Permanent forest estate                                 | Tier 3          |

### Tier Criteria

| Category  | Tier for status   |
|---|---|
| Forest area intended to be in permanent forest land use | <b>Tier 3</b> : National or sub-national land use plans strategy documents or other reports within the past 10 years <b>Tier 2</b> : National or sub-national land use plans strategy documents or other reports within the past 20 years <b>Tier 1</b> : Other |

|                         |   |
|-------------------------|---|
| Permanent forest estate | <b>Tier 3</b> : National or sub-national land use plans strategy documents or other reports within the past 10 years <b>Tier 2</b> : National or sub-national land use plans strategy documents or other reports within the past 20 years <b>Tier 1</b> : Other |
|-------------------------|---|

## 12.5 Comments

| Category  | Comments related to data definitions etc   |
|---|--|
| Forest area intended to be in permanent forest land use | The forest area remains in Finland quite stable, minor annual changes can appear due to the afforestation of agricultural land/ or by new building areas in settlements. During the 10 years period the change might be 0.2-0.5 % (+ or - )of the forest area. |
| Permanent forest estate                                 | Concept is not applied in our legislation.   |

## Other general comments

|  |
|--|
|  |
|--|

## 13. How does your country measure and report progress towards SFM at the national level?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 13.1 Categories and definitions

| Category   | Definition   |
|--|--|
| Forest area monitored under a national forest monitoring framework | Forest area monitored by a national monitoring framework or systems that provide measurement based periodic monitoring of forest extent and quality. |
| Forest reporting at national scale                                 | National reporting of forest extent and characteristics that includes some measure of progress toward sustainable forest management.                 |

### 13.2 National data

#### 13.2.1 Data sources

|   | References to sources of information   | Variables | Years | Additional comments |
|---|--|-----------|-------|---------------------|
| 1 | <a href="http://www.metla.fi/vmi/">www.metla.fi/vmi/</a>   | N/A       | N/A   | N/A                 |
| 2 | <a href="http://www.metsakeskus.fi/alueellinen-metsavaratieto">www.metsakeskus.fi/alueellinen-metsavaratieto</a> | N/A       | N/A   | N/A                 |
| 3 | N/A  | N/A       | N/A   | N/A                 |
| 4 | N/A  | N/A       | N/A   | N/A                 |

#### 13.2.2 Classification and definitions

| National class | Definition |
|----------------|------------|
| N/A            | N/A        |

### 13.3 Data

Table 13a

| Category                 | % of total forest area | Most recent year | Check all boxes that apply |          |                        |                        |                                    |                                     |
|--------------------------|------------------------|------------------|----------------------------|----------|------------------------|------------------------|------------------------------------|-------------------------------------|
|                          |                        |                  | Continuous                 | Periodic | Permanent ground plots | Temporary ground plots | Aerial/remote sensing sample based | Aerial/remote sensing full coverage |
| Forest inventory         | 100                    | 2012             | yes                        | no       | yes                    | yes                    | no                                 | no                                  |
| Other field assessments  | N/A                    | N/A              | yes                        | yes      | no                     | yes                    | no                                 | no                                  |
| Updates to other sources | N/A                    | N/A              | no                         | no       | no                     | no                     | no                                 | no                                  |
| Expert estimate          | N/A                    | N/A              |                            |          |                        |                        |                                    |                                     |

Table 13b

| Type of forest reporting used at national scale | Check boxes that apply |
|---|------------------------|
| 1 Criteria and Indicators reporting             | yes                    |
| 2 Periodic national state of the forest report  | yes                    |
| 3 Other (please document)                       | yes                    |
| 4 None  | no                     |

#### Other type of forest reporting

Follow up of NFP, and forest certification

### 13.4 Comments

| Category                        | Comments  |
|---------------------------------|---|
| Reporting and assessment of SFM | Finland is one of the forerunners in Europe reporting on the status of SFM. The experts have taken part in the FAO/UNECE development work on that area as well as FOREST EUROPE and worldwide development |
| N/A                             | N/A   |
| N/A                             | N/A   |

Other general comments

|  |
|--|
|  |
|--|

## 14. What is the area of forest under a forest management plan and how is this monitored?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 14.1 Categories and definitions

| Category  | Definition  |
|---|---|
| Forest area with management plan                        | Forest area that has a long-term documented management plan, aiming at defined management goals which is periodically revised                 |
| ...of which for production<br>( <i>sub-category</i> )   | Forest management plan mainly focused on production   |
| ...of which for conservation<br>( <i>sub-category</i> ) | Forest management plan mainly focused on conservation   |
| Monitoring of forest management plans                   | Government monitoring of forest management plan implementation conducted through field visits or audits of forest management plan performance |

### 14.2 National data

#### 14.2.1 Data sources

|   | References to sources of information                                       | Variables   | Years     | Additional comments |
|---|--|---|-----------|---------------------|
| 1 | 11th National Forest Inventory (NFI10). Finnish Forest Research Institute. | Forest, Other wooded land, Other land, Other land with tree cover | 2009-2012 | N/A                 |
| 2 | N/A  | N/A   | N/A       | N/A                 |
| 3 | N/A  | N/A   | N/A       | N/A                 |
| 4 | N/A  | N/A   | N/A       | N/A                 |

### 14.3 Data

Table 14a

| Forest plan type                 | Forest area 2010 (000 ha) |
|----------------------------------|---------------------------|
| Forest area with management plan | 22218                     |
| ... of which for production      | 18318                     |
| ... of which for conservation    | 3900                      |

Table 14b

| Indicate which (if any) of the following are required in forest management plans in your country |     |
|--|-----|
| 1 Soil and water management  | yes |

|   |     |
|---|-----|
| 2 High conservation value forest delineation  | yes |
| 3 Social considerations community involvement | yes |

Table 14c

|  |            |
|--|------------|
| <b>Percent of area under forest management plan that is monitored annually</b> | <b>100</b> |
|--|------------|

## Tiers

| Category  | Tier for status |
|---|-----------------|
| Forest area with management plan  | Tier 3          |
| Percent of area under forest management plan that is monitored annually | Tier 3          |

## Tier criteria

| Category  | Tier for status   |
|---|---|
| Forest area with management plan  | <b>Tier 3</b> : Reports that describe national records 5 years old or less that contain long-term forest monitoring plans <b>Tier 2</b> : Industry or other records indicating the presence of a long-term forest management plan <b>Tier 1</b> : Other |
| Percent of area under forest management plan that is monitored annually | <b>Tier 3</b> : Government documentation of monitoring extent <b>Tier 2</b> : Reports from forest managers or other documental sources <b>Tier 1</b> : Other  |

## 14.4 Comments

| Category   | Comments  |
|--|---|
| Forest area with management plan                     | Regional Forest Programmes are here regarded as management plans, these are monitored annually.   |
| Table 14b: social considerations in management plans | Required in management plans in state forests, not in private forests   |
| Table 14c: percent under monitoring                  | Management plans are only plans, following them is not obligatory. All cuttings must have a separate, operative plan and planned cuttings are informed to the forest authority before hand. |

## Other general comments

|  |
|--|
|  |
|--|

## 15. How are stakeholders involved in the management decision making for publicly owned forests?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 15.1 Categories and definitions

| Category                | Definition  |
|-------------------------|---|
| Stakeholder involvement | Stakeholder involvement is defined as significant inputs into at least one aspect of forest management at the operational scale |

Table 15

| Please indicate the type of stakeholder involvement in forest management decision making required in your country |     |
|---|-----|
| 1. Planning phase   | yes |
| 2. Operations phase   | yes |
| 3. Review of operations   | no  |

Tiers

| Category                   | Tier for status |
|----------------------------|-----------------|
| Type of stakeholder inputs | Tier 3          |

Tier criteria

| Category                   | Tier for status  |
|----------------------------|--|
| Type of stakeholder inputs | <b>Tier 3</b> : Government (national or sub-national) documentation of stakeholder inputs<br><b>Tier 2</b> : Government (national or subnational) requirement but stakeholder inputs not documented<br><b>Tier 1</b> : Other |

### 15.2 Comments

| Category                         | Comments   |
|----------------------------------|--|
| Planning phase Operational phase | Metsähallitus (State Forestry) strive for open and interactive operations in the planning of all natural resource use. In the regional planning projects, for example, representatives of stakeholder groups interested in utilising state-owned lands are invited to form a co-operation in which local experts negotiate on the use of the area and related factors. |
| N/A                              | N/A  |
| N/A                              | N/A  |

Other general comments

|  |
|--|
|  |
|--|

## 16. What is the area of forest under an independently verified forest certification scheme?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 16.1 Categories and definitions

| Category  | Definition   |
|---|--|
| FSC certification   | Forest area certified under the Forest Stewardship Council certification scheme  |
| PEFC certification  | Forest area certified under the Programme for the Endorsement of Forest Certification scheme   |
| Other international forest management certification                           | Forest area certified under an international forest management certification scheme with published standards and is independently verified by a third-party, excluding FSC and PEFC certification. |
| Certified forest area using a domestic forest management certification scheme | Area certified under a forest management certification scheme with published standards that are nationally recognized and independently verified by a thirdparty                                   |

### 16.2 Data

Table 16a

| International forest management certification                                       |       | Forest area (000 ha) |           |           |           |           |           |           |
|---|-------|----------------------|-----------|-----------|-----------|-----------|-----------|-----------|
|   |       | 2000                 | 2001      | 2002      | 2003      | 2004      | 2005      | 2006      |
|  | FSC   | 0                    | 0         | 0.09      | 0.09      | 0.09      | 0.09      | 9.58      |
|  | PEFC  | 21.91                | 21.91     | 21.91     | 22298.165 | 22355.596 | 22367.196 | 22144.082 |
|  | Other | 0                    | 0         | 0         | 0         | 0         | 0         | 0         |
|   |       | 2007                 | 2008      | 2009      | 2010      | 2011      | 2012      |           |
|  | FSC   | 9.49                 | 9.58      | 9.58      | 9.71      | 0.26      | 394.99    |           |
|  | PEFC  | 20719.735            | 20719.735 | 20806.165 | 20786.936 | 21068.333 | 20900     |           |
|  | Other | 0                    | 0         | 0         | 0         | 0         | 0         |           |

Table 16b

| Domestic forest management certification  |     | Forest area (000 ha) |      |      |      |      |      |      |
|---|-----|----------------------|------|------|------|------|------|------|
|   |     | 2000                 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|  | N/A | 0                    | 0    | 0    | 0    | 0    | 0    | 0    |
|  | N/A | 0                    | 0    | 0    | 0    | 0    | 0    | 0    |
|  | N/A | 0                    | 0    | 0    | 0    | 0    | 0    | 0    |

|   |  | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |  |
|---|--|------|------|------|------|------|------|--|
|  |  | 0    | 0    | 0    | 0    | 0    | 0    |  |
|  |  | 0    | 0    | 0    | 0    | 0    | 0    |  |
|  |  | 0    | 0    | 0    | 0    | 0    | 0    |  |

## Tier criteria

| Category   | Tier for status  |
|--|--|
| <b>International</b> forest management certification | Tier 3: International forest management scheme records maintained by the certifying organization for the reporting year<br>Tier 2: International forest management scheme records reported by the certifying organization for a period 2 years prior to the reporting year<br>Tier: 1 Other                    |
| <b>Domestic</b> forest management certification      | Tier 3: National registry reports for domestic forest management certification maintained by the certifying organization for the reporting year<br>Tier 2: Domestic forest management scheme records reported by the certifying organization for a period 2 years prior to the reporting year<br>Tier: 1 Other |

## Tiers

| Category   | Tier for status |
|--|-----------------|
| <b>International</b> forest management certification | Tier 3          |
| <b>Domestic</b> forest management certification      | Tier 3          |

## 16.3 Comments

| Category  | Comments related to data definitions etc  |
|---|---|
| Certified forest area using an international forest management certification scheme | Sources of information: Auvo Kaivola for PEFC (auvo.kaivola @ pefc.fi) and Anniina Kostilainen (a.kostilainen @ fi.fsc.org) for SFC |
| Domestic forest management certification  | N/A   |

## Other general comments

|  |
|--|
|  |
|--|

## 17. How much money do governments collect from and spend on forests?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 17.1 Categories and definitions

| Category                       | Definition  |
|--------------------------------|---|
| Forest revenue                 | All government revenue collected from the domestic production and trade of forest products and services. For this purpose revenue include: <ul style="list-style-type: none"> <li>• <u>Goods</u> : roundwood; sawnwood; biomass; woodbased panels; pulp and paper and non-wood forest products.</li> <li>• <u>Services</u> : including concession fees and royalties, stumpage payments, public timber sales revenue taxes and charges based on forest area or yield, taxes on domestic trade and export of forest products, special levies on forestry activities and payments into forest related funds, other miscellaneous inspection, licence and administrative fees levied by forest administrations, permit and licence fees for recreation and other forest related activities.</li> </ul> |
| Public expenditure on forestry | All government expenditure on forest related activities.  |

### 17.2 National data

#### 17.2.1 Data sources

|   | References to sources of information   | Variables                      | Years | Additional comments |
|---|--|--------------------------------|-------|---------------------|
| 1 | Metsähallitus (a state enterprise that administers state-owned land and water areas) | Forest revenue                 | 2012  | N/A                 |
| 2 | State accounts   | Public expenditure on forestry | 2012  | N/A                 |
| 3 | N/A  | N/A                            | N/A   | N/A                 |
| 4 | N/A  | N/A                            | N/A   | N/A                 |

### 17.3 Data

Table 17

| Category                       | Revenues / expenditures (000 local currency) |      |        |
|--------------------------------|--|------|--------|
|                                | 2000   | 2005 | 2010   |
| Forest revenue                 | N/A  | N/A  | 448000 |
| Public expenditure on forestry | N/A  | N/A  | 183540 |
|                                | 2000   | 2005 | 2010   |

|                        |      |     |     |
|------------------------|------|-----|-----|
| Name of Local Currency | euro | N/A | N/A |
|------------------------|------|-----|-----|

### 17.4 Comments

| Category                       | Comments related to data definitions etc   |
|--------------------------------|--|
| Forest revenue                 | Forest revenue: the operating profit of Metsähallitus + estimated taxes from timber selling from private forests |
| Public expenditure on forestry | Extracted from the state budget, all expenditures allocated on forestry (excl. training)                         |
| Other general comments         | N/A  |

Other general comments

|  |
|--|
|  |
|--|

## 18. Who owns and manages the forests and how has this changed?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 18.1 Categories and definitions

| Category   | Definition   |
|--|--|
| Public ownership   | Forest owned by the State or administrative units of the public administration or by institutions or corporations owned by the public administration.  |
| ...of which owned by the state at national scale<br>( <i>sub-category</i> )                    | Forest owned by the State at the national scale or administrative units of the public administration or by institutions or corporations owned by the public administration.  |
| ...of which owned by the state at the sub-national government scale<br>( <i>sub-category</i> ) | Forest owned by the State at the sub-national government scale 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 cooperatives corporations and other business entities, private, religious and educational institutions, pension or investment funds, NGOs, nature conservation associations and other private institutions.  |
| ...of which individuals<br>( <i>sub-category</i> )   | Forest owned by individuals and families.  |
| ...of which private business entities and institutions<br>( <i>sub-category</i> )              | Forest owned by private corporations cooperatives companies and other business entities as well as private nonprofit organizations such as NGOs nature conservation associations, and private religious and educational institutions etc.  |
| ...of which local tribal and indigenous communities<br>( <i>sub-category</i> )                 | Forest owned by a group of individuals belonging to the same community residing within or in the vicinity of a forest area or forest owned by communities of indigenous or tribal people The community members are coowners that share exclusive rights and duties and benefits contribute to the community development. |
| Unknown ownership  | Forest area where ownership is unknown includes areas where ownership is unclear or disputed.  |
| Categories related to management rights of public forests                                      | Definition   |
| Public Administration  | The Public Administration (or institutions or corporations owned by the Public Administration) retains management rights and responsibilities within the limits specified by the legislation.  |
| Individuals households   | Forest management rights and responsibilities are transferred from the Public Administration to individuals or households through long-term leases or management agreements.   |
| Private companies  | Forest management rights and responsibilities are transferred from the Public Administration to corporations, other business entities private cooperatives, private nonprofit institutions and associations, etc., through long-term leases or management agreements.  |
| Communities  | Forest management rights and responsibilities are transferred from the Public Administration to local communities (including indigenous and tribal communities) through long-term leases or management agreements.   |
| Other form of management rights  | Forests for which the transfer of management rights does not belong to any of the categories mentioned above.  |

### 18.2 National data

## 18.2.1 Data sources

|   | References to sources of information                                       | Variables  | Years           | Additional comments  |
|---|--|--|-----------------|--|
| 1 | 10th National Forest Inventory (NFI10). Finnish Forest Research Institute. | Forest, Other wooded land, Other land, Other land with tree cover, ownership   | 2005: 2004-2007 | Data collected in the NFI10 last field season, 2008, has not been used in this report. The NFI10 data permit direct calculation of data according to the FRA categories and definitions for 2005 and 2010. |
| 2 | 9th National Forest Inventory (NFI9). Finnish Forest Research Institute.   | Forest, Other wooded land, Other land, Other land with tree cover  | 2000:1996-2003  | The NFI9 data permit direct calculation of data according to the FRA categories and definitions for 2000. These data were used also to re-classify the NFI8 data for FAO land use classes                  |
| 3 | 8th National Forest Inventory (NFI8). Finnish Forest Research Institute.   | forest land, scrub land, waste land, other forestry land, agricultural land, build up land, traffic lines, power lines | 1990: 1986-1994 | Reclassification to FRA categories for 1990 data applying 1996-2003 NFI9 data and the distribution of national classes in NFI9 data into FRA categories.   |
| 4 | 11th NFI   | N/A  | 2010: 2009-2012 | N/A  |

## 18.2.2 Classification and definitions

| National class | Definition |
|----------------|------------|
| N/A            | N/A        |

## 18.2.3 Original data

|   |
|---|
| Extracted directly from the NFI database. |
|---|

## 18.3 Analysis and processing of national data

## 18.3.1 Adjustment

Similar to Question 1.

## 18.3.2 Estimation and forecasting

## 18.3.3 Reclassification

Public ownership at national level includes Metsähallitus and other government organisations. Public ownership at sub-national level includes municipalities and parishes etc. Private individuals include private people and non-designated (jakamaton) land.

Private business includes forestry companies, other companies (Ltd.), other associations (yhteisöt) and joined ownership (yhteismetsä).

## 18.4 Data

Table 18a

| Categories  |  | Forest area (1000 hectares) |       |       |          |
|---|--|-----------------------------|-------|-------|----------|
|   |  | 1990                        | 2000  | 2005  | 2010     |
|  | Public ownership   | 6722                        | 7209  | 6984  | 6743.7   |
|  | ... of which owned by the state at national scale                    | N/A                         | N/A   | N/A   | 6148.782 |
|  | ... of which owned by the state at the sub-national government scale | N/A                         | N/A   | N/A   | 594.9176 |
|  | Private ownership  | 15154                       | 15236 | 15159 | 15474.46 |
|  | ... of which owned by individuals                                    | 12973                       | 12945 | 12757 | 13099.59 |
|  | ... of which owned by private business entities and institutions     | 2181                        | 2291  | 2403  | 2374.87  |
|  | ... of which owned by local, tribal and indigenous communities       | 0                           | 0     | 0     | 0        |
|  | Unknown ownership  | 0                           | 0     | 0     | 0        |

|       |          |          |          |          |
|-------|----------|----------|----------|----------|
| TOTAL | 21876.00 | 22445.00 | 22143.00 | 22218.16 |
|-------|----------|----------|----------|----------|

## Tiers

| Category          | Tier for status | Tier for reported trend |
|-------------------|-----------------|-------------------------|
| Public ownership  | Tier 3          | Tier 3                  |
| Private ownership | Tier 3          | Tier 3                  |
| Unknown ownership | Tier 3          | Tier 3                  |

## Tier criteria

| Category  | Tier for status  | Tier for reported trend   |
|-----------|--|---|
| Ownership | Tier 3: National forestry statistics registers of land titles or maps on land ownership or all forest area under one ownership category that is five years old or less. Tier 2: National forestry statistics registers of land titles or maps on land ownership or questionnaires that are more than five years old. Tier 1: Other | <b>Tier 3</b> : Estimate based on repeated compatible tiers 3 (tier for status) <b>Tier 2</b> : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) <b>Tier 1</b> : Other |

Table 18b - Holder of management rights of public forests

| Categories            | Forest area (000 hectares) |         |         |         |
|-----------------------|----------------------------|---------|---------|---------|
|                       | 1990                       | 2000    | 2005    | 2010    |
| Public Administration | 6722                       | 7209    | 6984    | 6743.7  |
| Individuals           | 0                          | 0       | 0       | 0       |
| Private companies     | 0                          | 0       | 0       | 0       |
| Communities           | 0                          | 0       | 0       | 0       |
| Other                 | 0                          | 0       | 0       | 0       |
| TOTAL                 | 6722.00                    | 7209.00 | 6984.00 | 6743.70 |

| Category              | Tier for reported trend | Tier for status |
|-----------------------|-------------------------|-----------------|
| Public Administration | Tier 3                  | Tier 3          |
| Individuals           | Tier 3                  | Tier 3          |
| Private companies     | Tier 3                  | Tier 3          |
| Communities           | Tier 3                  | Tier 3          |

|       |        |        |
|-------|--------|--------|
| Other | Tier 3 | Tier 3 |
|-------|--------|--------|

### 18.5 Comments

| Category          | Comments related to data definitions etc | Comments on the reported trend |
|-------------------|--|--------------------------------|
| Public ownership  | N/A                                      | N/A                            |
| Private ownership | N/A                                      | N/A                            |
| Unknown ownership | N/A                                      | N/A                            |
| Management rights | N/A                                      | N/A                            |

| Other general comments to the table |
|-------------------------------------|
| N/A                                 |

## 19. How many people are directly employed in forestry?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 19.1 Categories and definitions

| Category                    | Definition   |
|-----------------------------|--|
| Full-time equivalents (FTE) | A measurement equal to one person working full-time during a specified reference period.   |
| Employment in forestry      | Employment in activities related to production of goods derived from forests. This category corresponds to the ISIC/NACE Rev. 4 activity A02 (Forestry and logging). |

### 19.2 National data

#### 19.2.1 Data sources

|   | References to sources of information  | Variables      | Years | Additional comments |
|---|---|----------------|-------|---------------------|
| 1 | Labour Force Surveys (by Statistics Finland)<br><a href="http://www.stat.fi/til/tyti/index_en.html">http://www.stat.fi/til/tyti/index_en.html</a> | 1990 2000 2005 | N/A   | N/A                 |
| 2 | N/A   | N/A            | N/A   | N/A                 |
| 3 | N/A   | N/A            | N/A   | N/A                 |
| 4 | N/A   | N/A            | N/A   | N/A                 |

#### 19.2.2 Classification and definitions

| National class | Definition |
|----------------|------------|
| N/A            | N/A        |

#### 19.2.3 Original data

See final reporting table.

Re-classification is not needed for employment figures, as national data correspond to FRA2015 definitions

**19.3 Data**

Table 19

| Category  |                        | Employment (000 years FTE) |      |      |      |
|---|------------------------|----------------------------|------|------|------|
|   |                        | 1990                       | 2000 | 2005 | 2010 |
|  | Employment in forestry | 38.9                       | 24.2 | 22.3 | 22.4 |
|  | ... of which female    | 3                          | 3    | 2    | 2.7  |

**19.4 Comments**

| Category               | Comments related to data definitions etc   | Comments on the reported trend   |
|------------------------|--|--|
| Employment in forestry | For definition of "forestry", see <a href="http://www.stat.fi/meta/luokitukset/toimiala/001-2002/02_en.html">http://www.stat.fi/meta/luokitukset/toimiala/001-2002/02_en.html</a> . The data from Labour Force Surveys (LFSs) are utilised. LFS is part of Official Statistics of Finland. | The downward trend is mostly due to rapid mechanization in the harvesting of roundwood. During recent years, however, employment in forestry has remained relatively stable. . Stumpage sales dominate in Finland; the share of delivery sales has decreased to less than 20% of harvested volumes in private forests (1990: 29%, 2000: 19%, 2005: 19%, 2010: 15%). In delivery sales, the seller is responsible for felling and forest haulage to a storage point alongside forest road, ready for long-distance transportation by the buyer. |

**Other general comments to the table**

N/A

## 20. What is the contribution of forestry to Gross Domestic Product (GDP)?

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 20.1 Categories and definitions

| Category  | Definition   |
|---|--|
| Gross value added from forestry (at basic prices) | This category corresponds to the ISIC/NACE Rev. 4 activity A02 (Forestry and logging). |

### 20.2 Data

Table 20 (Pre-filled data from UNdata/EUROSTAT)

| Category  | Million | Currency | Year for latest available information |
|---|---------|----------|---------------------------------------|
| Gross value added from forestry (at basic prices) | 2857    | EUR      | 2012                                  |

### 20.3 Comments

| Category  | Comments  |
|---|---|
| Gross value added from forestry (at basic prices) | Preliminary data (July 2013). The information is based on the National Accounts, compiled by Statistics Finland. Further information: <a href="http://www.tilastokeskus.fi/til/vtp/index_en.html">http://www.tilastokeskus.fi/til/vtp/index_en.html</a> |

Other general comments

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## 21. What is forest area likely to be in the future

Documents for this question:

- [Guide for country reporting FRA 2015](#)
- [FRA 2015 Terms and Definitions](#)

### 21.1 Categories and definitions

| Category                                     | Definition  |
|--|---|
| Government target/aspiration for forest area | Government target/aspiration for forest area for a specific year.                           |
| Forests earmarked for conversion             | Forest area that is allocated/classified or scheduled to be converted into non-forest uses. |

### 21.2 National data

#### 21.2.1 Data sources

|   | References to sources of information  | Variables                   | Years | Additional comments |
|---|---|-----------------------------|-------|---------------------|
| 1 | <a href="http://www.tem.fi/files/36730/Energia-_ja_ilmastostrategia_2013_SUOMENKIELINEN.pdf">http://www.tem.fi/files/36730/Energia-_ja_ilmastostrategia_2013_SUOMENKIELINEN.pdf</a> | Target for forest land area | N/A   | N/A                 |
| 2 | N/A   | N/A                         | N/A   | N/A                 |
| 3 | N/A   | N/A                         | N/A   | N/A                 |
| 4 | N/A   | N/A                         | N/A   | N/A                 |

### 21.3 Data

Table 21a

| Category                                     | Forest area (000 ha) |         |
|--|----------------------|---------|
|  | 2020                 | 2030    |
| Government target/aspiration for forest area | 22217.5              | 22217.5 |

Table 21b

| Category                         | Forest area (000 ha) |
|----------------------------------|----------------------|
|                                  | 2013                 |
| Forests earmarked for conversion | N/A                  |

### 21.4 Comments

| Category | Comments |
|----------|----------|
|----------|----------|

|  |  |
|--|--|
| Government target/aspiration for forest area | In the national energy and climate strategy there is a statement that forest loss must be avoided. |
| Forests earmarked for conversion             | N/A  |

Other general comments

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