Country fact sheet

Land cover 2012

Denmark

September 2017

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European Environment Agency

Denmark

Land cover 2012

Overview of land cover & change 2006-2012

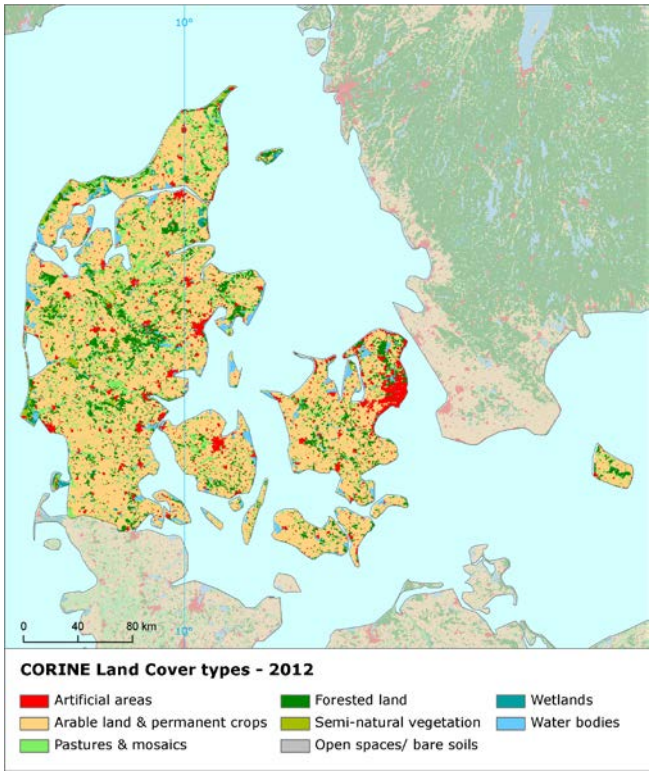
The overall land cover change rate in Denmark, which has been below the European average in the long term, is continuously slowly decreasing. The structure of the landscape development in the country is *colourful*, with most of main land cover flows incorporated, which is not typical for most of European countries.

The situation in the Danish landscape is characterised by relatively high rate of artificial sprawl, compared to the European average. Artificial land take is the main driver of the land cover change in Denmark, driven by the extension of the residential fabric as well as sport and leisure facilities, but also other types of artificial land development are visible in Denmark.

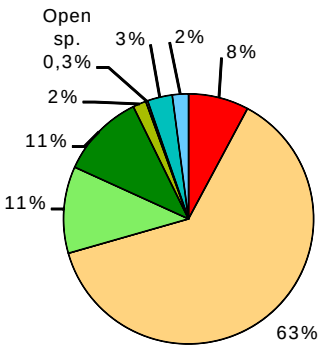
The sprawl proceeds mostly at the expenses of agricultural, mostly arable land. The overall formation rate of artificial land is about 2.5% of initial urban area during the 6-years period.

The other main change drivers, besides sprawl, are internal conversion of forested land, with increasing intensity of recent felling and transition from forest to shrub land, and internal agricultural flows, which occur with significantly higher intensity than in previous periods 1990-2000 and 2000-2006. There can be also observed some conversions between agricultural and natural land cover types in Danish landscape.

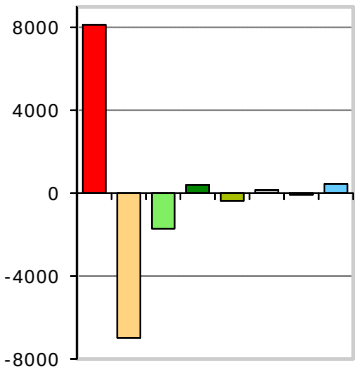
Note: The results presented here are based on a change analysis of 44 land cover types mapped consistently on a 1:100.000 scale across Europe over more than decade between 2000-2006-2012 - see Corine land cover (CLC) programme for details.
Number of years between CLC2006-CLC2012 data for Denmark: 6



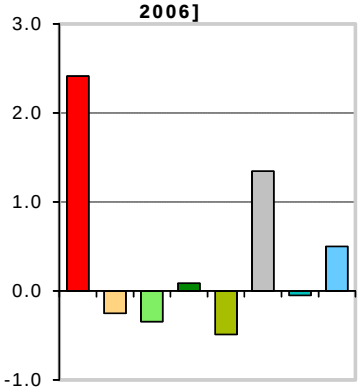
1.1. Land cover 2012 [% of total]



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

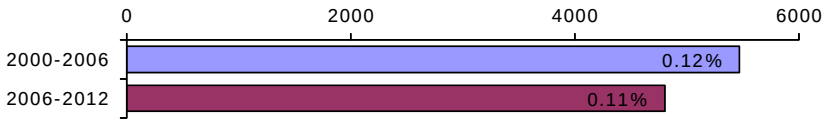
Summary balance table 2006-2012

	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	**3371**	**27757**	**4970**	**4821**	**760**	**111**	**1423**	**913**	**44127**
Consumption of initial LC	46.3	102.0	24.4	109.4	4.2	0.1	1.4	0.4	288
Formation of new LC	127.6	32.1	7.3	113.5	0.5	1.6	0.6	5.0	288
Net Formation of LC	**81.3**	**-69.9**	**-17.1**	**4.1**	**-3.7**	**1.5**	**-0.7**	**4.6**	**0**
Net formation as % of initial year	*2.4*	*-0.3*	*-0.3*	*0.1*	*-0.5*	*1.3*	*-0.1*	*0.5*	
Total turnover of LC	**173.8**	**134.1**	**31.7**	**223.0**	**4.7**	**1.8**	**2.0**	**5.4**	**576**
Total turnover as % of initial year	*5.2*	*0.5*	*0.6*	*4.6*	*0.6*	*1.6*	*0.1*	*0.6*	*1.3*
Land cover 2012	**3452**	**27687**	**4953**	**4825**	**756**	**113**	**1422**	**918**	**44127**

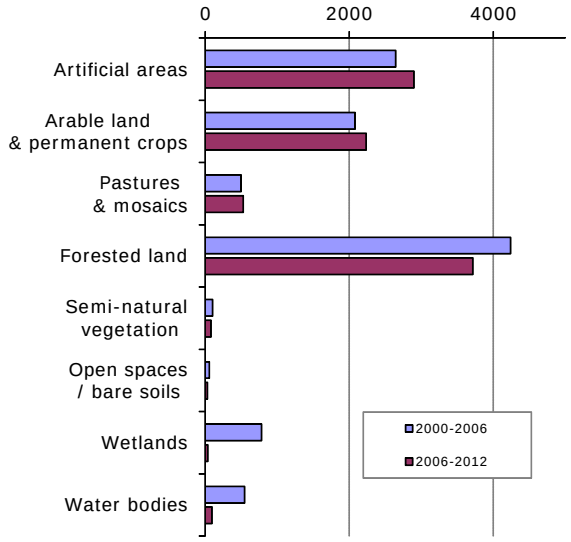
Denmark

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

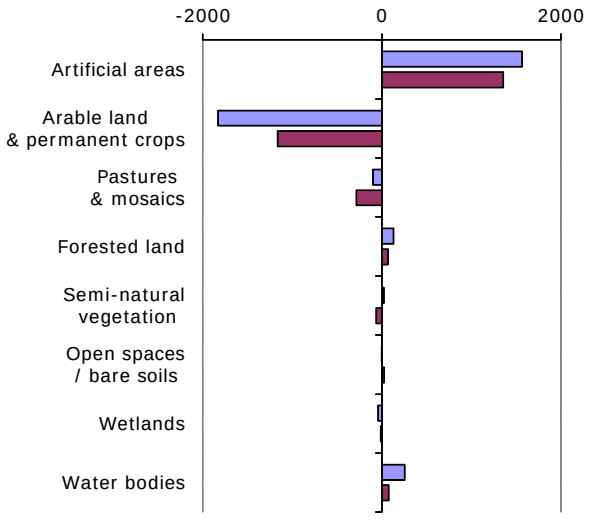
2.4. Annual land cover change [ha/year, % of total area]



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

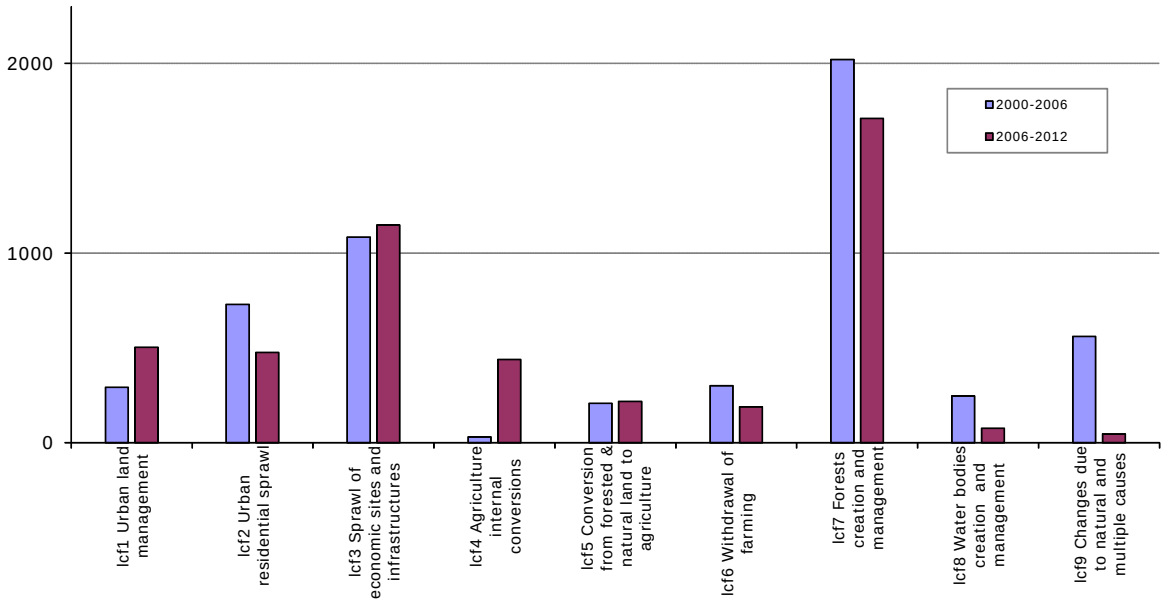


2.6. Net annual change of LC types [ha/year]



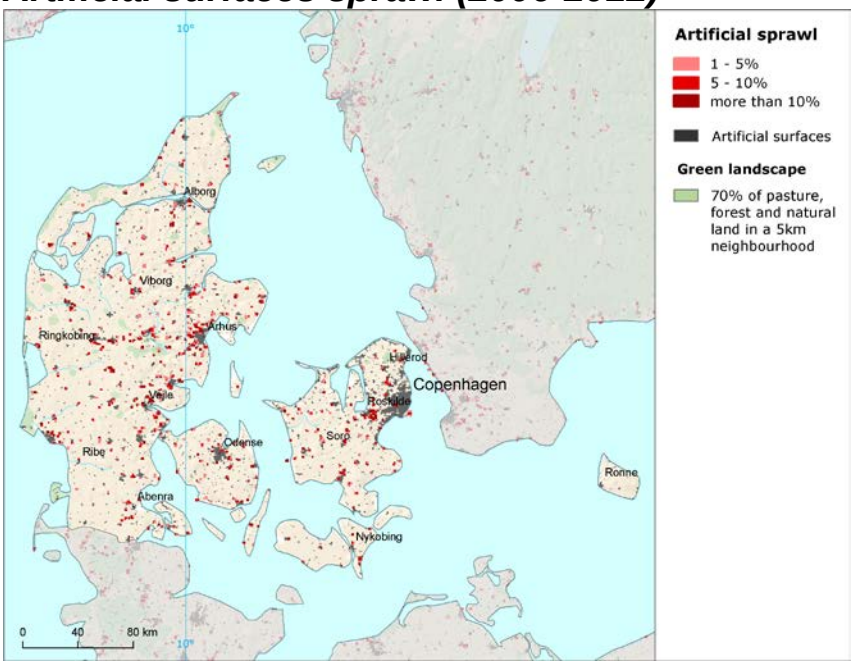
Summary trend figures	2000-2006	2006-2012
Annual land cover change [ha/year]	**5471**	**4804**
Annual land cover change as % of initial year	**0.12%**	**0.11%**
Land uptake by artificial development as mean annual change [ha/year]	1784	1495
Agricultural land uptake by urban and infrastructures development as mean annual change [ha/year]	1903	1464
Net uptake of forests and semi-natural land by agriculture as mean annual change [ha/year]	-245	-77
Net conversion from pasture to arable land and permanent crops as mean annual change [ha/year]	-15	214
Forest & other woodland net formation as mean annual change [ha/year]	129	69
Dry semi-natural land cover net formation as mean annual change [ha/year]	20	-37
Wetlands & water bodies net formation as mean annual change [ha/year]	213	64

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

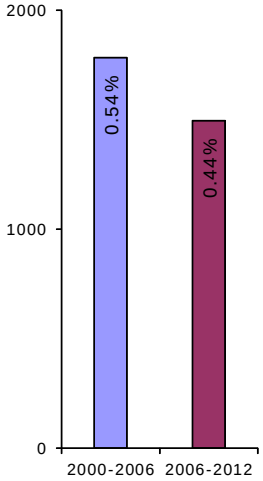


Denmark

Artificial surfaces sprawl (2006-2012)



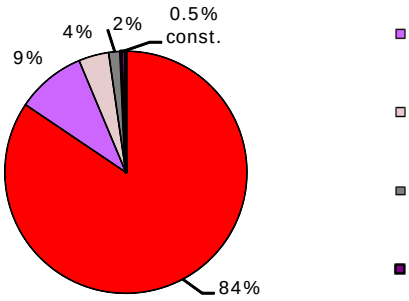
3.8. Artificial land take [ha/year, % of initial year]



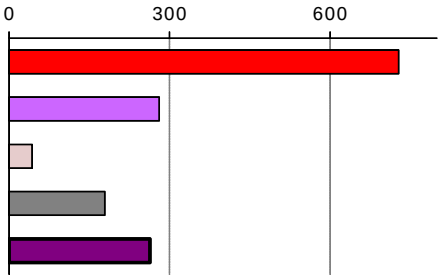
Residential sprawl slows down

Although its intensity shows a slightly decreasing tendency, artificial land take remains the main driver of land cover development in Denmark, with a mean annual land take rate safely above the European average. The internal structure of this phenomenon shows that it is driven mostly be diffuse residential (which is, however, less intensive than in the previous period) and sport and leisure facilities development. Besides it, also formation of industrial and commercial units plays its remarkable role in urban development. Concerning the source of land take, the sprawl consumes almost exclusively arable land, which is not surprising, as arable land constitutes about 85% of total agricultural land in the country. Not only sprawl, but also recycling of developed urban land (represented mostly by conversion of former construction sites into discontinuous urban fabric) is an important driver of Danish artificial development. The spatial pattern of sprawl is similar to the previous period, with concentration around major cities accompanied by scattered patches of land take distributed over whole country.

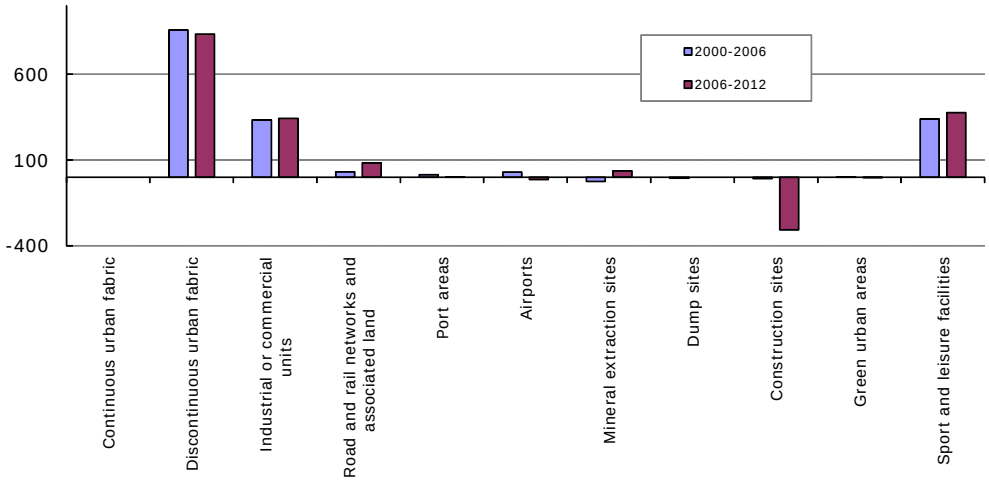
3.9. Artificial surfaces 2012 [% of total area]



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

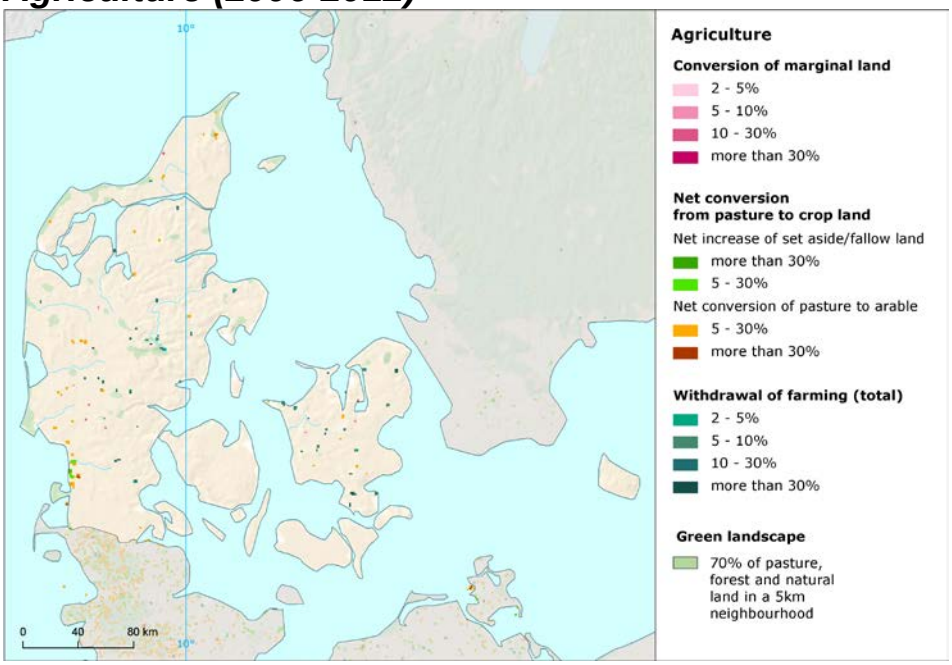


3.11. Mean annual artificial change by class [ha/year]



Denmark

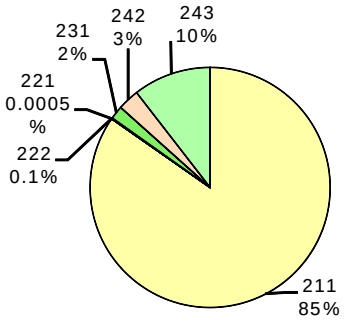
Agriculture (2006-2012)

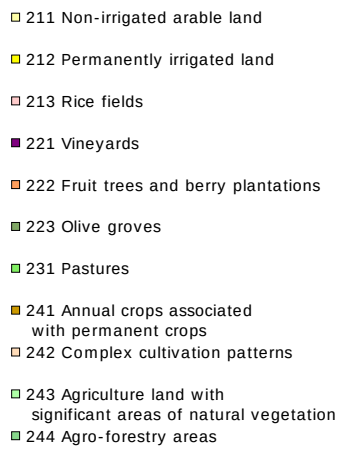


Internal conversions occur in agricultural development

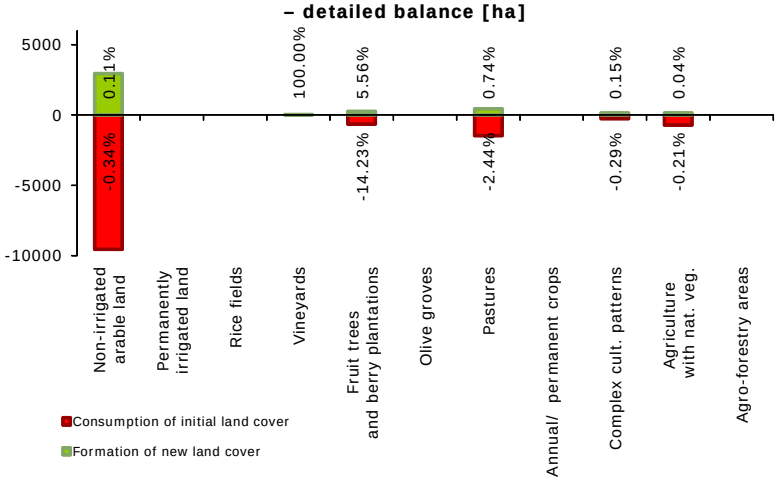
Agricultural land, with strongly prevailing share of arable land, is the main source for the artificial land take in the country. This flow of agricultural land consumption is the main driver of the land cover development in Denmark. The consumption of arable land is partially compensated by internal conversion from pasture to arable, which was not observed in Denmark during the previous period 2000-2006. In contrast, there occurred some internal development of agricultural land in the period 1990-2000, but its direction was opposite, with prevailing formation of pasture and set aside fallow land over arable. The other significant flow, which occurs in the Danish agricultural development, is the withdrawal of farming with woodland creation. This transition incorporates mostly conversion from arable land into transitional woodland and shrub areas.

4.12. Agricultural areas 2012 [% of total area]

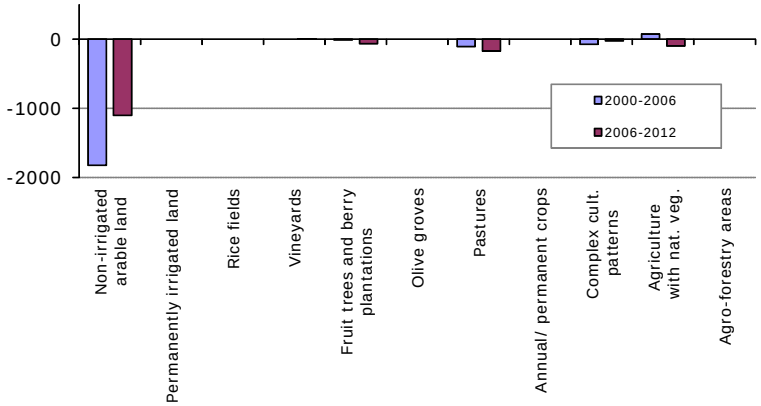




4.13. Development of agricultural areas 2006-2012 – detailed balance [ha]

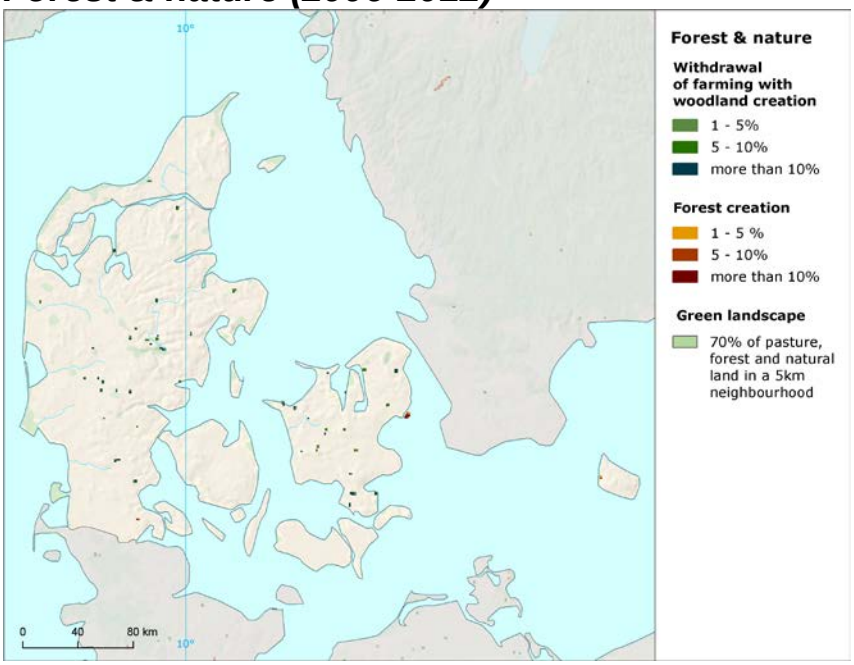


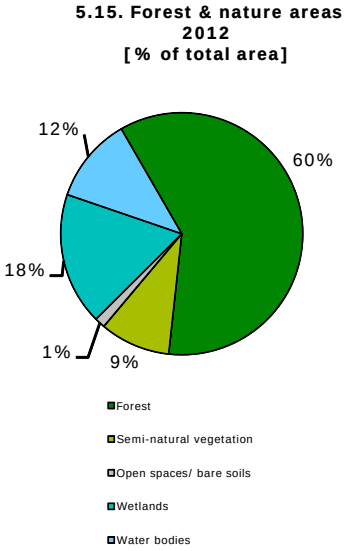
4.14. Mean annual agricultural change by class [ha/year]



Denmark

Forest & nature (2006-2012)

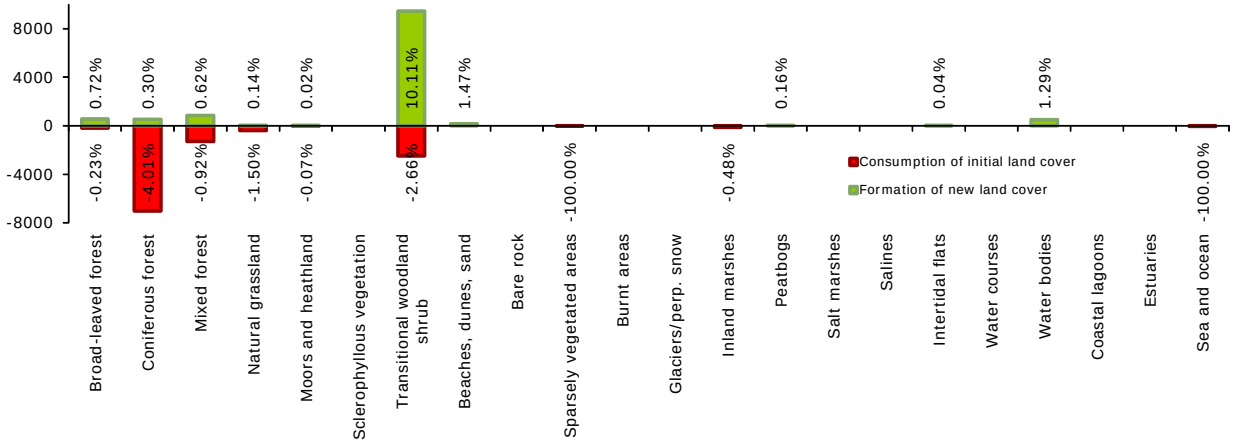




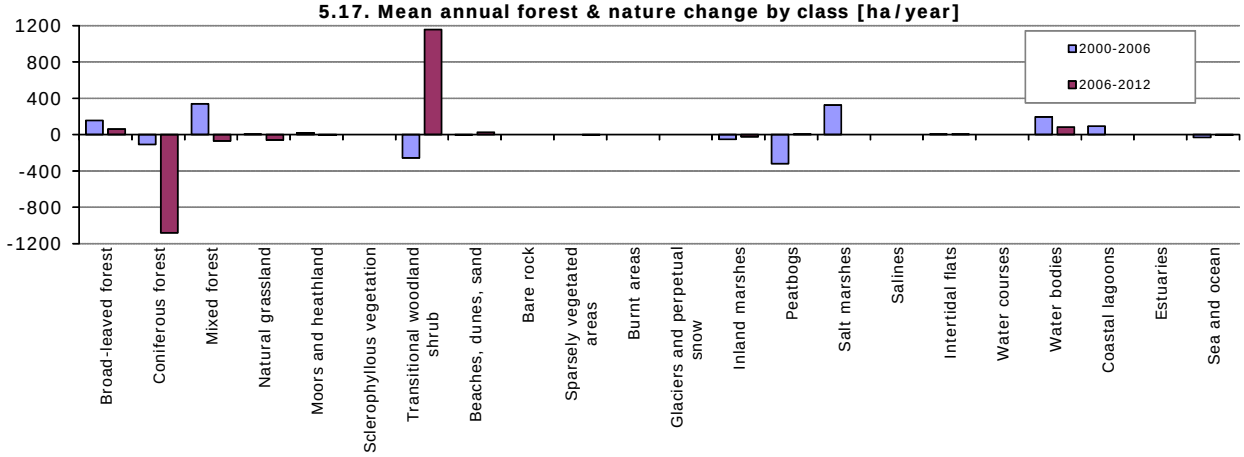
Turnaround of forest internal change

Forest creation and management is the second most extensive flow of land cover development in Denmark. This flow is represented mostly by internal forest exchange, with prevailing recent felling and transition, which shows an opposite trend when compared to the period 2000-2006. Recent felling occurs with almost doubled intensity compared to previous period, in contrast to the opposite conversion from transitional woodland to forest, which has significantly lower intensity than in the period 2000-2006. Mainly coniferous forest is consumed in the frame of this flow, with 4% consumption of its initial area. The other source for formation of transitional woodland is the withdrawal of farming with forest creation. Also this flow consumes mainly arable agricultural land and contributes to its overall consumption, driven mostly be artificial sprawl. There was also a significant amount of semi-natural land rotation between peatbogs and salt marshes observed in previous period, however, this flow seems to completely disappear from Danish natural land in the 2006-2012.

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



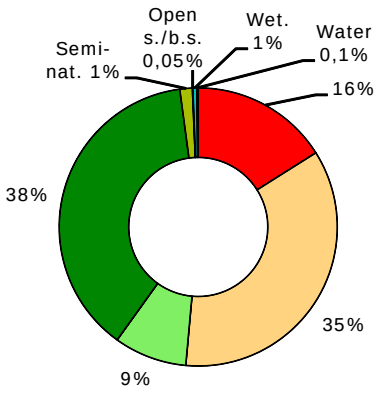
5.17. Mean annual forest & nature change by class [ha/year]



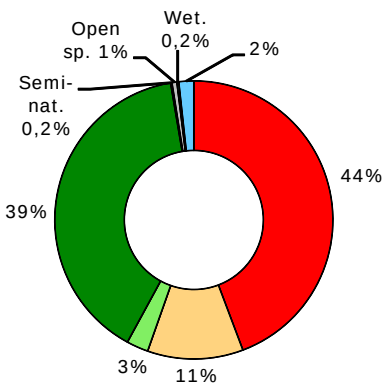
Annex: Land cover flows and trends

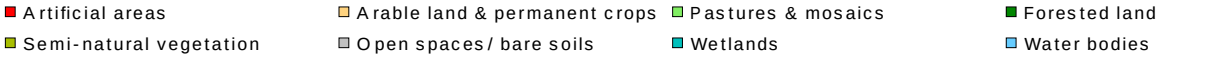
Land cover flows 2006-2012

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

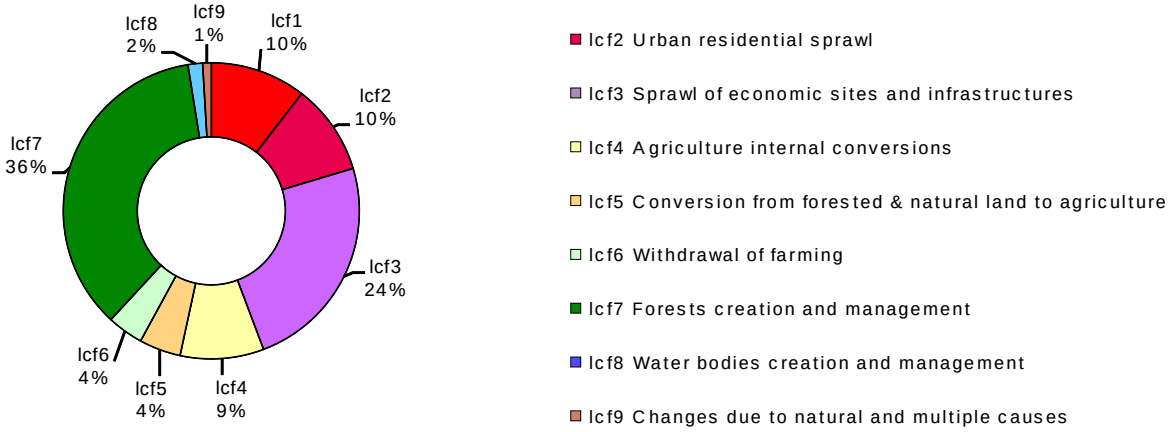


6.19. Formation of land cover 2006-2012 [% of total change area]





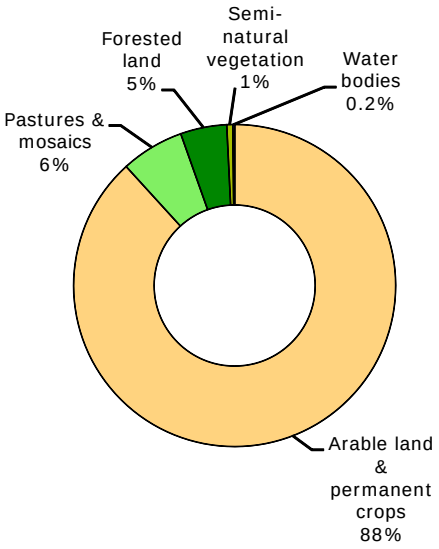
6.20. Drivers of change (LC FLOWS) 2006-2012 [% of total change area]



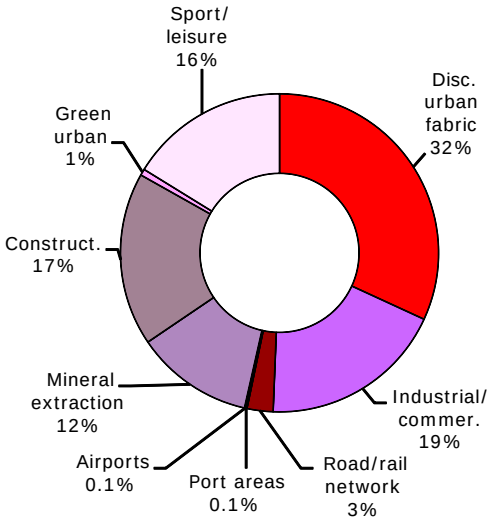
Denmark

Artificial areas

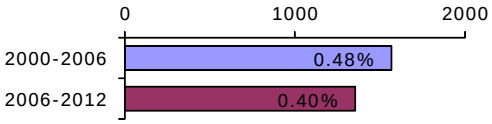
7.21. Consumption by artificial land take 2006-2012 [% of total]



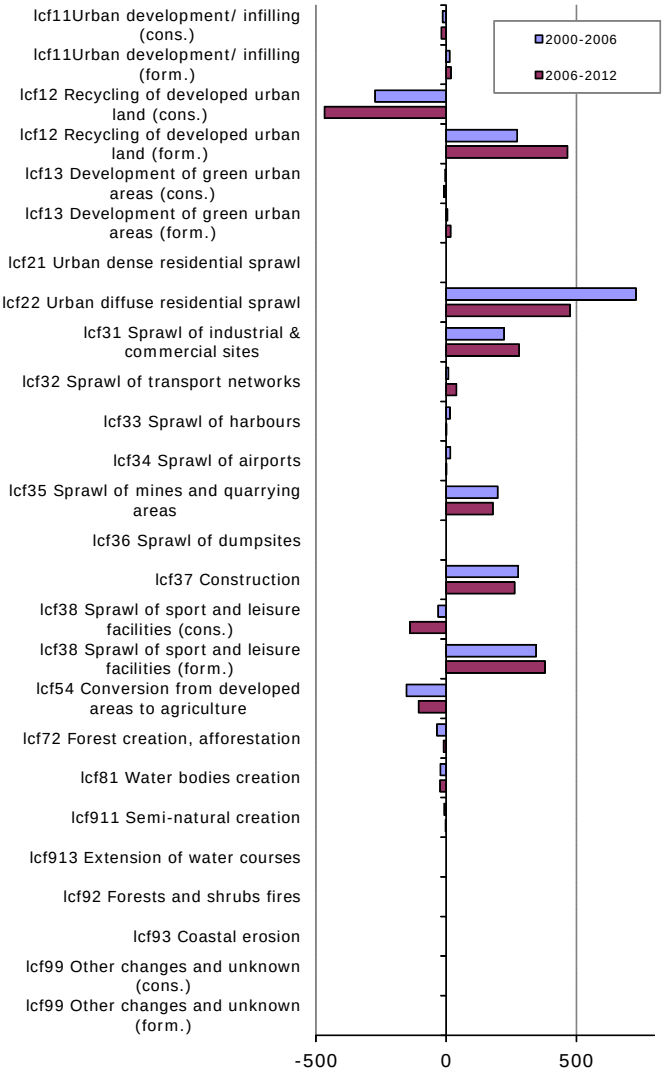
7.22. Formation by artificial land take 2006-2012 [% of total]



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



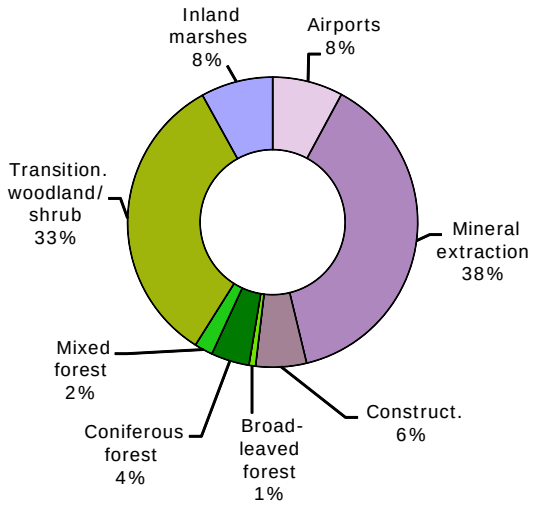
7.24. Artificial development by change drivers (LC FLOWS) [ha/year]



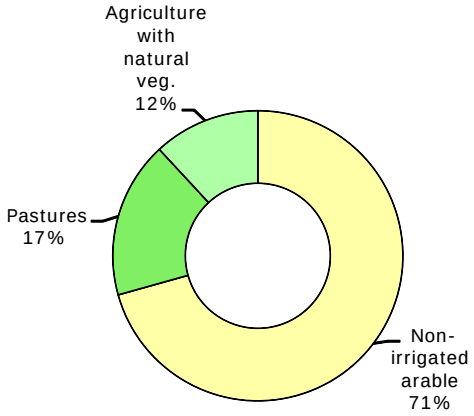
Denmark

Agriculture

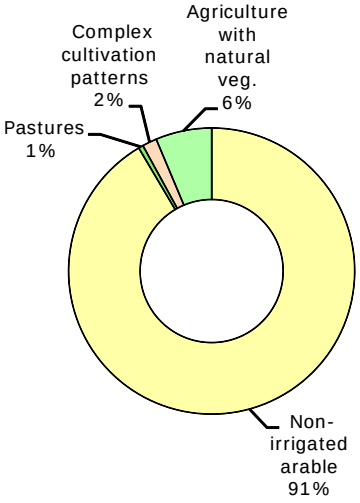
8.25. LC consumed by agriculture 2006-2012 [% of total]



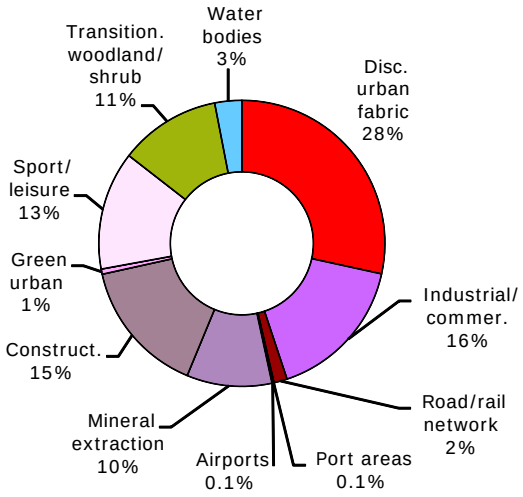
8.26. Formation of agricultural land from non-agriculture 2006-2012 [% of total]



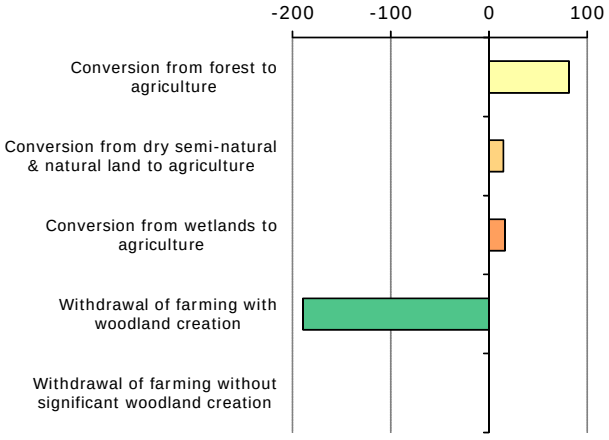
8.27. Consumption of agricultural land by non-agriculture 2006-2012 [% of total]



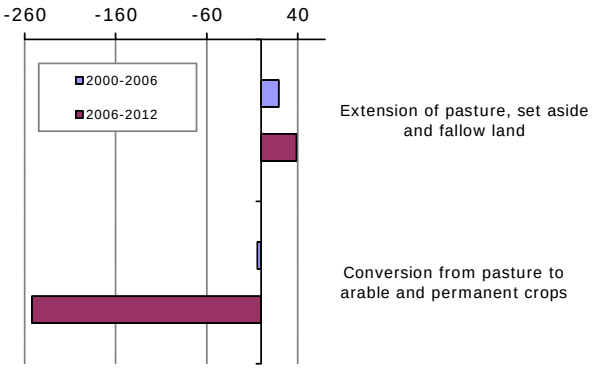
8.28. Formation of non-agricultural land from agriculture 2006-2012 [% of total]



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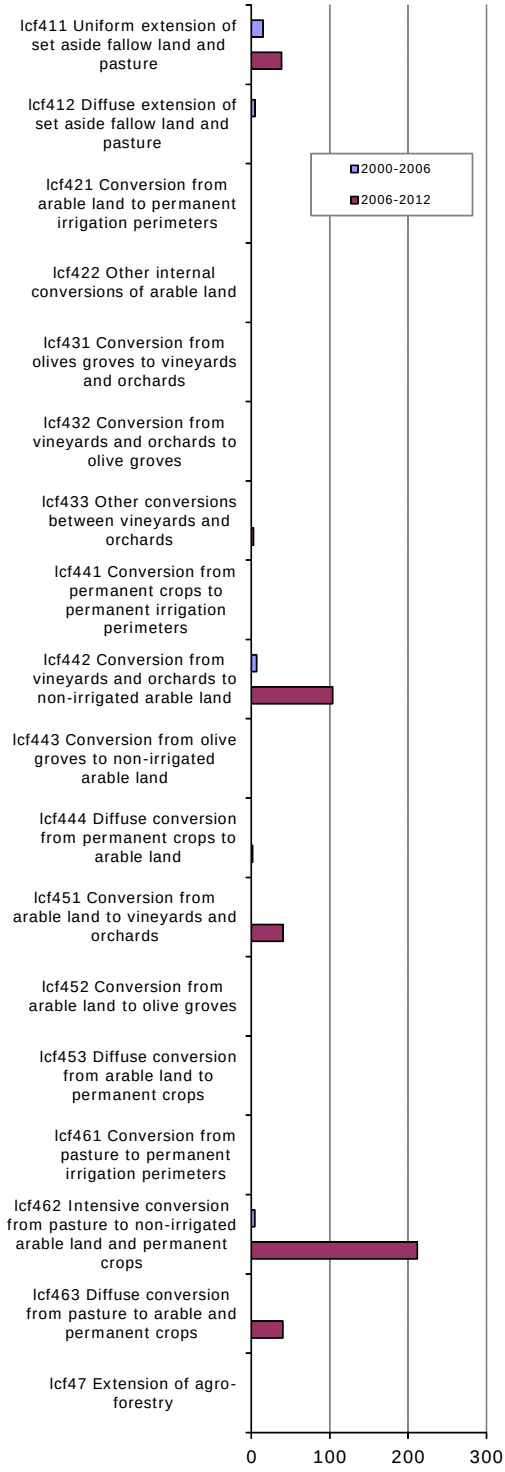
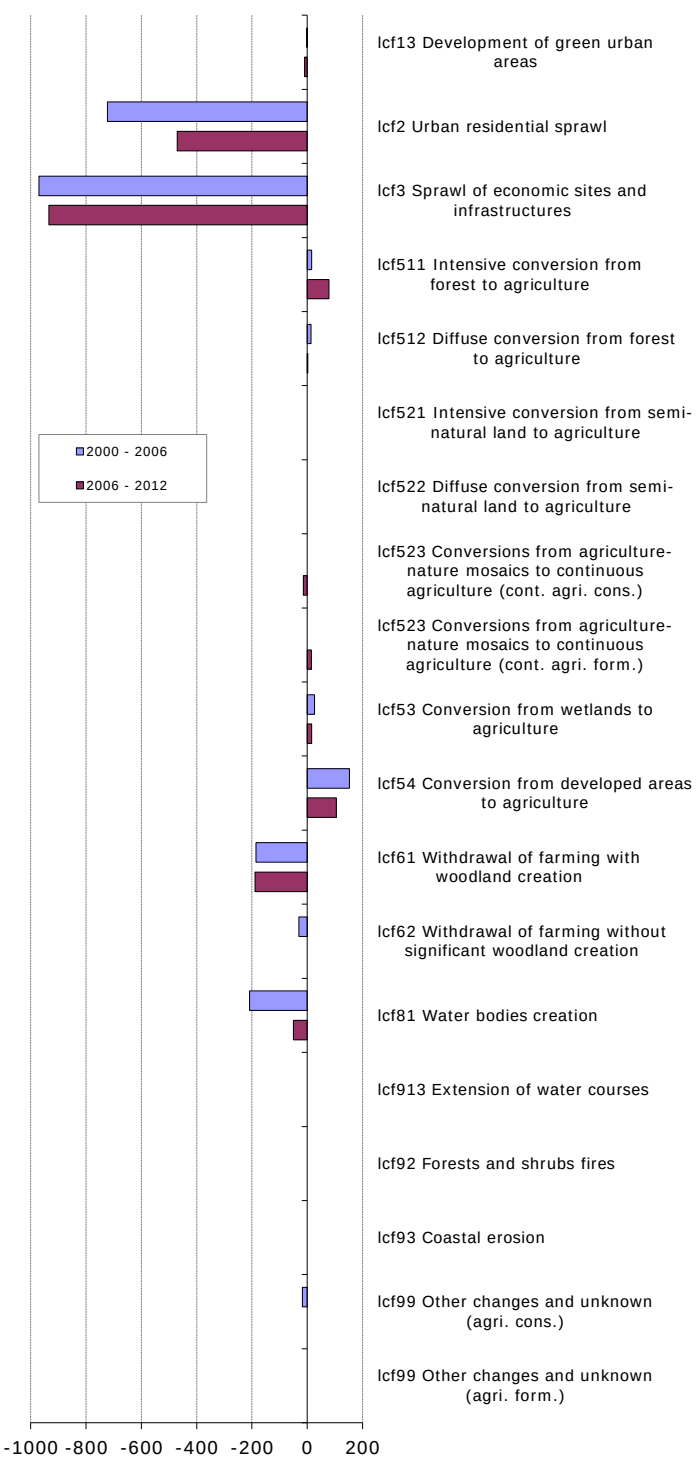
9.31. Mean annual agriculture internal conversions [ha/year]



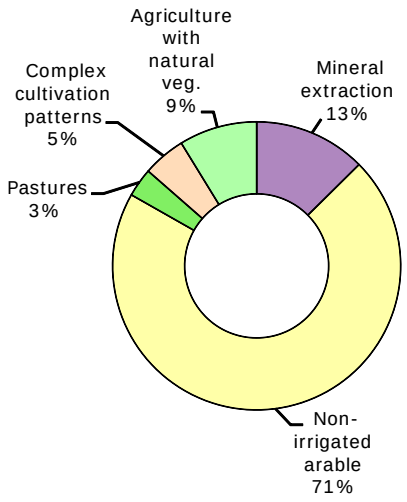
9.32. Mean annual conversions between agriculture and other LC types [ha/year]



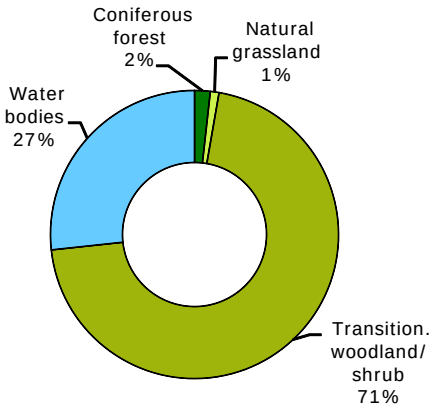
Denmark

Forest & nature

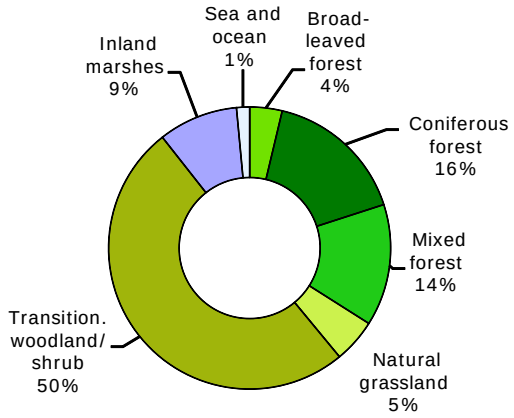
10.33. LC consumed by forest & nature 2006-2012 [% of total]



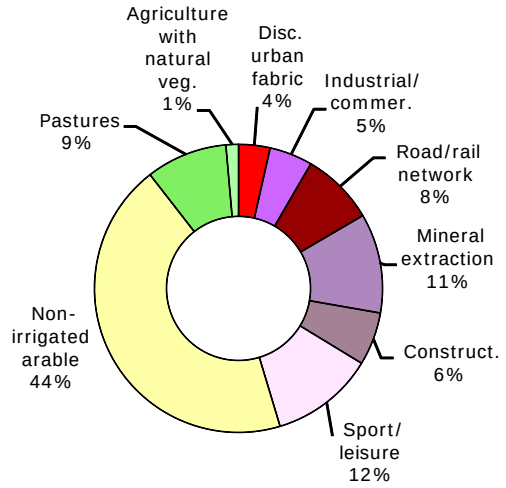
10.34. Formation of forest & nature land from non-forest /nature 2006-2012 [% of total]



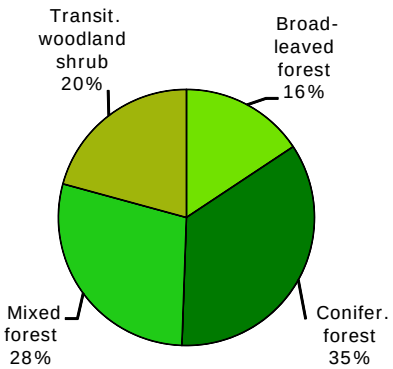
10.35. Consumption of forest & nature land by non-forest/nature 2006-2012 [% of total]



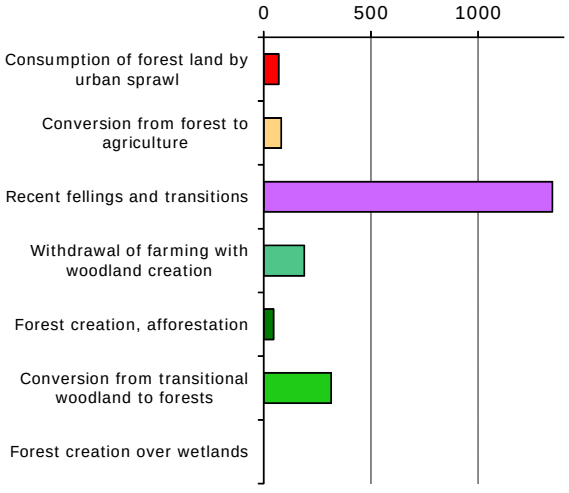
10.36. Formation of non-forest/nature land from forest & nature 2006-2012 [% of total]



10.37. Forested land 2012 [% of total area]

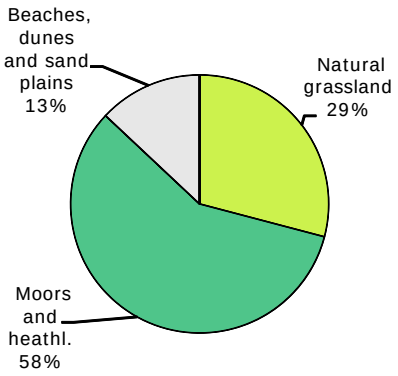


10.38. Main trends in woodland & forests consumption/formation 2006-2012 [ha/year]

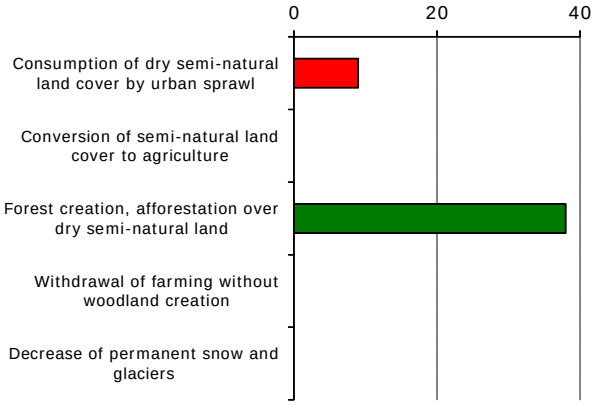


Denmark

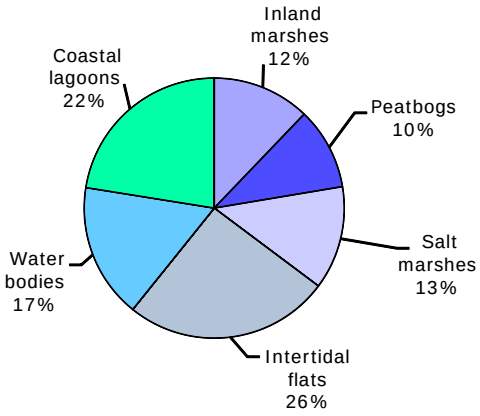
11.39. Dry semi-natural areas 2012 [% of total area]



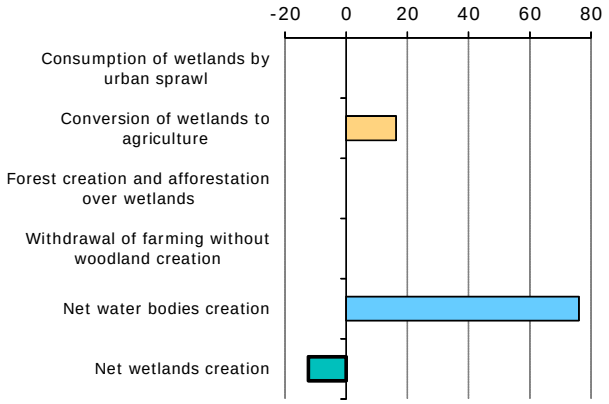
11.40. Main trends in dry semi-natural land consumption/formation 2006-2012 [ha/year]



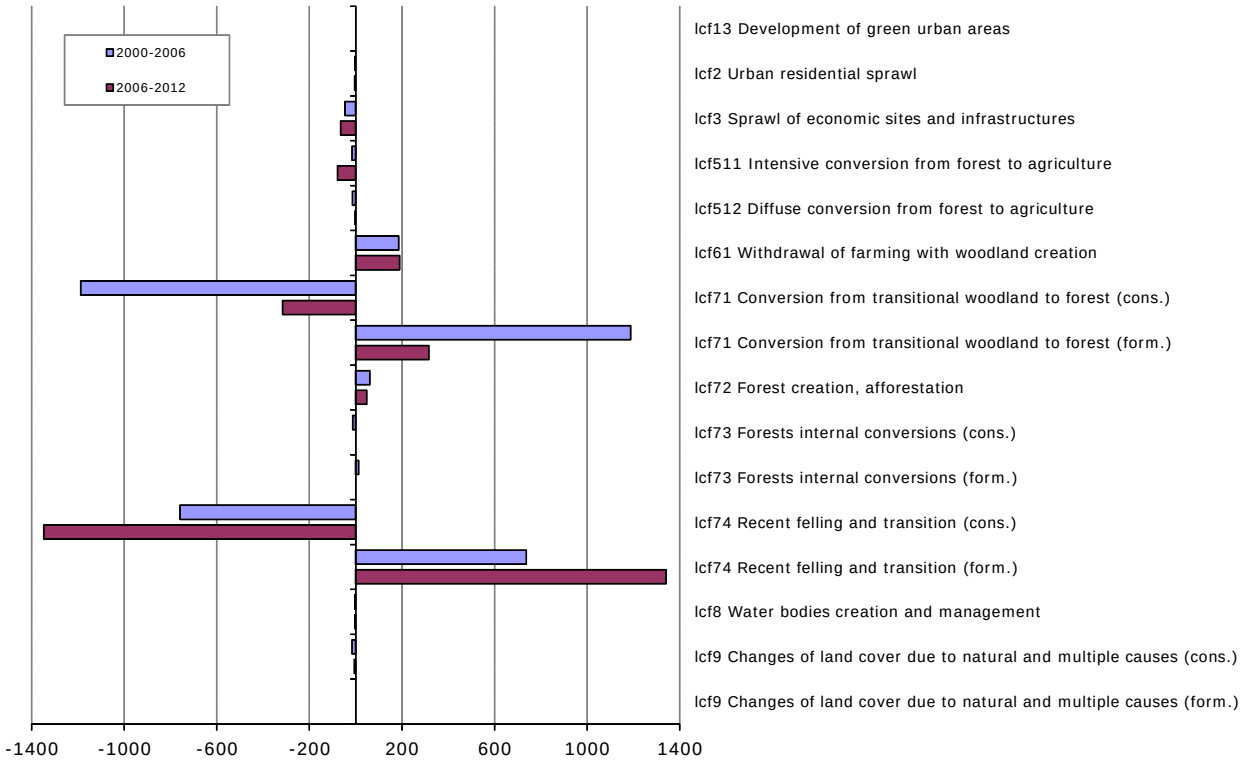
11.41. Wetlands & water 2012 [% of total area]



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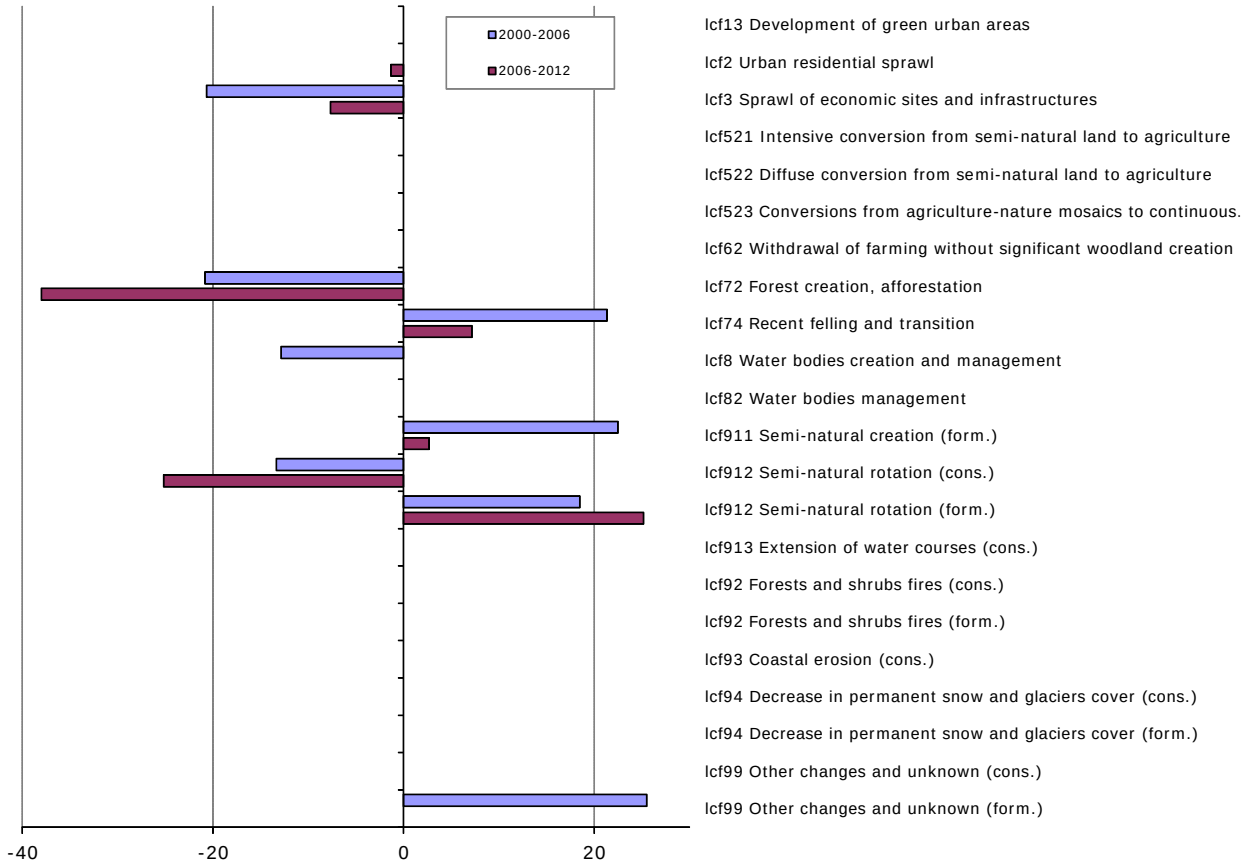
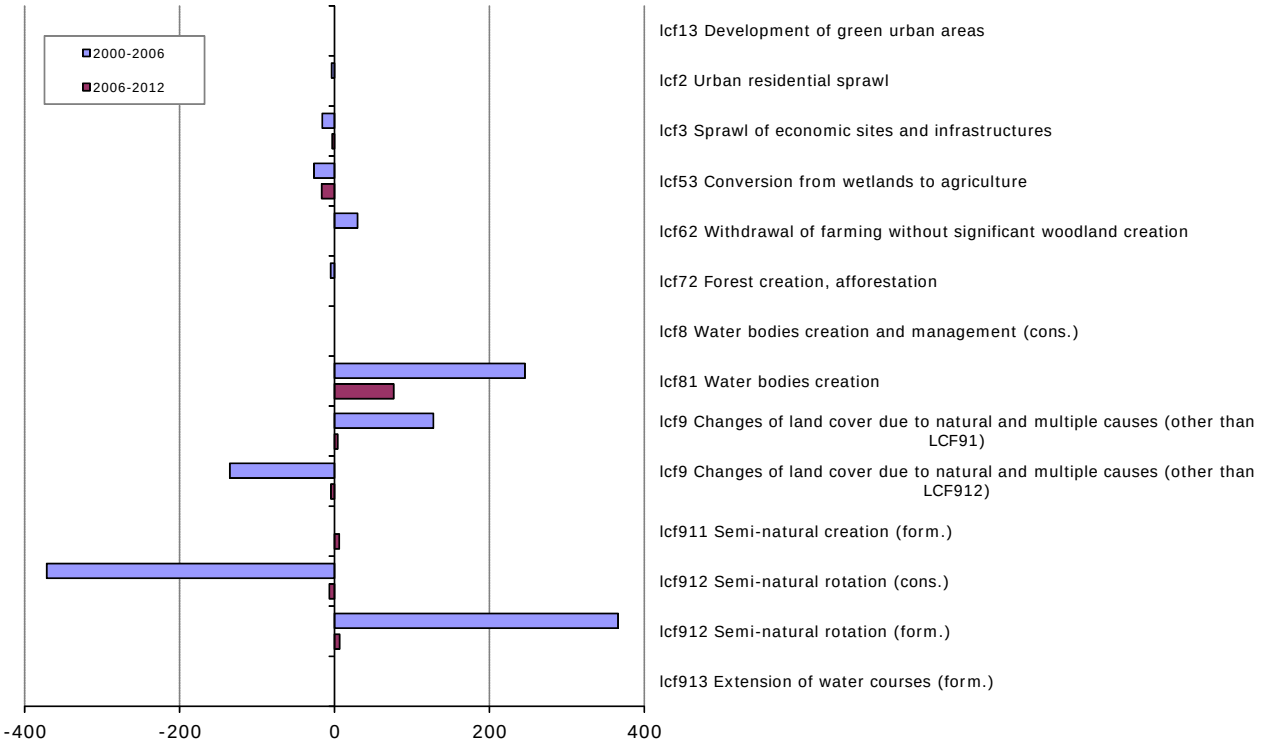
12.44. Mean annual conversions of dry semi-natural LC [ha/year]



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



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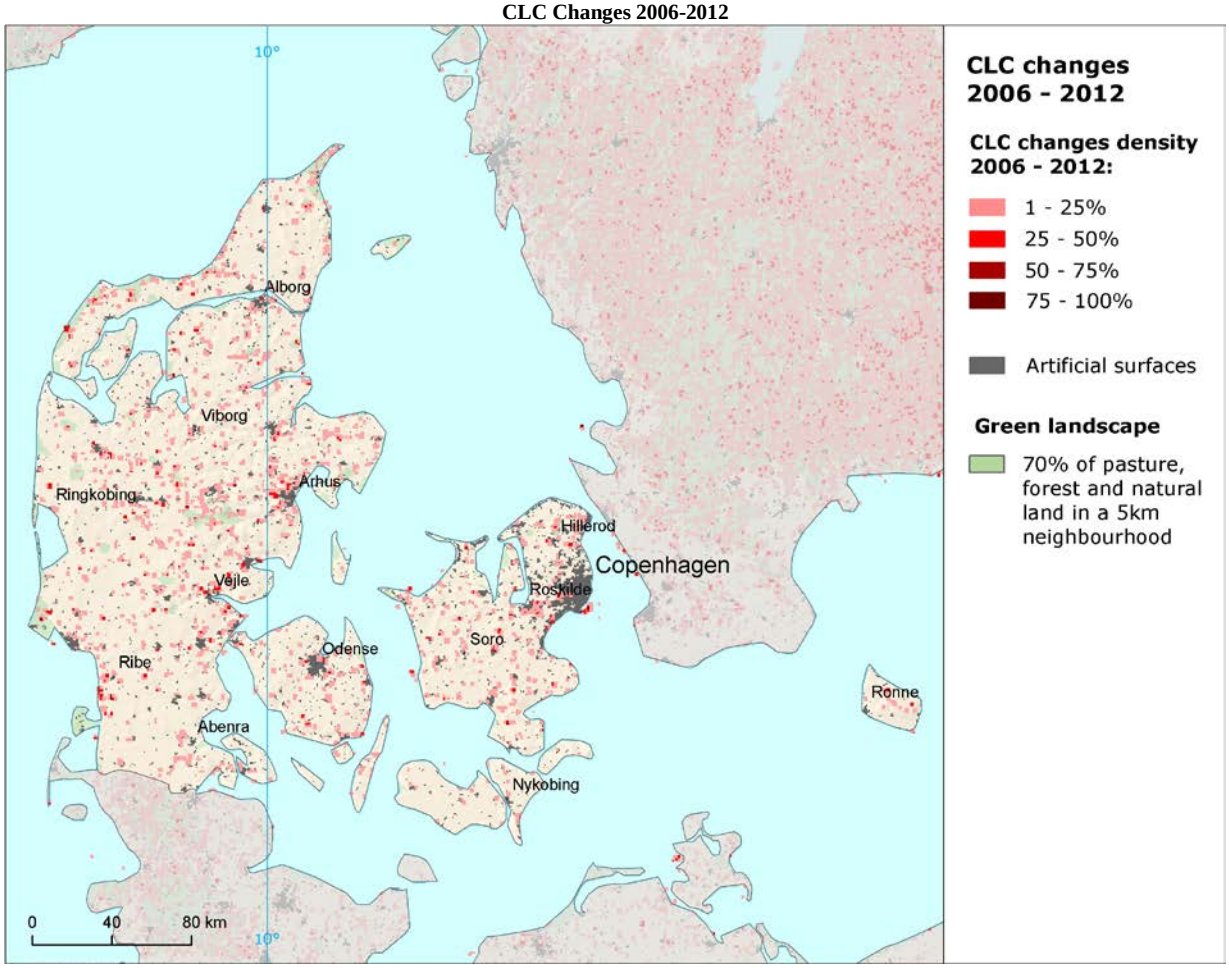
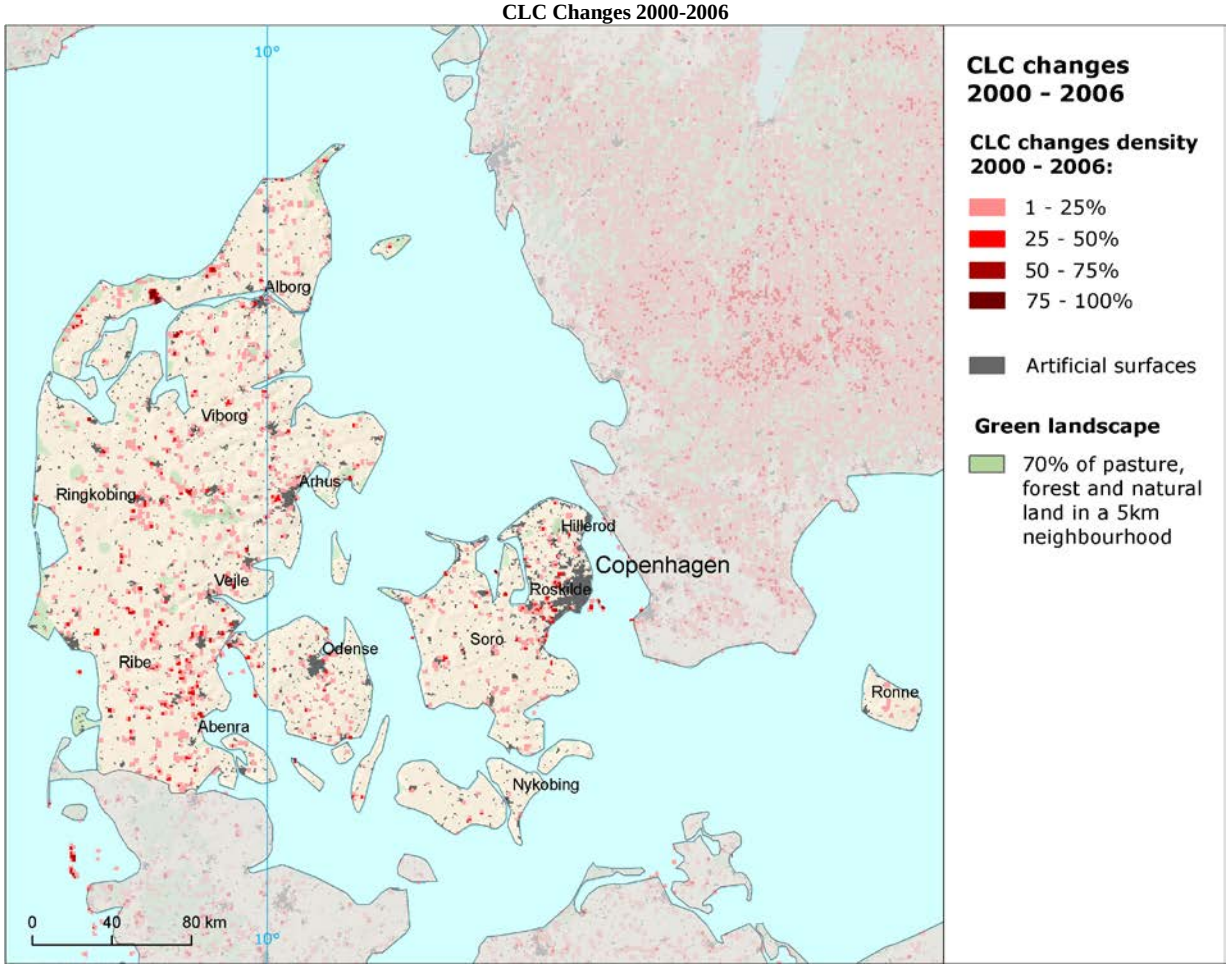
CLC Changes 2006-2012



CLC Changes 2000-2006



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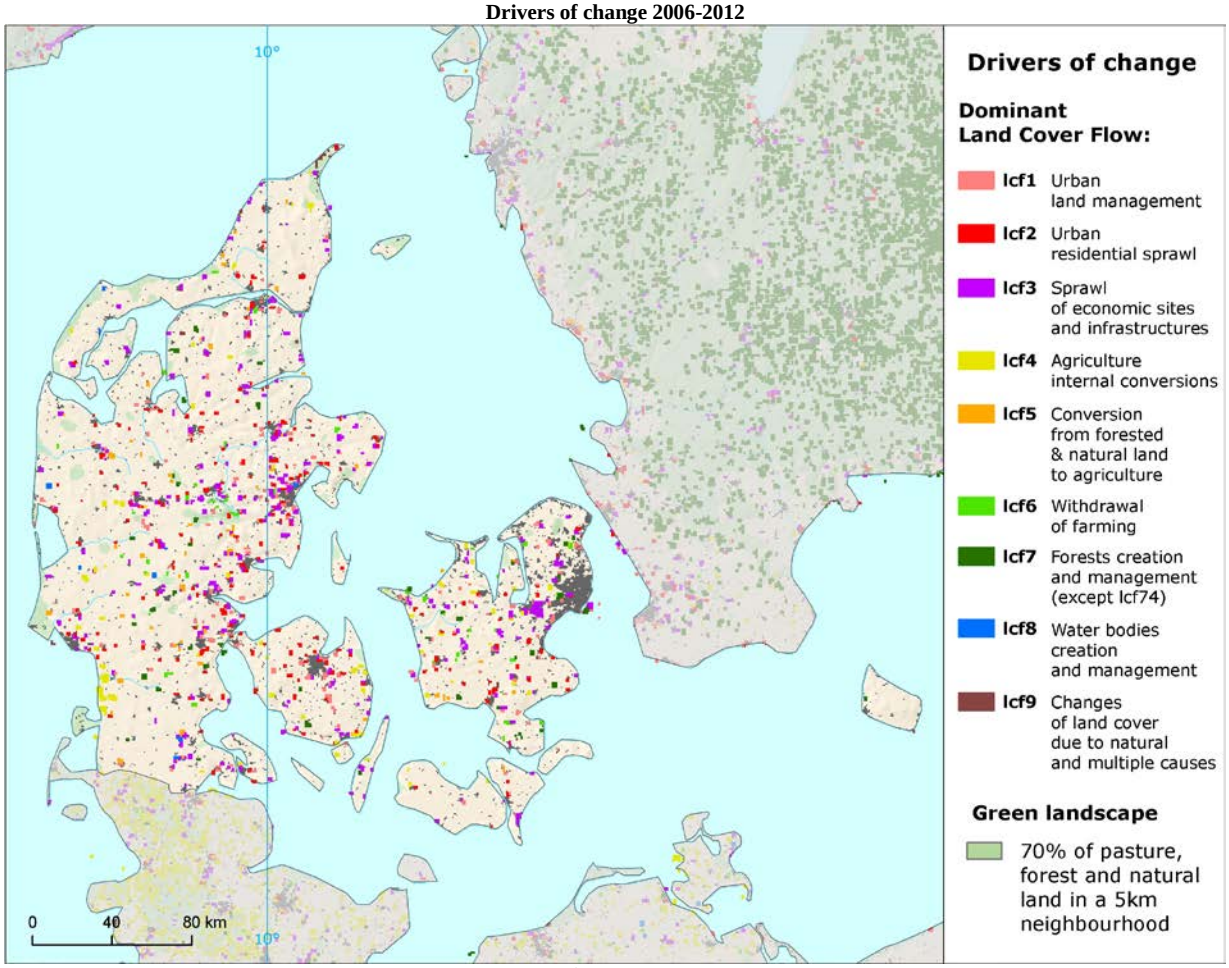
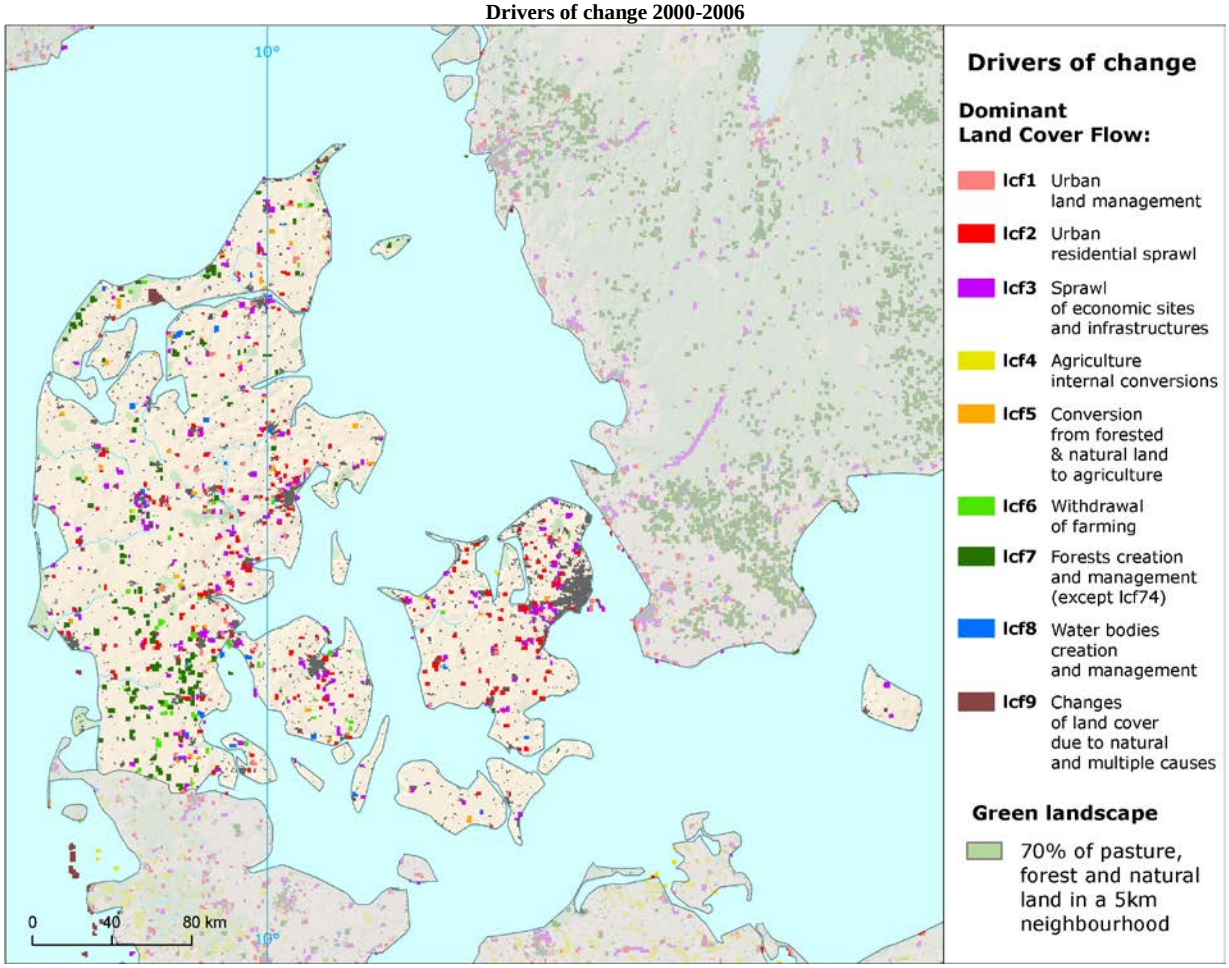
Drivers of change 2006-2012



Drivers of change 2000-2006



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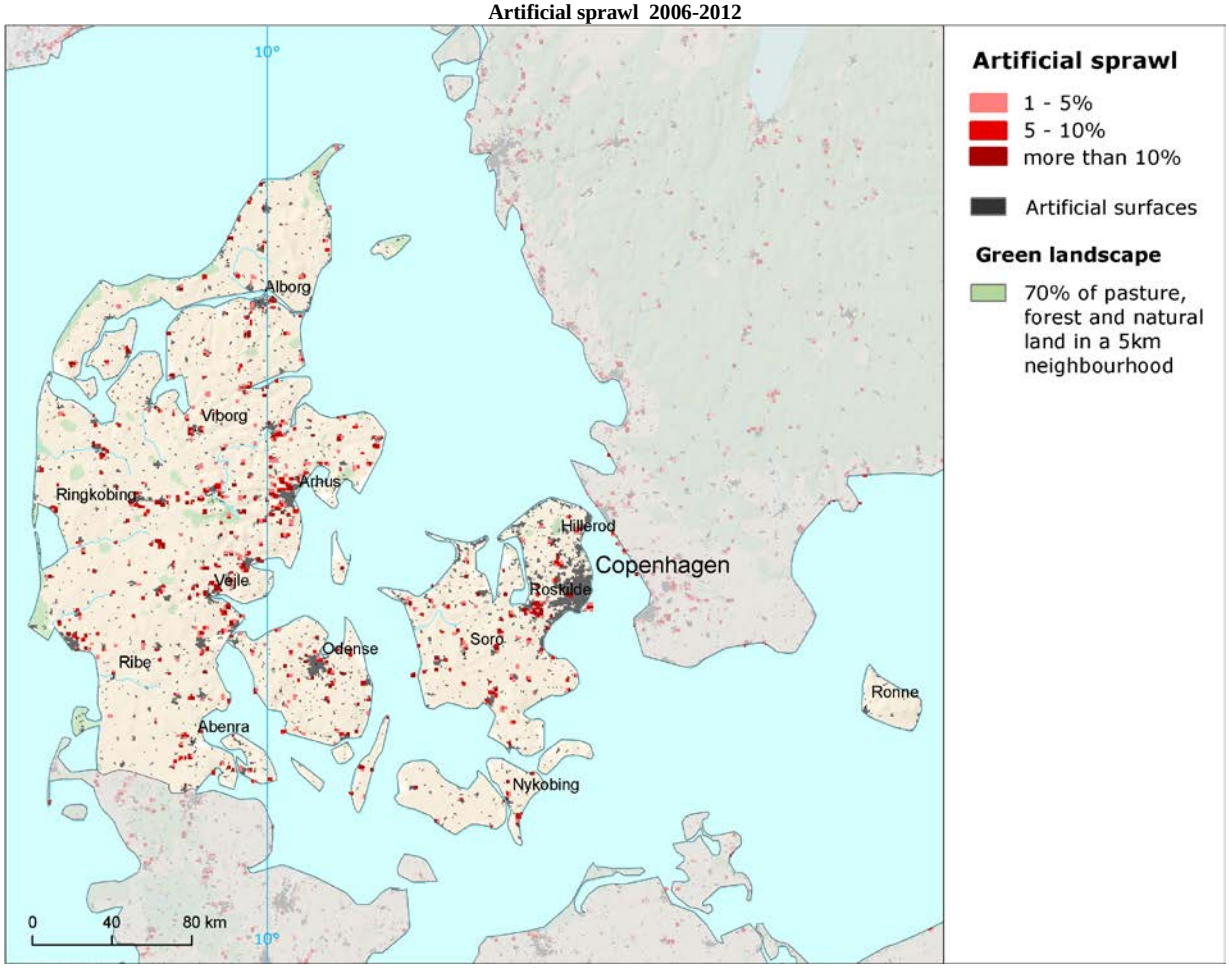
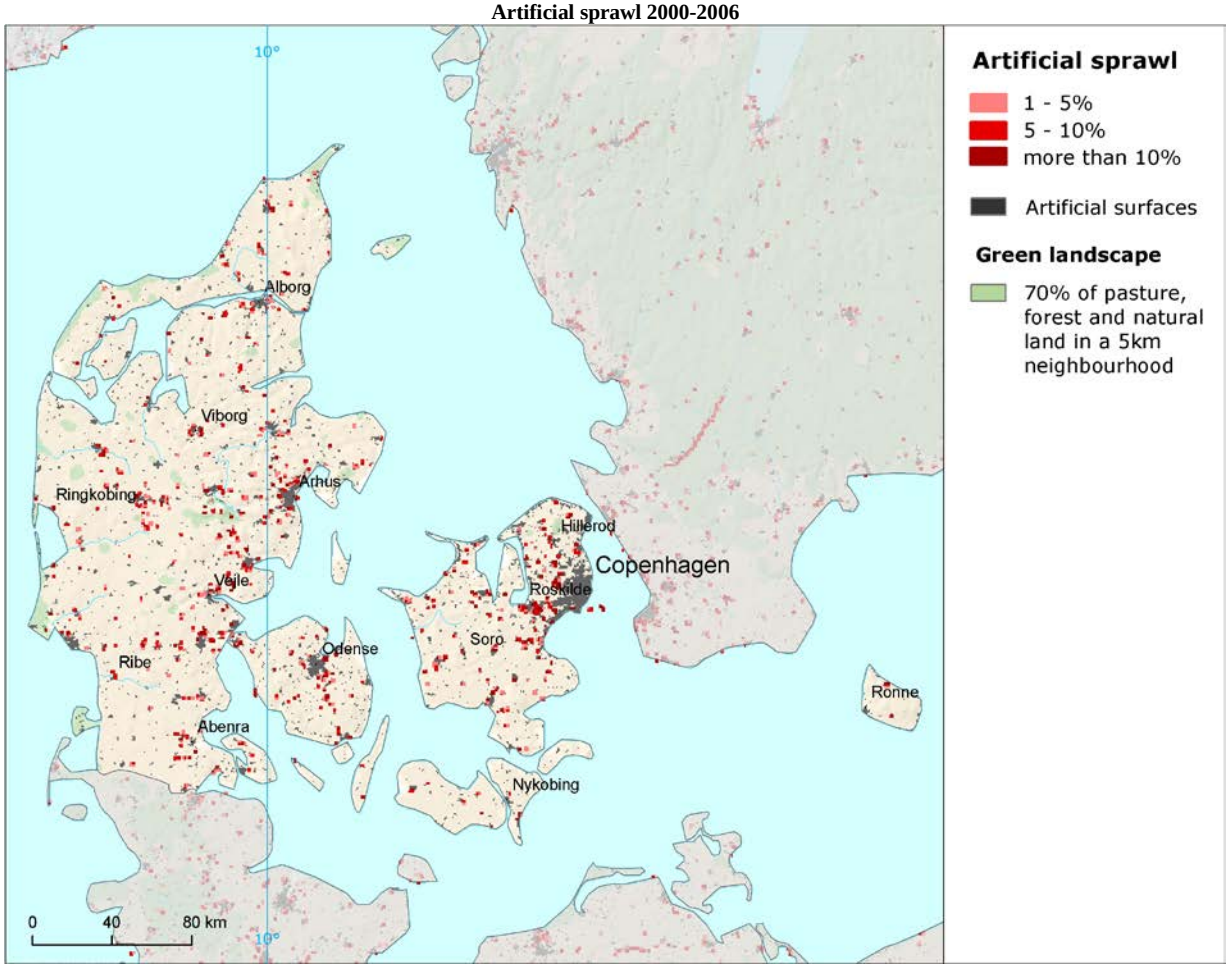
Artificial sprawl 2006-2012



Artificial sprawl 2000-2006



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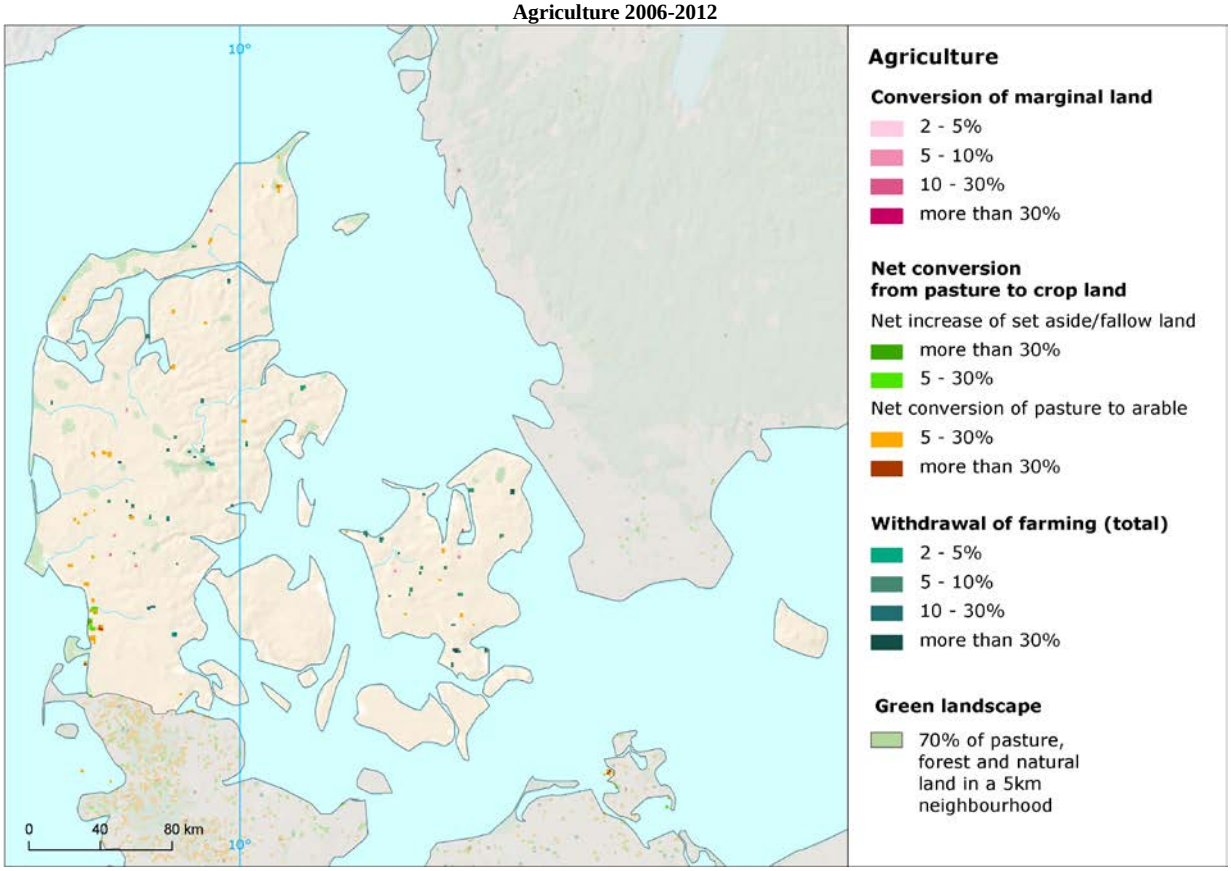
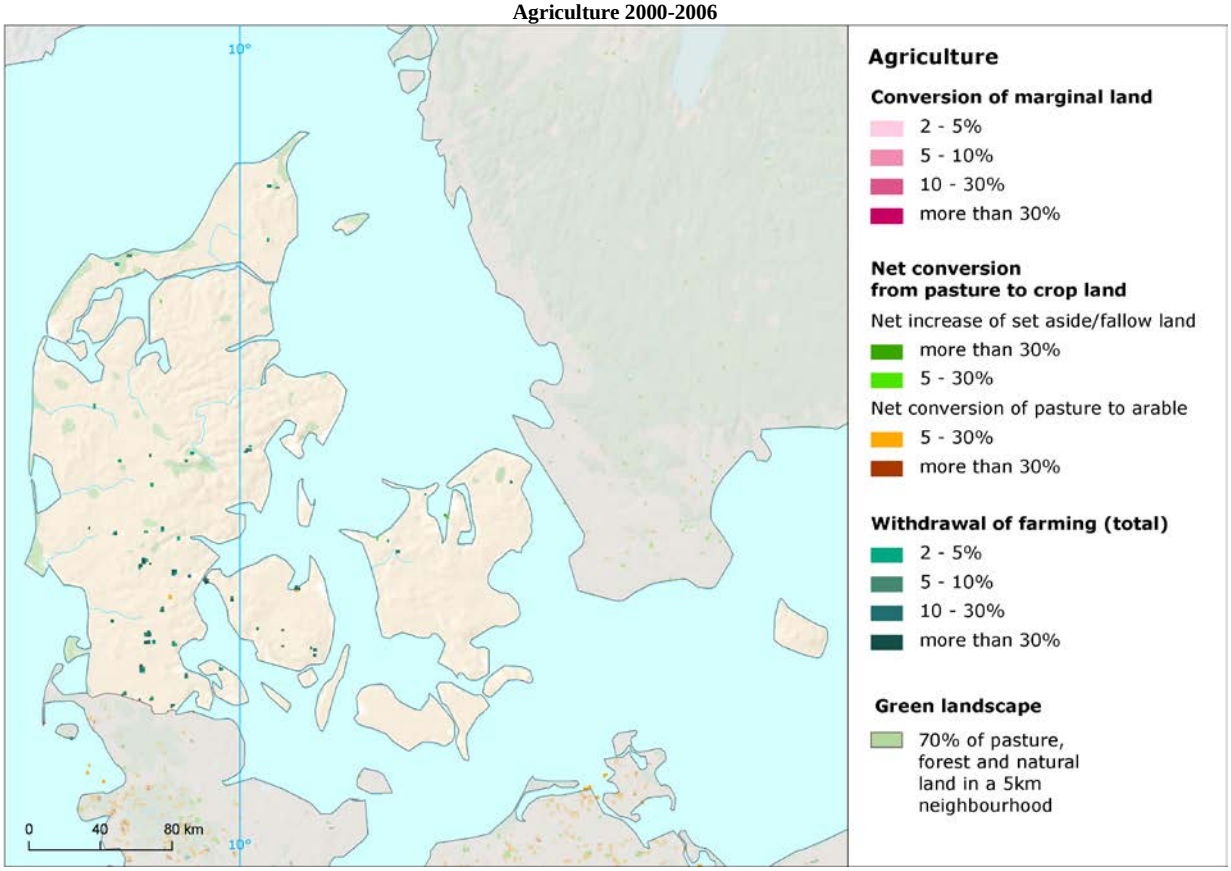
Agriculture 2006-2012



Agriculture 2000-2006



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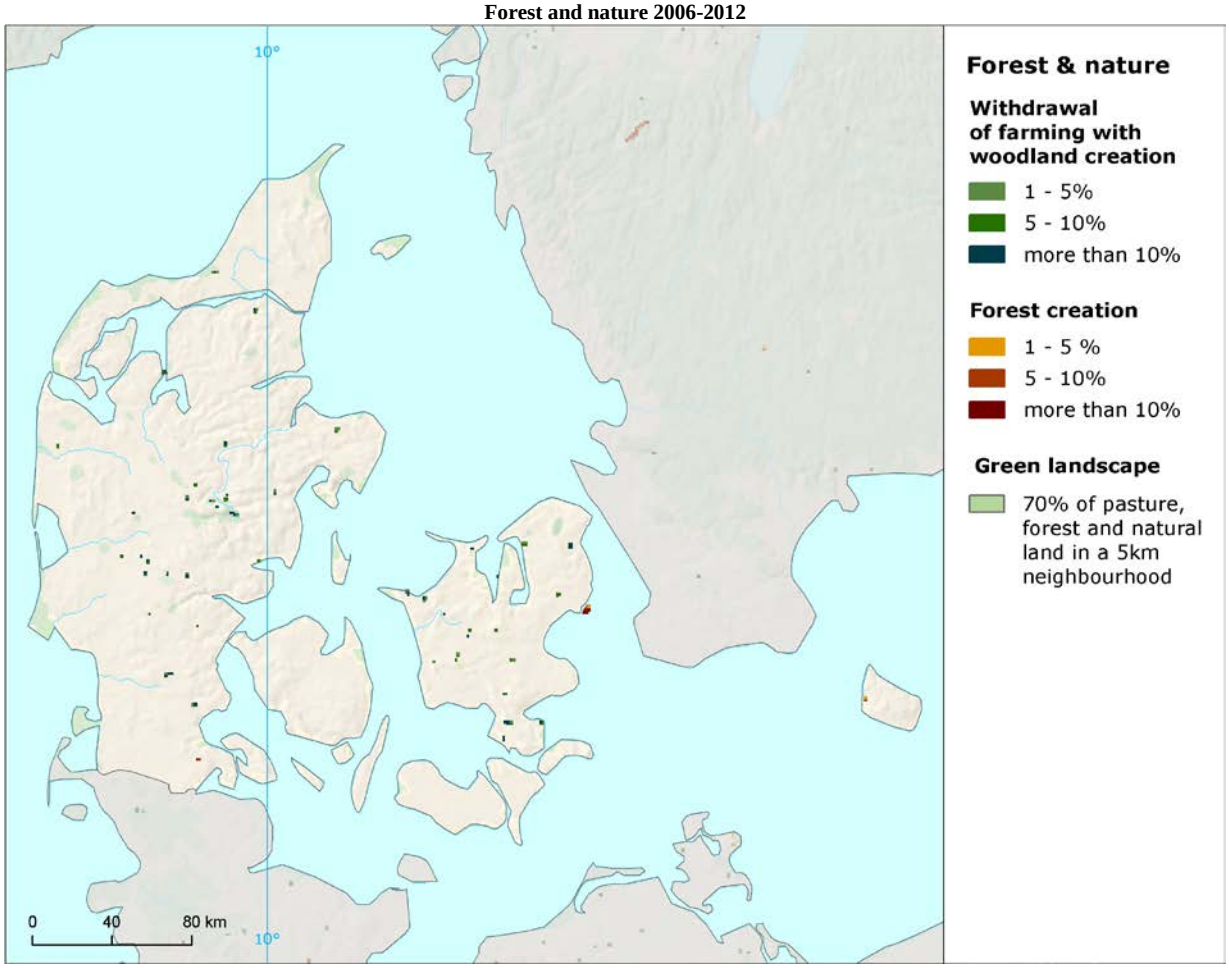
Forest and nature 2006-2012



Forest and nature 2000-2006