



Food and Agriculture
Organization of the
United Nations

Global Forest Resources Assessment 2020

Desk Study

Bosnia and Herzegovina

Rome, 2020



FAO has been monitoring the world's forests at 5 to 10 year intervals since 1946. The Global Forest Resources Assessments (FRA) are now produced every five years in an attempt to provide a consistent approach to describing the world's forests and how they are changing. The FRA is a country-driven process and the assessments are based on reports prepared by officially nominated National Correspondents. If a report is not available, the FRA Secretariat prepares a desk study using earlier reports, existing information and/or remote sensing based analysis.

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Introduction

Introductory text

No report has been received from the Bosnia and Herzegovina. This report is the result of a desk study prepared by the UNECE/FAO, which is based on the existing available information using the established FRA 2020 format.

1 Forest extent, characteristics and changes

1a Extent of forest and other wooded land

National Data

Data sources + type of data source eg NFI, etc

Agency for Statistics of Bosnia and Herzegovina

FRA 2015

National classification and definitions

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Original data

Original data are given in the table 1a for the years: 2010, 2015, 2016 and 2017.

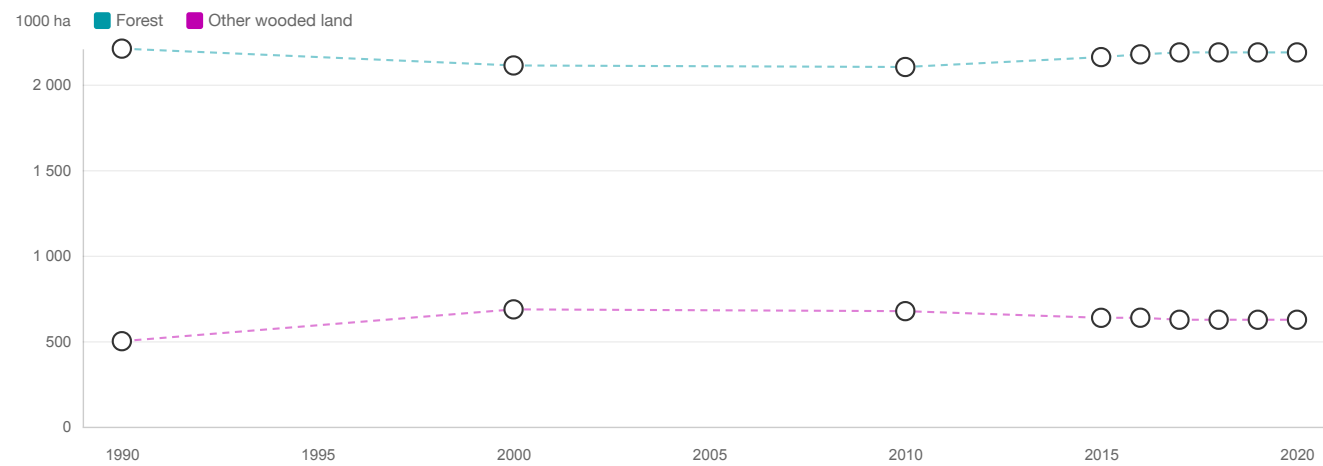
Analysis and processing of national data

Estimation and forecasting

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Reclassification into FRA 2020 categories

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FRA categories	Area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Forest (a)	2 210.00	2 111.65	2 102.66	2 160.50	2 176.51	2 187.91	2 187.91	2 187.91	2 187.91
Other wooded land (a)	500.00	685.99	675.60	636.64	637.13	625.37	625.37	625.37	625.37
Other land (c-a-b)	2 410.00	2 322.36	2 341.74	2 322.86	2 306.36	2 306.72	2 306.72	2 306.72	2 306.72
Total land area (c)	5 120.00	5 120.00	5 120.00	5 120.00	5 120.00	5 120.00	5 120.00	5 120.00	5 120.00

The FAOSTAT land area figure for the year 2015 is used for all reference years

Climatic domain	% of forest area 2015	Override value
Boreal	0.00	
Temperate	94.00	
Sub-tropical	6.00	
Tropical	0.00	

Comments

Data for 1990 are taken from FRA 2015.

Data for 2010, 2015, 2016 and 2017 are original data from Agency for Statistics of Bosnia and Herzegovina.

2017 data are repeated for 2018, 2019 and 2020.

1b Forest characteristics

National Data

Data sources + type of data source eg NFI, etc

UNECE, Environmental Performance Reviews, Bosnia and Herzegovina, 3rd Review, 2018 - Chapter 12: Forestry and environment

National classification and definitions

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Original data

Forest cultures in FBiH 62987 ha (2016)

Forest cultures in RS 56321 ha (2015)

Analysis and processing of national data

Estimation and forecasting

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Reclassification into FRA 2020 categories

Forest cultures = Other planted forests

Naturally regenerating forest = Total forest area - Forest cultures



FRA categories	Forest area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest (a)				2 041.19	2 057.20				
Planted forest (b)	–	–	–	119.31	119.31	–	–	–	–
Plantation forest				0.00	0.00				
...of which introduced species				0.00	0.00				
Other planted forest				119.31	119.31				
Total (a+b)	–	–	–	2 160.50	2 176.51	–	–	–	–
Total forest area	2 210.00	2 111.65	2 102.66	2 160.50	2 176.51	2 187.91	2 187.91	2 187.91	2 187.91

Comments

1c Primary forest and special forest categories

National Data

Data sources + type of data source eg NFI, etc

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National classification and definitions

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Original data

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Analysis and processing of national data

Estimation and forecasting

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Reclassification into FRA 2020 categories

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FRA categories	Area (1000 ha)				
	1990	2000	2010	2015	2020
Primary forest					
Temporarily unstocked and/or recently regenerated					
Bamboos	0.00	0.00	0.00	0.00	0.00
Mangroves	0.00	0.00	0.00	0.00	0.00
Rubber wood	0.00	0.00	0.00	0.00	0.00

Comments

1d Annual forest expansion, deforestation and net change

National Data

Data sources + type of data source eg NFI, etc

Institute for Statistics of Federation BiH, Statistical Yearbooks: <http://fzs.ba/index.php/publikacije/statisticki-godisnjaciljetopisi/>

Institute of Statistics of Republic Srpska, Statistical Yearbooks: <http://www.rzs.rs.ba/front/category/8/?page=1>

National classification and definitions

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Original data

Year	Artificial afforestation outside forests Republic Srpska (ha)	Artificial afforestation outside forests Federation BiH (ha)	Total (ha)
2017	114	189	303
2016	175	425	600
2015	189	171	360
2014	112	215	327
2013	102	209	311
2012	210	202	412
2011	151	418	569
2010	365	329	694
2009	307	316	623
2008	377	520	897
2007	372	596	968
2006	386	672	1058
2005	248	524	772
2004	230	413	643
2003	204	576	780
2002	233	616	849
2001	443	636	1079
2000	322	595	917
1999	244	601	845
1998	197	n/a	n/a

Analysis and processing of national data

Estimation and forecasting

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Reclassification into FRA 2020 categories

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FRA categories	Area (1000 ha/year)			
	1990-2000	2000-2010	2010-2015	2015-2020
Forest expansion (a)				
...of which afforestation		0.86	0.46	0.42
...of which natural expansion				
Deforestation (b)				
Forest area net change (a-b)	-9.84	-0.90	11.57	5.48

Comments

1e Annual reforestation

National Data

Data sources + type of data source eg NFI, etc

Institute for Statistics of Federation BiH, Statistical Yearbooks: <http://fzs.ba/index.php/publikacije/statisticki-godisnjaciljetopisi/>

Institute of Statistics of Republic Srpska, Statistical Yearbooks: <http://www.rzs.rs.ba/front/category/8/?page=1>

National classification and definitions

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Original data

Afforestation in forest (ha)			
Year	Republic Srpska	Federation BiH	Total
2017	538	962	1500
2016	468	1188	1656
2015	628	957	1585
2014	499	1147	1646
2013	570	358	928
2012	708	805	1513
2011	1102	940	2042
2010	787	891	1678
2009	801	997	1798
2008	1247	1528	2775
2007	1177	1498	2675
2006	1230	1586	2816
2005	1239	1679	2918
2004	1186	1464	2650
2003	1257	1694	2951
2002	1281	1517	2798
2001	986	1952	2938
2000	880	2110	2990
1999	1168	1901	3069
1998	1078	n/a	n/a

Analysis and processing of national data

Estimation and forecasting

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Reclassification into FRA 2020 categories

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FRA categories	Area (1000 ha/year)			
	1990-2000	2000-2010	2010-2015	2015-2020
Reforestation		2.73	1.56	2.58

Comments

1f Other land with tree cover

National Data

Data sources + type of data source eg NFI, etc

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National classification and definitions

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Original data

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Analysis and processing of national data

Estimation and forecasting

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Reclassification into FRA 2020 categories

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FRA categories	Area (1000 ha)				
	1990	2000	2010	2015	2020
Palms (a)					
Tree orchards (b)					
Agroforestry (c)					
Trees in urban settings (d)					
Other (specify in comments) (e)					
Total (a+b+c+d+e)	–	–	–	–	–
Other land area	2 410.00	2 322.36	2 341.74	2 322.86	2 306.72

Comments

2 Forest growing stock, biomass and carbon

2a Growing stock

National Data

Data sources + type of data source eg NFI, etc

UNECE, Environmental Performance Reviews, Bosnnia and Herzegovina, 3rd Review, 2018 - Chapter 12: Forestry and environment

FRA 2015, SoEF 2015

National classification and definitions

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Original data

Forest growing stock and increment in Republic Srpska, 2015 (m³)					
	Stock	Increment			
High forests with natural regeneration	180.722.124	4.568.542			
High degraded forests	4.003.832	86.657			
Forest cultures	8.792.053	478.873			
Coppices	44.844.749	1.679.003			
Total	238.362.758	6.813.075			

Growing stock in the Federation BiH, 2015					
	Coniferous (m³)	Broadlleaf (m³)	Total (m³)	m³/ha	%
High forests	62.058.507	77.317.639	139.376.146	243.3	86.4
Coppice forests	0	21.918.206	21.918.206	85.2	13.6
Total	62.058.507	99.235.845	161.294.352	192.4	100

Annual increment of forests in the Federation BiH, 2015					
	Coniferous (m³)	Broadlleaf (m³)	Total (m³)	m³/ha	%
High forests	1.875.274	1.712.155	3.587.429	6.26	81.2
Coppice forests	0	831.524	831.524	3.23	18.8
Total	1.875.274	2.543.679	4.418.953	5.27	100

Analysis and processing of national data

Estimation and forecasting

Data for total growing stock in 1990, 2000 and 2010 are taken from SoEF 2015.

Data for total growing stock in 2015 are taken from EPR (see Original data).

Data for 2015 growing stock are repeated for 2016 - 2020.

Reclassification into FRA 2020 categories

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FRA categories	Growing stock m³/ha (over bark)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest				191.49	191.43				
Planted forest				73.67	73.67				
...of which plantation forest				0.00	0.00				
...of which other planted forest				73.67	73.67				
Forest	131.67	169.54	185.15	184.98	184.98	184.98	184.98	184.98	184.98
Other wooded land									

FRA categories	Total growing stock (million m³ over bark)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest				390.87	393.82				
Planted forest				8.79	8.79				
...of which plantation forest				0.00	0.00				
...of which other planted forest				8.79	8.79				
Forest	291.00	358.00	389.31	399.66	402.61	404.72	404.72	404.72	404.72
Other wooded land									

Comments

Wood and timber are the primary products of forest management in BiH. Like the underestimation of forest area using old inventory data, this also holds true for quantities of growing stock and carbon stock. New NFI data speak of a growing stock of 435 million m³ in BiH, amounting to 201 m³ per ha. In total, this means that growing stock is expected to be 23 percent higher than officially reported, e.g. in Global Forest Resource Assessment GFRA, 2010.

Source: FAO Regional Office for Europe and Central Asia: Analysis of the Forest Sector in Bosnia and Herzegovina EU funded project “Preparation of IPARD Forest and Fisheries Sector Reviews in Bosnia and Herzegovina” (data refers to 2009)

2b Growing stock composition

National Data

Data sources + type of data source eg NFI, etc

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National classification and definitions

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Original data

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Analysis and processing of national data

Estimation and forecasting

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Reclassification into FRA 2020 categories

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FRA categories	Scientific name	Common name	Growing stock in forest (million m³ over bark)				
			1990	2000	2010	2015	2020
Native tree species							
#1 Ranked in terms of volume							
#2 Ranked in terms of volume							
#3 Ranked in terms of volume							
#4 Ranked in terms of volume							
#5 Ranked in terms of volume							
#6 Ranked in terms of volume							
#7 Ranked in terms of volume							
#8 Ranked in terms of volume							
#9 Ranked in terms of volume							
#10 Ranked in terms of volume							
Remaining native tree species							
Total volume of native tree species			–	–	–	–	–
Introduced tree species							
#1 Ranked in terms of volume							
#2 Ranked in terms of volume							
#3 Ranked in terms of volume							
#4 Ranked in terms of volume							
#5 Ranked in terms of volume							
Remaining introduced tree species							
Total volume of introduced tree species			–	–	–	–	–
Total growing stock			–	–	–	–	–

Comments

2c Biomass stock

National Data

Data sources + type of data source eg NFI, etc

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National classification and definitions

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Original data

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Analysis and processing of national data

Estimation and forecasting

Insert the percentages of Growing stock by IPCC forest type for each of the FRA forest categories									
IPCC forest types	FRA forest categories								
	Naturally regenerating forest	Plantation forest	Other planted forest						
	% of Growing stock								
Broadleaved	54%	0%	0%						
Pine	4%	0%	0%						
Other coniferous	36%	0%	6%						
	94%	0%	6%	Must add up to 100%					
Insert Carbon fraction used by country (IPCC default = 0.47)									
Carbon Fraction	47%								
Biomass conversion and expansion factors (BCEF)									
Naturally regenerating forest	1990	2000	2010	2015	2016	2017	2018	2019	2020
Broadleaved				1,05	1,05				
Pine				0,70	0,70				
Other coniferous				0,75	0,75				

Plantation forest									
Broadleaved				3,00	3,00				
Pine				1,80	1,80				
Other coniferous				3,00	3,00				
Other planted forest									
Broadleaved				1,40	1,40				
Pine				0,75	0,75				
Other coniferous				1,00	1,00				
Weighted BCEF									
Naturally regenerating forest				0,86	0,86				
Plantation forest									
Other planted forest				0,06	0,06				
Root-shoot ratios									
Naturally regenerating forest	1990	2000	2010	2015	2016	2017	2018	2019	2020
Broadleaved				0,24	0,24				
Pine				0,20	0,20				
Other coniferous				0,20	0,20				
Plantation forest									
Broadleaved				0,46	0,46				
Pine				0,40	0,40				
Other coniferous				0,40	0,40				
Other planted forest									
Broadleaved				0,46	0,46				
Pine				0,40	0,40				
Other coniferous				0,40	0,40				
Weighted RS ratio									
Naturally regenerating forest				0,21	0,21				
Plantation forest									
Other planted forest				0,02	0,02				

Above-ground biomass (t/ha)									
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest				165,24	165,18				
Plantation forest				0,00	0,00				
Other planted forest				4,42	4,42				
Total				156,36	156,37				
Below-ground biomass (t/ha)									
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest				34,53	34,52				
Plantation forest				0,00	0,00				
Other planted forest				0,11	0,11				
Total				32,63	32,64				

Reclassification into FRA 2020 categories

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FRA categories	Forest biomass (tonnes/ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Above-ground biomass				156.36	156.37				
Below-ground biomass				32.63	32.64				
Dead wood									

Comments

The first calculations following the procedures of the FAO Global Forest Resource Assessment for the BiH country report 2010 confirm that biomass and carbon stock are higher than suggested in officially reported data; that is, 23 percent for biomass and 16 percent for carbon stock as compared to internationally reported data.

	Biomass	Carbon
	Million tonnes	Million tonnes
Above-ground	306.13	143.88
Below-ground	91.84	43.16
Total 2009	397.97	187.05

Source: FAO Regional Office for Europe and Central Asia: Analysis of the Forest Sector in Bosnia and Herzegovina EU funded project “Preparation of IPARD Forest and Fisheries Sector Reviews in Bosnia and Herzegovina” (data refers to 2009)

2d Carbon stock

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

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Reclassification into FRA 2020 categories

-

FRA categories	Forest carbon (tonnes/ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Carbon in above-ground biomass				73.49	73.49				
Carbon in below-ground biomass				15.34	15.34				
Carbon in dead wood									
Carbon in litter									
Soil carbon									

Soil depth (cm) used for soil carbon estimates	
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Comments

The first calculations following the procedures of the FAO Global Forest Resource Assessment for the BiH country report 2010 confirm that biomass and carbon stock are higher than suggested in officially reported data; that is, 23 percent for biomass and 16 percent for carbon stock as compared to internationally reported data.

	Biomass	Carbon
	Million tonnes	Million tonnes
Above-ground	306.13	143.88
Below-ground	91.84	43.16
Total 2009	397.97	187.05

Source: FAO Regional Office for Europe and Central Asia: Analysis of the Forest Sector in Bosnia and Herzegovina EU funded project “Preparation of IPARD Forest and Fisheries Sector Reviews in Bosnia and Herzegovina” (data refers to 2009)

3 Forest designation and management

3a Designated management objective

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

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Original data

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Analysis and processing of national data

Estimation and forecasting

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Reclassification into FRA 2020 categories

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Primary designated management objective

FRA 2020 categories	Forest area (1000 ha)				
	1990	2000	2010	2015	2020
Production (a)					
Protection of soil and water (b)					
Conservation of biodiversity (c)					
Social Services (d)					
Multiple use (e)					
Other (specify in comments) (f)					
None/unknown (g)	2 210.00	2 111.65	2 102.66	2 160.50	2 187.91
Total forest area	2 210.00	2 111.65	2 102.66	2 160.50	2 187.91

Total area with designated management objective

FRA 2020 categories	Forest area (1000 ha)				
	1990	2000	2010	2015	2020
Production					
Protection of soil and water					
Conservation of biodiversity					
Social Services					
Other (specify in comments)					

Comments

3b Forest area within protected areas and forest area with long-term management plans

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

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Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Forest area within protected areas									
Forest area with long-term forest management plan									
...of which in protected areas									

Comments

4 Forest ownership and management rights

4a Forest ownership

National Data

Data sources + type of data source eg NFI, etc

Agency for Statistics of Bosnia and Herzegovina

FRA 2015

National classification and definitions

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Original data

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Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

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FRA categories	Forest area (1000 ha)			
	1990	2000	2010	2015
Private ownership (a)	403.00	555.22	555.22	571.42
...of which owned by individuals				
...of which owned by private business entities and institutions				
...of which owned by local, tribal and indigenous communities				
Public ownership (b)	1 807.00	1 556.43	1 547.44	1 589.08
Unknown/other (specify in comments) (c)	0.00	0.00	0.00	0.00
Total forest area	2 210.00	2 111.65	2 102.66	2 160.50

Comments

Data for 1990 are taken from FRA 2015.

Data for 2000, 2010 and 2015 are data from Agency for Statistics of Bosnia and Herzegovina

4b Holder of management rights of public forests

National Data

Data sources + type of data source eg NFI, etc

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National classification and definitions

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Original data

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Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

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FRA categories	Forest area (1000 ha)			
	1990	2000	2010	2015
Public Administration (a)				
Individuals (b)				
Private business entities and institutions (c)				
Local, tribal and indigenous communities (d)				
Unknown/other (specify in comments) (e)	1 807.00	1 556.43	1 547.44	1 589.08
Total public ownership	1 807.00	1 556.43	1 547.44	1 589.08

Comments

5 Forest disturbances

5a Disturbances

National Data

Data sources + type of data source eg NFI, etc

Institute for Statistics of Federation BiH, Statistical Yearbooks: <http://fzs.ba/index.php/publikacije/statisticki-godisnjaciljetopisi/>

Institute of Statistics of Republic Srpska, Statistical Yearbooks: <http://www.rzs.rs.ba/front/category/8/?page=1>

National classification and definitions

-

Original data

Year	Damages in Republic Srpska, state forests only (000m ³)				Damages in Federation BiH (m ³)			
	Human factor	Insects	Natural inclemencies	Plant diseases	Man	Insects	Natural disasters	Plant disease
2017	24	91	103	2	63837	4080	31450	n/a
2016	24	132	127	6	74093	5431	16927	n/a
2015	29	96	108	6	65332	3447	19939	n/a
2014	26	82	146	5	70199	6276	32449	n/a
2013	73	60	101	20	77044	10210	13762	n/a
2012	89	45	59	3	82890	602	4563	-
2011	25	48	17	1	87584	-	2320	-
2010	17	57	106	2	66632	1270	8342	-
2009	18	29	76	2	61996	6904	7534	-
2008	17	90	88	3	60857	21181	9646	-
2007	15	82	63	3	50382	37411	5409	-
2006	21	92	95	2	39497	56124	-	-
2005	23	131	39	2	54788	45160	7867	615
2004	25	149	40	2	45580	52224	9078	-
2003	26	84	35	4	55871	19060	38826	408
2002	23	128	68	5	60742	5726	1646	32825
2001	19	115	65	3	45831	32196	3391	-
2000	25	105	167	2	53791	16802	86515	250
1999	22	189	32	4	63217	29396	15282	921
1998	34	13	13	-	n/a	n/a	n/a	n/a

For 1999-2012, damages in FBiH are shown without data for private forests in few municipalities for Hercegovачko-neretvanski canton.

For 2013-2017, damages in FBiH, data on private forests in the Zapadnohercegovački kanton are incomplete.

Analysis and processing of national data

Estimation and forecasting

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Reclassification into FRA 2020 categories

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FRA categories	Area (1000 ha)																	
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Insects (a)																		
Diseases (b)																		
Severe weather events (c)																		
Other (specify in comments) (d)																		
Total (a+b+c+d)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Total forest area	2 111.65	–	–	–	–	–	–	–	–	–	2 102.66	–	–	–	–	2 160.50	2 176.51	2 187.91

Comments

5b Area affected by fire

National Data

Data sources + type of data source eg NFI, etc

Institute for Statistics of Federation BiH, Statistical Yearbooks: <http://fzs.ba/index.php/publikacije/statisticki-godisnjaciljetopisi/>

Institute of Statistics of Republic Srpska, Statistical Yearbooks: <http://www.rzs.rs.ba/front/category/8/?page=1>

National classification and definitions

-

Original data

Year	Forest fires RS (ha)	Forest fires FBiH (ha)	Total forest fires (ha)
2017	22977	17986	40963
2016	3860	4122	6982
2015	5804	3662	9466
2014	290	589	879
2013	415	2217	2632
2012	33781	34901	68682
2011	20312	4960	25272
2010	1698	441	2139
2009	1281	1166	2447
2008	5646	2168	7814
2007	8279	7747	16026
2006	2224	1687	3911
2005	360	739	1099
2004	1391	727	2118
2003	18942	16845	35787
2002	1426	1336	2762
2001	5066	1449	6515
2000	8064	22756	30820
1999	57	706	763
1998	4295	n/a	n/a

Analysis and processing of national data

Estimation and forecasting

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Reclassification into FRA 2020 categories

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FRA categories	Area (1000 ha)																	
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Total land area affected by fire																		
...of which on forest	30.82	6.52	2.76	35.79	2.12	1.10	3.91	16.03	7.81	2.45	2.14	25.27	68.68	2.63	0.88	9.47	6.98	40.96

Comments

5c Degraded forest

Does your country monitor area of degraded forest		No
If "yes"	What is the national definition of "Degraded forest"?	
	Describe the monitoring process and results	

Comments

6 Forest policy and legislation

6a Policies, Legislation and national platform for stakeholder participation in forest policy

National Data

Data sources + type of data source eg NFI, etc

FAO Regional Office for Europe and Central Asia: Analysis of the Forest Sector in Bosnia and Herzegovina EU funded project “Preparation of IPARD Forest and Fisheries Sector Reviews in Bosnia and Herzegovina”, 2015

National classification and definitions

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Original data

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Indicate the existence of	Boolean (Yes/No)	
	National	Sub-national
Policies supporting SFM	No	
Legislations and regulations supporting SFM	No	
Platform that promotes or allows for stakeholder participation in forest policy development	No	
Traceability system(s) for wood products		

Comments

In forestry, the Constitution of BiH transfers competences to entity level (FBiH and RS) and Brčko district. The institutions at the two entities and Brčko district levels are responsible for drafting and implementing forest policy and legislation. In the FBiH, these responsibilities are even more decentralized down to cantonal level. Part III. Of the Constitution of FBiH (Division of responsibilities between the Federation and the cantons) describes that the Federation (among other responsibilities) shall have exclusive responsibility for economic policy and land use policy at FBiH level, but both the Federation Government and the Cantons shall have responsibilities for environmental policy and use of natural resources. As appropriate, these responsibilities may be exercised jointly or separately, or by the Cantons as coordinated by the Federation Government.

The organization of the forestry sub-sector is a complex issue and differs between the entities and Brčko district.

In FBiH the ownership of the public forest resource rests with FBiH which transfers management rights to ten Cantons. The Cantons transfer these rights to Cantonal Forest Management Companies (only one in each canton), which are established in compliance with the Law on Forests from 2002. In seven cantons these Cantonal Forest Management Companies are established as 100 percent public companies owned by the Canton. The only exception is Canton 3 (Tuzla Canton), where the Cantonal Forest Management Company has been established as a joint stock company. This organization is not fully implemented in two cantons; in Canton 2 (Posavina Canton) – lowland area where forests play minor role and Canton 7 (Herzegovina-Neretva Canton) where some municipality-based companies are not integrated in existing Cantonal Forest Management Company. At the level of the Federation there is a Forestry Department within the Ministry of Agriculture, Water Management and Forestry with a unit responsible for legal matters (all aspects relating to forest law and related legislation) and an FBiH Forest Office (FFO) which deals with forestry development and support and has an overall monitoring role. At the Cantonal level, responsibility for forestry rests with the relevant Ministry within which there is a Cantonal Forest Office (CFO) whose main function is to control the activities of the cantonal forest management company and provide advice and support to private forest owners.

In Republika Srpska, there is the Forestry Department within the Ministry of Agriculture, Forestry and Water Management, which is responsible for forests and forestry. Public forest company Šume RS manages the public forests in RS. It has a hierarchical organizational structure with headquarters, twenty five Forest Management Units (FMUs), a Research Development and Design Centre, which undertakes forest management planning, a Centre for Seedling Production and a Karst Management Centre. Each FMU has a sub account, although all financial flows essentially go through the headquarters. The FMUs report to the headquarters and are managed on a Forest Management Area (FMA) basis, comprising a number of Forest Districts.

In Brčko district, where forestry plays a subordinated role, there is the Department for Agriculture, Forestry and Water management. Within this Department, there is Sub-Department for Forestry and Water management dealing with the implementation of forest and game-management legislation, forest management planning and executing projects, forest protection and other public administrative issues. As the majority of forests are owned by private forest owners, there is no public forest company in Brčko District.

Besides the above mentioned public forest companies, some public forests within the protected areas are managed by public institutions responsible for management of protected areas (e.g. National parks, protected landscapes etc.).

The organization of the forest sector reflects the constitutional character of the country, where entities and 10 cantons (within FBiH) have strong impacts on forest resource management. Due to the decentralised administrative structure, there is neither a state-level forest policy nor a framework for forest legislation. At the FBiH level there is a Forestry Department within the Ministry of Agriculture, Water Management and Forestry with a unit responsible for legal matters (all aspects relating to forest law and related legislation) and an FBiH Forest Office (FFO) which deals with forestry development and support and has an overall monitoring role. At the Cantonal level, responsibility for forestry rests with the relevant Ministry, within which there is a Cantonal Forest Office (CFO) whose main function is to control the activities of the cantonal forest management company and provide advice and support to private forest owners.

Traditionally, forest resource management in BiH has been entirely formulated by bodies that have constitutional authority (public forest administration) and is based on a hierarchical, top-down approach. This results in a lack of participation and stakeholder cooperation in forest-related planning processes and harms local stakeholders through inequitable distribution of forest benefits and the absence of a platform for prior and informed consultations. As to the rights of local communities to be involved in decisions related to forest management, the Association of Municipalities and Cities in BiH requested the Constitution Court to decide whether the Law on Forests is harmonized with the European Charter of Local Self-Government. The court identified serious discrepancies between the law and the charter and ordered necessary alignments in terms of respecting the rights and vital interests of local communities. Since such alignments were not realised on time,

the Law on Forests was proclaimed invalid. Although various institutions have proposed several drafts of a new Law on Forests, there is as yet no political agreement on this. The key point of disagreement is about the role of cantonal and local governments in terms of forest management. Moreover, the political crisis in BiH after the common elections in 2010 set this issue aside from general political debate, failing to observe negative impacts of that situation on SFM.

Although some strategic documents (e.g. the National Environmental Action Plan) propose clear goals related to the forest sector, an overall commitment to SFM in BiH is at doubt. The issues related to the forest sector are only occasionally subjects of public political agendas (e.g. forest fires). As documented, forest policy does not exist, so processes related to SFM hardly can be evaluated as positive.

Source: FAO Regional Office for Europe and Central Asia: Analysis of the Forest Sector in Bosnia and Herzegovina EU funded project “Preparation of IPARD Forest and Fisheries Sector Reviews in Bosnia and Herzegovina”, 2015

6b Area of permanent forest estate

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

FRA 2020 categories	Forest area (1000 ha)					
	Applicable?	1990	2000	2010	2015	2020
Area of permanent forest estate	No					

Comments

7 Employment, education and NWFP

7a Employment in forestry and logging

National Data

Data sources + type of data source eg NFI, etc

FAO Regional Office for Europe and Central Asia: Analysis of the Forest Sector in Bosnia and Herzegovina EU funded project “Preparation of IPARD Forest and Fisheries Sector Reviews in Bosnia and Herzegovina”, 2015

National classification and definitions

-

Original data

-

FRA 2020 categories	Full-time equivalents (1000 FTE)											
	1990			2000			2010			2015		
	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male
Employment in forestry and logging												
...of which silviculture and other forestry activities												
...of which logging												
...of which gathering of non wood forest products												
...of which support services to forestry												

Comments

In 2012, the forest sector (forestry without wood-processing industry) of FBiH employed 4 393 people (data for Canton 7 – Hercegovacko-Neretvanski Canton, are not included). 53 percent (2 330) were forestry professionals with different education/ qualification level. According to official statistics 4 285 people were employed in the forest sector of Republika Srpska in 2012. T

he total number of people employed in the forest sector (public forest management companies and public forest administration) of both BiH's entities is 8 678. This number does not include people employed by private companies engaged in forest sector as contractors, forestry inspectors at different administrative level as well as forestry professionals employed in education and research. In general, we can conclude that public forest administration is overstaffed. This is mainly for social reasons, as public forest enterprises are often the main employers in rural areas. Besides, there is no accurate data on people employed in the forest sector in Canton 7. Adding this grey number, the total number of people employed in the forest sectors of both entities (the FBiH and the RS) of Bosnia-Herzegovina is estimated about 10 000.

According to FBiH Office of Statistics (Statistical yearbook for 2011), more than 16 000 people (3.7 percent of total workforce) are employed in forestry and the wood-processing industry in the Federation of BiH.

Source: FAO Regional Office for Europe and Central Asia: Analysis of the Forest Sector in Bosnia and Herzegovina EU funded project "Preparation of IPARD Forest and Fisheries Sector Reviews in Bosnia and Herzegovina", 2015

7b Graduation of students in forest-related education

National Data

Data sources + type of data source eg NFI, etc

FAO Regional Office for Europe and Central Asia: Analysis of the Forest Sector in Bosnia and Herzegovina EU funded project “Preparation of IPARD Forest and Fisheries Sector Reviews in Bosnia and Herzegovina”, 2015

National classification and definitions

-

Original data

-

FRA 2020 categories	Number of graduated students											
	1990			2000			2010			2015		
	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male
Doctoral degree												
Master's degree												
Bachelor's degree												
Technician certificate / diploma												
Total												

Comments

During the school year 2012–2013, 1 304 students were enrolled in forestry and wood-processing secondary schools in RS, 1 052 of whom male and 252 were female (Institute for statistics of RS, 2013). There are nine forestry and wood-processing secondary schools in RS (Forest Development Strategy of RS for 2011–2021, 2012). These schools educate forestry technicians and wood-processing technicians.

In the same school year (2012–2013) in the FBiH, 1 712 students were enrolled in forestry and wood-processing industry secondary schools (Institute for statistics of the FBiH, 2013). 1 135 of whom were male and 577 were female students (Institute for statistics of the FBiH, 2013). There are six forestry and wood-processing secondary schools in the FBiH (Čabaravdić et al, 2011).

The tertiary forestry education in BiH is organized at four universities, namely the University of Sarajevo, the University of Banja Luka, the University of East Sarajevo and the University of Bihać. Forestry study at the University of East Sarajevo is organized within the Agricultural Faculty in Vlasenica (RS). The forestry study at the University of Bihać is organized within the Biotechnical faculty in Bihać (FBiH). The forestry study in Vlasenica and Bihać just started 2-3 years ago and it is still too early to evaluate their impact on overall forest education situation in BiH.

Source: FAO Regional Office for Europe and Central Asia: Analysis of the Forest Sector in Bosnia and Herzegovina EU funded project “Preparation of IPARD Forest and Fisheries Sector Reviews in Bosnia and Herzegovina”, 2015

7c Non wood forest products removals and value 2015

National Data

Data sources + type of data source eg NFI, etc

FAO Regional Office for Europe and Central Asia: Analysis of the Forest Sector in Bosnia and Herzegovina EU funded project “Preparation of IPARD Forest and Fisheries Sector Reviews in Bosnia and Herzegovina”, 2015

National classification and definitions

-

Original data

-

	Name of NWFP product	Key species	Quantity	Unit	Value (1000 local currency)	NWFP category
#1	Mushrooms					1 Food
#2	Medicinal and aromatic plants					3 Raw material for medicine and aromatic products
#3	Essential oils					3 Raw material for medicine and aromatic products
#4	Forest fruits					1 Food
#5	Honey					1 Food
#6						
#7						
#8						
#9						
#10						
All other plant products						
All other animal products						
Total					–	

Name of currency	BAM
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Comments

According to some studies (Gatarić 1988 in USAID, 2010), BiH has over 700 species of medicinal and aromatic plants (MAPs) out of which 200 are utilized. This list includes several endangered species that are amongst the most collected and traded ones (*Gentiana lutea*, *Arnica montana*, *Arctostaphylos uva ursi* and *Orchis* spp.) (USAID, 2010). Both during the Yugoslav period and today, BiH mainly provides raw material of medicinal and aromatic plants (Donnelly et al., 2002 in USAID, 2010). It is almost impossible to find reliable data on quantities of traded or exported plant material that originates from BiH (USAID, 2010). Still, according to the data from Foreign Trade Chamber and USAID, the export structure of the sector of non-wood forest products (NWFP) is dominated by mushrooms and forest fruits with almost 75 percent. Also, significant item in the structure of exports are essential oils that recorded growth of 88 percent in 2012 compared to the earlier year.

According to the USAID (2013), there are about 50 small and medium-sized enterprises operating in the sector of herbs and forest fruits. Many of these companies sell wild berries, wild mushrooms and other non-wood forest products. According to estimations, around 100 000 people collect various types of non-wood forest products within companies registered for their collection and further processing. For instance, in RS, concessions to collect NWFP are given to private companies, which also supports tax collection, customs operations and certification implementation (FSC).

The following list represents the most frequently collected and traded species of wild medicinal and aromatic plants in BiH. These are as follows (Source: USAID – FIRMA, 2010): Thyme (*Thymus serpyllum*), Melissa (*Melissa officinalis*), Rose hip (*Rosa canina*), Wild garlic (*Alium ursinum*), Ivy (*Hedera helix*), Horse chestnut (*Aesculus hippocastanum*), Mistletoe (*Viscum album*), Iceland

moss (*Cetraria islandica*), Cowslip (*Primula veris*), Sage (*Salvia officinalis*), St. John's Wort (*Hypericum perforatum*), Juniper (*Juniperus communis*), Nettle (*Urtica dioica*), Yarrow (*Achillea millefolium*), Gentian (*Gentiana lutea*), Linden (*Tilia sp.*), Catnip (*Nepeta cataria*), Dandelion (*Taraxacum officinale*), Iris (*Iris germanica*), Rosemary (*Rosmarinus officinalis*), Immortelle (*Helichrysum italicum*), Bearberry (*Arctostaphylos uva-ursi*), Elder (*Sambucus nigra*)

The most frequently collected/traded wild berries in BiH are as follows: Bilberry (*Vaccinium myrtillus*), Cowberry (*Vaccinium vitis-idaea*), Strawberry (*Fragaria vesca*), Raspberry (*Rubus idaeus*)

The most frequently collected/traded wild mushrooms in BiH are as follows: Boletus (*Boletus edulis*), Chanterelle (*Cantharellus cibarius*), Royal agarics (*Craterellus cornucopoides*), Morel (*Morchella conica*), Caesars mushroom (*Amanita caesarea*)

According to the data derived from the Final Report of EU (Analysis and Mapping of Value Chain) MAP annual harvesting in BiH varies from 1 500 to 9 000 tonnes (depending on demand and climatic conditions), mostly dried plants packed and sold in 25 kg sacks as raw material (FIRMA, 2013).

Source: FAO Regional Office for Europe and Central Asia: Analysis of the Forest Sector in Bosnia and Herzegovina EU funded project "Preparation of IPARD Forest and Fisheries Sector Reviews in Bosnia and Herzegovina", 2015

8 Sustainable Development Goal 15

8a Sustainable Development Goal 15

SDG Indicator 15.1.1 Forest area as proportion of total land area 2015

Indicator	Percent							
	2000	2010	2015	2016	2017	2018	2019	2020
Forest area as proportion of total land area 2015	41.24	41.07	42.20	42.51	42.73	42.73	42.73	42.73

Name of agency responsible	
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SDG Indicator 15.2.1 Progress towards sustainable forest management

Sub-Indicator 1	Percent						
	2000-2010	2010-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
Forest area annual net change rate	-0.04	0.54	0.74	0.52	0.00	0.00	0.00

Name of agency responsible	
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Sub-Indicator 2	Forest biomass (tonnes/ha)							
	2000	2010	2015	2016	2017	2018	2019	2020
Above-ground biomass stock in forest	–	–	156.36	156.37	–	–	–	–

Name of agency responsible	
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Sub-Indicator 3	Percent (2015 forest area baseline)							
	2000	2010	2015	2016	2017	2018	2019	2020
Proportion of forest area located within legally established protected areas	–	–	–	–	–	–	–	–

Name of agency responsible	
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Sub-Indicator 4	Percent (2015 forest area baseline)							
	2000	2010	2015	2016	2017	2018	2019	2020
Proportion of forest area under long-term forest management plan	–	–	–	–	–	–	–	–

Name of agency responsible	
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Sub-Indicator 5	Forest area (1000 ha)							
	2000	2010	2015	2016	2017	2018	2019	2020
Forest area under independently verified forest management certification schemes	0.00	108.69	1 496.12	1 495.53	1 532.63	1 654.46	–	–