Country fact sheet

Land cover 2012

Croatia

September 2017

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European Environment Agency

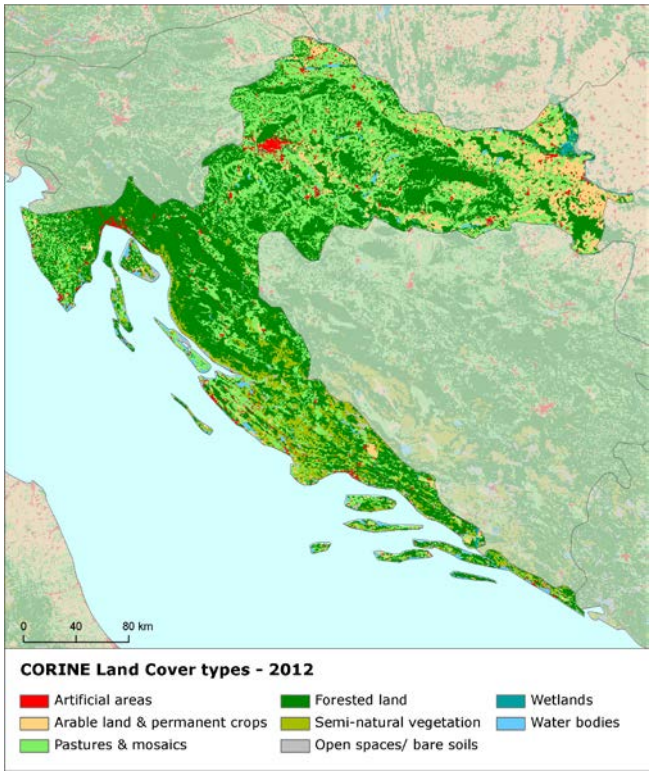
Croatia

Land cover 2012

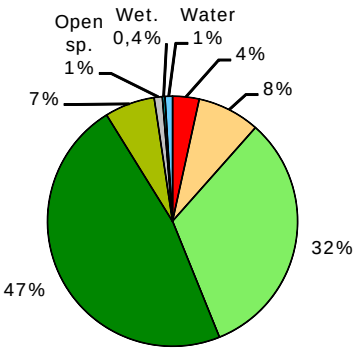
Overview of land cover & change 2006-2012

The pace of the Croatian landscape development is rather slow, with an annual change rate of 0.12% of total area, which is only circa one half of the European average. Moreover, the comparison with the previous periods 1990-2000 and 2000-2006 shows, that the intensity of the land cover development shows a slowly decreasing tendency. This slowdown has been caused by collateral decrease of intensities of all main land cover flows, with the exception of urban land management and changes due to natural and multiple causes.
Forest creation and management is the change with the largest area in Croatia, but the portfolio of changes is quite various in this country. Despite its strongly decreasing tendency, urban sprawl remains an important driver of landscape development, driven mostly by the sprawl of economic sites and infrastructures. Compared to other European countries, the annual artificial land take rate (0.41%) is still slightly above the average.
The construction of the highway network, which was very intensive in the previous period, continues by finalization of last segments. It has to be mentioned here, that this extensive construction of the highway network was the main reason for the very high artificial land take rate (0.96% per year), which was documented in the period 2000-2006.
Also the intensity of internal agricultural flows and conversions between natural and agricultural land is significantly lower, compared to previous period, however, they still occur in Croatian landscape.

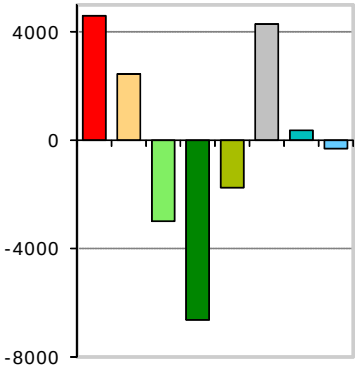
Note: The results presented here are based on a change analysis of 44 land cover types mapped consistently on a 1:100.000 scale across Europe over more than decade between 2000-2006-2012 - see Corine land cover (CLC) programme for details.
Number of years between CLC2006-CLC2012 data for Croatia: 6



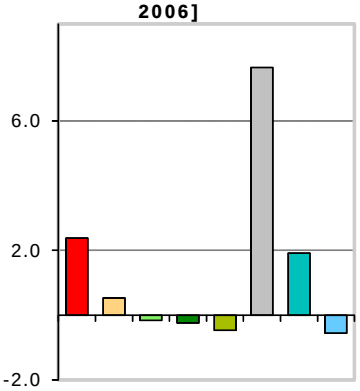
1.1. Land cover 2012 [% of total]



1.2. Net change in land cover 2006-2012 [ha]



1.3. Net change in land cover [% of initial year 2006]



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

Summary balance table 2006-2012

	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 2006	**1926**	**4616**	**18557**	**27152**	**3732**	**560**	**190**	**555**	**57288**
Consumption of initial LC	14.7	6.1	44.3	335.4	19.6	4.0	0.0	4.0	428
Formation of new LC	60.7	30.6	14.4	269.1	2.1	46.8	3.7	0.9	428
Net Formation of LC	**45.9**	**24.5**	**-29.9**	**-66.4**	**-17.5**	**42.9**	**3.6**	**-3.1**	**0**
Net formation as % of initial year	*2.4*	*0.5*	*-0.2*	*-0.2*	*-0.5*	*7.7*	*1.9*	*-0.6*	
Total turnover of LC	**75.4**	**36.7**	**58.7**	**604.5**	**21.7**	**50.8**	**3.7**	**4.8**	**856**
Total turnover as % of initial year	*3.9*	*0.8*	*0.3*	*2.2*	*0.6*	*9.1*	*1.9*	*0.9*	*1.5*
Land cover 2012	**1972**	**4641**	**18527**	**27085**	**3714**	**603**	**194**	**552**	**57288**

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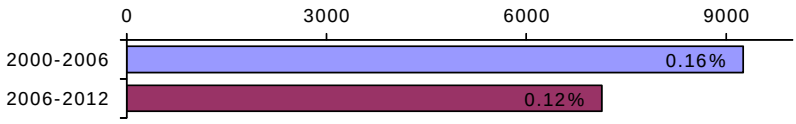
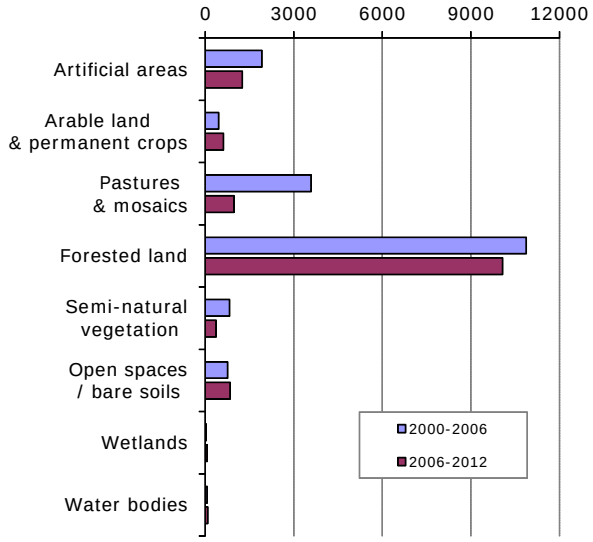
Land cover trends comparison 2000-2006 vs. 2006-2012

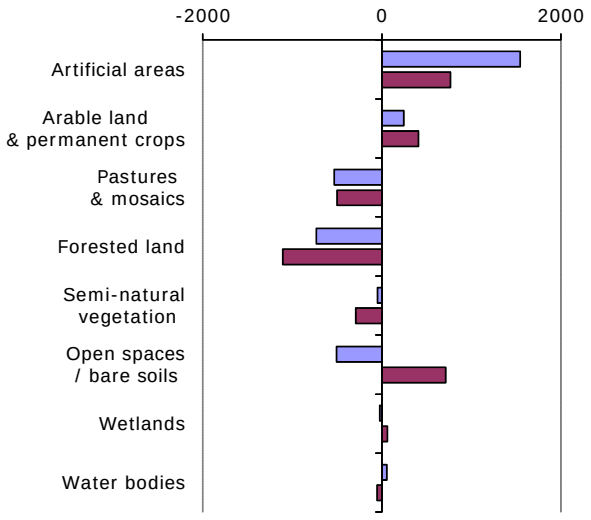
2.4. Annual land cover change [ha/year, % of total area]



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

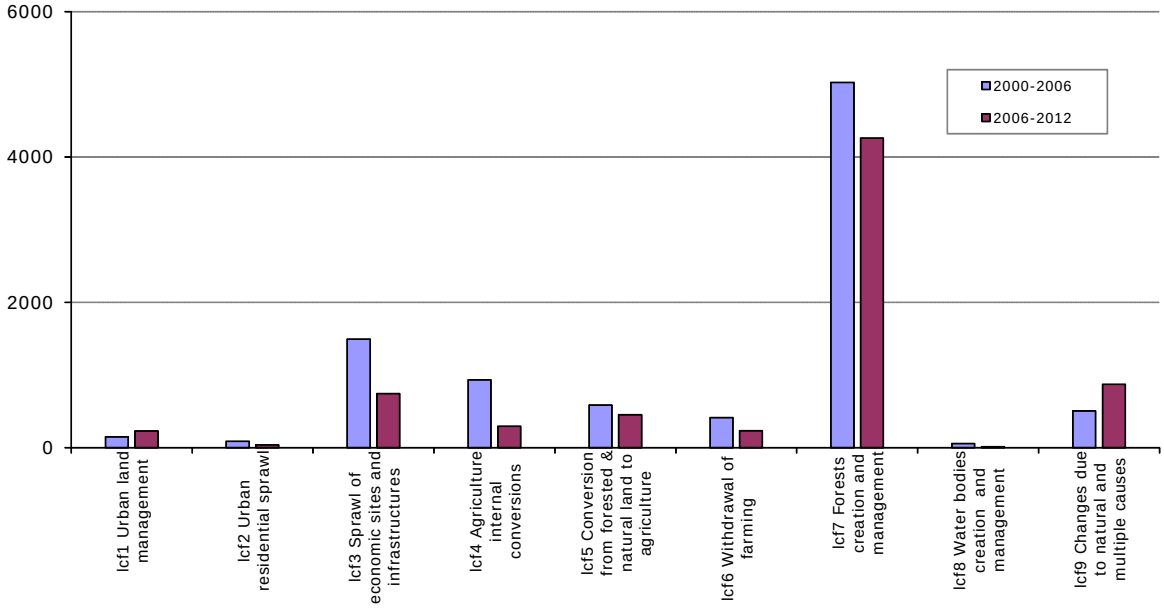


2.6. Net annual change of LC types [ha/year]



Summary trend figures	2000-2006	2006-2012
Annual land cover change [ha/year]	**9256**	**7135**
Annual land cover change as % of initial year	**0.16%**	**0.12%**
Land uptake by artificial development as mean annual change [ha/year]	1579	783
Agricultural land uptake by urban and infrastructures development as mean annual change [ha/year]	570	280
Net uptake of forests and semi-natural land by agriculture as mean annual change [ha/year]	157	216
Net conversion from pasture to arable land and permanent crops as mean annual change [ha/year]	862	217
Forest & other woodland net formation as mean annual change [ha/year]	-730	-1106
Dry semi-natural land cover net formation as mean annual change [ha/year]	-523	494
Wetlands & water bodies net formation as mean annual change [ha/year]	29	9

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



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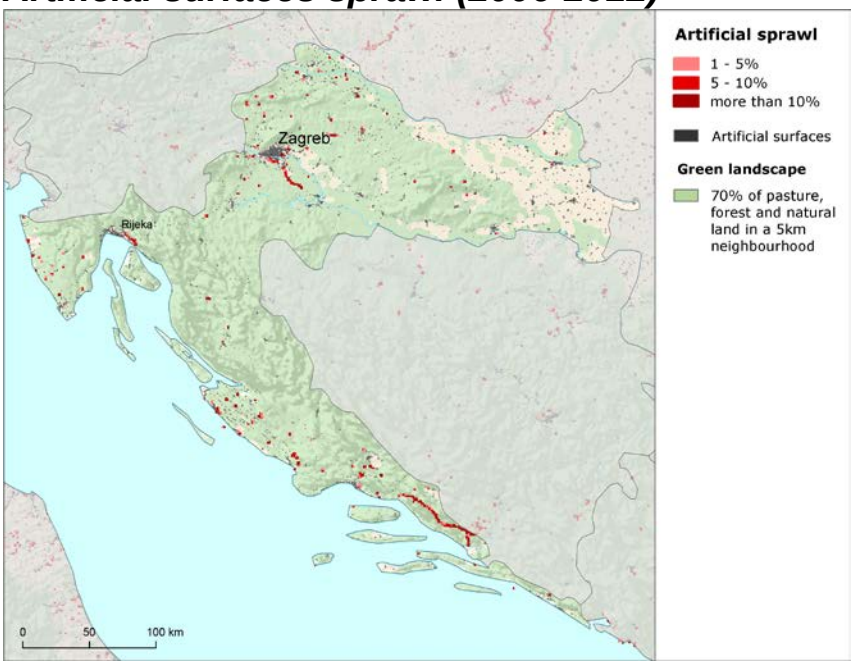
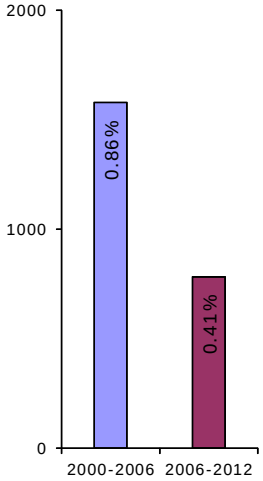
Artificial surfaces sprawl (2006-2012)



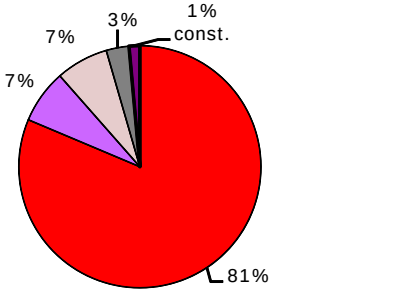
3.8. Artificial land take [ha/year, % of initial year]



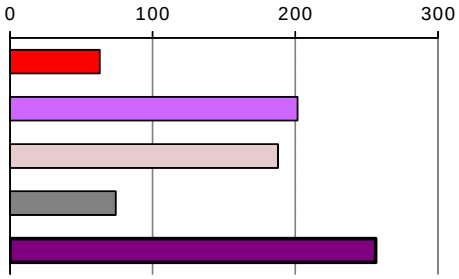
Highway to the south almost finished

The intensity of artificial land take in Croatia strongly decreased, compared to the previous period. This is caused by the fact that most of the highway network, which was under construction between 2000 and 2006, has been already finished in 2006-2012. Only two segments were still under construction in this period – first, the segment between cities Split and Dubrovnik located in southern Dalmacia and second, the segment located southern from capital city Zagreb. In contrast to highway construction, the sprawl of industrial and commercial units was more intensive in the period 2006-2012. This sprawl has been concentrated on Istrian peninsula, in the northern and central Dalmacia and also in the northern inland part of the country. The residential sprawl is rather insignificant in Croatia, with continuously decreasing intensity.

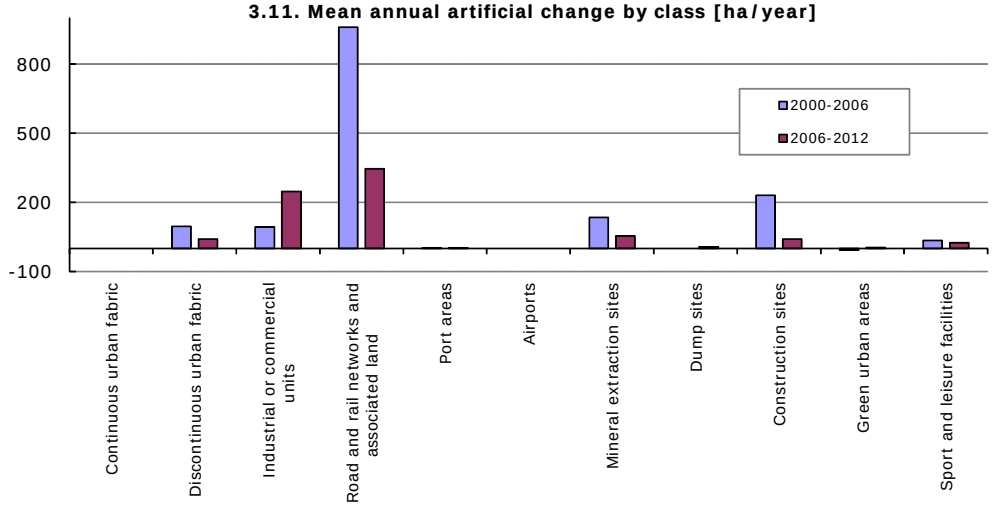
3.9. Artificial surfaces 2012 [% of total area]



3.10. Artificial land take 2006-2012 [ha/year]



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



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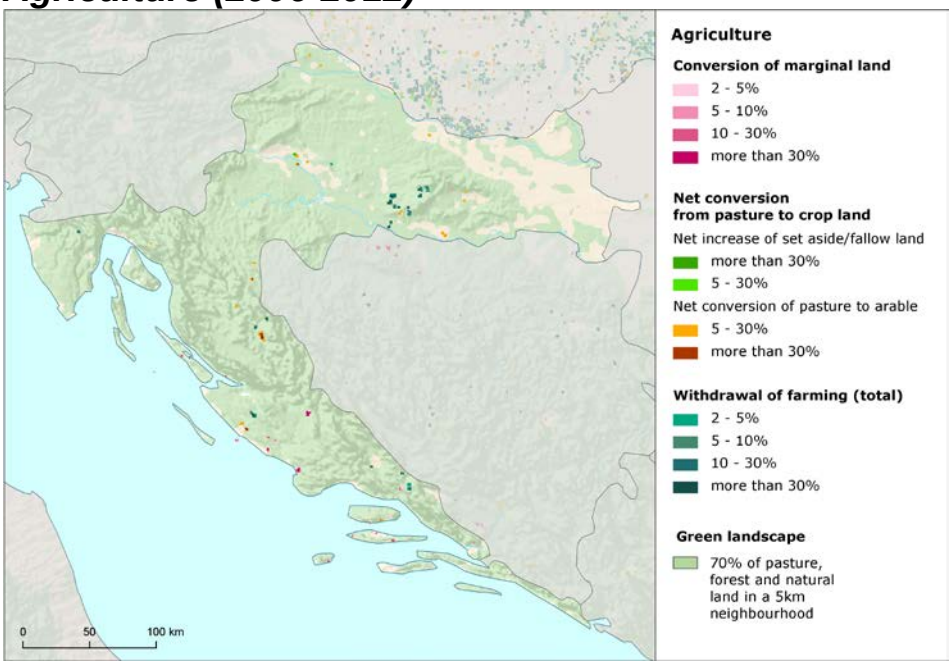
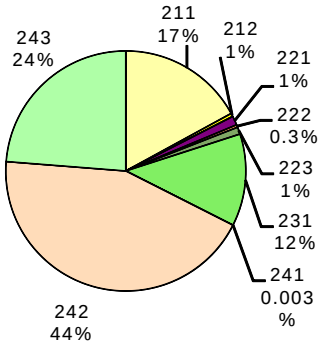
Agriculture (2006-2012)



Continuous slowdown of agricultural conversions

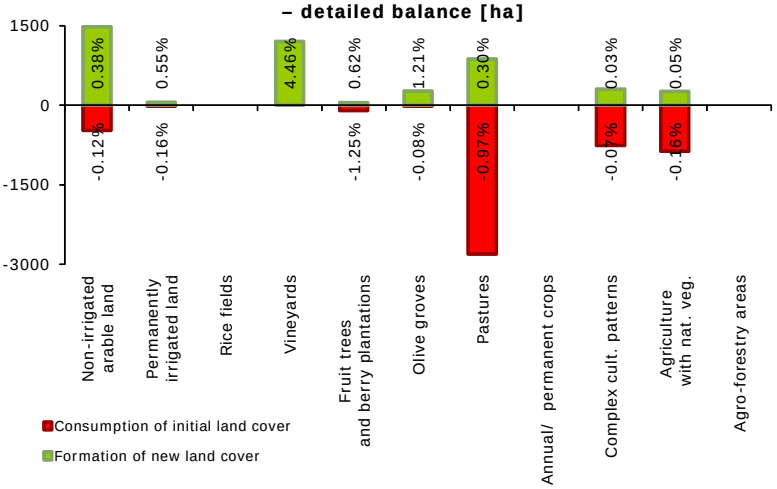
In comparison with the previous period and also with the period 1990-2000, the dynamics of agricultural land development (both internal and external exchanges) in Croatia became significantly lower. The prevailing direction of these flows is the formation of arable land and vineyards at the expense of pastures and agro-natural areas. This intensification trend had been observed already in the previous period, with even stronger intensity. Beside these internal flows, also external conversions between agricultural and natural land (both conversions from forest or natural land to agriculture, as well as withdrawal of farming with woodland creation) can be observed in the country. As a result of these internal and external conversions, pasture land shows negative net change balance, with prevailing consumption of area. However, this consumption is much less intensive than in the 2006-2012. On the other hand, the formation of arable land, vineyards (formation by 4.5%) and olive groves is obvious.

4.12. Agricultural areas 2012 [% of total area]

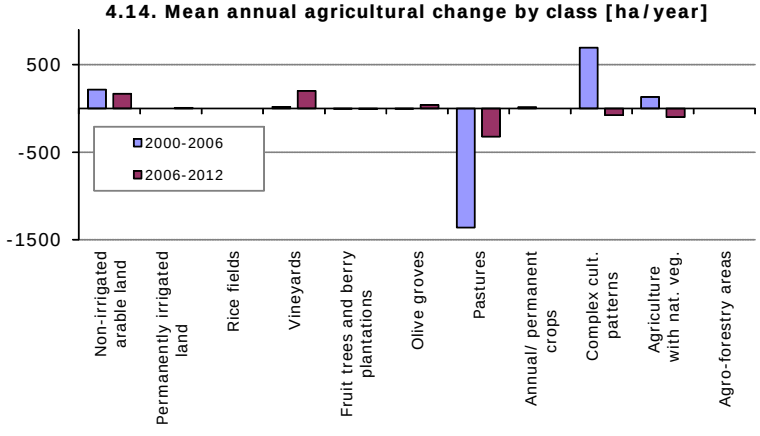


211 Non-irrigated arable land
212 Permanently irrigated land
213 Rice fields
221 Vineyards
222 Fruit trees and berry plantations
223 Olive groves
231 Pastures
241 Annual crops associated with permanent crops
242 Complex cultivation patterns
243 Agriculture land with significant areas of natural vegetation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

4.13. Development of agricultural areas 2006-2012 – detailed balance [ha]



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



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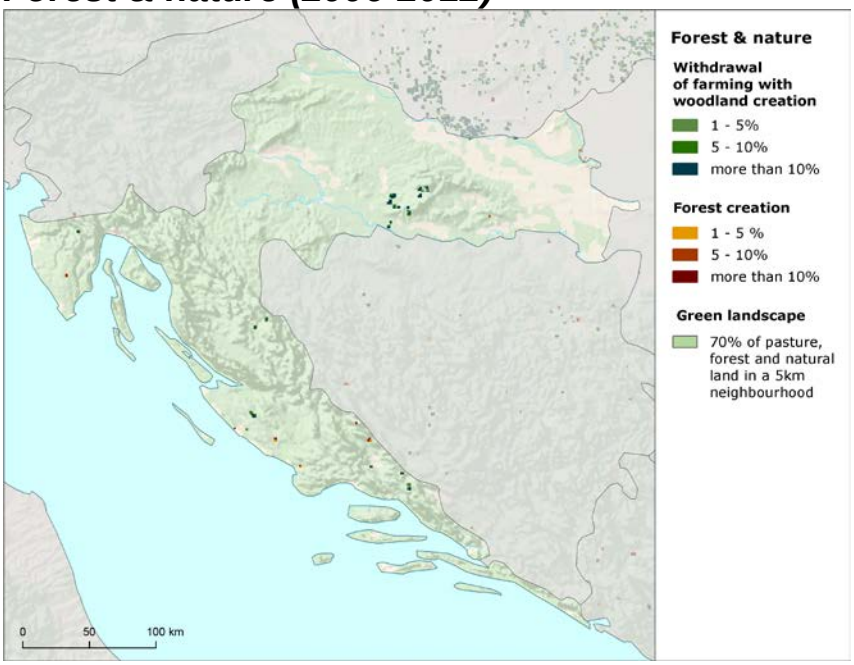
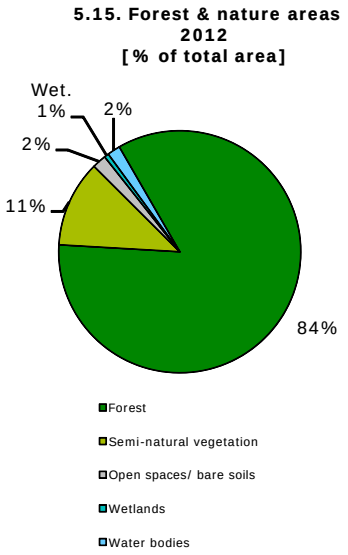
Forest & nature (2006-2012)

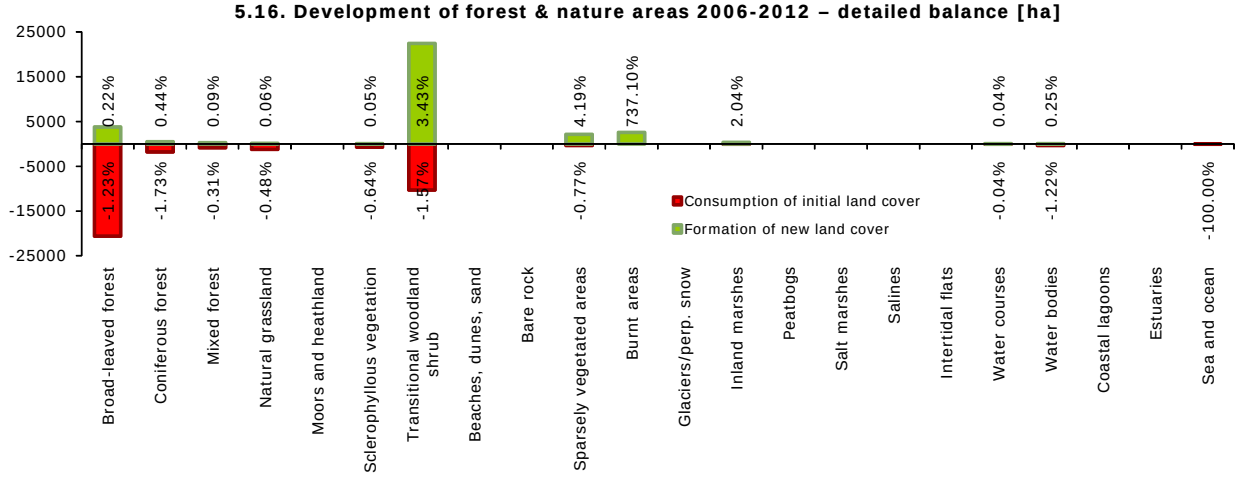




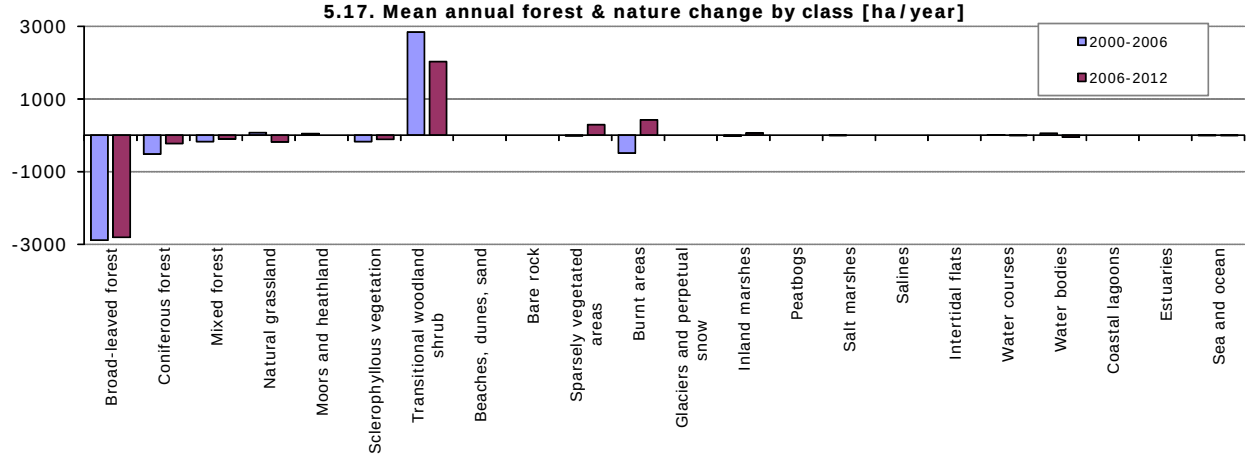
Forest and nature land development

Forest creation and management is the most extensive flow in Croatia, however, it is represented mostly by internal forest conversions. With significantly prevailing recent felling and transition over opposite conversion from transitional woodland to forest, the intensity of both these flows is slightly lower, compared to the previous period. As a result, the overall change balance of natural land is characterized by consumption of (mostly broad-leaved) forest and formation of transitional woodland and shrub areas.
Natural land has been also consumed by sprawl of economic sites and infrastructures, as well as by conversion from forest to agriculture. These consumptions are compensated through opposite withdrawal of farming (mainly pasture and agro-natural land) with transitional woodland creation. There also occurs negative trends like conversion from transitional woodland/shrub into sparsely vegetated areas and forest/shrub fires in the Croatian natural landscape.

5.16. Development of forest & nature areas 2006-2012 – detailed balance [ha]



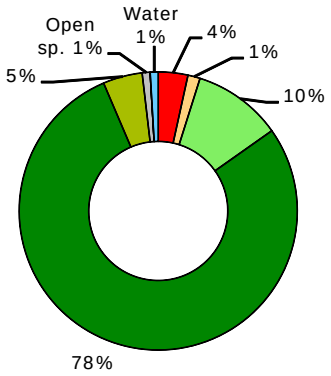
5.17. Mean annual forest & nature change by class [ha/year]



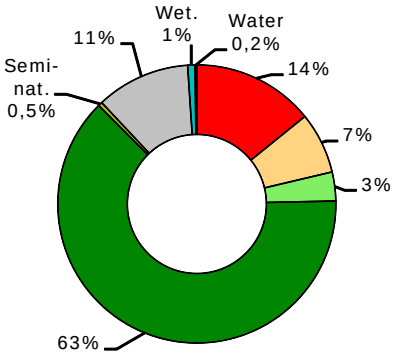
Annex: Land cover flows and trends

Land cover flows 2006-2012

6.18. Consumption of land cover 2006-2012 [% of total change area]

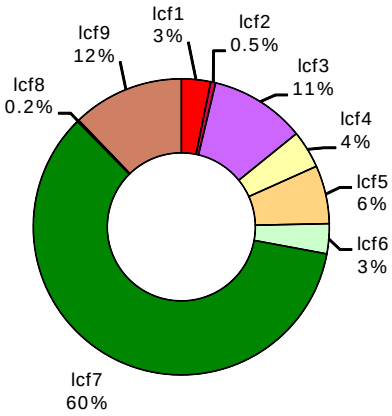


6.19. Formation of land cover 2006-2012 [% of total change area]



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) 2006-2012 [% of total change area]

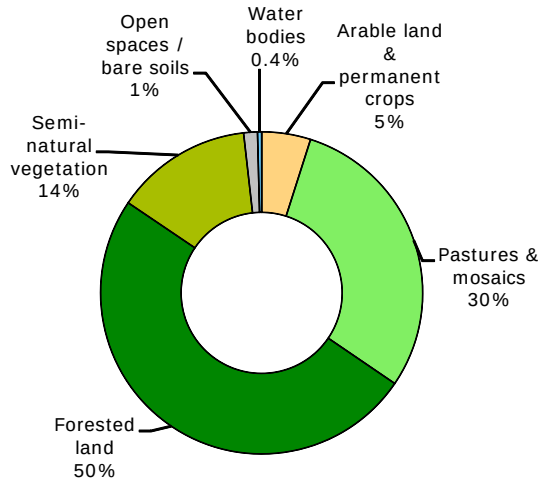


lcf1 Urban land management
lcf2 Urban residential sprawl
lcf3 Sprawl of economic sites and infrastructures
lcf4 Agriculture internal conversions
lcf5 Conversion from forested & natural land to agriculture
lcf6 Withdrawal of farming
lcf7 Forests creation and management
lcf8 Water bodies creation and management
lcf9 Changes due to natural and multiple causes

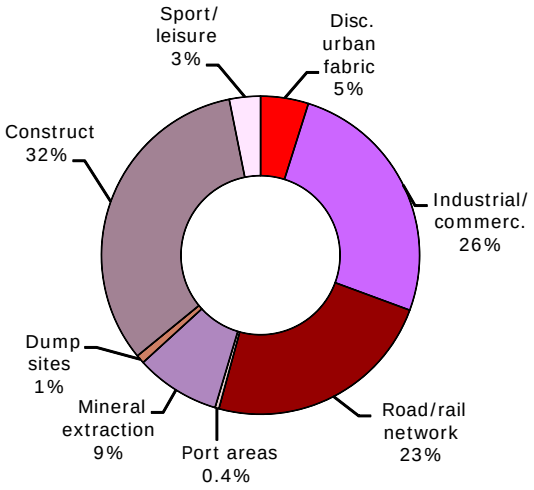
Croatia

Artificial areas

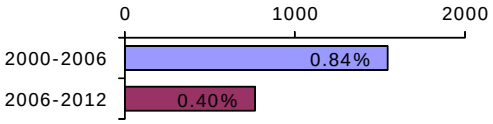
7.21. Consumption by artificial land take 2006-2012 [% of total]



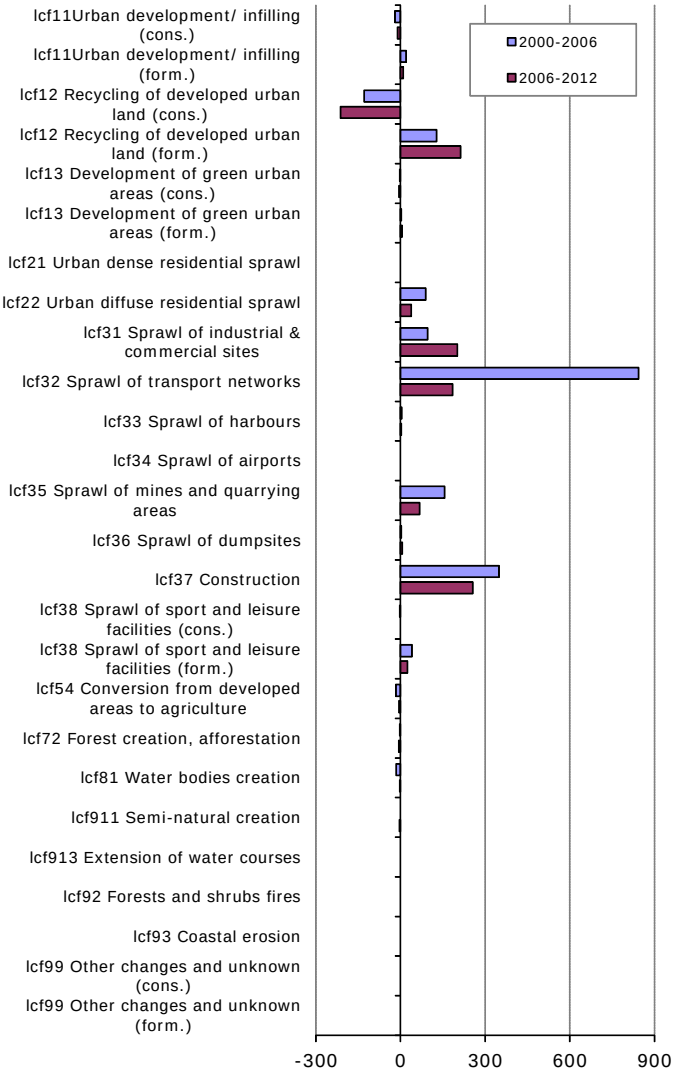
7.22. Formation by artificial land take 2006-2012 [% of total]



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



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



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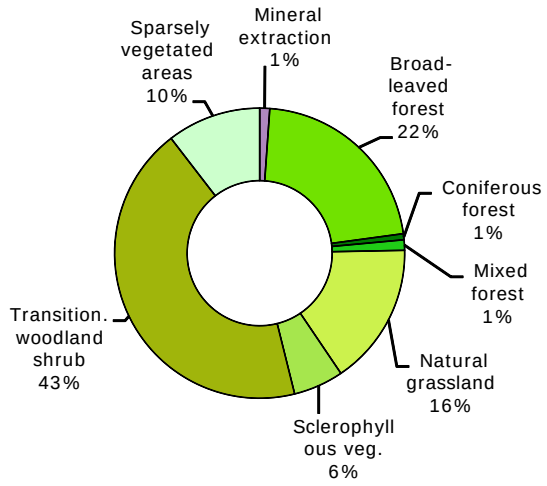
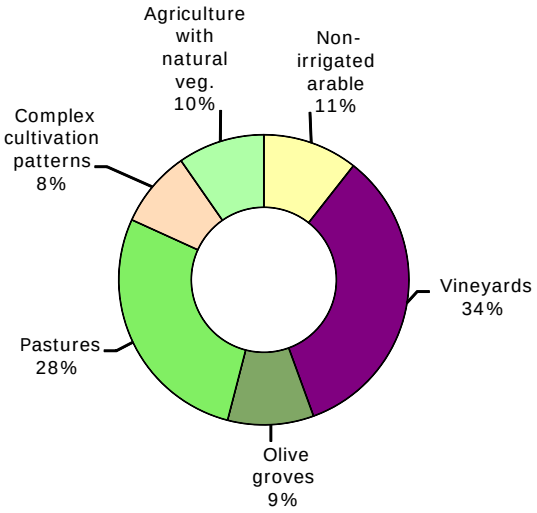
Agriculture

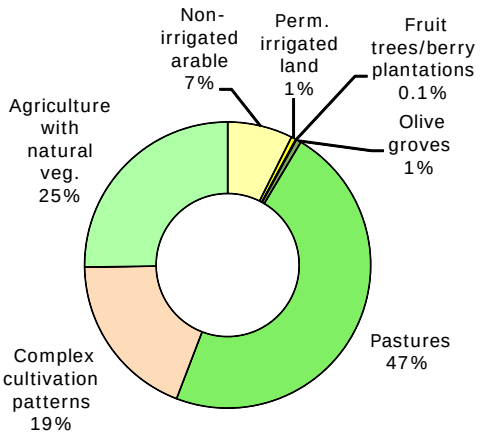
8.25. LC consumed by agriculture 2006-2012 [% of total]



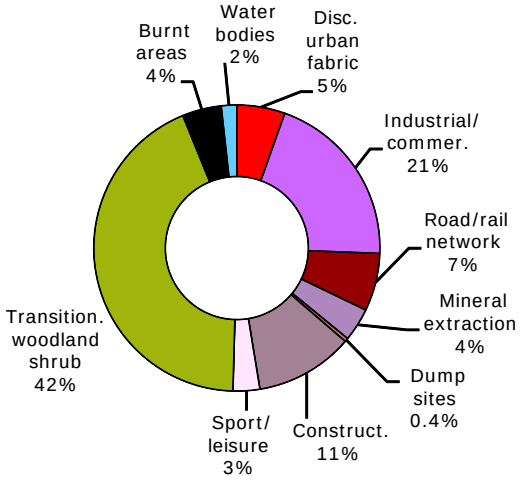
8.26. Formation of agricultural land from non-agriculture 2006-2012 [% of total]



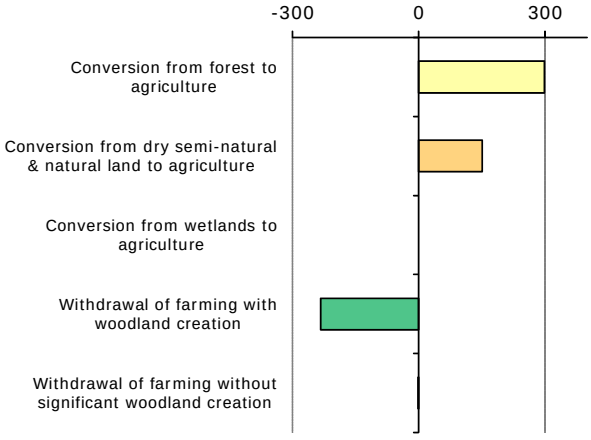
8.27. Consumption of agricultural land by non-agriculture 2006-2012 [% of total]



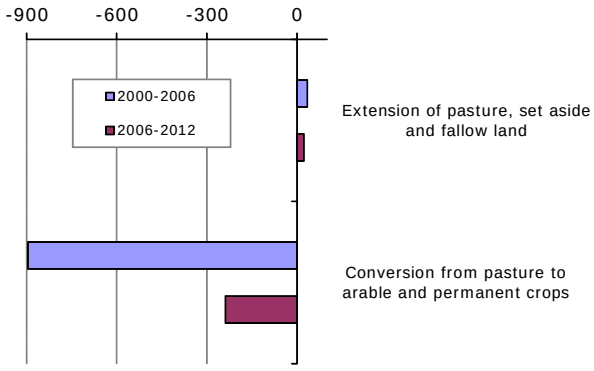
8.28. Formation of non-agricultural land from agriculture 2006-2012 [% of total]



8.29. Main annual conversions between agriculture and forests & semi-natural land 2006-2012 [ha/year]



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



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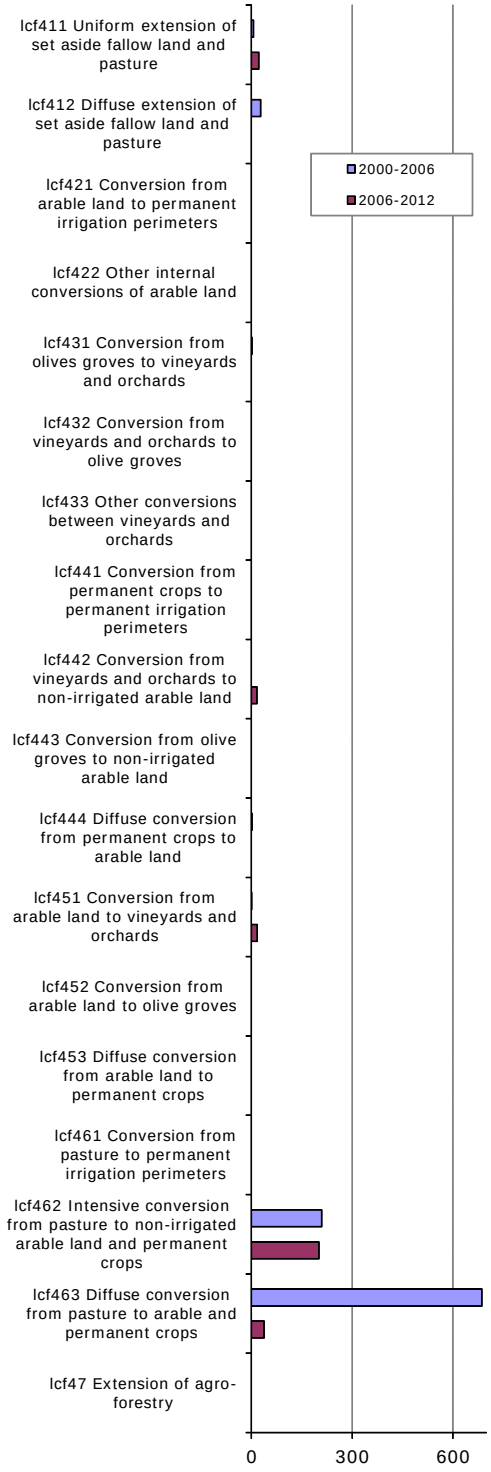
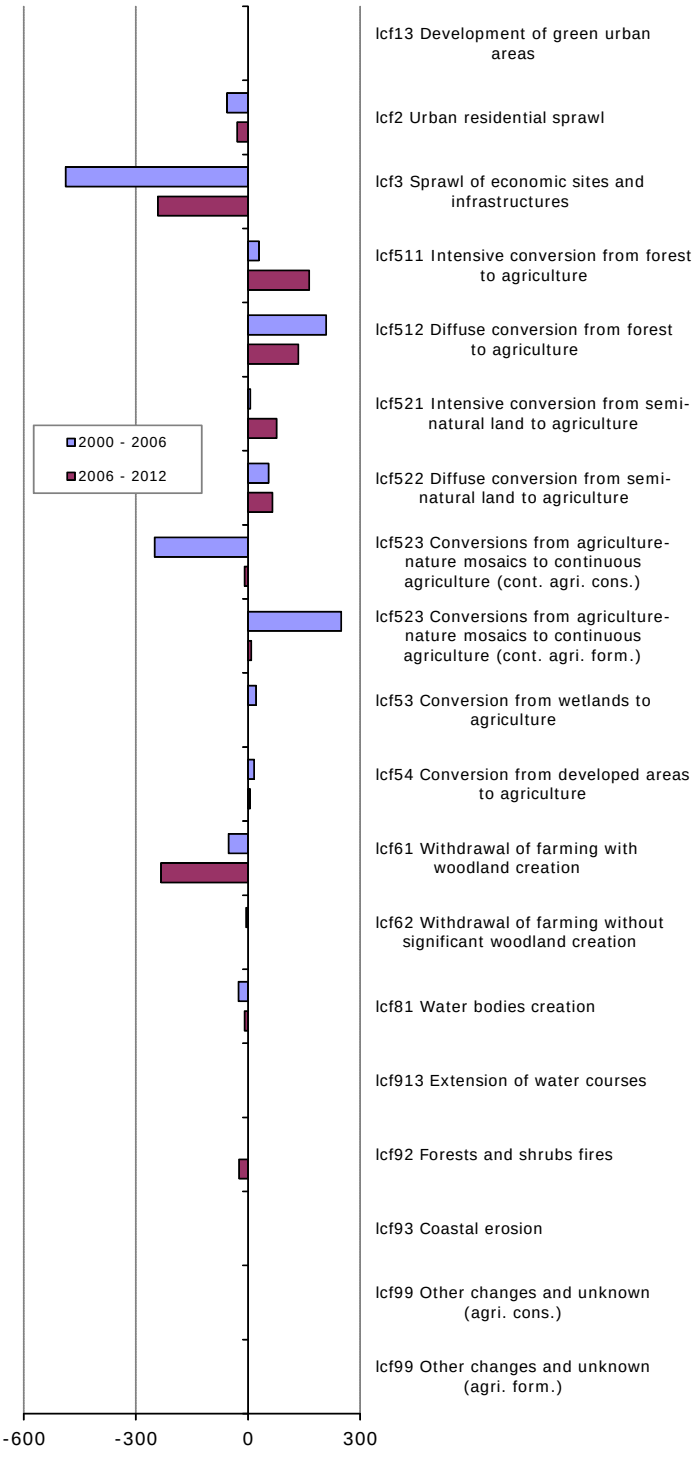
9.31. Mean annual agriculture internal conversions [ha/year]



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



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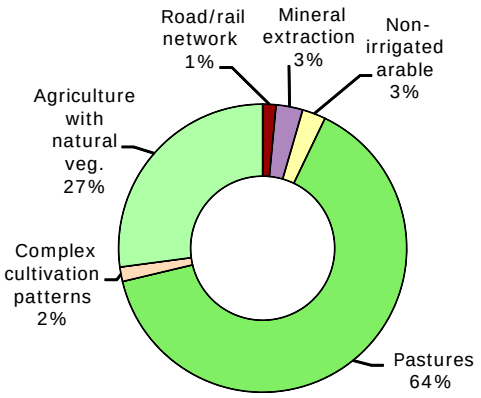
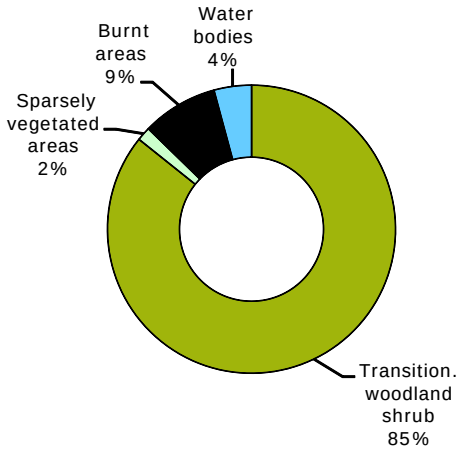
Forest & nature

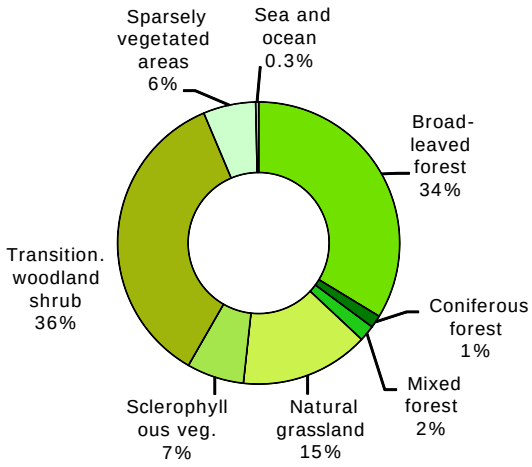
10.33. LC consumed by forest & nature 2006-2012 [% of total]



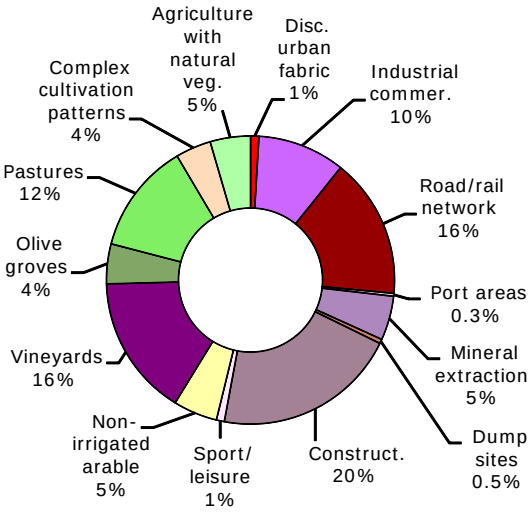
10.34. Formation of forest & nature land from non-forest /nature 2006-2012 [% of total]



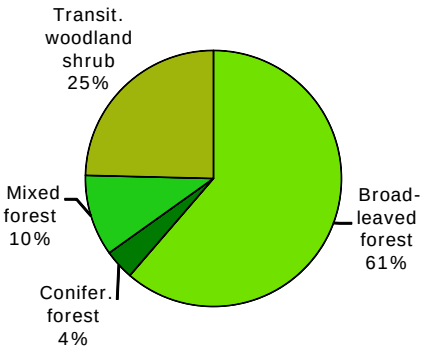
10.35. Consumption of forest & nature land by non-forest/nature 2006-2012 [% of total]



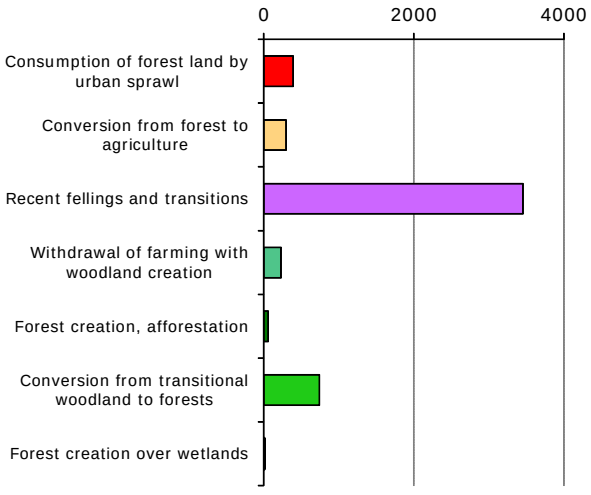
10.36. Formation of non-forest/nature land from forest & nature 2006-2012 [% of total]



10.37. Forested land 2012 [% of total area]



10.38. Main trends in woodland & forests consumption/formation 2006-2012 [ha/year]



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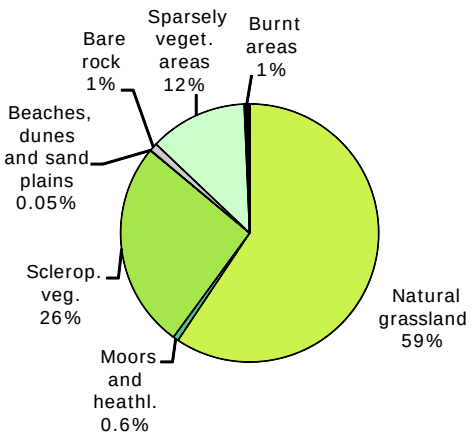
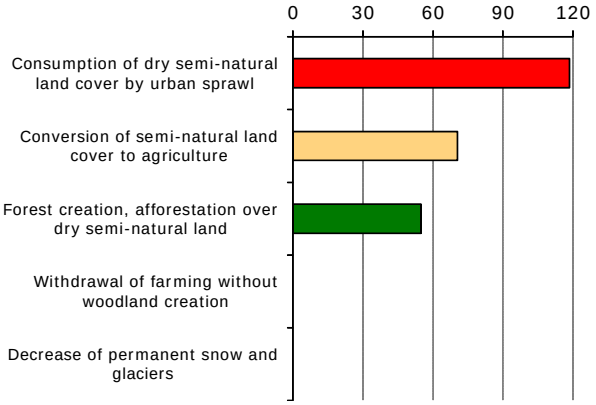
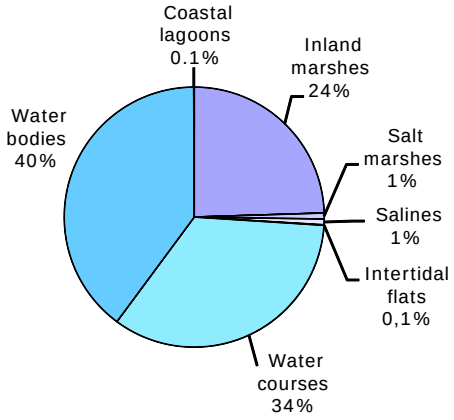
11.39. Dry semi-natural areas 2012 [% of total area]



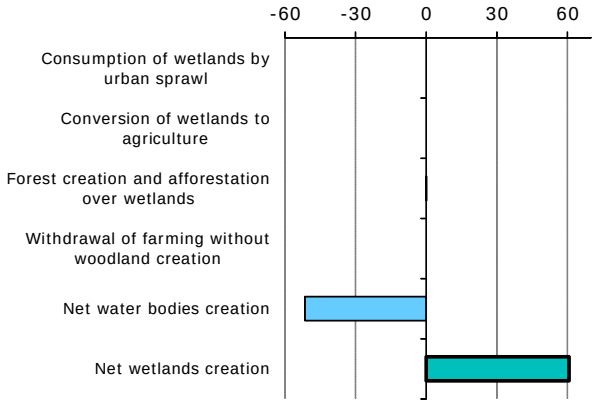
11.40. Main trends in dry semi-natural land consumption/formation 2006-2012 [ha/year]



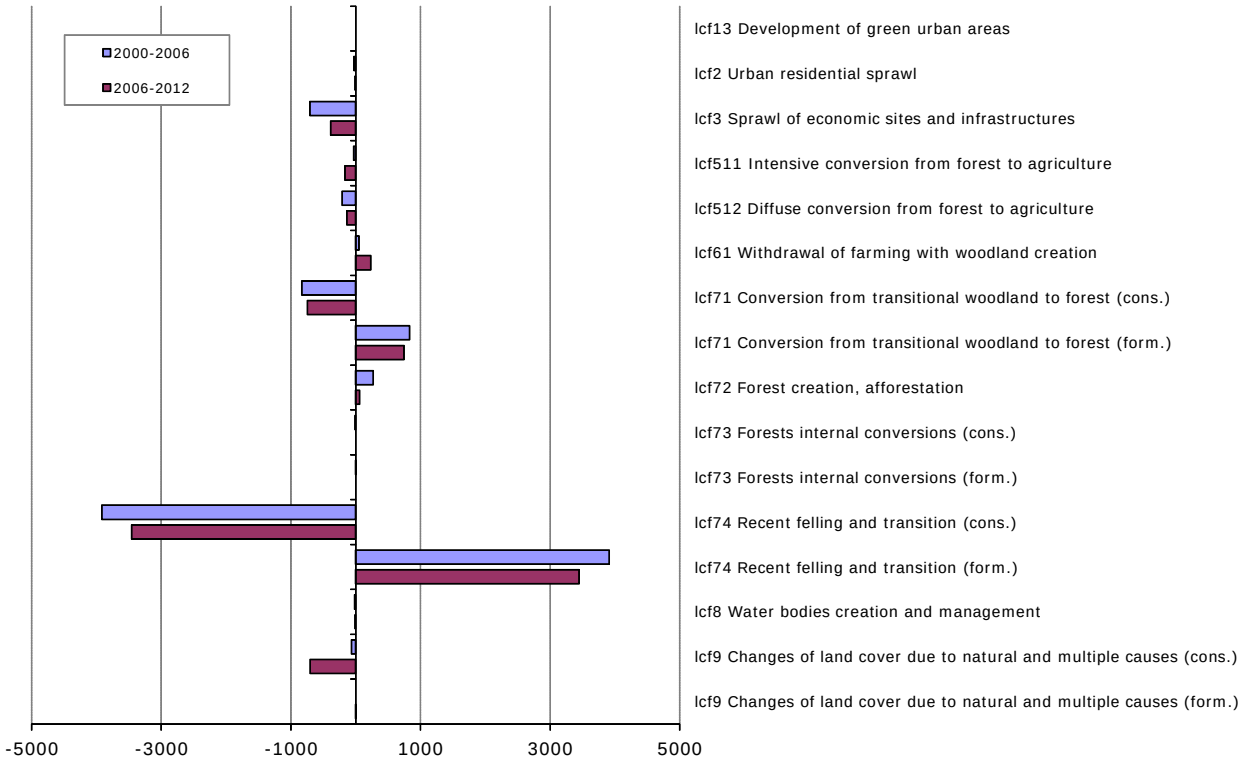
11.41. Wetlands & water 2012 [% of total area]



11.42. Main trends in wetlands & water consumption/formation 2006-2012 [ha/year]



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



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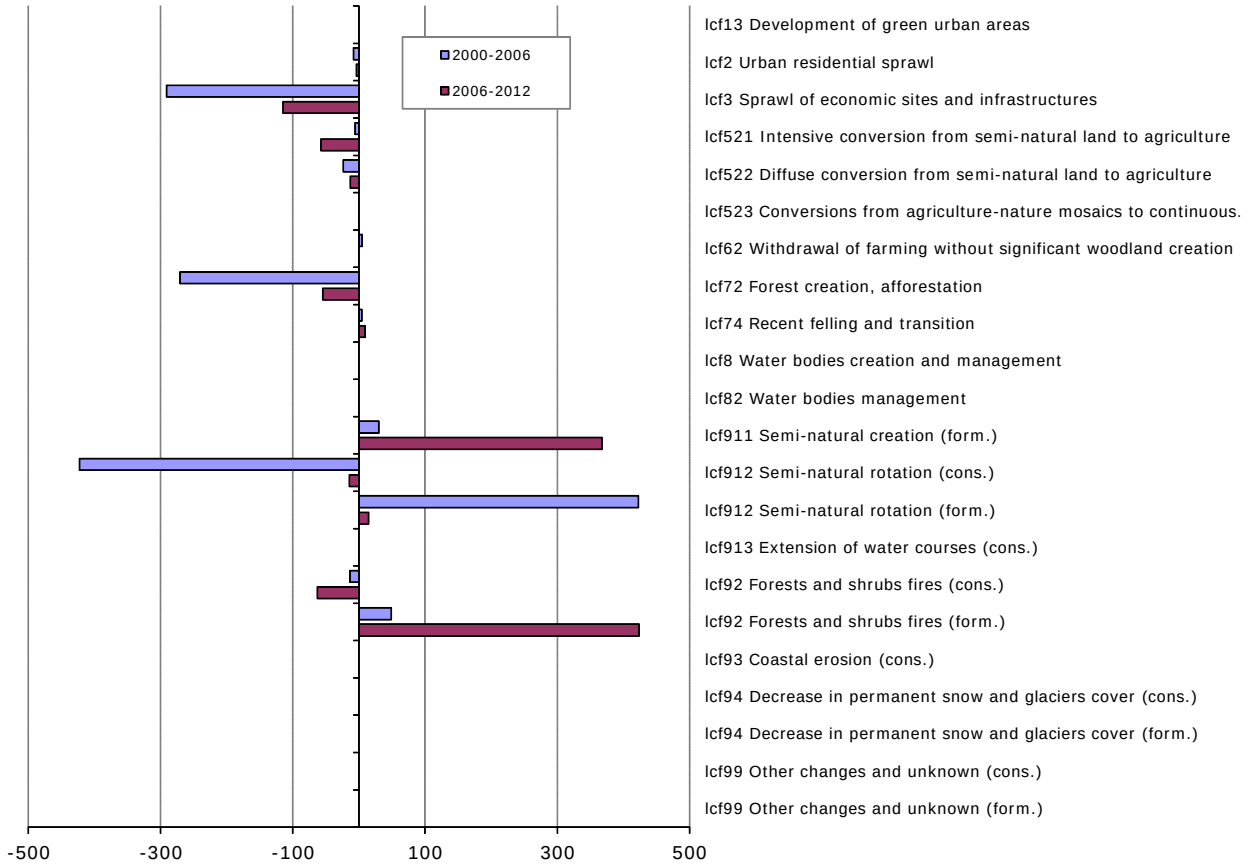
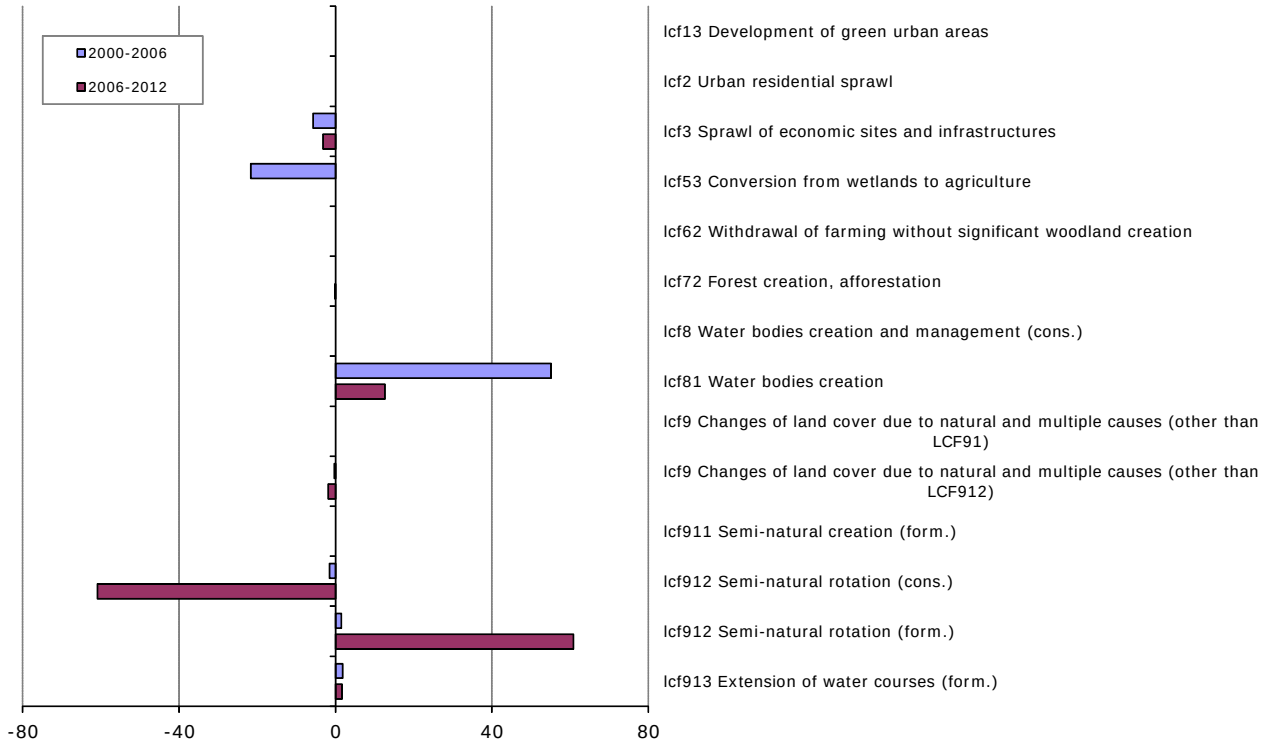
12.44. Mean annual conversions of dry semi-natural LC [ha/year]



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



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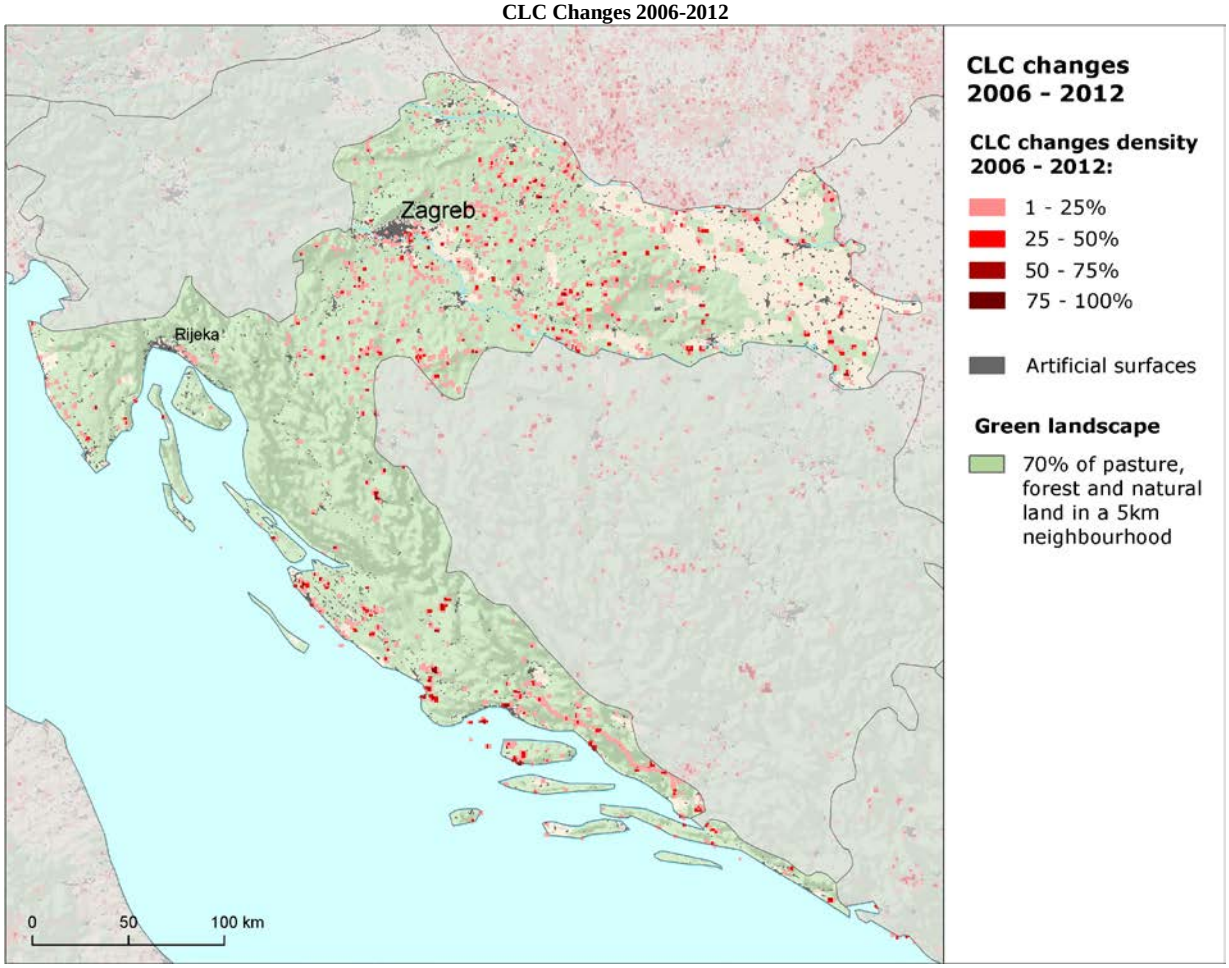
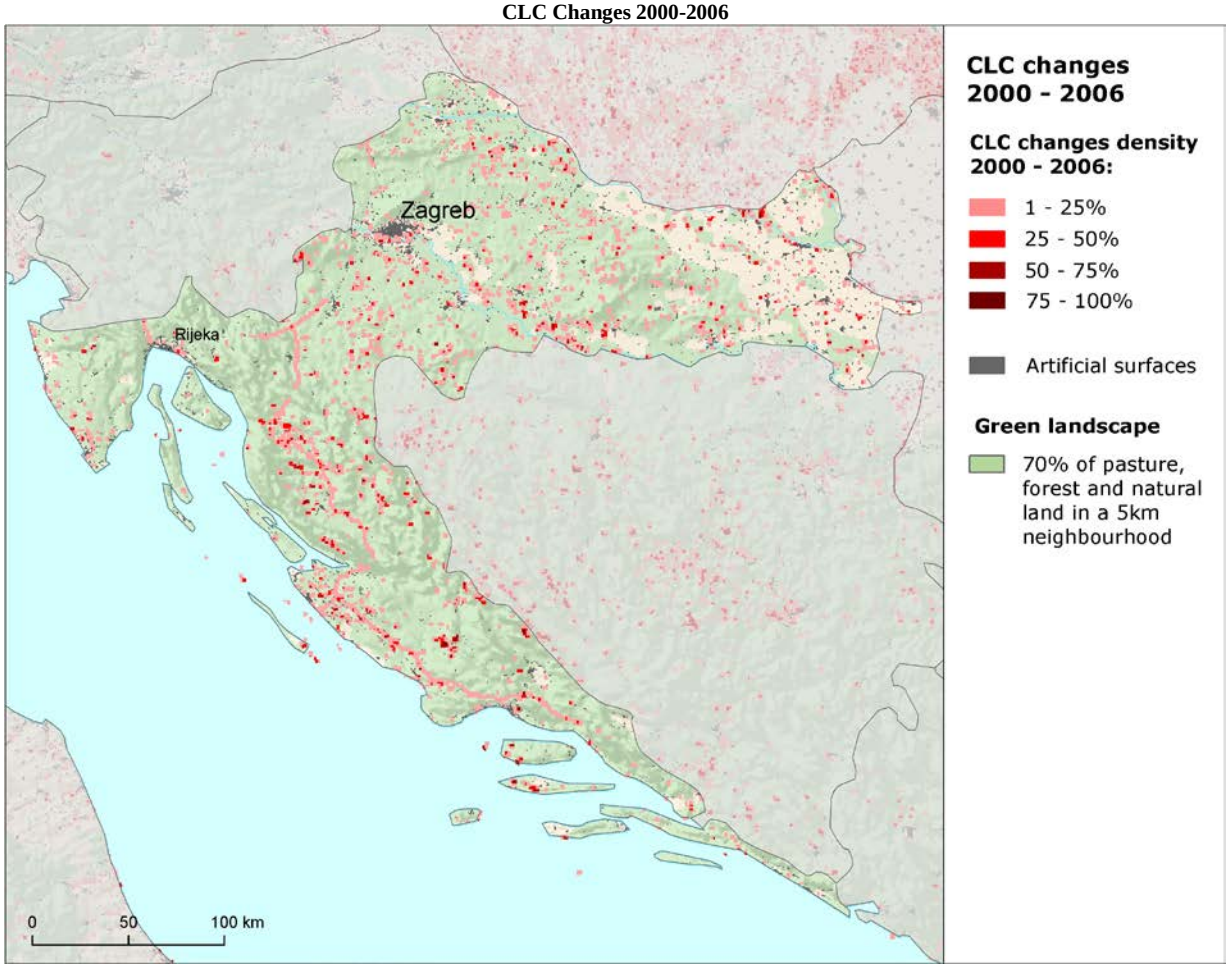
CLC Changes 2006-2012



CLC Changes 2000-2006



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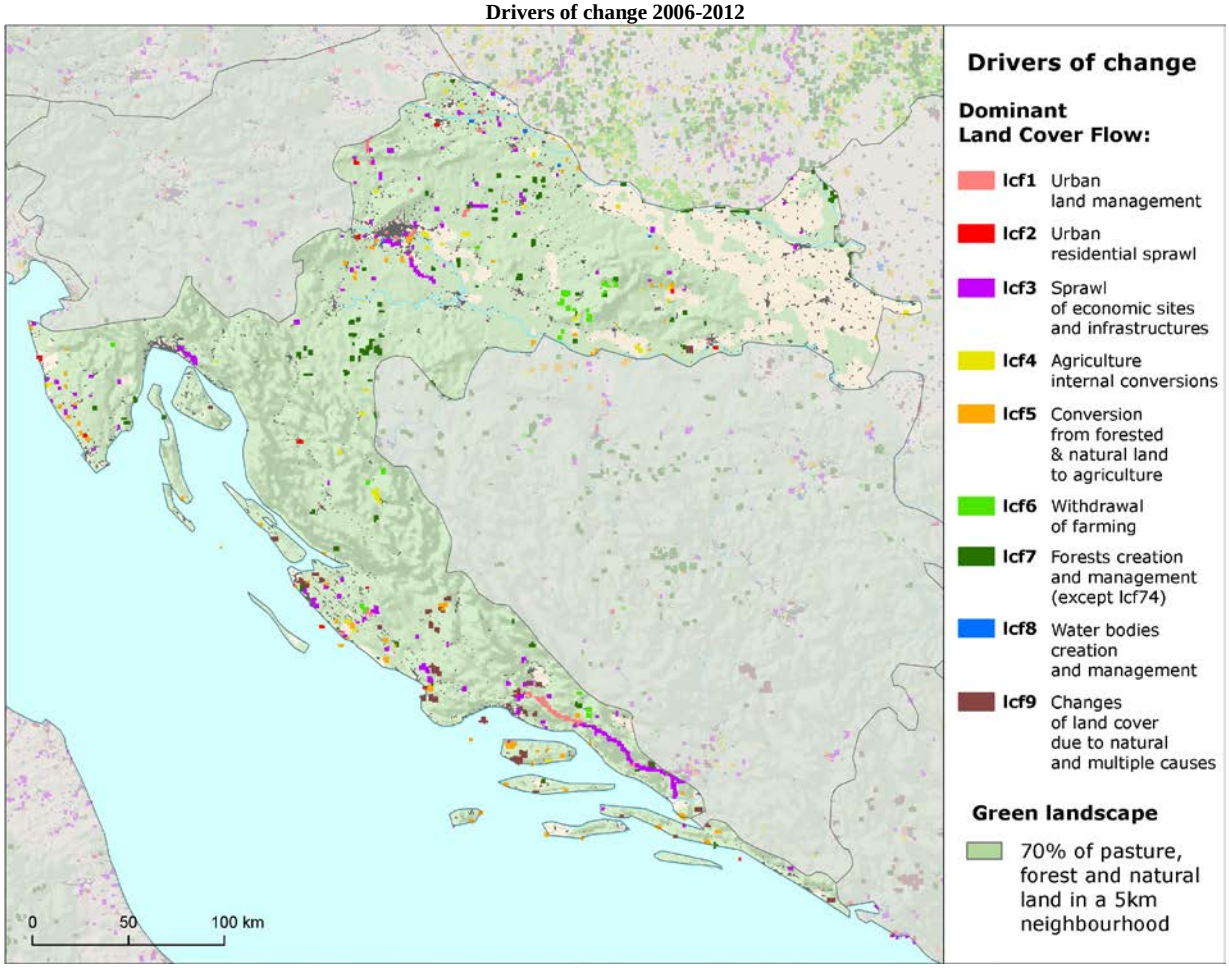
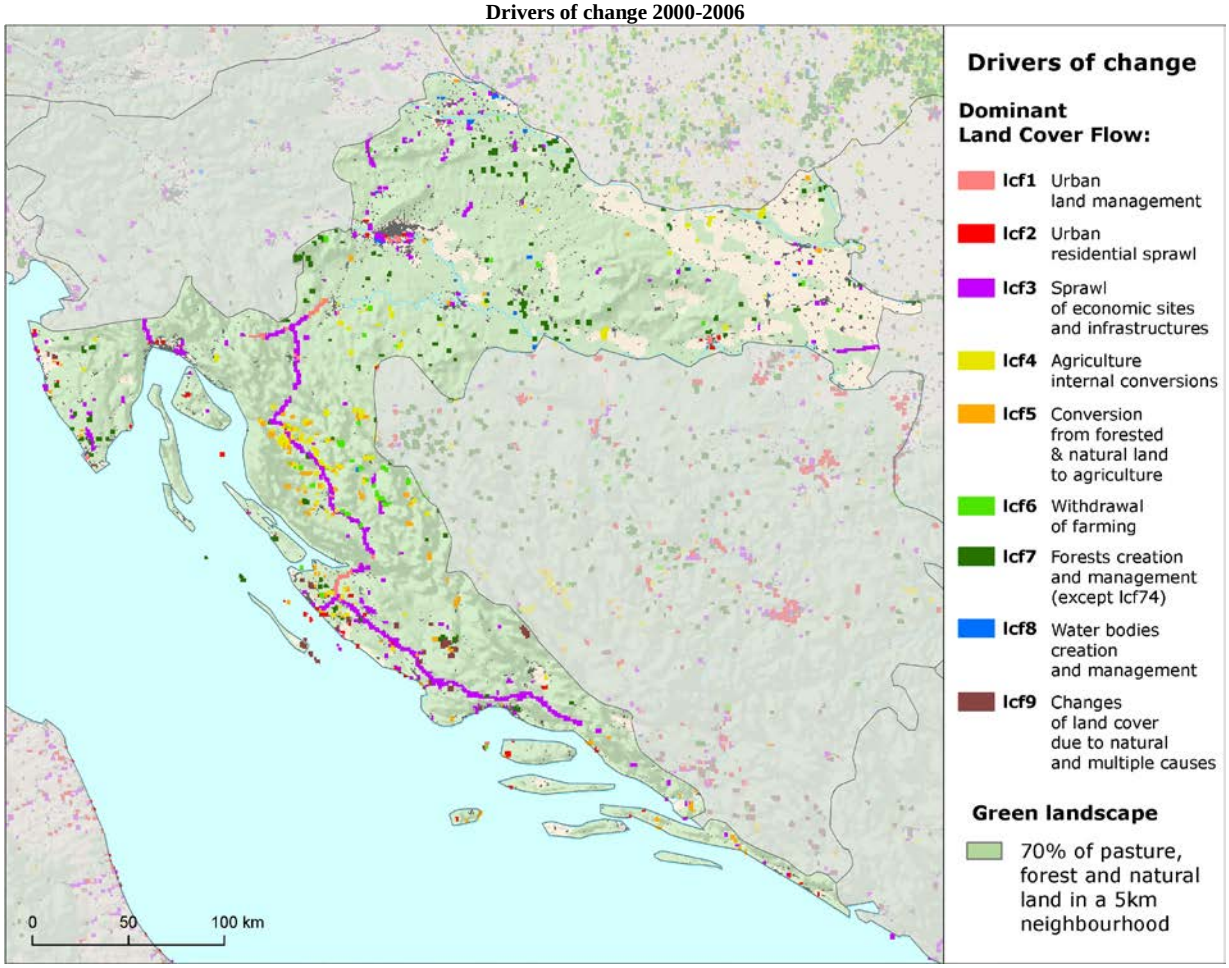
Drivers of change 2006-2012

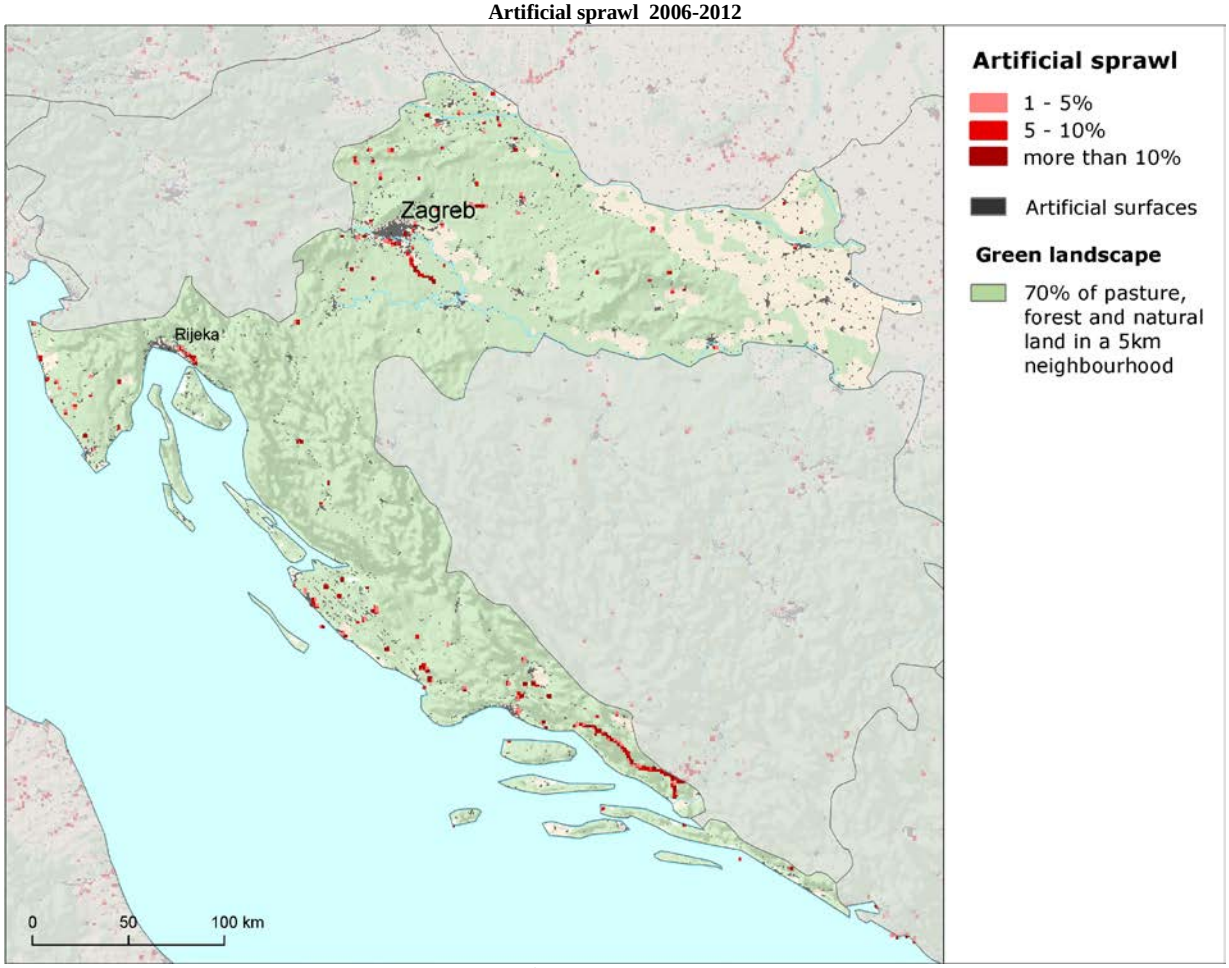


Drivers of change 2000-2006

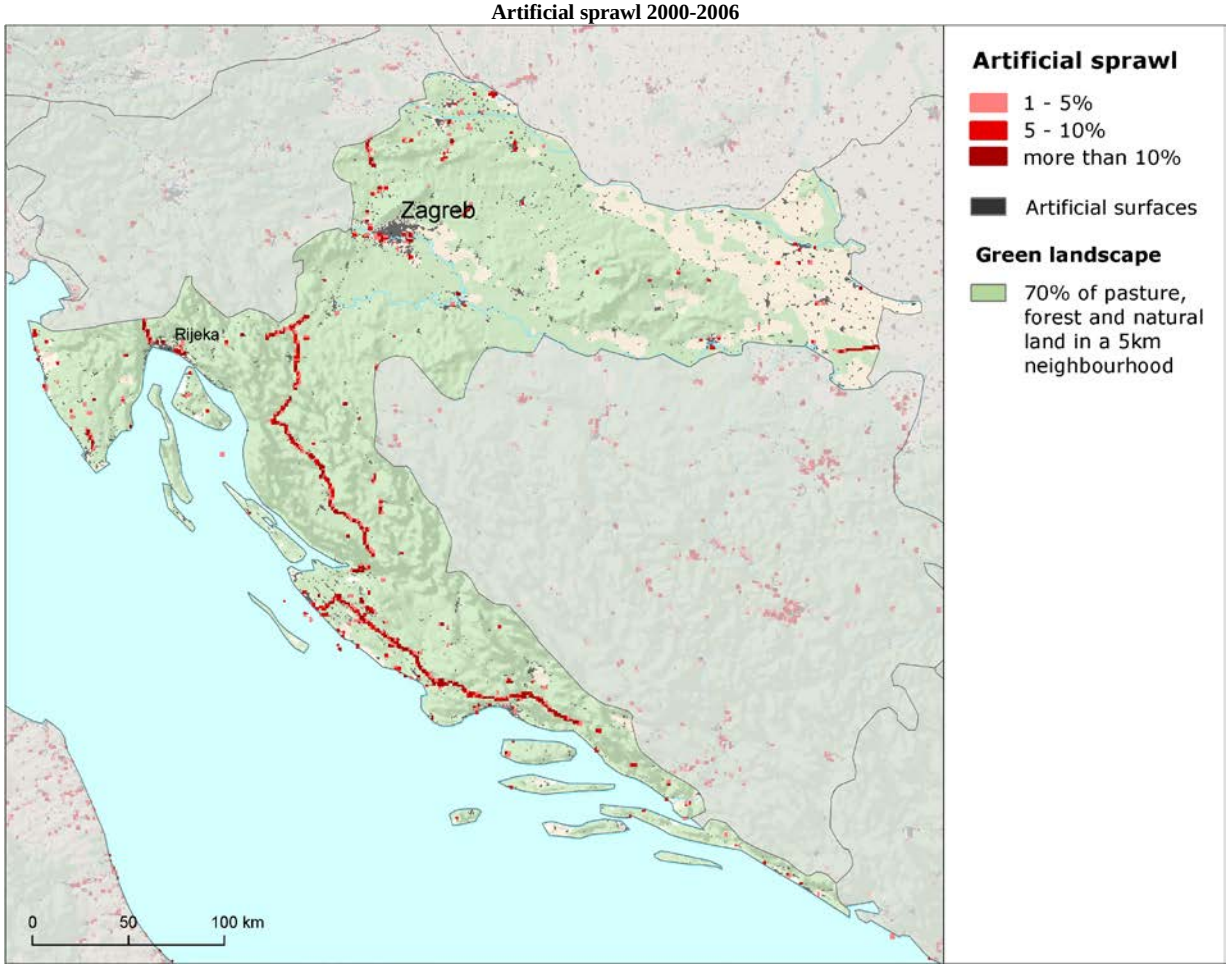


Croatia

Artificial sprawl 2006-2012



Artificial sprawl 2000-2006



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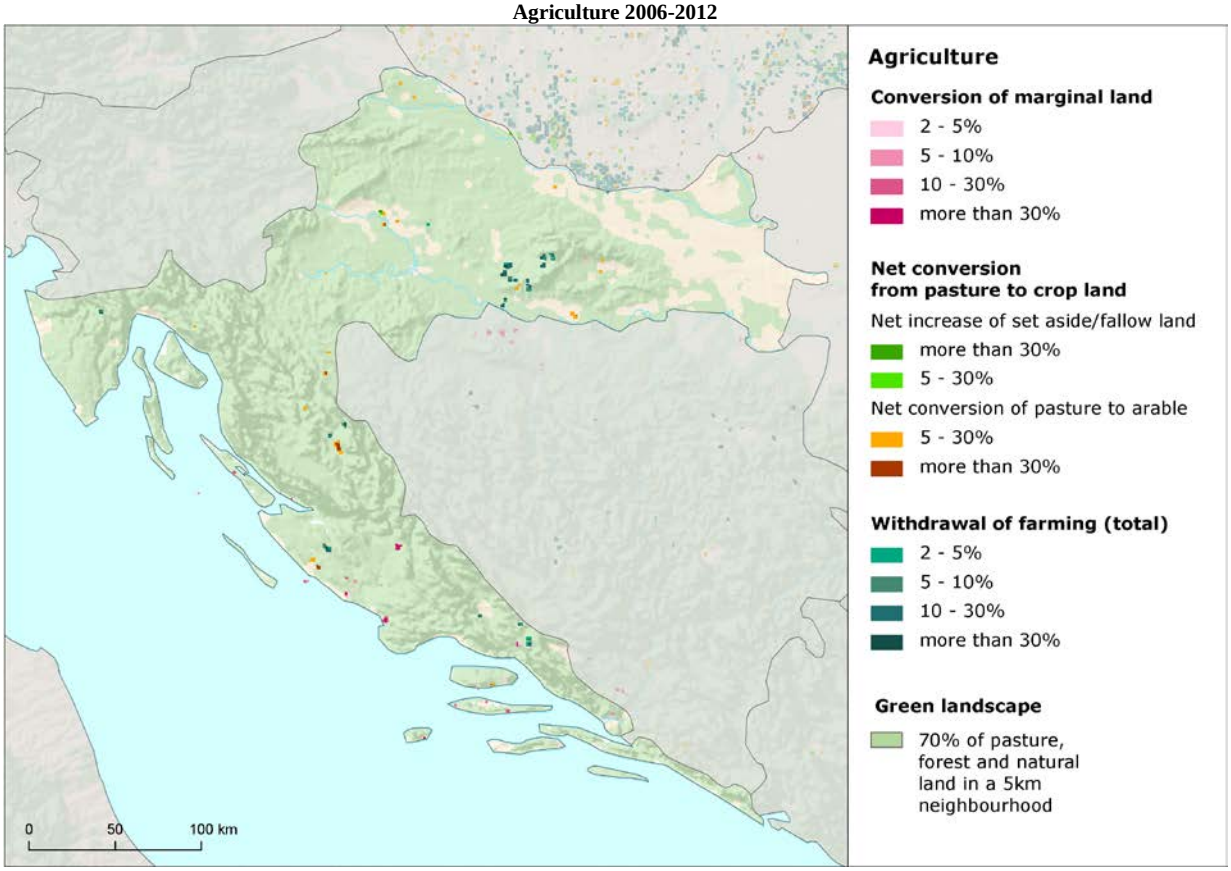
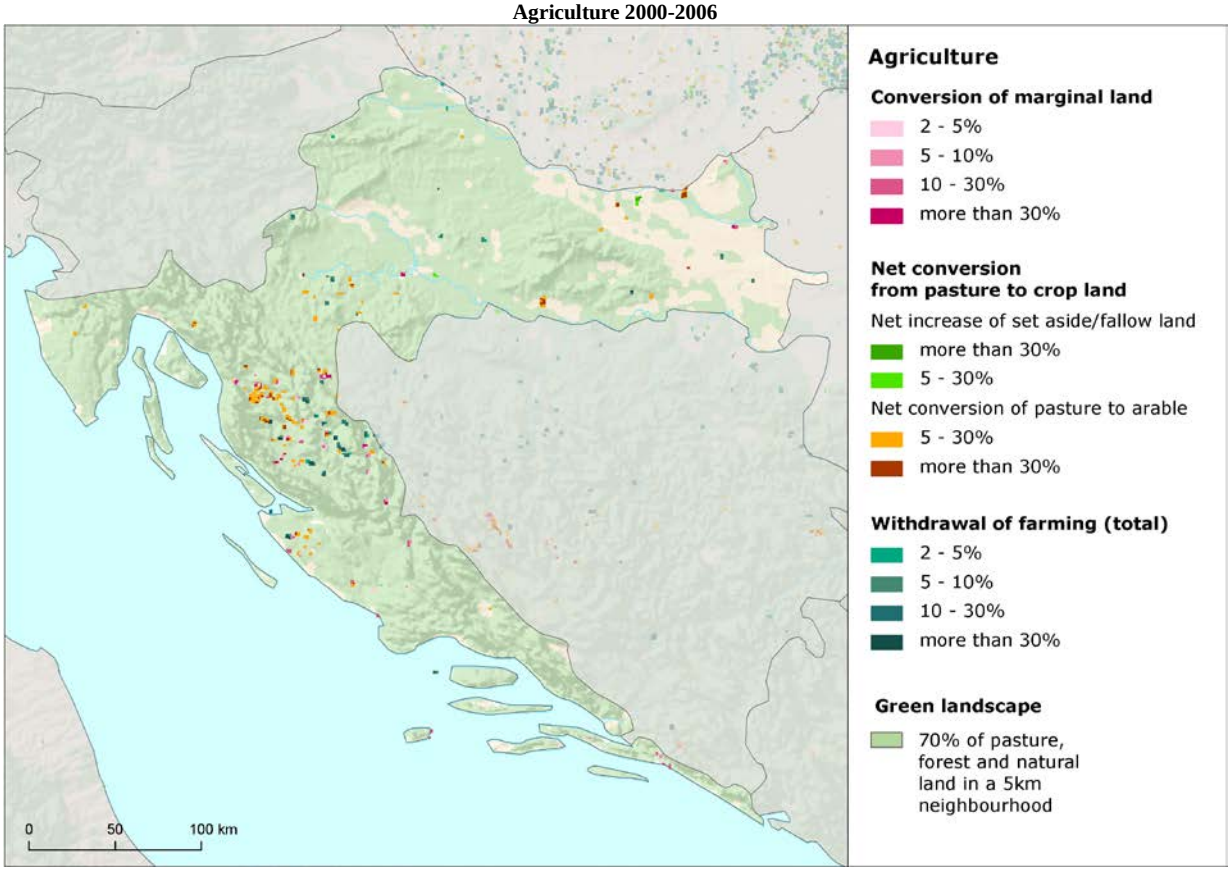
Agriculture 2006-2012

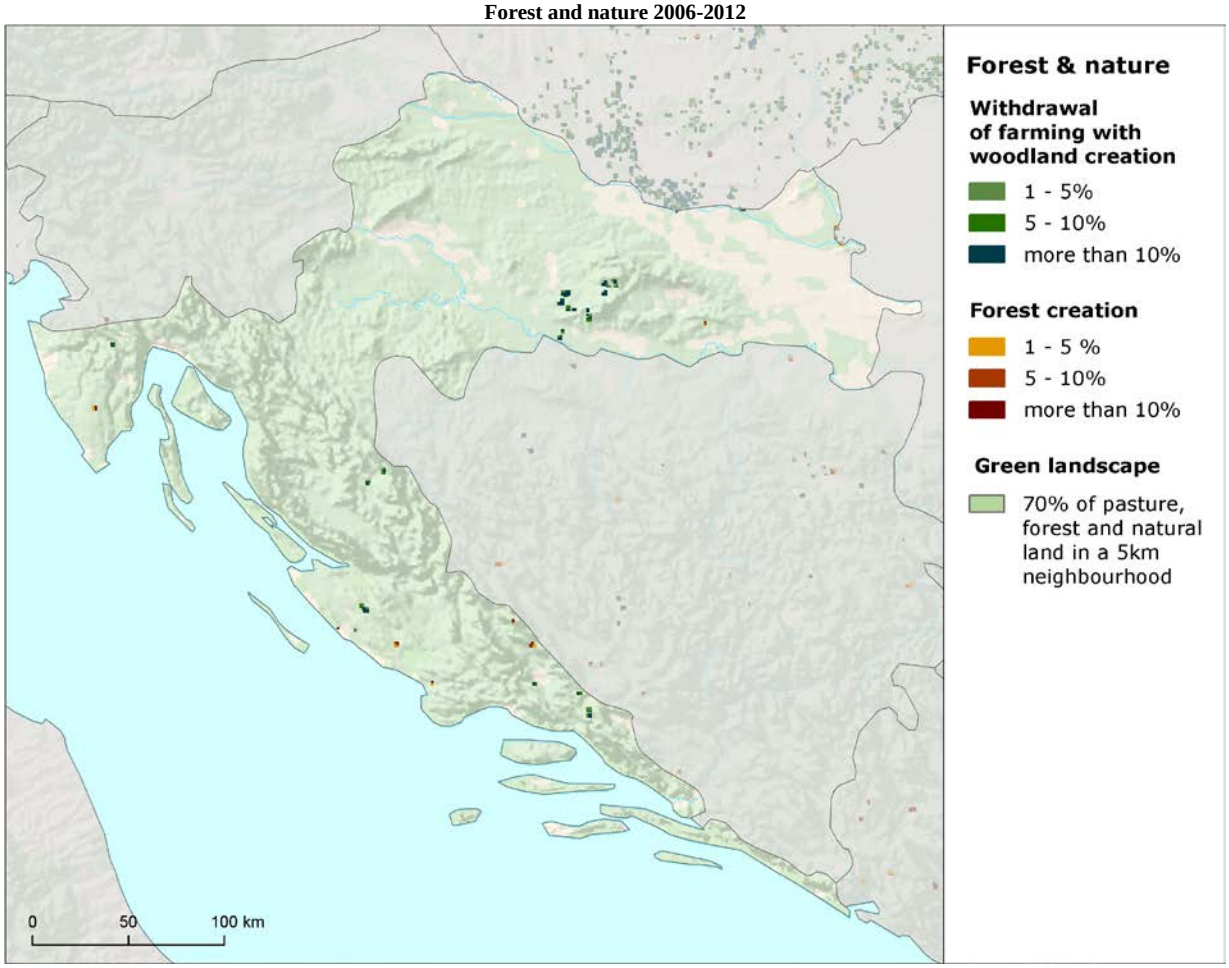


Agriculture 2000-2006



Croatia

Forest and nature 2006-2012



Forest and nature 2000-2006