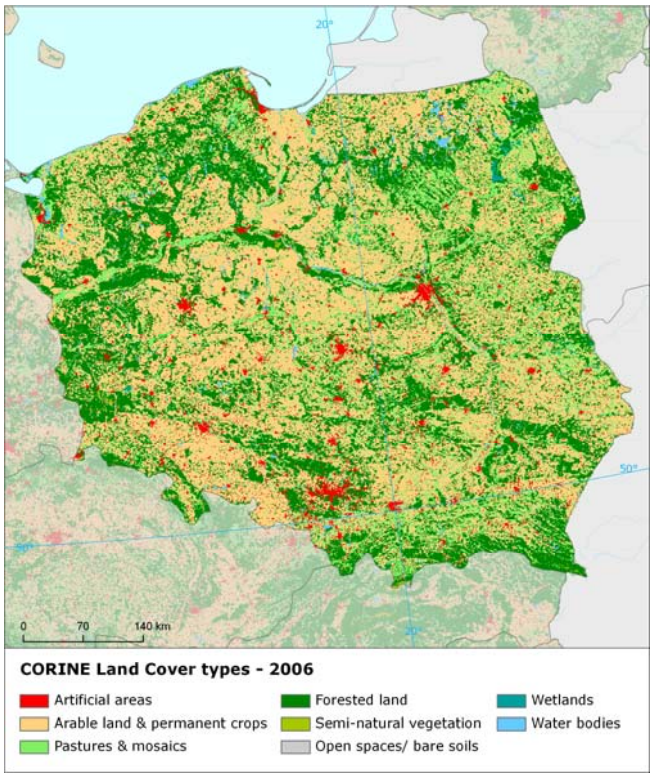
Poland

Land cover 2006

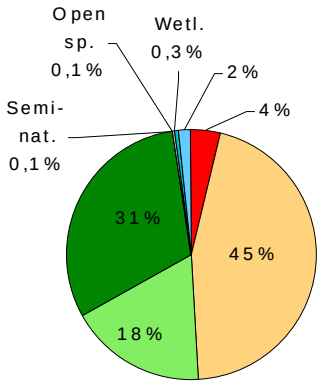
Overview of land cover & change 2000-2006

Polish landscape is dominated by agriculture (63%) and forest (31%). The situation is characterized by consumption of agricultural areas (with a predominant share of arable land and crops), forest land and artificial surfaces.
Overall change dynamic of land cover, characterized by annual land cover change, slightly decreased compared to the period 1990-2000. The main source of this slow down is decrease of intensity of internal agriculture conversions.
The land cover type with highest intensity of land cover development, shown by total turnover, is forested land, followed by agricultural surfaces and artificial areas. Concerning the net change of particular land cover types, forested land together with artificial areas and water bodies have positive balance, on the contrary, arable land/permanent crops is the land cover type with largest area consumed, followed by pastures and mosaics and by open spaces/bare soils, which is the land cover type with highest percentual consumption.
The structure of land cover flows is similar to the period 1990-2000. The main differences are within in the power of agriculture internal conversions and changes due to natural and multiple causes, witch have significantly lower intensity during 2000-2006. In contrast, the intensity of sprawl of economic sites and infrastructures and of withdrawal of farming increased compared to previous period.

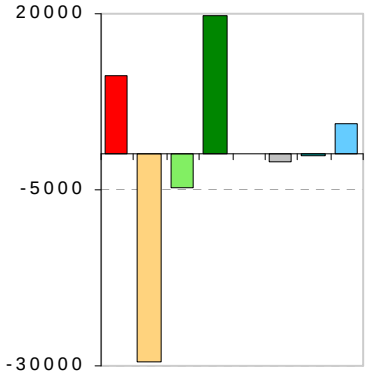
Note: The results presented here are based on a change analysis of 44 land cover types mapped consistently on a 1:100.000 scale across Europe over almost two decades 1990-2006 - see Corine land cover (CLC) programme for details.
Number of years between CLC2000-CLC2006 data for Poland: 6



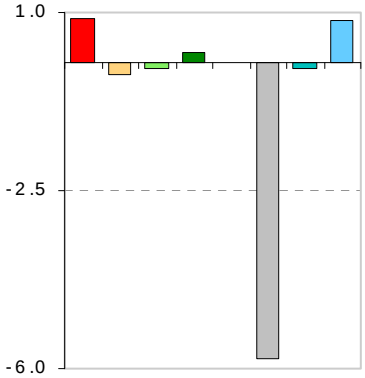
1.1. Land cover 2006 [% of total]



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



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



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

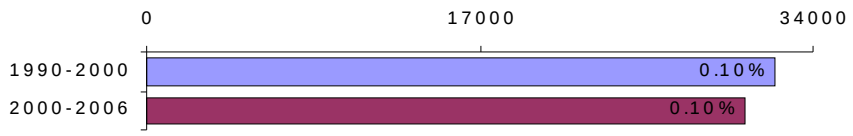
Summary balance table 2000-2006

	Artificial areas	Arable land & permanent crops	Pastures & mosaics	Forested land	Semi-natural vegetation	Open spaces / bare soils	Wetlands	Water bodies	TOTAL [hundreds ha]
Land cover 2000	**12435**	**140736**	**55978**	**97025**	**425**	**185**	**1084**	**5329**	**313196**
Consumption of initial LC	143	404	138	1128	5	11	1	1	1831
Formation of new LC	255	110	91	1324	5	0	0	45	1831
Net Formation of LC	**112**	**-294**	**-47**	**197**	**0**	**-11**	**-1**	**44**	**0**
Net formation as % of initial year	*0.9*	*-0.2*	*-0.1*	*0.2*	*0.0*	*-5.8*	*-0.1*	*0.8*	
Total turnover of LC	**399**	**513**	**229**	**2452**	**10**	**11**	**1**	**46**	**3662**
Total turnover as % of initial year	*3.2*	*0.4*	*0.4*	*2.5*	*2.4*	*6.2*	*0.1*	*0.9*	*1.2*
Land cover 2006	**12547**	**140442**	**55931**	**97222**	**425**	**174**	**1083**	**5373**	**313196**

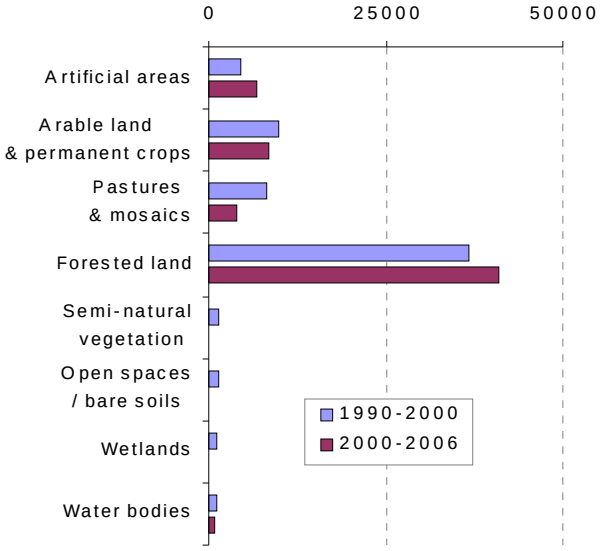
Poland

Land cover trends comparison 1990-2000 vs. 2000-2006

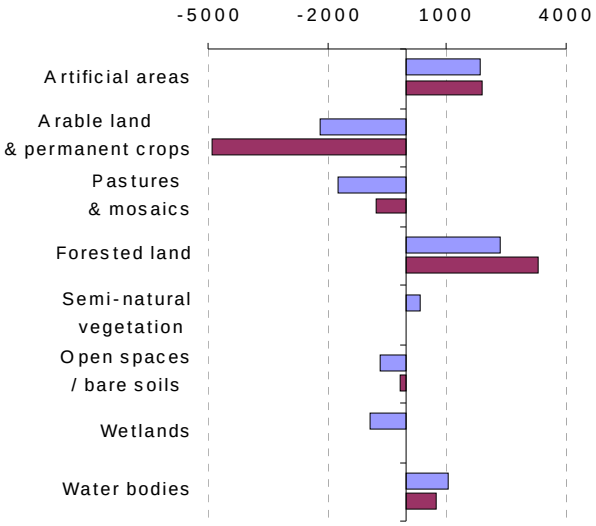
2.4. Annual land cover change [ha/year, % of total area]



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

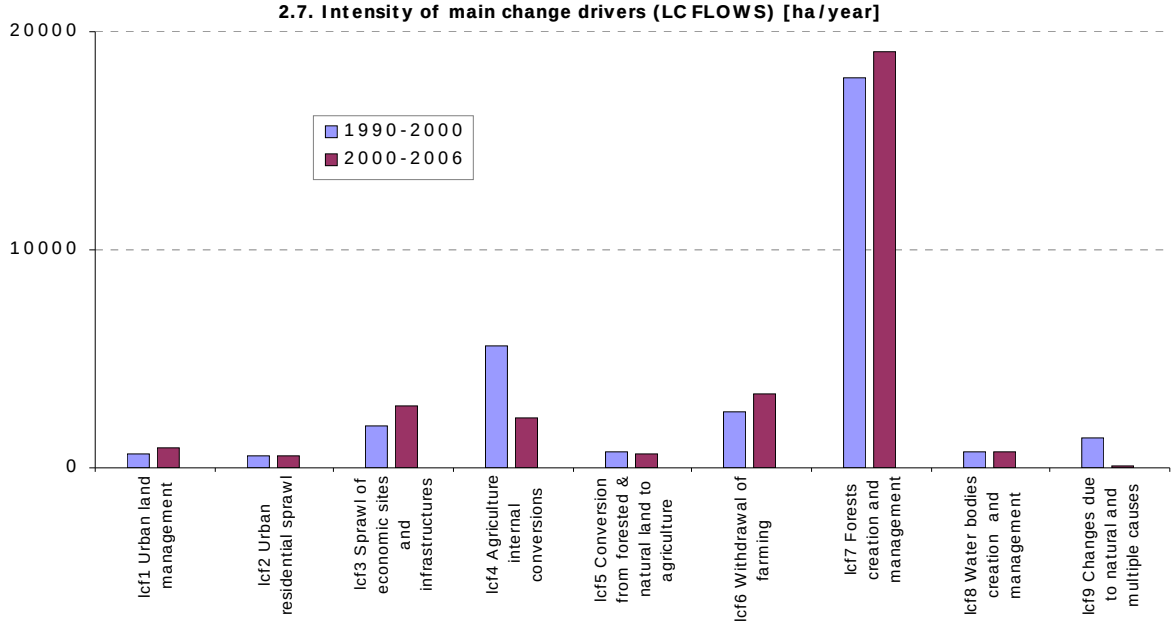


2.6. Net annual change of LC types [ha/year]



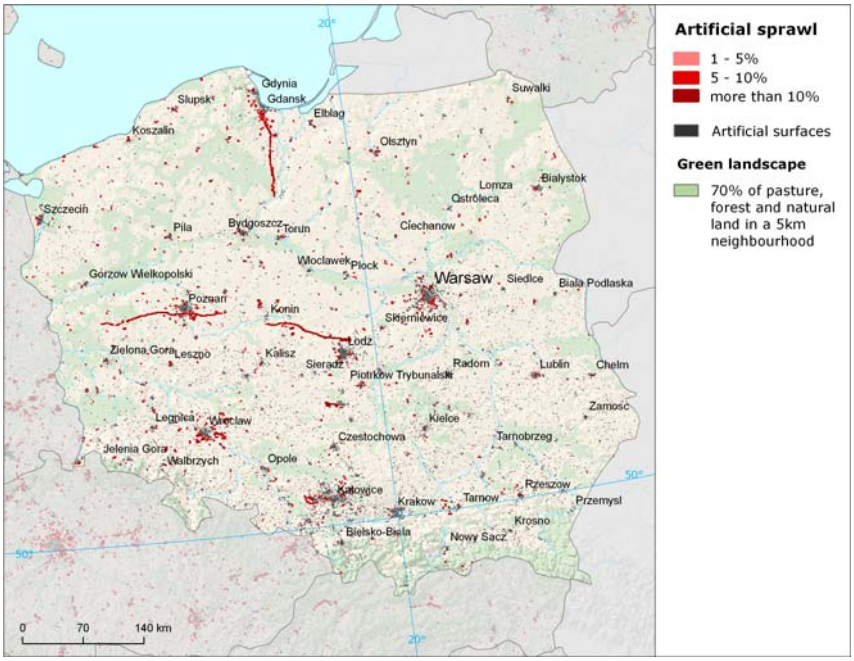
Summary trend figures	1990-2000	2000-2006
Annual land cover change [ha/year]	**32067**	**30516**
Annual land cover change as % of initial year	**0.10%**	**0.10%**
Land uptake by artificial development as mean annual change [ha/year]	2495	3371
Agricultural land uptake by urban and infrastructures development as mean annual change [ha/year]	2713	3276
Net uptake of forests and semi-natural land by agriculture as mean annual change [ha/year]	-2051	-3383
Net conversion from pasture to arable land and permanent crops as mean annual change [ha/year]	1033	78
Forest & other woodland net formation as mean annual change [ha/year]	2325	3276
Dry semi-natural land cover net formation as mean annual change [ha/year]	-329	-165
Wetlands & water bodies net formation as mean annual change [ha/year]	72	718

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

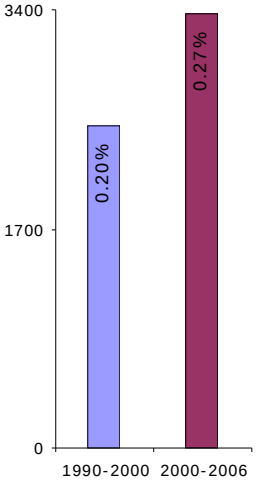


Poland

Artificial areas



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



Acceleration of commercial and industrial sprawl, highway construction

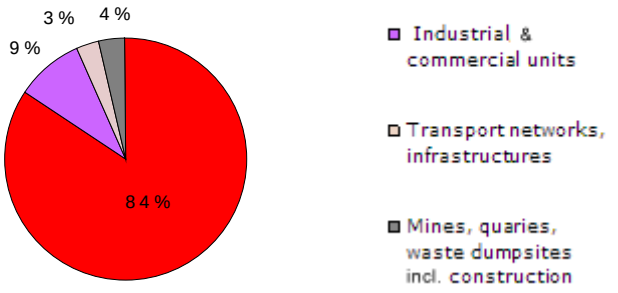
The development of artificial surfaces in Poland during 2000-2006 is characterized by increase of both total turnover of artificial land and land take rate compared with the period 1990-2000. However, net formation rate of artificial areas remains comparable to previous period. It is caused partially by increased intensity of recycling of developed urban land together with accelerated consumption of developed areas by agriculture or natural land cover, which occur beside the artificial land take.

Similar to previous period, sprawl of mines and quarrying areas, construction and diffuse residential sprawl are the main drivers of artificial land take. However, after year 2000, the intensity of sprawls of transport networks (driven by highways construction), industrial or commercial units and sport and leisure facilities increased significantly and these flows became the other powerful drivers of land take in Poland. On the other hand, mostly agricultural landscape has been taken by artificial sprawl (85%), with prevailing share of arable land (67%), followed by forested land (31%).

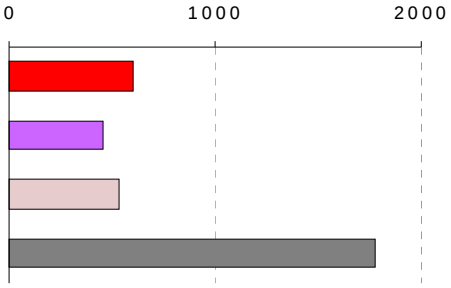
Regarding the spatial distribution, artificial sprawl in Poland is concentrated into surroundings of major cities like Wroclaw, Gdansk, the capital city Warsaw, Poznan, Lodz, Katowice or Szczecin. Besides, there are apparent linear features shown on the map, which represent construction of new highways.

Besides the land take, the other major driver, recycling of developed urban land occurs, consisting of conversion of construction sites into discontinuous urban fabric, industrial or commercial units and transportation networks. As mentioned before, there also occurs significant consumption of former artificial areas (mostly mineral extraction, dump or construction sites) by agricultural or natural land cover during the period.

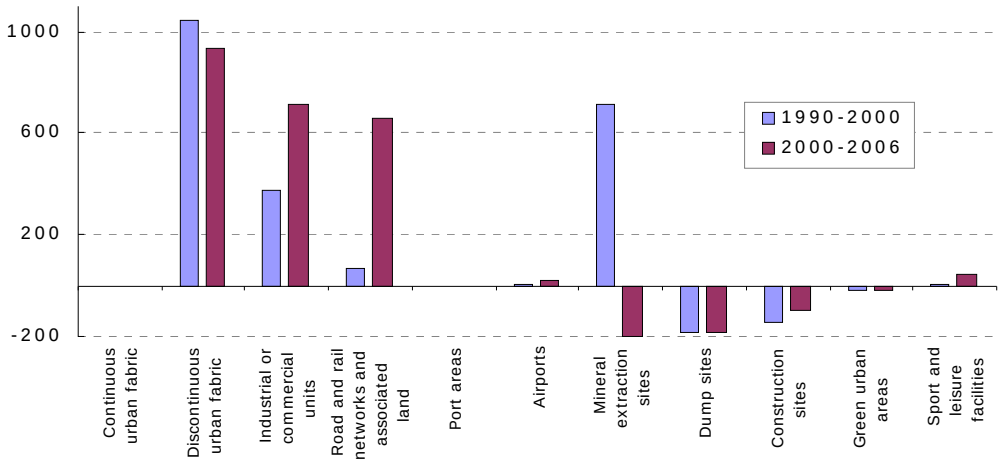
3.9. Artificial surfaces 2006 [% of total area]



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

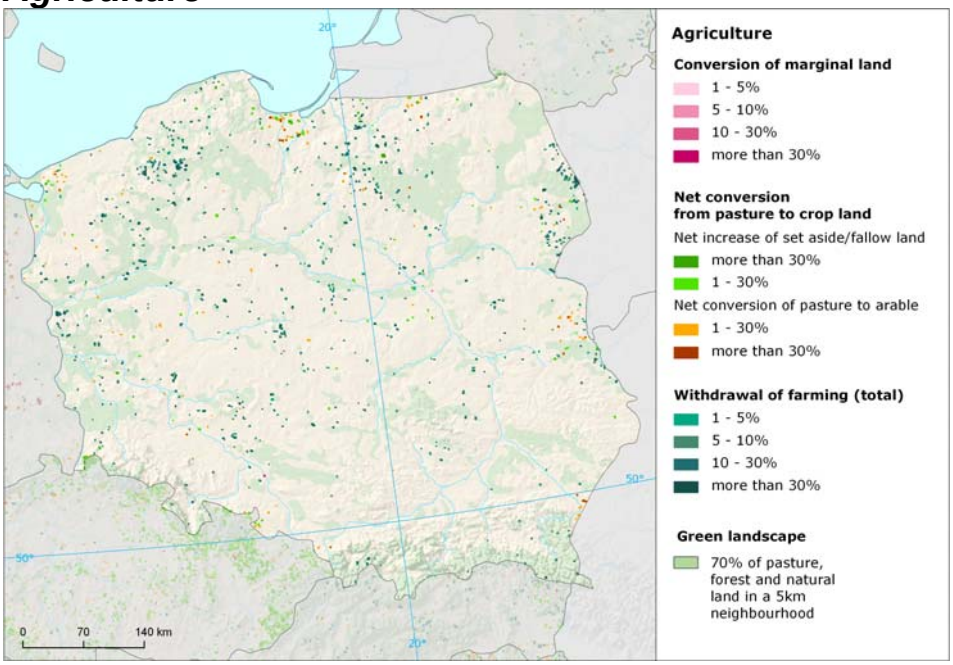


3.11. Mean annual artificial change by class [ha/year]



Poland

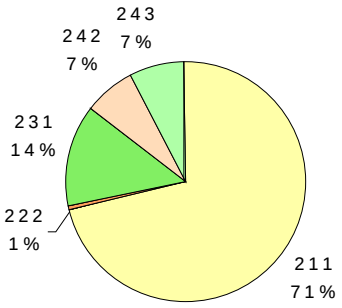
Agriculture

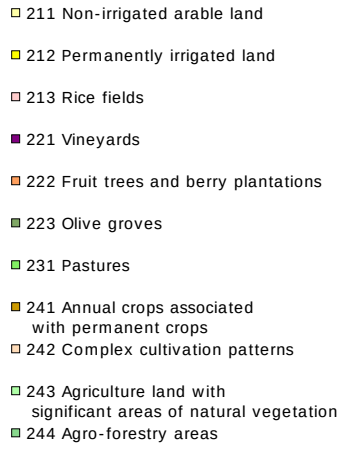


Agricultural land uptake by artificial sprawl and woodland creation

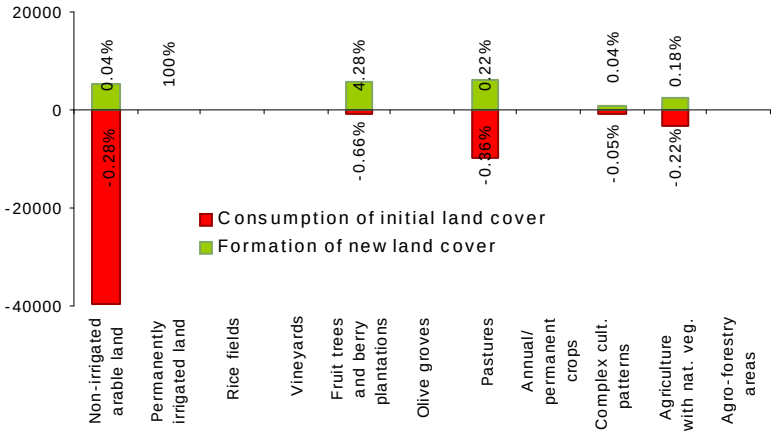
The development of agricultural areas in Poland, which have a predominant share of arable land (more than 70%), has been characterized by withdrawal of internal agricultural conversions and by accelerated consumption of agricultural surfaces by artificial and forested land. All agricultural classes, with the only exception of fruit and berry plantations, have negative balance of net change. Compared to the previous period, prevailing consumption of arable land has significantly increasing intensity, in contrast, the intensity of pasture consumption decreased after year 2000. Withdrawal of farming with woodland creation and sprawl of economic sites and infrastructures (the intensity of both increased compared to 1990-2000) remain the two main drivers of agricultural land consumption, followed by urban residential sprawl and water bodies creation. Mostly arable land, followed by pastures and agriculture with natural vegetation has been consumed by transitional woodland, water bodies or artificial areas in frame of these conversions. In contrast, there is a significant share of conversion from developed areas (mostly mineral extraction, dump and construction sites) to agriculture. Concerning the internal agricultural conversions, the situation is different to the 1990-2000 period. During 2000-2006, the intensity of both formerly main internal flows (conversions between arable and pasture land) decreased significantly and the conversion from arable land to vineyards and orchards became the most significant driver of internal change of agricultural areas.

4.12. Agricultural areas 2006 [% of total area]

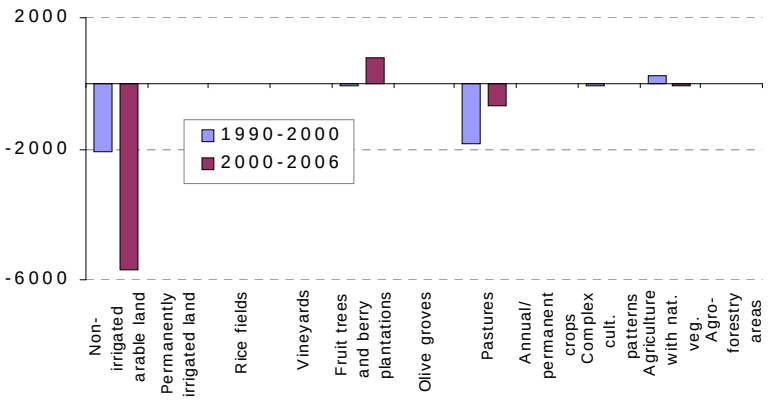




4.13. Development of agricultural areas 2000-2006 – detailed balance [ha]

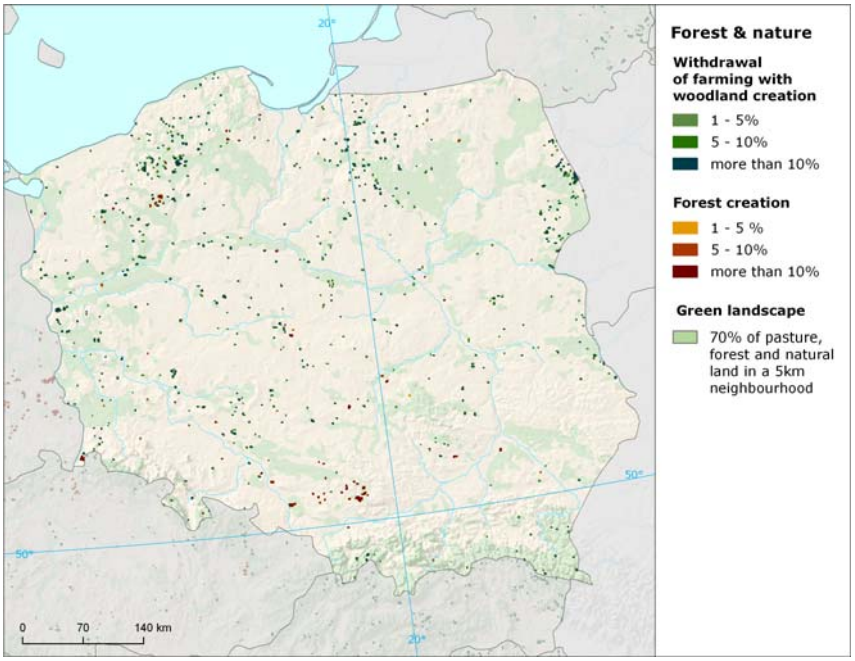


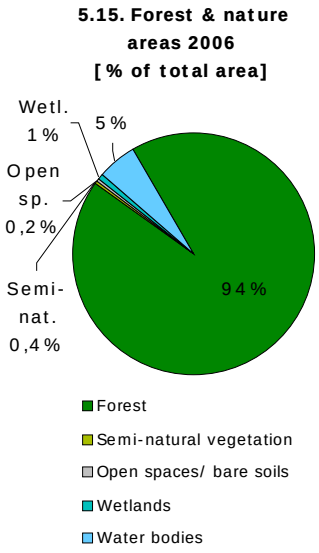
4.14. Mean annual agricultural change by class [ha/year]



Poland

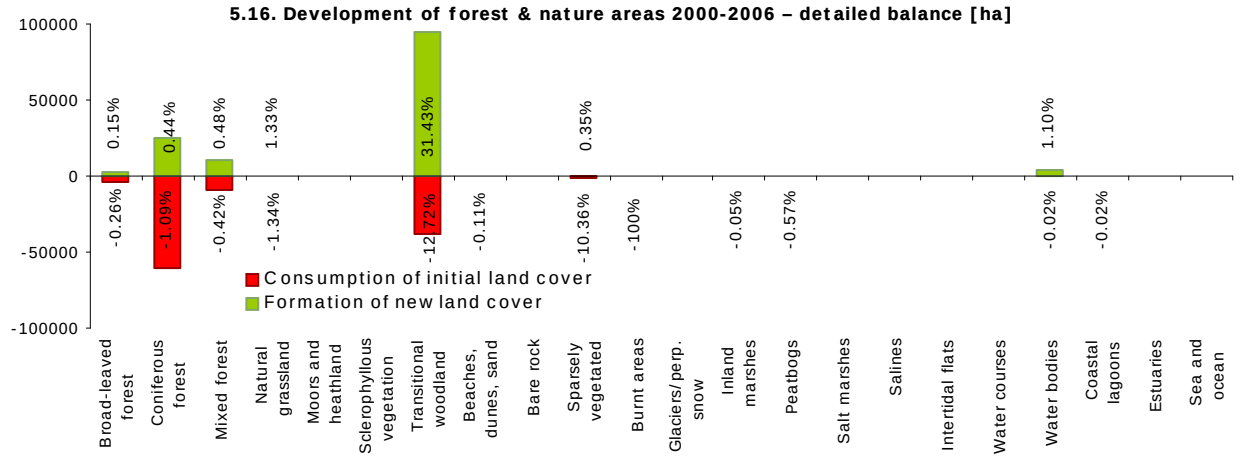
Forest & nature

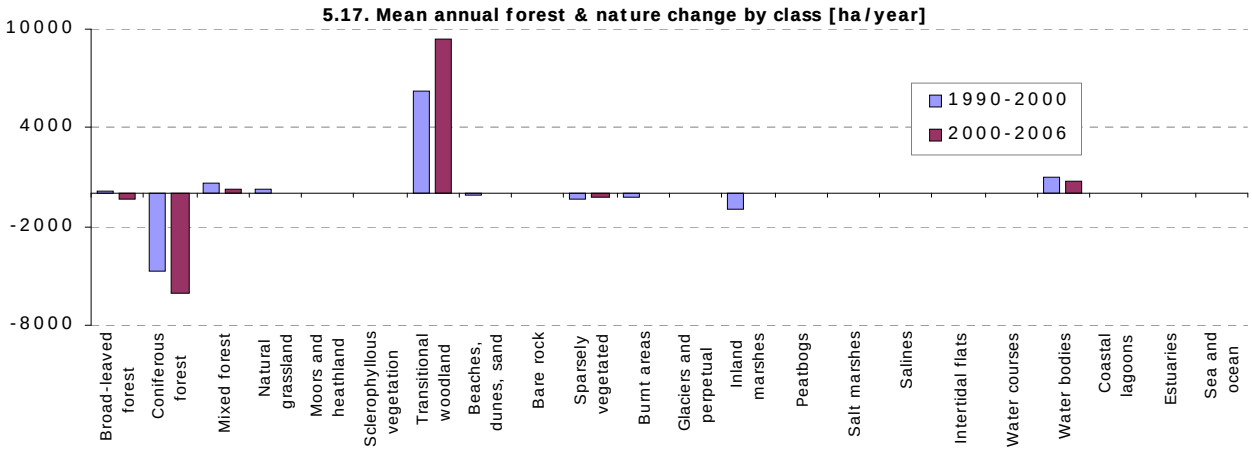




Withdrawal of farming with transitional woodland creation

Beside the internal conversions of forested landscape between standing forests and transitional woodland, withdrawal of farming with woodland creation has been the main driver of natural landscape formation in Poland during the period, with even increased intensity compared with 1990-2000. The other significant driver of forest area formation is transitional woodland creation mainly over former artificial areas (mineral extraction and dump sites) and over natural grasslands and sparsely vegetated areas.
Development of both dry-semi natural land cover and wetlands/water has stabilized. Already mentioned woodland creation over natural grasslands and sparsely vegetated areas and semi-natural rotation (represented mostly by conversion of sparsely vegetated areas to natural grasslands) remain the two most significant drivers of change of dry semi-natural land cover. However, the intensity of both these changes decreased significantly compared to the previous period. Significant water bodies creation over former mineral extraction sites and pastures is the main driver of wetlands/water development.

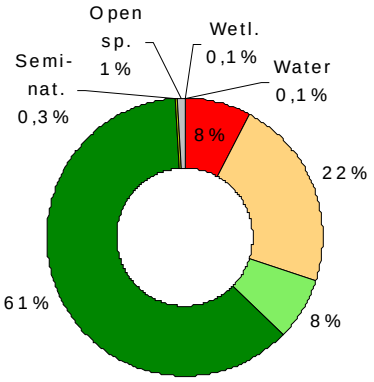




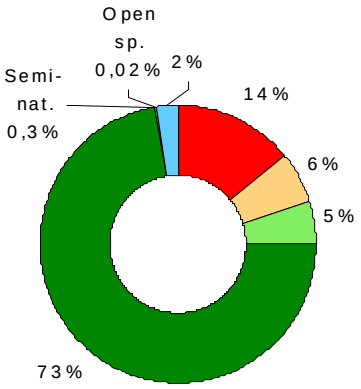
Annex: Land cover flows and trends

Land cover flows 2000-2006

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

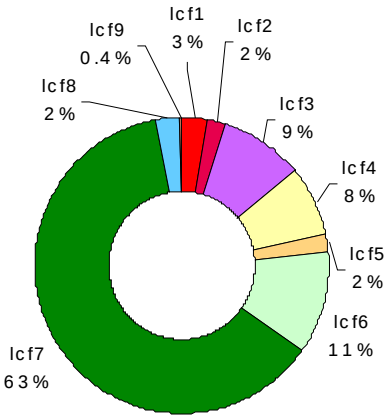


6.19. Formation of land cover 2000-2006 [% of total change area]



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

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

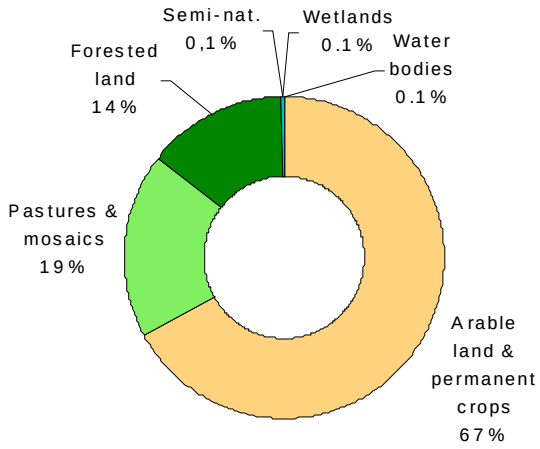


- lcf1 Urban land management
- lcf2 Urban residential sprawl
- lcf3 Sprawl of economic sites and infrastructures
- lcf4 Agriculture internal conversions
- lcf5 Conversion from forested & natural land to agriculture
- lcf6 Withdrawal of farming
- lcf7 Forests creation and management
- lcf8 Water bodies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

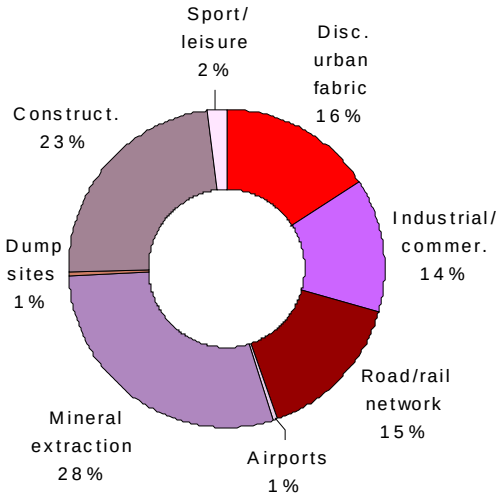
Poland

Artificial areas

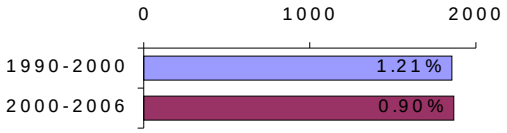
7.21. Consumption by artificial land take 2000-2006 [% of total]



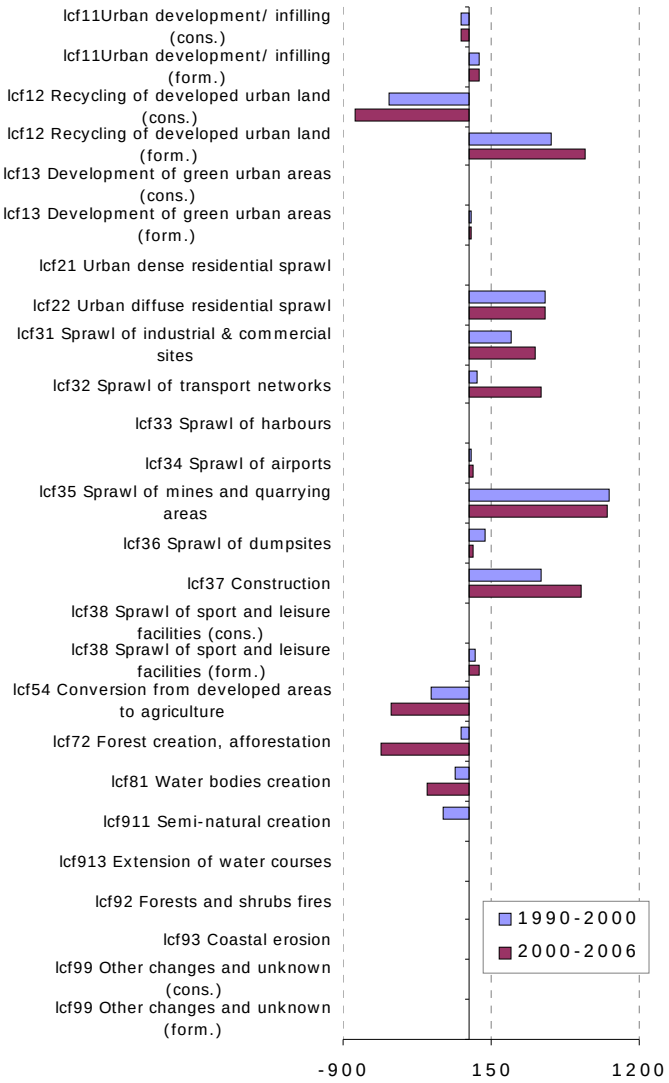
7.22. Formation by artificial land take 2000-2006 [% of total]



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



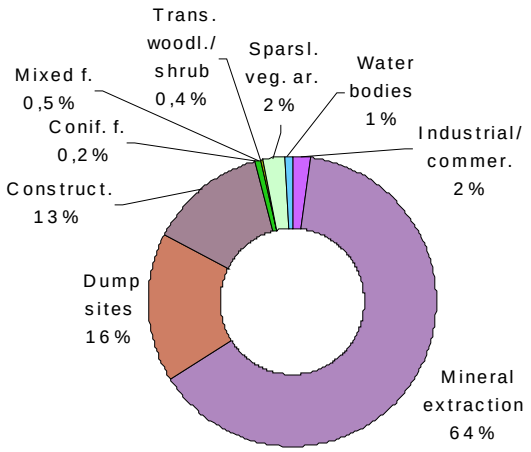
7.24. Artificial development by change drivers (LC FLOWS) [ha/year]



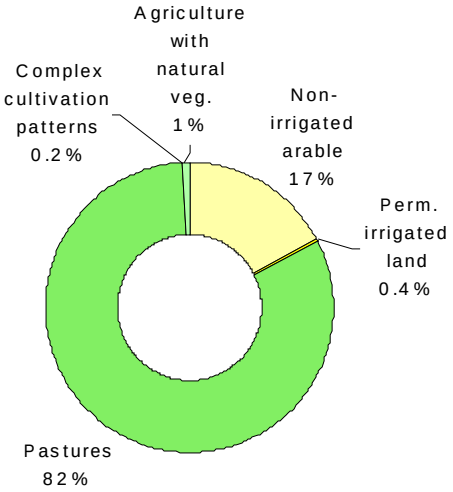
Poland

Agriculture

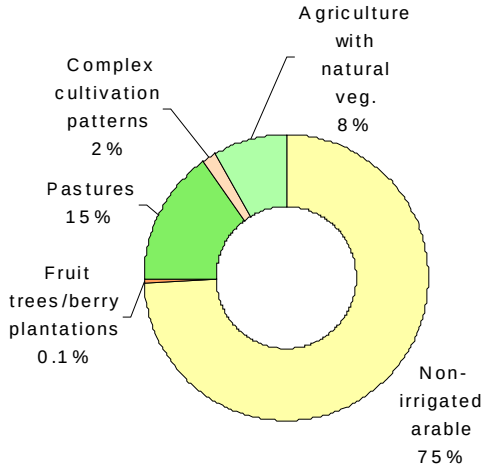
8.25. LC consumed by agriculture 2000-2006 [% of total]



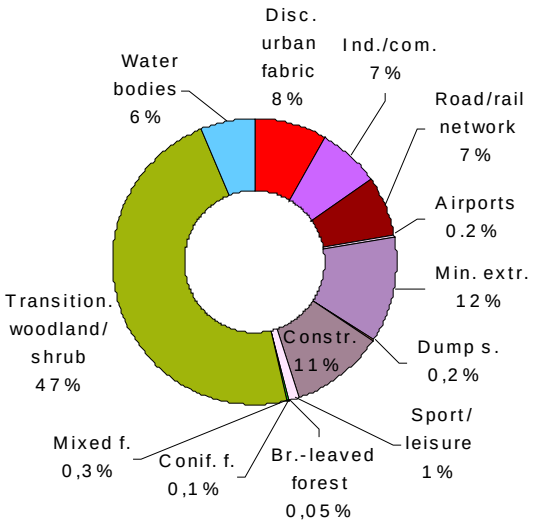
8.26. Formation of agricultural land from non-agriculture 2000-2006 [% of total]



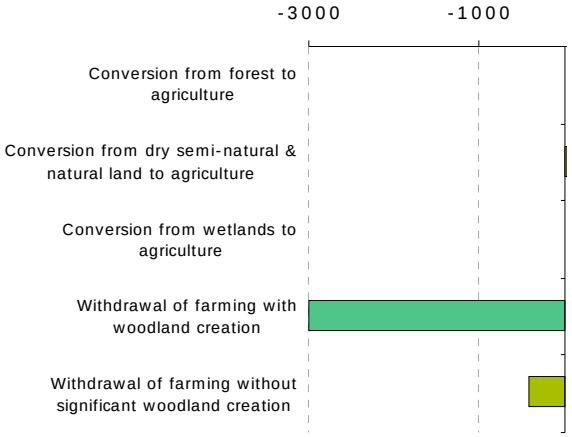
8.27. Consumption of agricultural land by non-agriculture 2000-2006 [% of total]



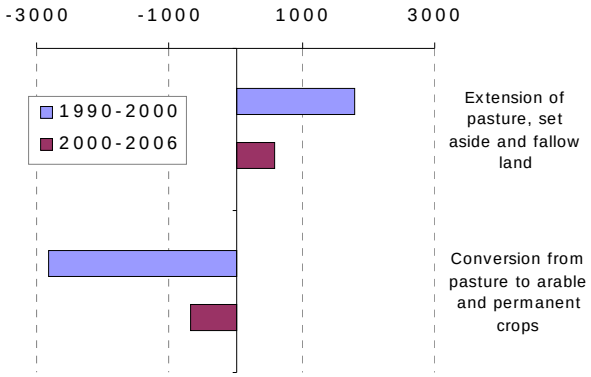
8.28. Formation of non-agricultural land from agriculture 2000-2006 [% of total]



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

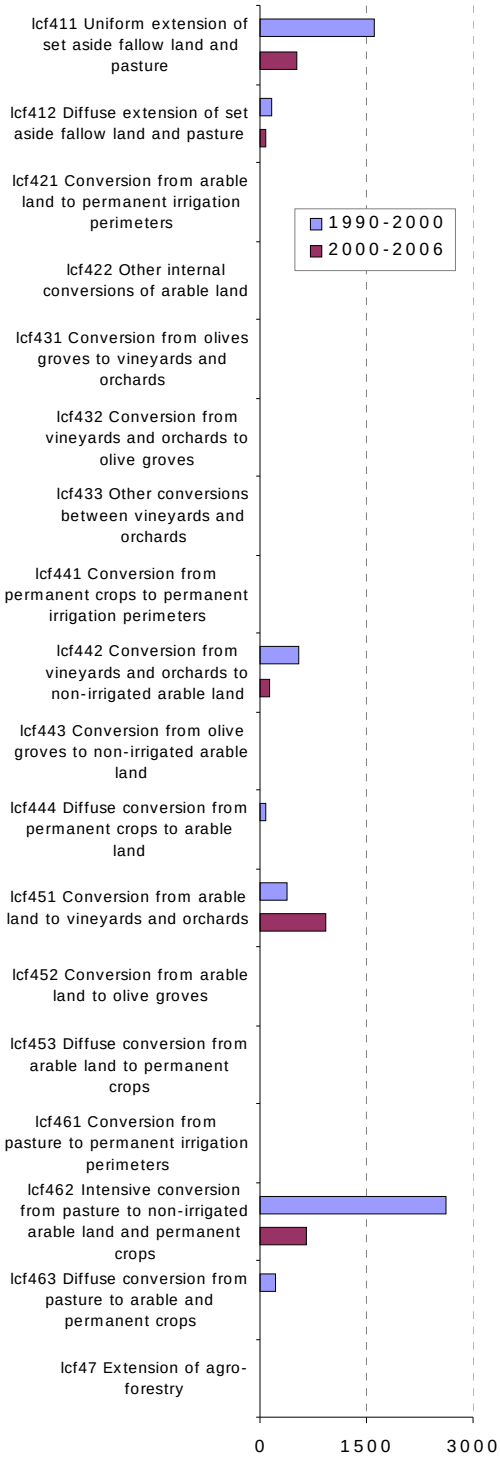


8.30. Mean annual conversion between arable land and pasture [ha/year]

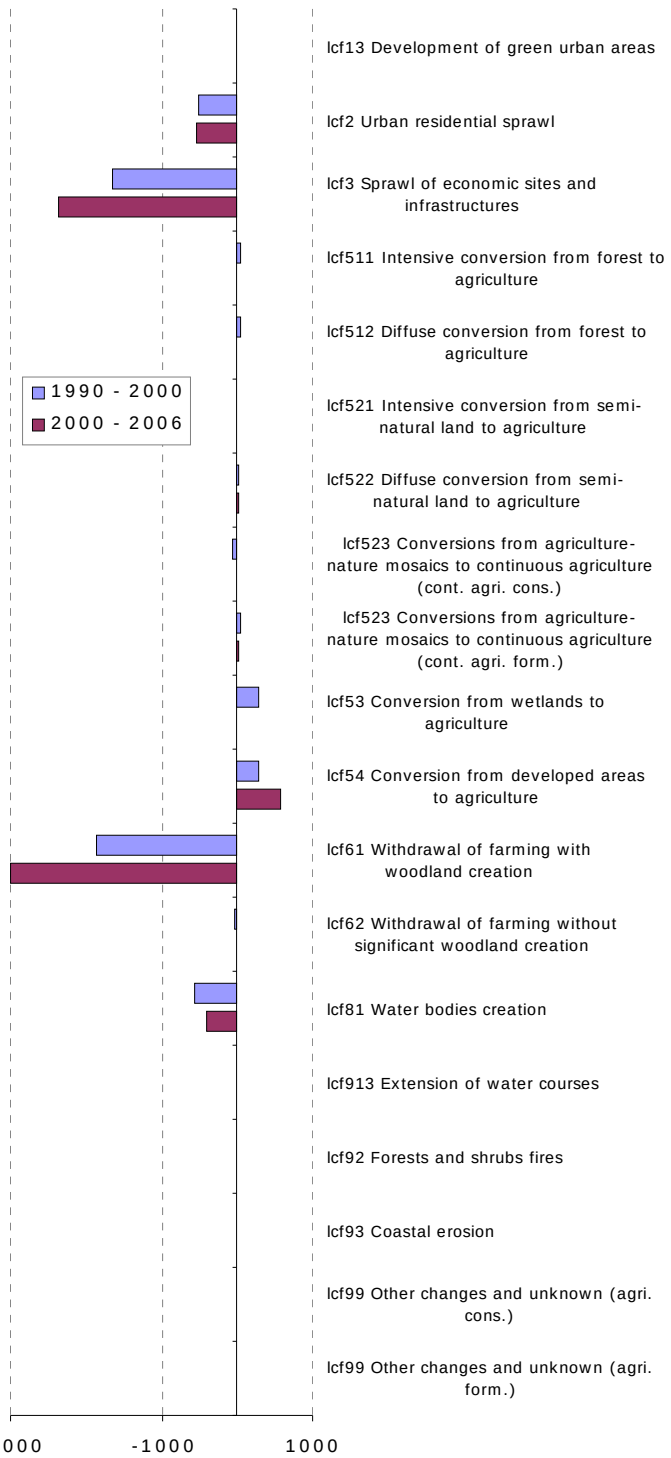


Poland

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



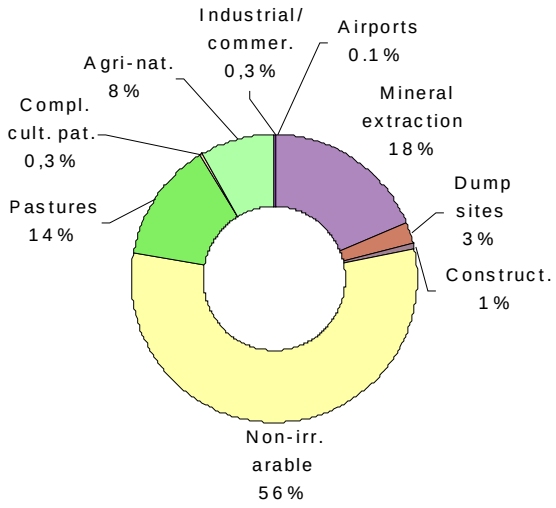
9.32. Mean annual conversions between agriculture and other LC types [ha/year]



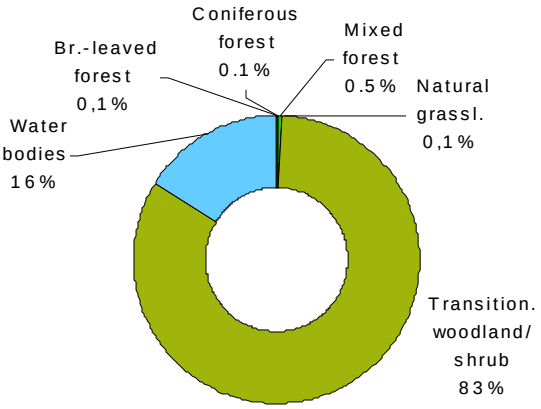
Poland

Forest & nature

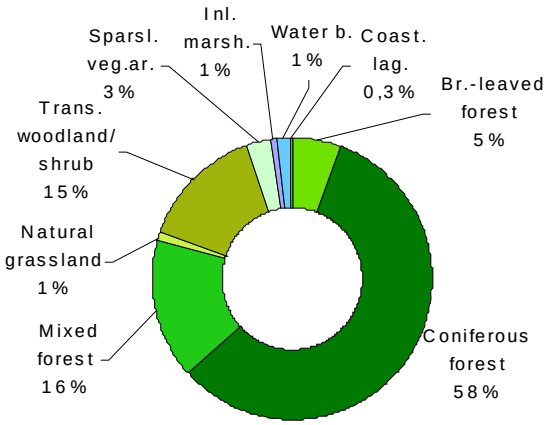
10.33. LC consumed by forest & nature 2000-2006 [% of total]



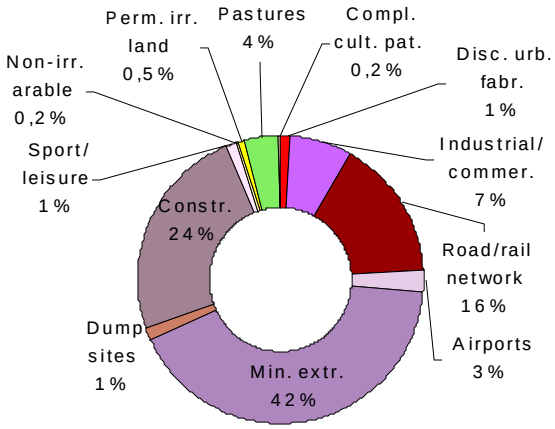
10.34. Formation of forest & nature land from non-forest /nature 2000-2006 [% of total]



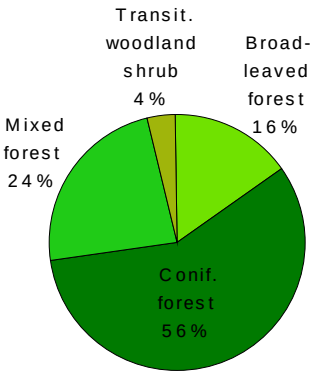
10.35. Consumption of forest & nature land by non-forest /nature 2000-2006 [% of total]



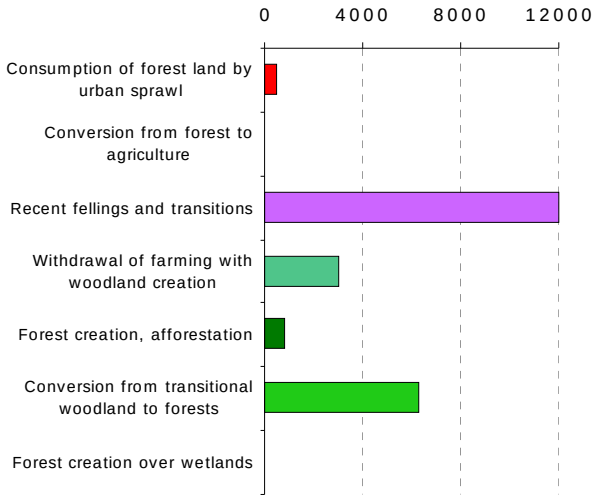
10.36. Formation of non-forest /nature land from forest & nature 2000-2006 [% of total]



10.37. Forested land 2006 [% of total area]



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



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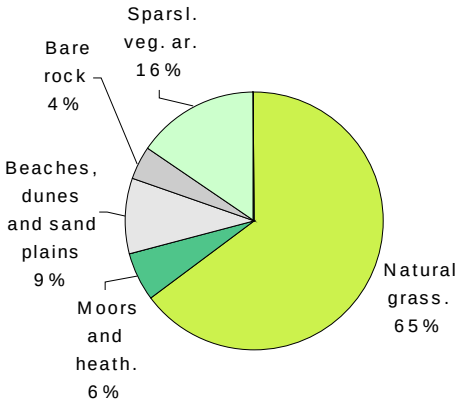
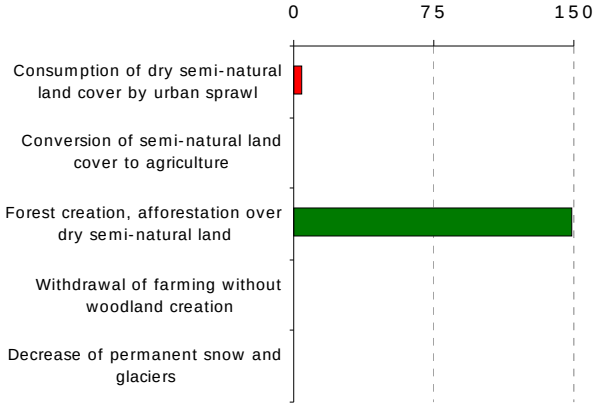
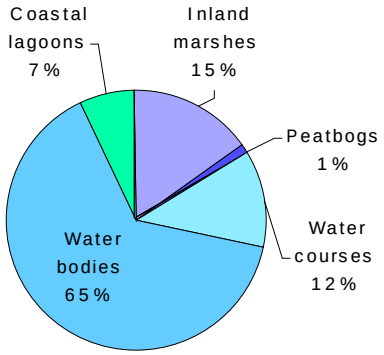
11.39. Dry semi-natural areas 2006 [% of total area]



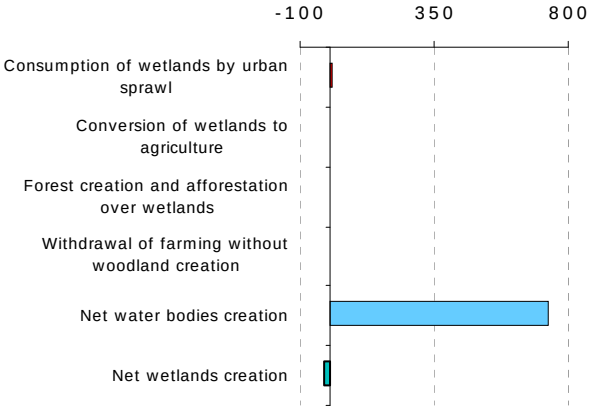
11.40. Main trends in dry semi-natural land consumption/formation 2000-2006 [ha/year]



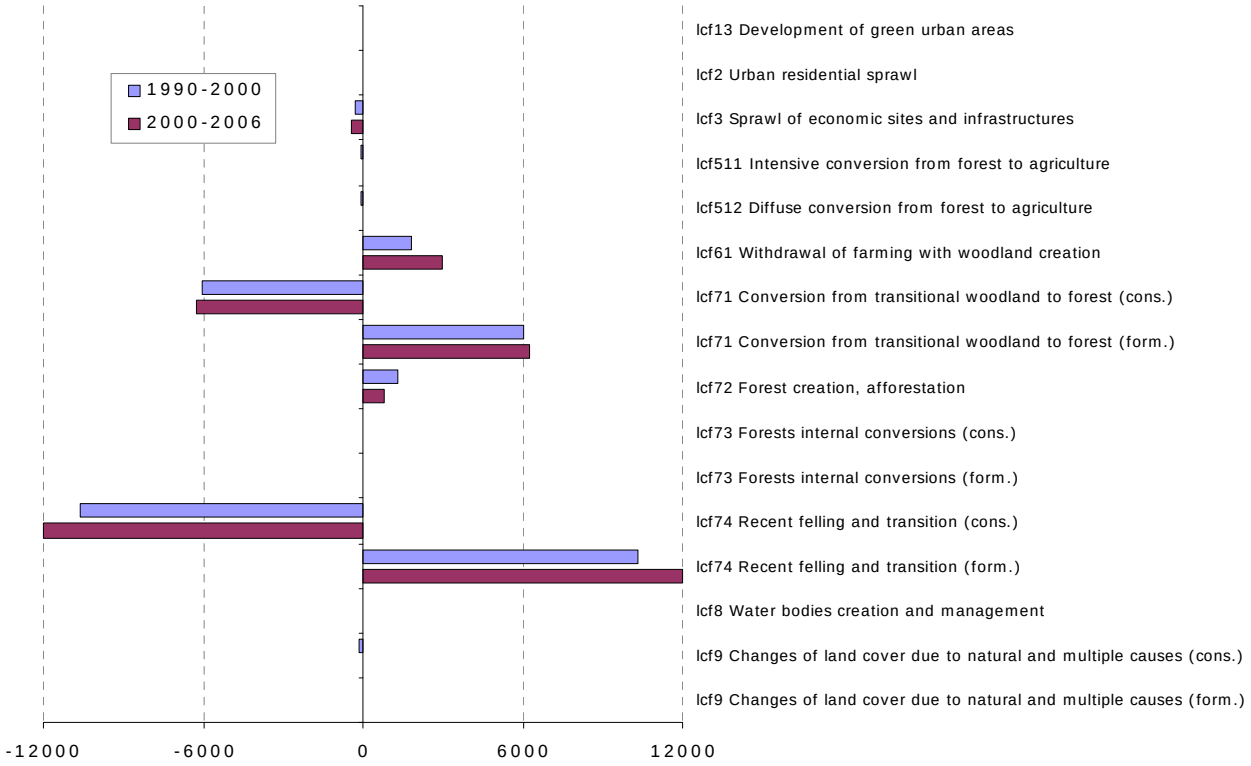
11.41. Wetlands & water 2006 [% of total area]



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



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



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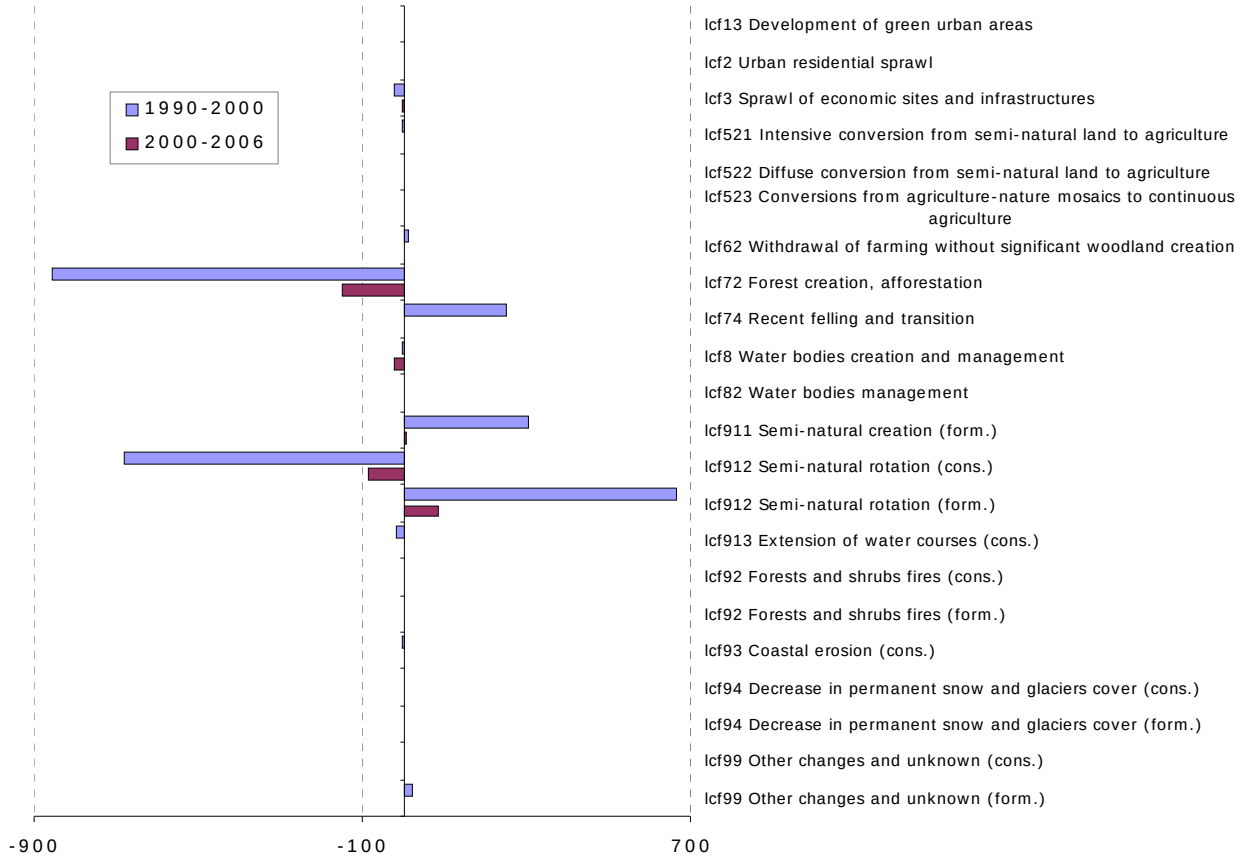
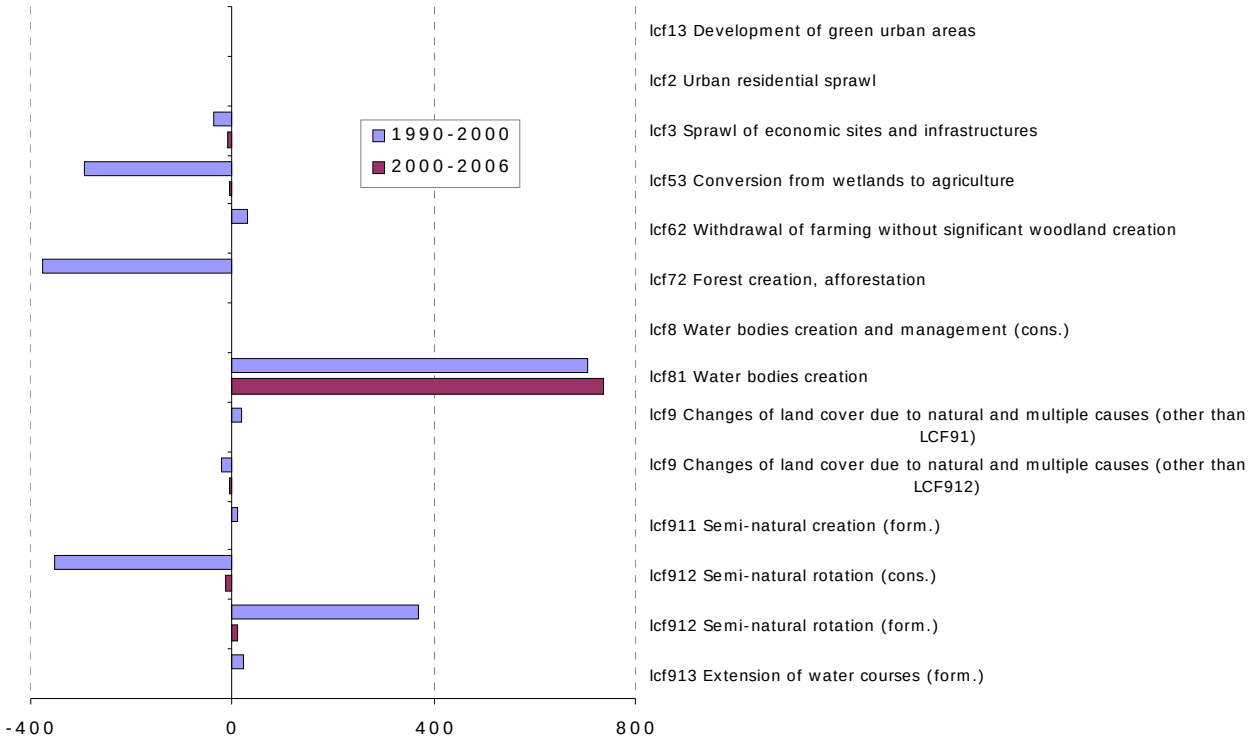
12.44. Mean annual conversions of dry semi-natural LC [ha/year]



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



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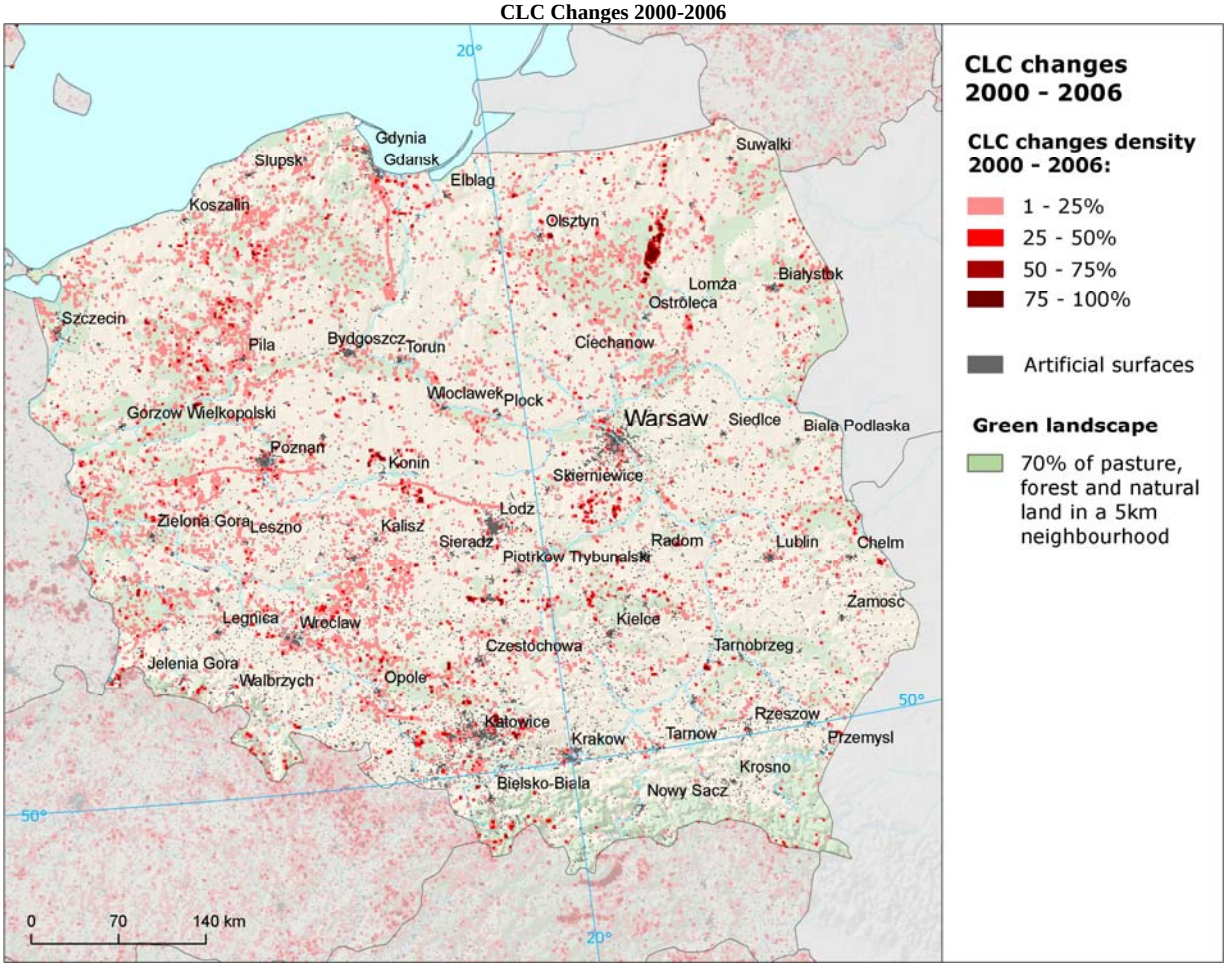
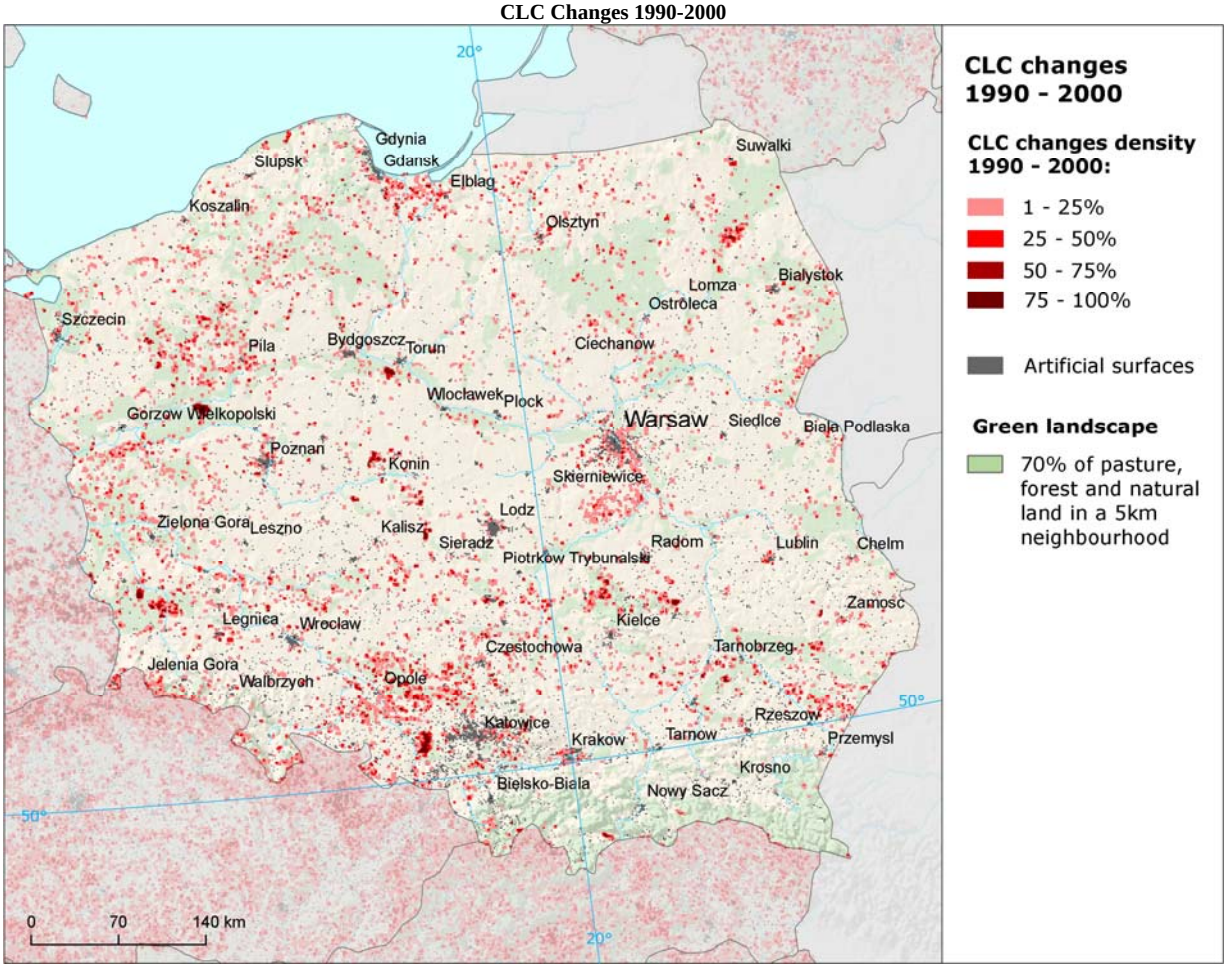
CLC Changes 2000-2006

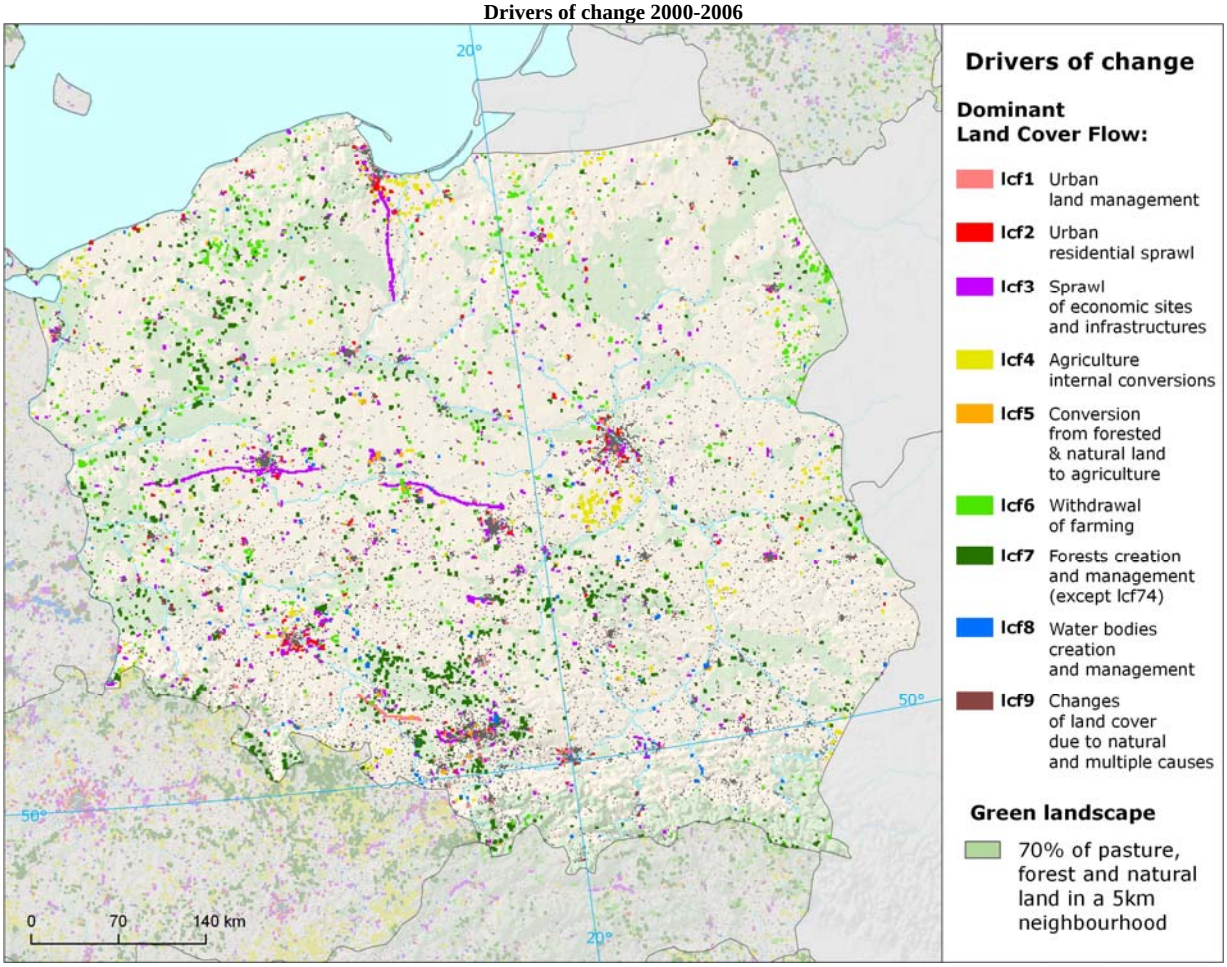


CLC Changes 1990-2000

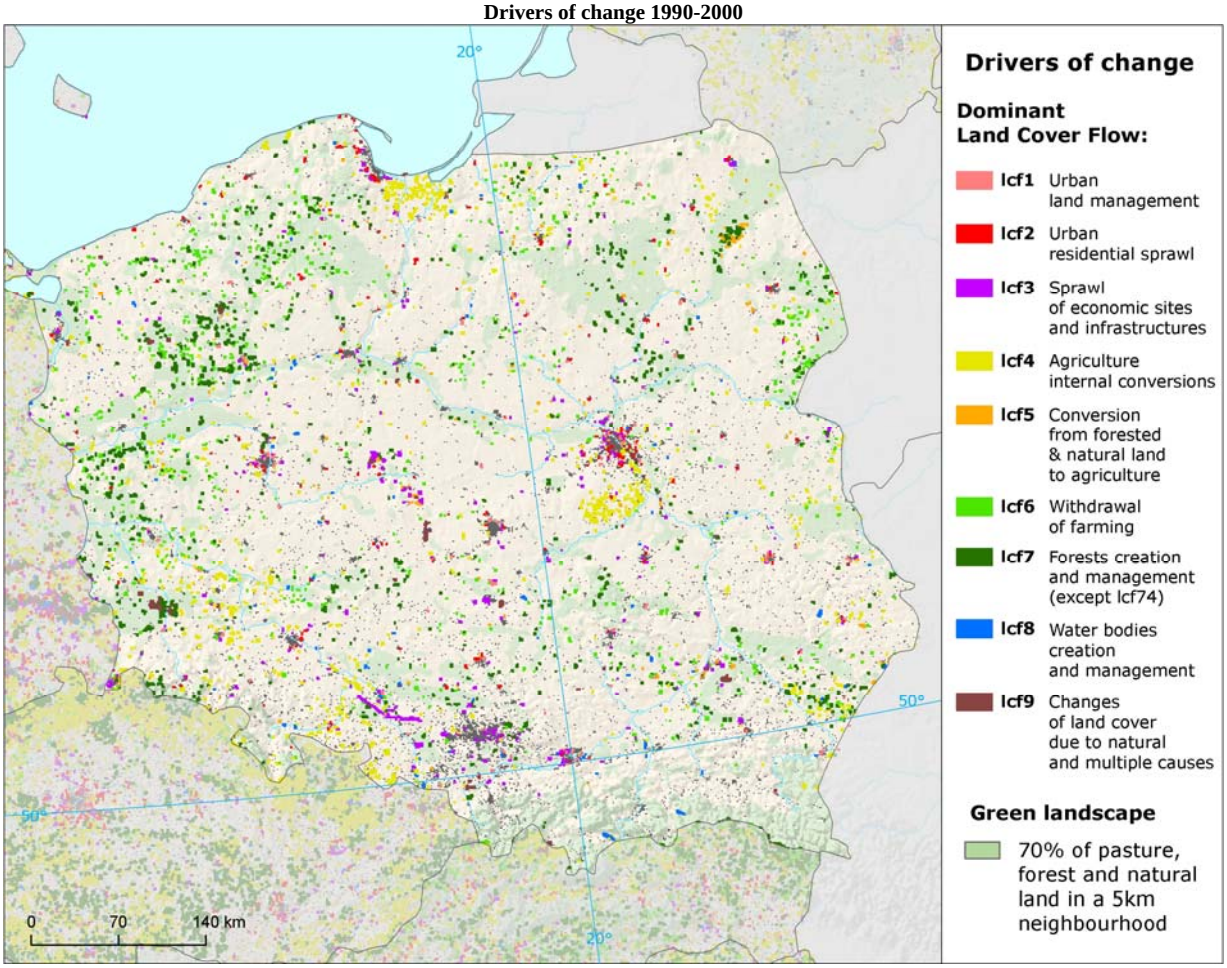


Poland

Drivers of change 2000-2006

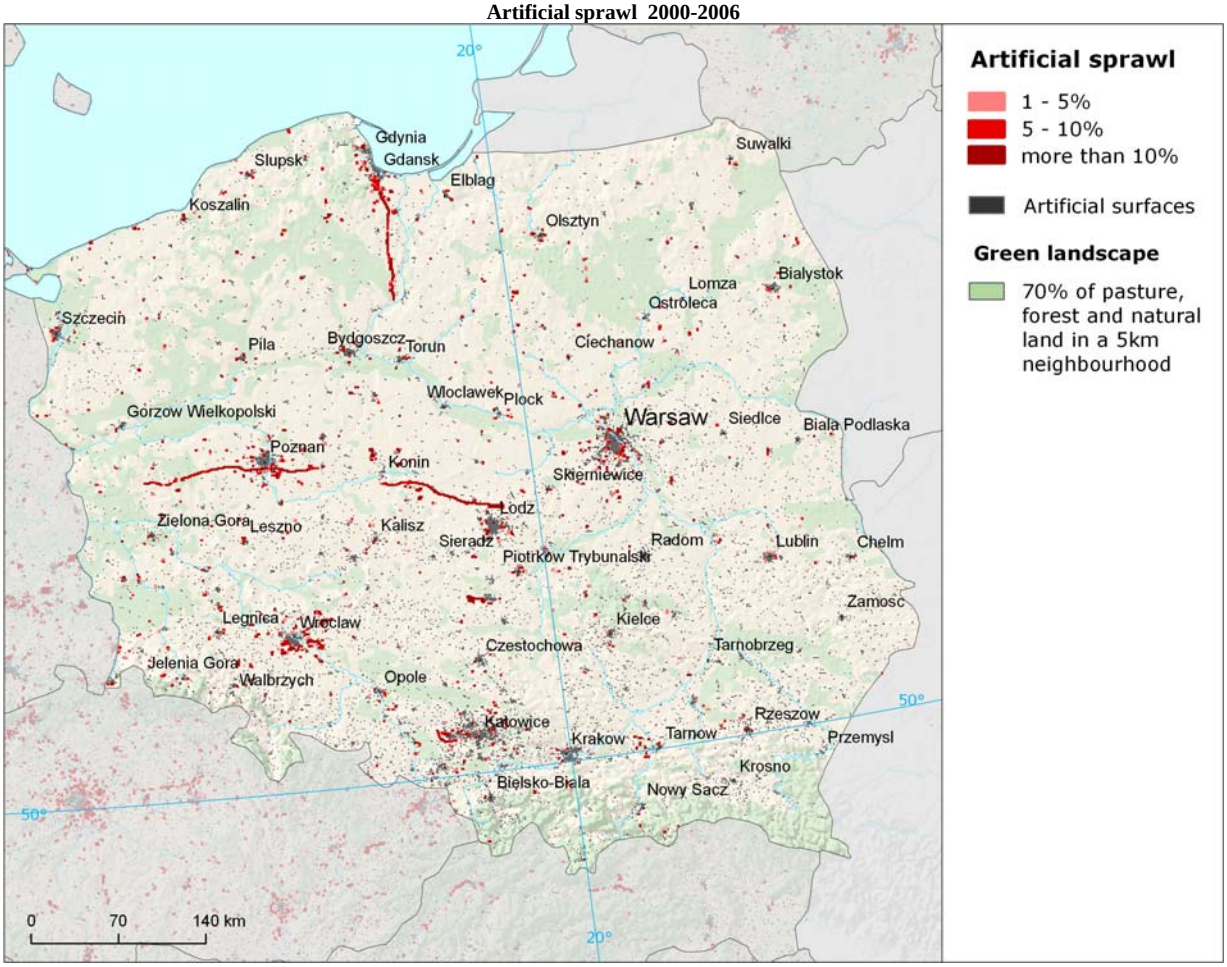


Drivers of change 1990-2000

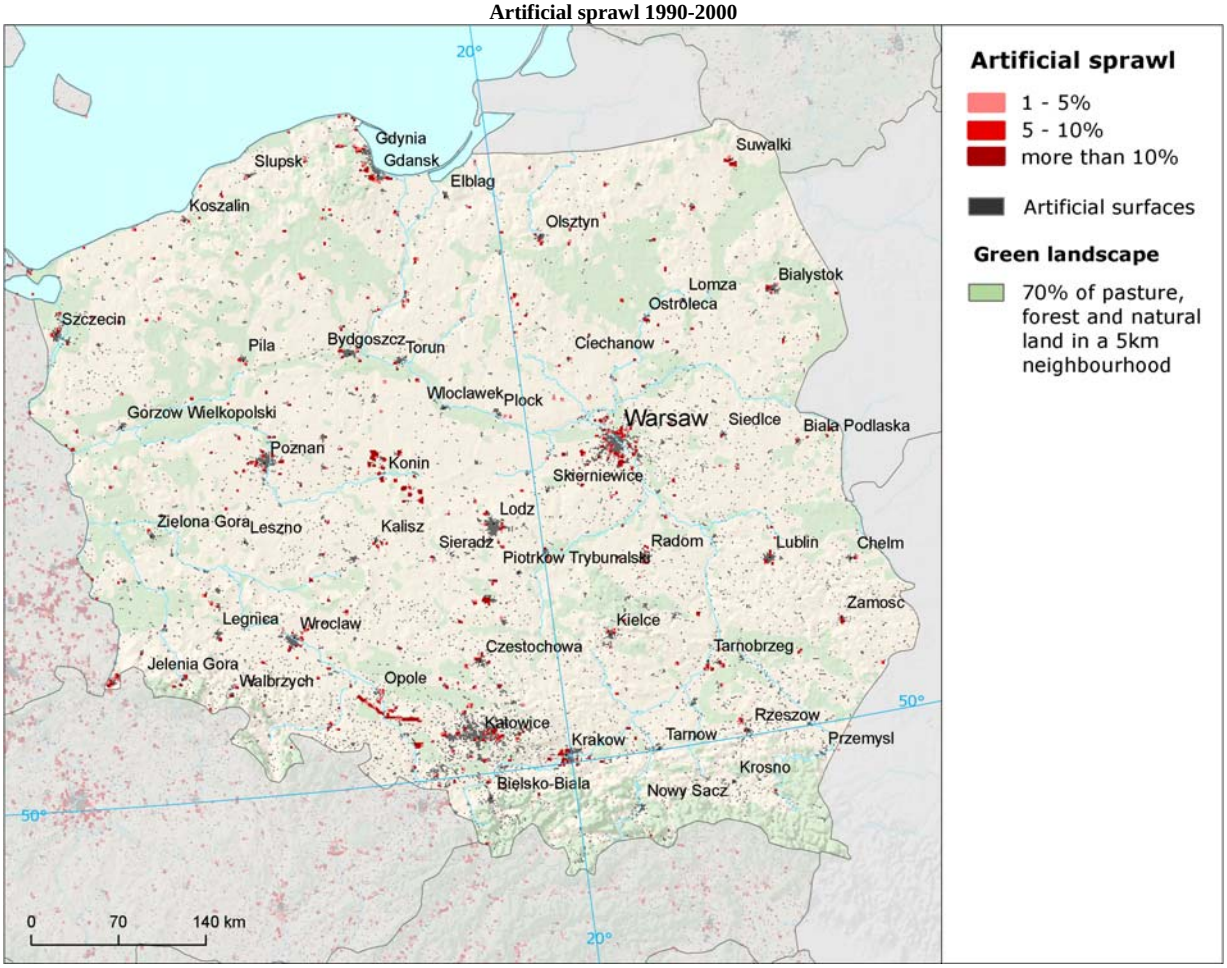


Poland

Artificial sprawl 2000-2006

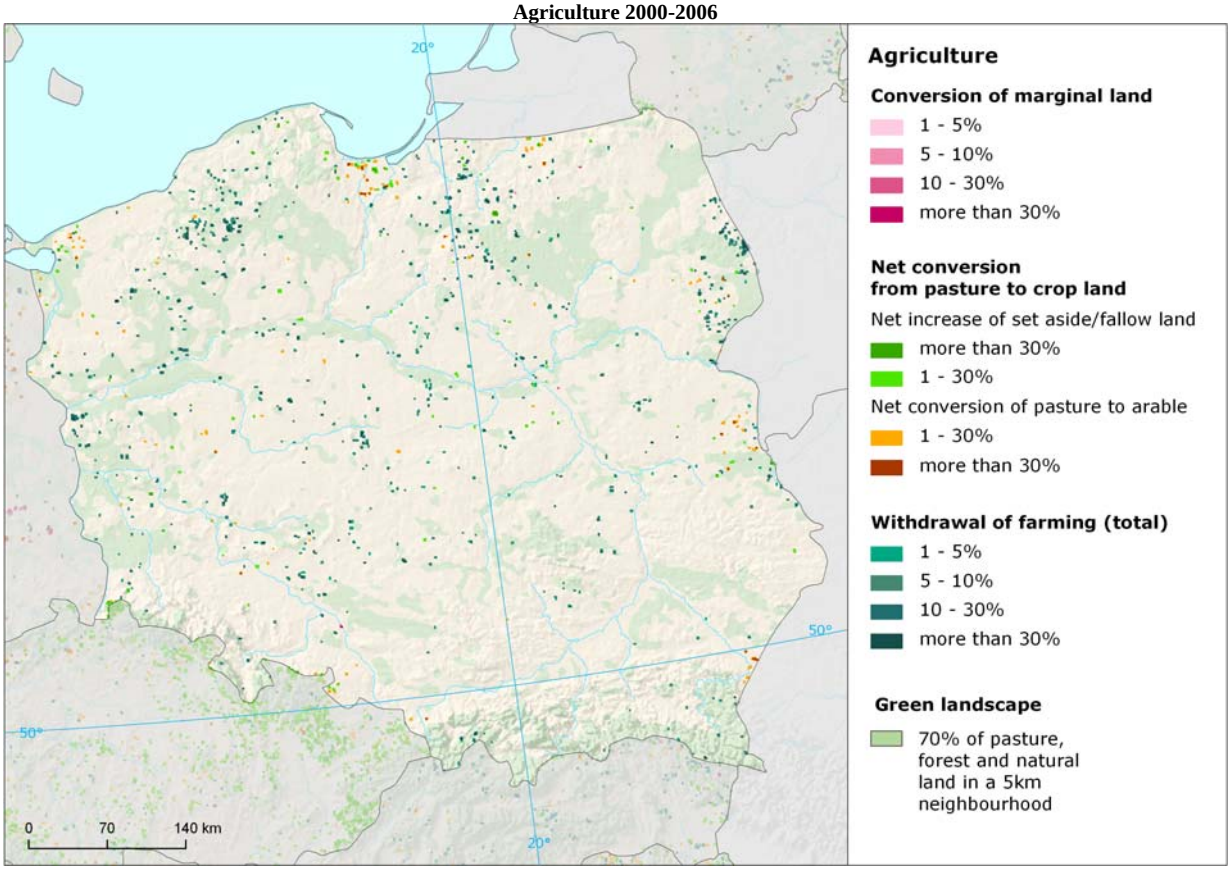


Artificial sprawl 1990-2000

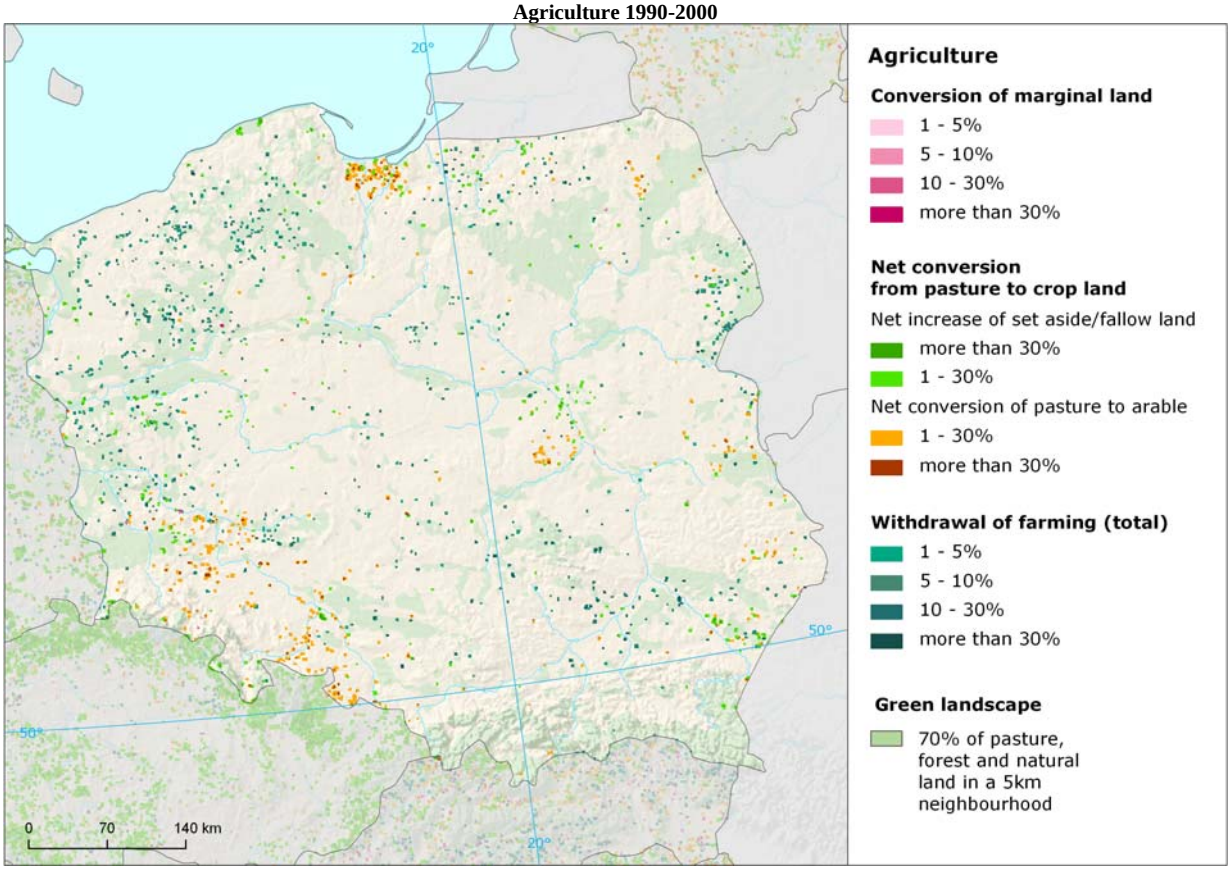


Poland

Agriculture 2000-2006

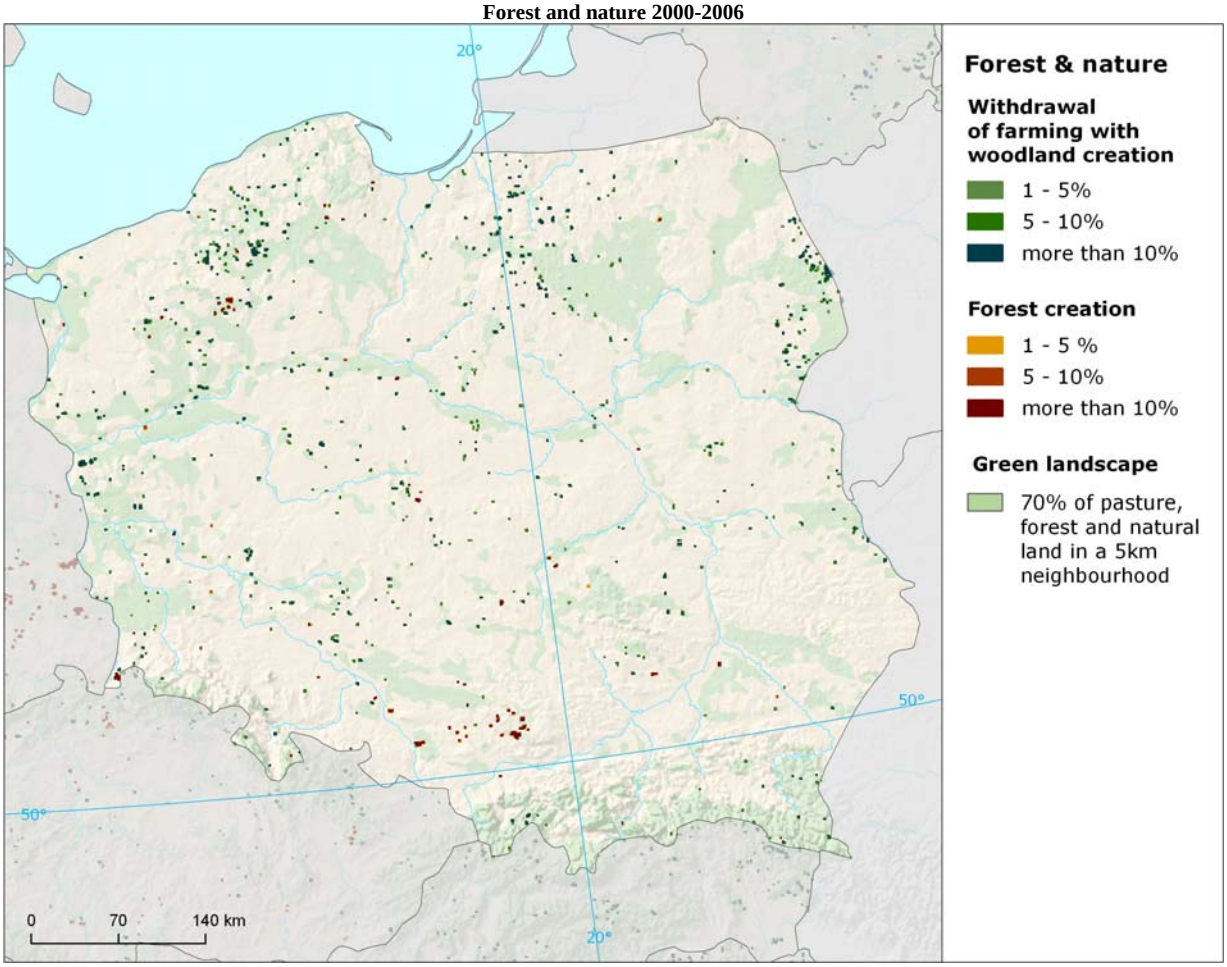


Agriculture 1990-2000



Poland

Forest and nature 2000-2006



Forest and nature 1990-2000