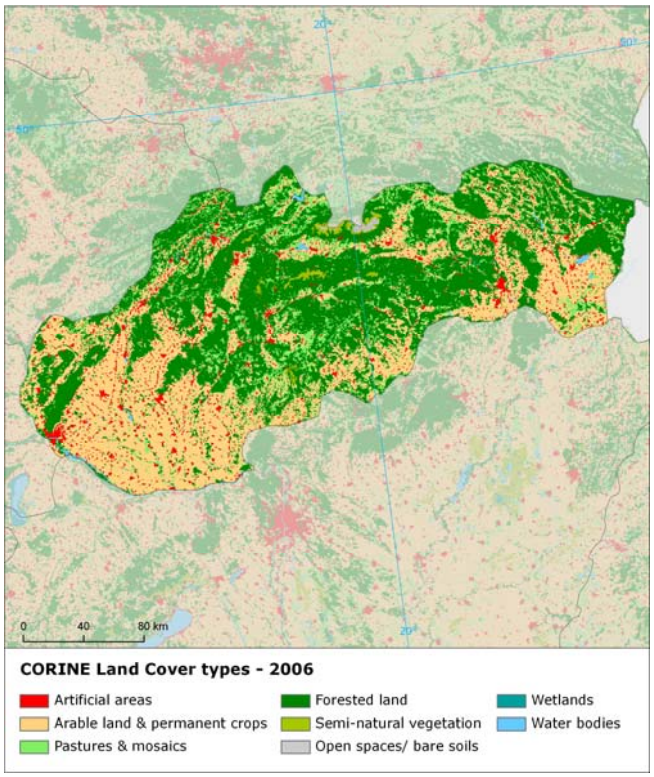
Slovakia

Land cover 2006

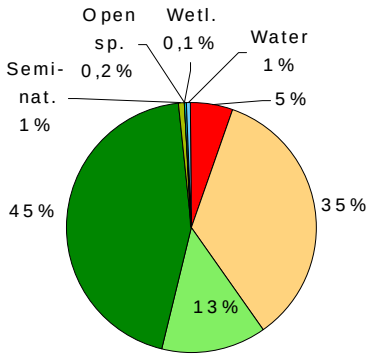
Overview of land cover & change 2000-2006

After the large political and economical changes in Slovakia during 90's, the period 2000-2006 is characterised by stabilization - rapid decrease of overall intensity of land cover changes. Compared to the previous period, mean annual rate of land cover change in Slovakia is four times lower in 2000-2006 period. This slowdown has been caused by decrease of intensity of all main change drivers, with the only exception of sprawl of economic sites and infrastructures.
The structure of land cover development in Slovakia remains similar to 1990-2000 period. Besides internal forest and agriculture conversions, change has been driven mostly by withdrawal of farming with woodland creation and also by accelerated sprawl of economic sites and infrastructures (which is driven mainly by accelerated construction). Agricultural internal conversions in Slovakia are characterized by prevailing agriculture management extensification, represented by conversion from arable land to pastures and mosaics. Despite of rapid increase of net artificial formation, the overall intensity of artificial changes in Slovakia (and particularly of residential sprawl) has been significantly slowed down. Spatially most of the changes are spread across the whole territory with artificial sprawl focused on large agglomerations including the capital city Bratislava.

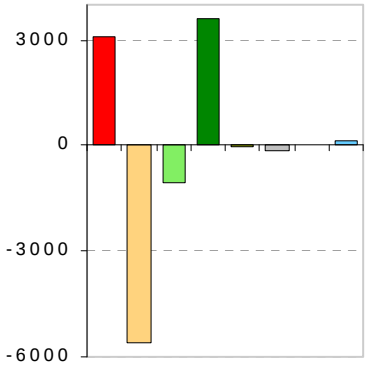
Note: The results presented here are based on a change analysis of 44 land cover types mapped consistently on a 1:100.000 scale across Europe over almost two decades 1990-2006 - see Corine land cover (CLC) programme for details.
Number of years between CLC2000-CLC2006 data for Slovakia: 6



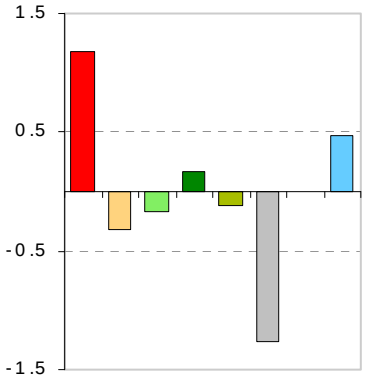
1.1. Land cover 2006 [% of total]



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

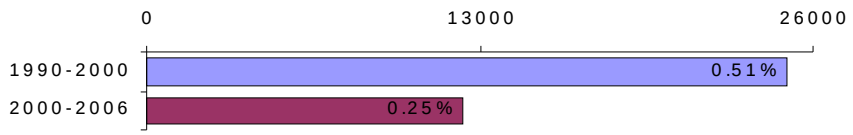
Summary balance table 2000-2006

	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	**2656**	**17173**	**6592**	**21798**	**427**	**112**	**29**	**313**	**49099**
Consumption of initial LC	6	96	57	582	1	1	0	0	742
Formation of new LC	37	40	46	618	0	0	0	2	742
Net Formation of LC	**31**	**-56**	**-11**	**36**	**-1**	**-1**	**0**	**2**	**0**
Net formation as % of initial year	*1.2*	*-0.3*	*-0.2*	*0.2*	*-0.1*	*-1.3*	*0.0*	*0.5*	
Total turnover of LC	**43**	**135**	**102**	**1200**	**1**	**1**	**0**	**2**	**1485**
Total turnover as % of initial year	*1.6*	*0.8*	*1.6*	*5.5*	*0.1*	*1.3*	*0.0*	*0.5*	*3.0*
Land cover 2006	**2687**	**17117**	**6581**	**21835**	**426**	**110**	**29**	**314**	**49099**

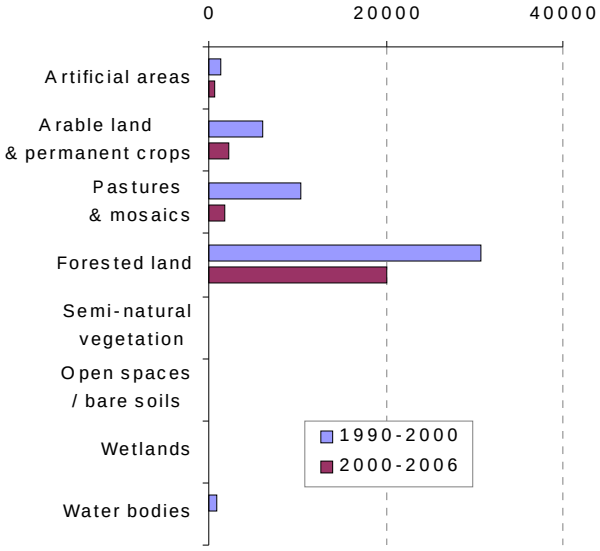
Slovakia

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

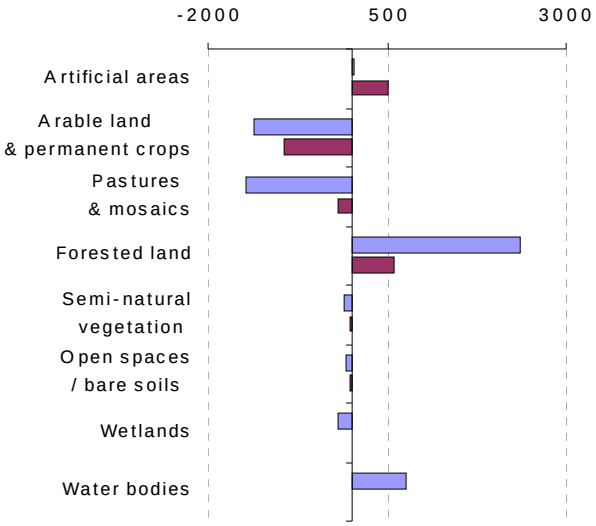
2.4. Annual land cover change [ha/year, % of total area]



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

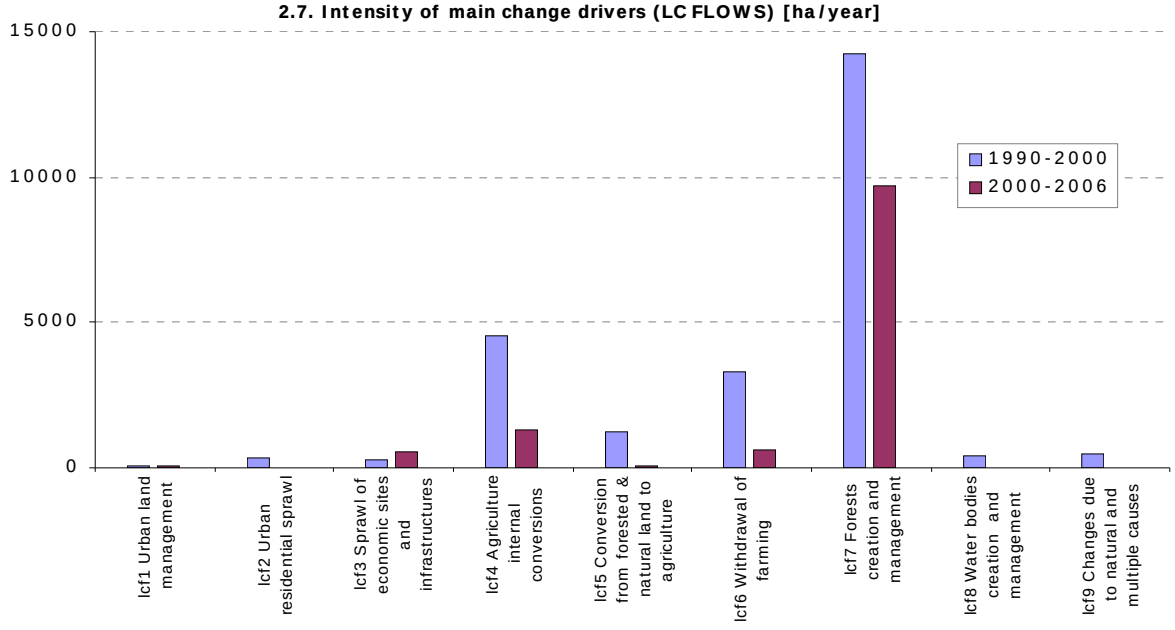


2.6. Net annual change of LC types [ha/year]



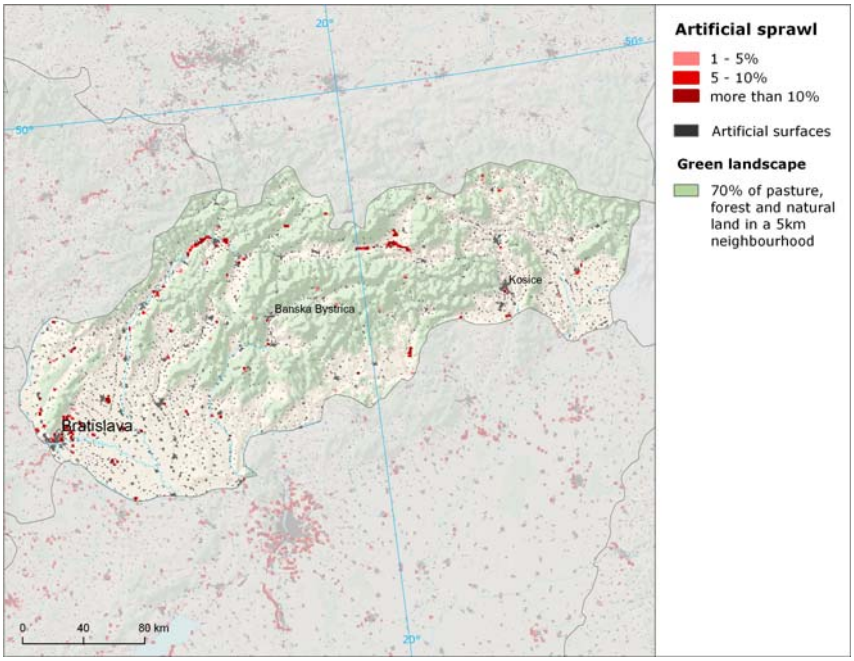
Summary trend figures	1990-2000	2000-2006
Annual land cover change [ha/year]	**25002**	**12375**
Annual land cover change as % of initial year	**0.51%**	**0.25%**
Land uptake by artificial development as mean annual change [ha/year]	667	550
Agricultural land uptake by urban and infrastructures development as mean annual change [ha/year]	672	541
Net uptake of forests and semi-natural land by agriculture as mean annual change [ha/year]	-2047	-525
Net conversion from pasture to arable land and permanent crops as mean annual change [ha/year]	-755	-486
Forest & other woodland net formation as mean annual change [ha/year]	2346	605
Dry semi-natural land cover net formation as mean annual change [ha/year]	-174	-32
Wetlands & water bodies net formation as mean annual change [ha/year]	595	25

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

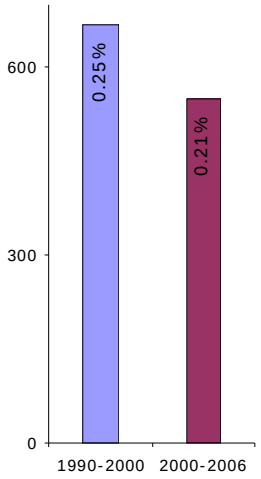


Slovakia

Artificial areas



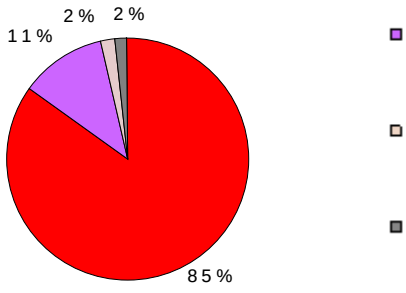
3.8. Artificial land take [ha/year, % of initial year]



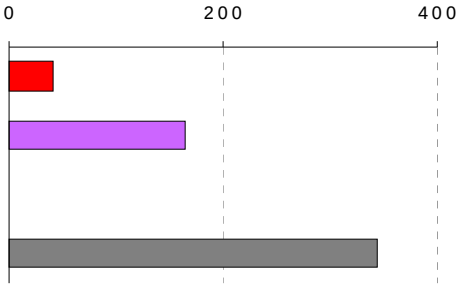
Residential sprawl slow down, land take driven by construction

Overall intensity of artificial changes in Slovakia characterized by total turnover of artificial surfaces, as well as urban sprawl has taken a significant slow down compared to the period 1990/2000. Lower net formation (formation-consumption) of area, in the previous period was caused by large consumption of artificial surfaces between 1990 and 2000 driven by conversion of construction sites to water bodies and water courses during the construction of dam Gabcikovo (Danube river, southern Slovakia).
Artificial sprawl in Slovakia is concentrated mainly in the surroundings of large cities (Bratislava, Zilina, Poprad). The main contributor to artificial land take after during 2000-2006 has been the development of construction sites (53%) and commercial/industrial units (20%) with only low contribution of sprawl of residential areas (4%) (which has significantly lower intensity compared to the previous period). Land uptake in Slovakia occurs mostly at the expense of agriculture areas (94% of total area uptaken) with prevailing share of arable land (55%).

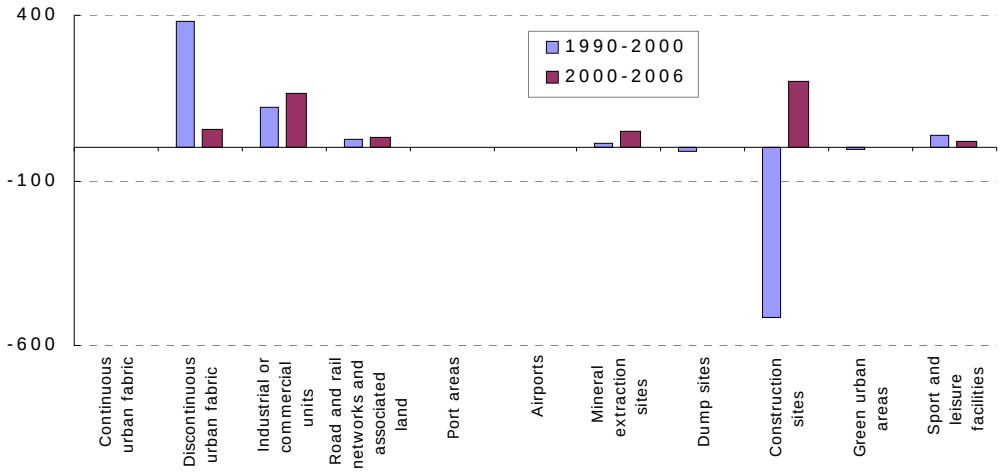
3.9. Artificial surfaces 2006 [% of total area]



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

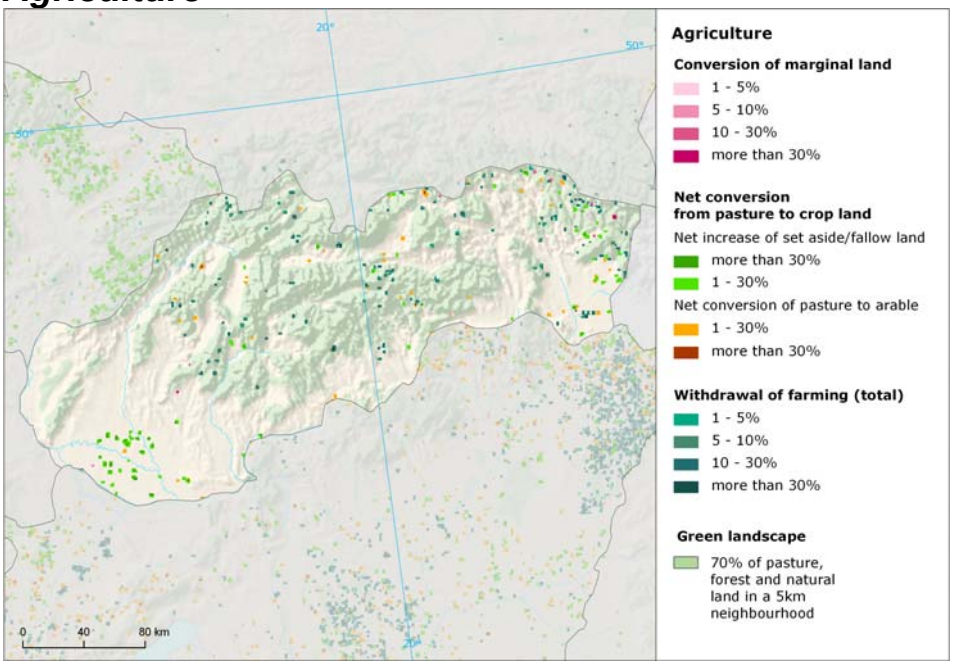


3.11. Mean annual artificial change by class [ha/year]



Slovakia

Agriculture



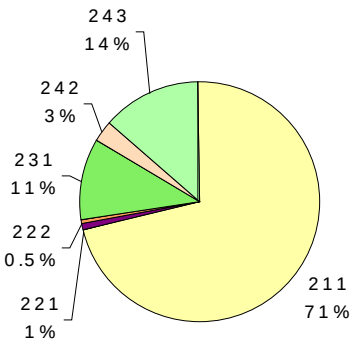
Extensification of agriculture, consumption of land

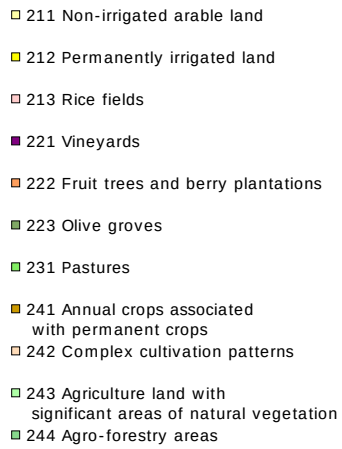
Agricultural land in Slovakia is composed mostly of arable land (more than 70%). The rest of agricultural areas consist mainly of pastures and agriculture with natural vegetation.

Comparing to previous period 1990-2000, there was rapid decrease of overall intensity of agriculture land development in Slovakia (of both external consumption and internal changes). All agricultural classes except complex cultivation patterns have negative net change balance after year 2000. Most of agricultural land consumption is driven by withdrawal of farming with woodland creation (which is characteristic especially for uplands and mountainous areas) and also by sprawl of economic sites and infrastructures (mainly construction and development of commercial/industrial units).

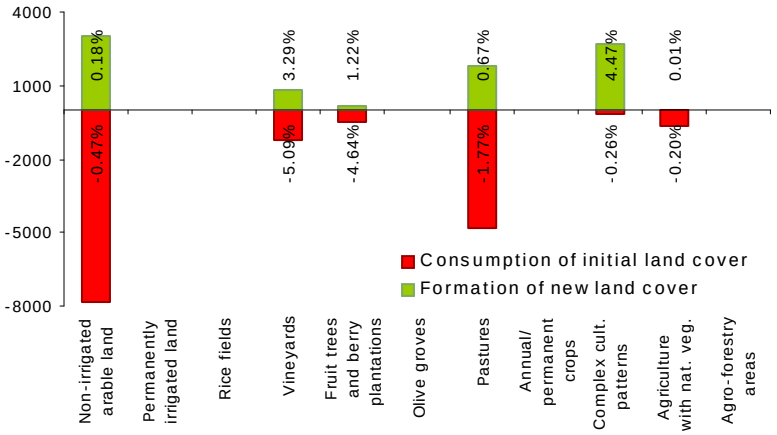
Internal agricultural development is characterized by prevailing conversions from arable land to pastures and mosaics – most of them occur in eastern Slovakia and in Danube lowland (southwest of Slovakia).

4.12. Agricultural areas 2006 [% of total area]

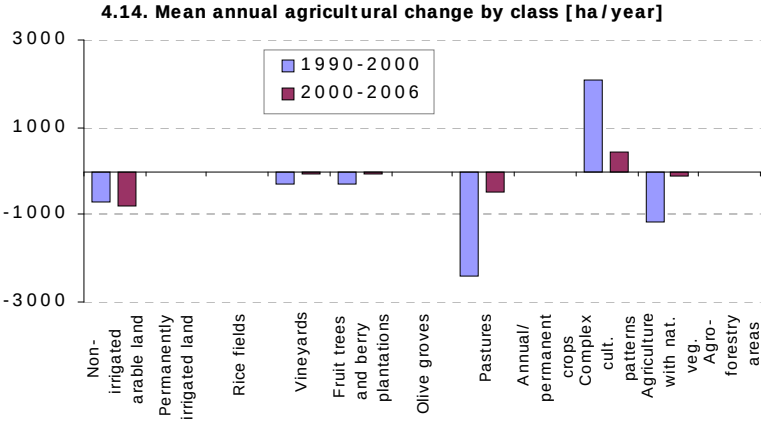




4.13. Development of agricultural areas 2000-2006 – detailed balance [ha]

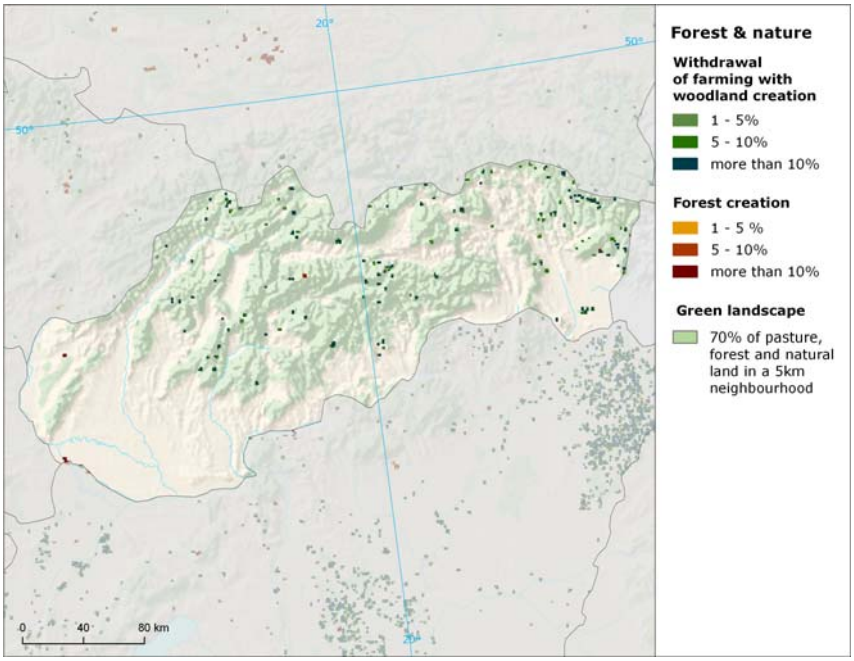


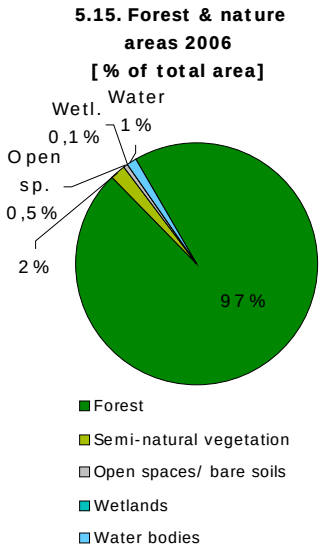
4.14. Mean annual agricultural change by class [ha/year]



Slovakia

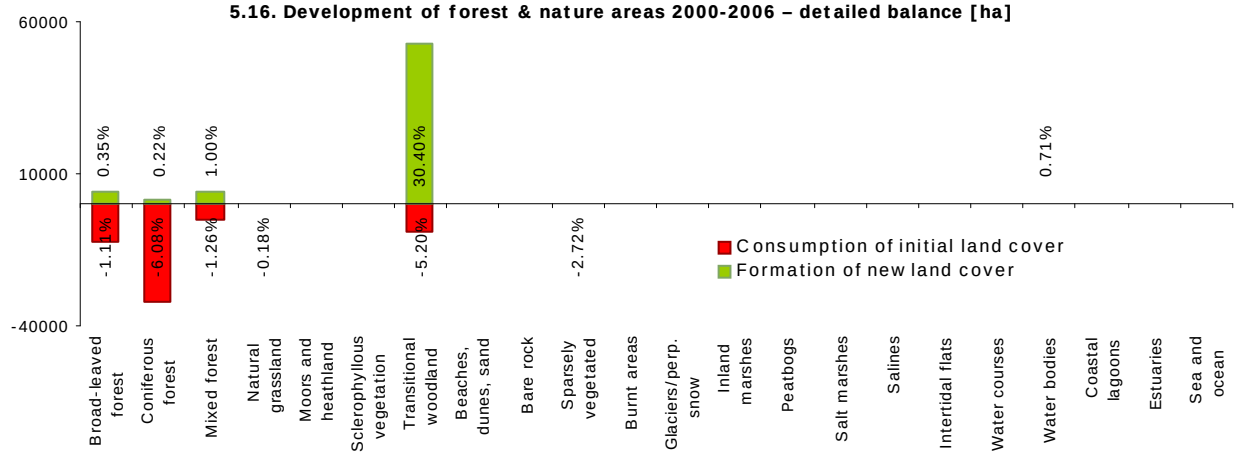
Forest & nature

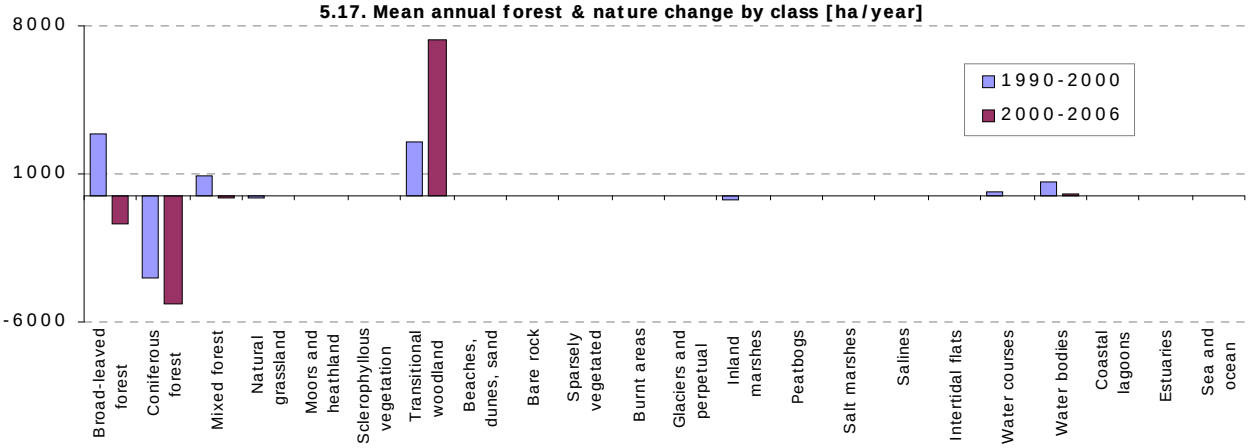




Forest creation by withdrawal of farming

Forest creation and management remains the most significant driver of land cover development in Slovakia, although the intensity of this flow strongly decreased compared width the figures from the previous period. Forest development is driven mainly by internal transitions between standing forest and transitional woodland.
Withdrawal of farming with forest creation (represented mostly by conversion of pastures to transitional woodland areas) is the most important source of new forested land formation. Changes of dry semi-natural land cover and wetlands/water bodies, which were quite significant in previous period, almost disappeared from Slovak landscape during 2000-2006 period. Spatially, changes are distributed all over the highland parts of Slovakia.

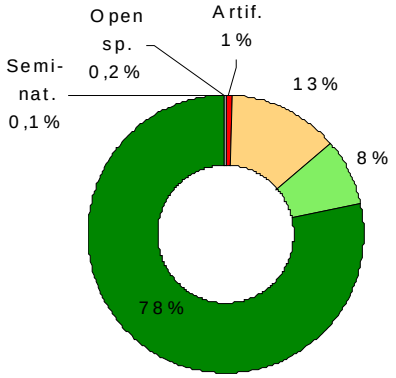




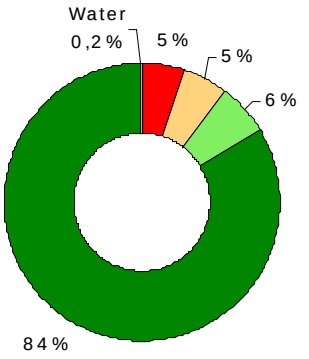
Annex: Land cover flows and trends

Land cover flows 2000-2006

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

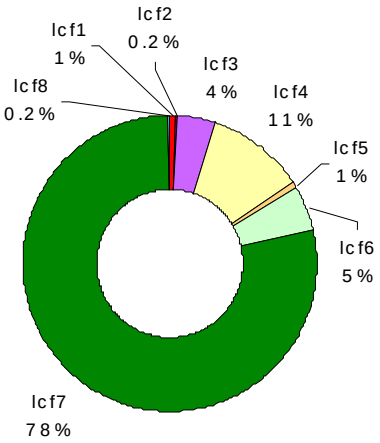


6.19. Formation of land cover 2000-2006 [% of total change area]



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]

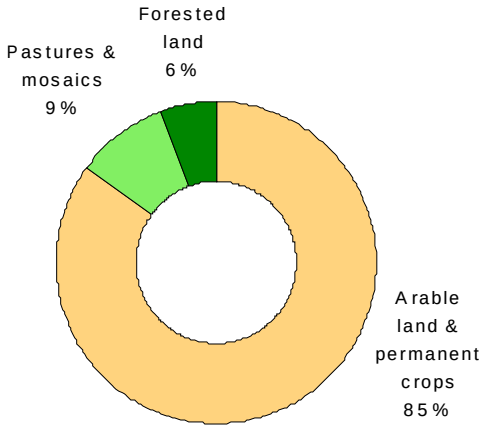


- lcf1 Urban land management
- lcf2 Urban residential sprawl
- lcf3 Sprawl of economic sites and infrastructures
- lcf4 Agriculture internal conversions
- lcf5 Conversion from forested & natural land to agriculture
- lcf6 Withdrawal of farming
- lcf7 Forests creation and management
- lcf8 Water bodies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

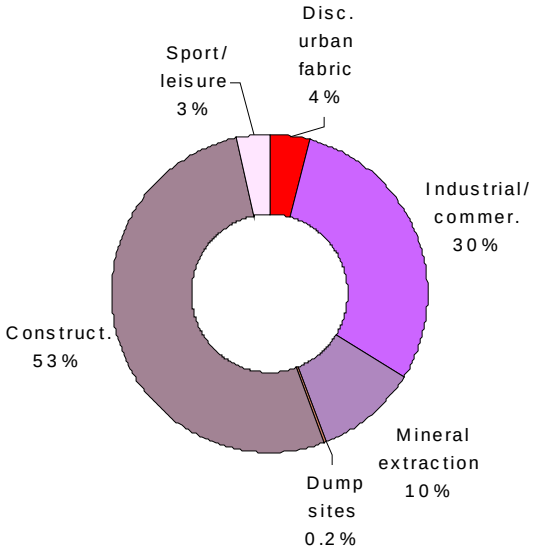
Slovakia

Artificial areas

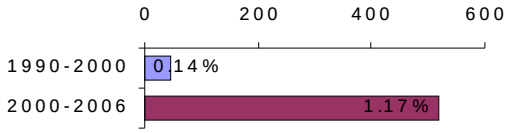
7.21. Consumption by artificial land take 2000-2006 [% of total]



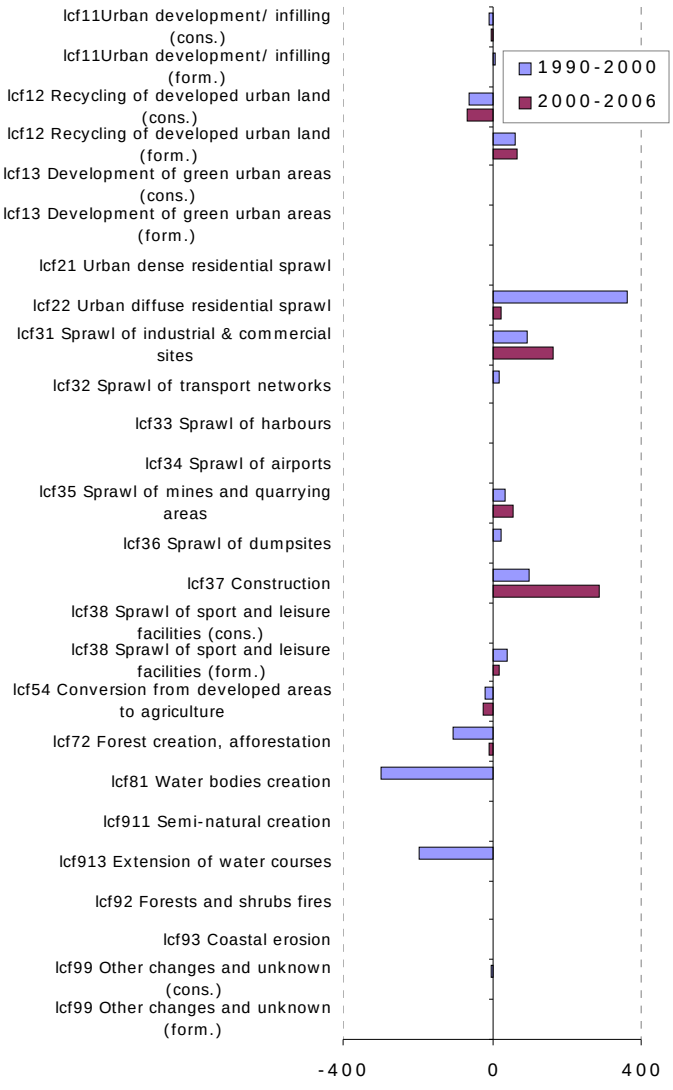
7.22. Formation by artificial land take 2000-2006 [% of total]



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



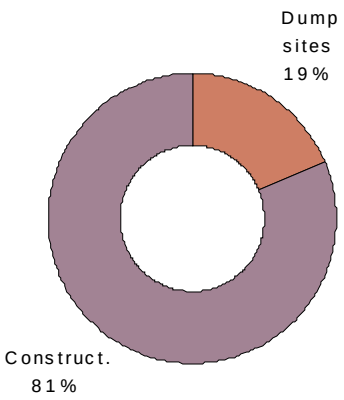
7.24. Artificial development by change drivers (LC FLOWS) [ha/year]



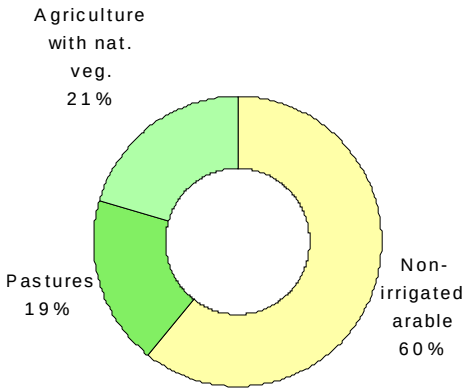
Slovakia

Agriculture

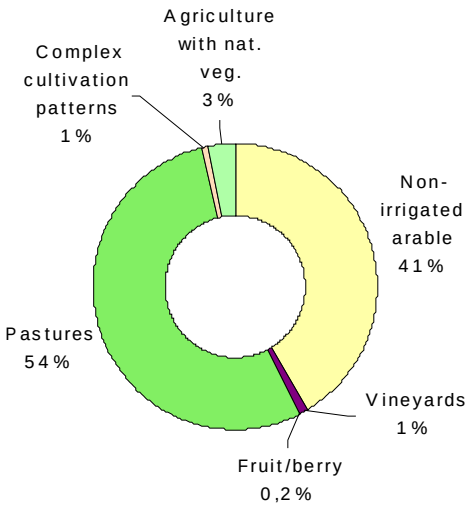
8.25. LC consumed by agriculture 2000-2006 [% of total]



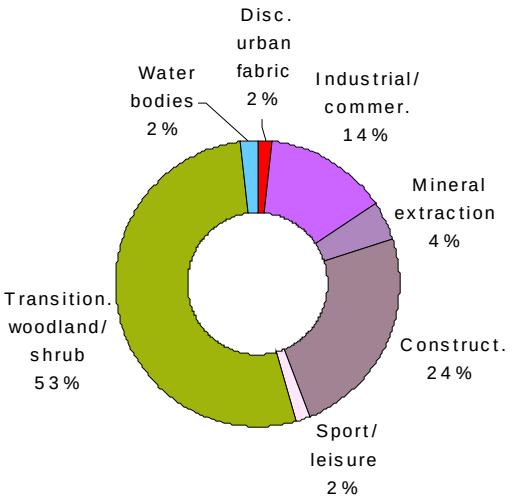
8.26. Formation of agricultural land from non-agriculture 2000-2006 [% of total]



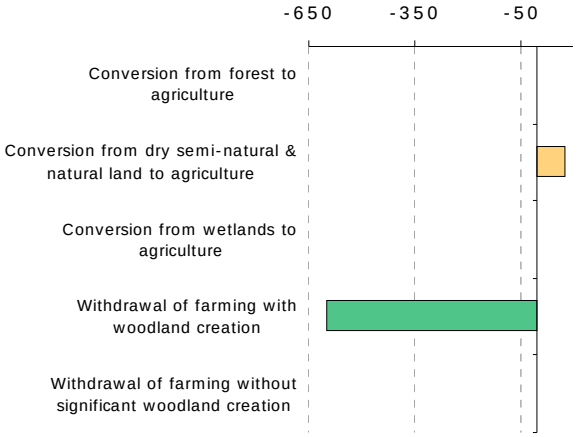
8.27. Consumption of agricultural land by non-agriculture 2000-2006 [% of total]



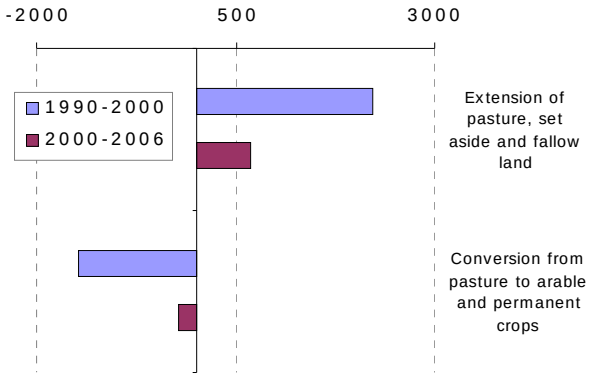
8.28. Formation of non-agricultural land from agriculture 2000-2006 [% of total]



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

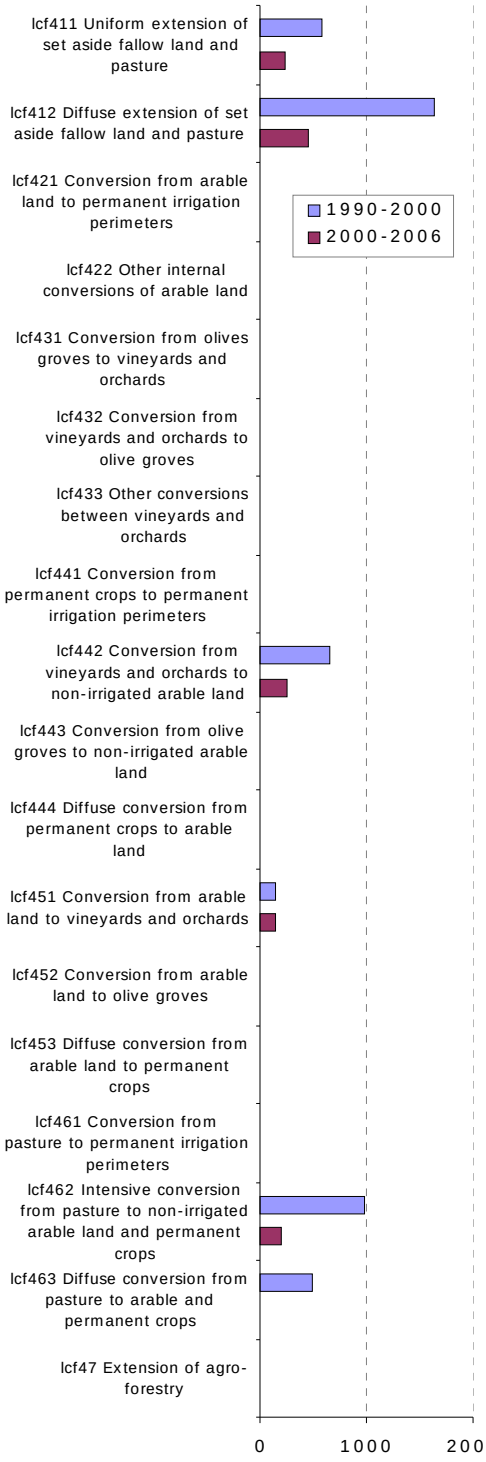


8.30. Mean annual conversion between arable land and pasture [ha/year]

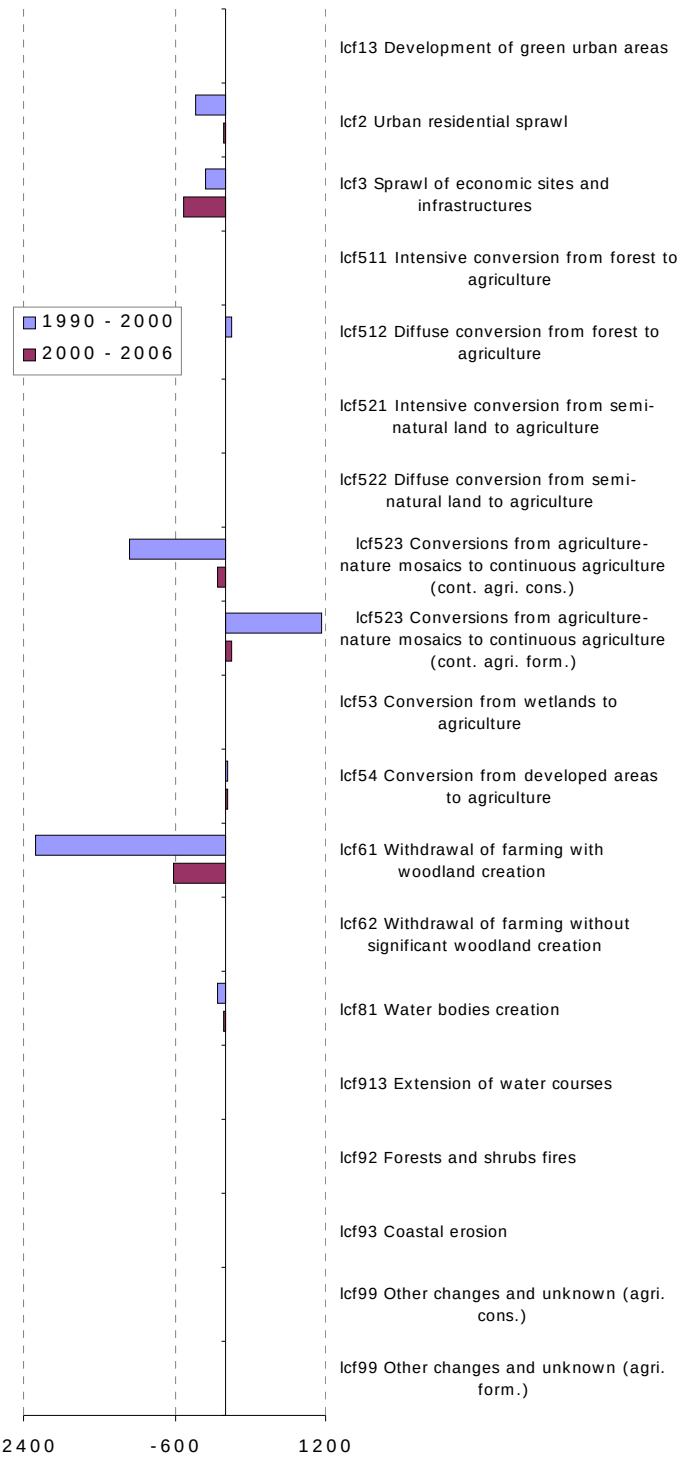


Slovakia

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



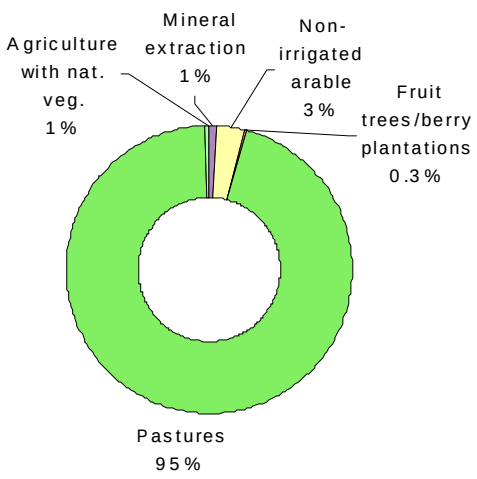
9.32. Mean annual conversions between agriculture and other LC types [ha/year]



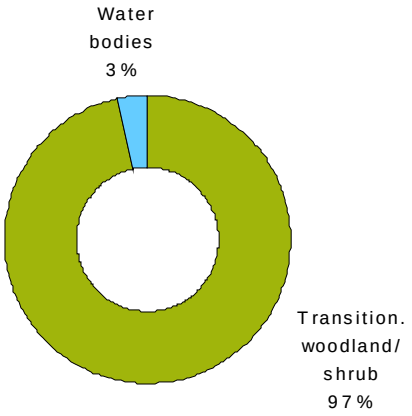
Slovakia

Forest & nature

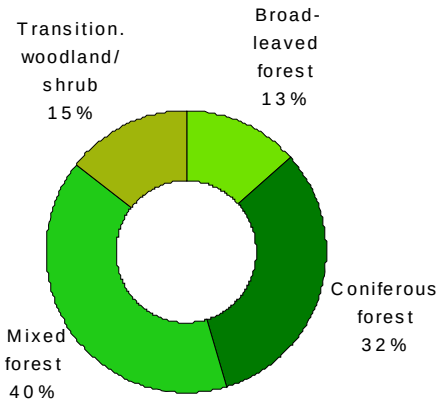
10.33. LC consumed by forest & nature 2000-2006 [% of total]



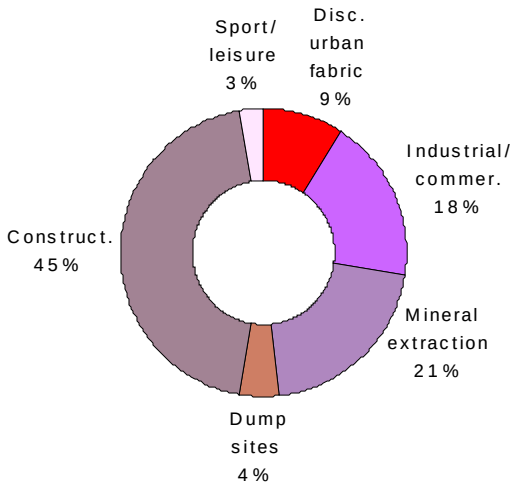
10.34. Formation of forest & nature land from non-forest /nature 2000-2006 [% of total]



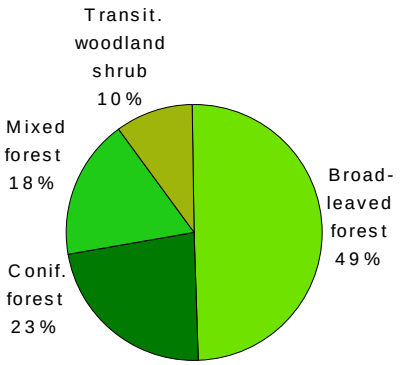
10.35. Consumption of forest & nature land by non-forest/nature 2000-2006 [% of total]



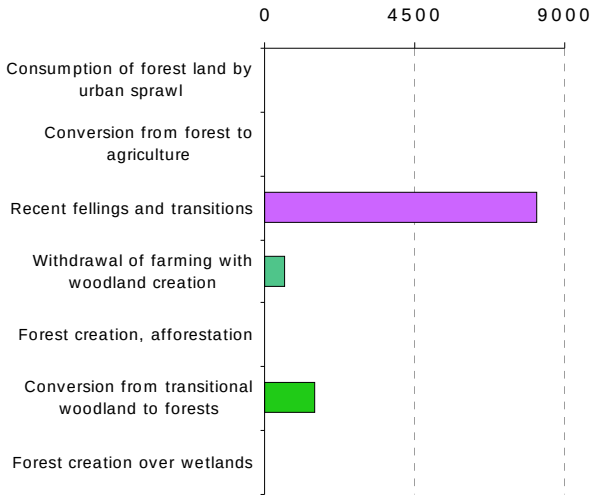
10.36. Formation of non-forest/nature land from forest & nature 2000-2006 [% of total]



10.37. Forested land 2006 [% of total area]

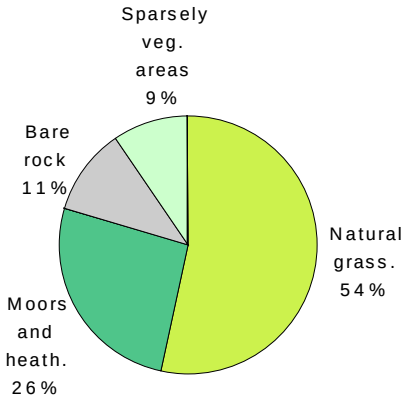


10.38. Main trends in woodland & forests consumption/formation 2000-2006 [ha/year]

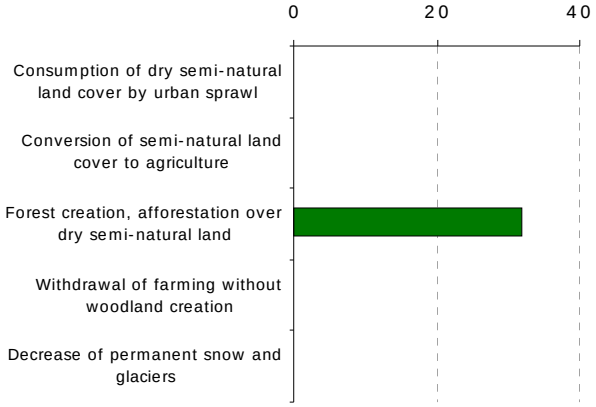


Slovakia

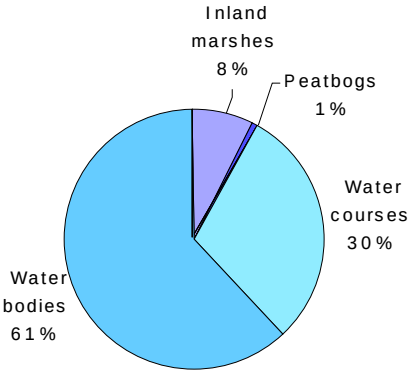
11.39. Dry semi-natural areas 2006 [% of total area]



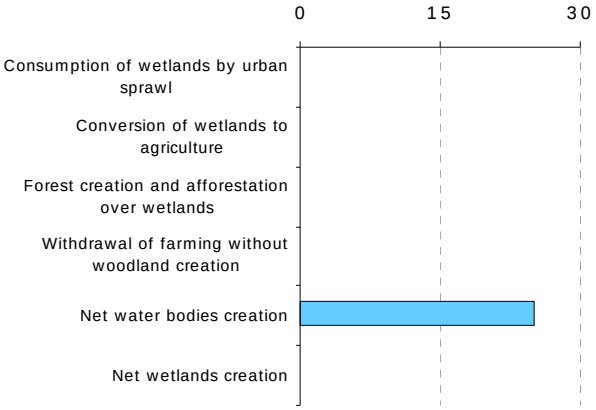
11.40. Main trends in dry semi-natural land consumption/formation 2000-2006 [ha/year]



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



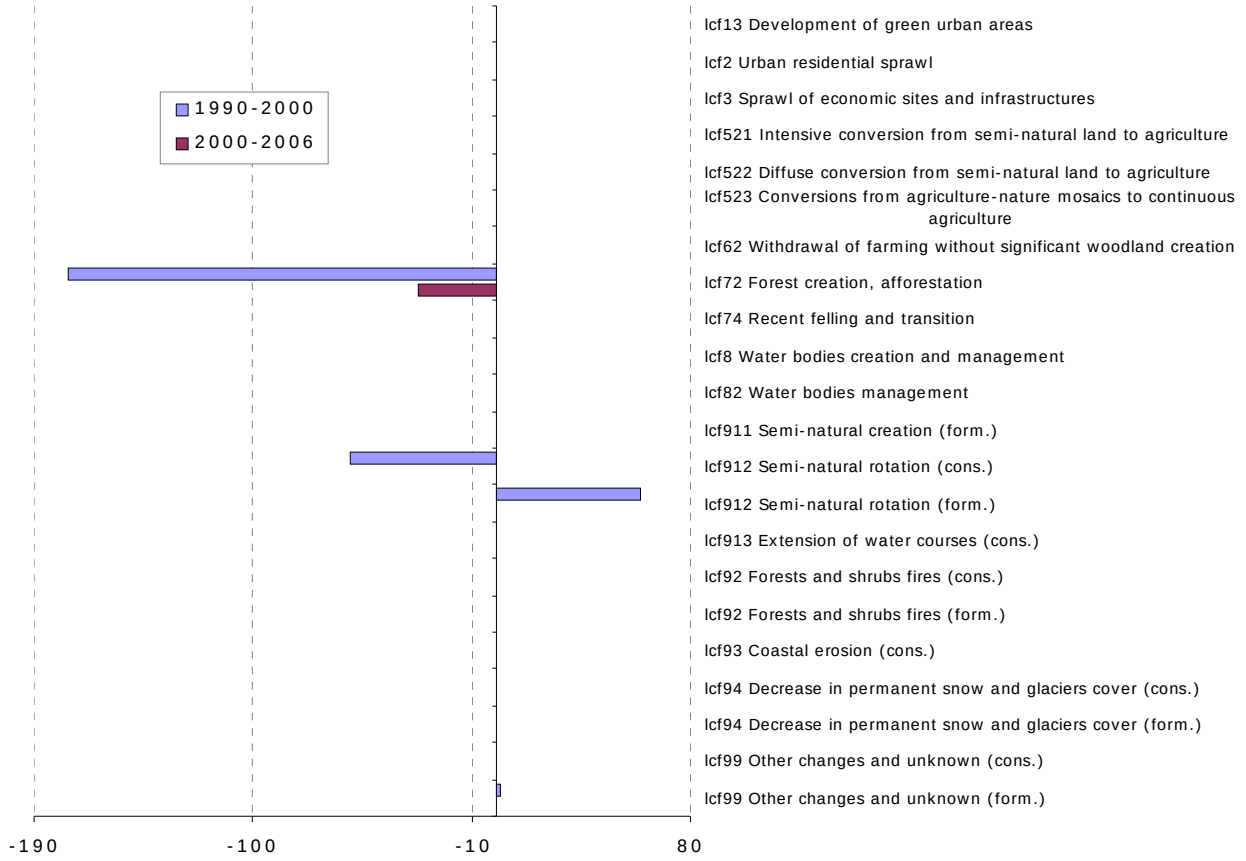
11.42. Main trends in wetlands & water consumption/formation 2000-2006 [ha/year]



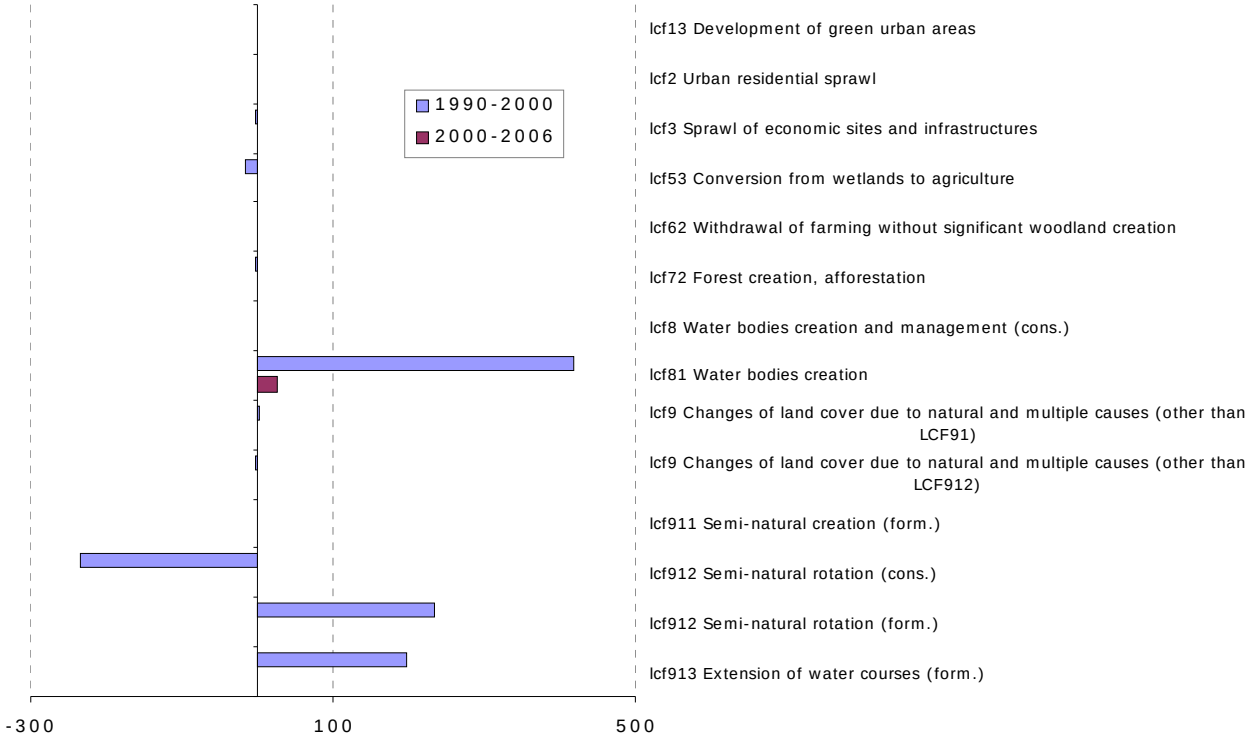
11.43. Mean annual conversions of forest & other woodland [ha/year]

Slovakia

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

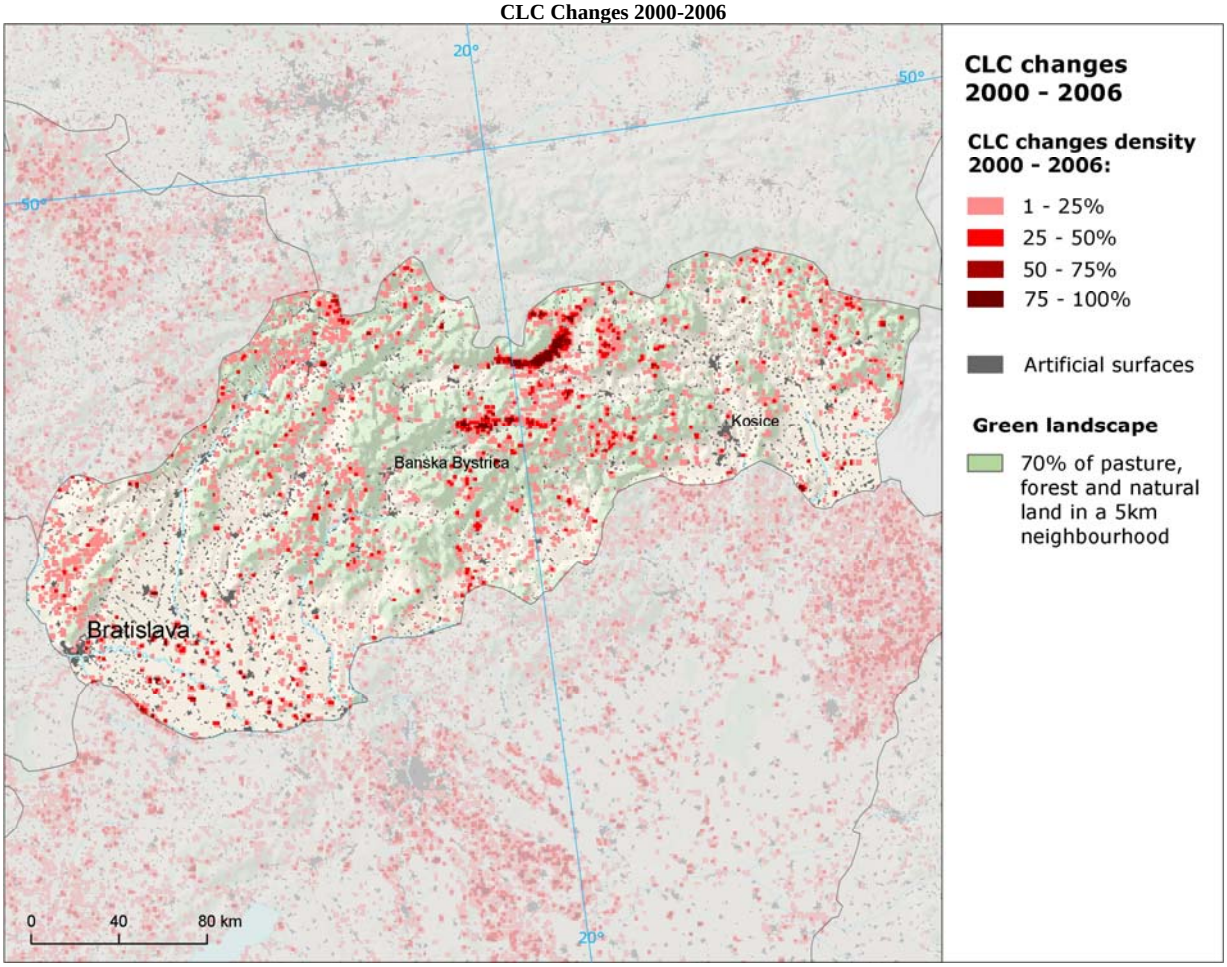


12.45. Mean annual conversions of wetlands and water LC [ha/year]

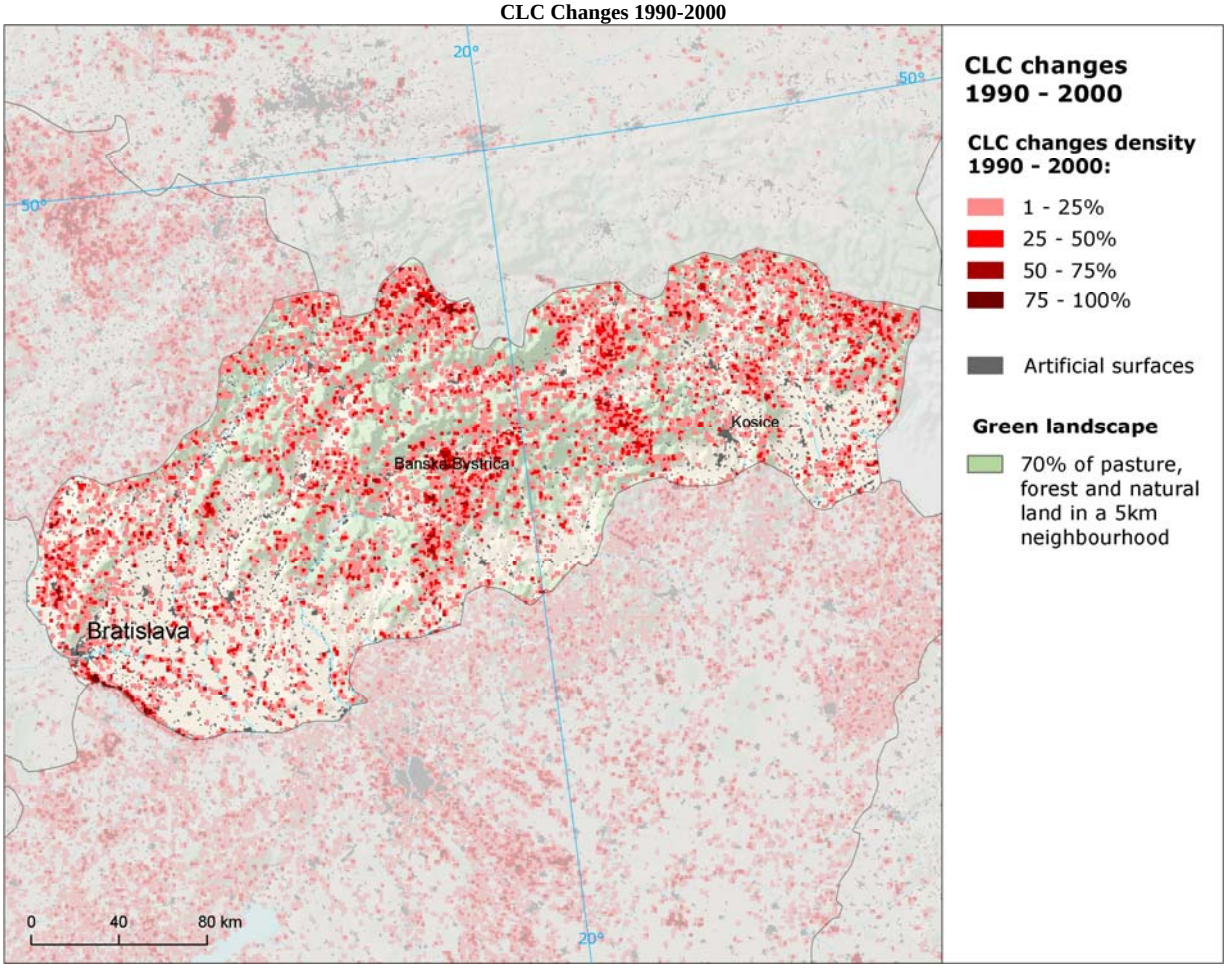


Slovakia

CLC Changes 2000-2006

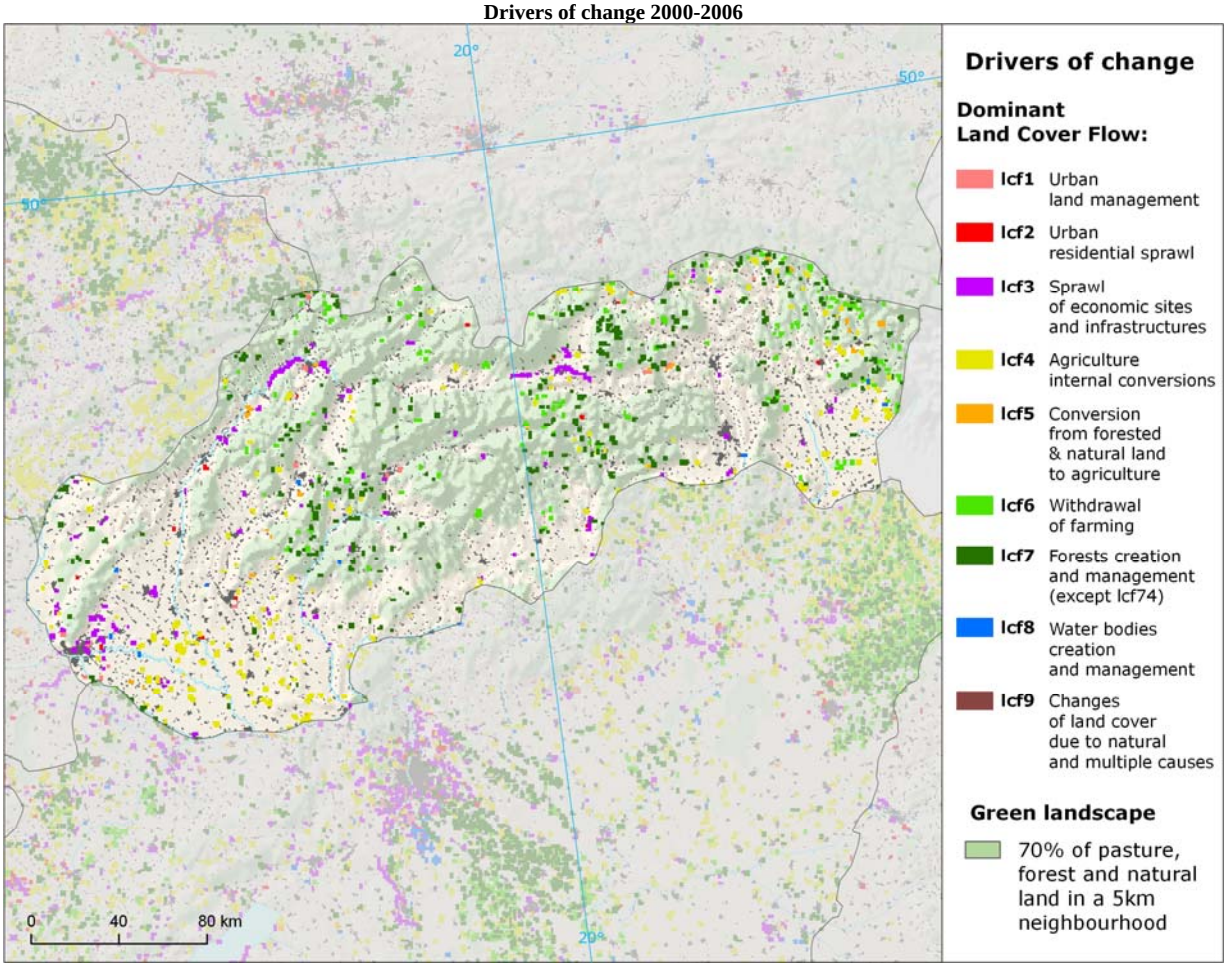


CLC Changes 1990-2000

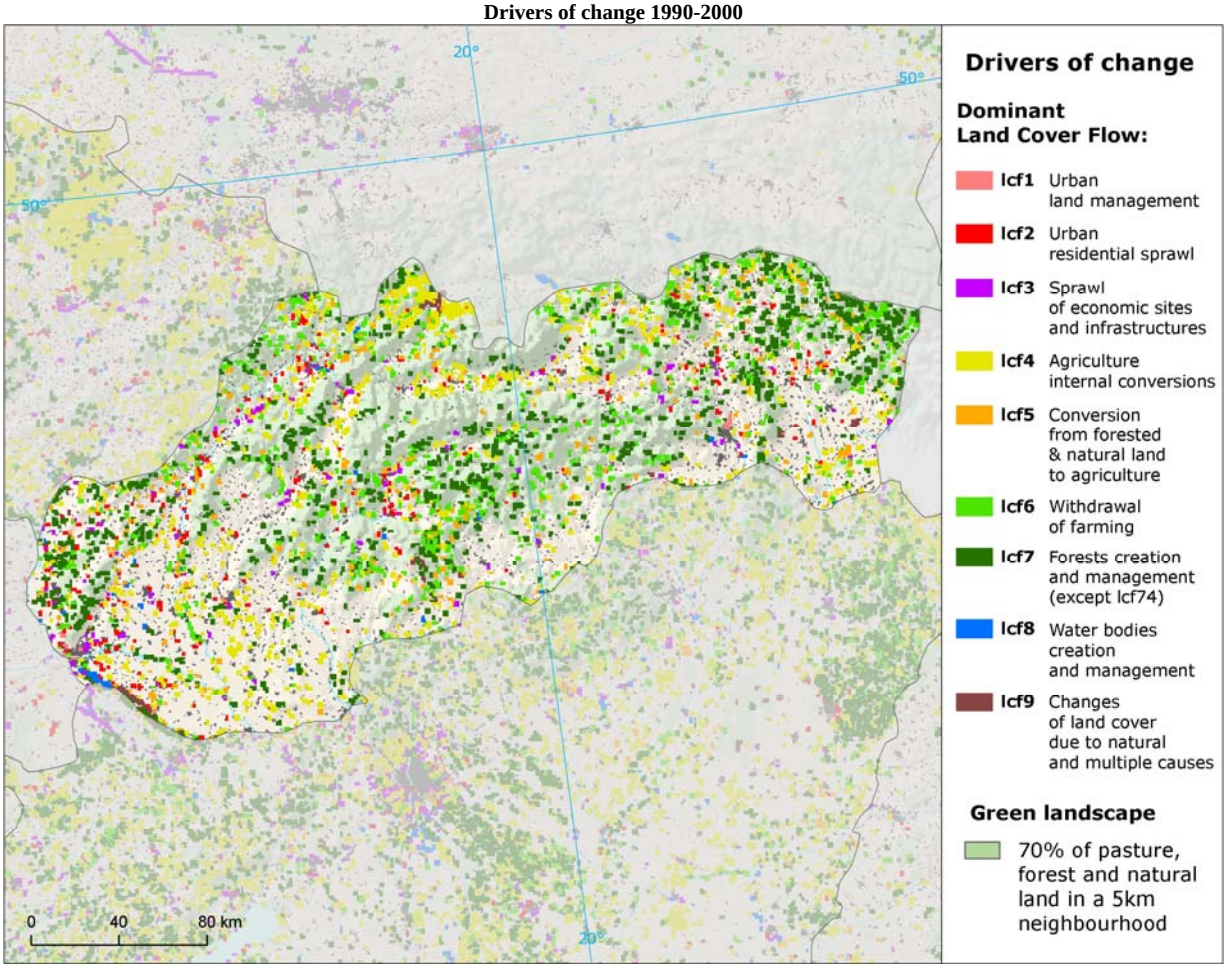


Slovakia

Drivers of change 2000-2006

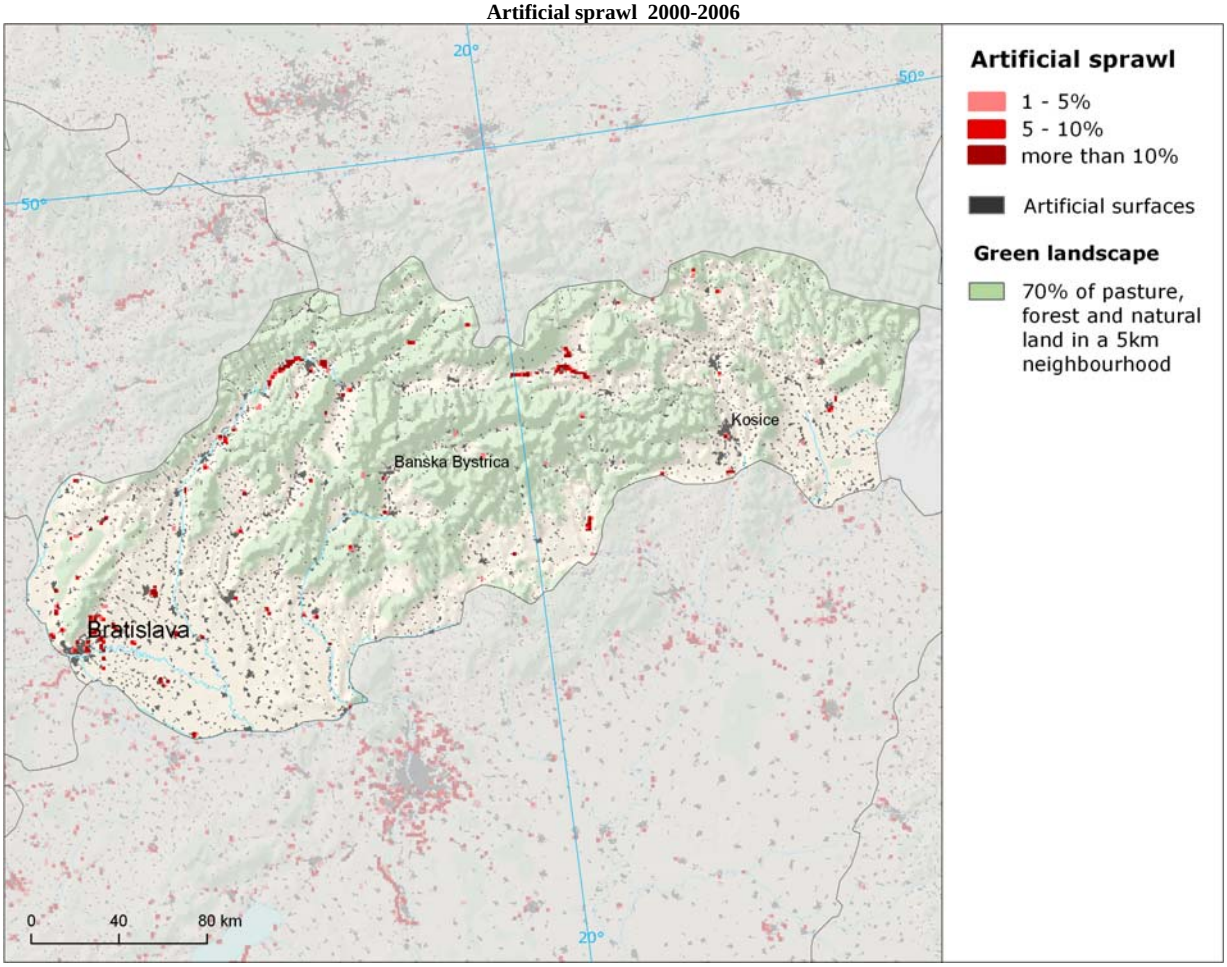


Drivers of change 1990-2000

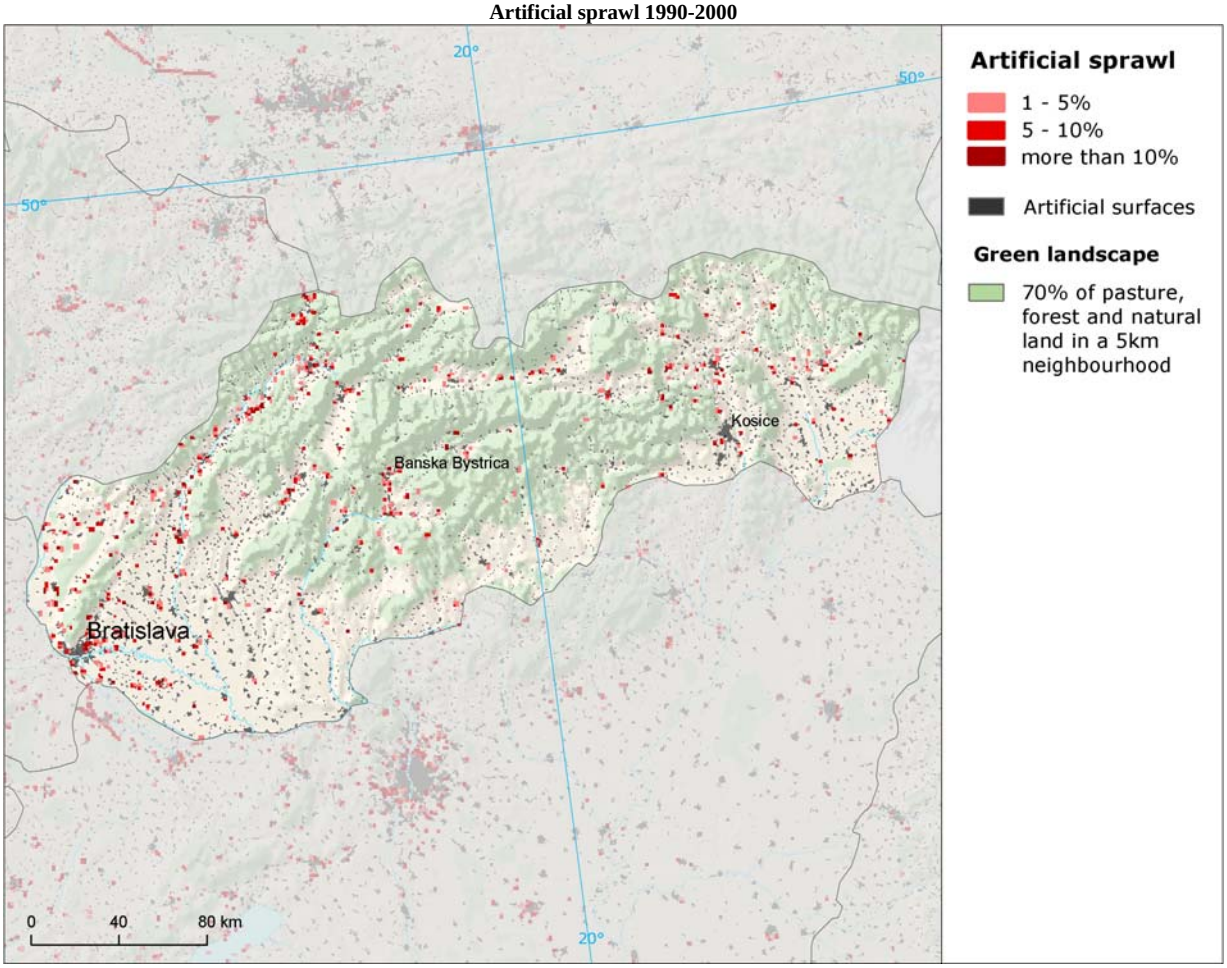


Slovakia

Artificial sprawl 2000-2006



Artificial sprawl 1990-2000



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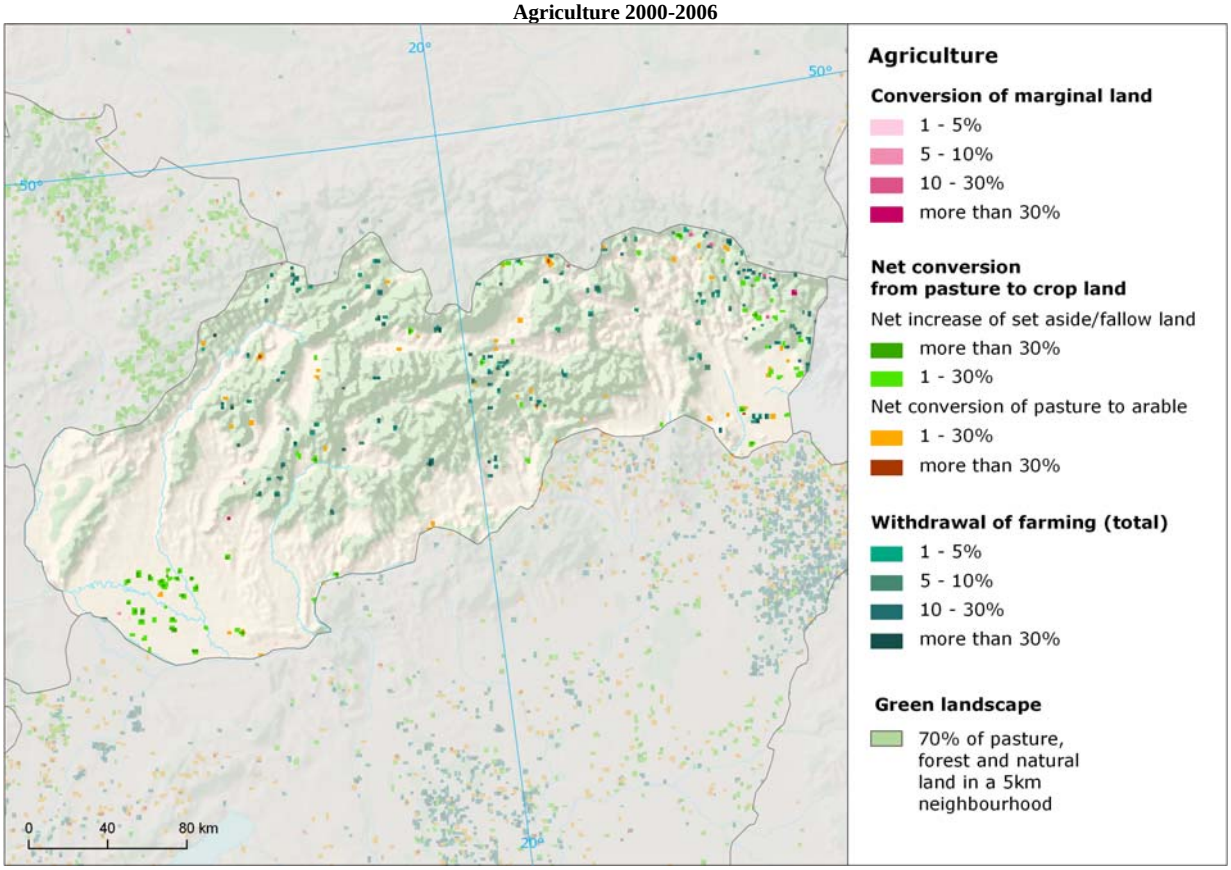
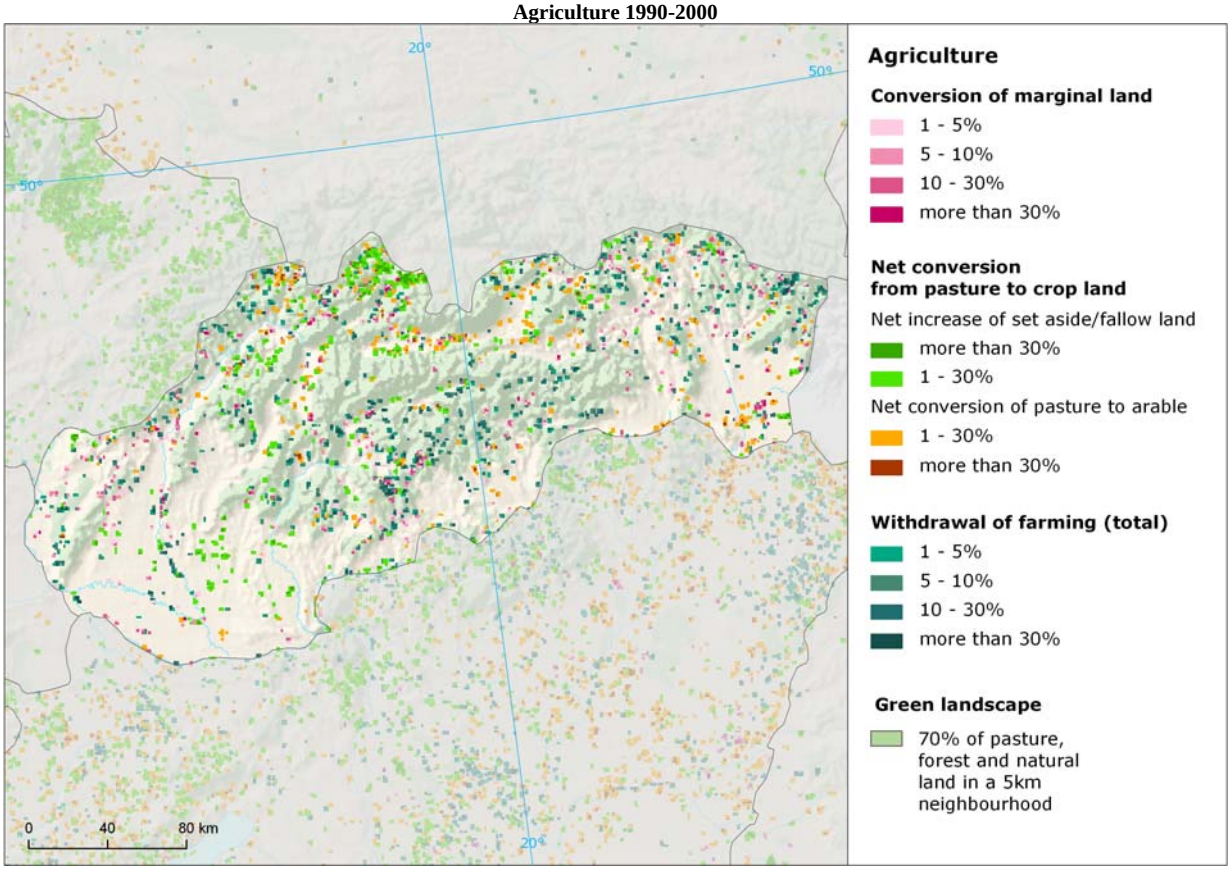
Agriculture 2000-2006

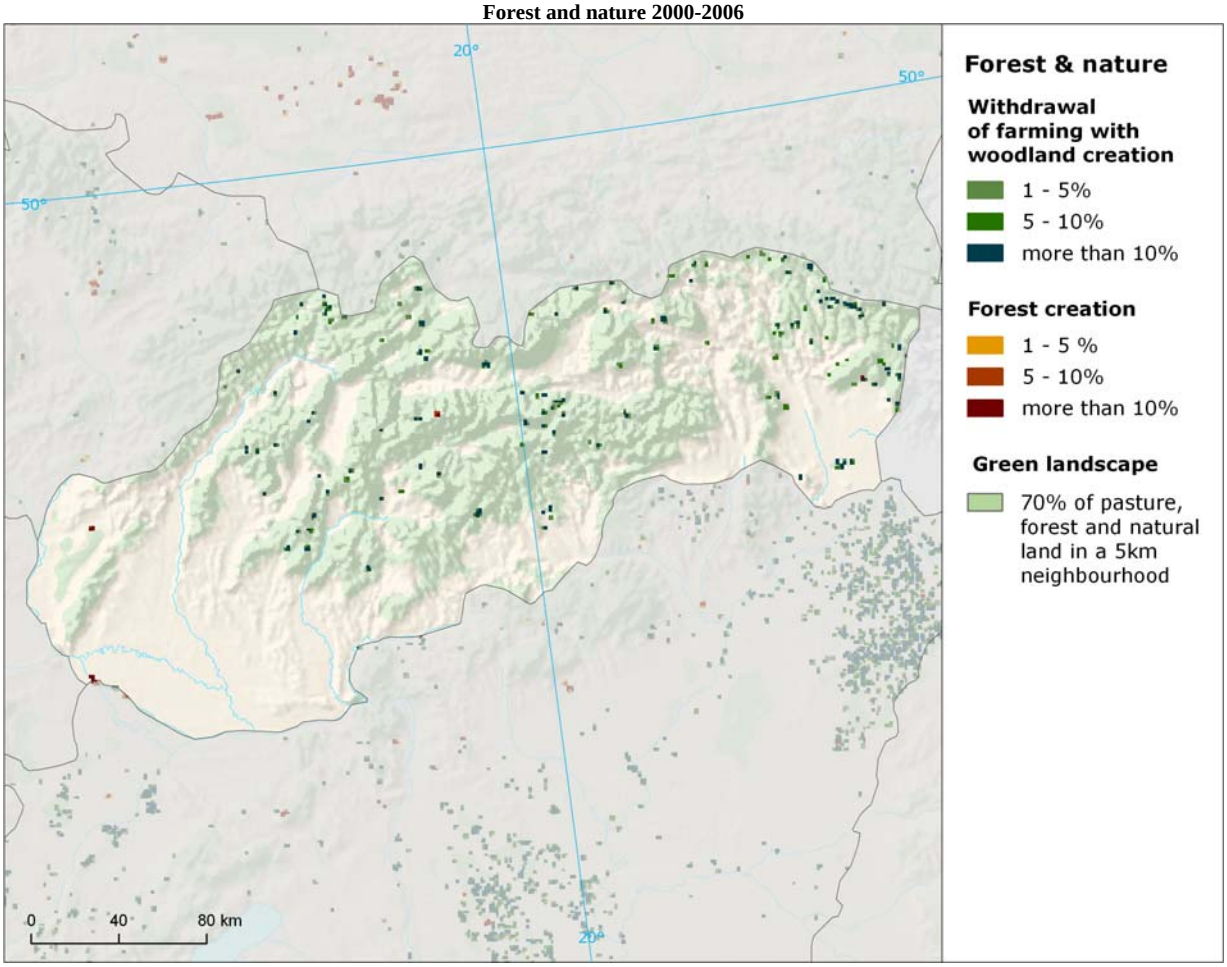


Agriculture 1990-2000



Slovakia

Forest and nature 2000-2006



Forest and nature 1990-2000