

GLOBAL FOREST RESOURCES ASSESSMENT 2015

COUNTRY REPORT

Switzerland

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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Report preparation and contact persons

Contact persons

The present report was prepared by the following person(s)

Name (FAMILY NAME, first name)	Institution/address	Email	Tables
ABEGG, Meinrad	Swiss Federal Institute for Forest, Snow and Landscape Research (WSL) Zürcherstrasse 111 8903 Birmensdorf Switzerland	meinrad.abegg@wsl.ch	N/A
BRÄNDLI, Urs-Beat	Swiss Federal Institute for Forest, Snow and Landscape Research (WSL) Zürcherstrasse 111 8903 Birmensdorf Switzerland	urs-beat.braendli@wsl.ch	N/A
DÜRR, Christoph	Federal Office for the Environment, CH-3003 Bern	christoph.duerr@bafu.admin.ch	N/A
CAMIN, Paolo	Federal Office for the Environment, CH-3003 Bern Switzerland	N/A	N/A
BOLLIGER, Markus	Federal Office for the Environment, CH-3003 Bern Switzerland	N/A	N/A
KLÄY, Matthias	Federal Office for the Environment, CH-3003 Bern Switzerland	N/A	N/A
RHEINHARD, Michael	Federal Office for the Environment, CH-3003 Bern Switzerland	N/A	N/A
SCHMID, Silvio	Federal Office for the Environment, CH-3003 Bern Switzerland	N/A	N/A
BRÄNDLI, Urs-Beat	Swiss Federal Institute for Forest, Snow and Landscape Research (WSL) Zürcherstrasse 111 8903 Birmensdorf Switzerland	urs-beat.braendli@wsl.ch	N/A

Introductory Text

Place an introductory text on the content of this report

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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	WSL, 2013: Schweizerisches Landesforstinventar LFI. Spezialauswertungen der Erhebungen 1983-85, 1993-95, 2004-06 und 2009 - 2013. August 2013. Meinrad Abegg, Eidg. Forschungsanstalt für Wald, Schnee und Landschaft (WSL), Birmensdorf.	Forest, Other wooded land (OWL), Other land, ... of which with tree cover, Forest expansion, ...of which afforestation, ...of which natural expansion of forest, Deforestation, ... of which human induced, Reforestation, ...of which artificial reforestation	1983-2013	N/A
2	FAOSTAT	Inland Water Body, Area of Switzerland	N/A	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

1.2.2 Classification and definitions

National class	Definition
Forest	The Forest Definition depends on three variables derived from thematic airphoto interpretation Width: The width of the stocked part of the interpretation area is at least 25m. The shortest distance across the sample plot center is measured between one forest boundary line to another forest boundary line. The forest boundary line separates the forest area from the non –forest area. It encompasses all stocking elements. Crown coverage: The crown coverage of the stocked part of the interpretation area has to be larger than or equal to 20%. Exceptions are afforestation, regeneration, burned, cut, or storm damaged areas Dominant stand height: The stocking has to have a dominant stand height of 3m. Exceptions to the Rule include: afforestation, regeneration, burned, cut, or storm damaged areas
Shrub-forest	Same conditions as forest, but the crown cover of the interpretation area consists of more or equal to 2/3 of shrub species
...of which with tree cover	10% and not forest according to Swiss NFI definition. The minimum height for trees is 3 m." /> Area of “other land” with a tree cover > 10% and not forest according to Swiss NFI definition. The minimum height for trees is 3 m.
Non-forest	All areas that are not forest or shrub forest
Forest Expansion	Same as FRA.
... of which afforestation	Same as FRA.
... of which natural expansion of forest	Same as FRA.
Deforestation	Same as FRA, but with a different threshold of the tree cover, following the Swiss definition of “forest”.
... of which human induced	Same as FRA.

Reforestation	Same as FRA.
.. of which artificial reforestation	Same as FRA.

1.2.3 Original data

National classes	Area (1000 hectares)			
	1983-1985	1993-1995	2004-2006	2009-2013
Forest	1128	1166	1217	1239
Shrub forest	58	58	67	69
Non-Forest with tree cover > 10%	n.a.	n.a.	385	345
Non-Forest	2943	2904	2844	2820

Forest expansion and Deforestation:

National class	Inventory 1 (1984) to Inventory 3 (2005)	Inventory 3 (2005) to Inventory 4 (2011)
Forest expansion	114'473 ha	40'567 ha
Deforestation	25'345 ha	20'301 ha
Mean time between the two inventories.	21.05 years	5.24 years

National class	Inventory 2 (1994) to Inventory 3 (2005)	Inventory 3 (2005) to Inventory 4 (2011)
Forest expansion	795 ha	0
... of which afforestation.		
Deforestation	10'196 ha	7'497 ha
... of which human induced.		

Mean time between the two inventories.	10.97 years	5.24 years
Reforestation		
National class	Inventory 2 (1994) to Inventory 3 (2005)	
Vegetationsperioden	10.98 years	
Percentage of „natural reforestation“	7.3 %	
Percentage of „artificial reforestation“ (Anteil Pflanzung seit letzter Inventur an Normalwaldfläche)	0.624%	

1.3 Analysis and processing of national data

1.3.1 Adjustment

Source	Total land area (1000 ha)
FAOSTAT	4000

The national class Non-Forest is divided in the FAO classes land and inland water. Since the estimated country area of Switzerland from our NFI data matches the one from FAOSTAT, we simply split the National class Non-Forest into other land and inland water.

Non-forest (National class)– inland water (FAOSTAT) = other land

National classes	Area (1000 hectares)			
	1983-1985 (reference year 1984)	1993-1995 (reference year 1994)	2004-2006 (reference year 2005)	2009-2013 (reference year 2011)

Other land	2943 - 128 = 2815	2904 - 128 = 2776	2844 - 128 = 2716	2820-128=2692
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1.3.2 Estimation and forecasting

National classes	Area (1000 hectares)							
	1983-1985 (reference year 1984)	1993-1995 (reference year 1994)	2004-2006 (reference year 2005)	2009-2013 (reference year 2011)	1990	2000	2010	2015
Forest	1128	1166	1217	1239	1151	1194	1235	1254
Shrub forest	58	58	67	69	58	63	69	70
Other Land	2814	2776	2716	2692	2791	2743	2696	2676
... of which with tree cover	n.a.	n.a.	385	345	n.a.	418	352	318

The Estimate for the year 1990 was calculated using linear interpolation of the difference between data from reference date 1984 and reference date 1994. Similarly the estimate for the year 2000 and 2010 was calculated. The data for the year 2015 was forecasted by extrapolating the linear trend between 2005 and 2011.

The data for forest expansion and deforestation were calculated as follows: First the mean forest expansion/deforestation per year between the two inventories was calculated, dividing the area of forest expansion/deforestation by the mean time between the two inventories. We assigned the values to the years 1994.5 and 2008. Then the forecasting was done in the same way as described above.

Similarly was the data about “forest expansion ... of which afforestation” and “deforestation ... of which human induced” calculated from the figures of the years 1999.5 and 2008.

The figures on reforestation were calculated the following: Total forest area multiplied with the share of forest that were subject to reforestation between two inventories divided by the average time intervals.

National class	Annual reforestation between 1994 and 2005 (hectares / year)
Reforestation	$1217000 / 10.97 * (0.073+0.00624) = 8790.8$
.. of which artificial reforestation	$1217000 / 10.97 * 0.00624 = 692.3$

1.3.3 Reclassification

In this report, the class “forest” of the Swiss NFI is reported as “forest” and the “class shrub” forest of the Swiss NFI is reported as “other wooded land”.

1.4 Data

Table 1a

Categories		Area (000 hectares)				
		1990	2000	2005	2010	2015
	Forest	1151	1194	1217	1235	1254
	Other wooded land	58	63	67	69	70
	Other land	2791	2743	2716	2696	2676
	... of which with tree cover	N/A	418	385	352	318
	Inland water bodies	128	128	128	128	128
	TOTAL	4128.00	4128.00	4128.00	4128.00	4128.00

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	4.67	6.38	7.23	8.08	N/A	0	0	0
	... of which afforestation	N/A	0.07	0.03	0	N/A	0	0	0

	... of which natural expansion of forest	N/A	6.31	7.2	8.08	N/A	0	0	0
	Deforestation	0.31	2.29	3.28	4.27	N/A	0	0	0
	... of which human induced	N/A	0.96	1.25	1.55	N/A	0	0	0
	Reforestation	N/A	8.791	N/A	N/A	N/A	0	0	0
	... of which artificial	N/A	0.692	N/A	N/A	N/A	0	0	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"> • Forest • Other wooded land • Afforestation • Reforestation • Natural expansion of forest • Deforestation 	<p>Tier 3 : Data sources: Either recent (less than 10 years ago) National Forest Inventory or remote sensing, with ground truthing, or programme for repeated compatible NFIs</p> <p>Tier 2 : Data sources: Full cover mapping / remote sensing or old NFI (more than 10 years ago)</p> <p>Tier 1 : Other</p>	<p>Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status)</p> <p>Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status)</p> <p>Tier 1 : Other</p>

1.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trends
Forest	N/A	N/A
Other wooded land	N/A	N/A
Other land	N/A	N/A
Other land with tree cover	The area assessed for this category is 0.25 ha in size. To define the tree cover we found difficulties in outlining a precise definition.	N/A
Inland water bodies	N/A	N/A

Forest expansionof which afforestation: The definition of afforestation in this report is not the same as the “direct-human induced afforestations” as it is used under the Kyoto Protokoll. Further, for reporting and accounting Afforestations under the Kyoto Protokoll, Switzerland uses a different data source. Land-Use changes are derived from the Swiss Land Use Statistics (AREA) and not from the National Forest Inventory.	N/A
Deforestation	... of which human induced: The definition of deforestation in this report is not the same as the “human induced deforstations” as it is used under the Kyoto Protokoll. Further, for reporting and accounting deforestations under the Kyoto Protokoll, Switzerland uses a different data source. Land-Use changes are derived from the Swiss Land Use Statistics (AREA) and not from the National Forest Inventory.	N/A
Reforestation	The definition of reforestation in this report is not the same as the “reforestation” as it is used under the Kyoto Protokoll. Under the Kyoto Protocol, Switzerland does not report reforestations.	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 outside 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	SAEFL. Leaflets "Forest and wood in Switzerland"	Primary, modified natural	1995/1999	N/A

2	WSL, 2013: Schweizerisches Landesforstinventar LFI. Spezialauswertungen der Erhebungen 1983-85, 1993-95, 2004-06 und 2009 - 2013. August 2013. Meinrad Abegg, Eidg. Forschungsanstalt für Wald, Schnee und Landschaft (WSL), Birmensdorf.	Primary forest Other naturally regenerated forest ...of which of introduced species ...of which naturalized Planted forest ...of which of introduced species	2004-2006	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

2.2.2 Classification and definitions

National class	Definition
Primary	Same as FRA.
Natural regeneration	Same as FRA.
Artificial regeneration (planted)	Same as FRA.
Mixed regeneration (natural and artificial)	Both regeneration types occur in the stand.
Introduced species	Robinia pseudoacacia, Pinus nigra, Pinus strobus, Pseudotsuga menziesii, other introduces coniferous species, Quercus rubra, Populus sp (but not P. nigra, alba and tremula)., Aesculus hippocastanum, Liriodendron tulipifera which occur in the Swiss NFI are classified as introduced species.

2.2.3 Original data

National classes	Area (1000 hectares) 2004-2006
Primary forest	40
Other naturally regenerated	932
...of which of introduced species	1.99
... of which naturalized	1.19
Artificial regeneration	96
...of which of introduced species	2.59

Mixed regeneration	141
...of which of introduced species	1.59
... of which naturalized	0
Unknown	8
Total forest area	1217

2.3 Analysis and processing of national data

2.3.1 Adjustment

2.3.2 Estimation and forecasting

Only data from the inventory 2004 to 2006 is available. We adjusted the figures for 1990, 2000, 2010 and 2015 by the forest area given in T1. Only the area of primary forest was considered stable.

National classes	Area (1000 hectares)				
	1990	2000	2004-2006 (2005)	2010	2015
Primary forest	40	40	40	40	40
Other naturally regenerated	881	914	932	946	961
...of which of introduced species	1.9	2.0	2.0	2.0	2.1
... of which naturalized	1.1	1.2	1.2	1.2	1.2
Artificial regeneration	91	94	96	97	99
...of which of introduced species	2.8	2.9	3.0	3.0	3.0

Mixed regeneration	133	138	141	143	145
...of which of introduced species	1.5	1.6	1.6	1.6	1.6
... of which naturalized	0	0	0	0	0
Unknown	8	8	8	8	8
Total	1151	1194	1217	1235	1254

2.3.3 Reclassification

"Mixed regeneration" covers theoretically stands with a percentage of naturally regenerated forest from 1 to 99%. Therefore we assign half of the area of "mixed regeneration" to "naturally regenerated" forest. Forest where the origin of the trees is unknown is listed under "other naturally regenerated forest".

FRA classes	Area (1000 hectares)				
	1990	2000	2004-2006 (2005)	2010	2015
Other naturally regenerated forest	$881 + 133/2 + 8 = 955.5$	$914 + 138/2 + 8 = 991$	$932 + 141/2 + 8 = 1010.5$	$946 + 143/2 + 8 = 1025.5$	$961 + 145/2 + 8 = 1041.5$
...of which of introduced species	$1.9 + 1.5/2 = 2.65$	$2.0 + 1.6/2 = 2.8$	$2.0 + 1.6/2 = 2.8$	$2.0 + 1.6/2 = 2.8$	$2.1 + 1.6/2 = 2.9$
Planted forest	$91 + 133/2 = 157.5$	$94 + 138/2 = 163$	$96 + 141/2 = 166.5$	$97 + 143/2 = 168.5$	$99 + 145/2 = 171.5$
...of which of introduced species	$2.8 + 1.5/2 = 3.55$	$2.9 + 1.6/2 = 3.7$	$3.0 + 1.6/2 = 3.8$	$3.0 + 1.6/2 = 3.8$	$3.0 + 1.6/2 = 3.8$

2.4 Data

Table 2a

Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Primary forest	40	40	40	40	40
	Other naturally regenerated forest	954	991	1010	1026	1042
	... of which of introduced species	3	3	3	3	3
	... of which naturalized	1.1	1.2	1.2	1.2	1.2
	Planted forest	157	163	167	169	172
	... of which of introduced species	4	4	4	4	4
TOTAL		1151.00	1194.00	1217.00	1235.00	1254.00

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
0	0	0	0	0	0	0	0	0

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 3
Other naturally regenerated forest	Tier 3	Tier 1
Planted forest	Tier 3	Tier 1
Mangroves	Tier 3	Tier 3

Tier Criteria

Category	Tier for status	Tier for reported trend
Primary forest/Other naturally regenerated forest/Planted forest	<p>Tier 3 : 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>Tier 2 : Data sources: Full cover mapping/ remote sensing or old NFI (more than 10 years)</p> <p>Tier 1 : Other</p>	<p>Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status)</p> <p>Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status)</p> <p>Tier 1 : Other</p>

2.5 Comments

Category	Comments related to data definitions etc	Comments on reported trend
Primary forest	There are three known areas with primary forest: Bödmerenwald, Derborence and Scatlé. Additionally to these the area of forest which is not accessible by NFI fieldworkers was added.	The area of primary forest was considered to be stable in Switzerland.
Other naturally regenerating forest	The area of naturally regenerated forest, the area of forest, where the origin of the stand is unknown and half of the forest area, with mixed regeneration.	Since there is only data from one point in time, the figures were only adjusted to the area given in T1.
Planted forest	Forests with planted trees and half of the area of forest, with mixed regeneration.	See above.
Mangroves	In Switzerland mangroves do not exist.	N/A

Other general comments to the table

N/A

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	FOEN 2013: Switzerland's Greenhouse Gas Inventory 1990–2011, National Inventory Report 2013. Submission of 15 April 2013 to the United Nations Framework Convention on Climate Change. Federal Office for the Environment, Bern. Published on http://www.climatereporting.ch	Soil carbon	2013	N/A

2	WSL, 2013: Schweizerisches Landesforstinventar LFI. Spezialauswertungen der Erhebungen 1983-85, 1993-95, 2004-06 und 2009 - 2013. August 2013. Meinrad Abegg, Eidg. Forschungsanstalt für Wald, Schnee und Landschaft (WSL), Birmensdorf.	Growing stock Net annual increment; Above-ground biomass; Below-ground biomass; Dead wood Carbon in above-ground biomass; Carbon in below-ground biomass; Carbon in dead wood	1983-2013	NFI Switzerland.
3	Didion, M., Kaufmann, E., Thürig, E.; Estimation of carbon stocks and stock changes in soil, LFH layer and deadwood in Swiss forests with Yasso07. Available at http://www.bafu.admin.ch/climate-reporting/00545/01913/index.html?lang=en .	Carbon in liter	1990 - 2012	N/A
4	N/A	N/A	N/A	N/A

3.2.2 Classification and definitions

National class	Definition
Growing stock	Volume over bark of all living trees more than 12 cm in diameter at breast height. Includes the stem from ground level up to a top diameter of 0 cm. Branches are not included.
Above-ground biomass	All living biomass above the soil including stem, stump, branches, bark, seeds, and foliage of trees measuring at least 12 cm at breast height.
Below-ground biomass	All biomass of live roots of trees measuring at least 12 cm at breast height. Fine roots of less than 2mm 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. Dead wood includes wood lying on the surface, dead roots, and stumps larger than or equal to 7 cm in. If the dead wood is standing, the diameter of the trees is measuring more than 12 cm at breast height.
Carbon in above-ground biomass	Carbon in all living trees above the soil measuring at least 12 cm at breast height, including stem, stump, branches, bark, seeds, and foliage.
Carbon in below-ground biomass	Carbon in all roots of living trees measuring at least 12 cm at breast height.
Carbon in dead wood	Carbon of all non-living woody biomass not contained in the litter, either standing, lying on the ground. Dead wood includes wood lying on the surface, dead roots, and stumps larger than or equal to 7 cm in. If the dead wood is standing, the diameter of the trees is measuring more than 12 cm at breast height.

Carbon in litter	Carbon in litter is the sum of carbon in the soil horizons L (litter), F (fermentation) and H (humus).
Soil carbon	Organic carbon in mineral soils to a depth of 30 cm.

3.2.3 Original data

1.1.1				
National classes	Volume (cubic meters over bark per hectare)			
	Forest			
	1983-1985 (reference year 1984)	1993-1995 (reference year 1994)	2004-2006 (reference year 2005)	2009-2013 (reference year 2011)
Growing stock hectare	330	352	347	350
... of which coniferous	240	249	238	238
... of which broadleaved	90	103	109	112
National classes	Volume (cubic meters over bark per hectare)			
	Other wooded land			
	1983-1985 (reference year 1984)	1993-1995 (reference year 1994)	2004-2006 (reference year 2005)	2009-2013 (reference year 2011)
Growing stock hectare	n.a.	n.a.	9.9	9.9
... of which coniferous	n.a.	n.a.	8.9	8.8
... of which broadleaved	n.a.	n.a.	1.0	1.2
FRA 2010 category / Species name	Growing stock in forest (cubic meters per hectare)			

Rank	Scientific name	Common name	1983-1985 (reference year 1984)	1993-1995 (reference year 1994)	2004-2006 (reference year 2005)	2009-2013 (reference year 2011)
1 st	Picea abies	Norway spruce	161	166	153	154
2 nd	Fagus sylvatica	Common Beech	56	62	63	63
3 rd	Abies alba	Silver Fir	48	50	51	52
4 th	Larix decidua	European Larch	16	18	19	20
5 th	Fraxinus excelsior	Common Ash	9	11	13	14
6 th	Pinus sylvestris	Scotch Pine	11	11	10	10
7 th	Acer pseudoplatanus	Common Maple	6	8	9	8
8 th	Castanea sativa	Spanish chestnut	3	4	4	4
9 th	Quercus petraea	Sessile Oak	3	4	4	3
10 th	Quercus robur	Common Oak	3	3	3	3
Remaining			14	15	18	19
TOTAL			330	352	347	350

The given data was collected on accessible plots on the Swiss NFI Grid.

Net annual increment:

National class	Volume (unit see below)	
	Forest	
	Inventory 2 (1994) to Inventory 3 (2005)	Inventory 3 (2005) to Inventory 4 (2011)
Net annual increment on permanent accessible forest [m ³ /ha/y]	6.9327	7.556

... of which coniferous [m ³ /ha/y]	7.9283	8.471
... of which broadleaved [m ³ /ha/y]	5.9774	6.3911

Biomass:

The Biomass was calculated using country specific, single tree biomass expansion functions.

FRA 2010 category	Biomass (metric tonnes per hectare, oven-dry weight)		
	Forest		
	1993-1995 (1994)	2004 - 2006 (2005)	2009 - 2013 (2011)
Above-ground biomass	187.8	187.9	190.1
Below-ground biomass	49.3	50.2	50.8
Dead wood	n.a.	13.7	14.3

FRA 2010 category	Biomass (metric tonnes per hectare, oven-dry weight)		
	Other wooded land		
	1993-1995 (1994)	2004 - 2006 (2005)	2009 - 2013 (2011)
Above-ground biomass	n.a.	5.4	5.4
Below-ground biomass	n.a.	2.4	2.4
Dead wood	n.a.	1.4	0.8

Carbon in dead wood:

FRA 2010 category	Carbon (metric tonnes per hectare)	
	Forest	

	1993-1995 (1994)	2004 - 2006 (2005)	2009 - 2013 (2011)
Carbon in dead wood	n.a.	5.9	6.4

FRA 2010 category	Carbon (metric tonnes per hectare)		
	Other wooded land		
	1993-1995 (1994)	2004 - 2006 (2005)	2009 - 2013 (2011)
Carbon in dead wood	n.a.	0.6	0.3

Carbon in litter, soil carbon:

The values on “carbon in litter” and “soil carbon” were taken from the “Switzerland’s Greenhouse Gas Inventory 1990 – 2011” Table 7-23. The soil carbon was assumed to be constant, as shown in the same Report on p. 288. For the carbon in litter the same values were taken for forest and other wooded land.

Category	Carbon (metric tonnes per ha)									
	Forest					Other wooded land				
	1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
Carbon in litter	16.73	16.73	16.73	16.73	16.73	16.73	16.73	16.73	16.73	16.73
Soil carbon	79.93	79.93	79.93	79.93	79.93	79.93	79.93	79.93	79.93	79.93

3.3 Analysis and processing of national data

3.3.1 Adjustment

To get the total volume in million cubic meters over bark the hectare-value is multiplied with the area given in Table 1a (in million ha). It was assumed that the not accessible forest plots, according to a remote sensing decision, contain in average the same growing stock as the accessible plots.

National classes	Volume (million cubic meters over bark)			
	Forest			
	1983-1985 (reference year 1984)	1993-1995 (reference year 1994)	2004-2006 (reference year 2005)	2009-2013 (reference year 2011)
Growing stock hectare	330 * 1.128 = 372	352 * 1.166 = 410	347 * 1.217 = 422	350 * 1.239 = 434
... of which coniferous	240 * 1.128 = 270	249 * 1.166 = 290	238 * 1.217 = 289	238 * 1.239 = 295
... of which broadleaved	90 * 1.128 = 102	103 * 1.166 = 120	109 * 1.217 = 133	112 * 1.239 = 139

National classes	Volume (million cubic meters over bark)			
	Other wooded land			
	1983-1985 (reference year 1984)	1993-1995 (reference year 1994)	2004-2006 (reference year 2005)	2009-2013 (reference year 2011)
Growing stock hectare	n.a.	n.a.	9.9 * 0.067 = 0.66	9.9 * 0.069 = 0.68
... of which coniferous	n.a.	n.a.	8.9 * 0.067 = 0.6	8.8 * 0.069 = 0.61
... of which broadleaved	n.a.	n.a.	1.0 * 0.067 = 0.07	1.2 * 0.069 = 0.08

FRA 2010 category / Species name			Growing stock in forest (million cubic meters over bark)			
Rank	Scientific name	Common name	1983-1985 (reference year 1984)	1993-1995 (reference year 1994)	2004-2006 (reference year 2005)	2009-2013 (reference year 2011)
1 st	<i>Picea abies</i>	Norway spruce	161 * 1.128 = 182	166 * 1.166 = 194	153 * 1.217 = 186	154 * 1.237 = 190
2 nd	<i>Fagus sylvatica</i>	Common Beech	56 * 1.128 = 63	62 * 1.166 = 72	63 * 1.217 = 77	63 * 1.237 = 78
3 rd	<i>Abies alba</i>	Silver Fir	48 * 1.128 = 54	50 * 1.166 = 58	51 * 1.217 = 62	52 * 1.237 = 64

4 th	Larix decidua	European Larch	16 * 1.128 = 18	18 * 1.166 = 21	19 * 1.217 = 23	20 * 1.237 = 25
5 th	Fraxinus excelsior	Common Ash	9 * 1.128 = 10	11 * 1.166 = 13	13 * 1.217 = 16	14 * 1.237 = 17
6 th	Pinus sylvestris	Scotch Pine	11 * 1.128 = 12	11 * 1.166 = 13	10 * 1.217 = 12	10 * 1.237 = 12
7 th	Acer pseudoplatanus	Common Maple	6 * 1.128 = 7	8 * 1.166 = 9	9 * 1.217 = 11	8 * 1.237 = 10
8 th	Castanea sativa	Spanish chestnut	3 * 1.128 = 3	4 * 1.166 = 5	4 * 1.217 = 5	4 * 1.237 = 5
9 th	Quercus petraea	Sessile Oak	3 * 1.128 = 3	4 * 1.166 = 5	4 * 1.217 = 5	3 * 1.237 = 4
10 th	Quercus robur	Common Oak	3 * 1.128 = 3	3 * 1.166 = 3	3 * 1.217 = 4	3 * 1.237 = 4
Remaining			14 * 1.128 = 16	15 * 1.166 = 17	18 * 1.217 = 22	19 * 1.237 = 24
TOTAL			330 * 1.128 = 372	352 * 1.166 = 410	347 * 1.217 = 422	350 * 1.237 = 433

Biomass:

The total biomass in the forest area is calculated by multiplying the hectare-value with the area given in Table 1a (in million ha). It was assumed that the not accessible forest (other wooded land) plots, according to a remote sensing decision, contain in average the same biomass as the accessible plots.

The conversion of biomass to carbon was done according to the “Switzerland’s Greenhouse Gas Inventory 1990 – 2011” by multiplying the figures with the factor 0.5.

The values of carbon in litter and the soil carbon per hectare were multiplied with the forest area given in Table 1a.

3.3.2 Estimation and forecasting

Data for the years 1990, 2000 and 2010 were estimated using linear interpolation of the difference between data from the foregoing and the posterior reference date. The data for the year 2015 was forecasted by extrapolating the linear trend from the two foregoing reference dates.

Growing stock in forest

National classes	Volume (million cubic meters over bark)				
	Forest				
	1990	2000	2005	2010	2015
Growing stock hectare	395	417	422	432	442
... of which coniferous	282	290	289	294	298
... of which broadleaved	113	127	133	138	143

Growing stock in other wooded land

National classes	Volume (million cubic meters over bark)				
	Other wooded land				
	1990	2000	2005	2010	2015
Growing stock hectare	n.a.	0.64	0.67	0.68	0.69
... of which coniferous	n.a.	0.58	0.6	0.60	0.61
... of which broadleaved	n.a.	0.06	0.07	0.08	0.08

Growing stock of the 10 most common species

FRA 2010 category / Species name		Growing stock in forest (million cubic meters over bark)			
Rank	Scientific name	1990	2000	2005	2010
1 st	Picea abies	189	190	186	190

2 nd	Fagus sylvatica	68	75	77	78
3 rd	Abies alba	56	60	62	64
4 th	Larix decidua	20	22	23	25
5 th	Fraxinus excelsior	12	15	16	17
6 th	Pinus sylvestris	13	12	12	12
7 th	Acer pseudoplatanus	8	10	11	10
8 th	Castanea sativa	4	5	5	5
9 th	Quercus petraea	4	5	5	4
10 th	Quercus robur	3	4	4	4
Remaining		18	19	21	23
TOTAL		395	417	422	432

3.3.3 Reclassification

3.4 Data

Table 3a

Category		Growing stock volume (million m ³ over bark)									
		Forest					Other wooded land				
		1990	2000	2005	2010	2015	1990	2000	2005	2010	2015
	Total growing stock	395	417	422	432	442	N/A	0.64	0.67	0.68	0.69
	... of which coniferous	282	290	289	294	298	N/A	0.58	0.6	0.6	0.61

	... of which broadleaved	113	127	133	138	144	N/A	0.06	0.07	0.08	0.08
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Table 3b

Category/Species name			Growing stock in forest (million cubic meters)			
Rank	Scientific name	Common name	1990	2000	2005	2010
1 st	<i>Picea abies</i>	Norway spruce	189	190	186	190
2 nd	<i>Fagus sylvatica</i>	Common Beech	68	75	77	78
3 rd	<i>Abies alba</i>	Silver Fir	56	60	62	64
4 th	<i>Larix decidua</i>	European Larch	20	22	23	25
5 th	<i>Fraxinus excelsior</i>	Common Ash	12	15	16	17
6 th	<i>Pinus sylvestris</i>	Scotch Pine	13	12	12	12
7 th	<i>Acer pseudoplatanus</i>	Common Maple	8	10	11	10
8 th	<i>Castanea sativa</i>	Spanish chestnut	4	5	5	5
9 th	<i>Quercus petraea</i>	Sessile Oak	4	5	5	4
10 th	<i>Quercus robur</i>	Common Oak	3	4	4	4
Remaining			18	19	21	23
TOTAL			395.00	417.00	422.00	432.00

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)	12	N/A
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)	AG	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 ³ per hectare and year)				
		Forest				
		1990	2000	2005	2010	2015
	Net annual increment	N/A	7	7.3	7.7	8.1
	... of which coniferous	N/A	8	8.3	8.6	8.9
	... of which broadleaved	N/A	6	6.2	6.5	6.7

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	216	224	229	235	241	N/A	0.32	0.34	0.34	0.35
	Below ground biomass	56	60	61	63	64	N/A	0.13	0.13	0.14	0.14
	Dead wood	N/A	16	17	17	19	N/A	0.13	0.07	0.07	N/A
TOTAL		272.00	300.00	307.00	315.00	324.00	.00	.58	.54	.55	.49

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	108	112	114	118	120	N/A	0.16	0.17	0.17	0.18
	Carbon in below ground biomass	28	30	30.5	31.5	32	N/A	0.065	0.065	0.07	0.07
	<i>Subtotal Living biomass</i>	136	142	144.5	149.5	152	N/A	0.225	0.235	0.24	0.25

	Carbon in dead wood	N/A	7	7	8	8	N/A	0.05	0.04	0.02	0.01
	Carbon in litter	19	20	20	21	21	0.97	1.05	1.12	1.15	1.17
	<i>Subtotal Dead wood and litter</i>	N/A	27	27	29	29	N/A	1.1	1.16	1.17	1.18
	Soil carbon	92	95	97	99	100	4.64	5.04	5.36	5.52	5.6
TOTAL		247.00	264.00	268.50	277.50	281.00	5.61	6.36	6.76	6.93	7.03

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 1
Soil carbon	Tier 3	Tier 1

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	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other
<ul style="list-style-type: none"> • Carbon in above ground biomass • Carbon in below ground biomass • Carbon in dead wood and litter • Soil carbon 	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	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

3.5 Comments on growing stock biomass and carbon

Category	Comments related to data definitions etc	Comments on the reported trend
Total growing stock	The growing stock and its related variables consist only of trees from a DBH starting at 12 cm.	N/A
Growing stock of broadleaved coniferous	N/A	N/A
Growing stock composition	N/A	N/A
Net annual increment	The total NAI ist estimated on the area that ist permanently forest between two inventories. It is determined trough consecutive measurement of trees on permanent sample plots.	N/A
Above-ground biomass	The above-ground biomass is derived from the measurement of living trees with a minimum diameter of 12 cm at breast height.	N/A
Below-ground biomass	N/A	N/A

Dead wood	N/A	The forecast of dead wood might be to high. Because between the three measuring cycles of the Swiss NFI two larger storms affected Swiss forests. Because of these there was a strong increase of dead wood. The future trend is not clear, the volume of dead wood could be stable or could increase because of another storm. On the other hand, the estimation of dead wood (biomass or carbon) in other wooded land is very low and based only on two consecutive measurements. The extrapolation for the year 2015 is therefore very unstable, respectively makes no sense.
Carbon in above-ground biomass	N/A	N/A
Carbon in below-ground biomass	N/A	N/A
Carbon in dead wood	N/A	See comment on dead wood.
Carbon in litter	Carbon in litter ist reportet according to the swiss greenhouse gas inventory.	Since there is no information available on the carbon content in litter over time, the carbon in litter per hectare was assumed to be constant.
Soil carbon	Soil carbon is also reported as in the Swiss Greenhouse Gas Inventory.	See comment on carbon in litter.

Other general comments to the table

The data was collected on accessible plots. It was assumed that the not accessible forest has in average the same stands and so the same growing stock as the accessible forest. Although additional evaluations have shown that the growing stock on not accessible plots might be less than on accessible plots. Due to a change in the calculation procedure of the NFI data there are changes in the figures provided in previous reports.

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	WSL, 2013: Schweizerisches Landesforstinventar LFI. Spezialauswertungen der Erhebung 2004-06. August 2013. Meinrad Abegg. Eidg. Forschungsanstalt für Wald, Schnee und Landschaft (WSL), Birmensdorf.	primary designated function	2004-2006	Third NFI Switzerland.

2	Limacher S., Walker D. (2012), Nicht-Holz-Waldprodukte in der Schweiz. Aktualisierung der Daten und Weiterentwicklung der Erhebungsmethode im Hinblick auf die nationale und internationale Berichterstattung. Bericht erstellt im Auftrag des Bundesamtes für Umwelt BAFU, Bern, WaldKultur, Vitznau.	Value of NWFG	2010	estimations
3	Swiss forest statistic Swiss Federal Statistical Office (FSO) Neuchâtel http://www.agr.bfs.admin.ch/ReportFolders/ReportFolders.aspx	wood removals and woodfuel removals	1990 -2012	N/A
4	N/A	N/A	N/A	N/A

4.2.2 Classification and definitions

National class	Definition
Production forest	Same as FRA.
Multiple use forest	Same as FRA.
Total wood removals	Same as FRA. Figures are for wood measured under bark.
N/A	N/A

4.2.3 Original data

National classes	Area (1000 hectares)
	2004-2006 (2005)
Production (Holzproduktion)	371.68

4.3 Analysis and processing of national data

4.3.1 Adjustment

4.3.2 Estimation and forecasting

Production forest:

Only data from the inventory 2004 to 2006 is available. We adjusted the figures for 1990, 2000, 2010 and 2015 by the forest area given in T1.

National classes (English)	Area (1000 hectares)				
	1990	2000	2004-2006 (2005)	2010	2015
Production	352	365	372	377	383

4.3.3 Reclassification

4.4 Data

Table 4a

Categories		Forest area (000 hectares)				
		1990	2000	2005	2010	2015
	Production forest	352	365	372	377	383
	Multiple use forest	0	0	0	0	0

Table 4b

Rank	Name of product	Key species	Commercial value of NWFP removals 2010 (value 1000 local currency)	NWFP category
1 st	Honey	N/A	52000	11
2 nd	Wild meat	N/A	20000	12

3 rd	Mushrooms	N/A	11000	1
4 th	Christmas trees	Abies alba, picea abies	3600	6
5 th	Chest nuts (castanea sativa)	Castanea sativa	500	1
6 th	Decorative foliage, etc...	N/A	N/A	4
7 th	Pelts, hides, skins and trophies	N/A	N/A	10
8 th	Seeds	N/A	N/A	8
9 th	Medical plants	N/A	N/A	3
10 th	Fodder	N/A	N/A	2
TOTAL			87100.00	

2010	
Name of local currency	CHF, Swiss Francs

Category
Plant products / raw material
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
Animal products / raw material
9 Living animals
10 Hides skins and trophies
11 Wild honey and beewax

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 ³ u.b.)	
	Total wood removals	...of which woodfuel
1990	6332	879
1991	4607	786
1992	4553	845
1993	4407	836
1994	4679	858
1995	4749	833
1996	4064	853
1997	4486	940
1998	4276	800
1999	4736	980
2000	9238	1626
2001	5662	1122
2002	4557	991
2003	5120	1107
2004	5132	1148
2005	5284.6	1250.82
2006	5701.5	1417.03
2007	5520	1221.98
2008	4950.4	1194.89

2009	4701.8	1414.66
2010	4938	1498.65
2011	4861	1538.92

Tiers

Category	Tier for status	Tier for reported trend
Production forest	Tier 3	Tier 1
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	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

4.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Production forest	Same definition as FRA.	Since there is only data from on point in time, the figures were only adjusted to the area given in T1. In 2013/14 a new legally binding area of protective forest was defined, which caused a decline in forest area, which is primarily designated to production. So the trend given here is actually not correct.
Multiple use forest	In Switzerland there is always one forest function that is weighted more than the others. Hence there is no forest, that has no primary designated function, still most of the forest has multiple functions (besides general function as air cleaning etc.).	N/A

Total wood removals	The data in the prefilled table 4c (FAO) are wood removals under bark and don't correspond to the data from the national forest statistic but they are consistent with them. The definitions of the national forest statistic are sawlogs under bark, Pulpwood and Woodfuel over bark. (industrial roundwood = sawlog + pulpwood) ... of which woodfuel: The data in the prefilled table 4c (FAO) are wood under bark and don't correspond to the data from the national forest statistic but they are consistent with them. The data of Woodfuel removals in the national forest are wood over bark.	N/A
Commercial value of NWFP	The data are estimations. The products from the 6th to the 10th rank are still used to a certain extent, but to rarely, so that no figures about the amount exist.	Due to the data quality a trend can't be reported.

Other general comments to the table

In the third Swiss NFI the first time reliable data on forest functions were collected. Therefore data given in earlier reports might have changed.

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	WSL, 2013: Schweizerisches Landesforstinventar LFI. Spezialauswertungen der Erhebung 2004-06. August 2013. Meinrad Abegg. Eidg. Forschungsanstalt für Wald, Schnee und Landschaft (WSL), Birmensdorf.	Public recreation; Protection of soil and water; ...of which production; of clean water; ... of which avalanche control; ...of which erosion, flood protection or reducing flood risk; ...of which other	2004-2006	Third NFI Switzerland.
2	Losey, S. et Wehrli, A. 2013 Forêt protectrice en Suisse. Du projet SilvaProtect-CH à la forêt protectrice harmonisée. P. 29 et annexes. Federal Office for the Environment, Bern	Modelling of processes of natural hazards , such as Rockfall, landslides, avalanches and processes connected to water course.	2013	Accordin to the modelling of SilvaProtect.
3	Limacher S. Walker D. (2013) [unpublished]: Waldrelevantes Kulturerbe in der Schweiz – projet exploratif, WaldKultur, Vitznau	Cultural and spiritual values	N/A	Proposition how to get data in the future
4	N/A	N/A	N/A	N/A

5.2.2 Classification and definitions

National class	Definition
All categories	Same as FRA.
Public recreation	Same as FRA.
N/A	N/A
N/A	N/A

5.2.3 Original data

Categories	Forest area (1000 hectares)
	2004-2006 (2005)
...of which public recreation	21.68
Categories	Forest area (1000 hectares)

	2004-2006 (2005)
Protection of soil and water ¹⁾	578.07
...of which production of clean water	6.56
...of which coastal stabilization	0
... of which desertification control	0
... of which avalanche control	87.70
...of which erosion, flood protection or reducing flood risk	335.06
...of which other	119.71

5.3 Analysis and processing of national data

5.3.1 Adjustment

5.3.2 Estimation and forecasting

For the criteria "... of which public recreation" only data from the inventory 2004 to 2006 is available. We adjusted the figures for 1990, 2000, 2010 and 2015 by the forest area given in T1.

Only data from the inventory 2004 to 2006 is available. We adjusted the figures for 1990, 2000, 2010 and 2015 by the forest area given in T1.

5.3.3 Reclassification

5.4 Data

Table 5a

Categories	Forest area (1000 hectares)				
	1990	2000	2005	2010	2015

	Protection of soil and water	547	567	578	587	596
	... of which production of clean water	6	6	7	7	7
	... of which coastal stabilization	0	0	0	0	0
	... of which desertification control	0	0	0	0	0
	... of which avalanche control	83	86	88	89	90
	... of which erosion, flood protection or reducing flood risk	317	329	335	340	345
	... of which other (please specify in comments below the table)	113	117	120	121	123

Other

Rockfall and Landslides (small and large).

Table 5b

Categories	Forest area (1000 hectares)				
	1990	2000	2005	2010	2015
Ecosystem services, cultural or spiritual values					
...of which public recreation	21	21	22	22	22
...of which carbon storage or sequestration	N/A	N/A	N/A	N/A	N/A
...of which spiritual or cultural services	N/A	N/A	N/A	N/A	N/A
...of which other (please specify in comments below the table)	N/A	N/A	N/A	N/A	N/A

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 1

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	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other
<ul style="list-style-type: none"> • Cultural or spiritual values • Public recreation • Spiritual or cultural services • Other 	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	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

5.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Protection of soil and water	A different data source is used, than in former reports. Therefore this figure changed.	Even though the figure of the trends are based on one survey, it is expected, that they are reliable for the future, because they mainly base on a long term planning tool of the government. The trend for the past might not be correct, because the planning tool was established in 2013/14, so before that there was less forest with protection of soil and water.
Production of clean water	N/A	N/A
Coastal stabilization	There are no coasts in Switzerland.	N/A
Desertification control	There are no deserts in Switzerland.	N/A
Avalanche control	N/A	N/A
Erosion, flood protection or reducing flood risk	N/A	N/A
Other protective functions	Rockfall, landslide.	N/A

Ecosystem services, cultural or spiritual values	No data available, except recreation	No data available
Public recreation	N/A	N/A
Carbon storage or sequestration	No data available. Switzerland is accounting for the entire forest area under the Kyoto Protocol, so also 100% could be applicable.	No data available
Spiritual or cultural services	No data available	No data available
Other ecosystem services	No data available	No data available

Other general comments to the table

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	WSL, 2013: Schweizerisches Landesforstinventar LFI. Spezialauswertungen der Erhebung 2004-06. August 2013. Meinrad Abegg. Eidg. Forschungsanstalt für Wald, Schnee und Landschaft (WSL), Birmensdorf.	primary designated function, conservation of biodiversity	2004-2006	Third NFI Switzerland.
2	Swiss Federal Office for the Environment (FOEL) 2013: National database of forest reserves	N/A	status of 2012	N/A
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

6.2.2 Classification and definitions

National class	Definition
Conservation of biodiversity	Same as FRA.
N/A	N/A
N/A	N/A
N/A	N/A

6.2.3 Original data

Categories	Forest area (1000 hectares)
	2004-2006 (2005)
Conservation of biodiversity	67.42

6.3 Analysis and processing of national data

6.3.1 Adjustment

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6.3.2 Estimation and forecasting

Only data from the inventory 2004 to 2006 is available. We adjusted the figures for 1990, 2000, 2010 and 2015 by the forest area given in T1.

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	64	66	67	68	69
	Forest area within protected areas	N/A	N/A	N/A	58	58

Tiers

Category	Tier for status	Tier for reported trend
Conservation of biodiversity	Tier 3	Tier 1

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"> • Conservation of biodiversity • Forests within protected areas 	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	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

6.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Conservation of biodiversity	N/A	N/A
Forest area within protected areas	N/A	The area of forest within protected areas is expected to remain stable in the coming years.

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	WSL, 2013: Schweizerisches Landesforstinventar LFI. Spezialauswertungen der Erhebung 2004-06. August 2013. Meinrad Abegg. Eidg. Forschungsanstalt für Wald, Schnee und Landschaft (WSL), Birmensdorf.	Area affected by woody invasive species	2004-2006	Third NFI Switzerland.
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

Area affected by woody invasive species
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Up to now no *Rhus typhina* grew over the size of 12 cm dbh, to be visible in the Swiss NFI.

7.3 Analysis and processing of national data

7.3.1 Adjustment

Area affected by woody invasive species

7.3.2 Estimation and forecasting

7.3.3 Reclassification

7.4 Data

Table 7

Scientific name of woody invasive species	Forest area affected (000 ha)	
	2005	2010
<i>Rhus typhina</i>	0	0
N/A	N/A	N/A
Total	0	0

Tiers

Category	Tier for status	Tier for reported trend
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Invasive species	Tier 3	Tier 3
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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	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

7.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Invasive species	The area given is the area of forest, where woody invasive species dominate the other trees regarding the stock. Rhus typhina is the only species considered as woody invasive species by law.	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	Swissfire Database.	Number of fires, burned area	2003 - 2012	N/A
2	Meier, F. et al, 2013, Forstschutz-Überblick, WSL Berichte, Heft 2, Eidg. Forschungsanstalt WSL. S. 9.	Amount of wood affected by insects. Distribution area of <i>Chalara fraxinea</i> .	1990 - 2012	www.waldschutz.ch
3	Various sources, like "Wald und Holz".	Amount of wood affected by weather events.	1990 - 2012	N/A
4	WSL, 2013: Schweizerisches Landesforstinventar LFI. Spezialauswertungen der Erhebung 2004-06. August 2013. Meinrad Abegg. Eidg. Forschungsanstalt für Wald, Schnee und Landschaft (WSL), Birmensdorf.	Forest area, Volume per Hectar.	2005	N/A

8.2.2 Classification and definitions

National class	Definition
N/A	N/A
N/A	N/A

N/A	N/A
N/A	N/A

8.2.3 Original data

For the areas affected by insects and severe weather events, the amounts of wood affected (die-back) by these disturbances was used.

For the area affected by diseases the volume of all the *Fraxinus excelsior* in the affected area was taken.

8.3 Analysis and processing of national data

8.3.1 Adjustment

Since no data on the affected area is available, the area has to be derived from the volumes.

The total volumes of affected trees by weather events and insects was divided by the average volume of all trees per hectare in Switzerland. This leads to an area affected by these disturbances. Mathematically spoken: the forest area is weighted by the ratio of the hectare-volume of the affected trees and the hectare-volume of all trees.

Similarly the area affected by diseases was calculated. There the volume of all *fraxinus excelsior* in the distribution area of *chalara fraxinea* was taken. Dividing this by the estimated ratio of affected trees per stand lead to the total volume of affected trees. The area was calculated in the same way as the area affected by insects and weather.

8.3.2 Estimation and forecasting

Not necessary

8.3.3 Reclassification

Not necessary

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	N/A								
	... of which forest area burned	0.523	250	0.021	64	0.038	74	0.106	72	0.234	77
Category		2008		2009		2010		2011		2012	
		000 ha	#								
	Total land area burned	N/A	N/A								
	... of which forest area burned	0.036	51	0.041	63	0.024	59	0.167	92	0.021	58

Table 8b

Outbreak category	Description/name	Year(s) of latest outbreak	Area damaged (000 hectares)
3	Storm "Lothar"	1999	36.7
1	Ips typographus (affecting Picea abies)	2003	16
3	Storm "Vivian"	1990	14.4
1	Ips typographus (affecting Picea abies)	2001	7.2
1	Ips typographus (affecting Picea abies)	1991	4.2
1	Ips typographus (affecting Picea abies)	1995	1.9
3	Winterstorm	2003	1.2
3	Storm "Wilma"	1995	1
2	Chalara Fraxinea	2008	N/A
3	Drought	2003	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"> Insects Diseases Severe weather events 	Tier 2	Tier 2

Tier criteria

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

8.5 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Burned area	Forest fires are reported in Swissfire (National Database). Other wildland fires are not in the database, unless they affect forests at some point. Over the period 2003-2012 voluntarily reported wildland fires other than forest fires (Grassland & Non productive land) rise at about a further 25% of the total forest fire area burned over the same period.	N/A
Insects	Only events with an affected area greater than 1000 ha are listed. The area is estimated from figures about the volume of damaged trees.	Tier 2
Diseases	There are several diseases, of which Chalara fraxinea might be the severest at the moment. Up to now it did not cause a major die-back of fraxinus excelsior. The area could be estimated from figures about the volume of damaged trees.	Tier 1
Severe weather events	Only events with an affected area greater than 1000 ha are listed. The area is estimated from figures about the volume of damaged trees.	Tier 2

Other general comments to the table
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N/A

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	207.2

Tiers

Category	Tier for reported trend
Reduction in canopy cover	Tier 2

Tier criteria

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

Comments

Category	Comments related to data definitions etc
Reduction in canopy cover	The data prefilled data provided by the MODIS sensor is compared to national data very plausible.

Other general comments

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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 Policy 2020, published 2013: http://www.bafu.admin.ch/wald/01152/11490/index.html?lang=de	Policies ...	2013	N/A
2	Policy on wood resources, published 2008, with action plan 2009-2016: http://www.bafu.admin.ch/wald/01152/10307/index.html?lang=de Legislation: http://www.bafu.admin.ch/wald/11352/index.html?lang=en	Policies ...	2008	N/A
3	Federal Act on Forests, 1991	Legislation ...	1991	N/A
4	Forest Ordinance on Forests 1992	Legislation ...	1992	N/A
5	Responsible Governmental Organisation for Federal forest policies and legislation in Switzerland: Federal Department of the Environment, Transport, Energy and Communications (DETEC) - Federal Office for the Environment FOEN http://www.bafu	Policies ... Legislation ...	N/A	N/A

10.2.2 Classification and definitions

National class	Definition
N/A	N/A

10.2.3 Original data

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10.3 Data

Table 10

Category				
	National	Sub-national		
		Regional	Provincial/State	Local
Policies supporting sustainable forest management	yes		yes	yes
... of which, in <u>publicly</u> owned forests	yes		yes	yes
... of which, in <u>privately</u> owned forests	yes		yes	yes
Legislation and regulations supporting sustainable forest management	yes		yes	yes
... of which, in <u>publicly</u> owned forests	yes		yes	yes
... of which, in <u>privately</u> owned forests	yes		yes	yes

10.4 Comments

Variable / category	Comments related to data definitions etc
Policies supporting sustainable forest management	Regional does not apply for Switzerland
Legislation and regulations supporting sustainable forest management	Regional does not apply for Switzerland

Other general comments

In addition to the above given data sources there are 26 cantons with their own forest policies

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	Forum Wald (Forum on Forest)	permanent	Minutes of the meetings
2	Forum Holz (Forum on Wood)	permanent	Minutes of the meetings
3	IDANE Wald (Forum on international issues on forests)	permanent	Minutes of the meetings
4	N/A	N/A	N/A

Table 11

Is there a national platform that promotes or allows for stakeholder participation in forest policy development?	yes
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11.3 Comments

Category	Comments related to data definitions etc
National stakeholder platform	There are different Fora on issues on forests and wood. They meet several times per year. All relevant stakeholders are invited to provide opinions, suggestions, analysis, recommendations and other input into the development of national forest policy. Minutes of the meetings are provided to the participants by the hosting organisation, the Federal Office for the Environment, Forest Division.

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	Federal Act of 4 October 1991 on Forest: http://www.admin.ch/ch/e/rs/c921_0.html	Forest area intended to be in permanent forest land use ... of which permanent forest estate (sub-category)	N/A	In addition to that, there are 26 cantons with their own forest policies and legislation.
2	Ordinance of 30 November 1992 on Forest: http://www.admin.ch/ch/e/rs/c921_01.html	Forest area intended to be in permanent forest land use ... of which permanent forest estate (sub-category)	N/A	In addition to that, there are 26 cantons with their own forest policies and legislation.
3	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A

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

12.3.2 Estimation and forecasting

12.3.3 Reclassification

12.4 Data

Table 12

Categories		Forest area 2010 (000 ha)
	Forest area intended to be in permanent forest land use	1235
	... of which permanent forest estate	1235

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

12.5 Comments

Category	Comments related to data definitions etc
----------	--

Forest area intended to be in permanent forest land use	N/A
Permanent forest estate	According to Swiss forest act clearing of forest is not allowed. If clearing has to be done, the same area has to be afforested elsewhere as compensation.

Other general comments

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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	Forest Report 2005 http://www.bafu.admin.ch/publikationen/publikation/00767/index.html?lang=en	N/A	periodically	Next forest report is due 2015
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

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	2013	yes	yes	yes	no	yes	no
Other field assessments	N/A	N/A						
Updates to other sources	N/A	N/A						
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

Annual Reporting about key indicators: <http://www.bafu.admin.ch/publikationen/publikation/01693/index.html?lang=fr> Regular Reports on forests in Switzerland, focused on thematic topics: <http://www.bafu.admin.ch/publikationen/00025/index.html?lang=de&offset=0> Reporting on forest biodiversity indicators (monitoring of biodiversity): <http://www.biodiversitymonitoring.ch/en/data/indicators.html?thema=4&cHash=56a76bd50a24d11910903ead236c4d37>

13.4 Comments

Category	Comments
Forest inventory	On a subgrid of the NFI Plots there is a biodiversity monitoring.
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 (<i>sub-category</i>)	Forest management plan mainly focused on production
...of which for conservation (<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	WSL, 2013: Schweizerisches Landesforstinventar LFI. Spezialauswertungen der Erhebung 2004-06. December 2013. Meinrad Abegg. Eidg. Forschungsanstalt für Wald, Schnee und Landschaft (WSL), Birmensdorf.	Forest area with management plan	2004-2006	Third NFI Switzerland.
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	886
... of which for production	N/A
... of which for conservation	N/A

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	no
3 Social considerations community involvement	yes

Table 14c

Percent of area under forest management plan that is monitored annually	N/A
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Tiers

Category	Tier for status
Forest area with management plan	Tier 3
Percent of area under forest management plan that is monitored annually	N/A

Tier criteria

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

14.4 Comments

Category	Comments
Forest area with management plan	Forest area with management plan and/or within natural reserves with management plan. Forest area that has none of the two above, but regional planning is not shown.
... of which for production ... of which for conservation	Management plans are usually for multiple purposes so it is not possible to split up as proposed. Besides production, protection against natural hazards is an important issue in management plans in Switzerland. This is neither covered by production nor by conservation.
N/A	N/A

Other general comments

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Categories	Forest area (1000 hectares)
	2004-2006 (2005)
Forest area with management plan	872.94

Only data from the inventory 2004 to 2006 is available. We adjusted the figure for 2010 by the forest area given in T1.

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	no
3. Review of operations	yes

Tiers

Category	Tier for status
Type of stakeholder inputs	Tier 3

Tier criteria

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

15.2 Comments

Category	Comments
Type of stakeholder inputs in different phases	Note: these inputs are regulated differently in the 26 cantons (who are responsible for implementation on their territories. At national level inputs by stakeholders are provided to forest policy, not to forest management directly (there is no state forest at national level).
Documentation of stakeholder inputs	Exists in form of minutes at all levels where inputs are provided by stakeholders.
N/A	N/A

Other general comments

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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	0	499.368	652.079	674.101
	PEFC	0	0	0	0	356.593	432.645	453.024
	Other	0	0	0	0	0	0	0
		2007	2008	2009	2010	2011	2012	
	FSC	672.867	667.972	674.136	651.331	641.616	639.769	
	PEFC	449.395	461.959	444.429	421.838	397.2	385.657	
	Other	0	0	0	0	0	0	

Table 16b

Domestic forest management certification		Forest area (000 ha)						
		2000	2001	2002	2003	2004	2005	2006
	Q-Label	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	
	Q-Label	0	0	0	0	0	0	
		0	0	0	0	0	0	
		0	0	0	0	0	0	

Tier criteria

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

Tiers

Category	Tier for status
International forest management certification	Tier 1
Domestic 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	<ul style="list-style-type: none"> • Data source: Schweizerische Forststatistik, 2012, data available from 2004 on. • Due to forest areas with double certification (FSC and PEFC), the data in table 16a cannot simply be added to the total certified forest area of Switzerland.
Domestic forest management certification	The domestic certificate Q-Label is equivalent to the PEFC-certificate (if a Q-Label ist granted, automatically the PEFC-Label is granted as well) and is therefore not separately statistically evaluated. Hence, all the figures are incorporated under the international forest management certification.

Other general comments

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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"> • Goods : roundwood; sawnwood; biomass; woodbased panels; pulp and paper and non-wood forest products. • Services : 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.
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	FOEL, Federal office for the environment: "Annuaire 2011, La forêt et le bois Jahrbuch Wald und Holz 2011	N/A	2000, 2005, 2010	N/A
2	Intern annual reports: Federal Office for the Environment FOEN, Forest Division	N/A	2000, 2005, 2010	N/A
3	Federal Database ARAMIS: The ARAMIS information system contains information regarding research projects and assessments that are either run or funded by the Federal Administration.	N/A	N/A	The ARAMIS Web site: www.aramis.admin.ch
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	N/A

Public expenditure on forestry	256300	137600	117500
	2000	2005	2010
Name of Local Currency	Swiss Franc (CHF)	Swiss Franc (CHF)	Swiss Franc (CHF)

17.4 Comments

Category	Comments related to data definitions etc
Forest revenue	N/A
Public expenditure on forestry	Data include only the expenditures on forests made by the Federal Office for the Environment FOEN. In addition the 26 cantons are providing minimum same amount from their own cantonal budgets.
Other general comments	N/A

Other general comments

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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 (<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 (<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 (<i>sub-category</i>)	Forest owned by individuals and families.
...of which private business entities and institutions (<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 (<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	WSL, 2013: Schweizerisches Landesforstinventar LFI. Spezialauswertungen der Erhebungen 1983-85, 1993-95 und 2004-06. Dezember 2013. Meinrad Abegg. Eidg. Forschungsanstalt für Wald, Schnee und Landschaft (WSL), Birmensdorf.	Public owned Forest, private owned forest	2004-2006, 1993 – 1995, 1983 - 1985	Third NFI Switzerland.
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

18.2.2 Classification and definitions

National class	Definition
Public ownership: State ownership (Bund)	Same as FRA: Forest owned by the state.
Public ownership: Canton	Same as FRA: Forest owned by a canton, respectively “...owned by the state at the sub-national government scale”
Public ownership: Political community (Polit. Gemeinde)	Same as FRA: Forest owned by a political community (resident people), respectively “...owned by the state at the sub-national government scale”.
Private Ownership: Citizens community (Bürgergemeinde)	Same as FRA for local or indigenous community: Forest owned by a citizens community, school-, church-, poverty-community.
Private Ownership: Corporations (Korporation)	Same as FRA for corporations: Forest owned by a corporation or cooperative is mostly under public law, even if owned by private.
Private Ownership: Individual private ownership (Einzeleigentum)	Same as FRA ...
Private Ownership: Private business entities and institutions (Gesellschaft)	Same as FRA ...

18.2.3 Original data

1.1.1			
	1983-1985	1993-1995	2004-2006
Public ownership	295.1	307.2	328.9

...of which owned by the state at national scale	9.2	9.7	8.8
...of which owned by the state at the sub-national government scale	286	297.5	320.1
Private ownership	832.7	858.2	888.1
...of which owned by individuals	324	331.4	336.3
...of which owned by private business entities and institutions	132.6	137.0	149.1
...of which owned by local, tribal and indigenous communities	376	389.8	402.6
Unknown ownership	0	0.0	0.0

18.3 Analysis and processing of national data

18.3.1 Adjustment

18.3.2 Estimation and forecasting

Data for the year 1990 was estimated using linear interpolation of the difference between data from reference date 1984 and reference date 1994. Similarly the data for the year 2000 was estimated. The data for the year 2010 was forecasted using the same linear trend and was calibrated to the forest area shown in table 1.

18.3.3 Reclassification

Holder of management rights of public forests		
National classes	FRA classes	Area (1000 hectares)
		2005

State ownership (Bund)	Public administration	8+46 = 54
Canton (Staatswald)		
Political community (Polit. Gemeinden)	Communities	321 + 274 = 595
Citizens community (Bürgergemeinden)		
Private institutions (Übrige Öffentliche)	Private corporations and institutions	124
Other (Öffentliche gemischt)	Other	54
Public forestTotal		827

18.4 Data

Table 18a

Categories		Forest area (1000 hectares)			
		1990	2000	2005	2010
	Public ownership	302	319	329	337
	... of which owned by the state at national scale	10	9	9	8
	... of which owned by the state at the sub-national government scale	293	310	320	328
	Private ownership	849	875	888	898
	... of which owned by individuals	329	334	336	337
	... of which owned by private business entities and institutions	135	144	149	154

	... of which owned by local, tribal and indigenous communities	384	397	403	406
	Unknown ownership	0	0	0	0
TOTAL		1151.00	1194.00	1217.00	1235.00

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	Tier 3 : Estimate based on repeated compatible tiers 3 (tier for status) Tier 2 : Estimate based on repeated compatible tier 2 or combination tier 3 and 2 or 1 (tier for status) Tier 1 : Other

Table 18b - Holder of management rights of public forests

Categories	Forest area (000 hectares)			
	1990	2000	2005	2010
Public Administration	302	319	329	337
Individuals	0	0	0	0
Private companies	0	0	0	0
Communities	0	0	0	0
Other	0	0	0	0
TOTAL	302.00	319.00	329.00	337.00

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	The categories "State ownership", "canton" and "political community" of the Swiss NFI were assigned to "public ownership" according to the FRA Definition.	The changes of this category are mostly due to natural expansion of forest.
Private ownership	The categories "individual private ownership" and "private business entities and institutions" of the Swiss NFI were clearly assigned to "private ownership", whereas the first is assigned to be "owned by individuals" and the latter to be "owned by private business entities and institutions". The FRA categories "citizens community" and "corporations" are assigned to "private ownership" as well, in contrast to former reportings of FRA. Even though they are subject to public law, their character of ownership is private.	See above.
Unknown ownership	N/A	N/A
Management rights	There is no real transfer of management rights from the public administration to private persons or institutions.	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	Eidg. Betriebszählung, Bundesamt für Statistik	Employees in forest enterprises, independent contractors in forestry	1985, 1996, 2000, 2005	Roughly every five years
2	Bundesamt für Umwelt (BAFU), 2008: Jahrbuch Wald und Holz 2007	N/A	2007	N/A
3	Bundesamt für Umwelt (BAFU), 2012: Jahrbuch Wald und Holz 2012	N/A	2012	Last available data are from 2008, these were used for data on 2010 in table 19
4	N/A	N/A	N/A	N/A

19.2.2 Classification and definitions

National class	Definition
Employees in forest enterprises	The national class employees in forest enterprises matches the FRA class primary production of goods.
N/A	N/A
N/A	N/A
N/A	N/A

19.2.3 Original data

1.1.1

National class	Employment (person-years)			
	1985	1996	2000	2005
Employees in forest enterprises	6899	5272	4282	3302
Independent contractors in forestry	2405	1710	1748	1576

National class	Employment (person-years)			
	1990	1996	2000	2005
Employees in forest enterprises	6085	5272	4282	3302
Independent contractors in forestry	2057	1710	1748	1576
TOTAL	8142	6982	6030	4878

Data for the years 1990 was estimated using linear interpolation of the difference between data from 1985 and 1996. The data for the years 2000 and 2005 could be used directly.

19.3 Data

Table 19

Category		Employment (000 years FTE)			
		1990	2000	2005	2010
	Employment in forestry	8.142	6.03	4.981	4.881
	... of which female	N/A	N/A	0.24	0.26

19.4 Comments

Category	Comments related to data definitions etc	Comments on the reported trend
Employment in forestry	In the reported data, no clear line may be drawn between the percentage of employment in primary production of goods and other activities such as education or activities related to biodiversity...	After severe decreases in the previous reporting periods, the employment numbers have developed stable after 2005, total for both enterprises and contractors (with a slight decrease of 2%). The number of female employees were slightly rising, but are still low (0.5%).

Other general comments to the table

The data for 2005 have been corrected with the revised correct data.
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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)	356	Swiss Franc (CHF)	2011

20.3 Comments

Category	Comments
Gross value added from forestry (at basic prices)	Not included in this number are the the values of the protection function, the biodiversity function, the recreation function and the changes in the growing stock (no estimation of the values available by now).

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	Forest Policy 2020	Indicator and target value	2013	The Swiss Confederation's Forest Policy 2020 formulates provisions for the optimal coordination of the ecological, economic and social demands on the forest. It ensures sustainable forest management and creates favourable conditions for an efficient and innovative forestry and wood industry. The Forest Policy 2020 defines a total of eleven policy objectives including the conservation of forest area.
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	1239	1239

Table 21b

Category	Forest area (000 ha)
	2013
Forests earmarked for conversion	0

21.4 Comments

Category	Comments
Government target/aspiration for forest area	The target of the Confederation is, that forest area is conserved in its area and distribution. Nevertheless an increase of forest area is expected in the same range as being observed in the last years (0.5% per year), specially due to the abandonment of alps due to economic difficulties in mountain agriculture. The value given ist the most recent forest area in Switzerland (2011).
Forests earmarked for conversion	In average each year about 137 ha of forest area are converted for individual infrastructure projects. 94% of these forest area ist compensated with forest area, the rest (6%) is compensated with promotion measures for nature and landscape.

Other general comments

Table 21a		
FRA 2015 Category	Forest area (000 ha)	
	2020	2030
Government target/aspiration for forest area	Miniumum: area according to National Forest Inventory 3	Forest area is conserved in its area and distribution