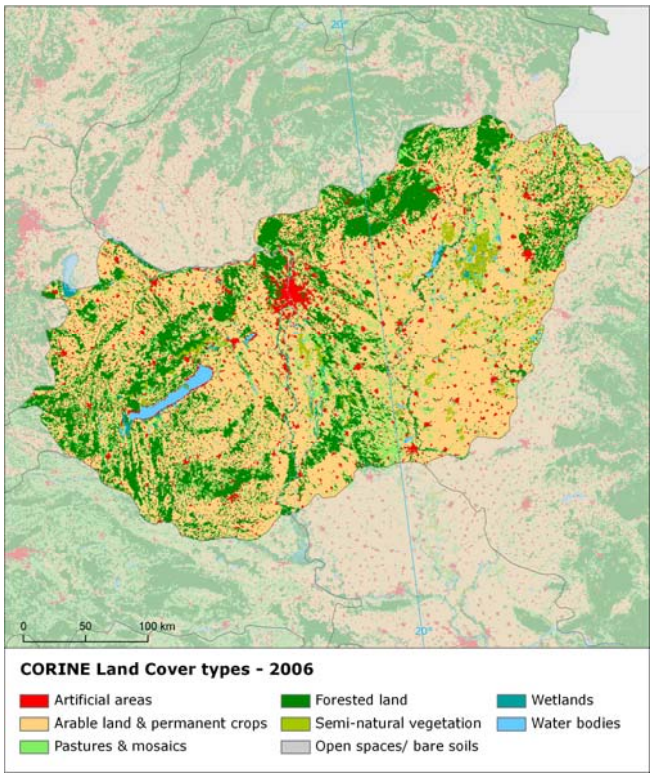
Hungary

Land cover 2006

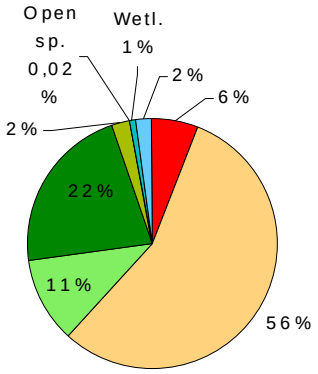
Overview of land cover & change 2000-2006

Hungarian landscape has agricultural character with prevailing arable land areas (56% of total land cover). Natural surfaces are represented mostly by forested areas, with highest share of broad-leaved forest. During 2000-2006, the overall change dynamic of land cover in Hungary has been slightly slowed down, compared to the previous period. However, structure did not change, showing positive balance of artificial and forested areas and water bodies and negative balance of both arable land and pastures.
Internal change dynamic of all land cover types characterized by total turnover decreased (with the exception of artificial surfaces). However, annual rates of net change of forested and agricultural areas are higher than in previous period. It indicates decrease of intensity of internal changes within forested and agricultural land and on the contrary increase of exchange between different land cover types.
Despite decrease of intensity, forest creation and management (driven by internal changes between forest and transitional woodland) together with internal agricultural conversions remain two main drivers of land cover change in Hungary. Third most significant driver of change are withdrawal of farming, which accelerated during this period.
Compared to intensive agricultural and forest conversions, artificial development has quite a low share on total land cover exchange in Hungary. However, artificial land take, driven mainly by extension of construction sites, has been more than doubled compared to the previous period.
Spatially, changes of forested and agricultural areas are scattered over almost the whole territory with highest density in central and north-western parts of the country. Artificial sprawl is concentrated in the surroundings of capital city Budapest and other major cities and also along southern coast of the Balaton lake.

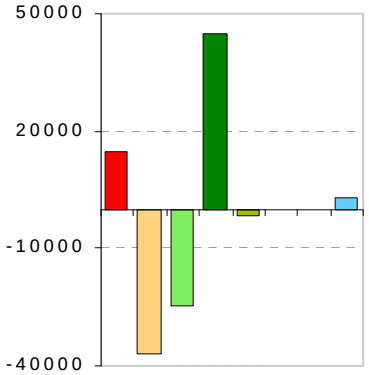
Note: The results presented here are based on a change analysis of 44 land cover types mapped consistently on a 1:100.000 scale across Europe over almost two decades 1990-2006 - see Corine land cover (CLC) programme for details.
Number of years between CLC2000-CLC2006 data for Hungary: 6



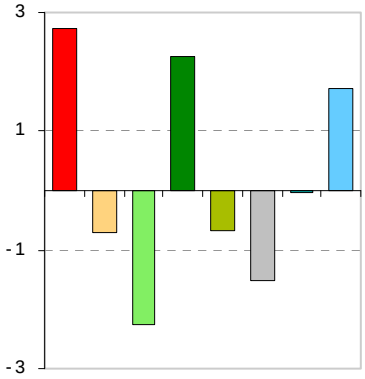
1.1. Land cover 2006 [% of total]



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

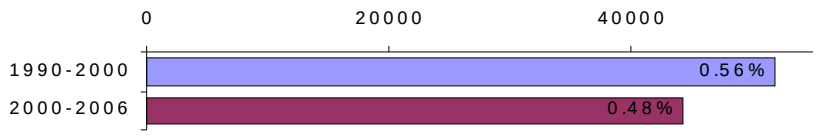
Summary balance table 2000-2006

	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	**5467**	**52064**	**10753**	**19912**	**2281**	**23**	**860**	**1745**	**93105**
Consumption of initial LC	42	820	368	1405	16	0	5	1	2657
Formation of new LC	191	451	124	1855	0	0	5	31	2657
Net Formation of LC	**149**	**-369**	**-244**	**450**	**-15**	**0**	**0**	**30**	**0**
Net formation as % of initial year	*2.7*	*-0.7*	*-2.3*	*2.3*	*-0.7*	*-1.5*	*0.0*	*1.7*	
Total turnover of LC	**233**	**1271**	**493**	**3260**	**16**	**0**	**10**	**31**	**5315**
Total turnover as % of initial year	*4.3*	*2.4*	*4.6*	*16.4*	*0.7*	*1.5*	*1.2*	*1.8*	*5.7*
Land cover 2006	**5616**	**51695**	**10509**	**20363**	**2266**	**23**	**859**	**1775**	**93105**

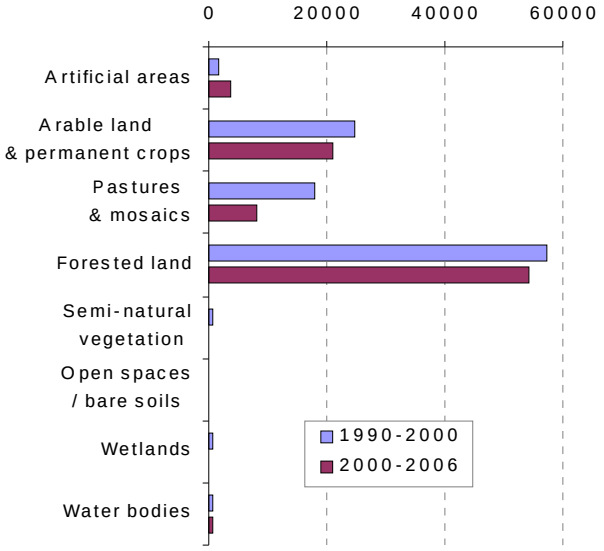
Hungary

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

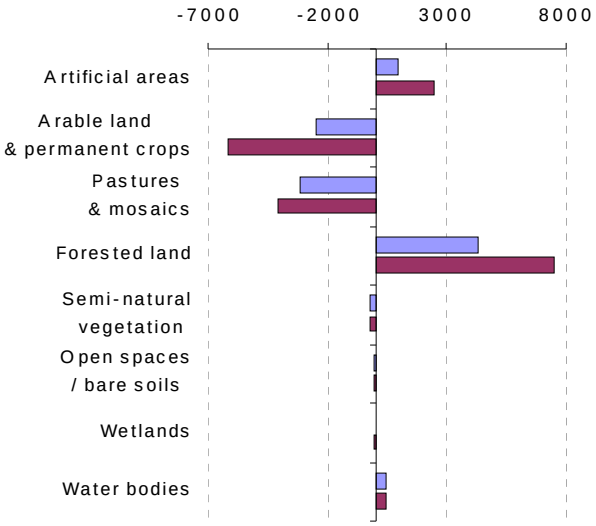
2.4. Annual land cover change [ha/year, % of total area]



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

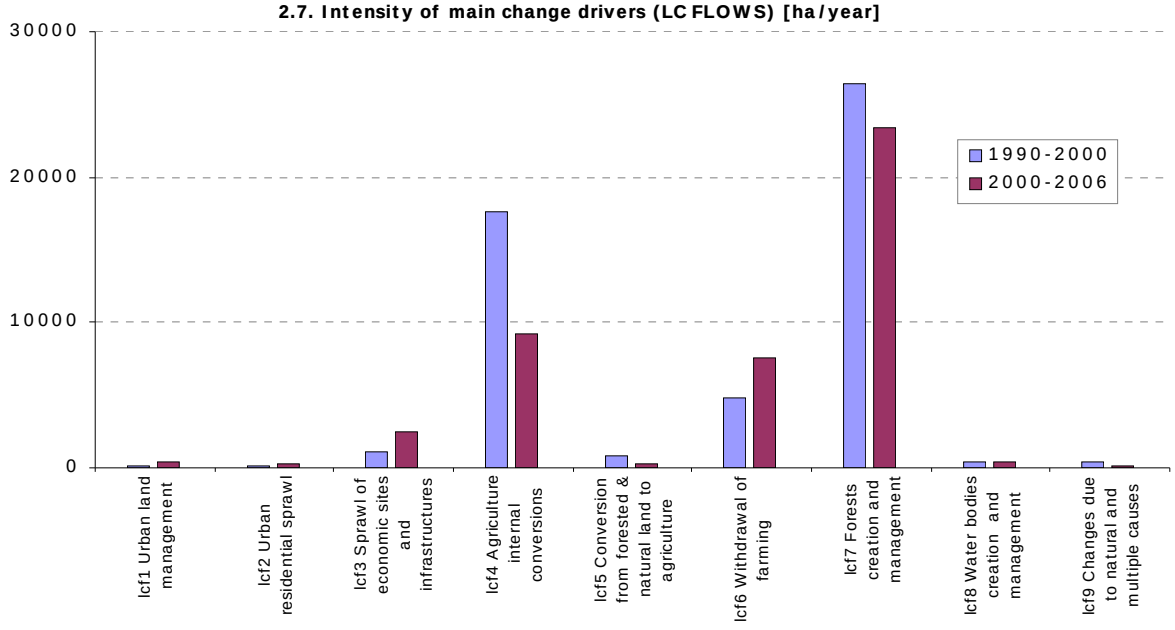


2.6. Net annual change of LC types [ha/year]



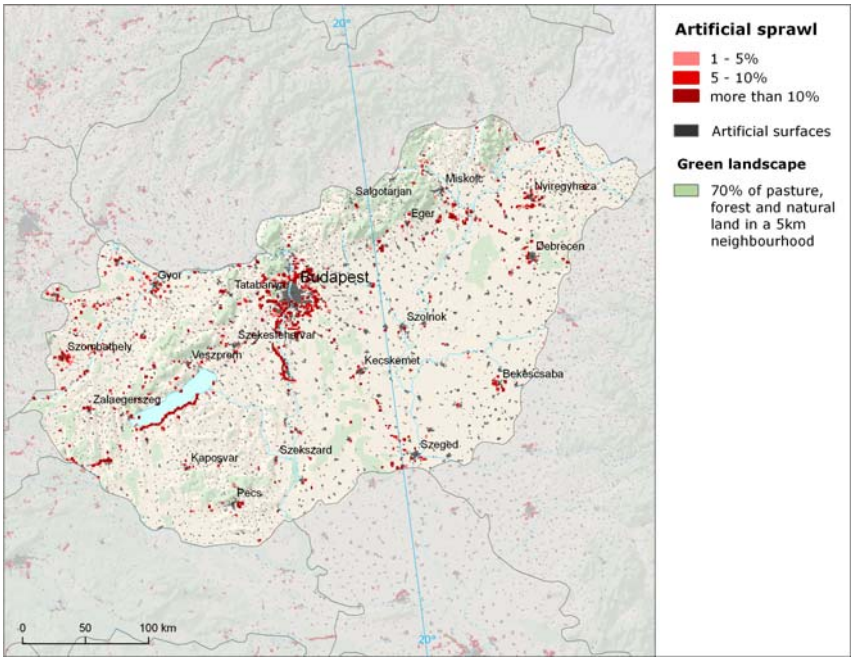
Summary trend figures	1990-2000	2000-2006
Annual land cover change [ha/year]	**51939**	**44289**
Annual land cover change as % of initial year	**0.56%**	**0.48%**
Land uptake by artificial development as mean annual change [ha/year]	1292	2709
Agricultural land uptake by urban and infrastructures development as mean annual change [ha/year]	1512	2890
Net uptake of forests and semi-natural land by agriculture as mean annual change [ha/year]	-4297	-7458
Net conversion from pasture to arable land and permanent crops as mean annual change [ha/year]	1460	1160
Forest & other woodland net formation as mean annual change [ha/year]	4290	7503
Dry semi-natural land cover net formation as mean annual change [ha/year]	-237	-258
Wetlands & water bodies net formation as mean annual change [ha/year]	570	489

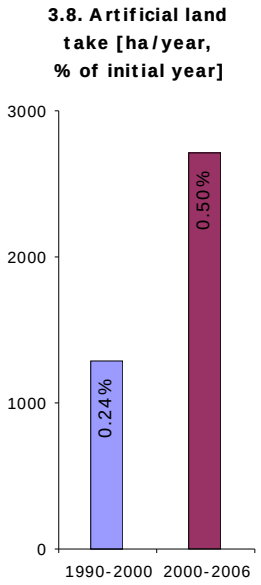
2.7. Intensity of main change drivers (LC FLOWS) [ha/year]



Hungary

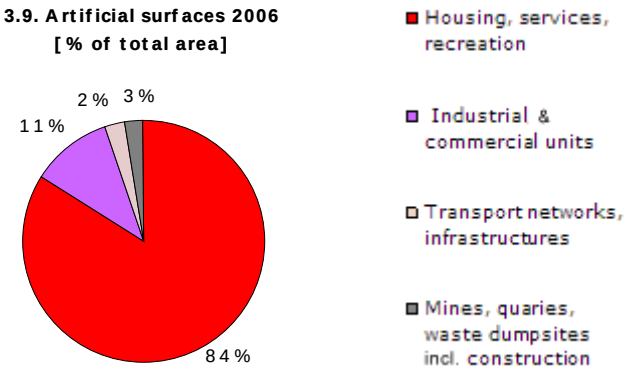
Artificial areas

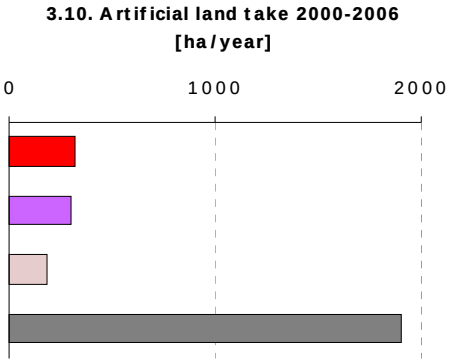


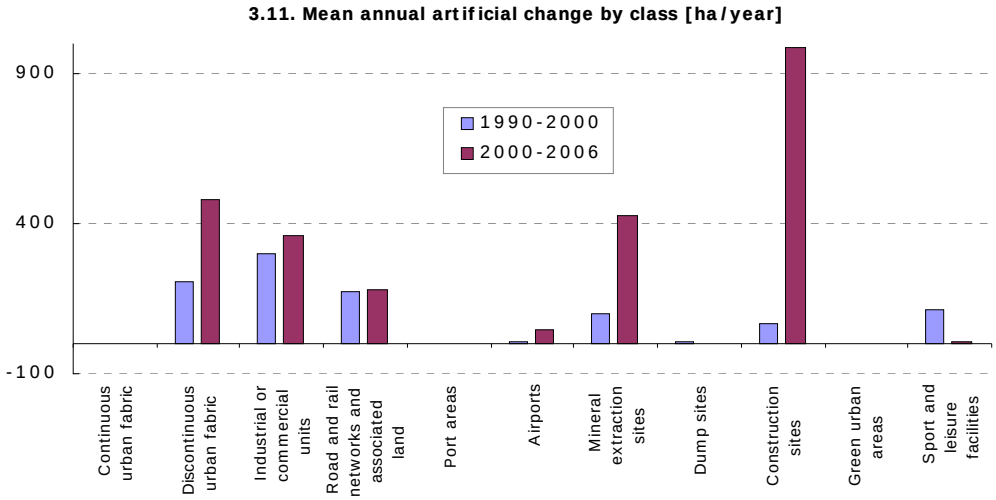


Artificial land take accelerate due to expansion of construction and mineral extraction

Artificial land take in Hungary accelerated more than twice compared to the previous period. Land uptake has been driven mainly by increased construction (49%), which indicated potential of further artificial development and extension of mineral extraction sites (20%). Besides, sprawls of commercial/industrial units (11%), discontinuous urban fabric (9%) and transport networks (6%) are the other important contributors to increased land uptake in the country. On consumption side, mostly agricultural areas (92%) with predominant share of arable land (64%) have been taken by urban sprawl. Beside the extension of artificial surfaces at the expanse of agricultural areas, recycling of developed urban land (represented mainly by conversion of construction sites into discontinuous urban fabric) also became the significant contributor of artificial land cover changes after year 2000. Artificial sprawl is concentrated in the surroundings of capital city Budapest and other major cities and also along southern coast of the Balaton lake.

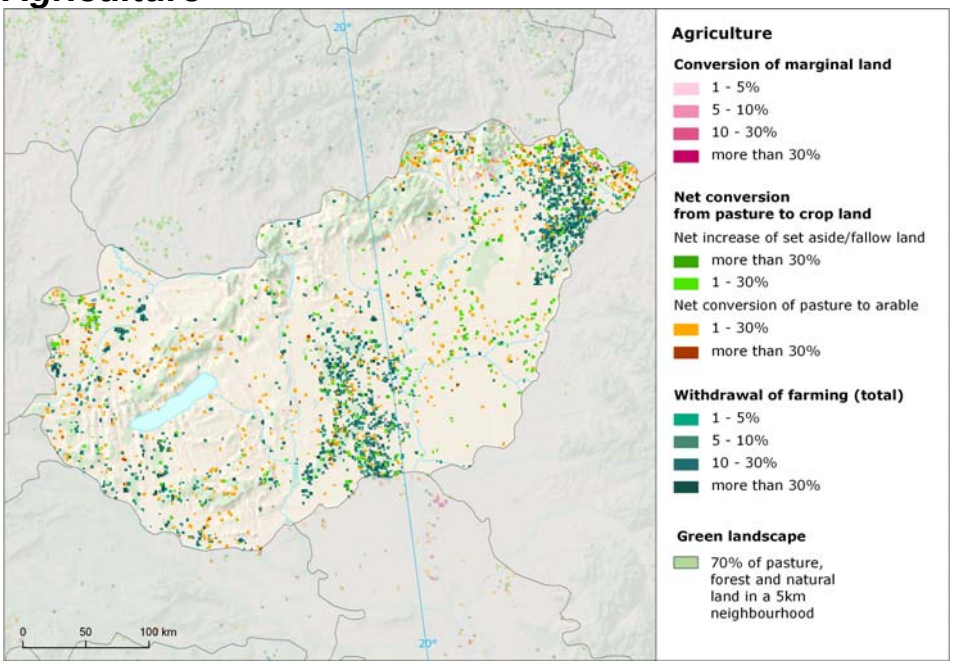






Hungary

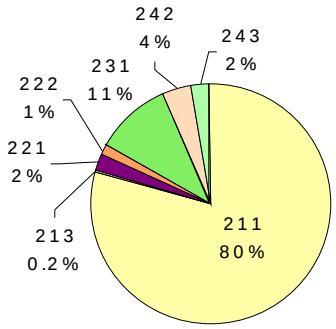
Agriculture



Accelerated withdrawal of farming with woodland creation

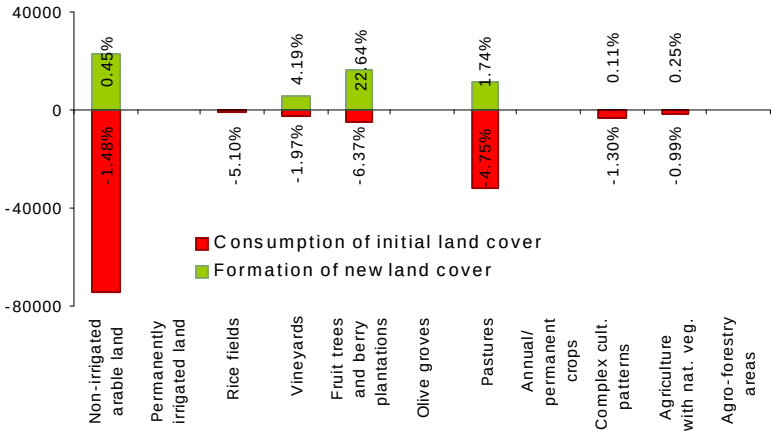
Consumption of agricultural areas, which has been significant already in the previous period, accelerated even more after in the period 2000-2006, especially in case of arable land. This consumption of agricultural areas has been caused mainly by withdrawal of farming with transitional woodland creation (which occurs mostly in central and north-eastern part of Hungary) and, to a lesser extent, by artificial land take (which is driven by sprawl of economic sites and infrastructures with prevailing share of construction). In contrast to the previous period, there has been significant formation of fruit trees and berry plantations and vineyards, mostly through internal conversion from arable land. Concerning the conversions between arable land and pastures, the intensity of this flow decreased significantly compared to previous period; however, the trend did not changed, with prevailing conversion from pasture to arable land. Areas with internal agriculture conversions are scattered uniformly over whole Hungary, however, this type of change occurred especially in north-eastern part of the country, along the boundaries with Slovakia and Ukraine.

4.12. Agricultural areas 2006 [% of total area]

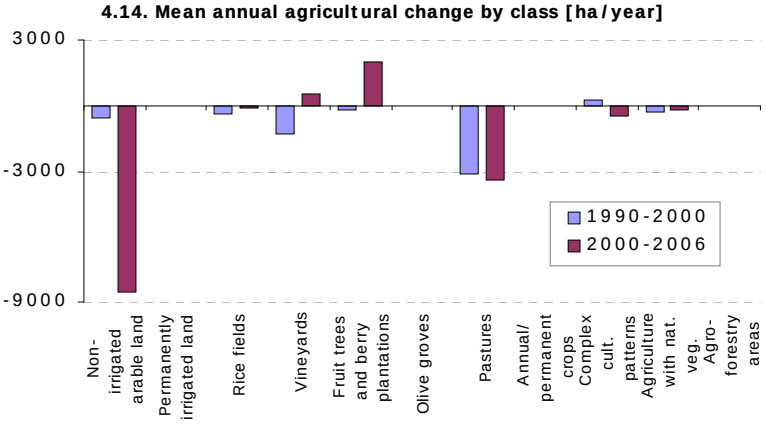


211 Non-irrigated arable land
212 Permanently irrigated land
213 Rice fields
221 Vineyards
222 Fruit trees and berry plantations
223 Olive groves
231 Pastures
241 Annual crops associated with permanent crops
242 Complex cultivation patterns
243 Agriculture land with significant areas of natural vegetation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

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

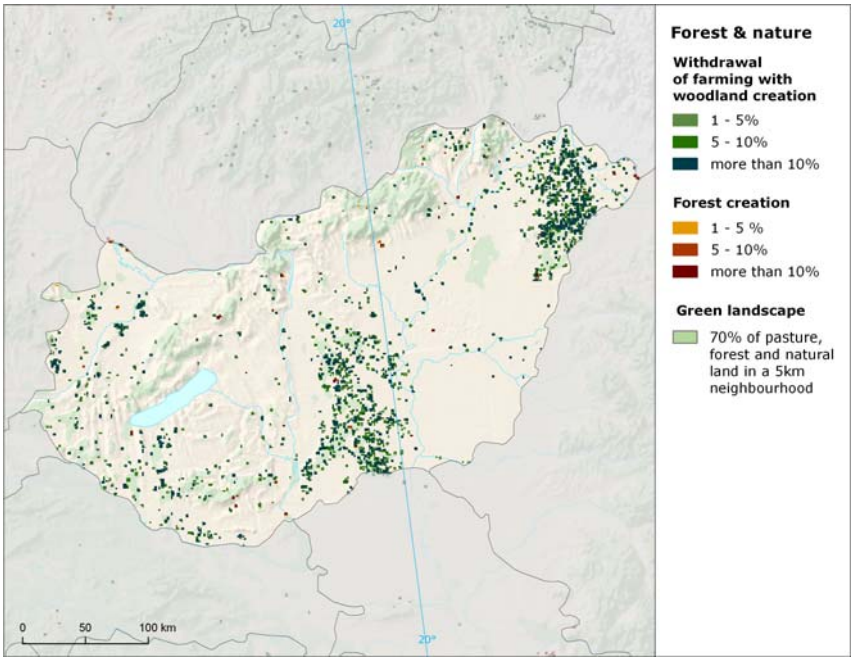


4.14. Mean annual agricultural change by class [ha/year]

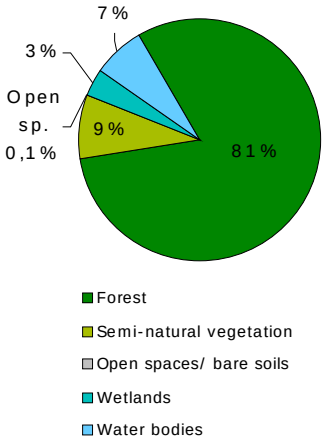


Hungary

Forest & nature



5.15. Forest & nature areas 2006 [% of total area]

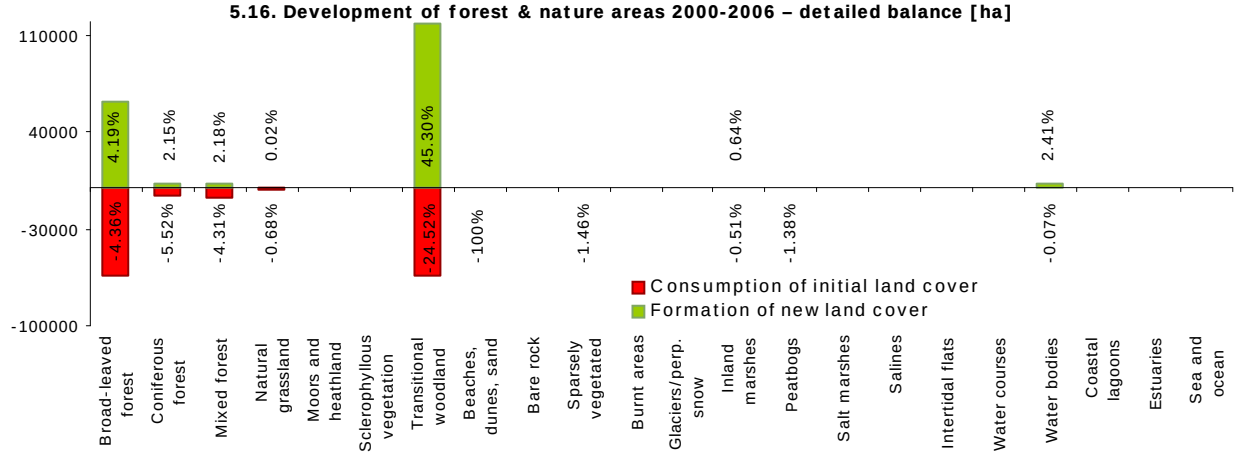


Transitional woodland creation over former farmland

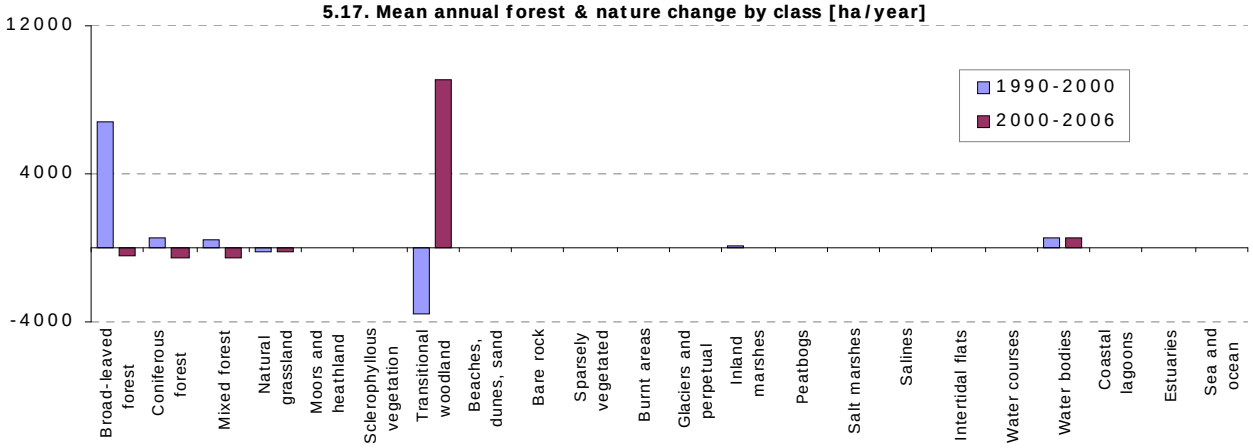
Beside recent internal conversions between standing forests and transitional woodland due to regular forestry activities, withdrawal of farming with woodland creation is the main driver of change of natural areas in Hungary (represented predominantly by transitional woodland creation over former arable land). The other significant change of natural surfaces is the creation of water bodies mainly from former agricultural areas. On the contrary, there also occurs certain amount of natural land consumption by construction or mineral extraction sites extension. However, extent of this land take over natural areas is significantly lower compared to formation of forest areas through withdrawal of farming.

Internal changes of natural land in Hungary are represented mainly by transitional woodland creation over natural grasslands or inland marshes and semi-natural rotation (conversion of natural grassland to inland marshes and creation of water bodies in wetlands).

5.16. Development of forest & nature areas 2000-2006 – detailed balance [ha]



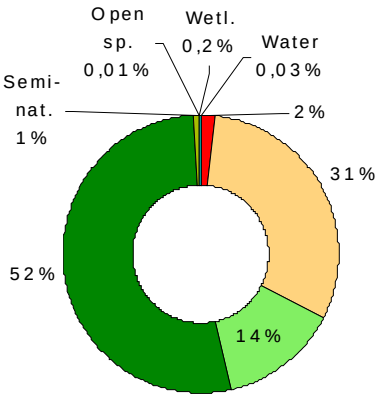
5.17. Mean annual forest & nature change by class [ha/year]



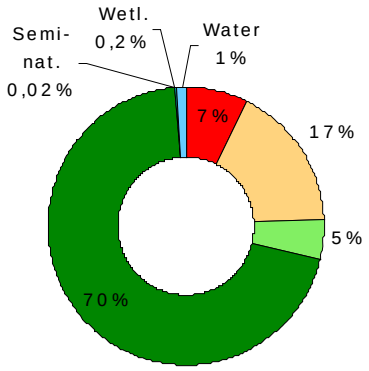
Annex: Land cover flows and trends

Land cover flows 2000-2006

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

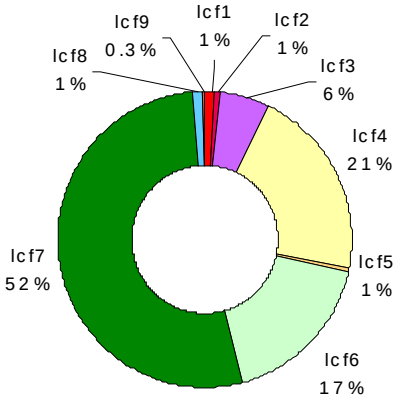


6.19. Formation of land cover 2000-2006 [% of total change area]



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]

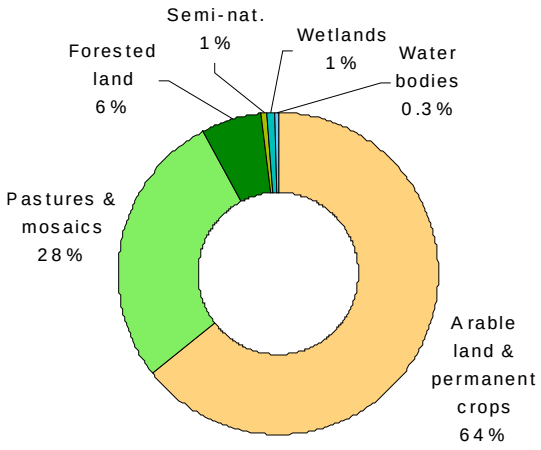


- lcf1 Urban land management
- lcf2 Urban residential sprawl
- lcf3 Sprawl of economic sites and infrastructures
- lcf4 Agriculture internal conversions
- lcf5 Conversion from forested & natural land to agriculture
- lcf6 Withdrawal of farming
- lcf7 Forests creation and management
- lcf8 Water bodies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

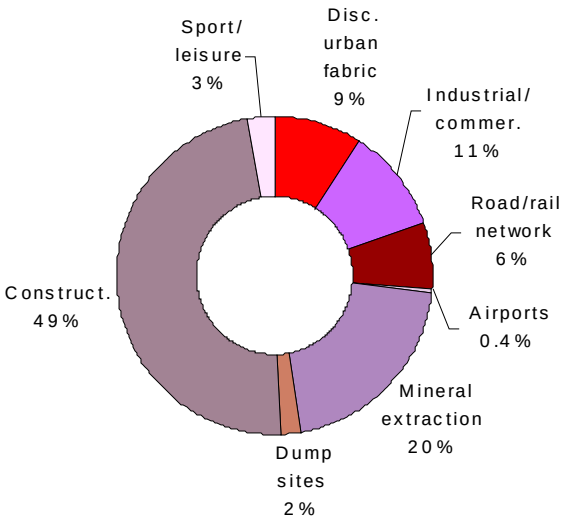
Hungary

Artificial areas

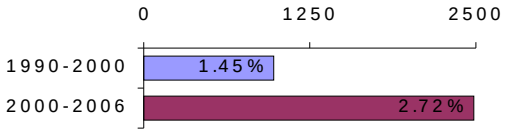
7.21. Consumption by artificial land take 2000-2006 [% of total]



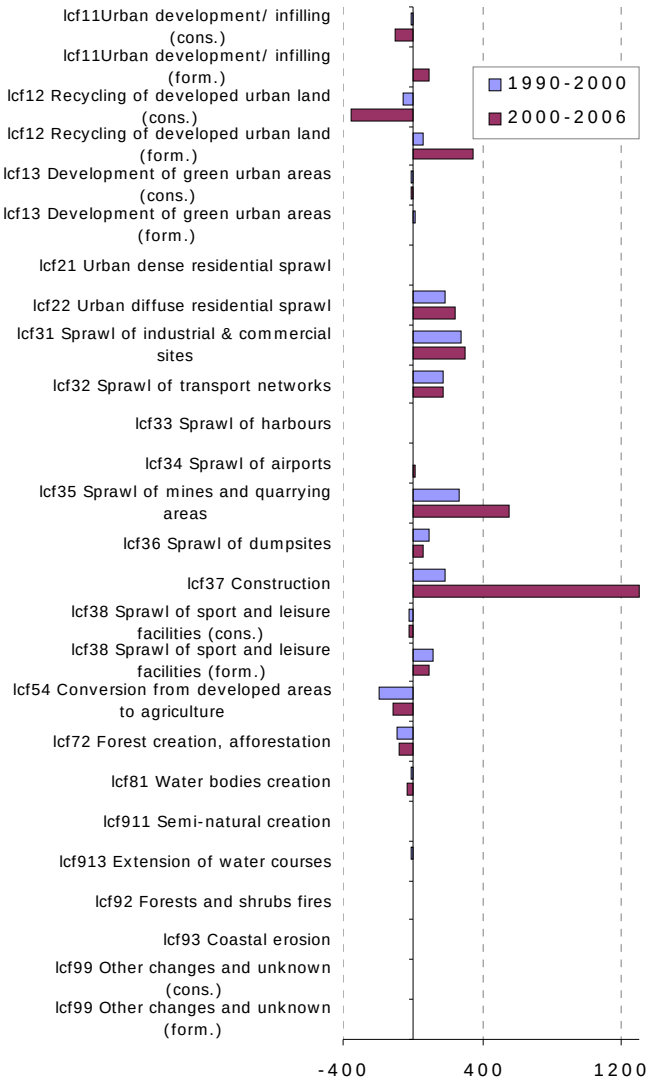
7.22. Formation by artificial land take 2000-2006 [% of total]



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



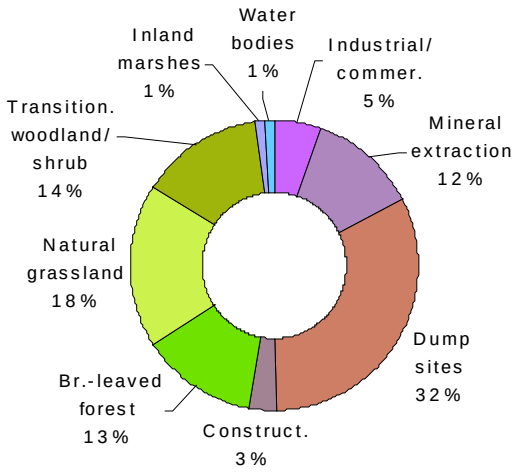
7.24. Artificial development by change drivers (LC FLOWS) [ha/year]



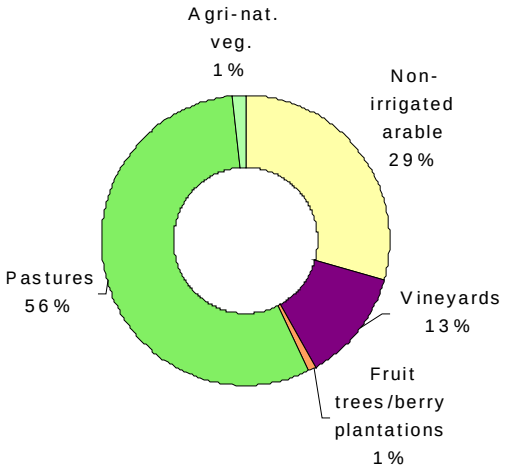
Hungary

Agriculture

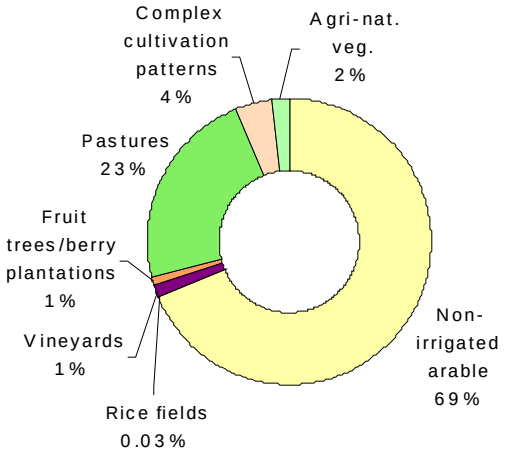
8.25. LC consumed by agriculture 2000-2006 [% of total]



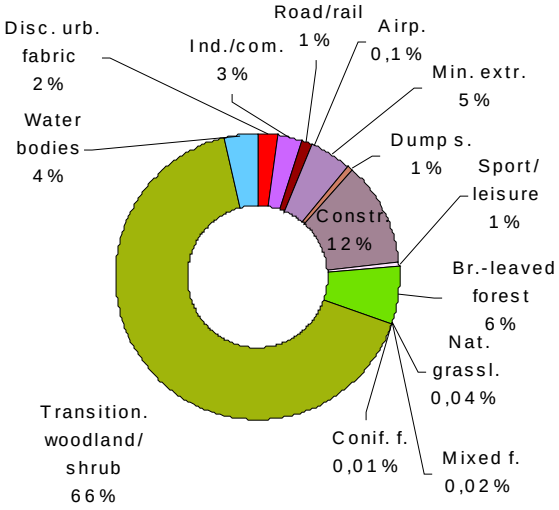
8.26. Formation of agricultural land from non-agriculture 2000-2006 [% of total]



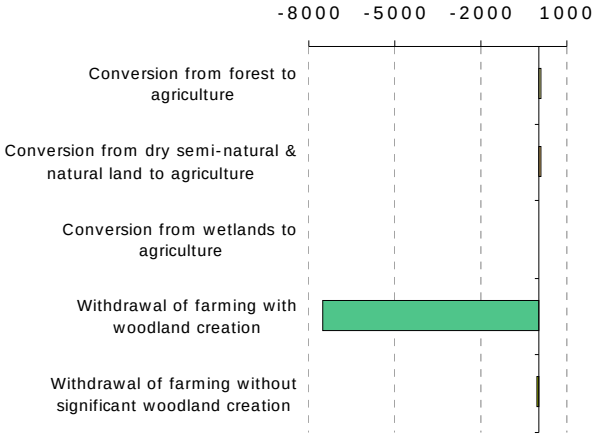
8.27. Consumption of agricultural land by non-agriculture 2000-2006 [% of total]



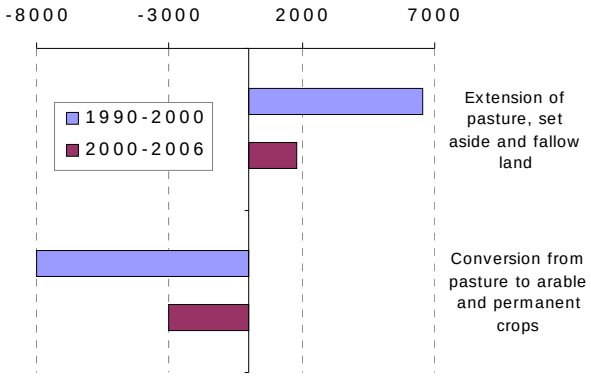
8.28. Formation of non-agricultural land from agriculture 2000-2006 [% of total]



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

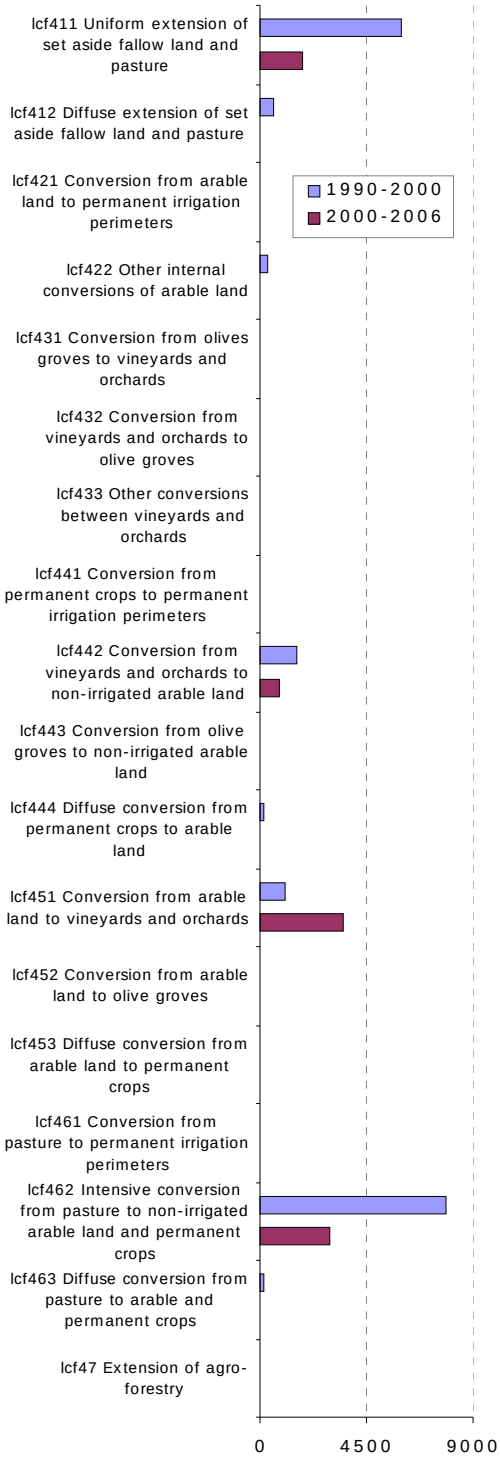


8.30. Mean annual conversion between arable land and pasture [ha/year]

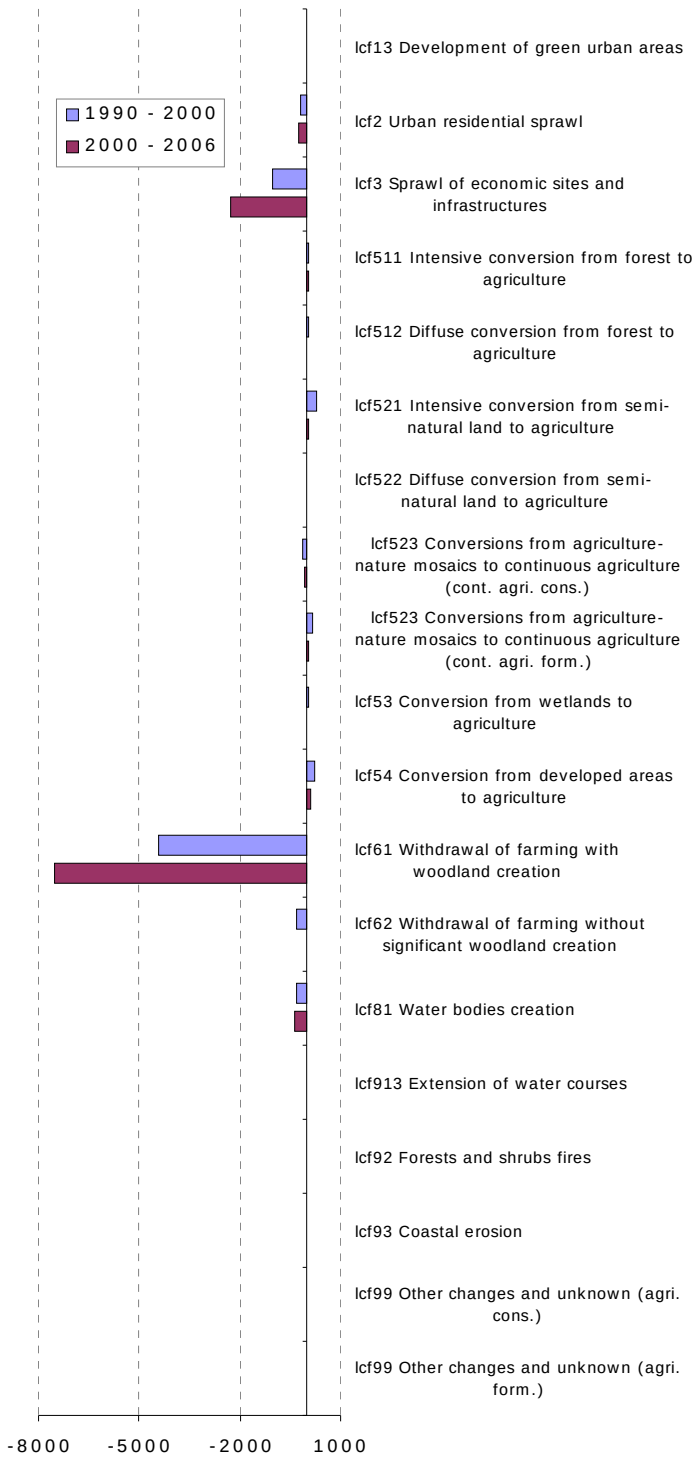


Hungary

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



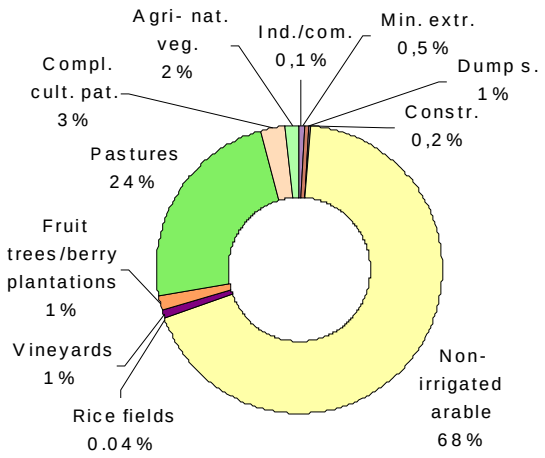
9.32. Mean annual conversions between agriculture and other LC types [ha/year]



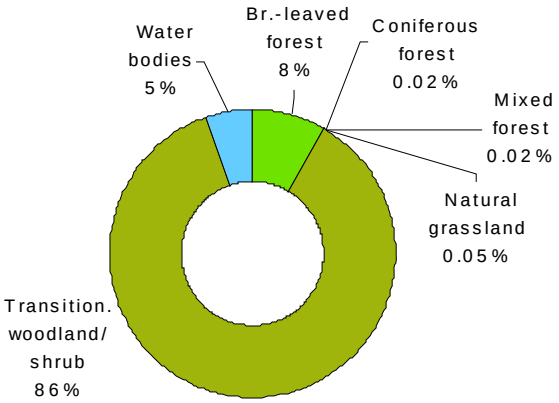
Hungary

Forest & nature

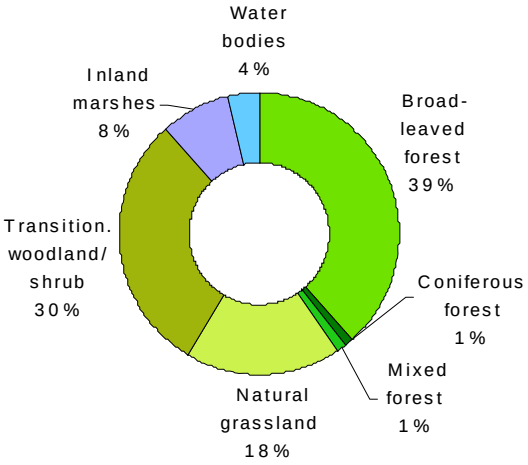
10.33. LC consumed by forest & nature 2000-2006 [% of total]



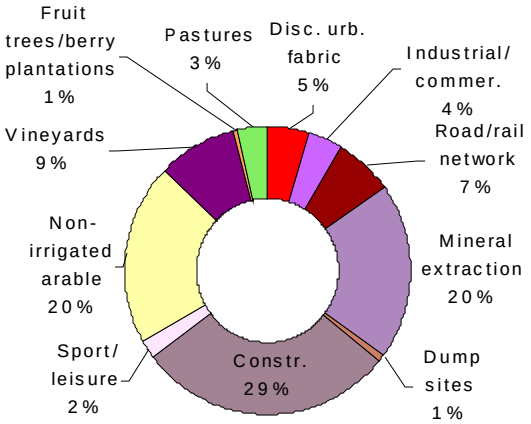
10.34. Formation of forest & nature land from non-forest /nature 2000-2006 [% of total]



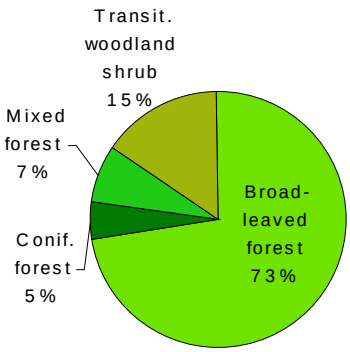
10.35. Consumption of forest & nature land by non-forest /nature 2000-2006 [% of total]



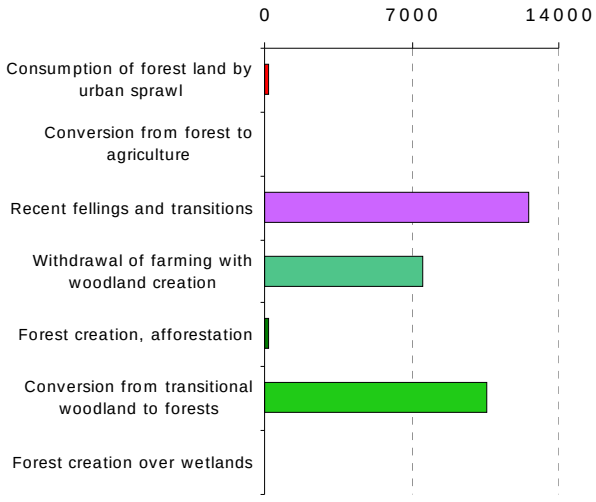
10.36. Formation of non-forest /nature land from forest & nature 2000-2006 [% of total]



10.37. Forested land 2006 [% of total area]

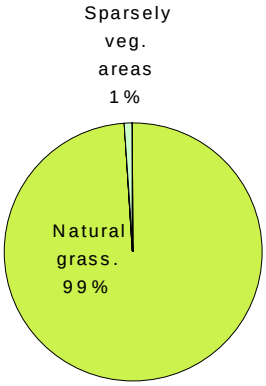


10.38. Main trends in woodland & forests consumption/formation 2000-2006 [ha/year]

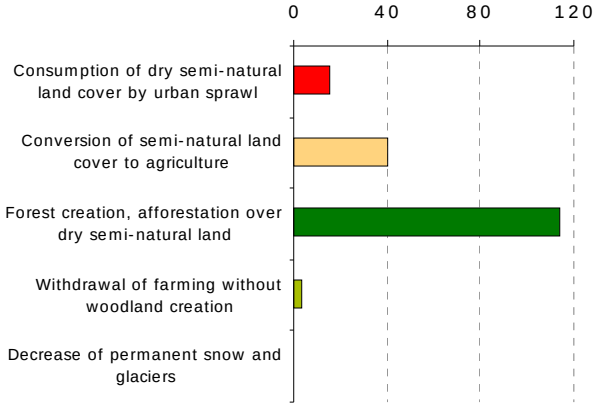


Hungary

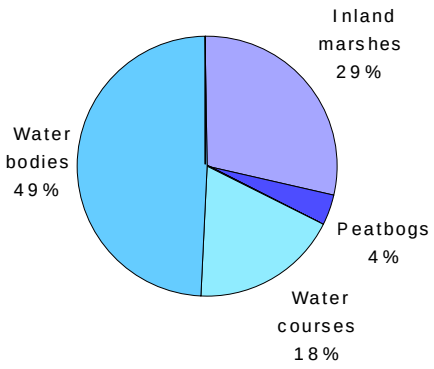
11.39. Dry semi-natural areas 2006 [% of total area]



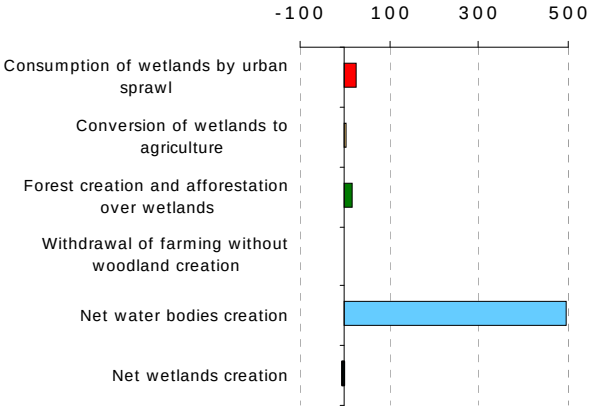
11.40. Main trends in dry semi-natural land consumption/formation 2000-2006 [ha/year]



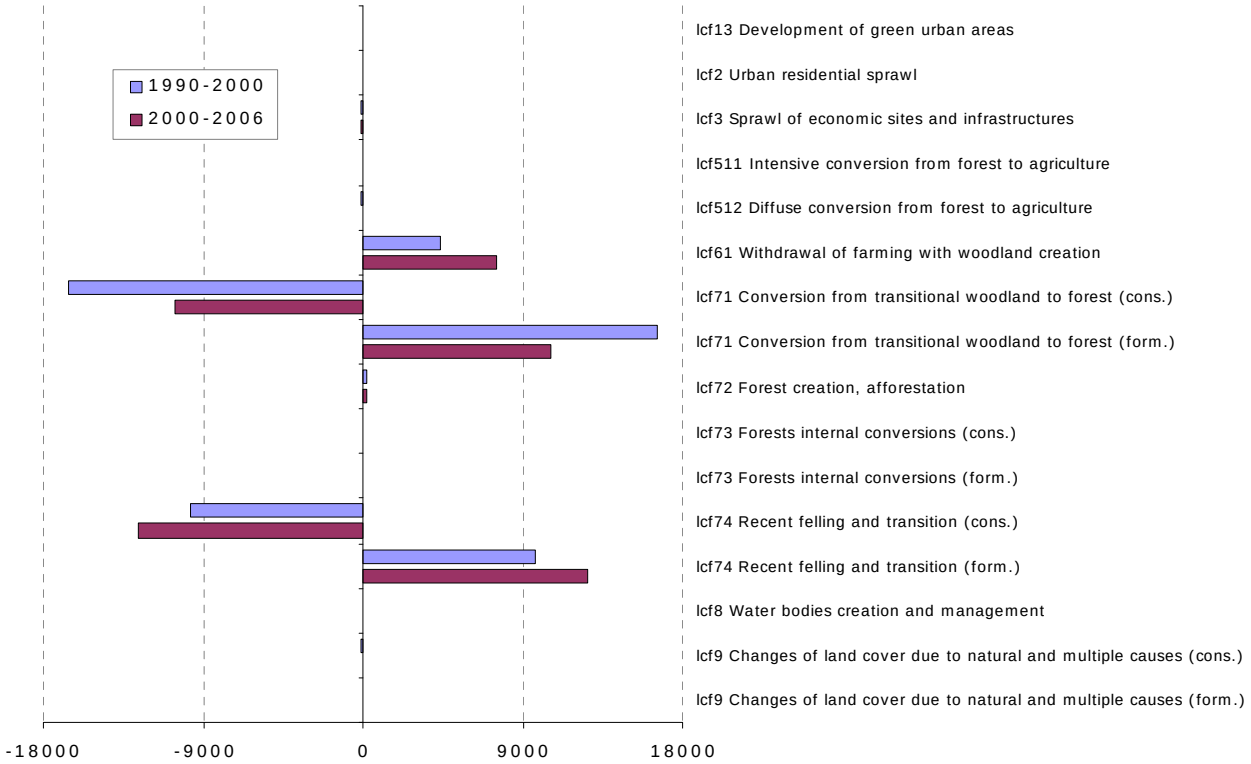
11.41. Wetlands & water 2006 [% of total area]



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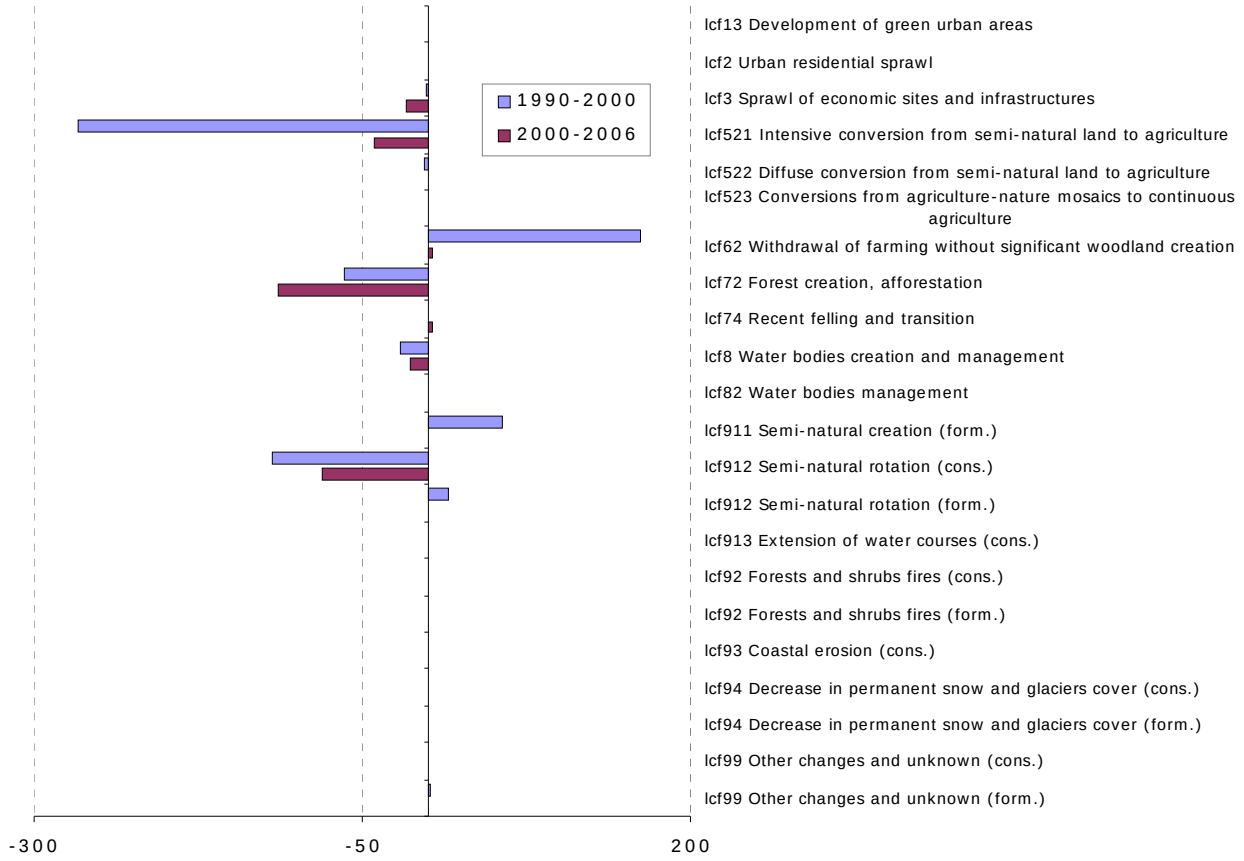
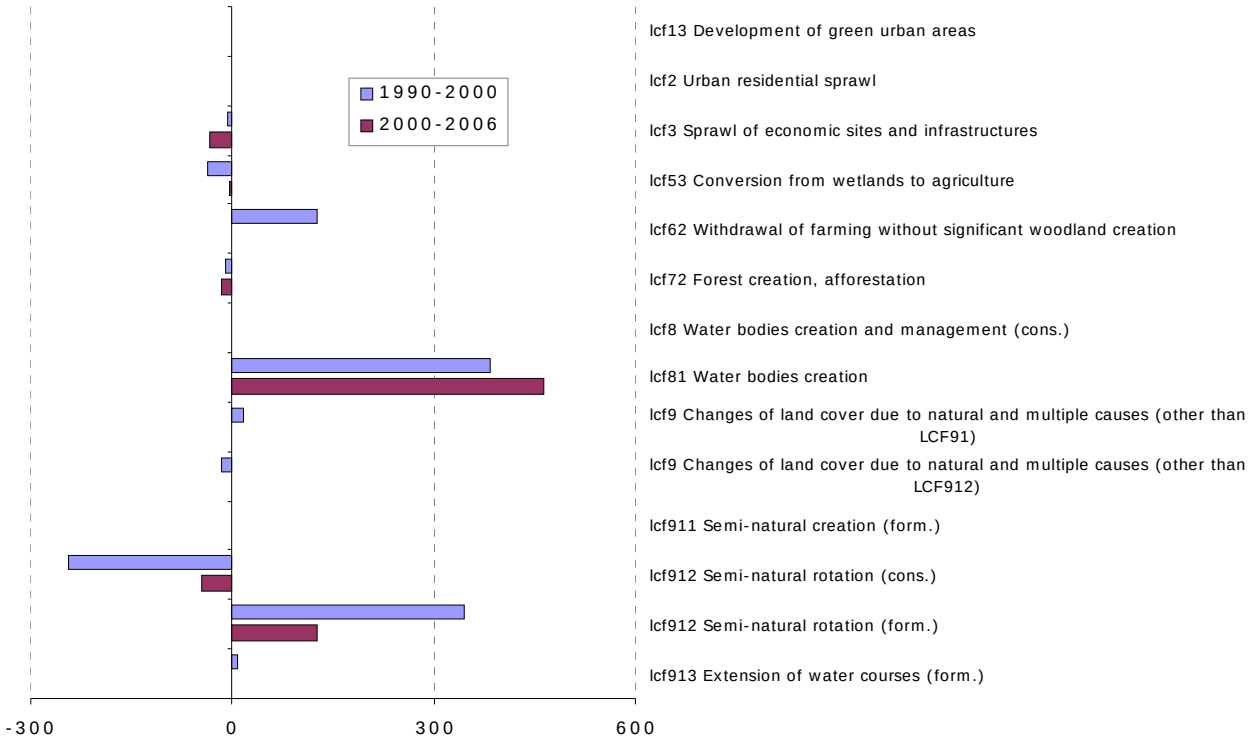
12.44. Mean annual conversions of dry semi-natural LC [ha/year]



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



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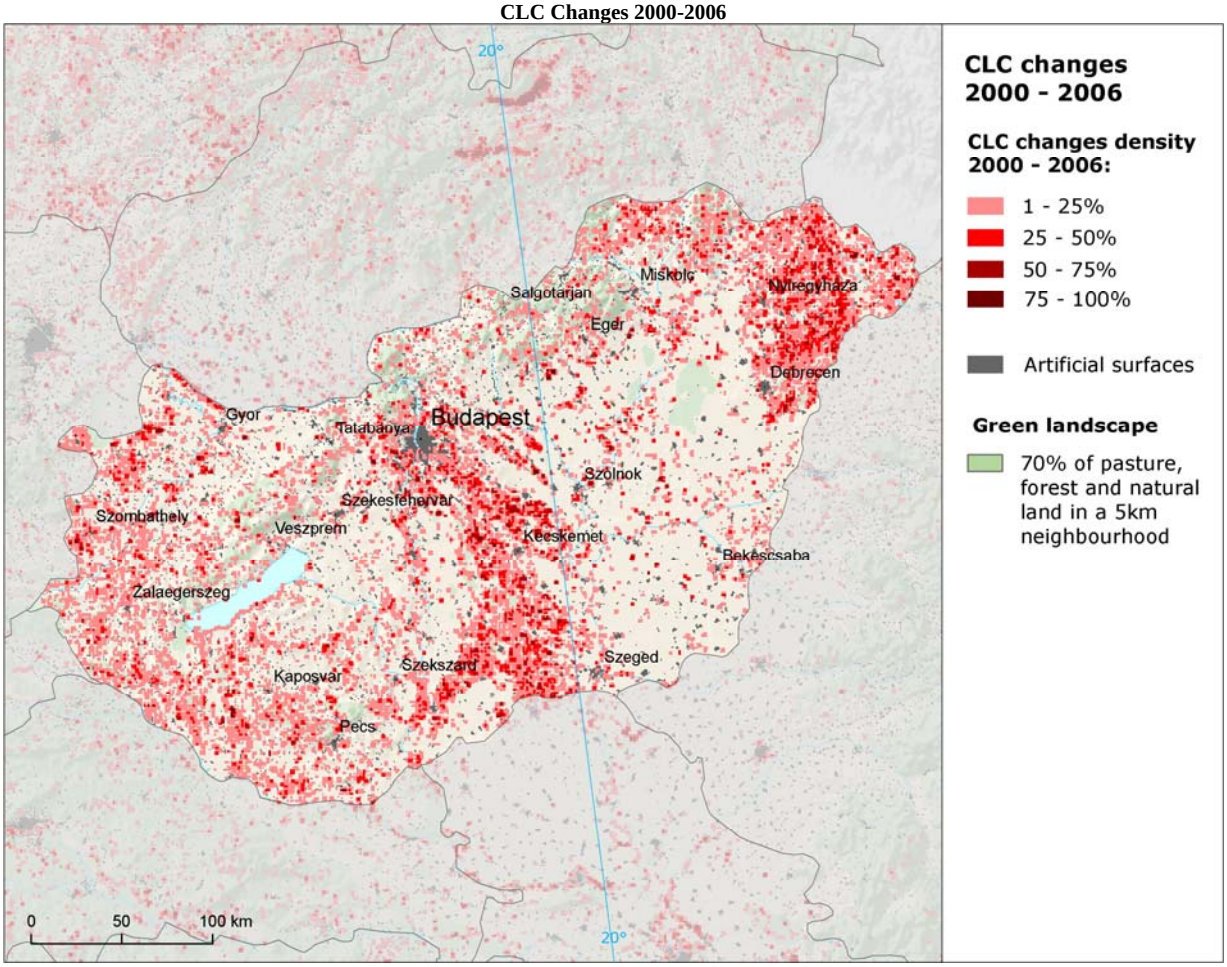
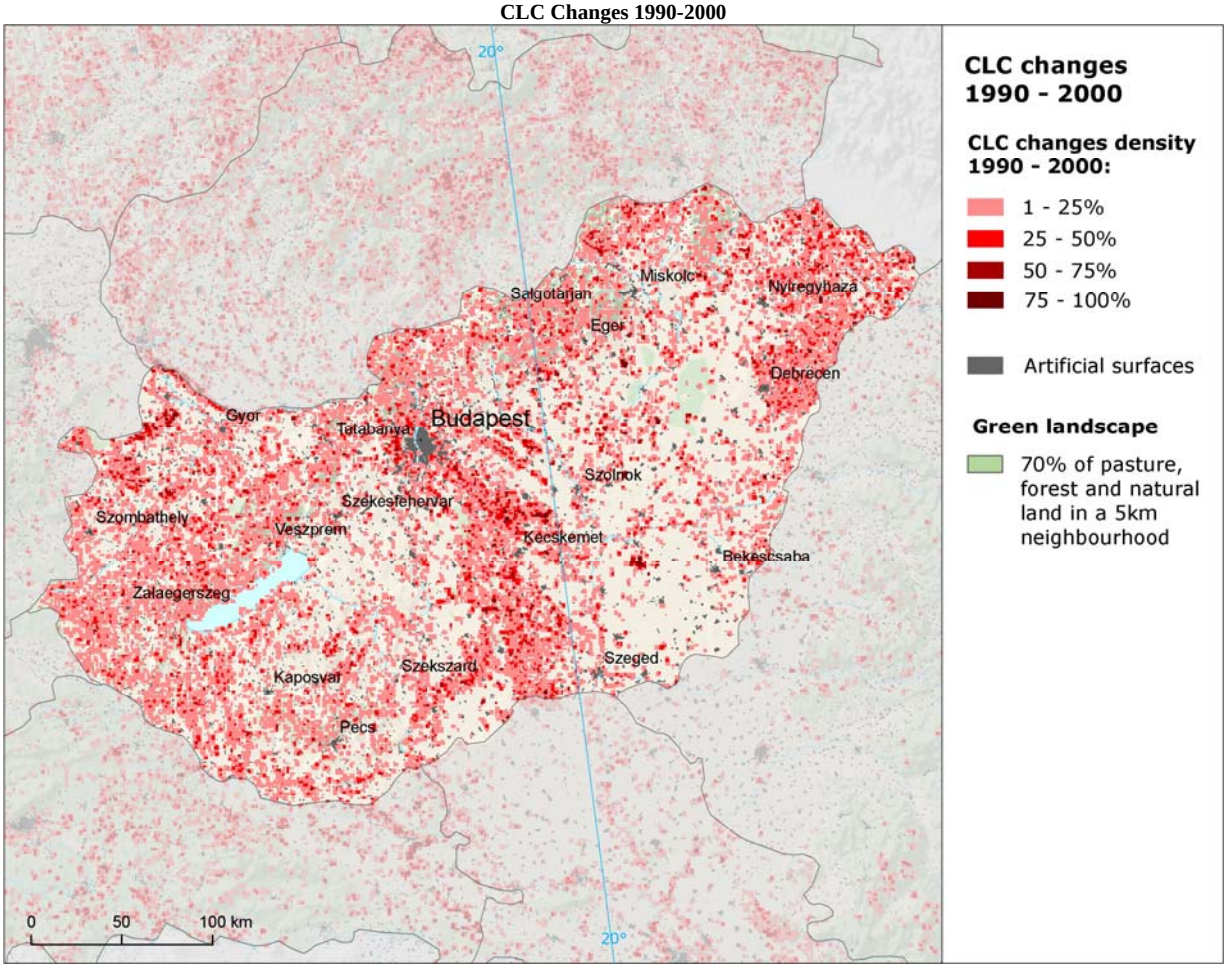
CLC Changes 2000-2006



CLC Changes 1990-2000



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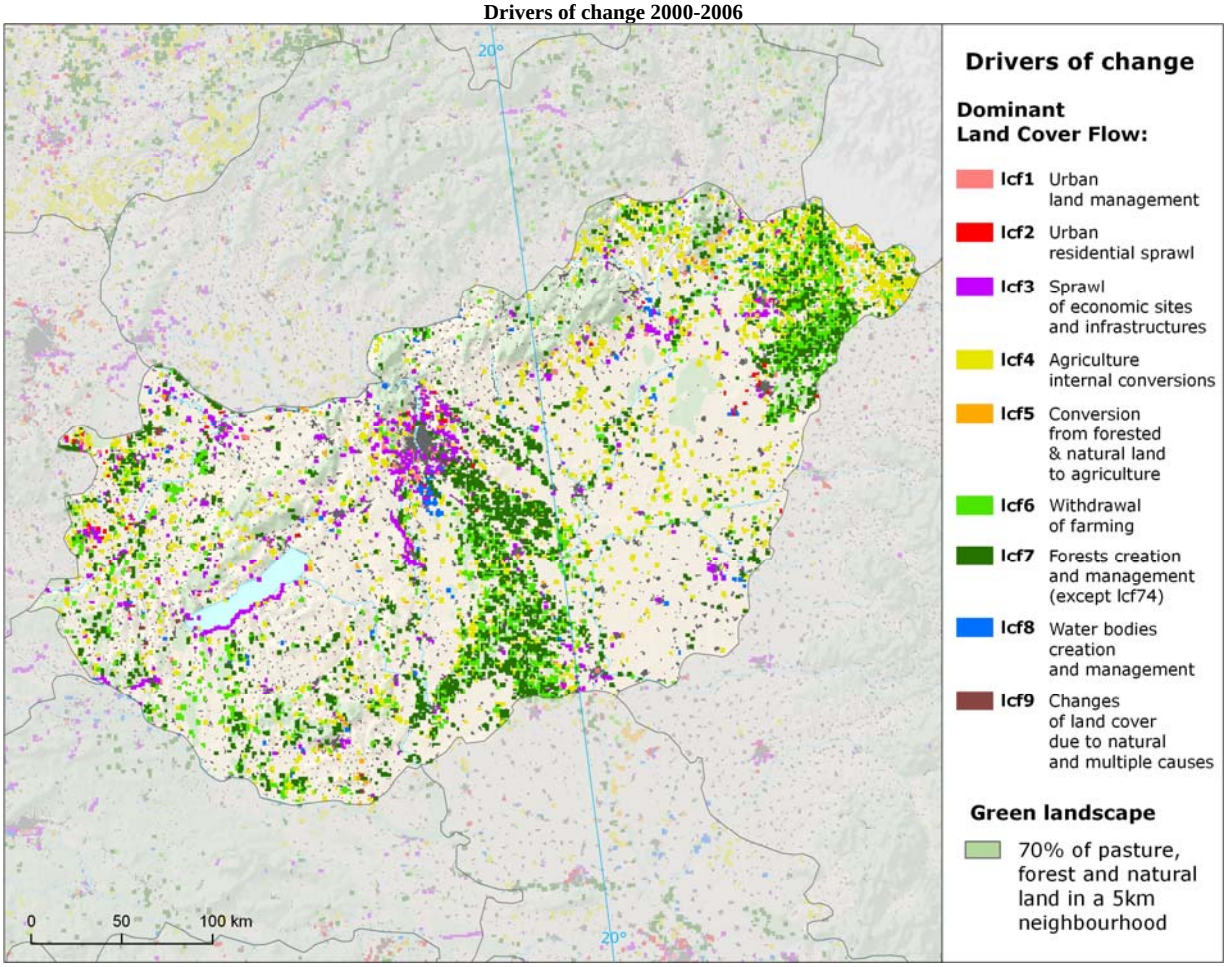
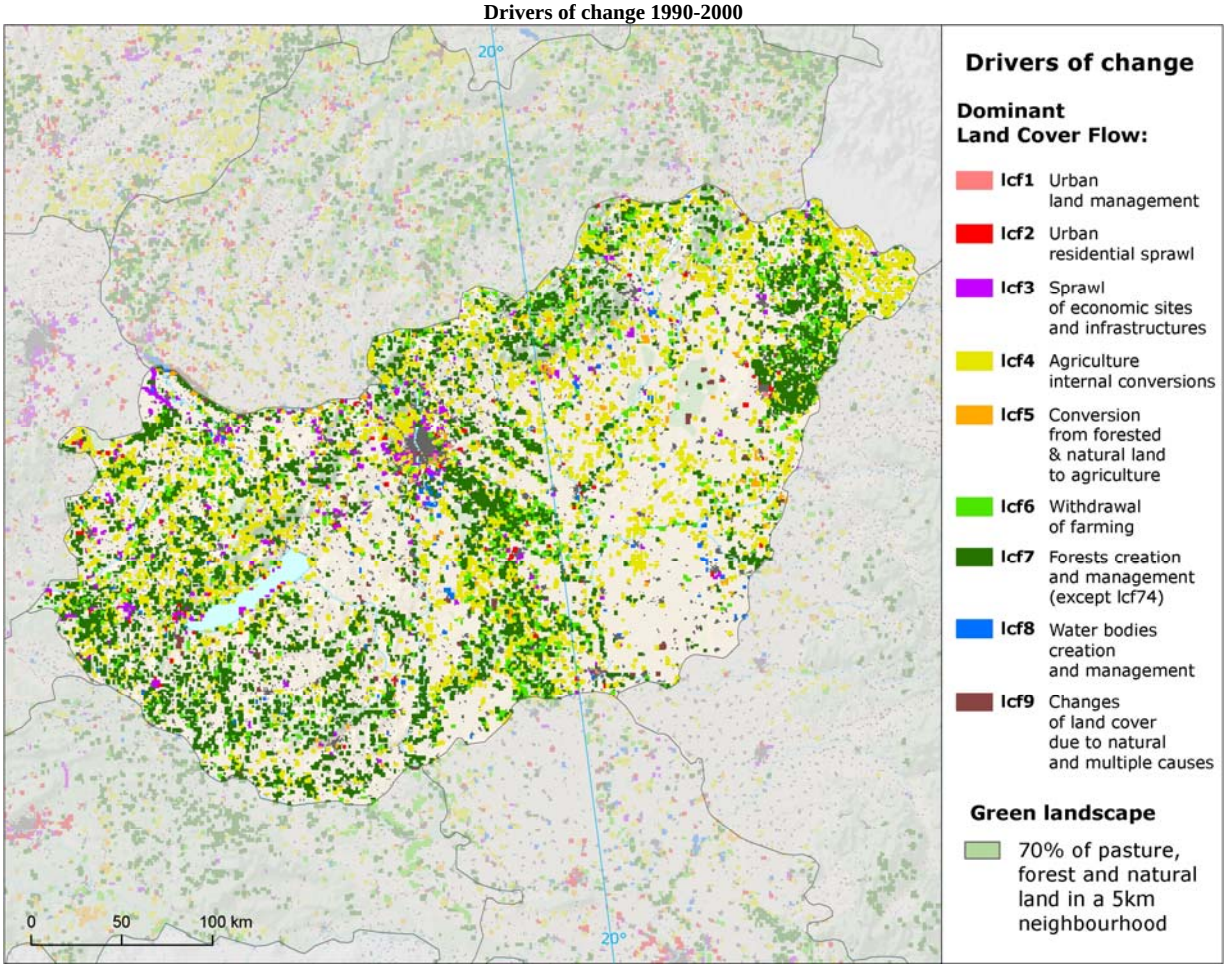
Drivers of change 2000-2006



Drivers of change 1990-2000



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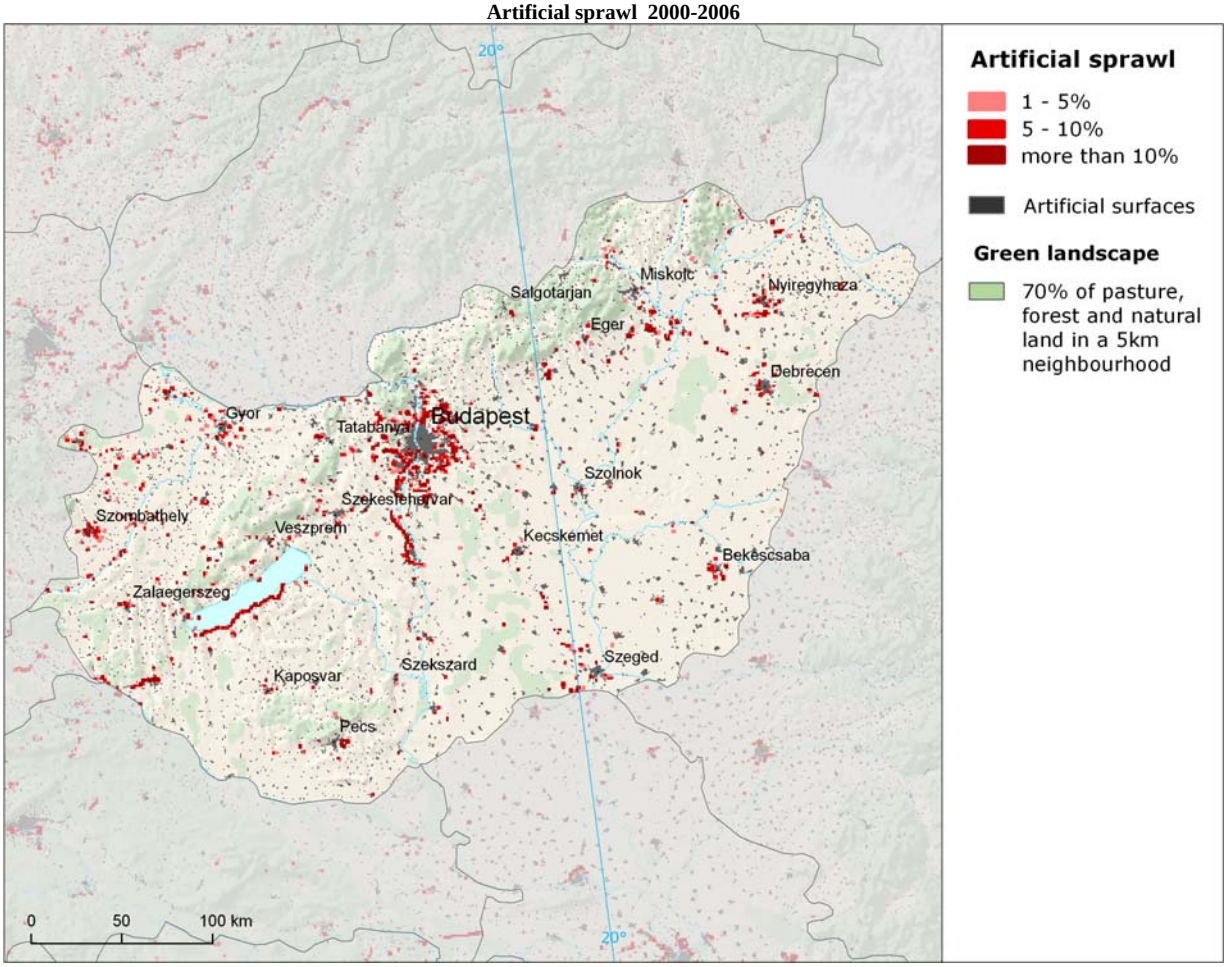
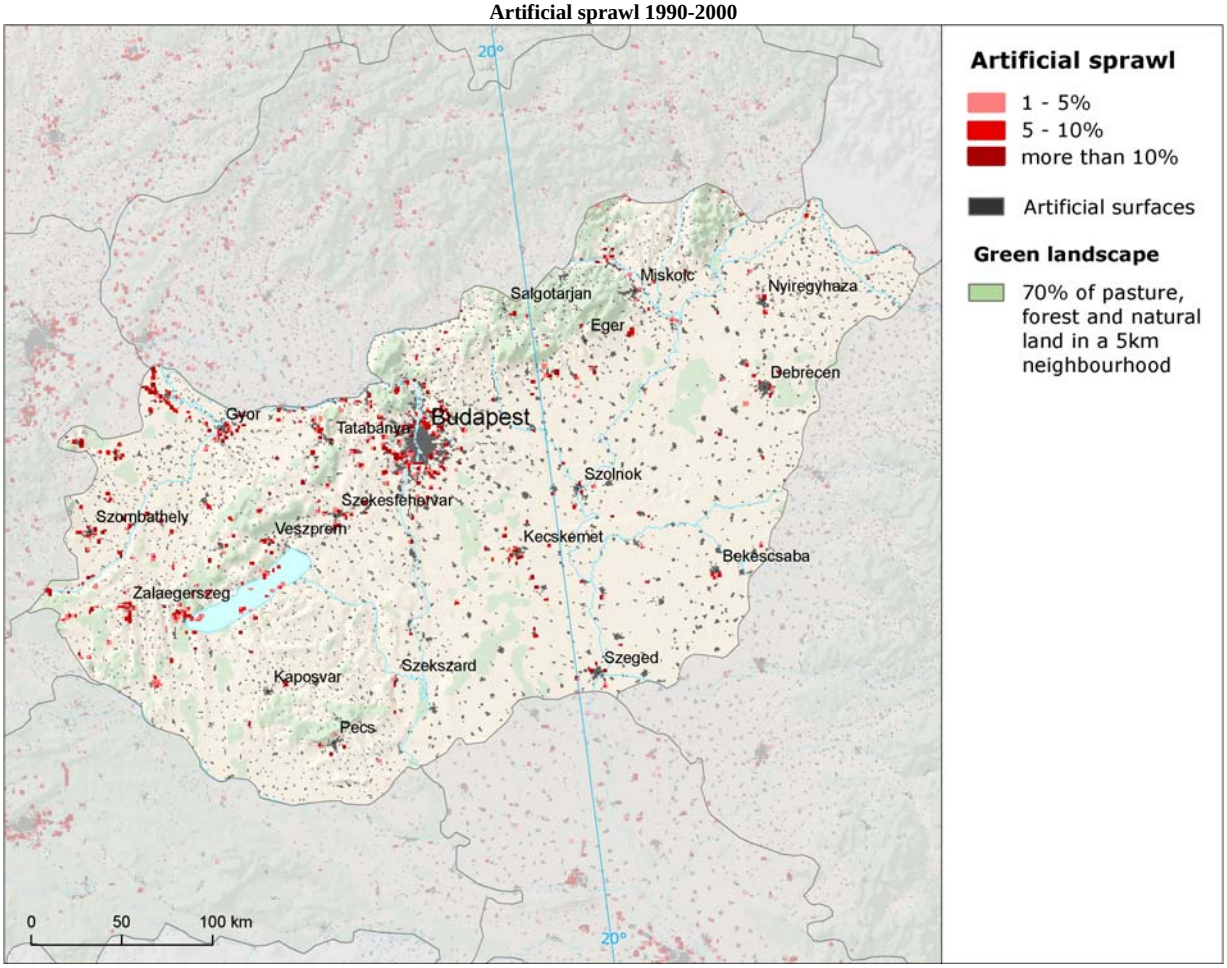
Artificial sprawl 2000-2006



Artificial sprawl 1990-2000



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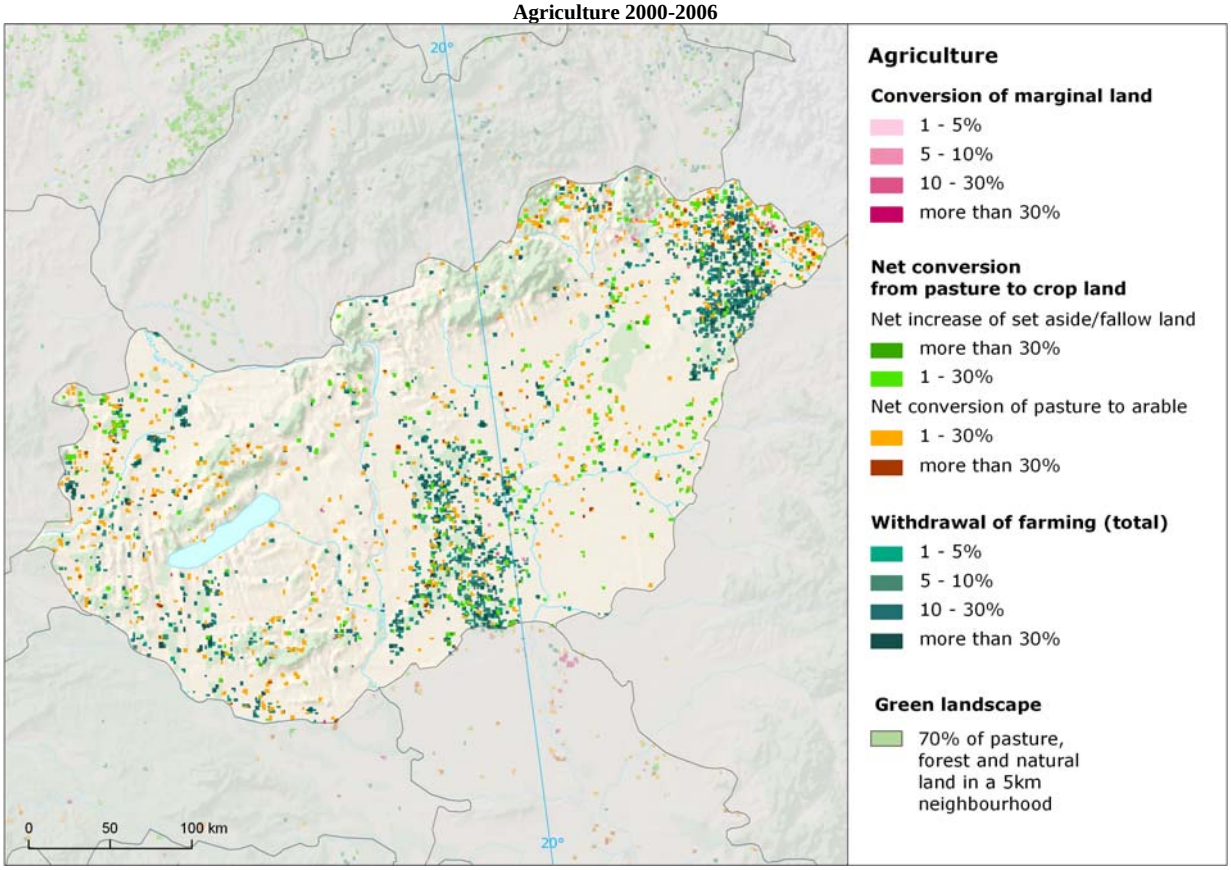
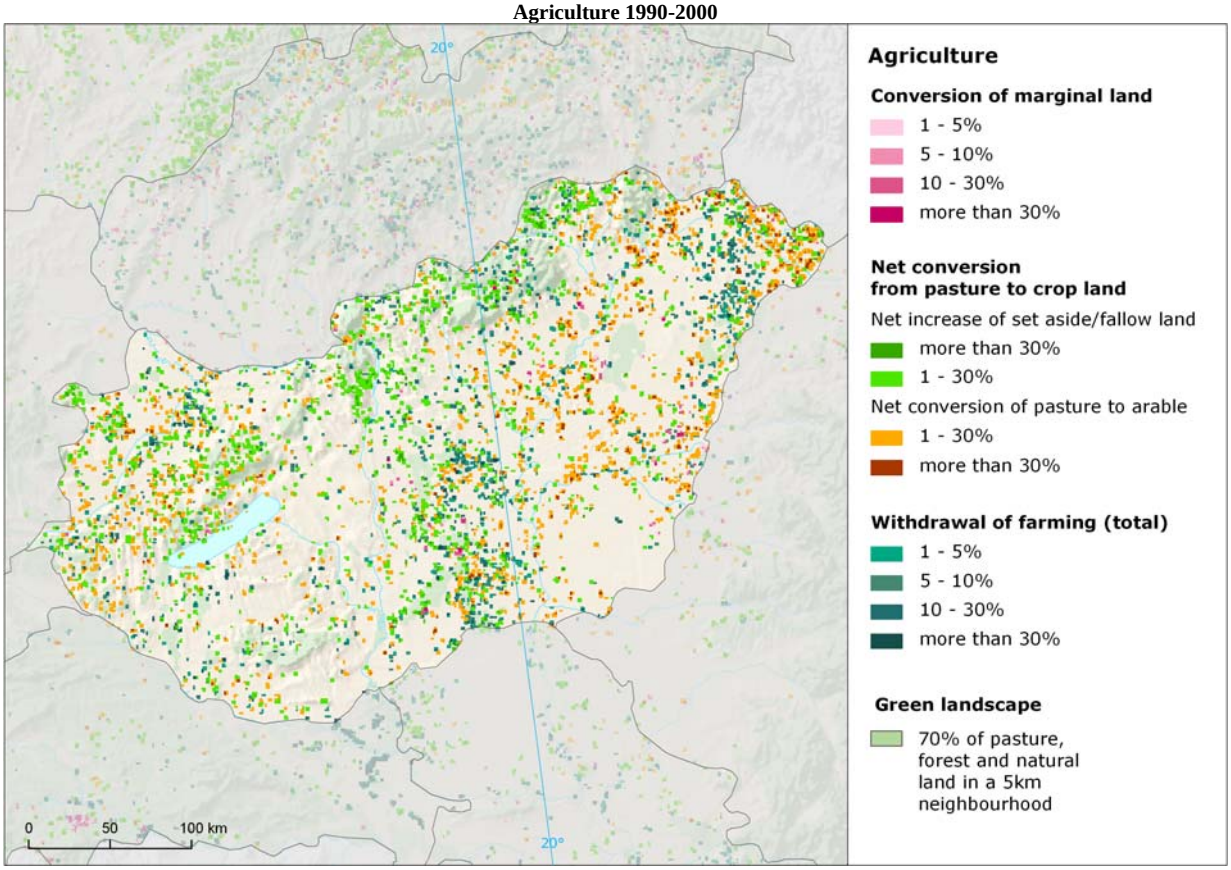
Agriculture 2000-2006



Agriculture 1990-2000



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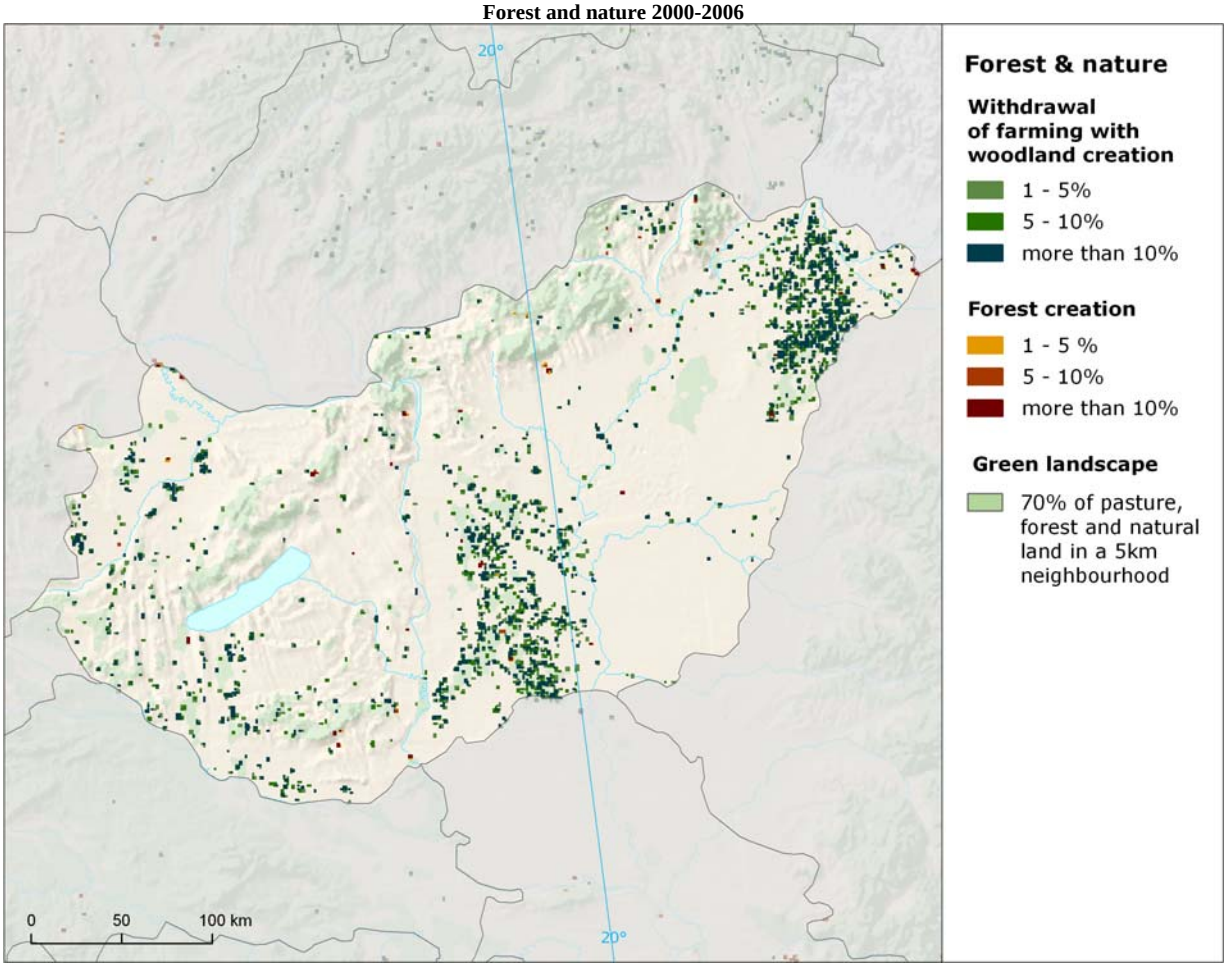
Forest and nature 2000-2006



Forest and nature 1990-2000