Country fact sheet

Land cover 2012

Luxembourg

September 2017

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European Environment Agency

Luxembourg

Land cover 2012

Overview of land cover & change 2006-2012

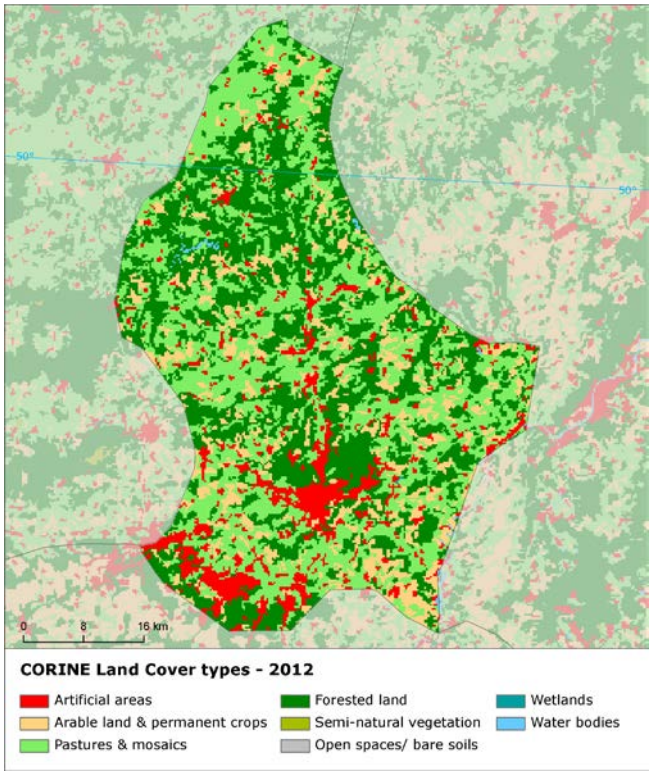
The small country of Luxembourg shows significant decrease of the land cover development dynamics, compared to previous period 2000-2006. The overall annual change rate for 2006-2012 – 0.07% of total area - is one of the lowest among European countries. The pace of the land cover development in the country culminated during the previous period, with an annual change rate of 0.23%.

The main reason for this decrease is a rapid slowdown of the internal conversions of forested and also agricultural land, which can be observed when comparing the periods 2000-2006 and 2006-2012. The intensity of both these flows culminated during the period 2000-2006.

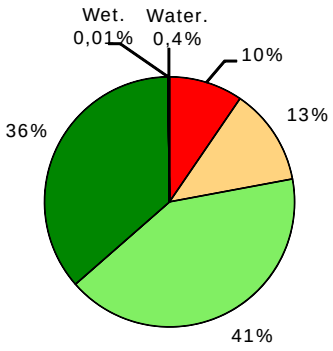
The internal forest conversions, which were the most powerful driver of land cover change in the country in the 2000-2006 period, lost most of their intensity and there were no registered internal agricultural conversions during the period 2006-2012.

The position of the main driver of the land cover change in the country has been overtaken by the artificial development in the last period, with prevailing sprawl of economic sites and infrastructures. The annual rate of the artificial land take is slightly below the European average, which means it's a little bit higher compared to the period 2000-2006; however, still more than twice lower than in the period 1990-2000.

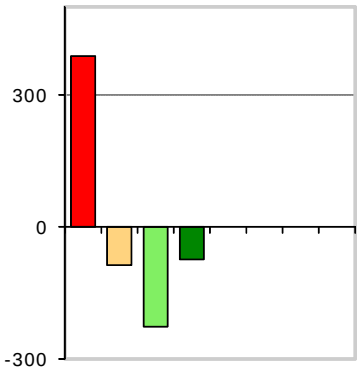
Note: The results presented here are based on a change analysis of 44 land cover types mapped consistently on a 1:100.000 scale across Europe over more than decade between 2000-2006-2012 - see Corine land cover (CLC) programme for details.
Number of years between CLC2006-CLC2012 data for Luxembourg: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



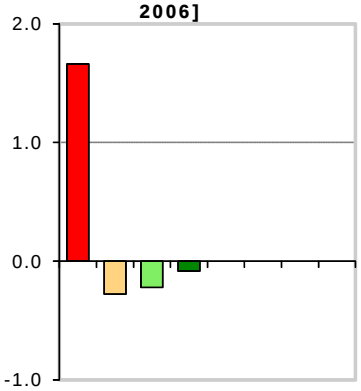
1.1. Land cover 2012 [% of total]



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	**233**	**313**	**1034**	**902**	**0**	**0**	**0**	**5**	**2487**
Consumption of initial LC	1.5	0.9	2.8	3.9	0.0	0.0	0.0	0.0	9
Formation of new LC	5.4	0.0	0.6	3.2	0.0	0.0	0.0	0.0	9
Net Formation of LC	**3.9**	**-0.9**	**-2.3**	**-0.7**	**0.0**	**0.0**	**0.0**	**0.0**	**0**
Net formation as % of initial year	*1.7*	*-0.3*	*-0.2*	*-0.1*	*0.0*	*0.0*	*0.0*	*0.0*	
Total turnover of LC	**6.8**	**1.0**	**3.4**	**7.1**	**0.0**	**0.0**	**0.0**	**0.0**	**18**
Total turnover as % of initial year	*2.9*	*0.3*	*0.3*	*0.8*	*0.0*	*0.0*	*0.0*	*0.0*	*0.7*
Land cover 2012	**237**	**312**	**1032**	**901**	**0**	**0**	**0**	**5**	**2487**

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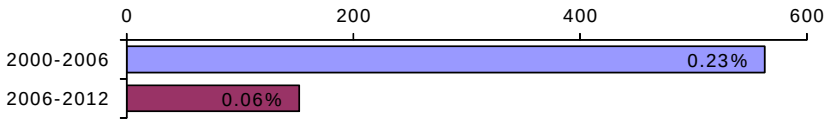
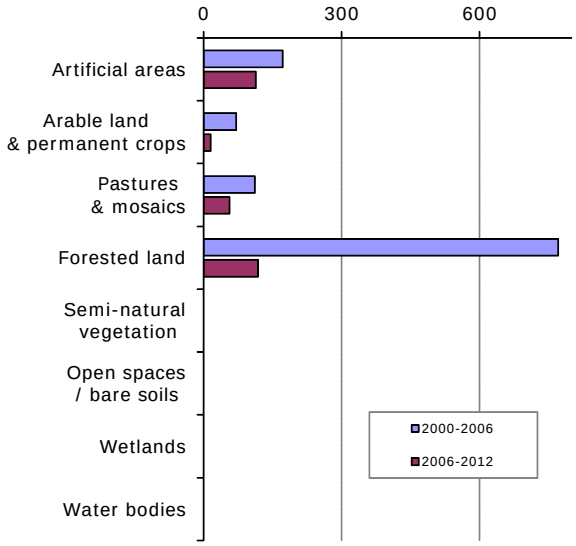
Land cover trends comparison 2000-2006 vs. 2006-2012

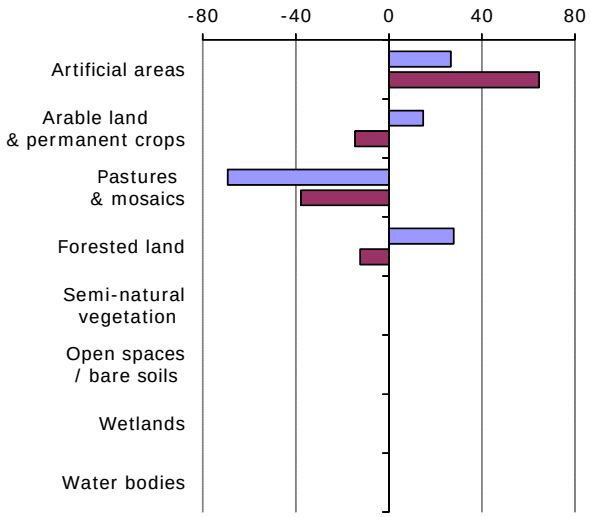
2.4. Annual land cover change [ha/year, % of total area]



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

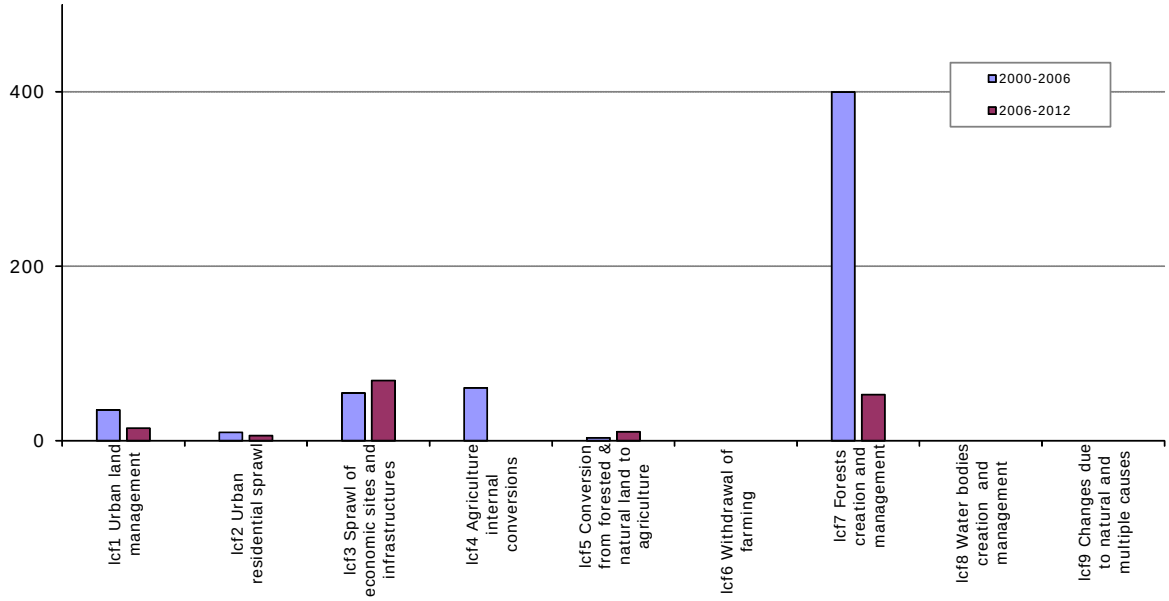


2.6. Net annual change of LC types [ha/year]



Summary trend figures	2000-2006	2006-2012
Annual land cover change [ha/year]	**563**	**152**
Annual land cover change as % of initial year	**0.23%**	**0.06%**
Land uptake by artificial development as mean annual change [ha/year]	64	75
Agricultural land uptake by urban and infrastructures development as mean annual change [ha/year]	58	63
Net uptake of forests and semi-natural land by agriculture as mean annual change [ha/year]	0	0
Net conversion from pasture to arable land and permanent crops as mean annual change [ha/year]	20	0
Forest & other woodland net formation as mean annual change [ha/year]	28	-12
Dry semi-natural land cover net formation as mean annual change [ha/year]	0	0
Wetlands & water bodies net formation as mean annual change [ha/year]	0	0

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



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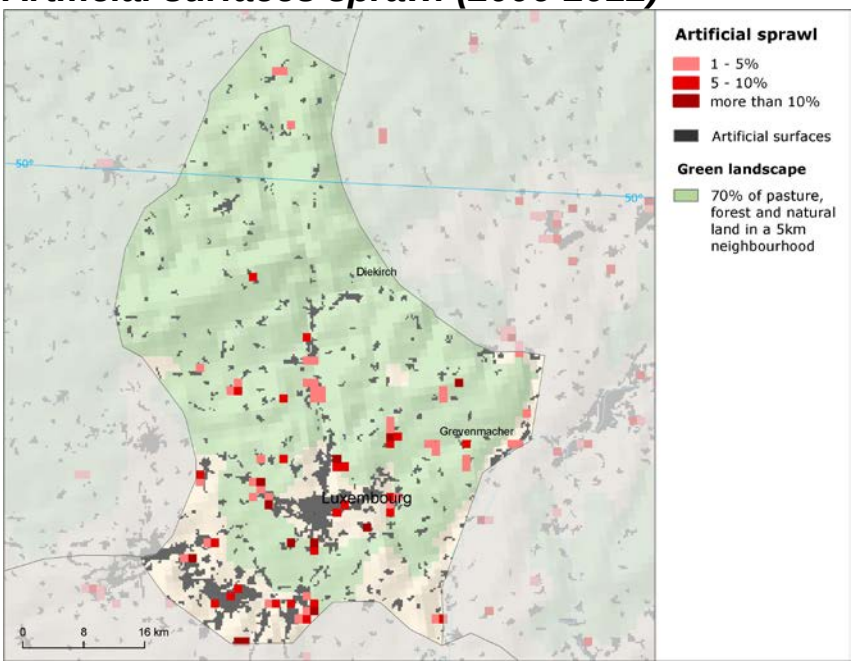
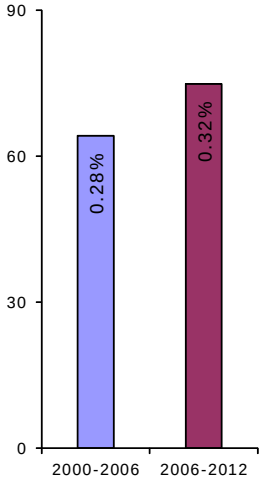
Artificial surfaces sprawl (2006-2012)



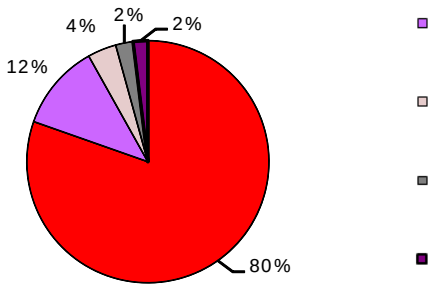
3.8. Artificial land take [ha/year, % of initial year]



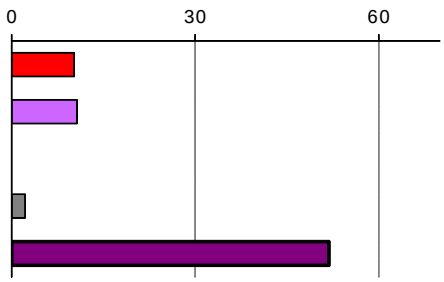
Artificial development became the most intensive flow in the country

Although its increase compared to the previous period is rather small, due to significant slowdown of the internal forest and agricultural conversions, the artificial development became the main driver of the land cover exchange in Luxembourg in the period 2006-2012. The artificial land take rate of 0.34% of initial artificial area per year is just below the European average. The land take is driven almost exclusively by construction. There also occurs certain amount of urban land management in the country. Geographically, the artificial development in Luxembourg is situated mostly in the southern half of the country, in the surroundings of major cities. The formation of construction sites consumes mainly agricultural land, with prevailing share of pastures.

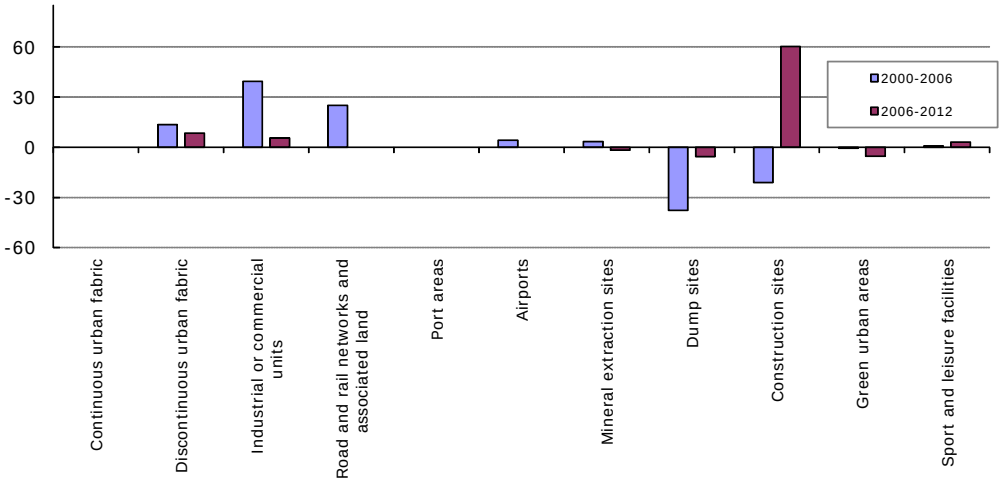
3.9. Artificial surfaces 2012 [% of total area]



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



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



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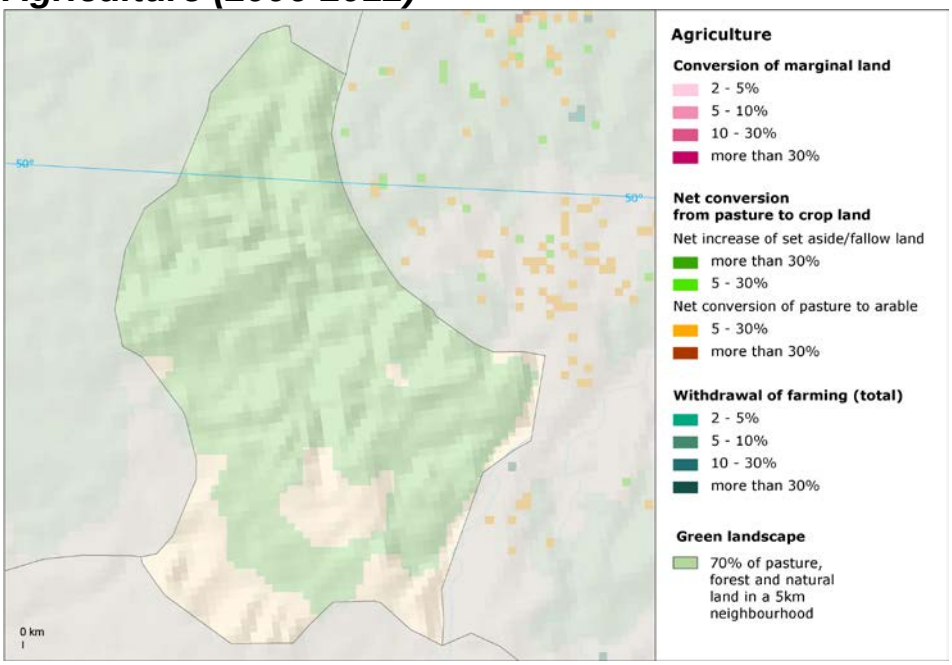
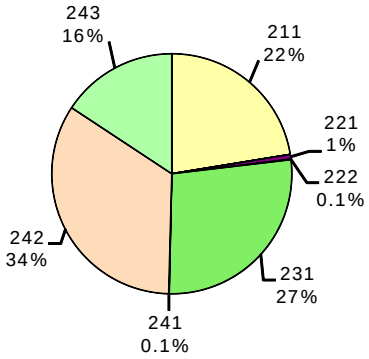
Agriculture (2006-2012)



Internal agricultural conversions disappeared

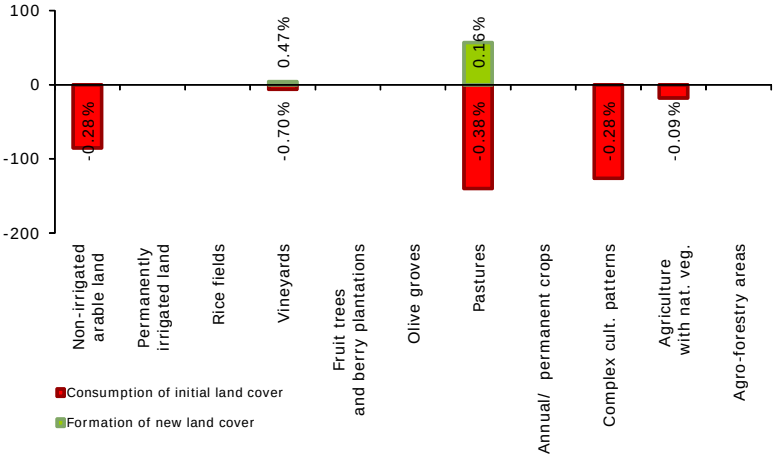
During the previous period, the internal agricultural conversions (with prevailing share of conversion from pasture to arable or crop land) were quite frequent in Luxembourg, and they represented the second major driver of the land cover development in the country. However, these flows do not occur anymore between 2006 and 2012. The main process in agricultural development in this period is the consumption of agricultural land by the artificial sprawl, mostly by extension of construction sites. As a result, all agricultural land cover classes show negative balance of net change, with prevailing consumption of land. The main sources for the artificial land take in Luxembourg are pastures (40%) and complex cultivation patterns (31%).

4.12. Agricultural areas 2012 [% of total area]

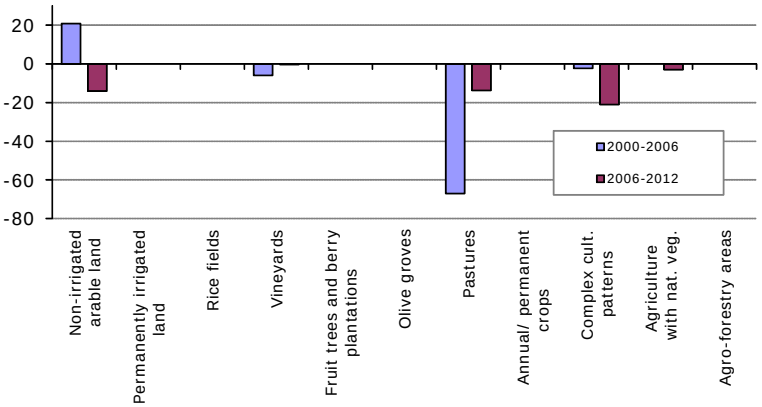


211 Non-irrigated arable land
212 Permanently irrigated land
213 Rice fields
221 Vineyards
222 Fruit trees and berry plantations
223 Olive groves
231 Pastures
241 Annual crops associated with permanent crops
242 Complex cultivation patterns
243 Agriculture land with significant areas of natural vegetation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

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

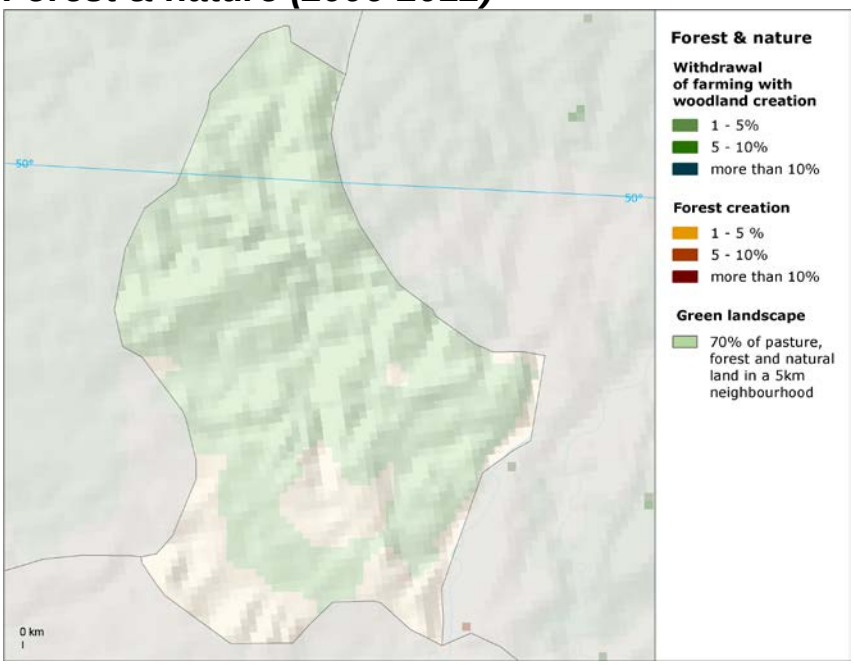


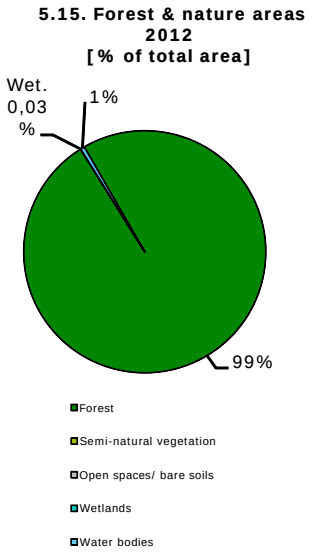
4.14. Mean annual agricultural change by class [ha/year]



Luxembourg

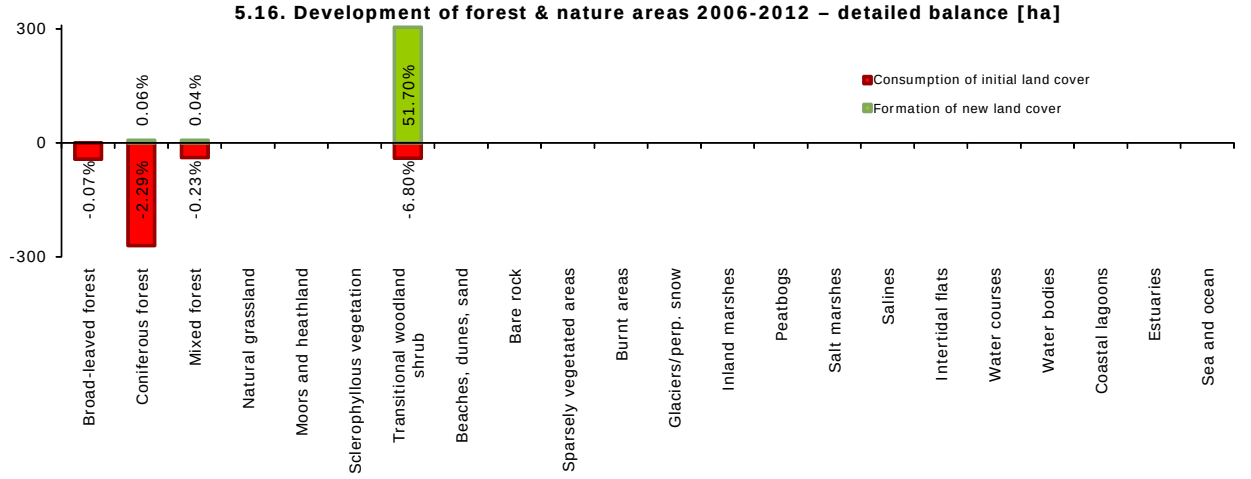
Forest & nature (2006-2012)

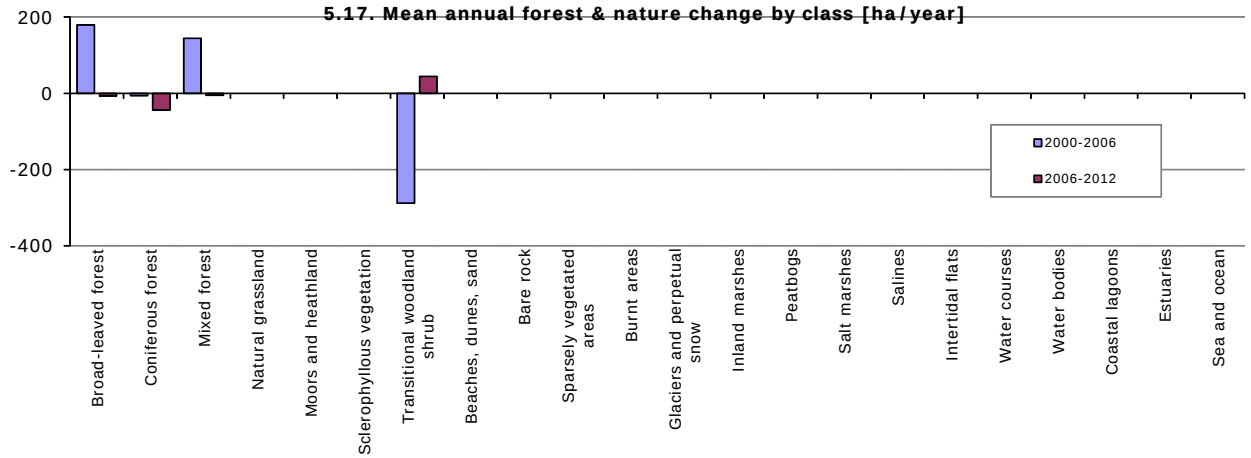




Forest and nature land development

The overall dynamics of the forested land development significantly decreased, compared to the previous period. The conversion from transitional woodland to forest, which was the major driver of the land cover exchange during the period 2000-2006, completely disappeared from the landscape and there only occurs certain amount of the opposite recent felling and transition. Some amount of forested land has been also consumed by the artificial land take, namely by the sprawl of construction and sport and leisure facilities. All broad-leaved, coniferous and mixed forest have negative change balance with prevailing consumption, in contrast to transitional woodland, with 50% formation of initial area. This balance represents a completely opposite trend, compared to the previous period.

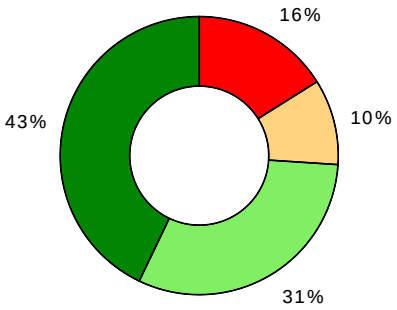




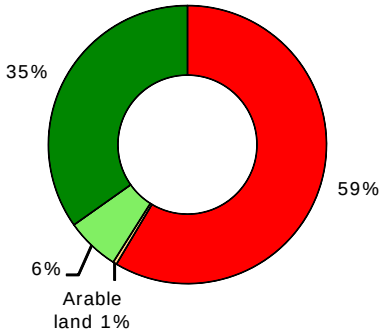
Annex: Land cover flows and trends

Land cover flows 2006-2012

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

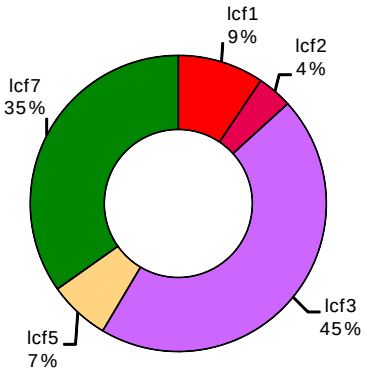


6.19. Formation of land cover 2006-2012 [% of total change area]



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]

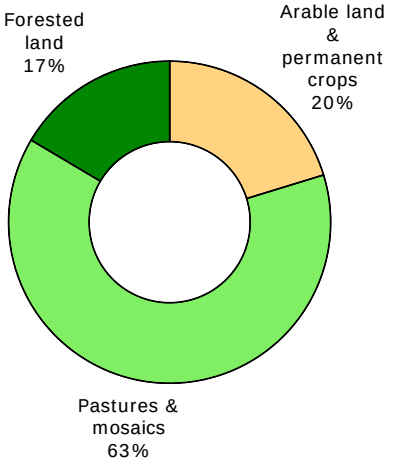


- lcf1 Urban land management
- lcf2 Urban residential sprawl
- lcf3 Sprawl of economic sites and infrastructures
- lcf4 Agriculture internal conversions
- lcf5 Conversion from forested & natural land to agriculture
- lcf6 Withdrawal of farming
- lcf7 Forests creation and management
- lcf8 Water bodies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

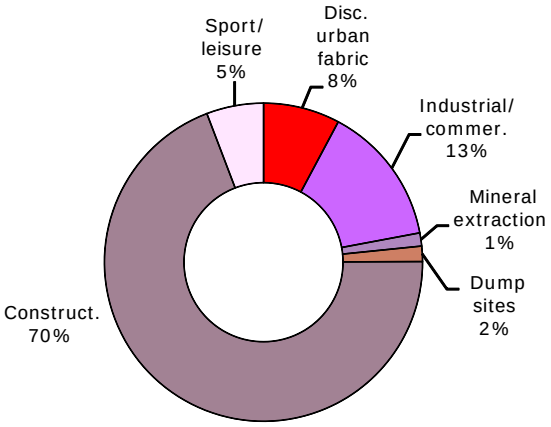
Luxembourg

Artificial areas

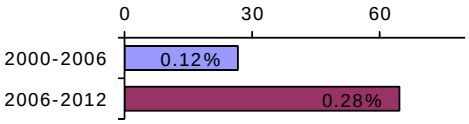
7.21. Consumption by artificial land take 2006-2012 [% of total]



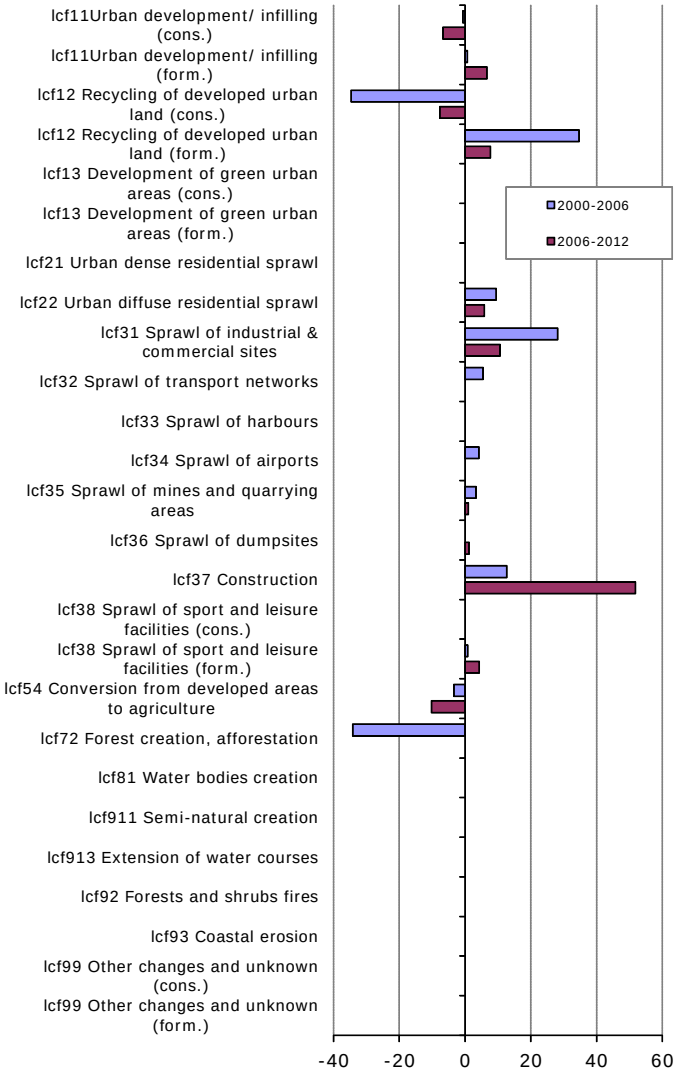
7.22. Formation by artificial land take 2006-2012 [% of total]



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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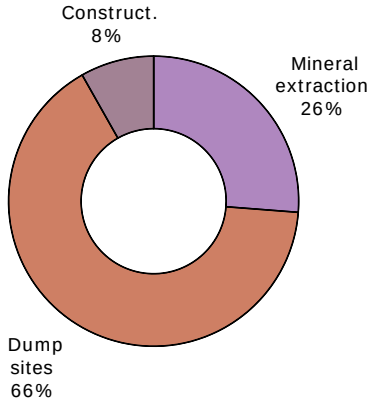
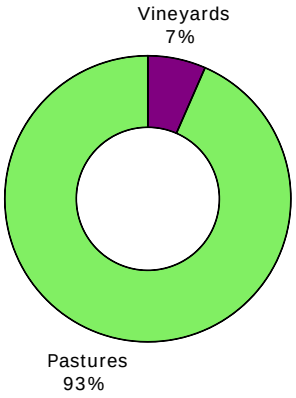
Agriculture

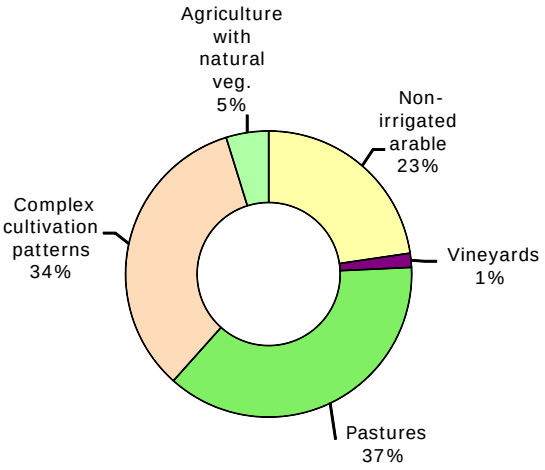
8.25. LC consumed by agriculture 2006-2012 [% of total]



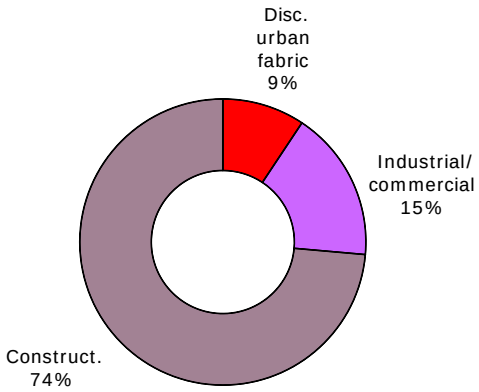
8.26. Formation of agricultural land from non-agriculture 2006-2012 [% of total]



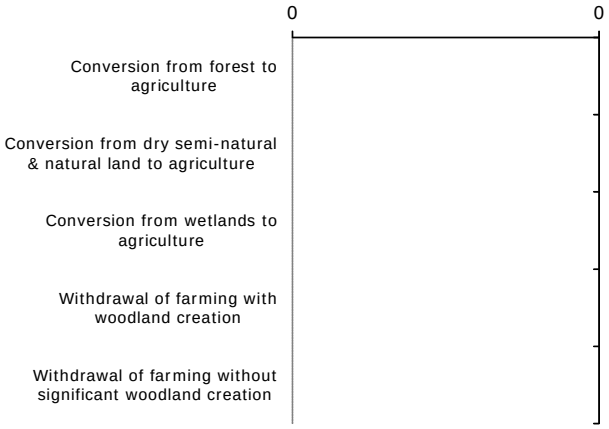
8.27. Consumption of agricultural land by non-agriculture 2006-2012 [% of total]



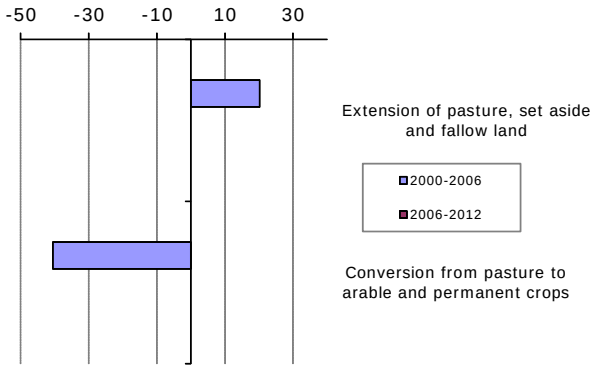
8.28. Formation of non-agricultural land from agriculture 2006-2012 [% of total]



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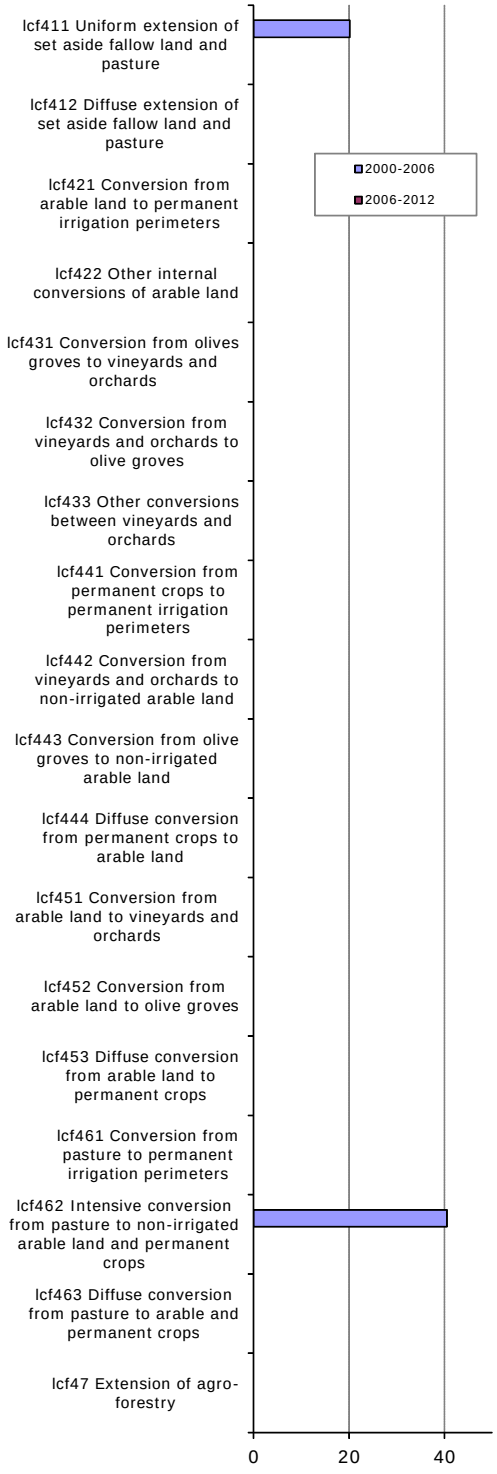
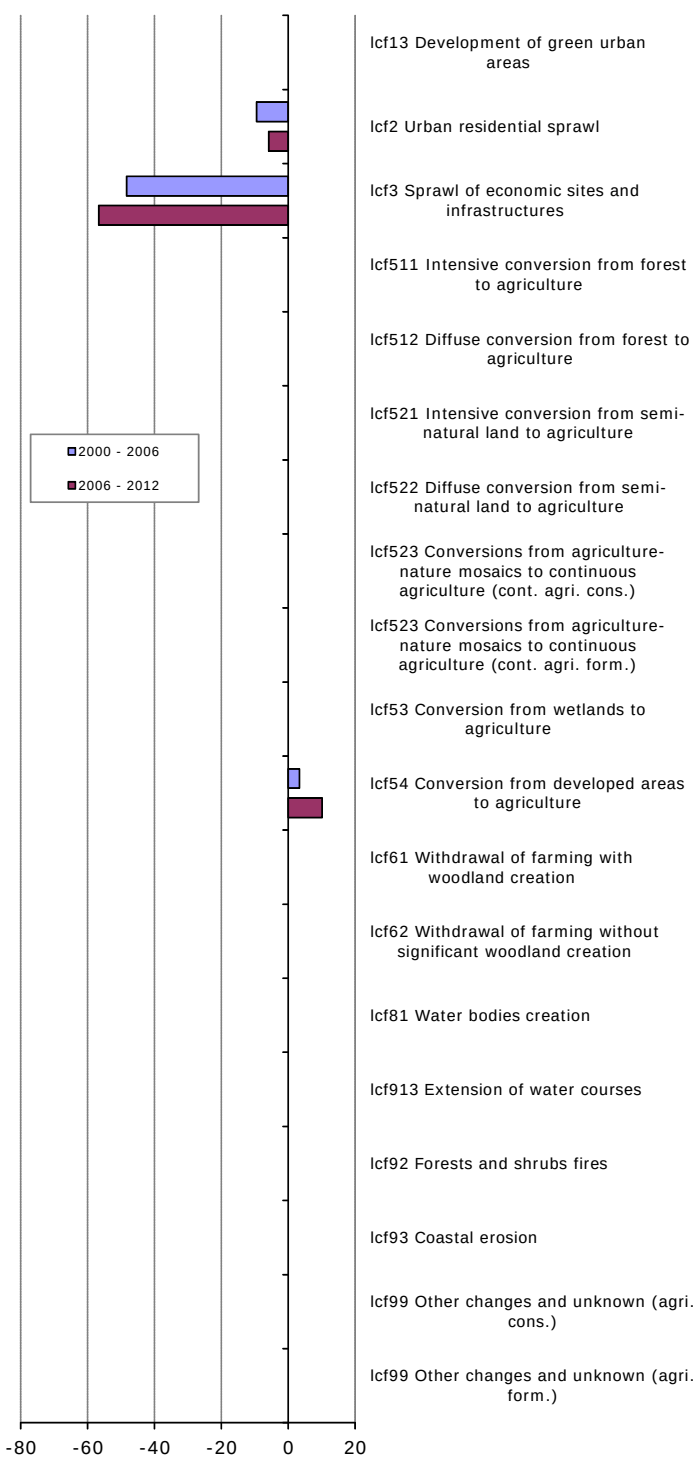
9.31. Mean annual agriculture internal conversions [ha/year]



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



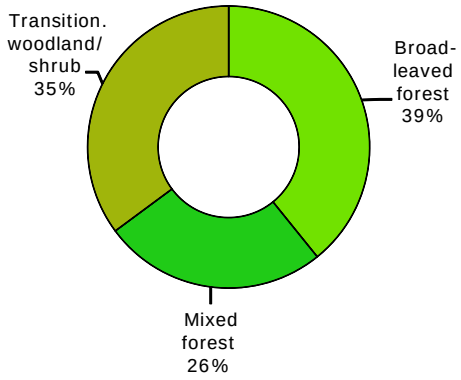
Luxembourg

Forest & nature

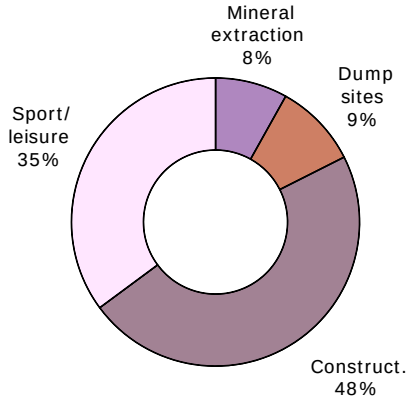
10.33. LC consumed by forest & nature 2006-2012 [% of total]

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

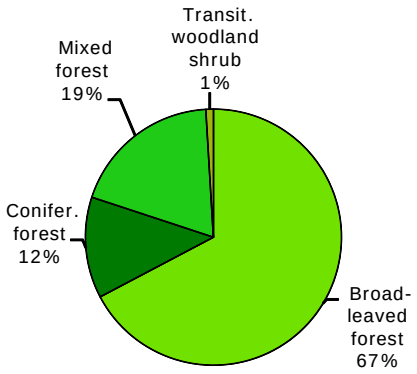
10.35. Consumption of forest & nature land by non-forest/nature 2006-2012 [% of total]



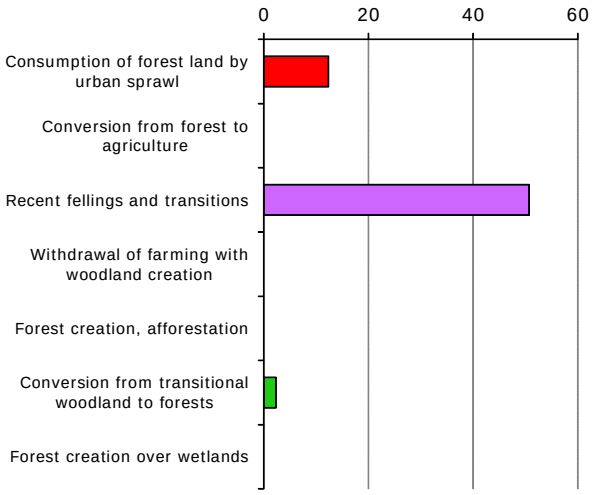
10.36. Formation of non-forest/nature land from forest & nature 2006-2012 [% of total]



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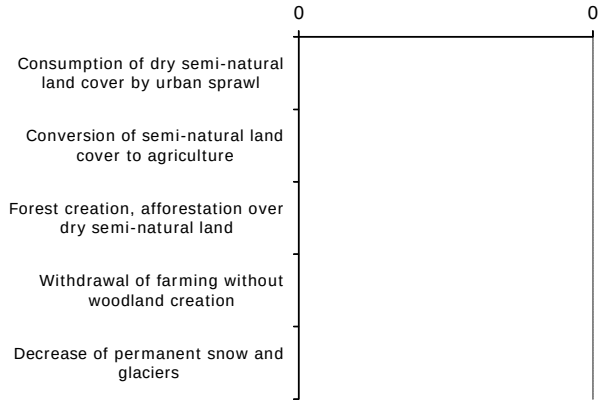
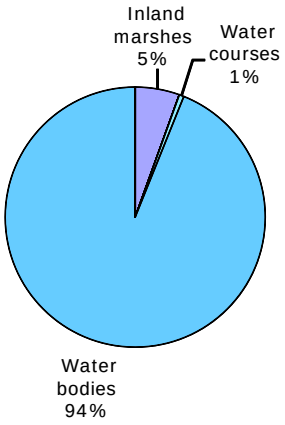
11.39. Dry semi-natural areas 2012
[% of total area]

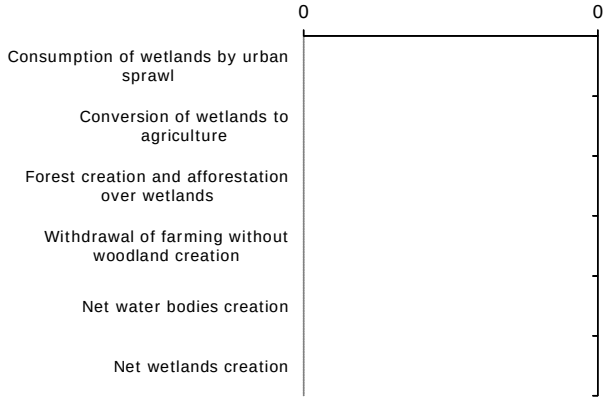
11.40. Main trends in dry semi-natural land consumption/formation 2006-2012
[ha/year]



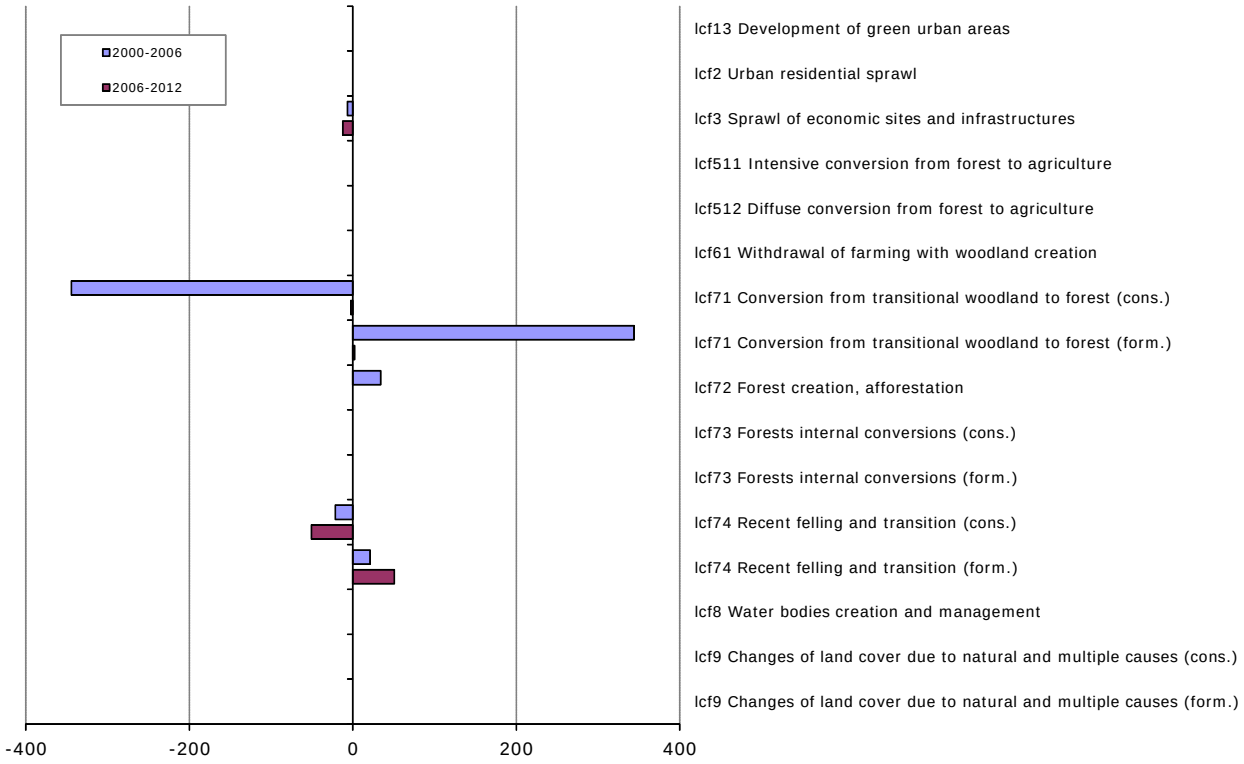
11.41. Wetlands & water 2012
[% of total area]



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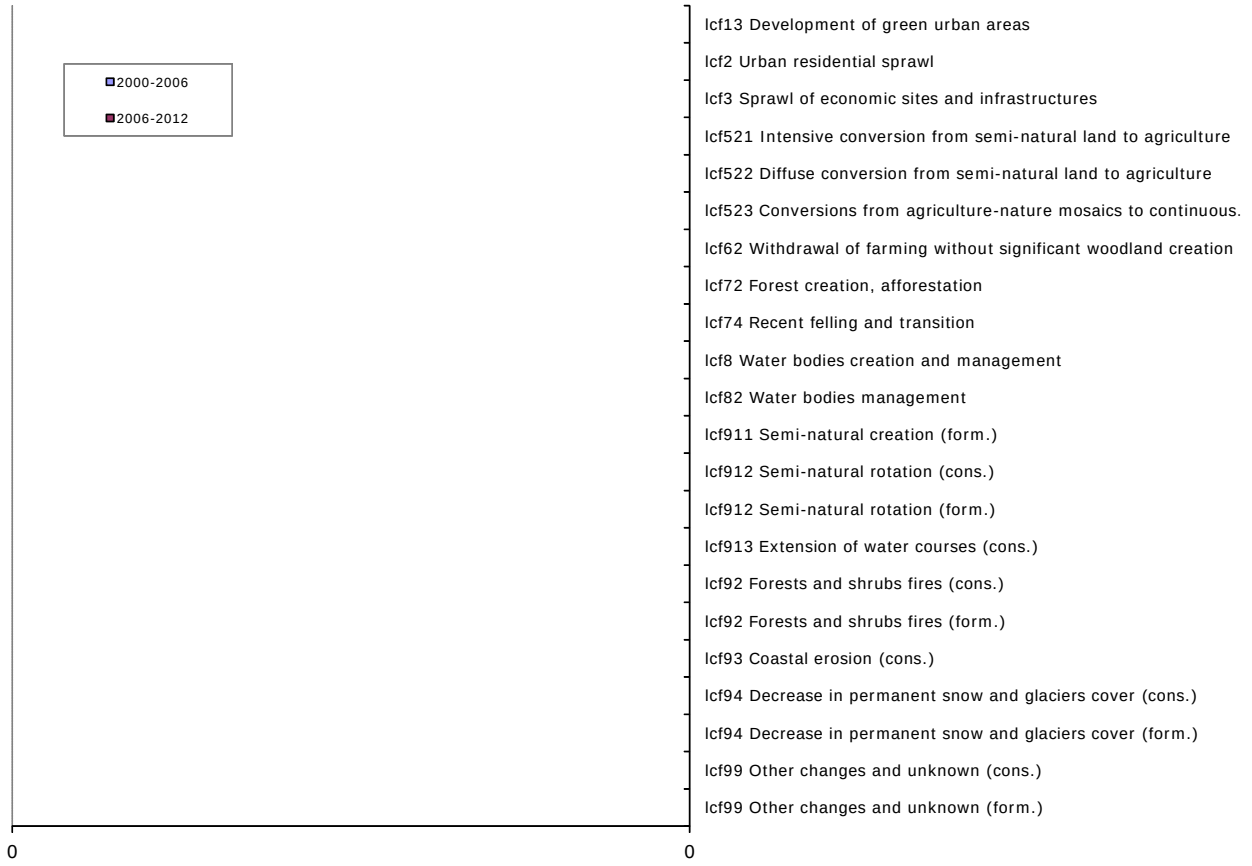
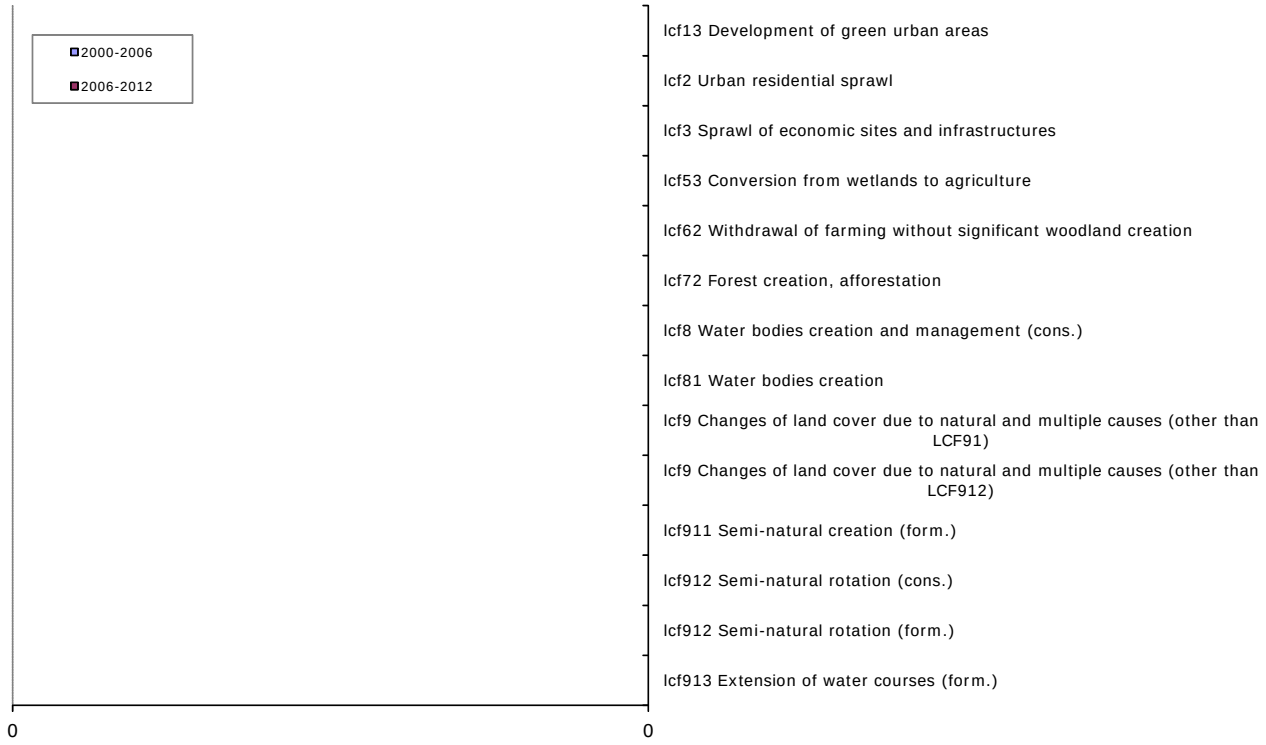
12.44. Mean annual conversions of dry semi-natural LC [ha/year]



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



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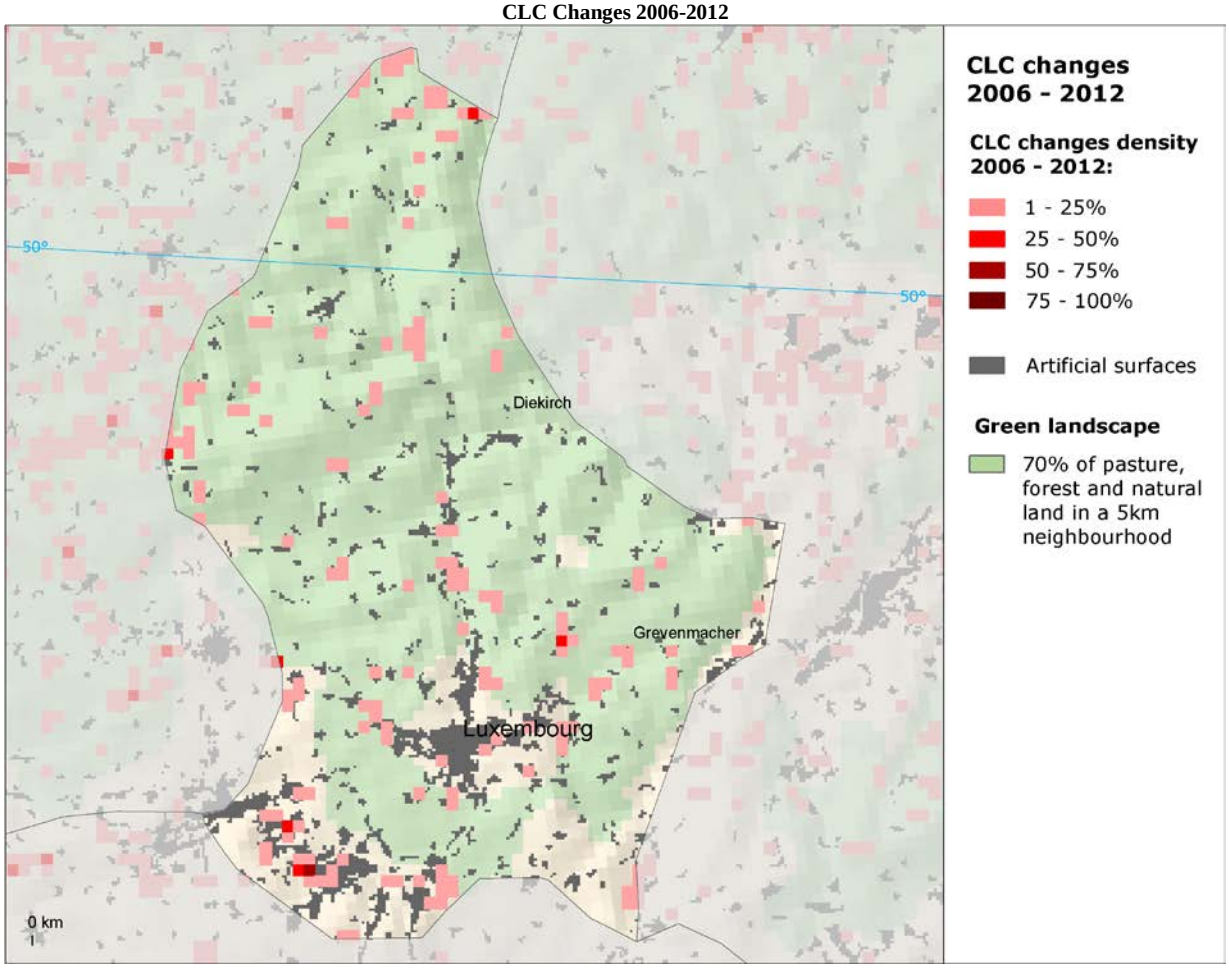
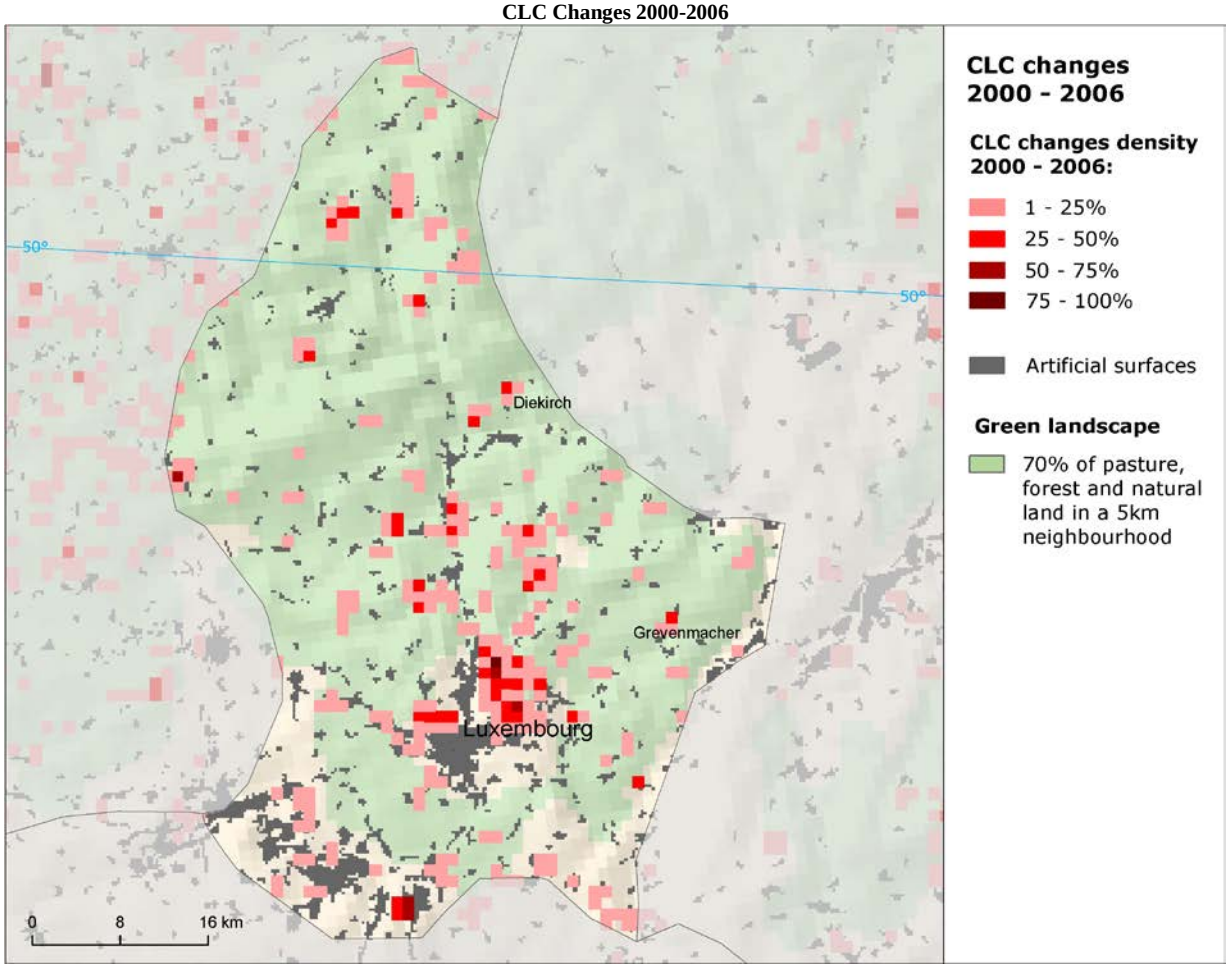
CLC Changes 2006-2012



CLC Changes 2000-2006



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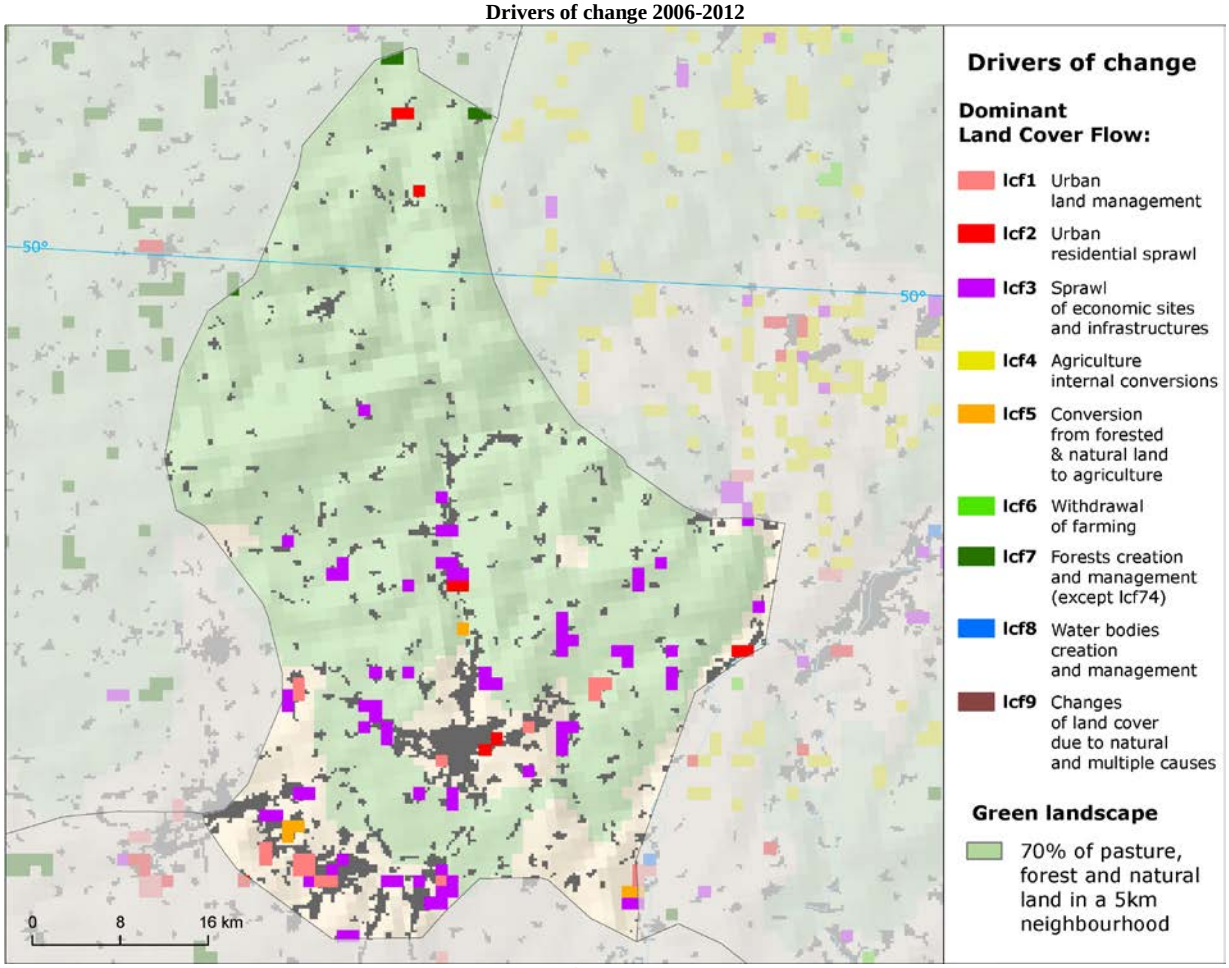
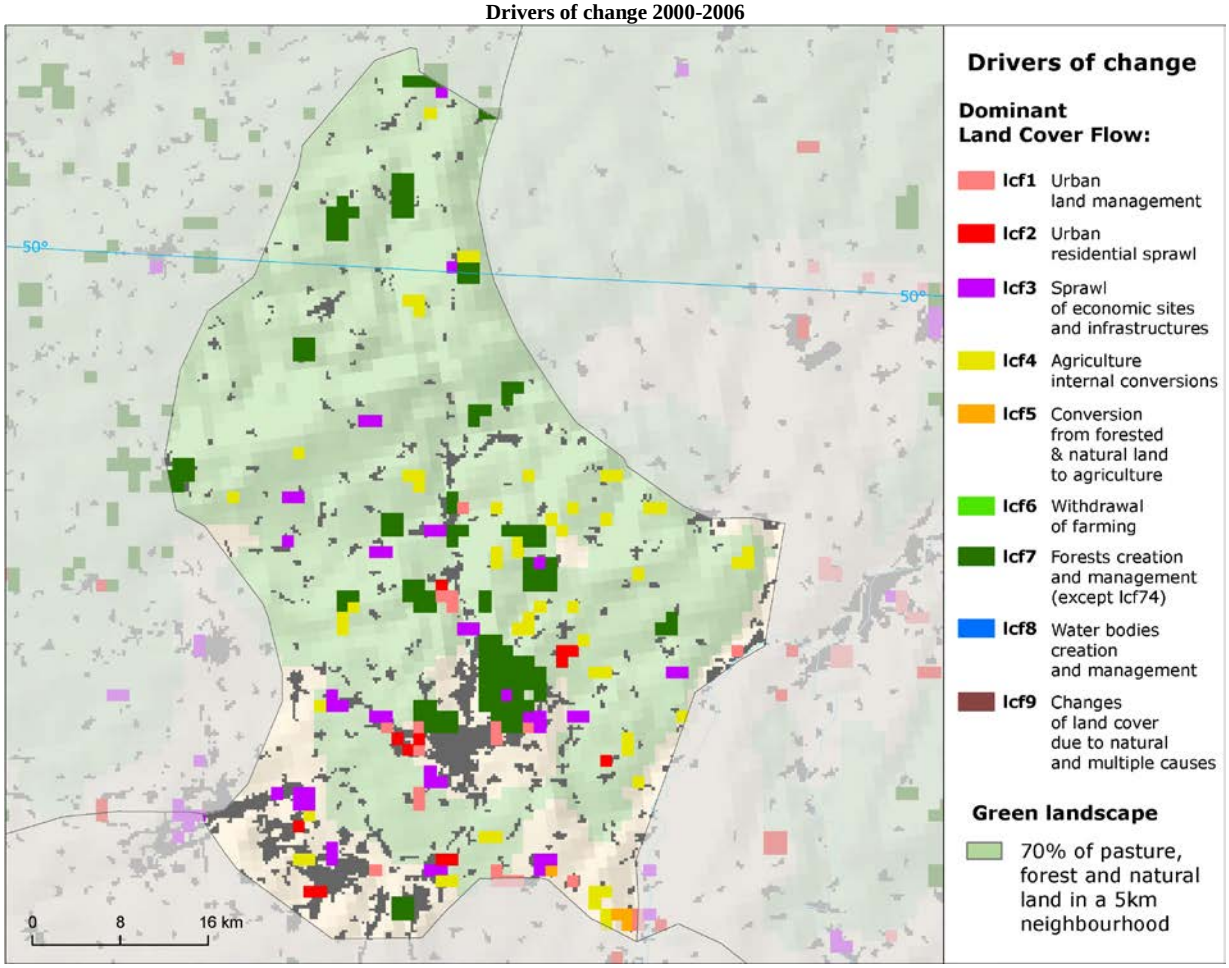
Drivers of change 2006-2012



Drivers of change 2000-2006



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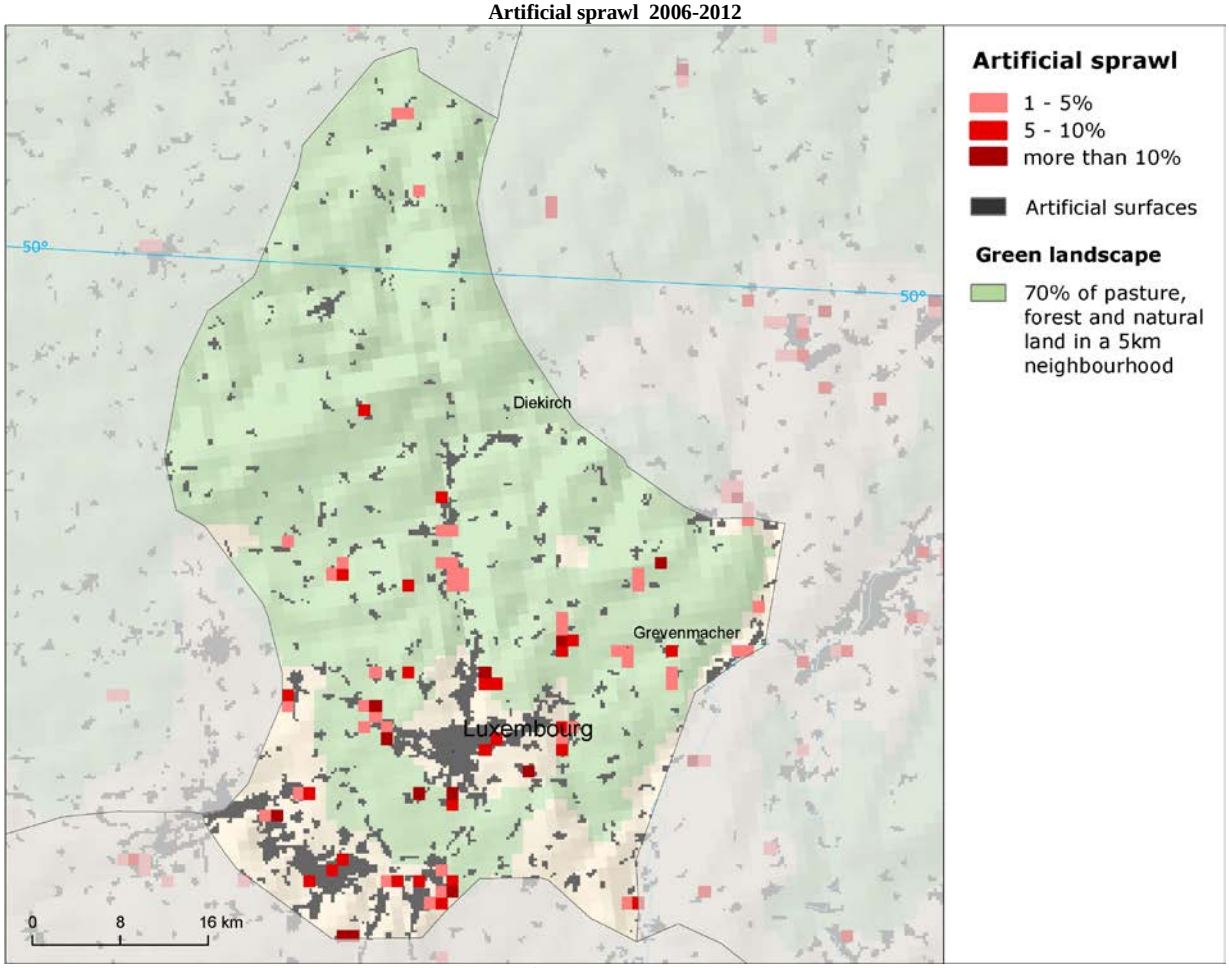
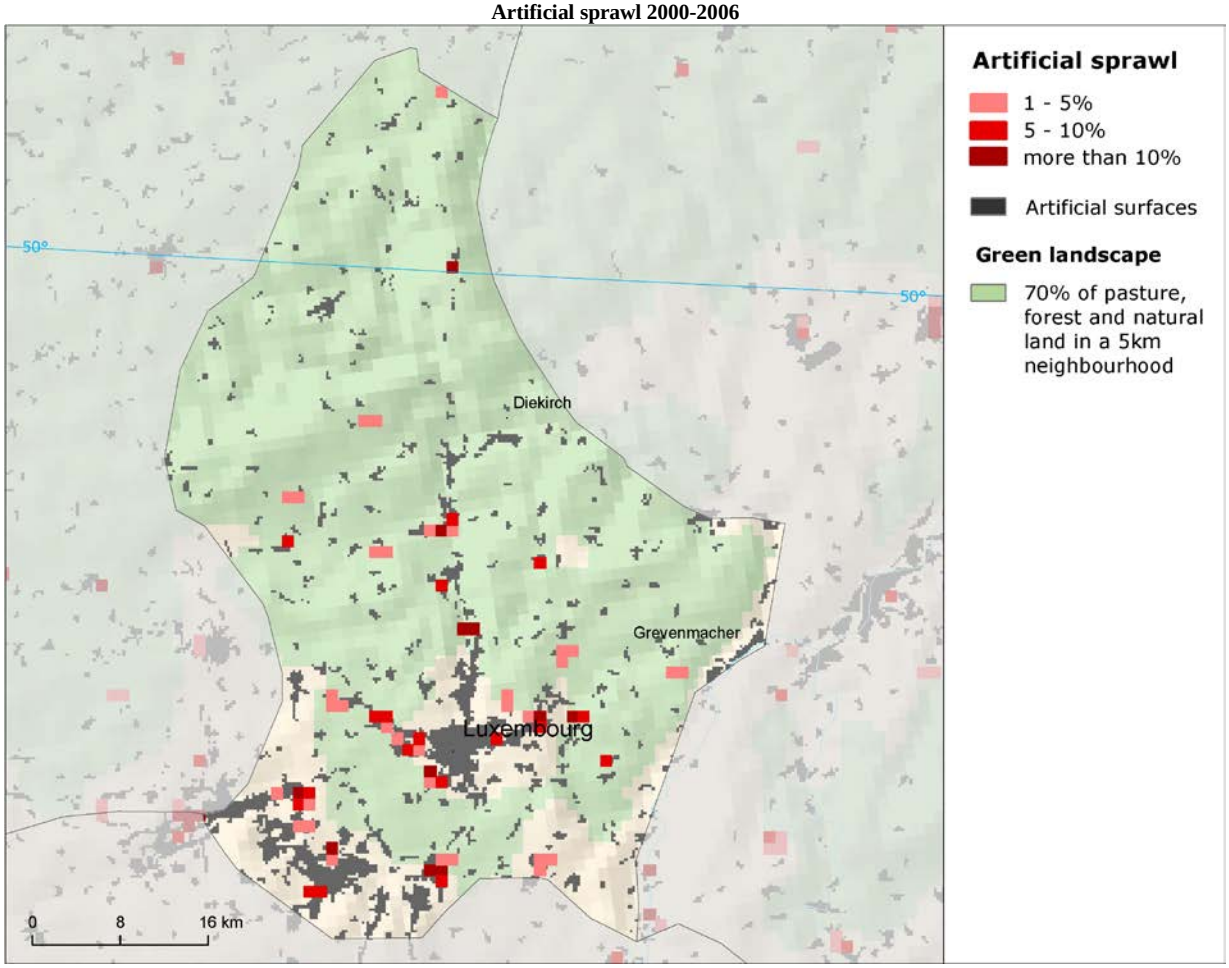
Artificial sprawl 2006-2012



Artificial sprawl 2000-2006



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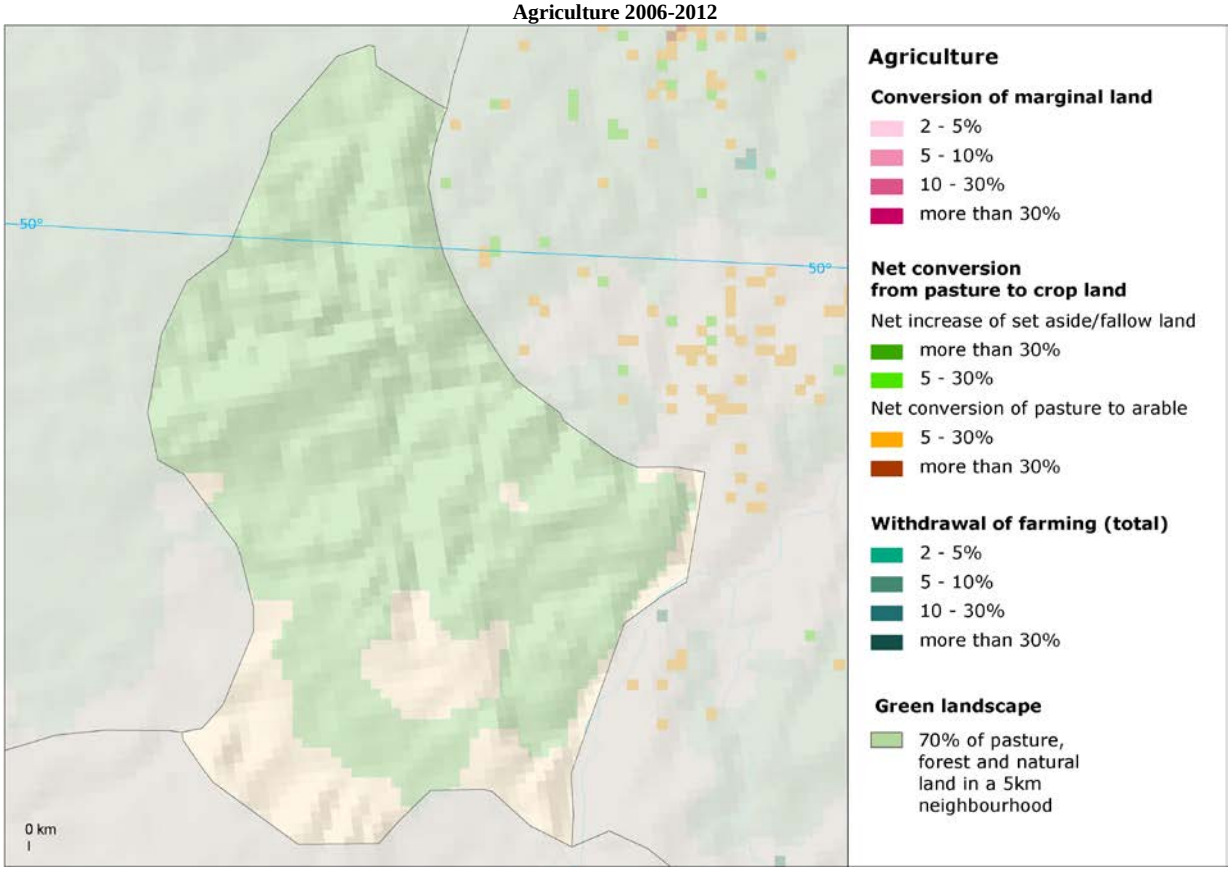
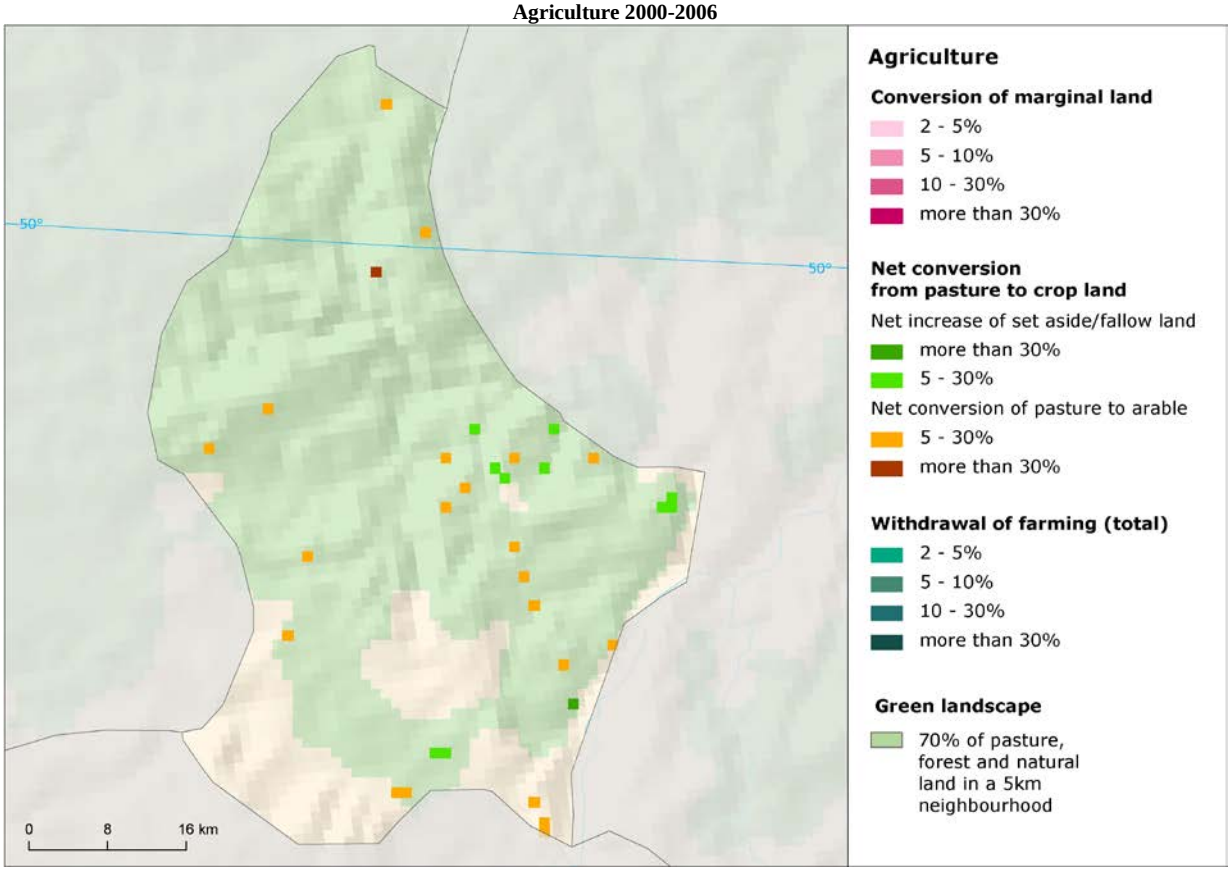
Agriculture 2006-2012



Agriculture 2000-2006



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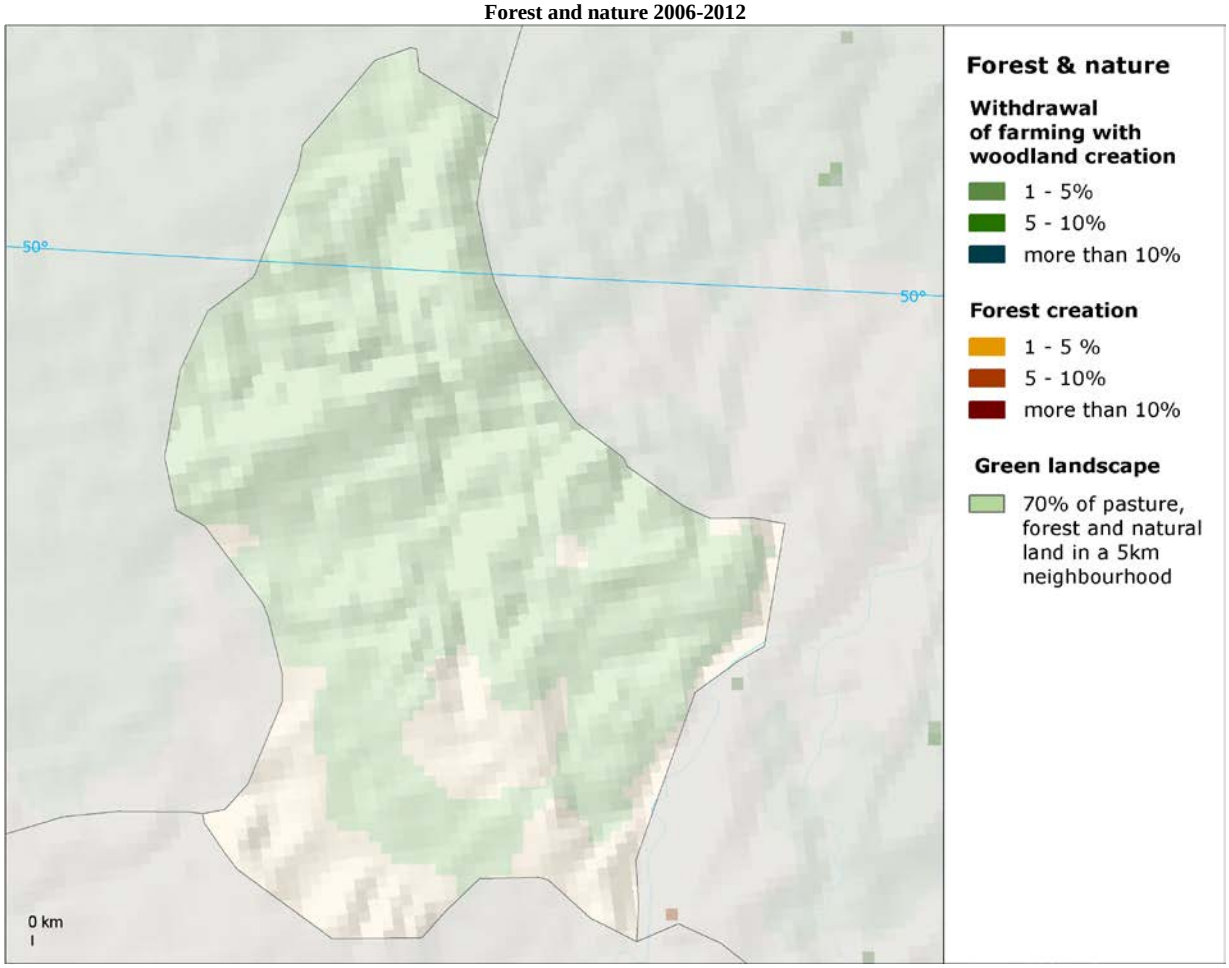
Forest and nature 2006-2012



Forest and nature 2000-2006