

Bosnia and Herzegovina

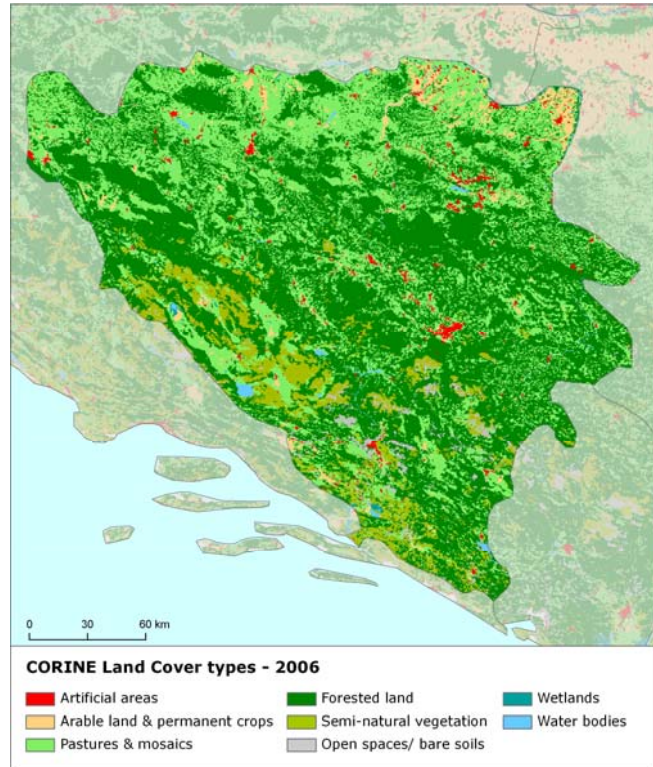
Land cover 2006

Overview of land cover & change 2000-2006

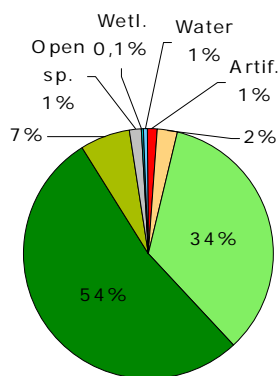
Landscape in Bosnia and Herzegovina is covered mostly by forests (54%), pastures (34%) and semi-natural vegetation (7%). The overall development of land cover during the observed period is driven mainly by artificial land take (with prevailing share of residential sprawl) consuming agricultural areas and by (mostly internal) flows in forested land. Besides artificial areas, also open spaces / bare soils and water bodies land cover types has positive net change balance. In contrast, agricultural areas, forested land and semi-natural vegetation, together with wetlands, have been consumed during the period.

Spatial distribution of artificial sprawl is concentrated mostly in close proximity to the capital Sarajevo as well as to the other major cities like Tuzla, Mostar and Banja Luka. The urban expansion occurs also in lowland areas in the north-eastern part of the country. Changes in forested land and agricultural areas are scattered mainly in the north-western part of the country. There is also significant decrease of inland marshes occurring in the southern part of Bosnia and Herzegovina due to water bodies creation and agriculture uptake.

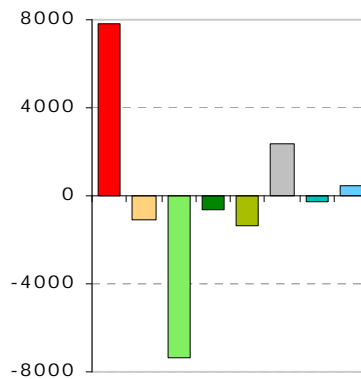
Note The results presented here are based on a change analysis of 44 land cover types mapped consistently on a 1:100,000 scale across Europe over almost two decades 1990-2006 - see Corine land cover (CLC) programme for details.
Number of years between CLC2000-CLC2006 data for Bosnia and Herzegovina: 8



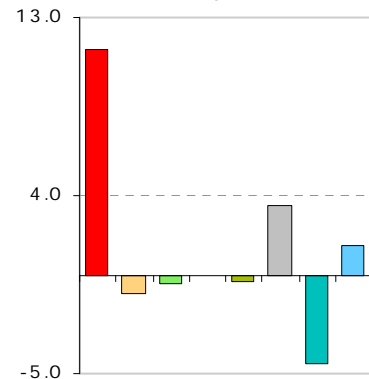
1.1. Land cover 2006
[% of total]



1.2. Net change in land cover
2000-2006 [ha]



1.3. Net change in land cover
[% of initial year 2000]



■ Artificial areas
 ■ Arable land & permanent crops
 ■ Pastures & mosaics
 ■ Forested land
■ Semi-natural vegetation
 ■ Open spaces/ bare soils
 ■ Wetlands
 ■ Water bodies

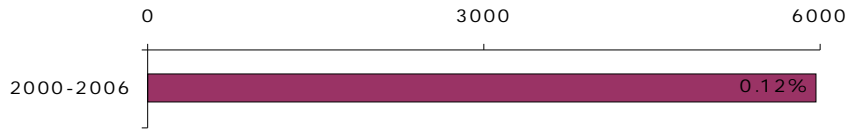
Summary balance table 2000-2006

	Artificial areas	Arable land & permanent crops	Pastures & mosaics	Forested land	Semi-natural vegetation	Open spaces/ bare soils	Wetlands	Water bodies	TOTAL [hundreds ha]
Land cover 2000	690	1211	17624	27186	3505	665	53	326	51261
Consumption of initial LC	7	24	111	307	21	4	3	0	477
Formation of new LC	85	13	38	300	8	27	0	5	477
Net Formation of LC	78	-11	-73	-6	-13	23	-2	5	0
<i>Net formation as % of initial year</i>	<i>11.4</i>	<i>-0.9</i>	<i>-0.4</i>	<i>0.0</i>	<i>-0.4</i>	<i>3.5</i>	<i>-4.5</i>	<i>1.5</i>	
Total turnover of LC	92	37	149	607	29	31	3	6	954
<i>Total turnover as % of initial year</i>	<i>13.3</i>	<i>3.0</i>	<i>0.8</i>	<i>2.2</i>	<i>0.8</i>	<i>4.7</i>	<i>5.7</i>	<i>1.7</i>	<i>1.9</i>
Land cover 2006	769	1200	17551	27179	3492	688	50	331	51261

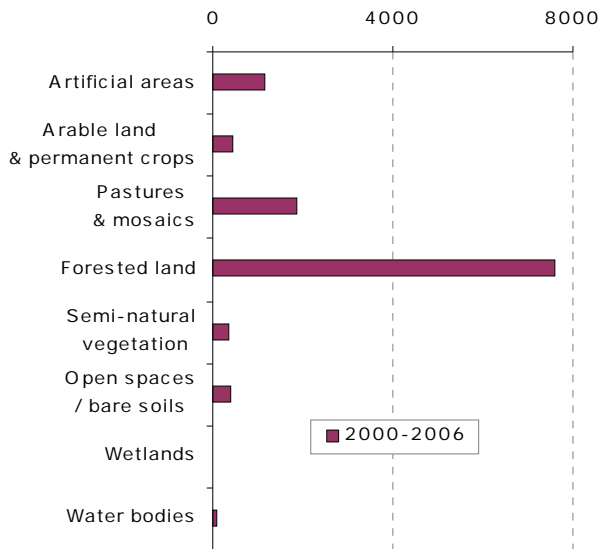
Bosnia and Herzegovina

Land cover trends 2000-2006

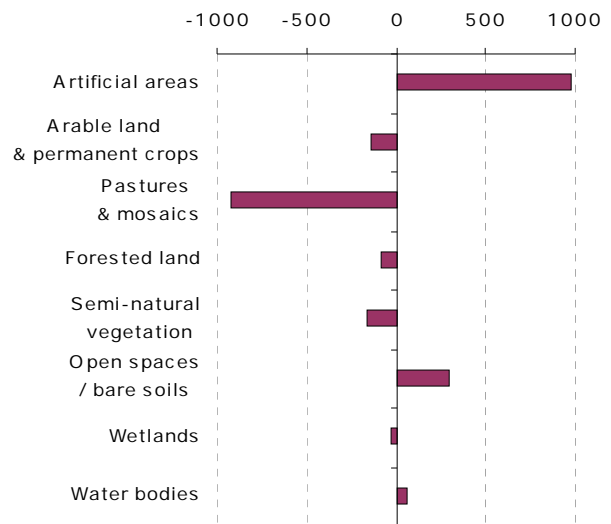
2.4. Annual land cover change
[ha/year, % of total area]



2.5. Annual turnover of LC types
[ha/year]

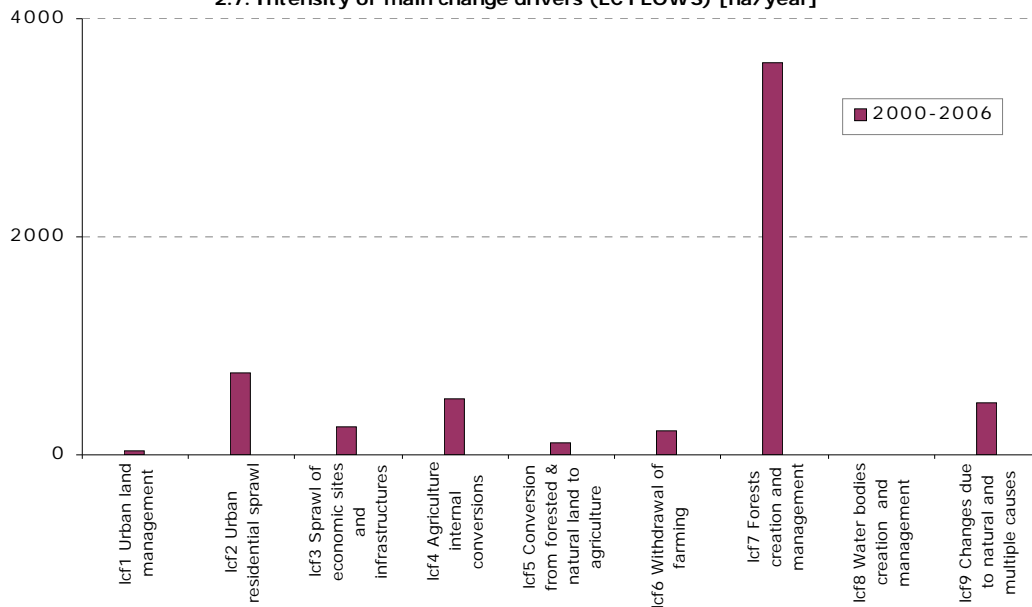


2.6. Net annual change of LC types [ha/year]



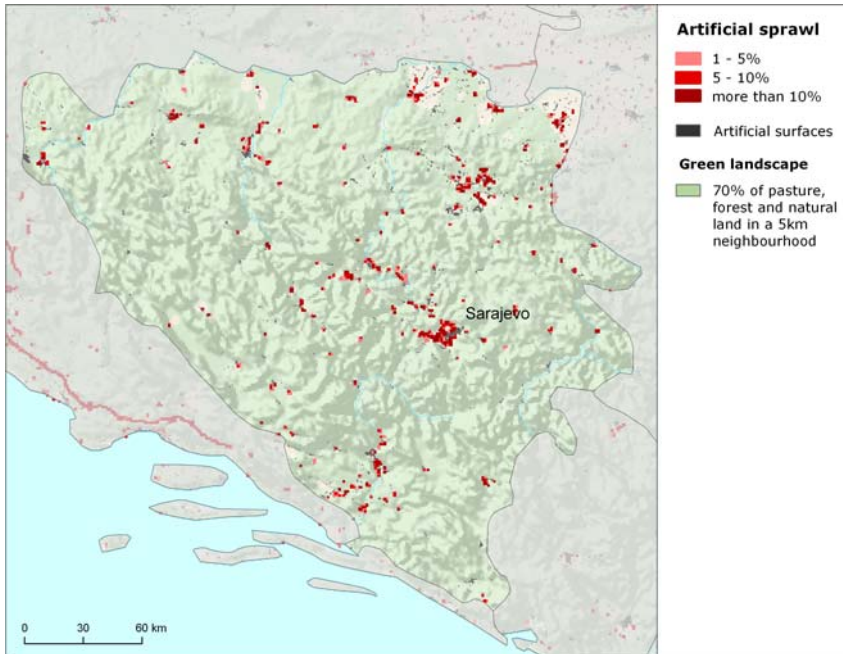
Summary trend figures		2000-2006
Annual land cover change [ha/year]		5963
Annual land cover change as % of initial year		0.12%
Land uptake by artificial development as mean annual change [ha/year]		1021
Agricultural land uptake by urban and infrastructures development as mean annual change [ha/year]		906
Net uptake of forests and semi-natural land by agriculture as mean annual change [ha/year]		-138
Net conversion from pasture to arable land and permanent crops as mean annual change [ha/year]		449
Forest & other woodland net formation as mean annual change [ha/year]		-80
Dry semi-natural land cover net formation as mean annual change [ha/year]		128
Wetlands & water bodies net formation as mean annual change [ha/year]		30

2.7. Intensity of main change drivers (LC FLOWS) [ha/year]

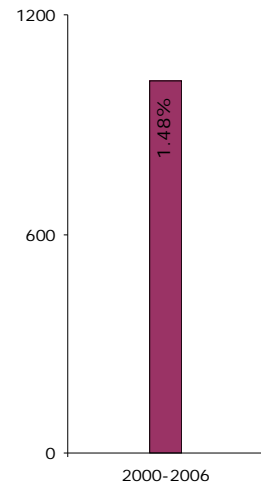


Bosnia and Herzegovina

Artificial areas



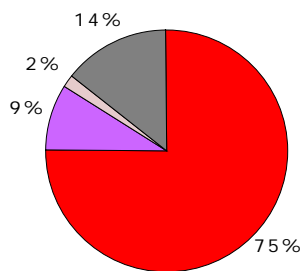
3.8. Artificial land take [ha/year, % of initial year]



High diffuse residential sprawl

Artificial land in Bosnia and Herzegovina is formed from ¾ by residential areas with quite significant share of mines, quarries and dumpsites (14%). The development of artificial land in Bosnia and Herzegovina during the period is characterized by relatively high percentage of artificial formation (1.48%) with respect to the total initial artificial area, compared to other European countries. Artificial land take, which is concentrated mostly around major cities, is driven predominantly by urban diffuse residential sprawl (about 75%). Besides the sprawl of diffuse residential areas, also sprawl of mines and quarrying areas has significant share (13%) on total up-taken area. Land consumed by artificial sprawl during this period is mostly composed by agricultural areas, with predominant share of pastures and mosaics (70%), followed by arable land (18%), but also forested land (9%) turned to artificial one.

3.9. Artificial surfaces 2006 [% of total area]



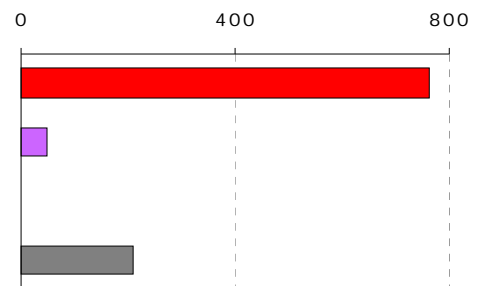
■ Housing, services, recreation

■ Industrial & commercial units

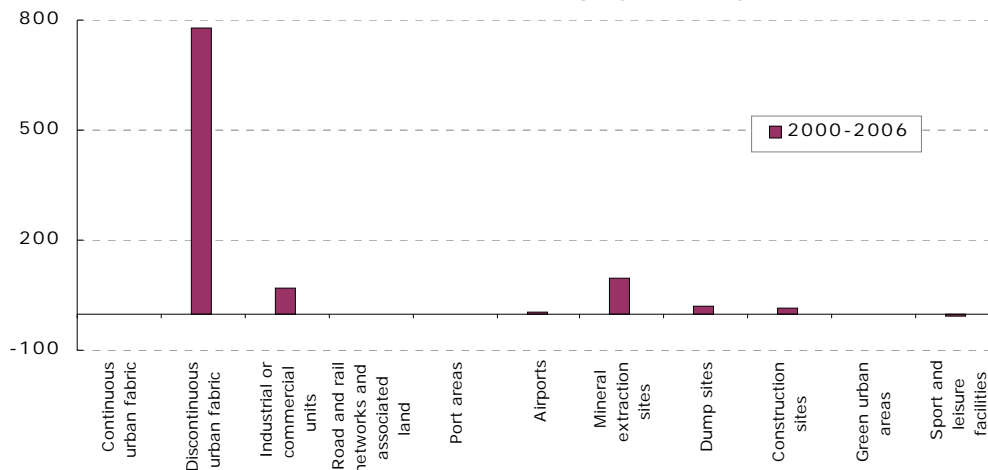
■ Transport networks, infrastructures

■ Mines, quarries, waste dumpsites incl. construction

3.10. Artificial land take 2000-2006 [ha/year]

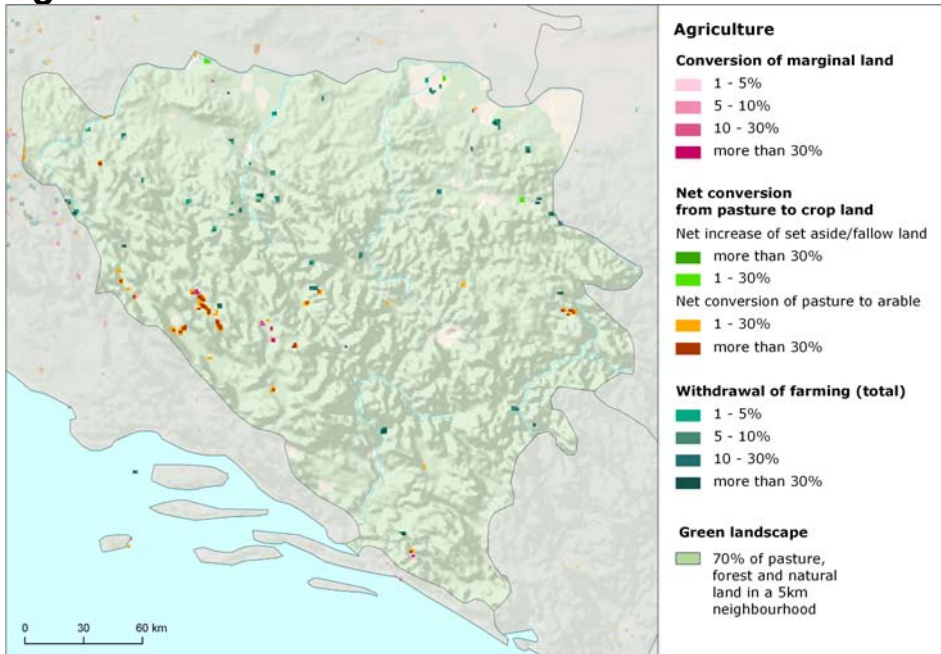


3.11. Mean annual artificial change by class [ha/year]



Bosnia and Herzegovina

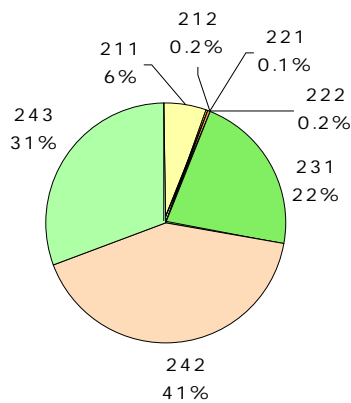
Agriculture



Pasture/mosaics consumption by artificial sprawl and arable/crop land

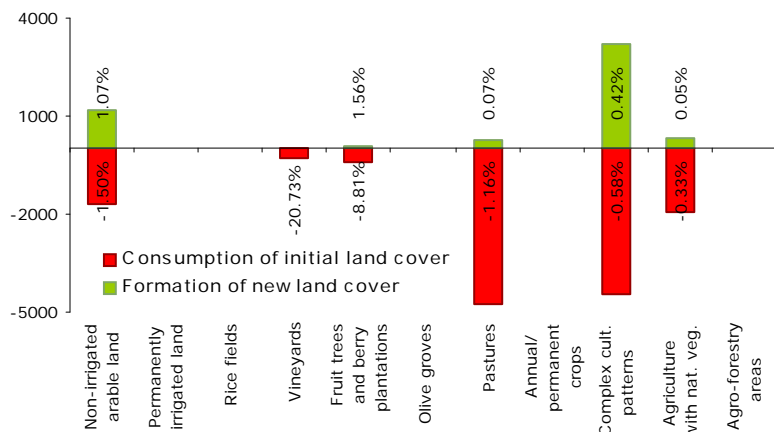
Agricultural land in Bosnia and Herzegovina is composed mainly of complex cultivation patterns (41%), agriculture areas with significant share of natural vegetation (31%) and pastures (22%), followed by arable land to a lesser extent (6%). Both pastures/mosaics and arable/crop land are characterized by negative balance of net change and prevailing consumption of land by mostly artificial surfaces during the period. Formation and consumption area is close to balanced for complex cultivation patterns and arable land. In contrast, both pastures and agricultural land with natural vegetation contribute only by low percentage to area formation. Mostly, there are prevailing consumption processes within the period (see 4.13 below). Negative net change balance of arable/crop land is caused also by high percentage consumption of vineyards (more than 20% of initial vineyards area) and fruit/berry plantations. The development of agricultural land cover is influenced mostly by consumption of pasture/mosaics land by urban residential sprawl and also by internal agricultural conversion from pasture to arable/crop land. Beside it, there is also significant amount withdrawal of farming with transitional woodland creation.

4.12. Agricultural areas 2006 [% of total area]

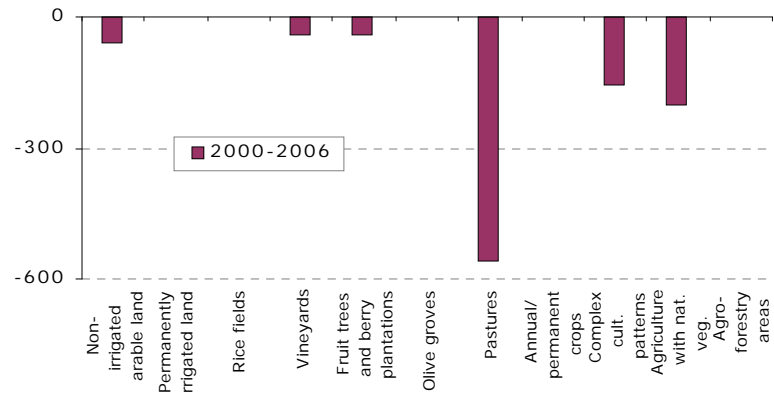


- 211 Non-irrigated arable land
- 212 Permanently irrigated land
- 213 Rice fields
- 221 Vineyards
- 222 Fruit trees and berry plantations
- 223 Olive groves
- 231 Pastures
- 241 Annual crops associated with permanent crops
- 242 Complex cultivation patterns
- 243 Agriculture land with significant areas of natural vegetation
- 244 Agro-forestry areas

4.13. Development of agricultural areas 2000-2006 – detailed balance [ha]

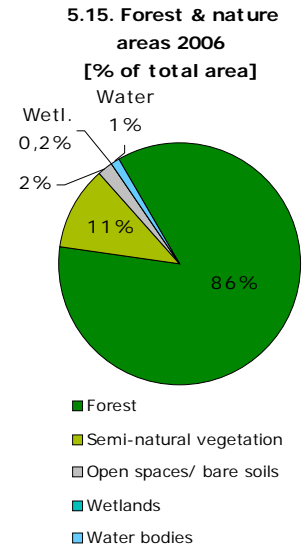
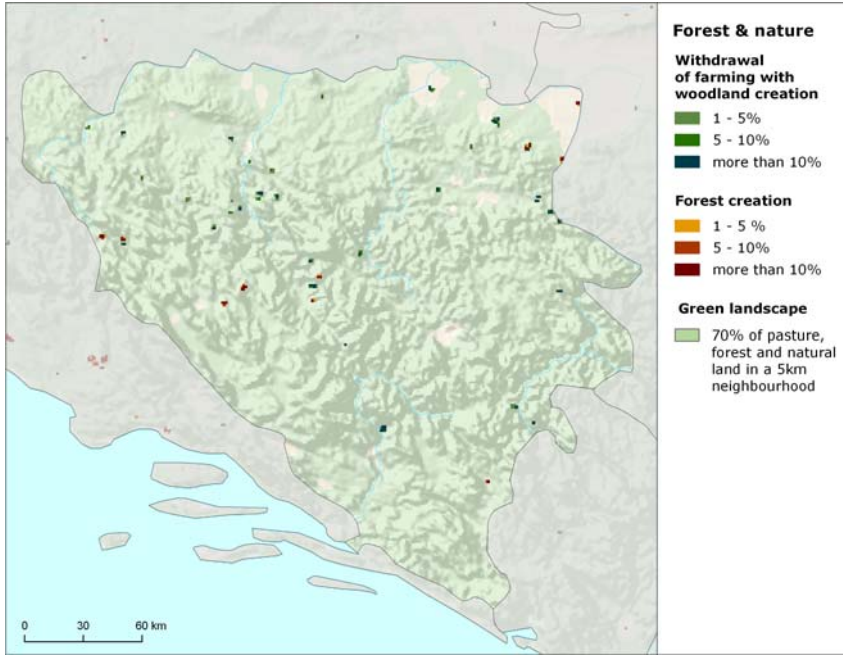


4.14. Mean annual agricultural change by class [ha/year]



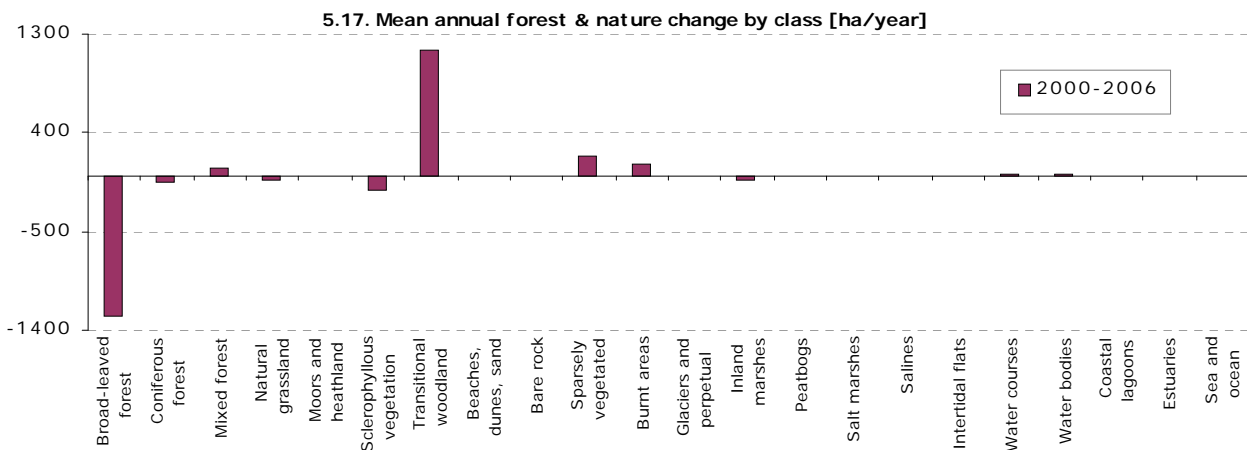
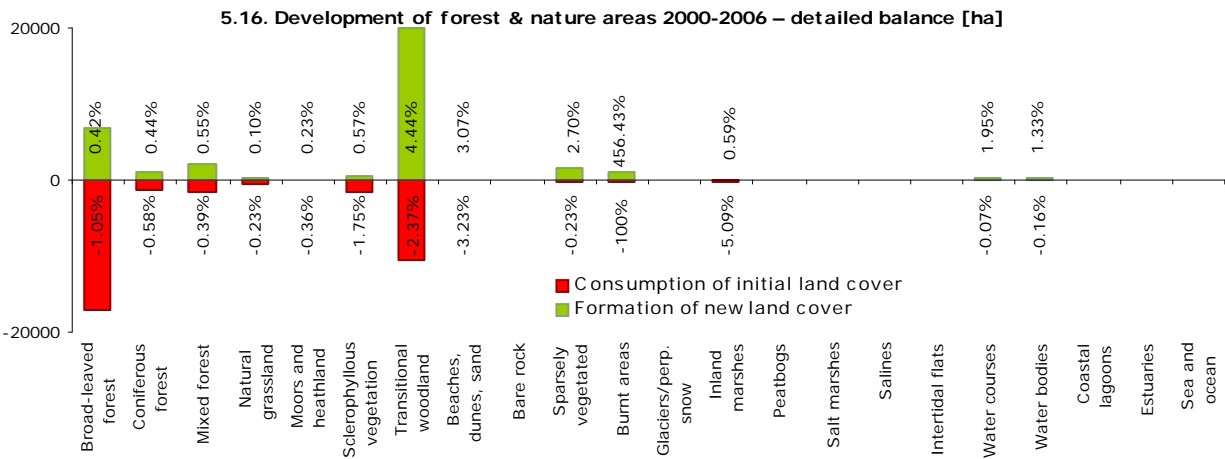
Bosnia and Herzegovina

Forest & nature



Semi-natural rotation and creation; forest and shrub fires

In Bosnia and Herzegovina, nature areas are the dominant land cover type. More than 1/2 of the country is covered by forested land (mostly by broad-leaved forest), which is also reflected in high amount of internal forest conversions. The rest of nature areas consist mainly of natural grasslands. Within the period, all natural surfaces, with the exception of open spaces/bare soils and water bodies, have negative balance of net change. The most significant drivers of natural land cover exchange are semi-natural rotation (represented by transition from sclerophyllous vegetation areas to sparsely vegetated areas), forest and shrub fires and semi-natural creation (mainly conversion from transitional woodland to sclerophyllous vegetation or sparsely vegetated areas). The interaction with non-natural surfaces is represented by withdrawal of farming (mainly with transitional woodland creation) and by consumption of natural land cover by artificial sprawl (with prevailing share of mineral extraction and diffuse residential sprawl). Significant decrease of inland marshes occurred in the southern part of Bosnia and Herzegovina due to water bodies creation and agriculture uptake.

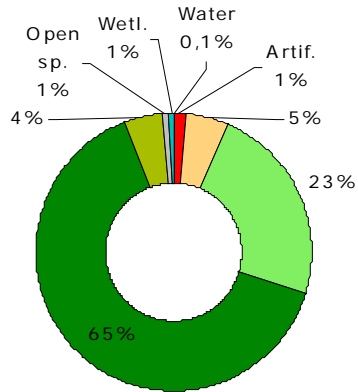


Bosnia and Herzegovina

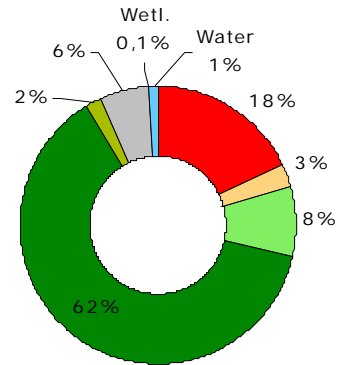
Annex: Land cover flows and trends

Land cover flows 2000-2006

6.18. Consumption of land cover 2000-2006 [% of total change area]

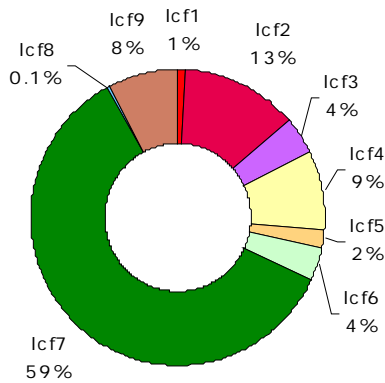


6.19. Formation of land cover 2000-2006 [% of total change area]



- Artificial areas
- Arable land & permanent crops
- Pastures & mosaics
- Forested land
- Semi-natural vegetation
- Open spaces / bare soils
- Wetlands
- Water bodies

6.20. Drivers of change (LC FLOWS) 2000-2006 [% of total change area]

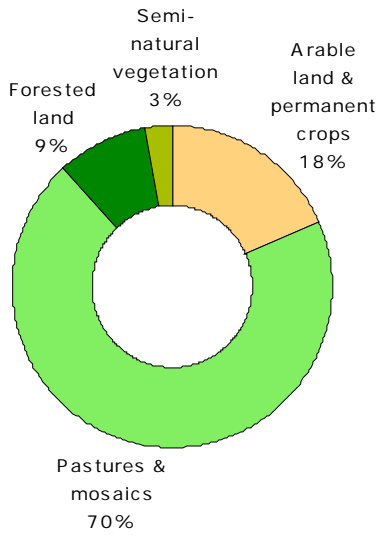


- Icf1 Urban land management
- Icf2 Urban residential sprawl
- Icf3 Sprawl of economic sites and infrastructures
- Icf4 Agriculture internal conversions
- Icf5 Conversion from forested & natural land to agriculture
- Icf6 Withdrawal of farming
- Icf7 Forests creation and management
- Icf8 Water bodies creation and management
- Icf9 Changes due to natural and multiple causes

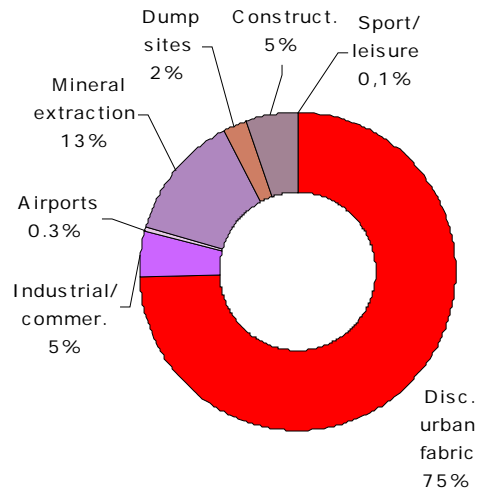
Bosnia and Herzegovina

Artificial areas

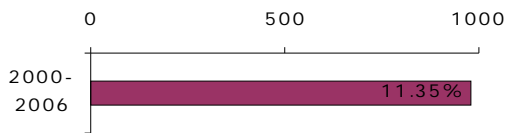
7.21. Consumption by artificial land take 2000-2006 [% of total]



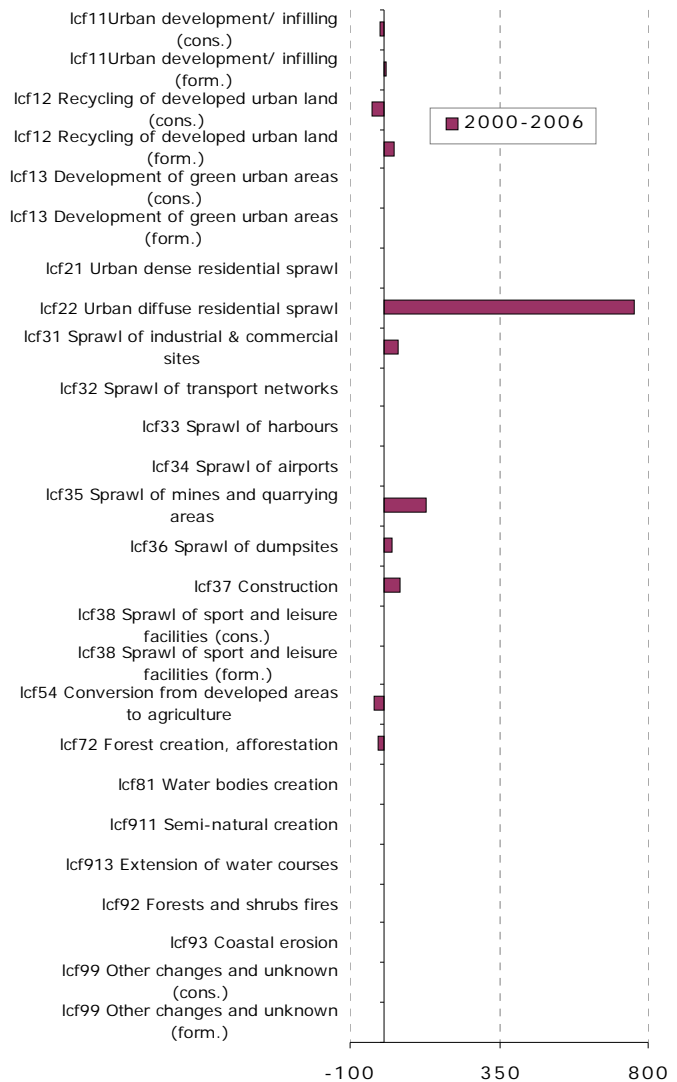
7.22. Formation by artificial land take 2000-2006 [% of total]



7.23. Net formation of artificial area [ha/year, % of initial year]



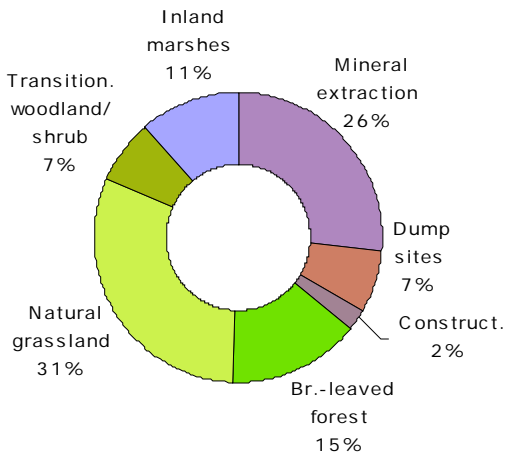
7.24. Artificial development by change drivers (LC FLOWS) [ha/year]



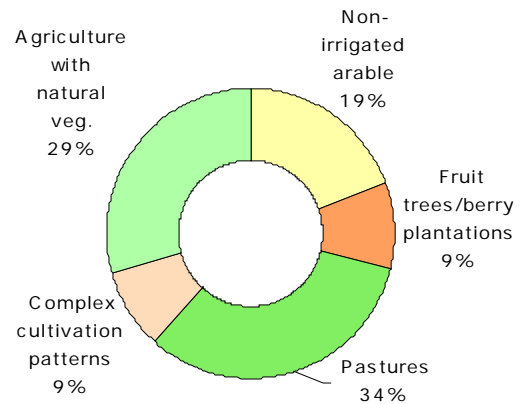
Bosnia and Herzegovina

Agriculture

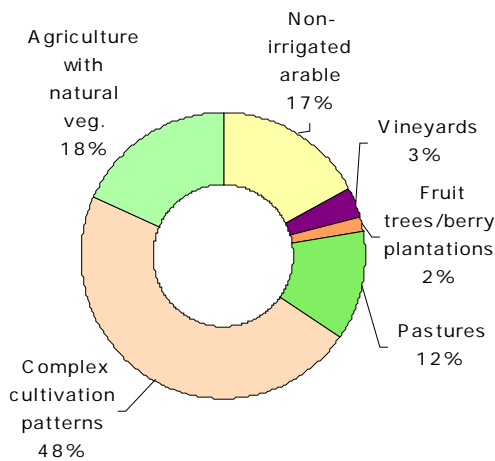
8.25. LC consumed by agriculture 2000-2006 [% of total]



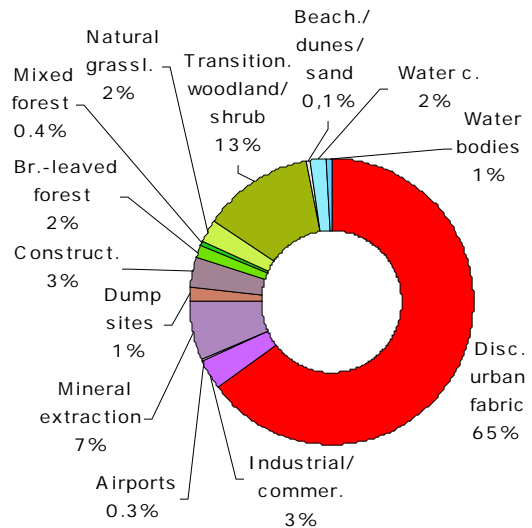
8.26. Formation of agricultural land from non-agriculture 2000-2006 [% of total]



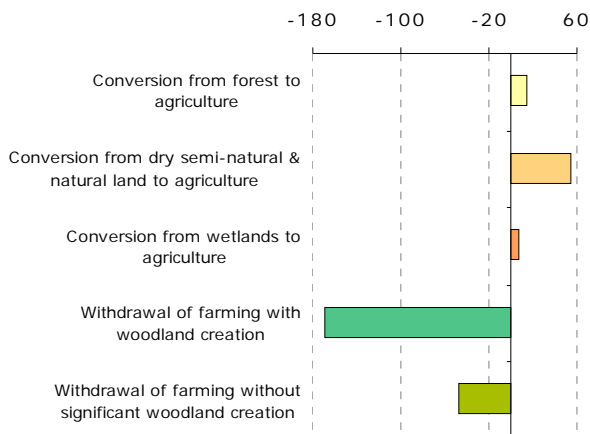
8.27. Consumption of agricultural land by non-agriculture 2000-2006 [% of total]



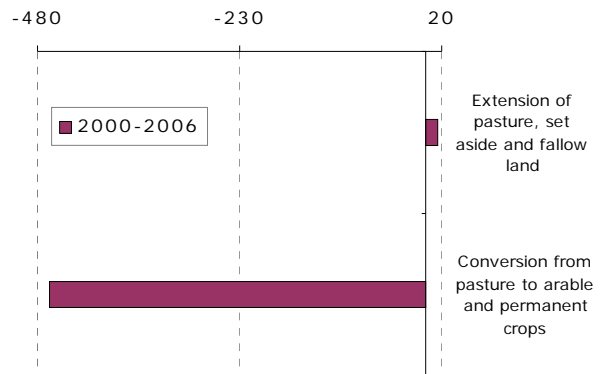
8.28. Formation of non-agricultural land from agriculture 2000-2006 [% of total]



8.29. Main annual conversions between agriculture and forests & semi-natural land 2000-2006 [ha/year]

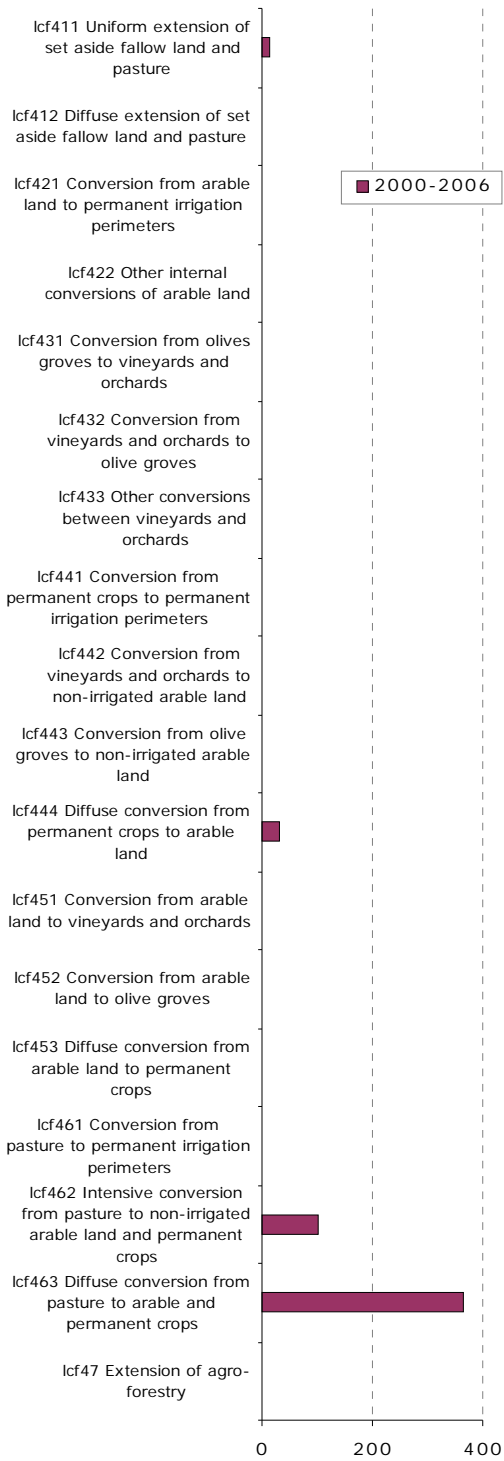


8.30. Mean annual conversion between arable land and pasture [ha/year]

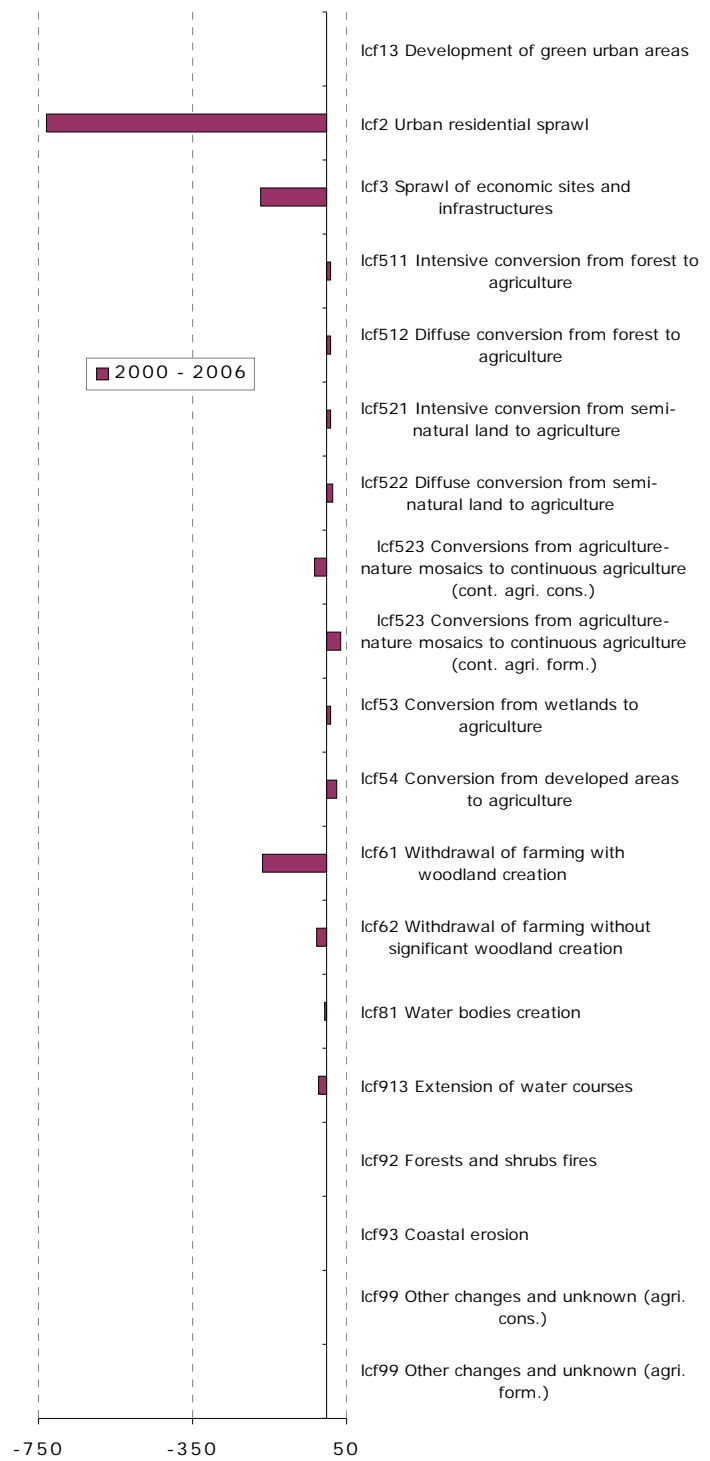


Bosnia and Herzegovina

9.31. Mean annual agriculture internal conversions [ha/year]



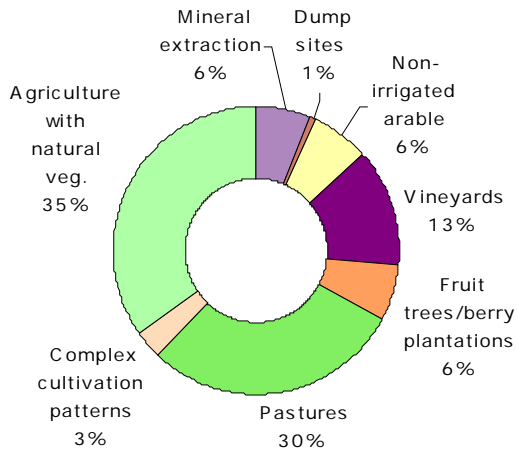
9.32. Mean annual conversions between agriculture and other LC types [ha/year]



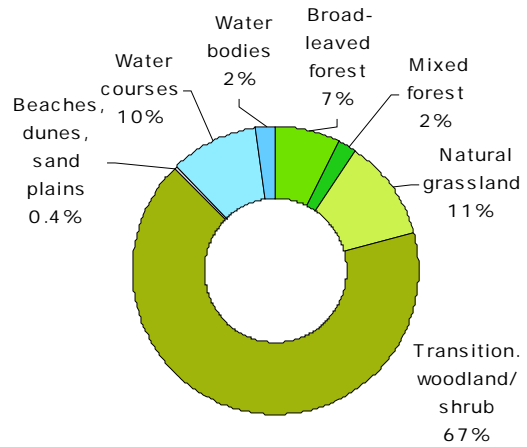
Bosnia and Herzegovina

Forest & nature

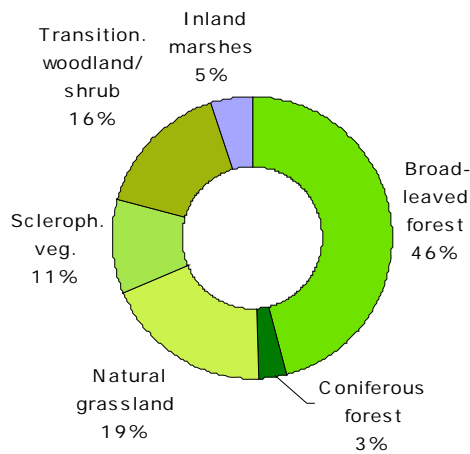
10.33. LC consumed by forest & nature 2000-2006 [% of total]



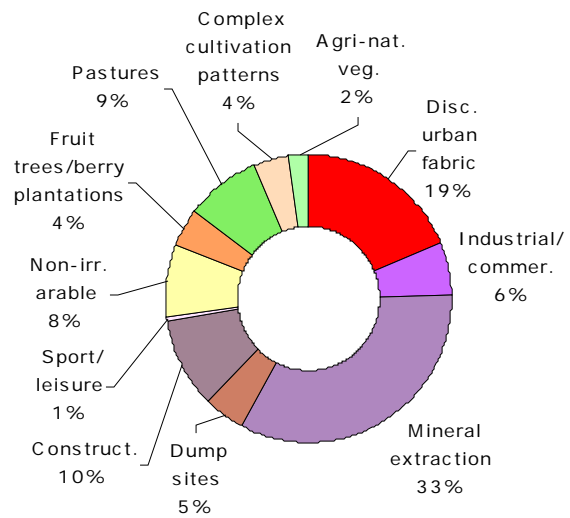
10.34. Formation of forest & nature land from non-forest /nature 2000-2006 [% of total]



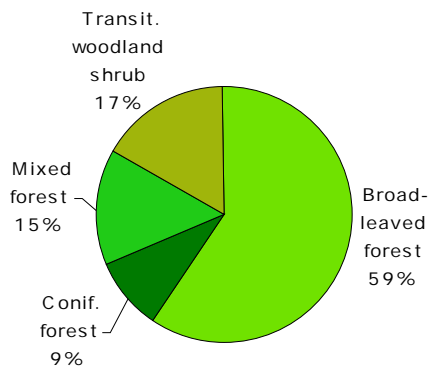
10.35. Consumption of forest & nature land by non-forest/nature 2000-2006 [% of total]



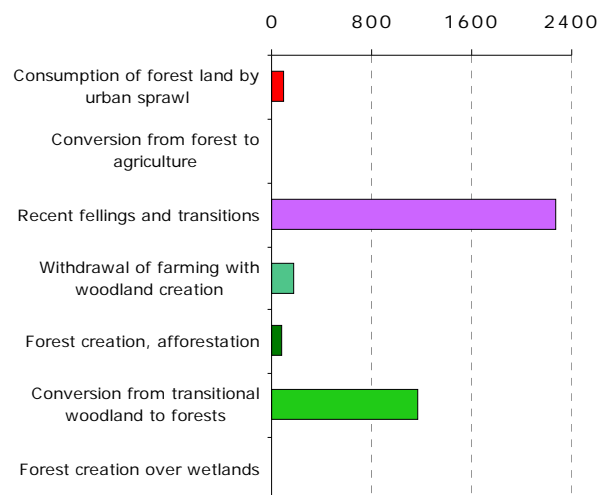
10.36. Formation of non-forest/nature land from forest & nature 2000-2006 [% of total]



10.37. Forested land 2006 [% of total area]

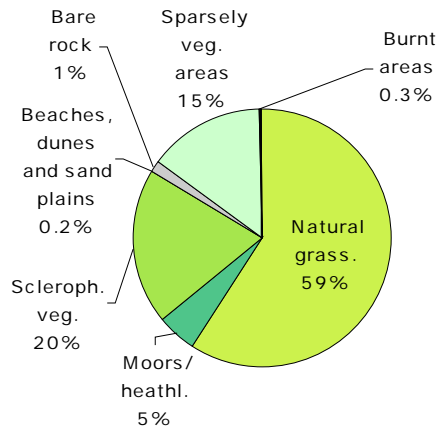


10.38. Main trends in woodland & forests consumption/formation 2000-2006 [ha/year]

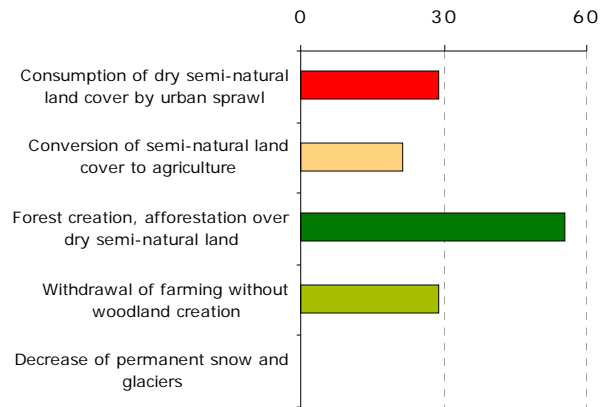


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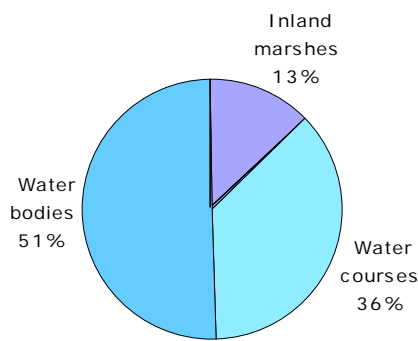
11.39. Dry semi-natural areas 2006
[% of total area]



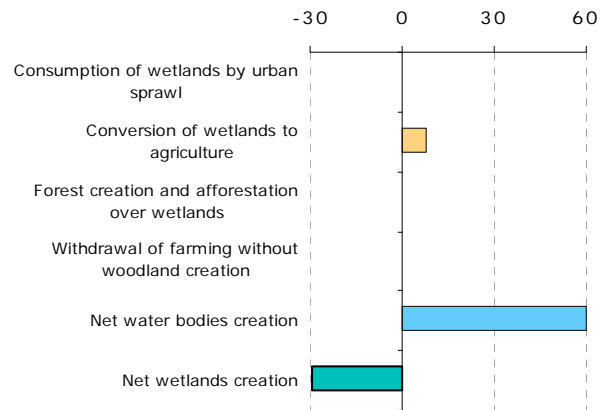
11.40. Main trends in dry semi-natural land consumption/formation 2000-2006 [ha/year]



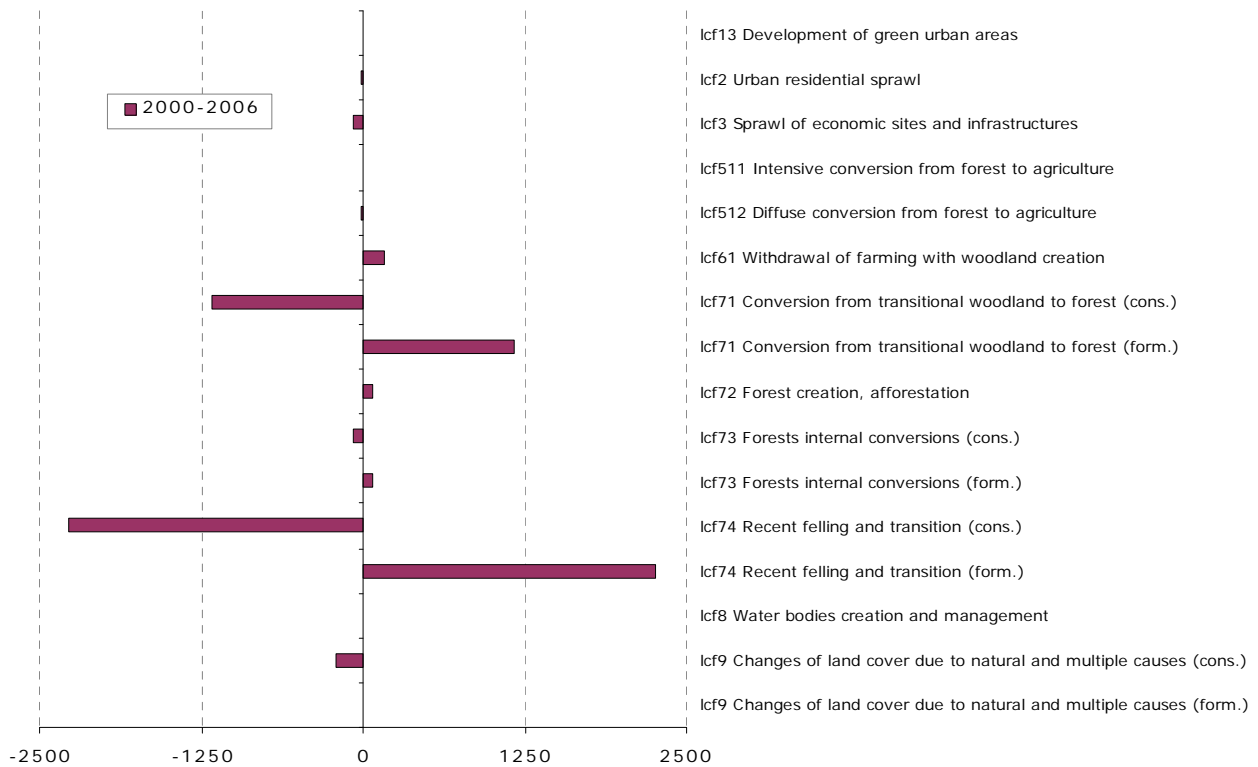
11.41. Wetlands & water 2006
[% of total area]



11.42. Main trends in wetlands & water consumption/formation 2000-2006 [ha/year]



11.43. Mean annual conversions of forest & other woodland
[ha/year]

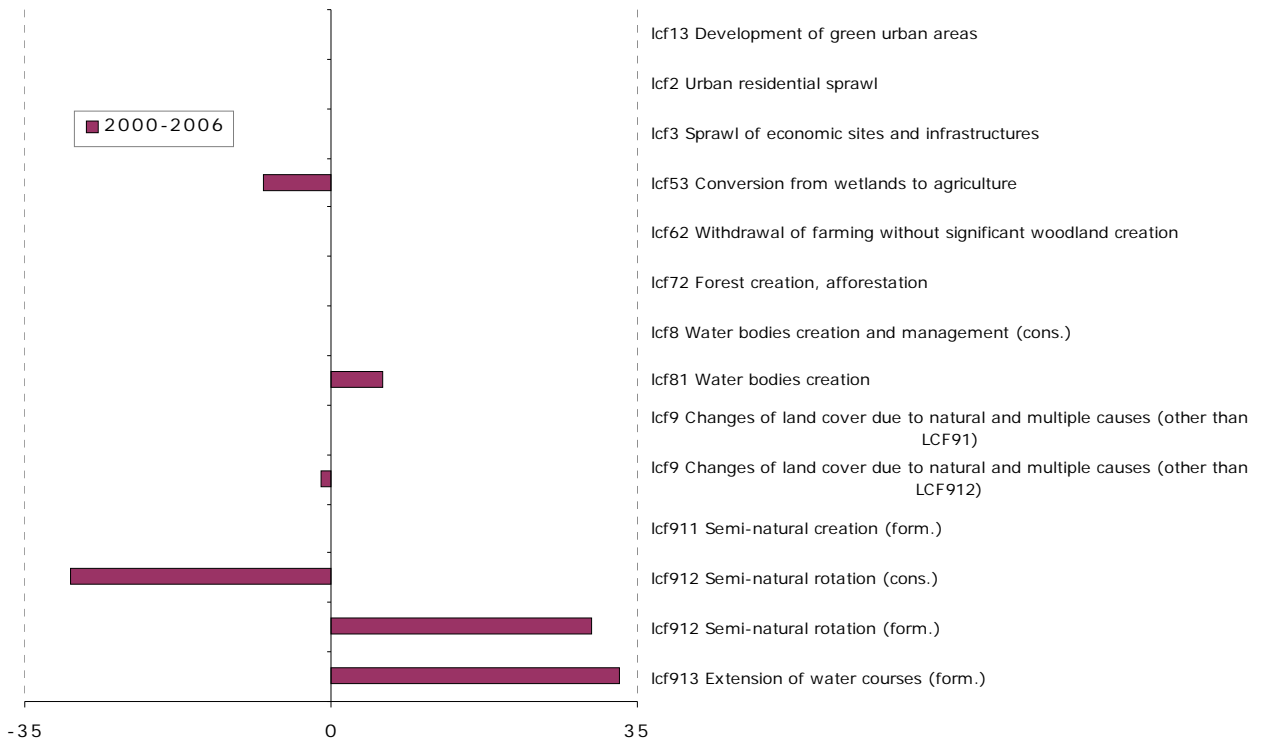


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12.44. Mean annual conversions of dry semi-natural LC [ha/year]



12.45. Mean annual conversions of wet lands and water LC [ha/year]



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