Country fact sheet

Land cover 2012

Netherlands

September 2017

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European Environment Agency

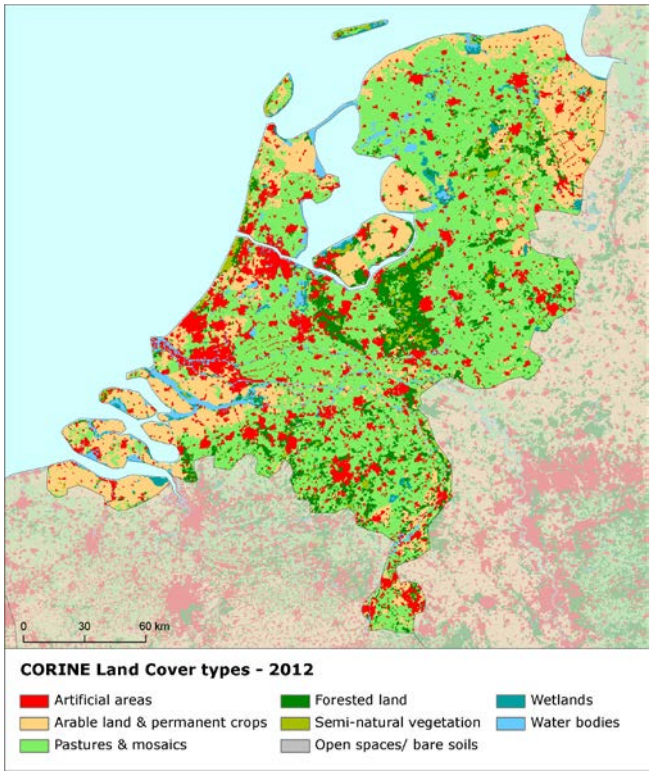
Netherlands

Land cover 2012

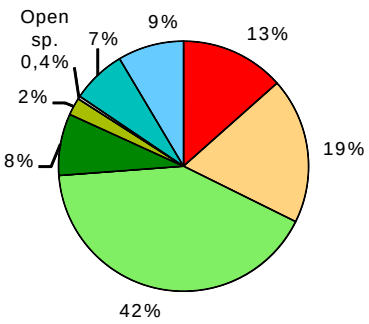
Overview of land cover & change 2006-2012

In the long term, the pace of the land cover development in the Netherlands is moderate, compared to other countries in Europe. The overall annual change rate – 0.25% - is just slightly above the European average. Its little slow down can be observed when compared to the previous observing periods. As well as during both periods 1990-2000 and 2000-2006, the current landscape exchange in the country is also driven mainly by the artificial development, with still prevailing sprawl of economic sites and infrastructures, represented mostly by construction. Residential sprawl itself is rather insignificant; however, new residential areas are rising in the frame of recycling of developed urban land, from sites which were under construction already in the previous period. The annual artificial land take rate for the Netherlands is 0.77%, which means the sprawl in the country is one of the most intensive in the European context. However, in comparison with previous periods, this pace means a significant slowdown of artificial development.
The other land cover flows are significantly weaker, compared to artificial development. Withdrawal of farming without significant woodland creation is the most powerful driver of this non-artificial change in the Netherlands. There also occurs increased amount of changes due to natural and multiple causes in the country, represented mostly by different types of conversions in coastal areas.

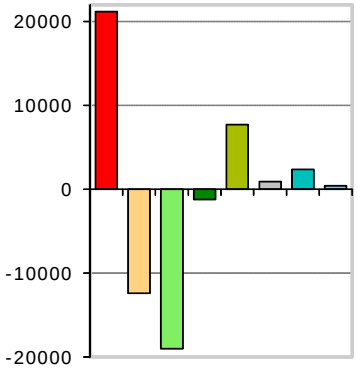
Note: The results presented here are based on a change analysis of 44 land cover types mapped consistently on a 1:100.000 scale across Europe over more than decade between 2000-2006-2012 - see Corine land cover (CLC) programme for details.
Number of years between CLC2006-CLC2012 data for Netherlands: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



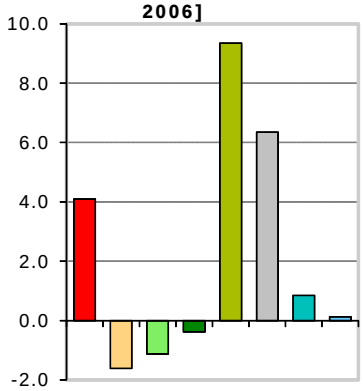
1.1. Land cover 2012 [% of total]



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

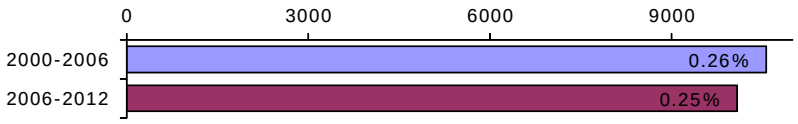
Summary balance table 2006-2012

	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	**5180**	**7690**	**16832**	**3216**	**826**	**146**	**2787**	**3422**	**40099**
Consumption of initial LC	177.2	144.3	201.3	44.8	10.6	1.2	9.1	16.4	605
Formation of new LC	389.3	20.3	11.3	32.3	87.8	10.5	32.7	20.7	605
Net Formation of LC	**212.0**	**-124.1**	**-190.0**	**-12.4**	**77.2**	**9.3**	**23.6**	**4.4**	**0**
Net formation as % of initial year	*4.1*	*-1.6*	*-1.1*	*-0.4*	*9.3*	*6.3*	*0.8*	*0.1*	
Total turnover of LC	**566.5**	**164.6**	**212.5**	**77.1**	**98.3**	**11.7**	**41.8**	**37.1**	**1210**
Total turnover as % of initial year	*10.9*	*2.1*	*1.3*	*2.4*	*11.9*	*8.0*	*1.5*	*1.1*	*3.0*
Land cover 2012	**5392**	**7566**	**16642**	**3203**	**904**	**155**	**2811**	**3426**	**40099**

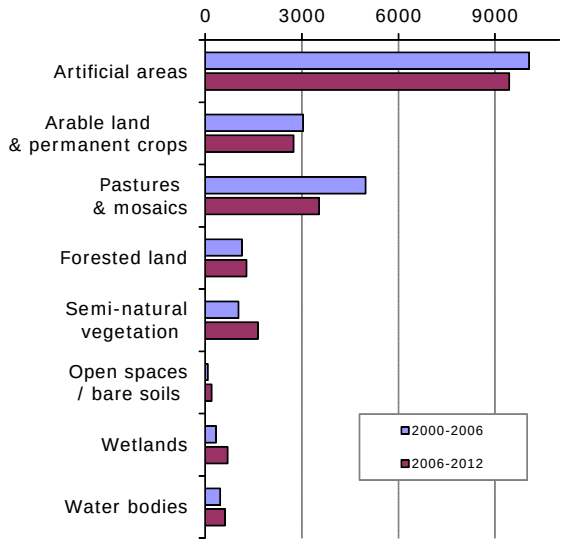
Netherlands

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

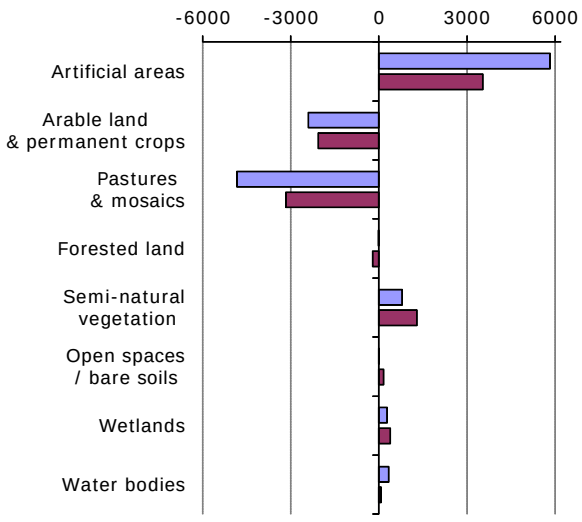
2.4. Annual land cover change [ha/year, % of total area]



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

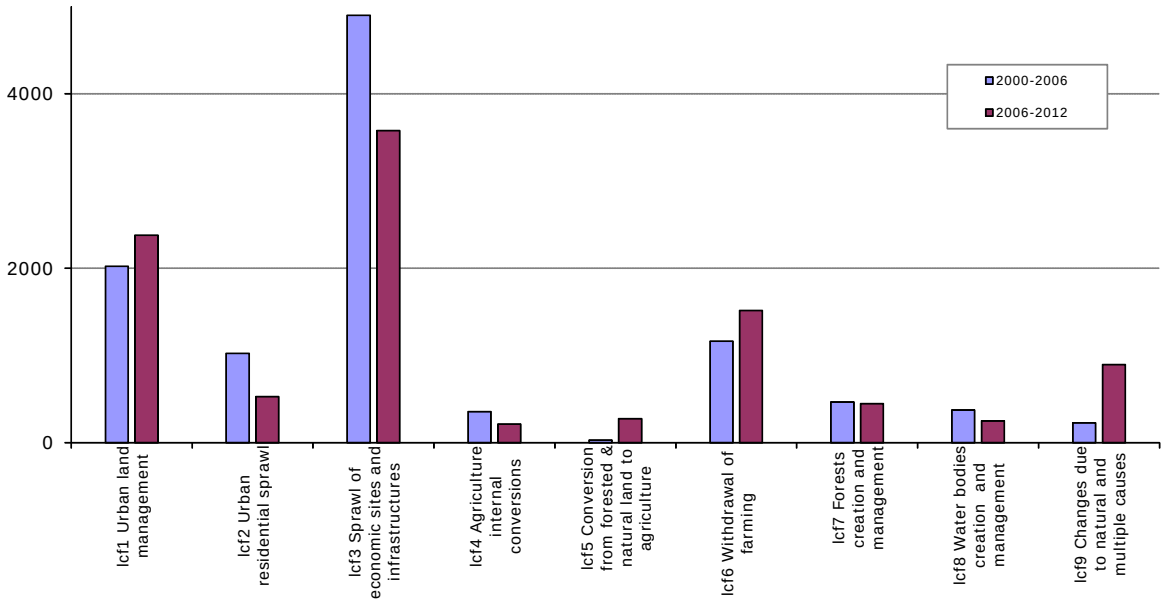


2.6. Net annual change of LC types [ha/year]



Summary trend figures	2000-2006	2006-2012
Annual land cover change [ha/year]	**10561**	**10081**
Annual land cover change as % of initial year	**0.26%**	**0.25%**
Land uptake by artificial development as mean annual change [ha/year]	5951	4034
Agricultural land uptake by urban and infrastructures development as mean annual change [ha/year]	6050	3844
Net uptake of forests and semi-natural land by agriculture as mean annual change [ha/year]	-1159	-1306
Net conversion from pasture to arable land and permanent crops as mean annual change [ha/year]	202	67
Forest & other woodland net formation as mean annual change [ha/year]	-4	-207
Dry semi-natural land cover net formation as mean annual change [ha/year]	794	1442
Wetlands & water bodies net formation as mean annual change [ha/year]	615	465

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



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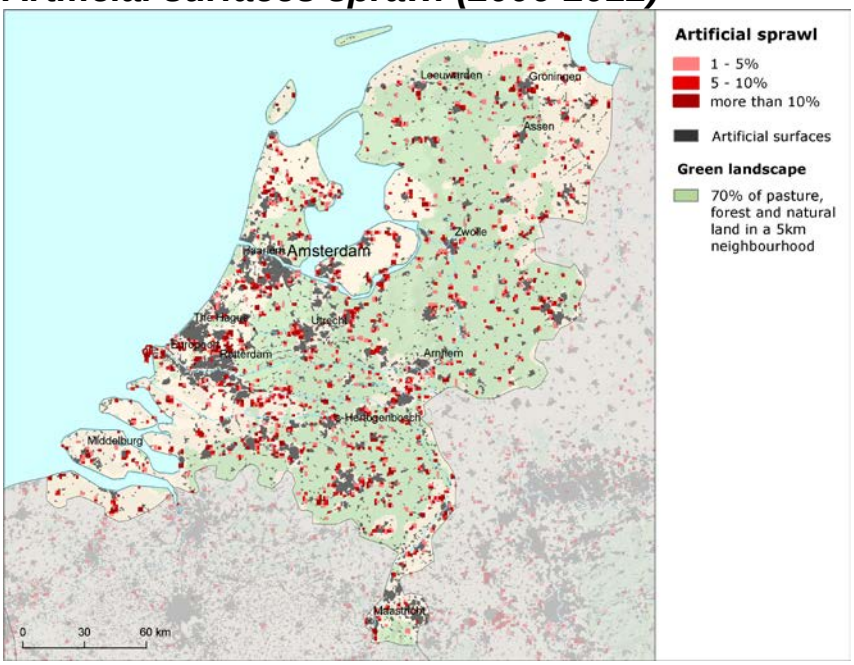
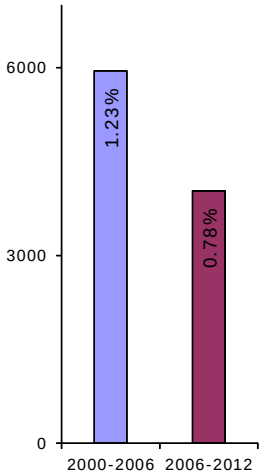
Artificial surfaces sprawl (2006-2012)



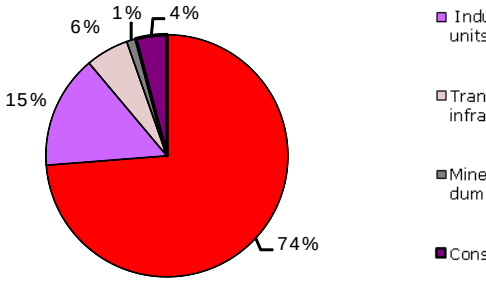
3.8. Artificial land take [ha/year, % of initial year]



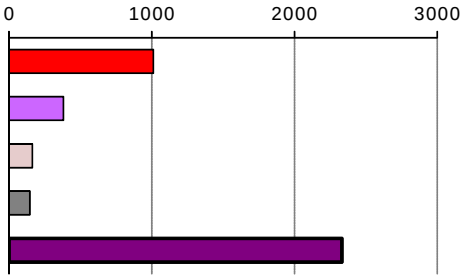
Despite significant slowdown, artificial development is still going strong

Despite its significant slowdown compared to both previous periods, the artificial development is still by far the main driver of the landscape exchange in the country. With the annual land take rate of 0.77%, the Netherlands still have one of the fastest paces of artificial sprawl among European countries. As well as in the previous period 2000-2006, the urban development is driven mainly by construction and also by recycling of developed urban land, represented mostly by the conversion of former construction sites into residential or commercial/industrial areas. The spatial distribution of the urban development shows similar pattern as in the previous period, with patches of sprawl and urban recycling densely scattered over the whole country. Discontinuous urban fabric has the highest formation of the area from all urban classes – as already mentioned, this formation proceeds mostly through the conversion of sites, which were under construction already in the period 2000-2006. This is a slightly different situation compared to the previous period, when most of the urban fabric development went directly via the sprawl. The main source for the land take in the Netherlands is the agricultural land, with prevailing share of pasture (55% of total land taken).

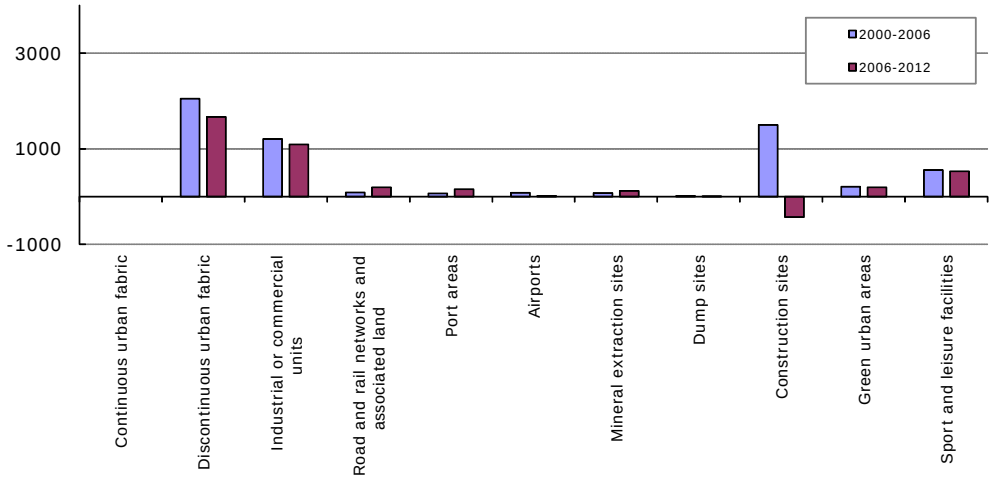
3.9. Artificial surfaces 2012 [% of total area]



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

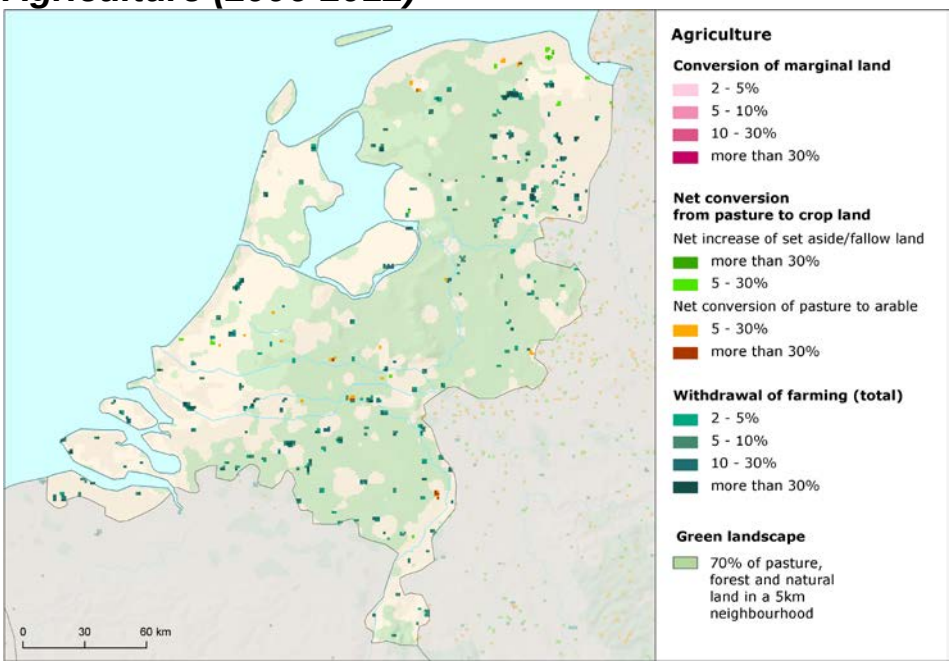


3.11. Mean annual artificial change by class [ha/year]



Netherlands

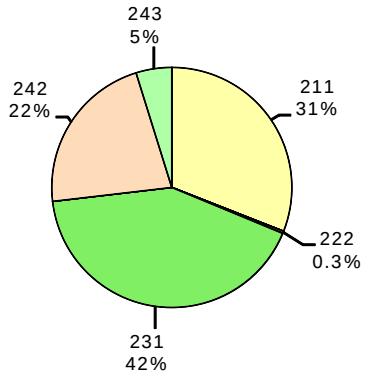
Agriculture (2006-2012)

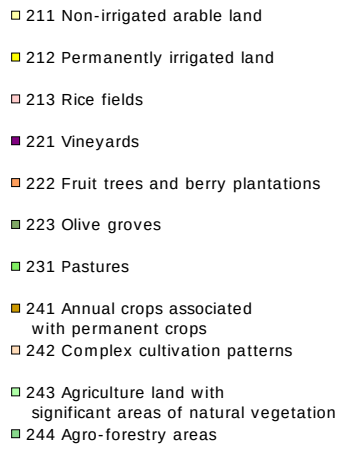


Consumption of agricultural land continues with slight slowdown

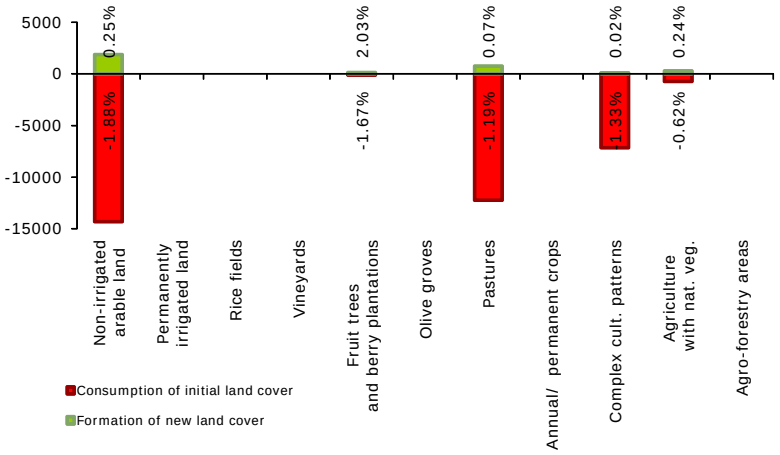
The long term trend in the agricultural development in the Netherlands shows continuous consumption of agricultural land by both artificial land take and withdrawal of farming. Compared to the previous periods, the amount of agricultural land taken by the sprawl is getting lower. On the other hand, the intensity of the agricultural land consumption by natural land cover types is slightly higher than in 2000-2006. Concerning the source, all arable, pasture and complex cultivation patterns land are consumed by these two flows. The withdrawal of farming is the second most extensive land cover flow in the country, behind the artificial development. This flow occurs mostly without significant woodland creation in the Netherlands and is represented mainly by conversions of both pasture and arable land into natural grasslands or inland marshes. As a result of these flows, all agricultural classes show negative net change balance with prevailing consumption of land. This trend of agricultural land consumption, as well as its structure, is identical with the situation in the previous period, however, it occurs currently with slightly lower intensity due to the overall slowdown of the artificial land take in the country.

4.12. Agricultural areas 2012 [% of total area]

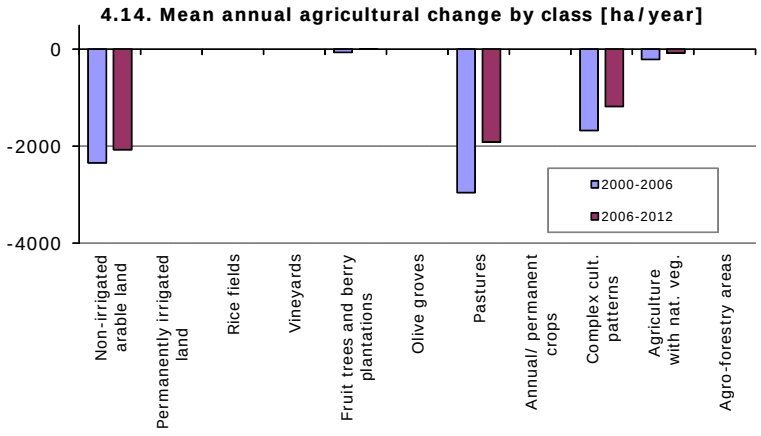




4.13. Development of agricultural areas 2006-2012 – detailed balance [ha]

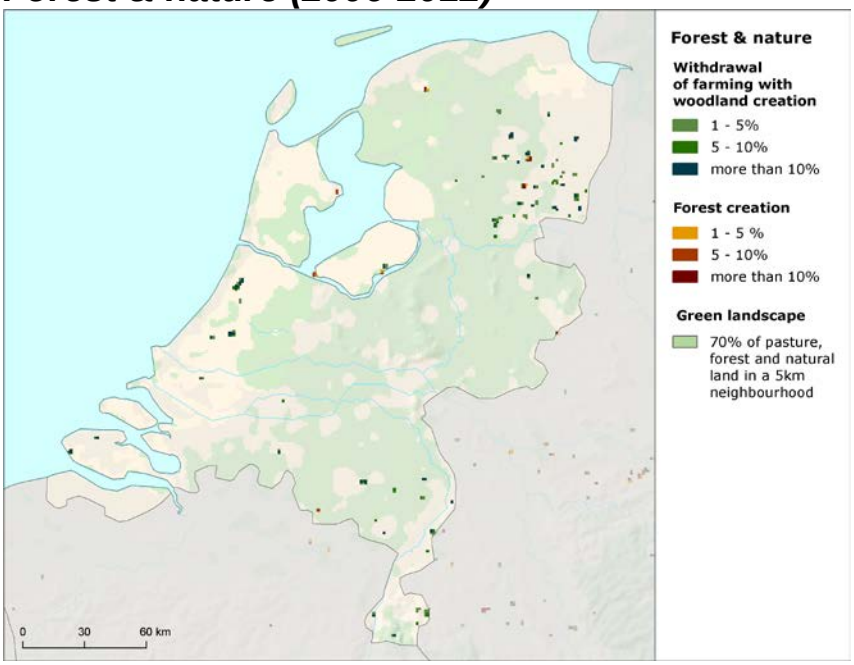


4.14. Mean annual agricultural change by class [ha/year]

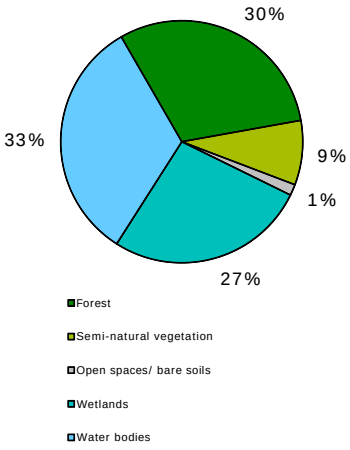


Netherlands

Forest & nature (2006-2012)



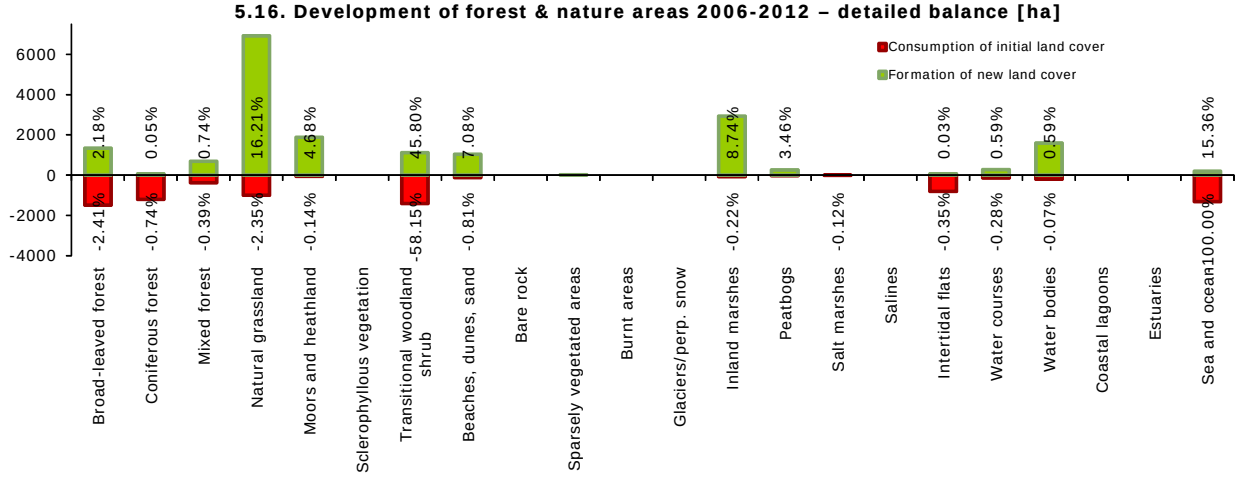
5.15. Forest & nature areas 2012 [% of total area]



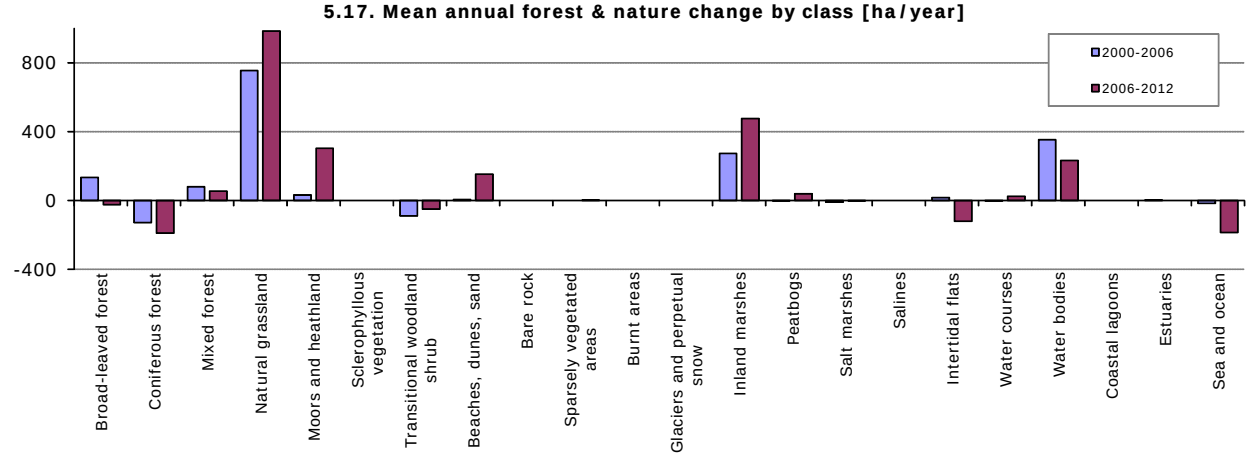
Withdrawal of farming without woodland creation continues

The most extensive flow in the frame of the Dutch natural landscape is the formation of new natural areas, especially of natural grasslands and inland marshes trough withdrawal of farming without woodland creation. There is also an obvious concentration of withdrawal of farming with woodland creation (in particular of broad-leaved forest and transitional woodland) in the north-eastern part of the country, which was not visible in the previous period. However, the intensity of this flow is significantly lower, compared to withdrawal of farming without woodland creation. The intensity of this withdrawal of farming as well as the opposite conversion from natural land to agriculture increased, compared to the period 2000-2006. In contrast, intensity of internal agricultural conversions in the Netherlands is continuously getting lower, comparing with the period 2000-2006 and in particular with the period 1990-2000, during which these internal agricultural exchanges were much more significant (especially the conversion from pasture to arable land or permanent crops) and represented the second most extensive driver of land cover change in the country, behind artificial development. Beside these flows, also internal exchanges of forested land have been observed in the Netherlands and semi-natural creation (including conversion of former construction sites into natural grasslands or moors and heathlands) or changes due to natural and multiple causes are quite frequent in the country.

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



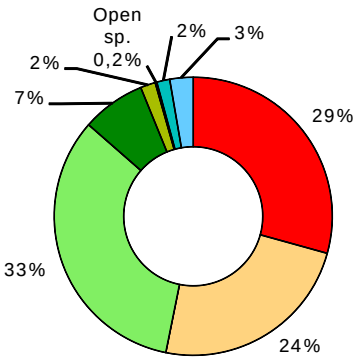
5.17. Mean annual forest & nature change by class [ha/year]



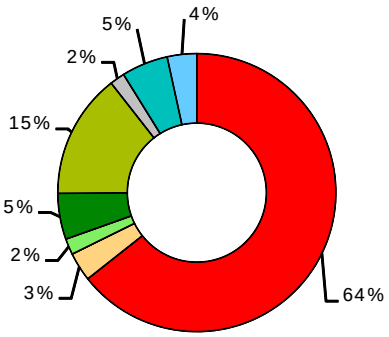
Annex: Land cover flows and trends

Land cover flows 2006-2012

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

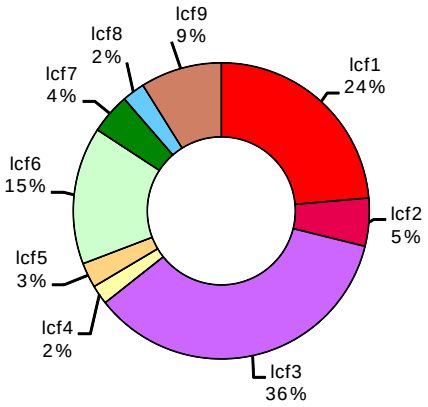


6.19. Formation of land cover 2006-2012 [% of total change area]



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]

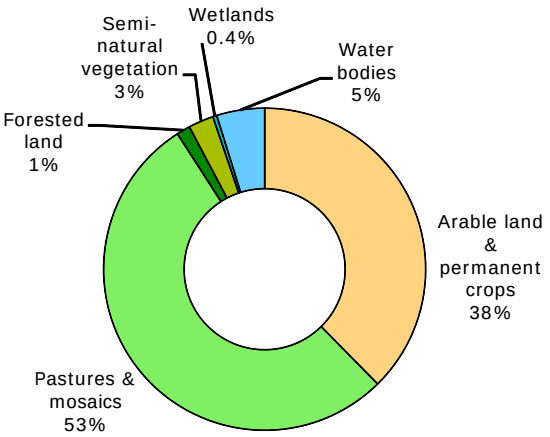


lcf1 Urban land management
lcf2 Urban residential sprawl
lcf3 Sprawl of economic sites and infrastructures
lcf4 Agriculture internal conversions
lcf5 Conversion from forested & natural land to agriculture
lcf6 Withdrawal of farming
lcf7 Forests creation and management
lcf8 Water bodies creation and management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

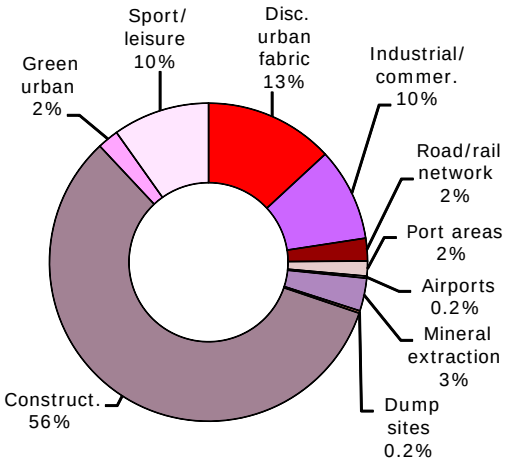
Netherlands

Artificial areas

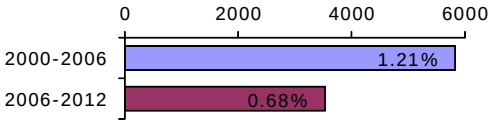
7.21. Consumption by artificial land take 2006-2012 [% of total]



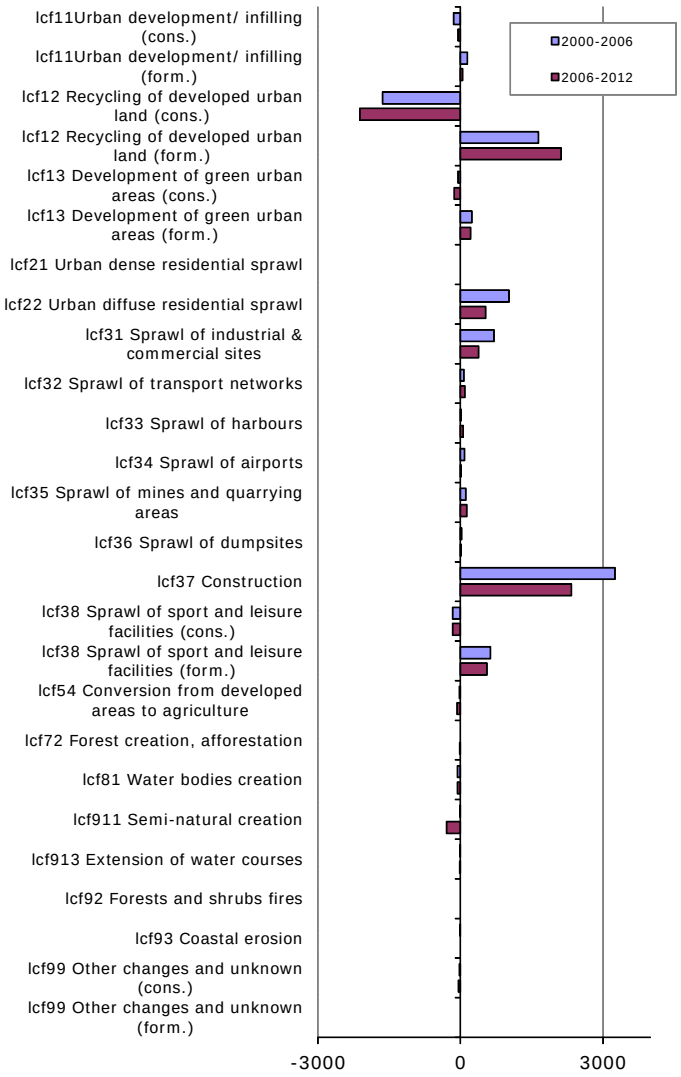
7.22. Formation by artificial land take 2006-2012 [% of total]



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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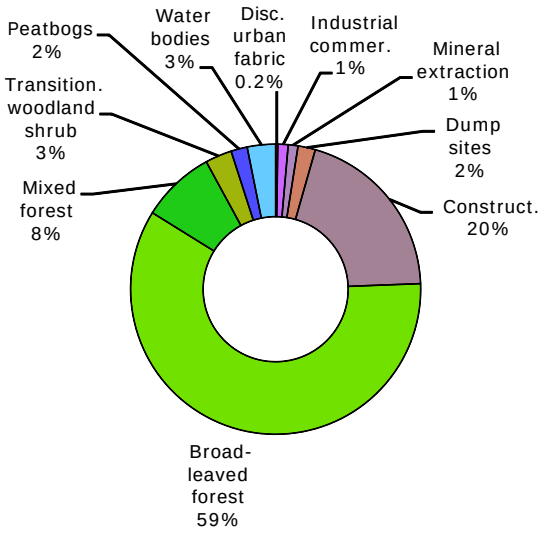
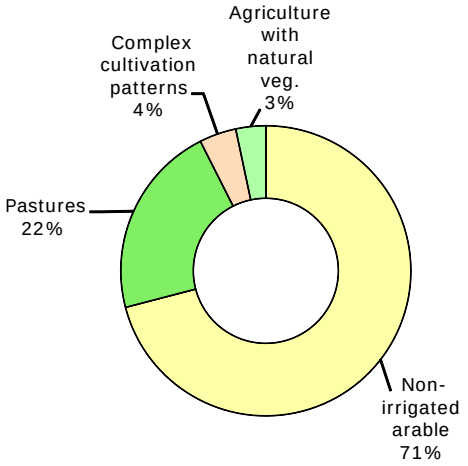
Agriculture

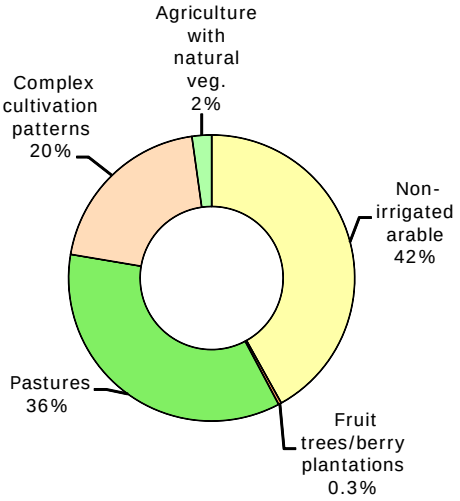
8.25. LC consumed by agriculture 2006-2012 [% of total]



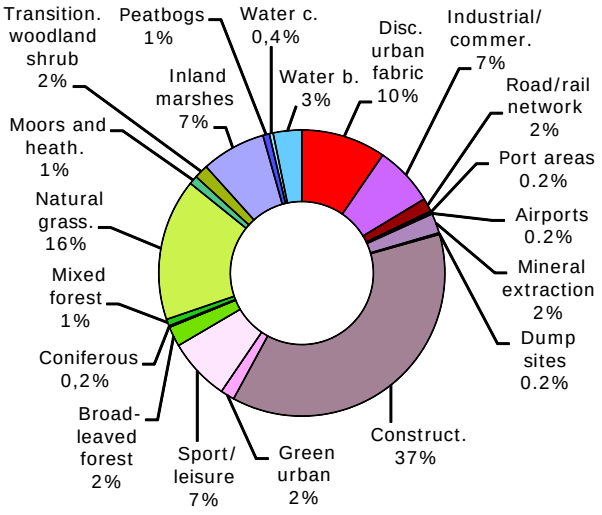
8.26. Formation of agricultural land from non-agriculture 2006-2012 [% of total]



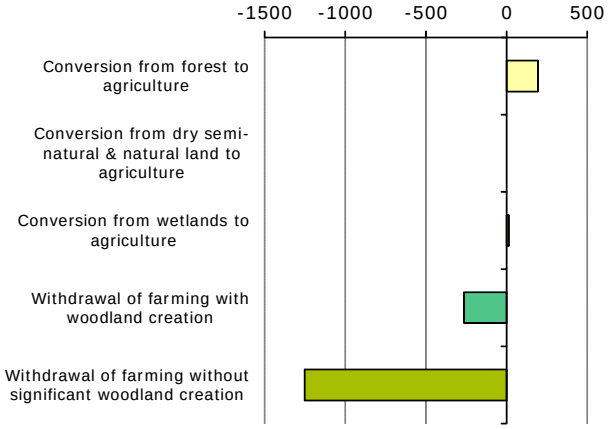
8.27. Consumption of agricultural land by non-agriculture 2006-2012 [% of total]



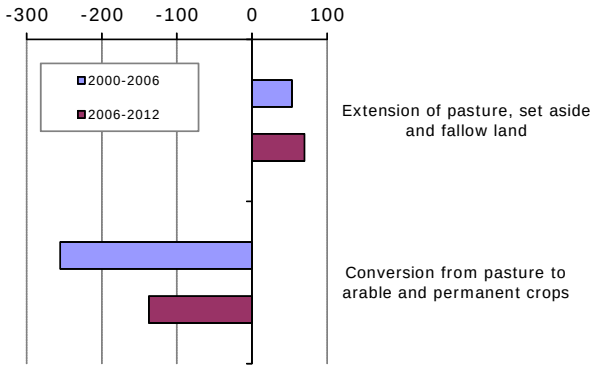
8.28. Formation of non-agricultural land from agriculture 2006-2012 [% of total]



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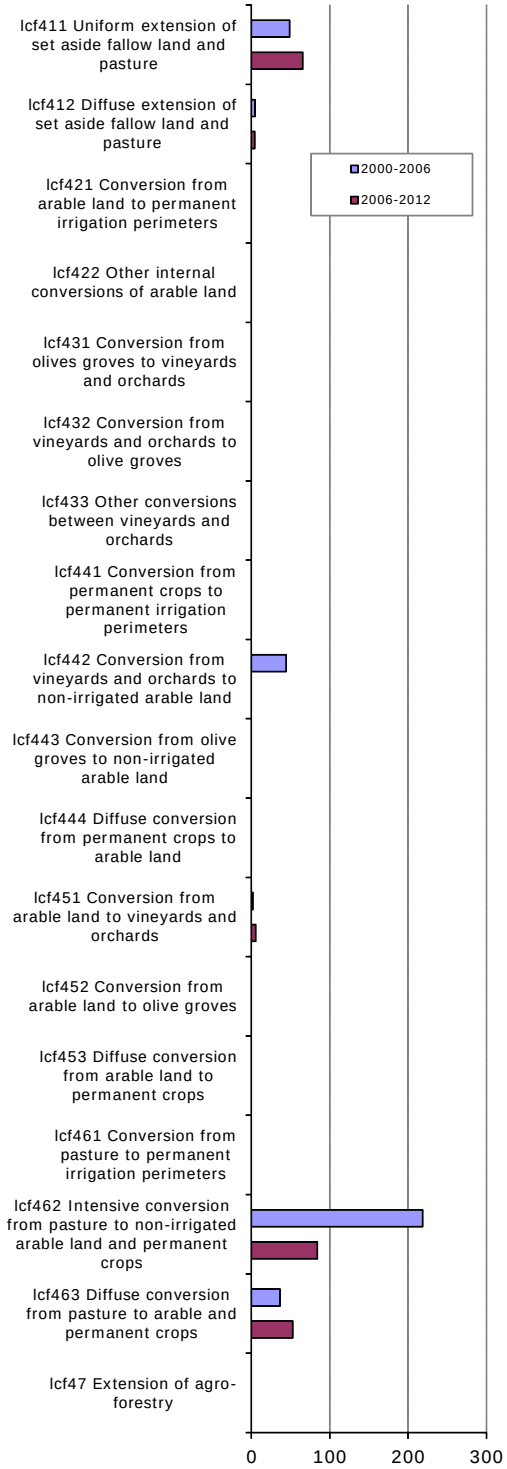
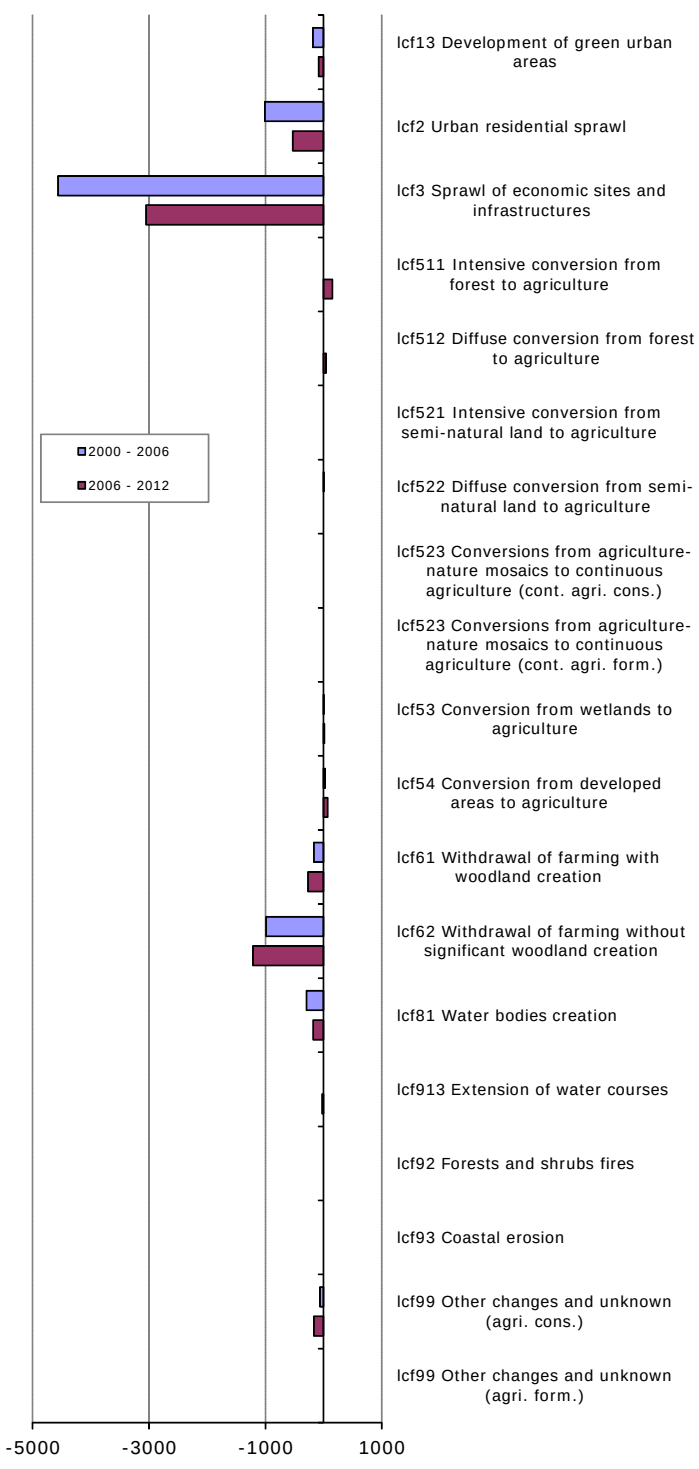
9.31. Mean annual agriculture internal conversions [ha/year]



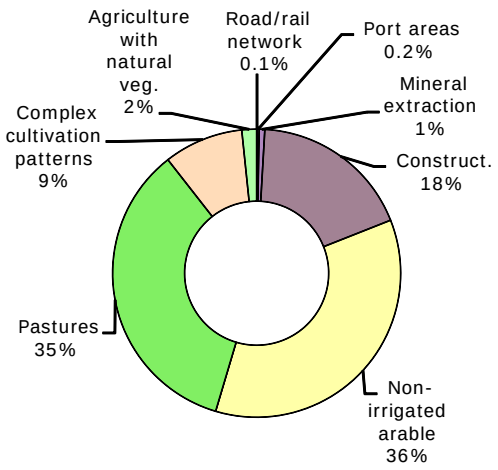
9.32. Mean annual conversions between agriculture and other LC types [ha/year]



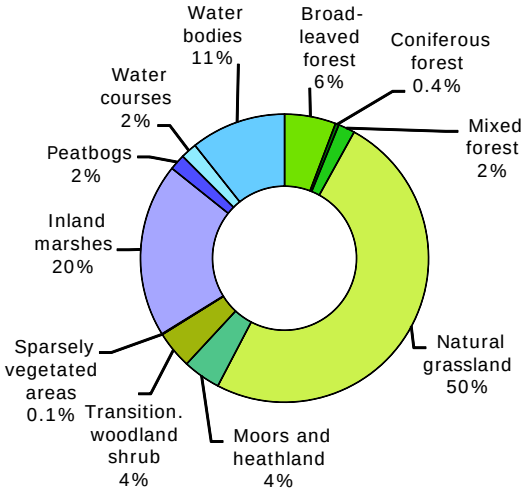
Netherlands

Forest & nature

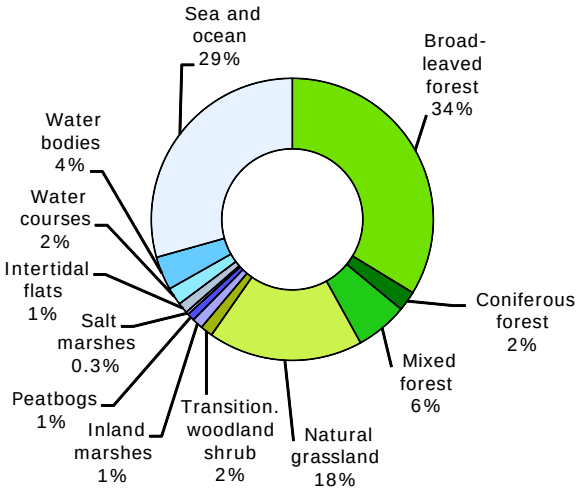
10.33. LC consumed by forest & nature 2006-2012 [% of total]



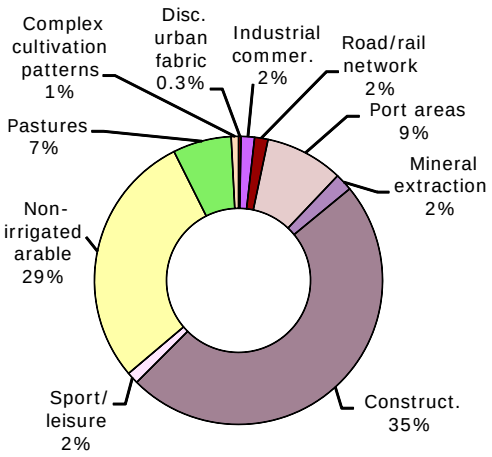
10.34. Formation of forest & nature land from non-forest /nature 2006-2012 [% of total]



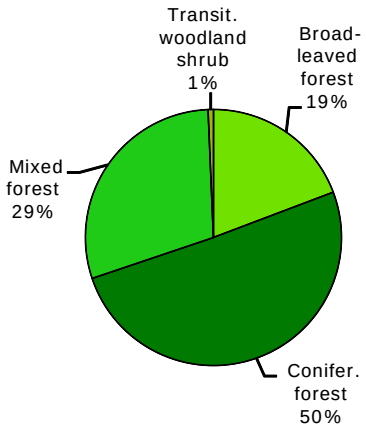
10.35. Consumption of forest & nature land by non-forest/nature 2006-2012 [% of total]



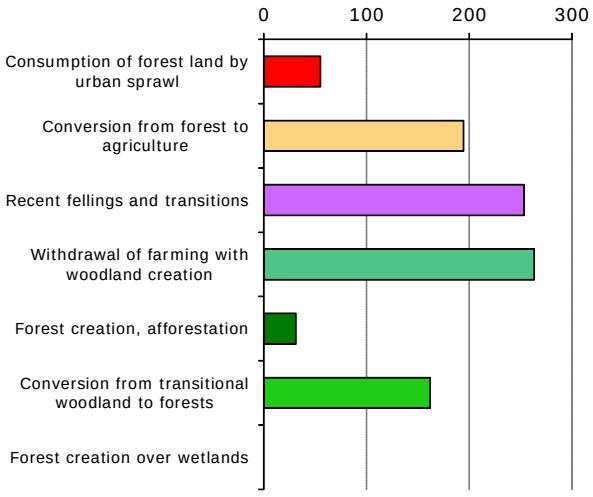
10.36. Formation of non-forest/nature land from forest & nature 2006-2012 [% of total]



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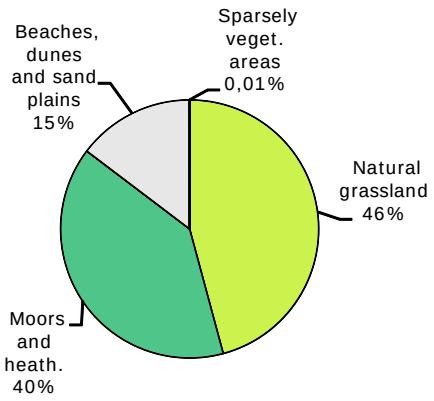
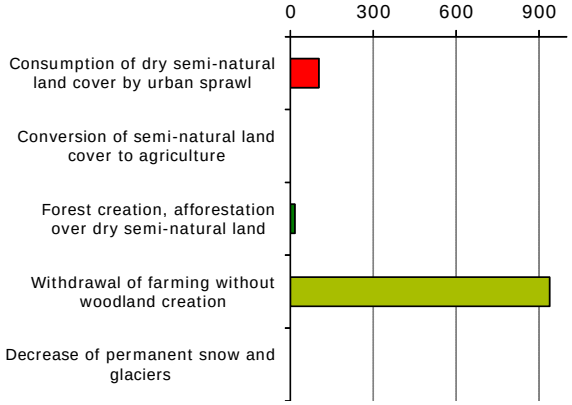
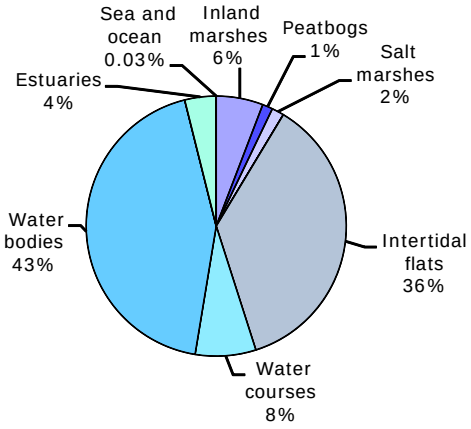
11.39. Dry semi-natural areas 2012 [% of total area]



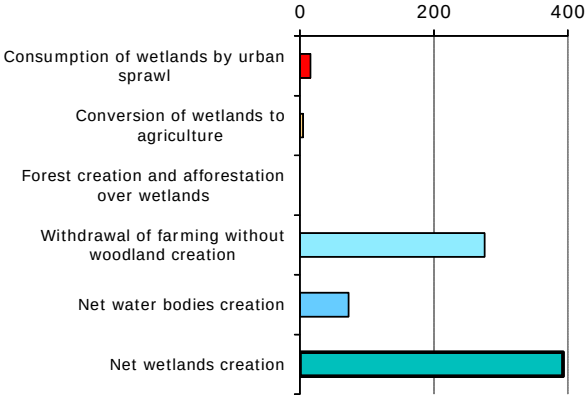
11.40. Main trends in dry semi-natural land consumption/formation 2006-2012 [ha/year]



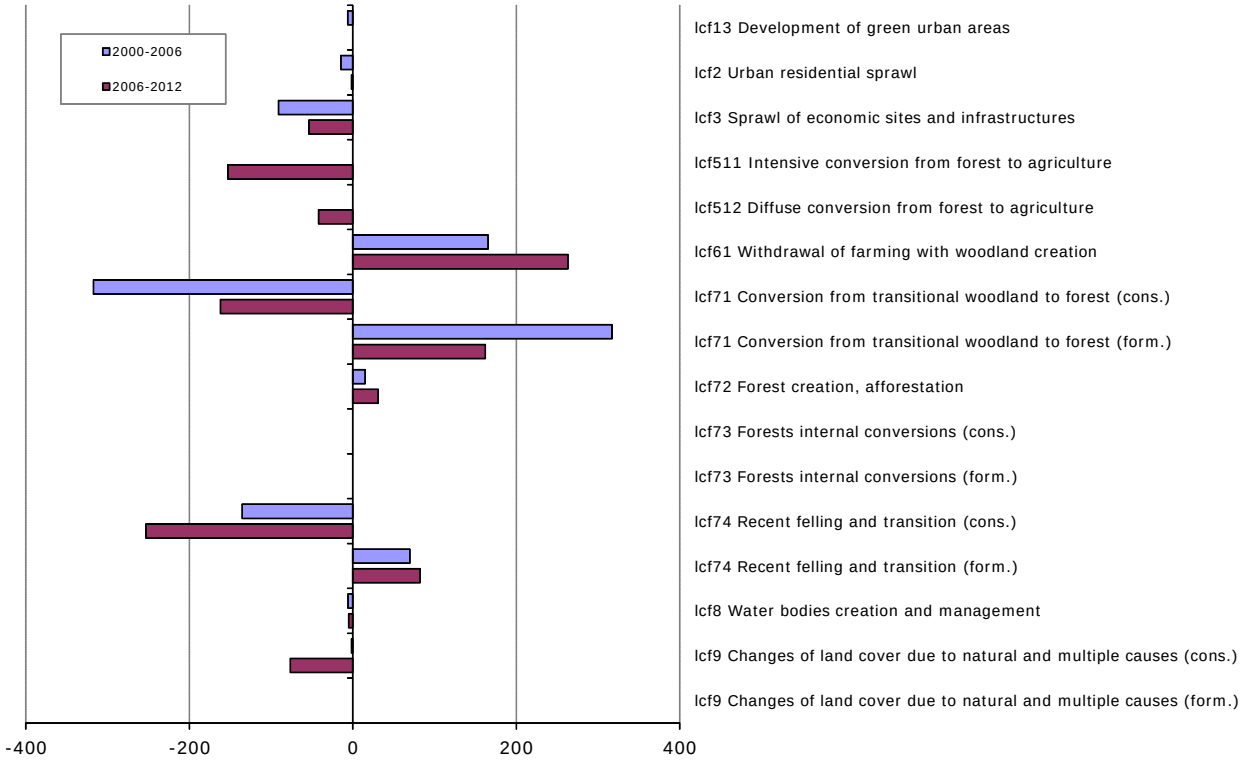
11.41. Wetlands & water 2012 [% of total area]



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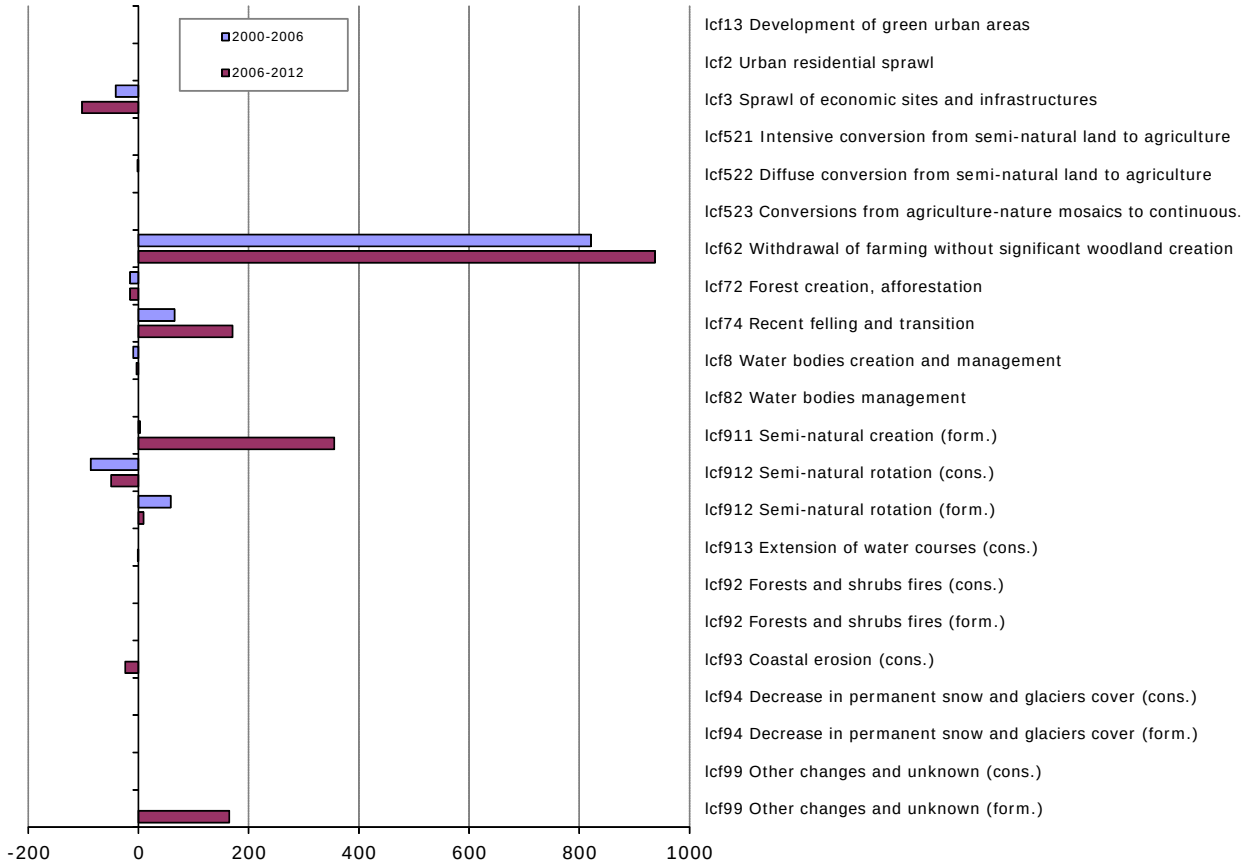
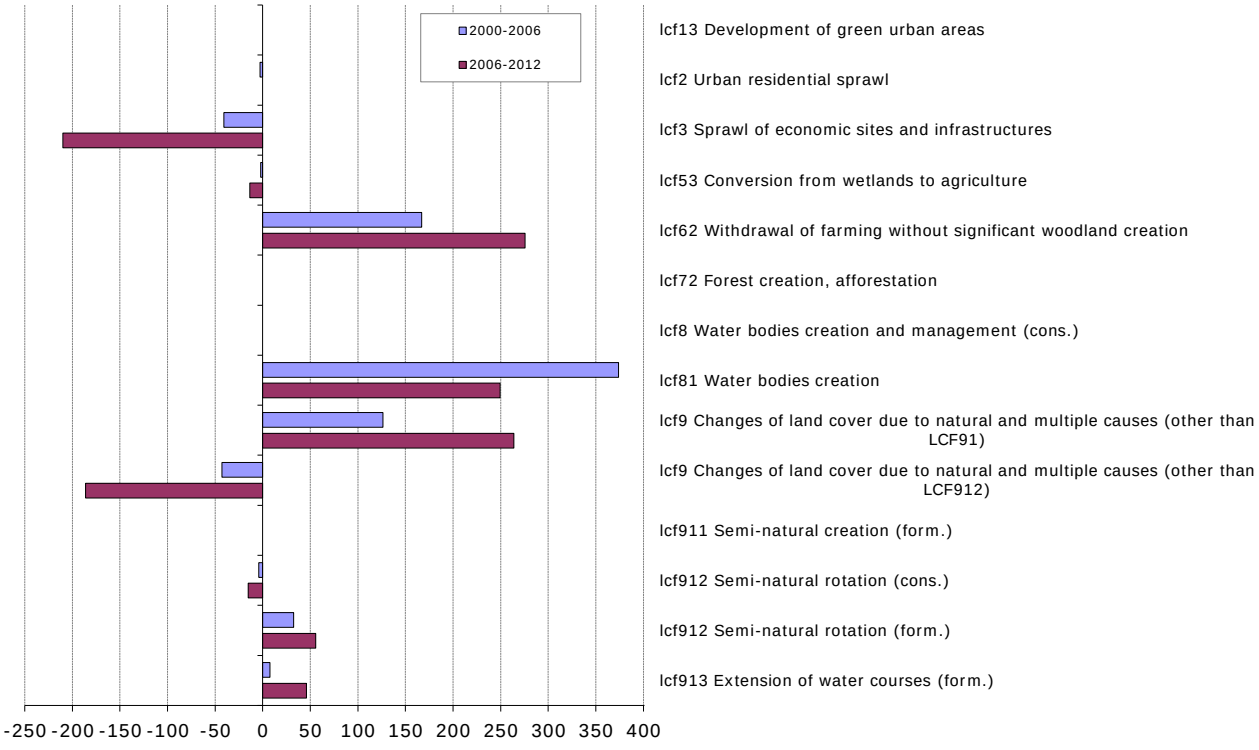
12.44. Mean annual conversions of dry semi-natural LC [ha/year]



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



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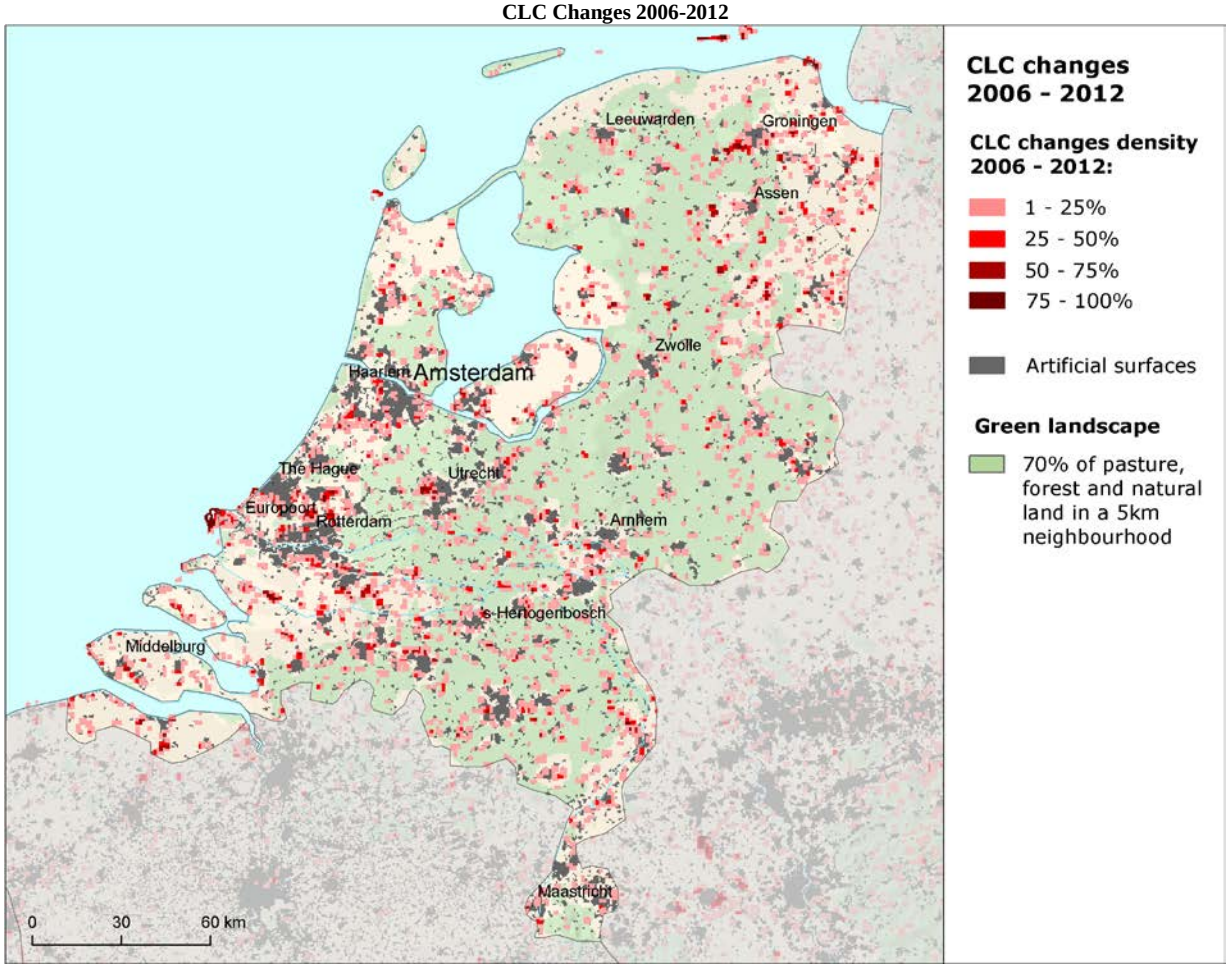
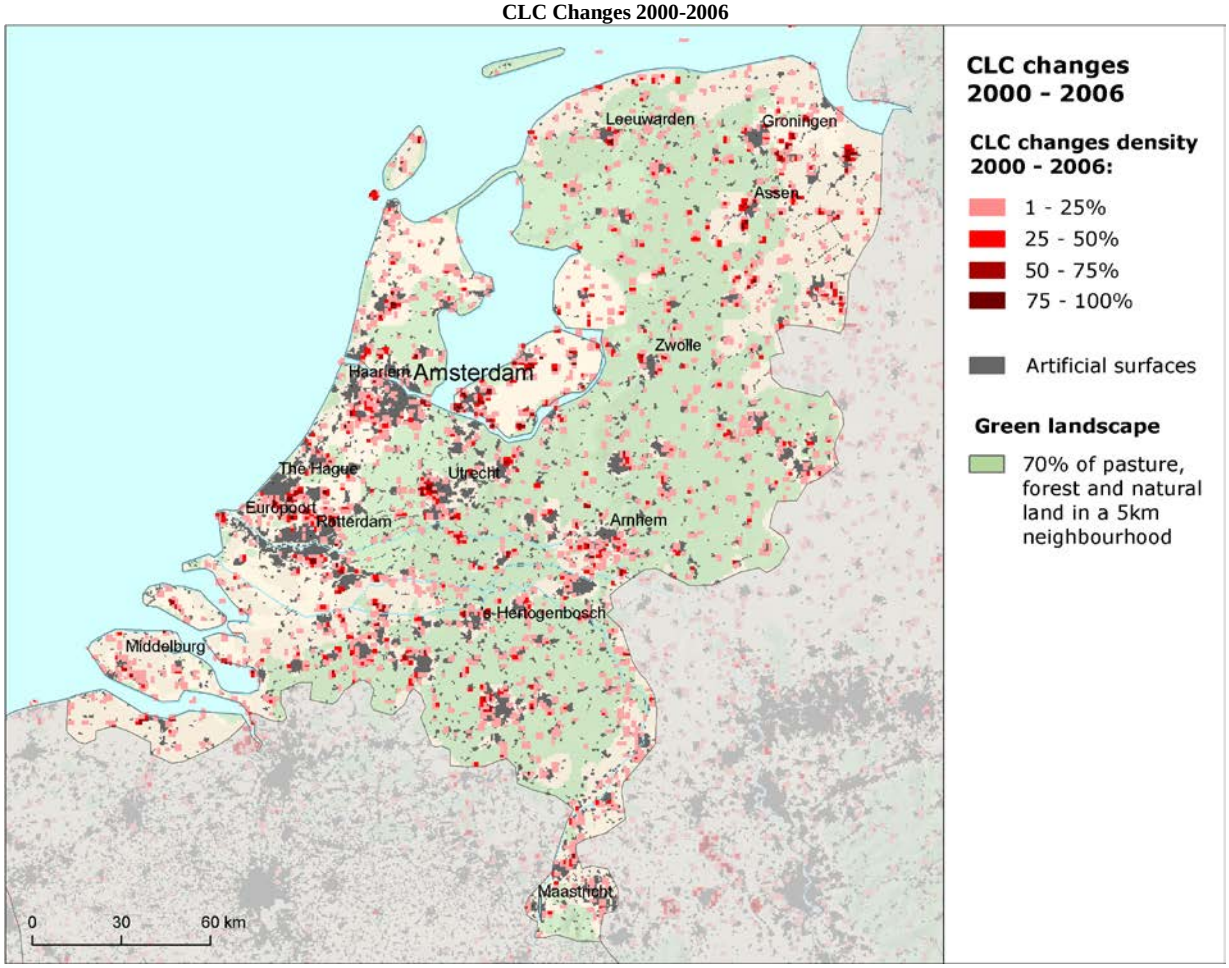
CLC Changes 2006-2012



CLC Changes 2000-2006



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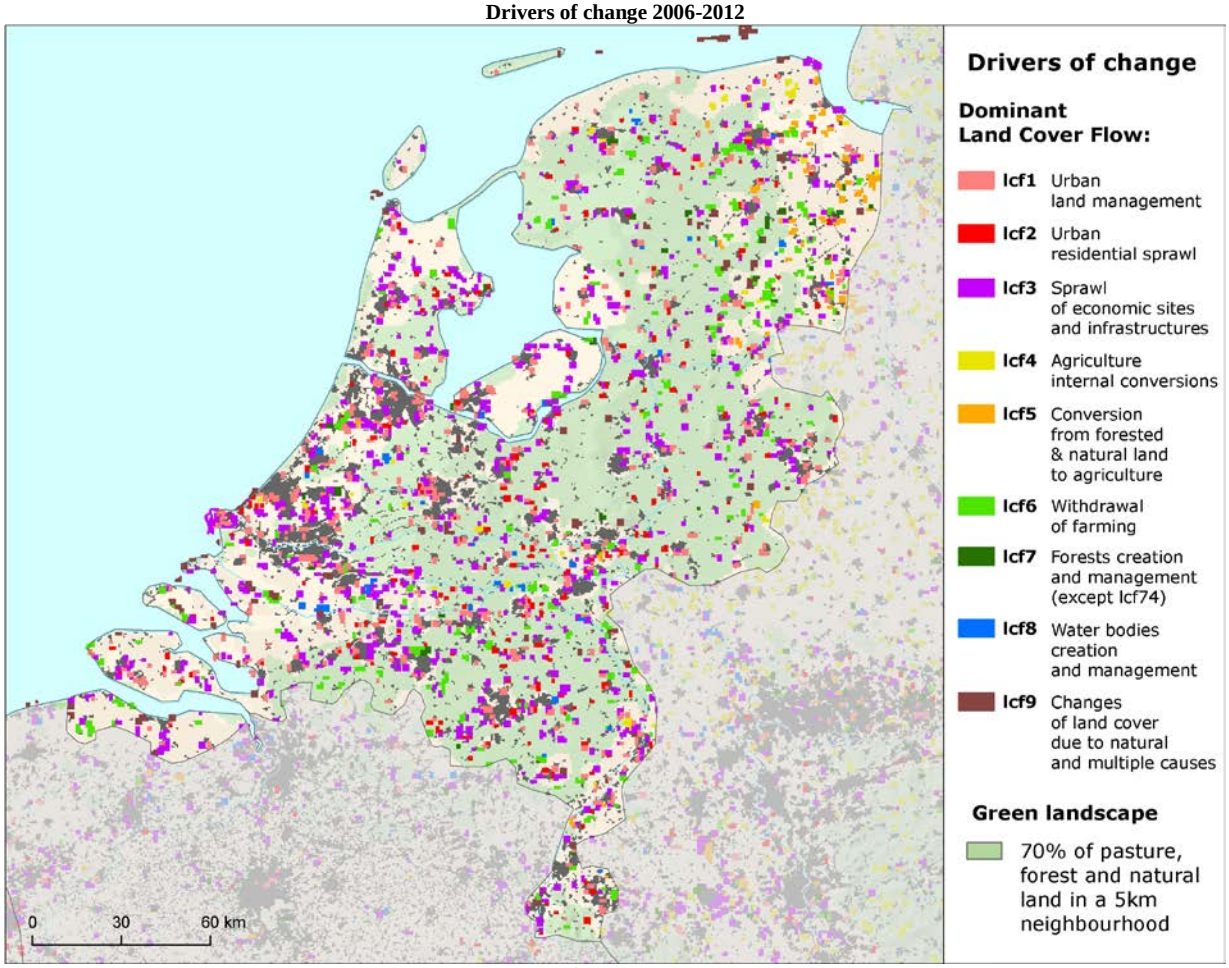
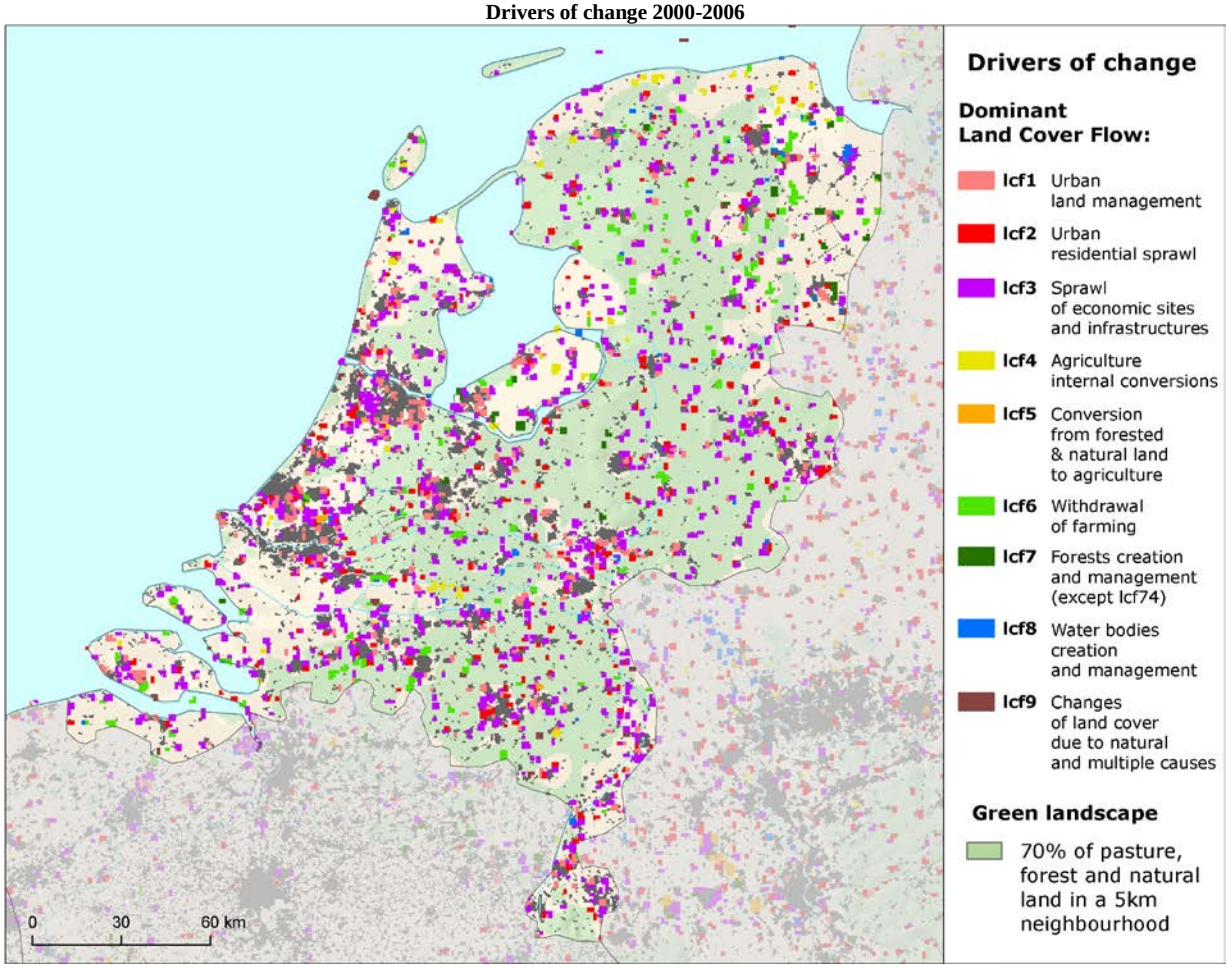
Drivers of change 2006-2012

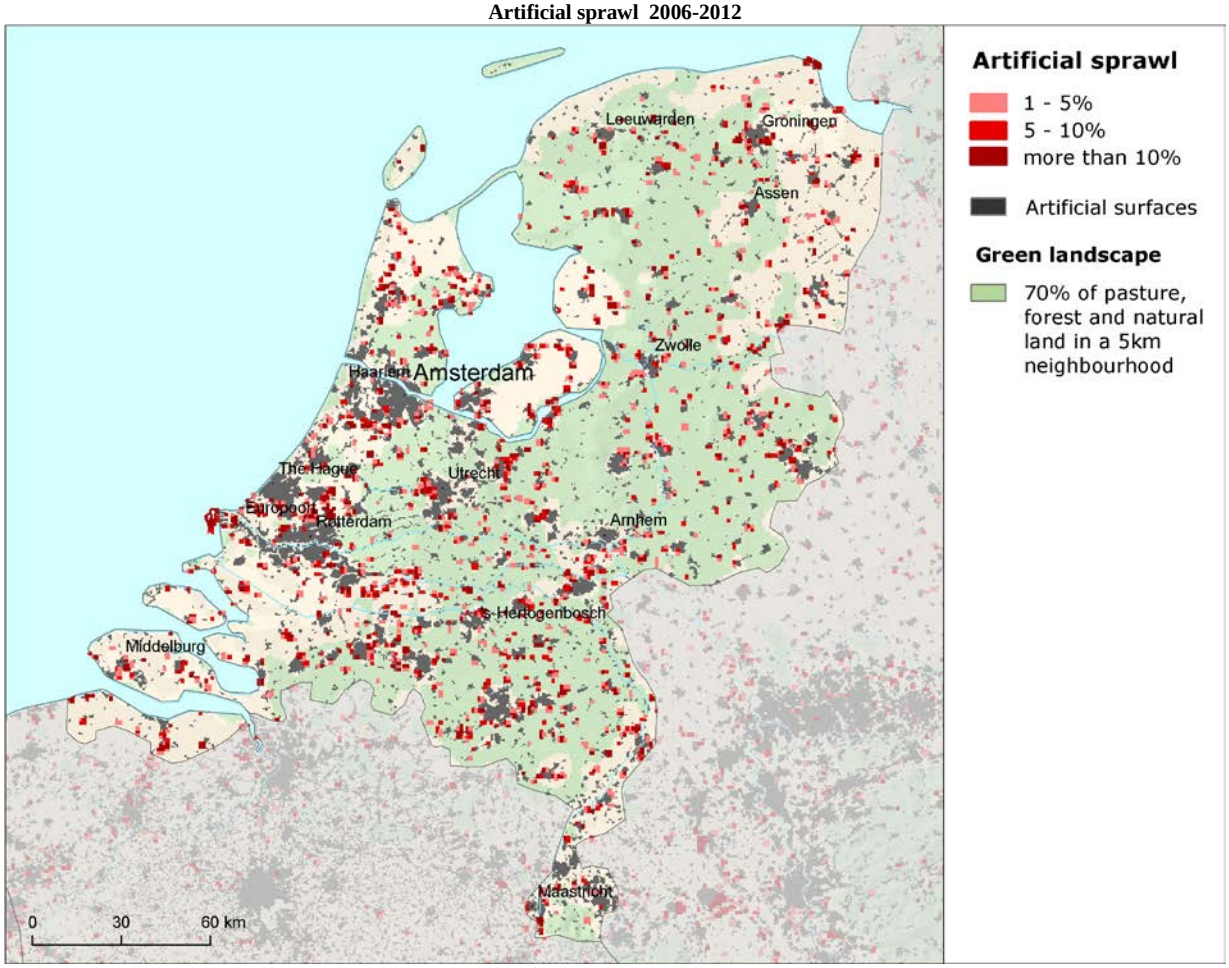


Drivers of change 2000-2006

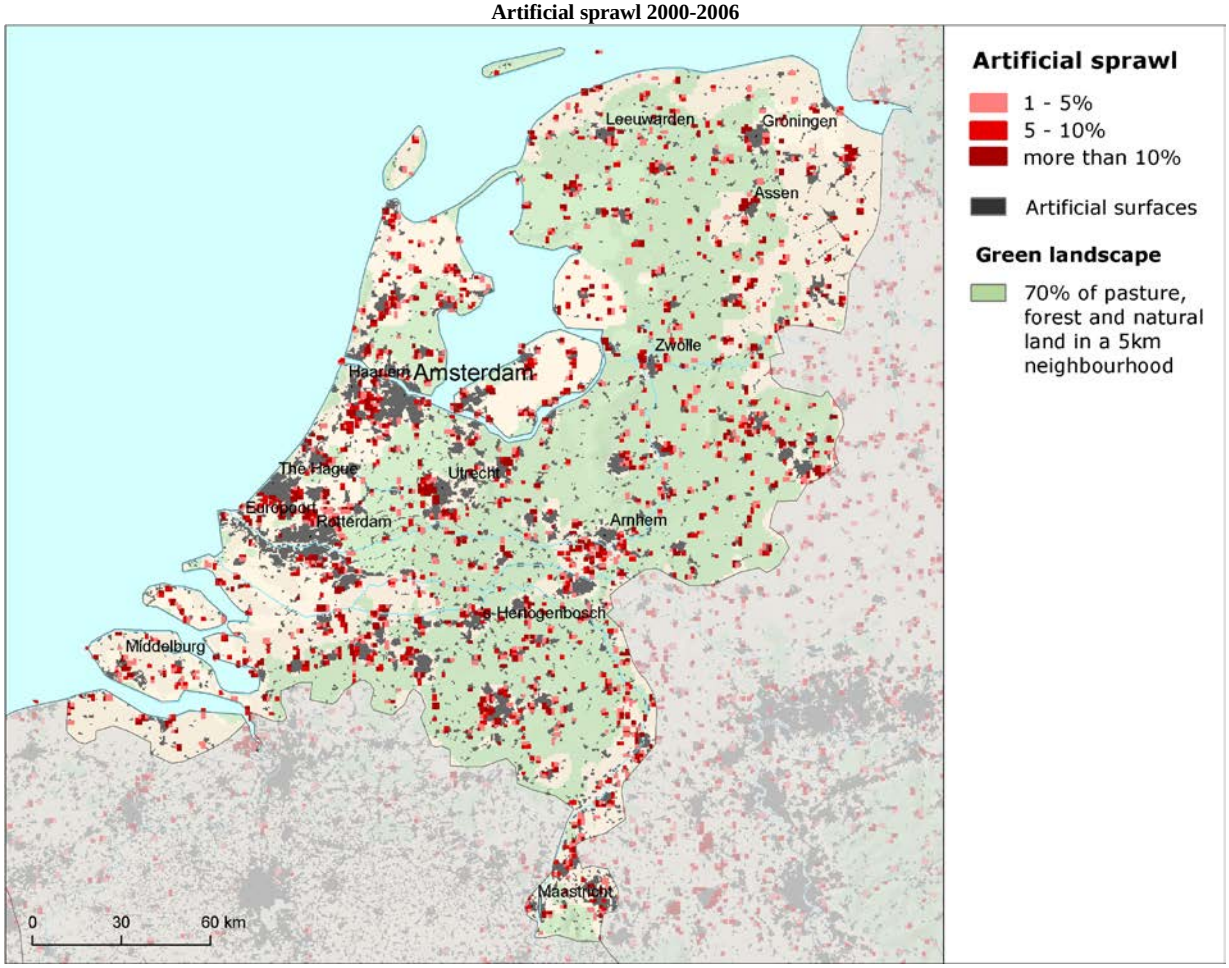


Netherlands

Artificial sprawl 2006-2012



Artificial sprawl 2000-2006



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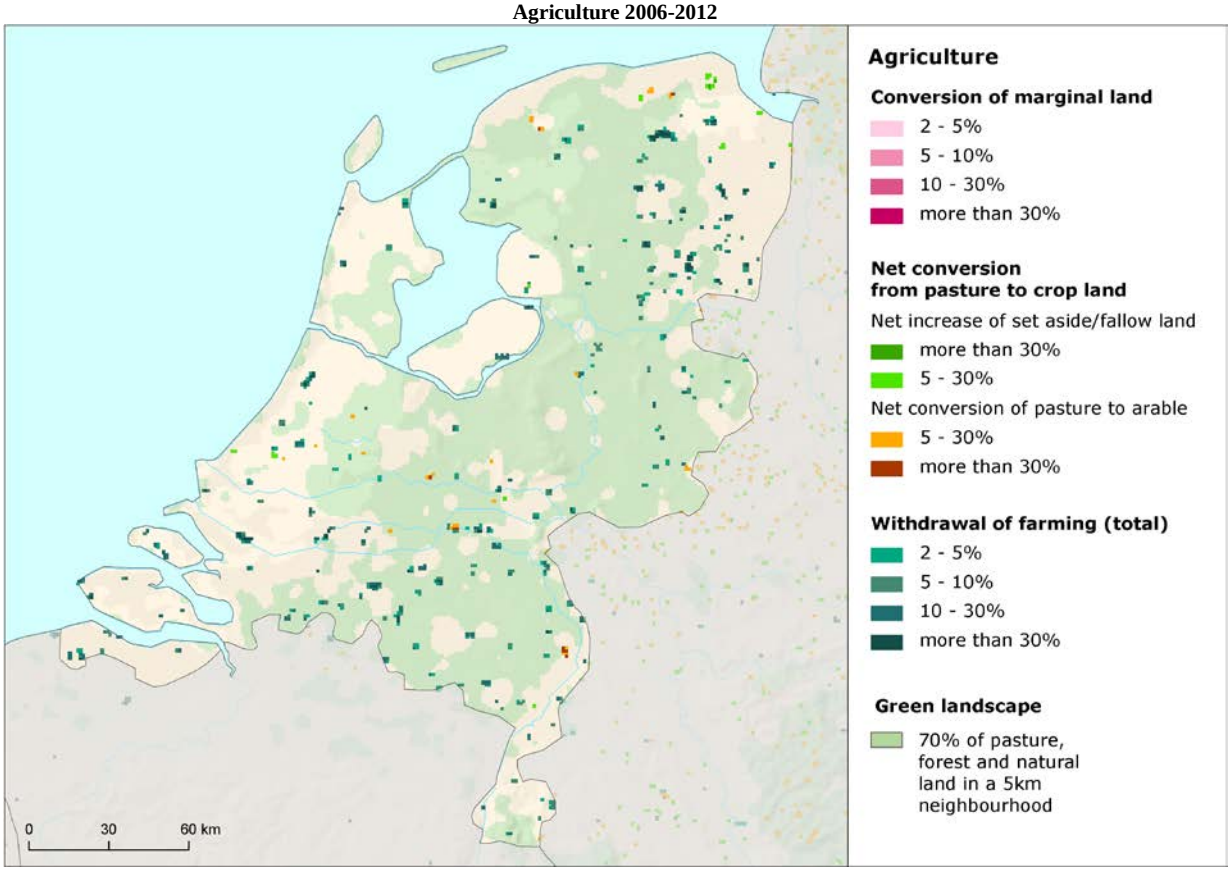
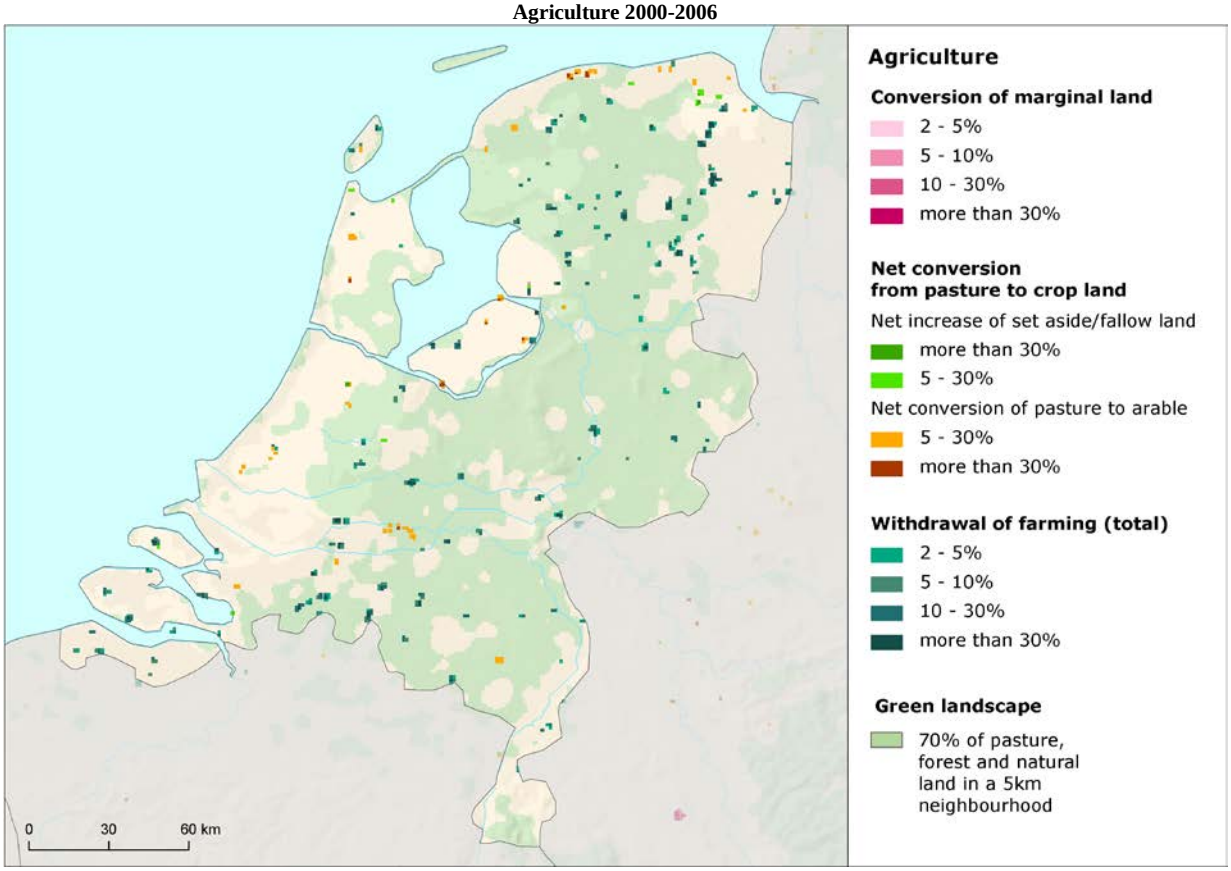
Agriculture 2006-2012

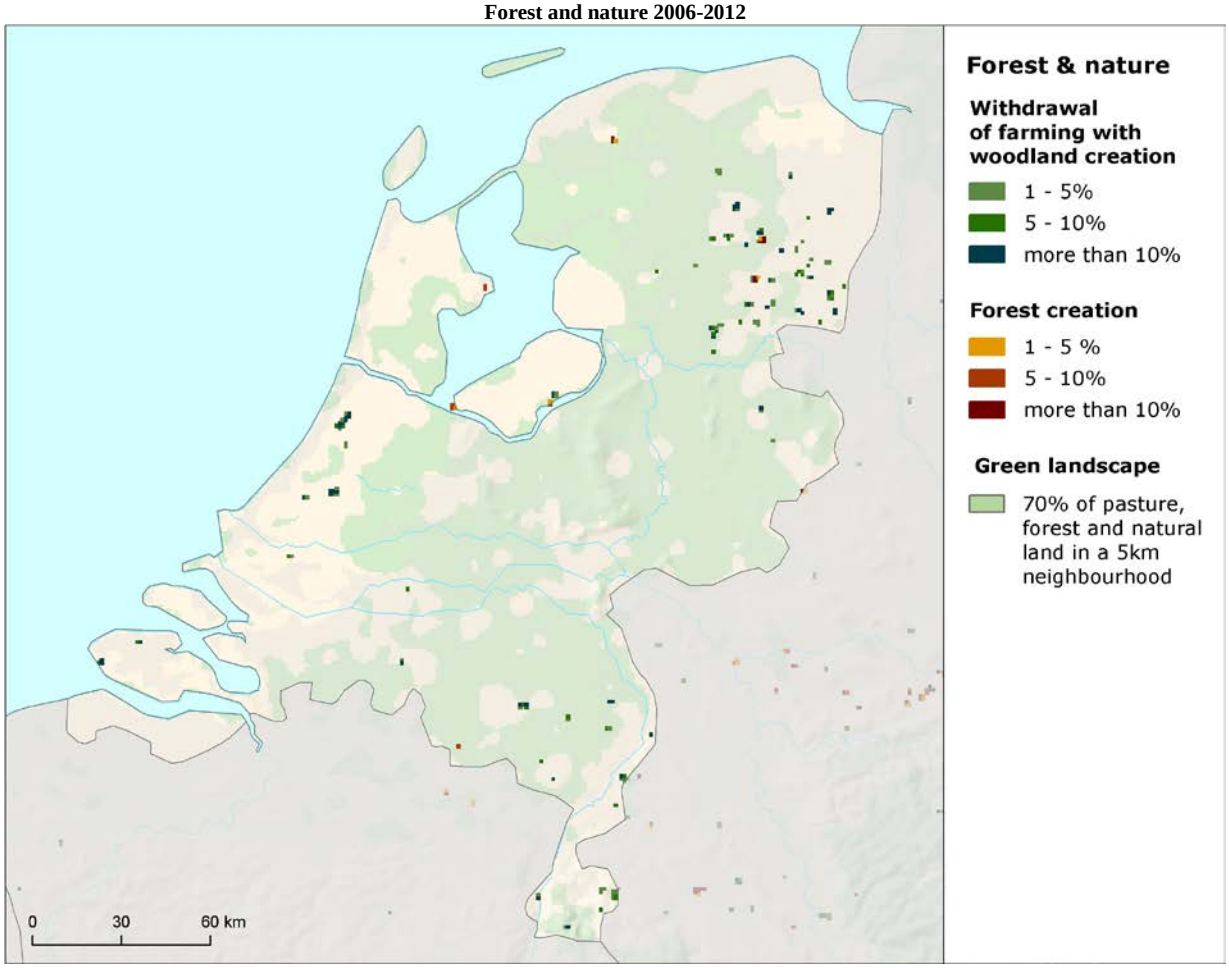


Agriculture 2000-2006



Netherlands

Forest and nature 2006-2012



Forest and nature 2000-2006