

Land cover 2012



Bulgaria

September 2017

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Bulgaria

Land cover 2012

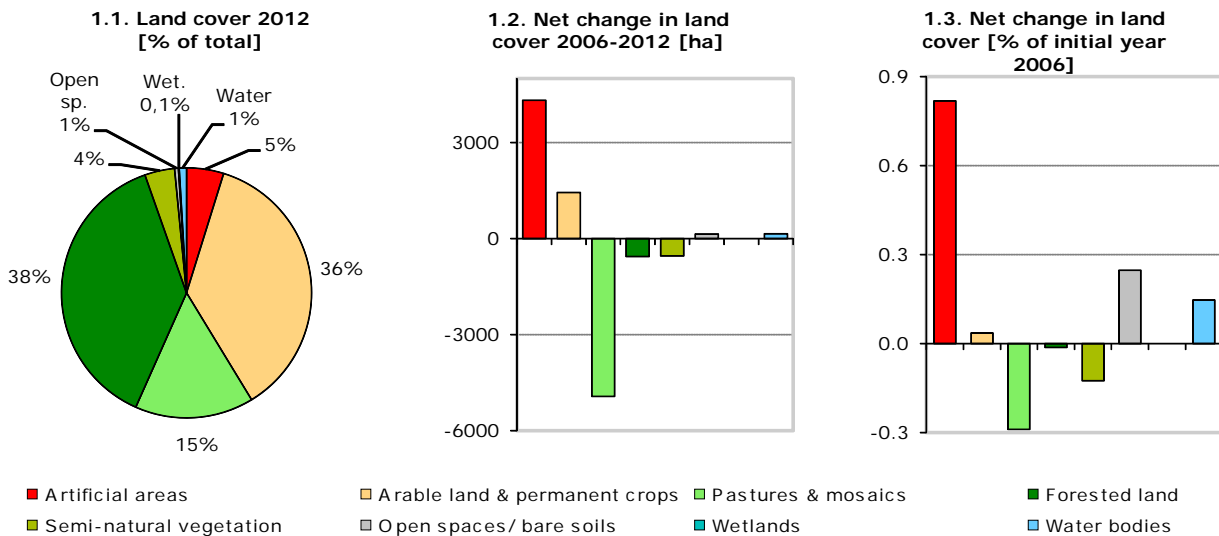
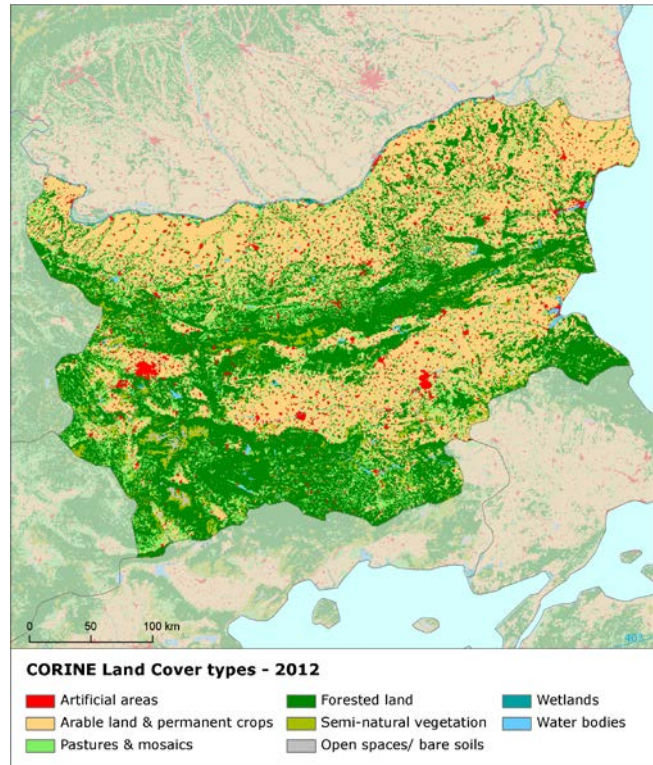
Overview of land cover & change 2006-2012

The overall change rate in Bulgaria is very low, compared to other European countries and is getting even lower, in comparison with previous periods 1990-2000 and 2000-2006. Regarding the main drivers of the Bulgarian landscape development, forest creation and management, which was the most significant flow in both previous periods, lost about half of its intensity in 2006-2012. In contrast, the agriculture internal conversions, which were in significant decline during the previous periods, became much more intensive in the 2006-2012. Conversions between arable land and vineyards and orchards, with prevailing consumption of arable land, together with intensive conversion from pasture to arable/crop land, are the most frequent internal agricultural flows. The exchange between agricultural and natural land in Bulgaria is represented mainly by withdrawal of farming with woodland creation on one hand and conversion from dry semi-natural or natural land to agriculture, on the other.

Urban sprawl in the country is driven mostly by the extension of economic sites and infrastructures. With 0.14% mean annual land take rate, the Bulgarian sprawl belongs to the slowest ones in Europe. Its pace is comparable to the previous period. However, it has to be mentioned, that the current sprawl rate is relatively high, compared to the period 1990-2000, during which the rate was more than twice lower.

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 Bulgaria: 6

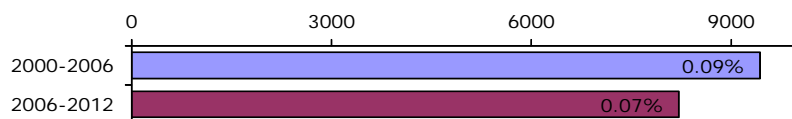


Summary balance table 2006-2012

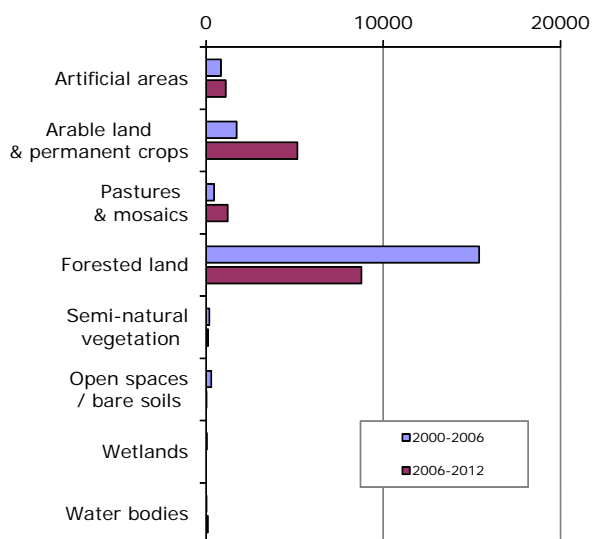
	Artificial areas	Arable land & permanent crops	Pastures & mosaics	Forested land	Semi-natural vegetation	Open spaces/ bare soils	Wetlands	Water bodies	TOTAL [hundreds ha]
Land cover 2006	5278	40387	17061	42011	4286	546	113	1031	110713
Consumption of initial LC	11.2	147.1	60.8	265.8	5.9	0.0	0.0	2.1	493
Formation of new LC	54.4	161.4	11.5	260.2	0.5	1.4	0.0	3.6	493
Net Formation of LC	43.1	14.4	-49.3	-5.6	-5.4	1.4	0.0	1.5	0
Net formation as % of initial year	0.8	0.0	-0.3	0.0	-0.1	0.2	0.0	0.1	
Total turnover of LC	65.6	308.5	72.3	525.9	6.4	1.4	0.0	5.6	986
Total turnover as % of initial year	1.2	0.8	0.4	1.3	0.2	0.2	0.0	0.5	0.9
Land cover 2012	5321	40402	17012	42005	4280	548	113	1032	110713

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

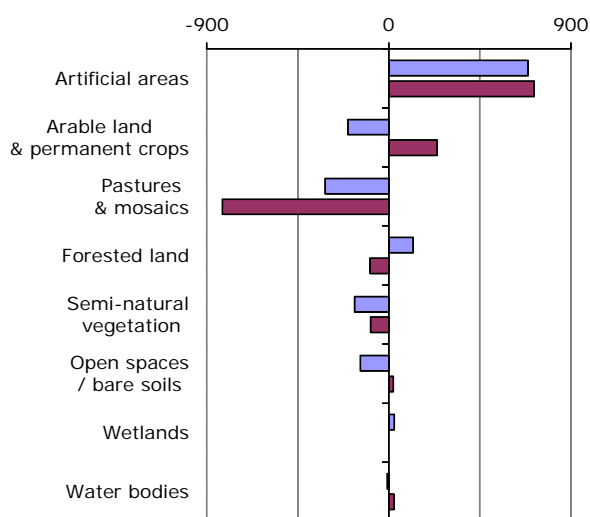
2.4. Annual land cover change
[ha/year, % of total area]



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

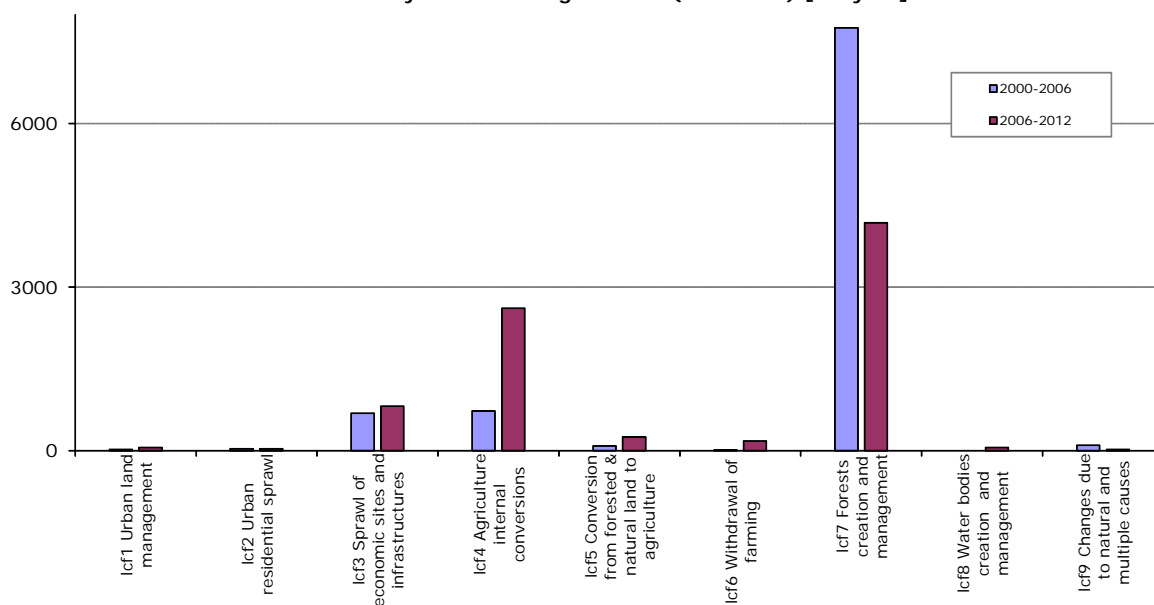


2.6. Net annual change of LC types [ha/year]

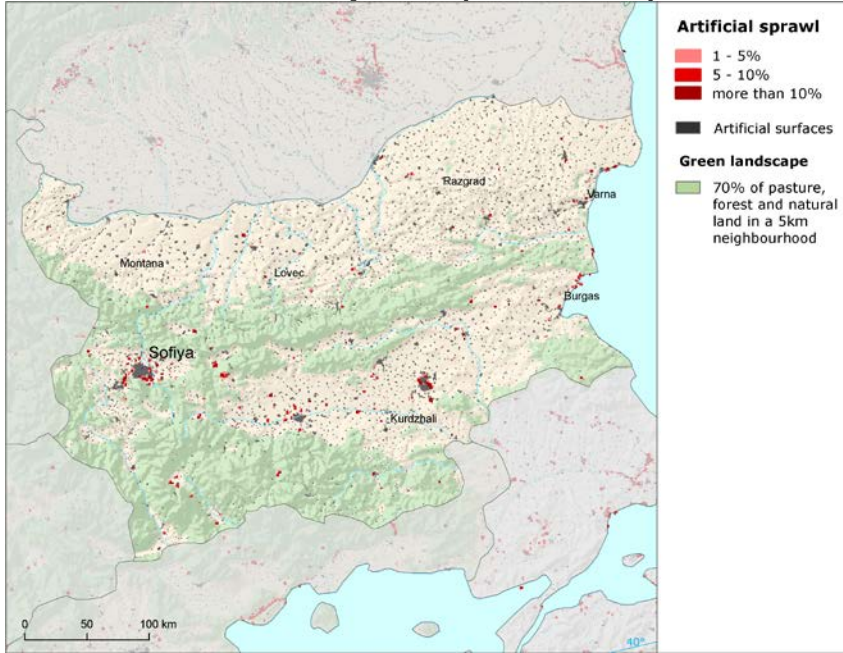


Summary trend figures		
	2000-2006	2006-2012
Annual land cover change [ha/year]	9435	8215
Annual land cover change as % of initial year	0.09%	0.07%
Land uptake by artificial development as mean annual change [ha/year]	717	755
Agricultural land uptake by urban and infrastructures development as mean annual change [ha/year]	559	560
Net uptake of forests and semi-natural land by agriculture as mean annual change [ha/year]	48	65
Net conversion from pasture to arable land and permanent crops as mean annual change [ha/year]	89	529
Forest & other woodland net formation as mean annual change [ha/year]	120	-94
Dry semi-natural land cover net formation as mean annual change [ha/year]	-311	-67
Wetlands & water bodies net formation as mean annual change [ha/year]	20	25

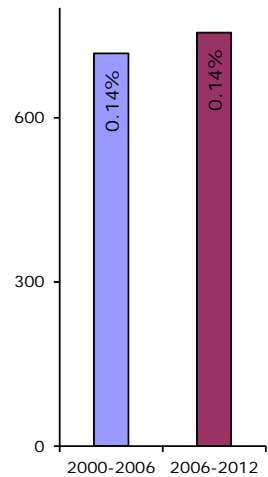
2.7. Intensity of main change drivers (LC FLOWS) [ha/year]



Artificial surfaces sprawl (2006-2012)



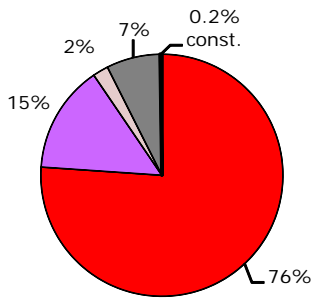
3.8. Artificial land take [ha/year, % of initial year]



Sprawl around large cities

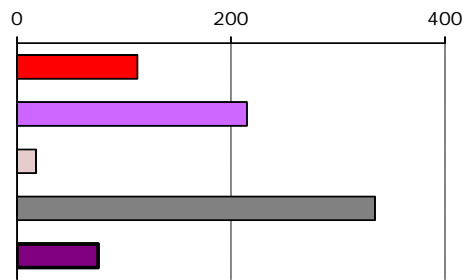
Development of artificial areas in Bulgaria is concentrated mostly in the surroundings of major cities, especially around capital city Sofia, Plovdiv and Stara Zagora, and also along the Black Sea coastline. The overall urban land take rate is comparable to previous period, which means it is twice as high as in the period 1990-2000; however, it still remains one of the European lowest. The extension of mineral extraction sites remains the main driver of the artificial development. Beside it, the formation of industrial and commercial units and of sport and leisure facilities became more significant, both of them having increasing intensity, compared to period 2000-2006. On the other hand, the intensity of construction, which was the second most frequent type of sprawl during the 2000-2006, significantly decreased. This can possibly indicate overall a slowdown of artificial development in Bulgaria in the future. Concerning the source, mainly agricultural land is consumed by artificial sprawl, with comparable share of arable and crop land and pastures and mosaics.

3.9. Artificial surfaces 2012 [% of total area]

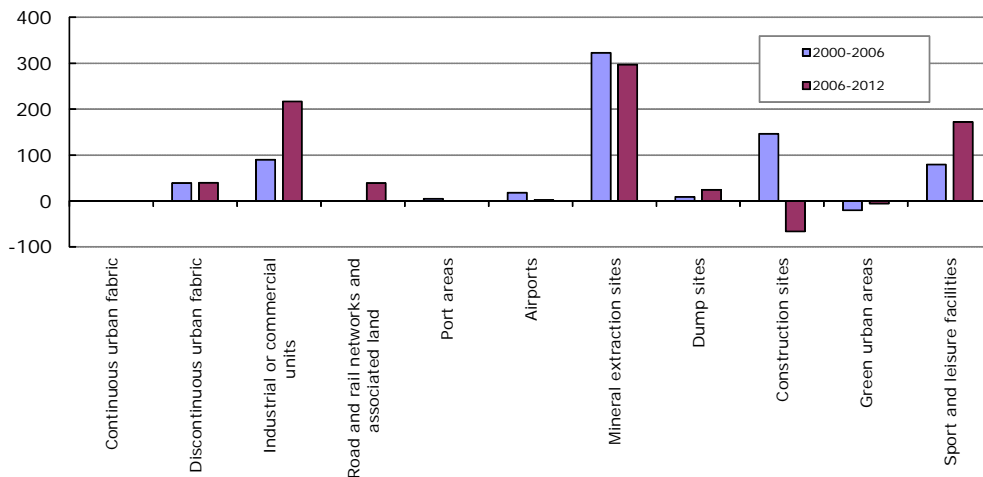


- Housing, services, recreation
- Industrial, commercial units
- Transport networks, infrastructures
- Mines, quarries, waste dumpsites
- Construction

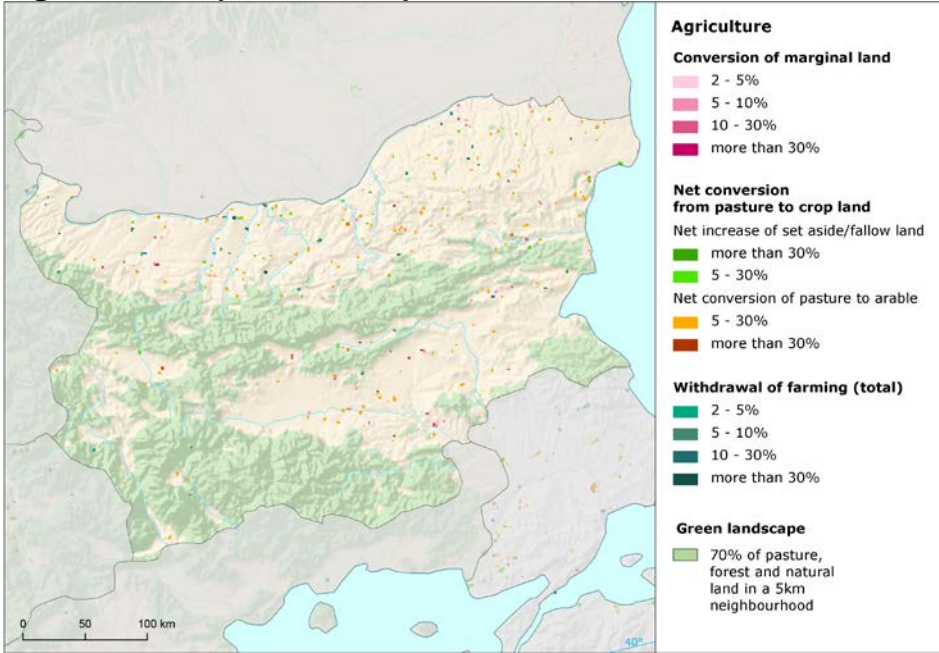
3.10. Artificial land take 2006-2012 [ha/year]



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



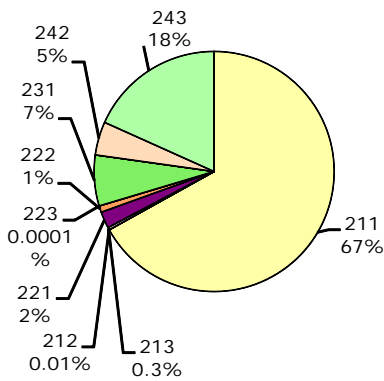
Agriculture (2006-2012)



Conversions between arable and vineyards/orchards

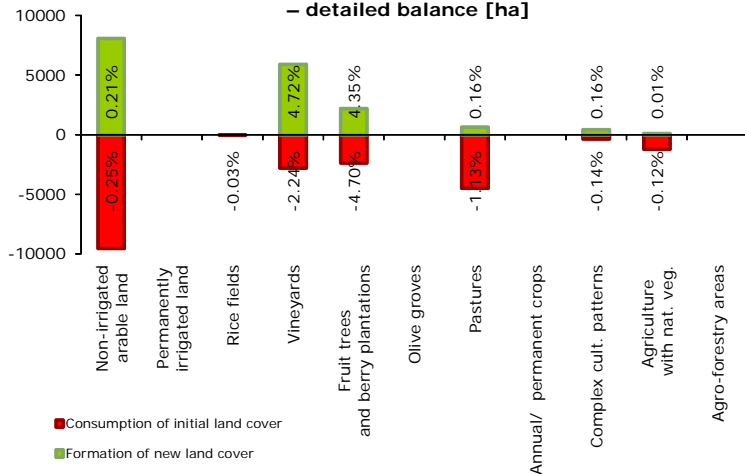
Agricultural development in Bulgaria is quite dynamic, compared to other European countries mainly driven by internal agricultural conversions, which were in significant decline during the previous period; but are much more intensive again in 2006-2012 having become the second major driver of land cover development in the country. Conversions between arable land and vineyards /orchards, with prevailing consumption of arable land together with intensive conversion from pasture to arable/crop land, are the most frequent internal agricultural flows. Also the exchange between agricultural and natural land is more intensive, compared to the previous period . It is represented mainly by withdrawal of farming (mostly abandonment of vineyards fruit and berry plantations) with transitional woodland creation and conversion from natural areas (mostly natural grasslands or transitional woodland) to arable land. Conversions between agricultural-nature mosaics and continuous agriculture also occur in the Bulgarian landscape. The main consumer of agricultural land is by far artificial sprawl.

4.12. Agricultural areas 2012 [% of total area]

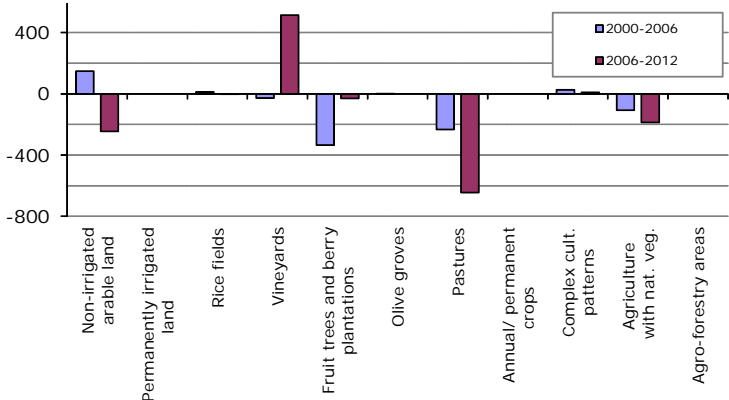


- 211 Non-irrigated arable land
- 212 Permanently irrigated land
- 213 Rice fields
- 221 Vineyards
- 222 Fruit trees and berry plantations
- 223 Olive groves
- 231 Pastures
- 241 Annual crops associated with permanent crops
- 242 Complex cultivation patterns
- 243 Agriculture land with significant areas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

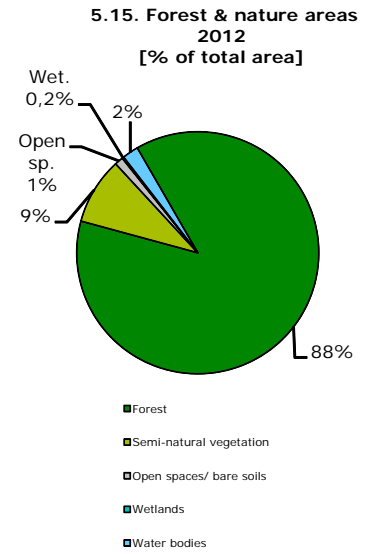
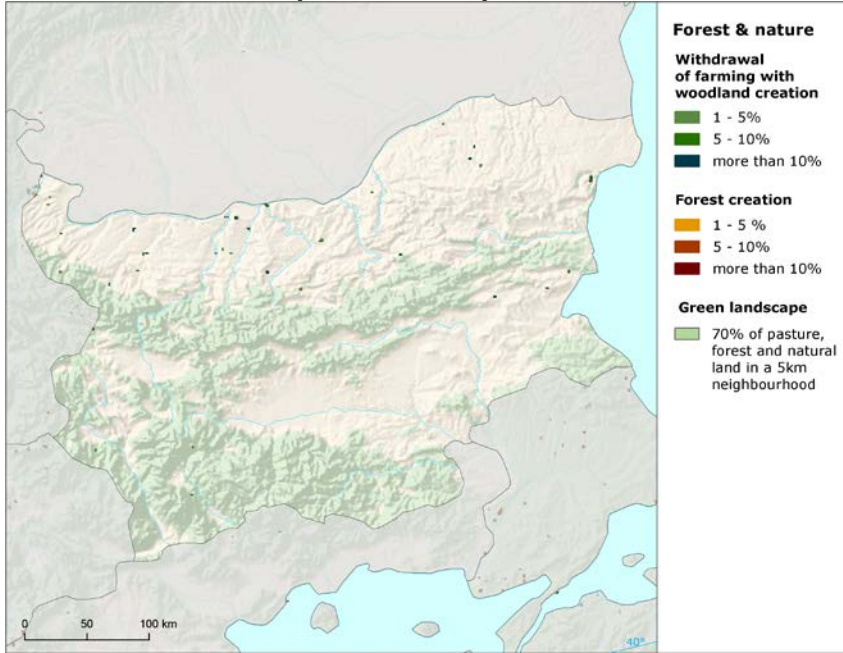
4.13. Development of agricultural areas 2006-2012 – detailed balance [ha]



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



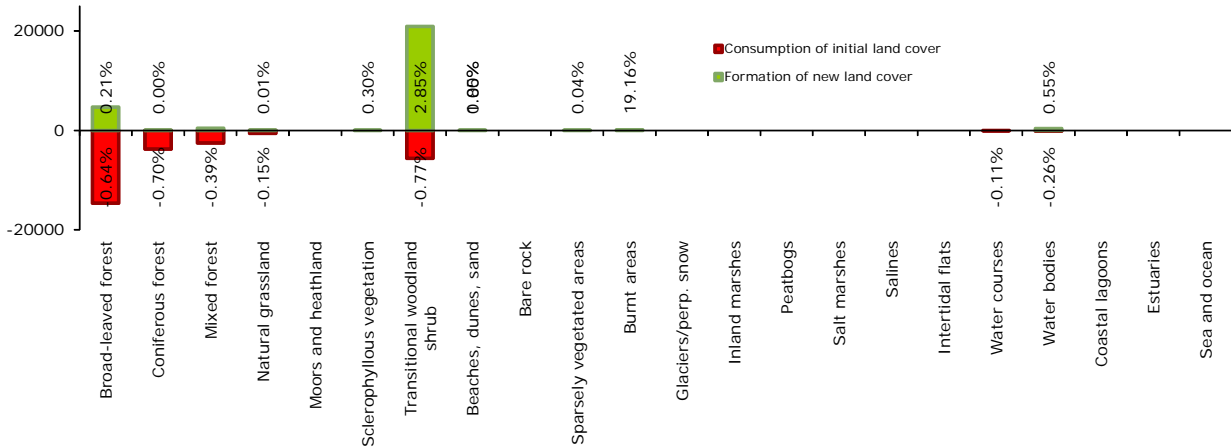
Forest & nature (2006-2012)



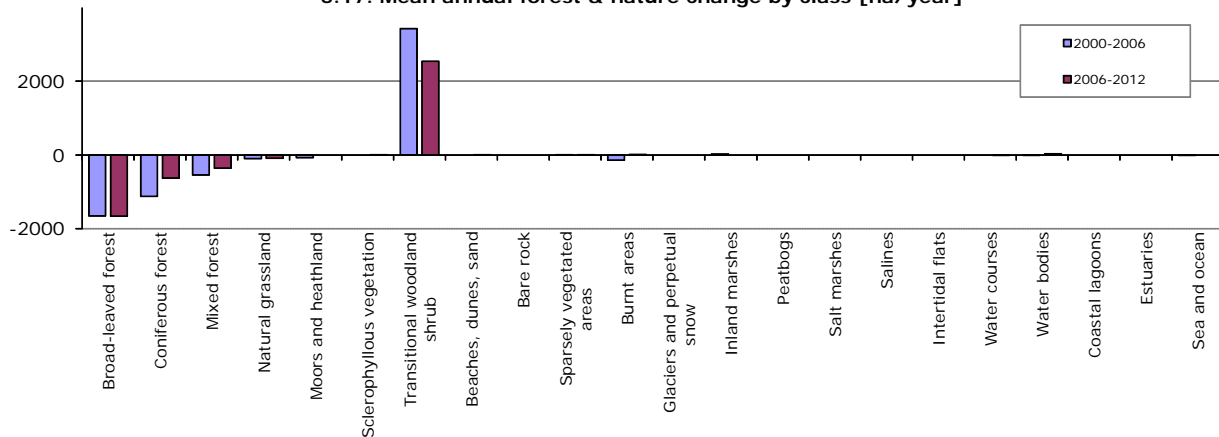
Slowdown of internal forest conversions

Although the overall intensity of this flow decreased to one half compared to the period 2000-2006, forest internal conversion remains by far the most extensive type of land cover change in Bulgaria. Its prevailing direction is a transition from forested land to transitional woodlands and shrub. The intensity of other change flows relevant for natural land is significantly lower. Withdrawal of farming with woodland creation together with conversion from natural and semi-natural land to agriculture and consumption of forest land by urban sprawl should be mentioned here. The first one is represented by abandonment of vineyards or fruits/berry plantations with transitional woodland creation. In contrast, natural grasslands and transitional woodlands are consumed by extension of arable land and especially by extension of artificial areas, in particular mineral extraction sites.

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



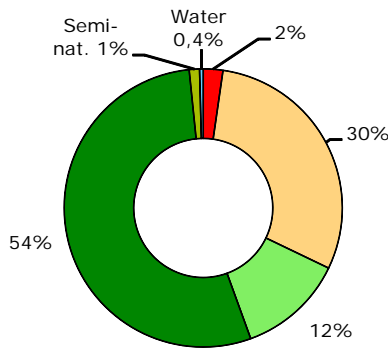
5.17. Mean annual forest & nature change by class [ha/year]



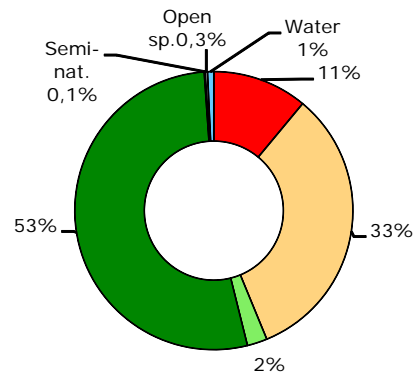
Annex: Land cover flows and trends

Land cover flows 2006-2012

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

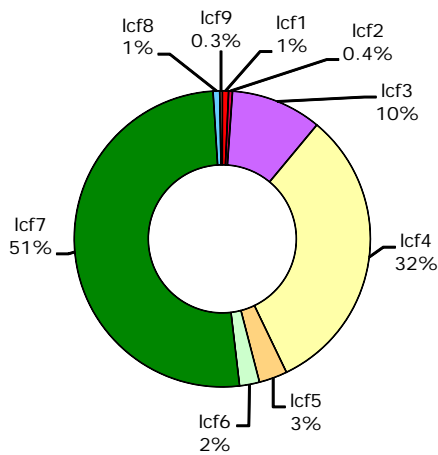


6.19. Formation of land cover 2006-2012 [% of total change area]



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

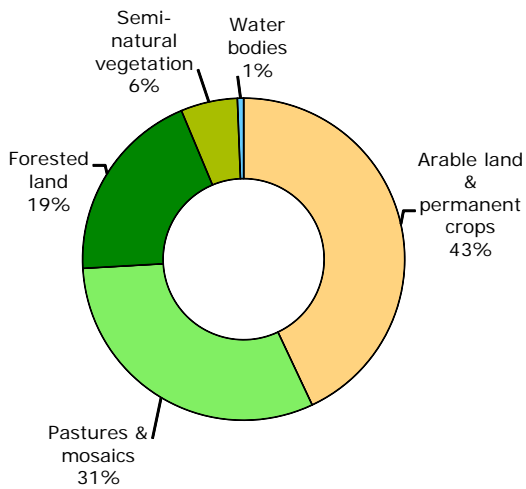
6.20. Drivers of change (LC FLOWS) 2006-2012 [% of total change area]



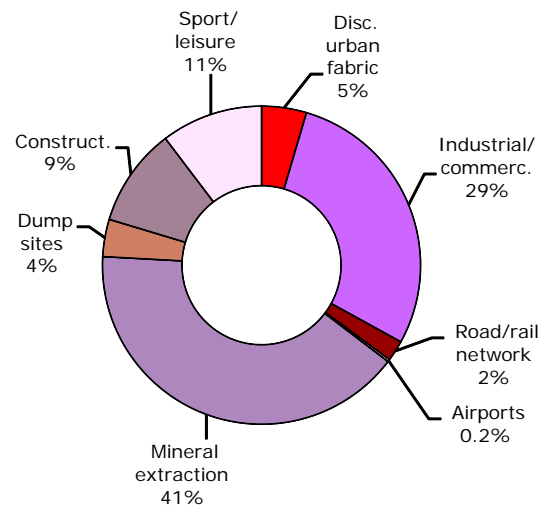
- lcf1 Urban land management
- lcf2 Urban residential sprawl
- lcf3 Sprawl of economic sites and infrastructures
- lcf4 Agriculture internal conversions
- lcf5 Conversion from forested & natural land to agriculture
- lcf6 Withdrawal of farming
- lcf7 Forests creation and management
- lcf8 Water bodies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

Artificial areas

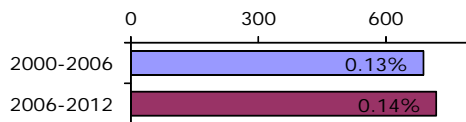
7.21. Consumption by artificial land take 2006-2012 [% of total]



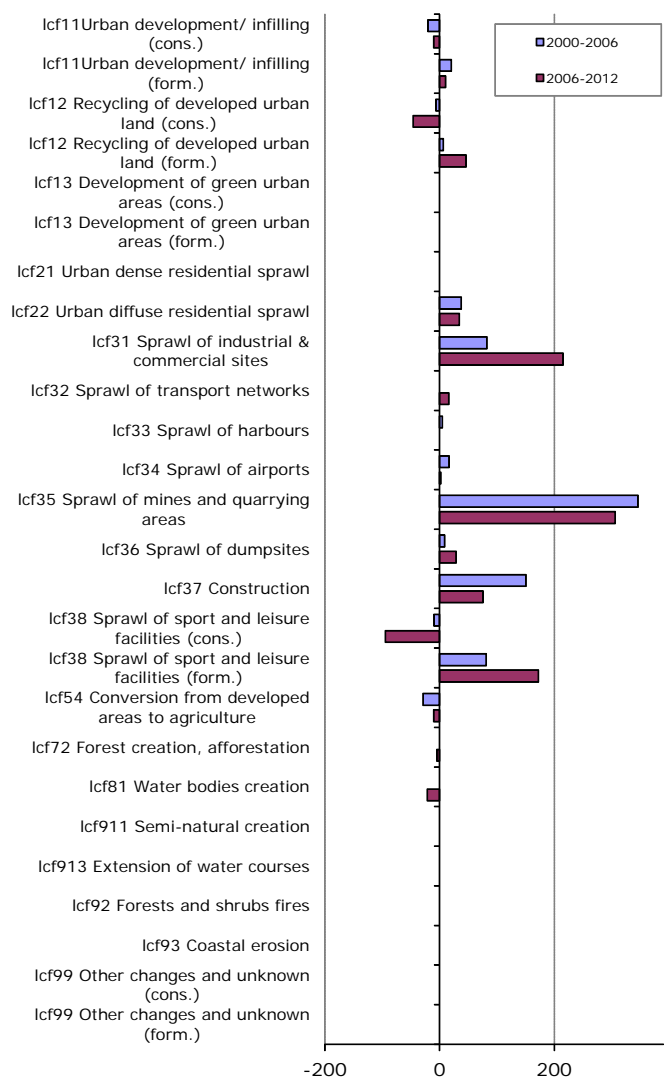
7.22. Formation by artificial land take 2006-2012 [% of total]



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

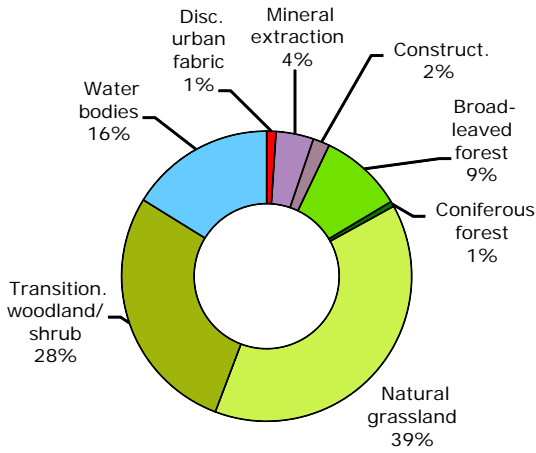


7.24. Artificial development by change drivers (LC FLOWS) [ha/year]

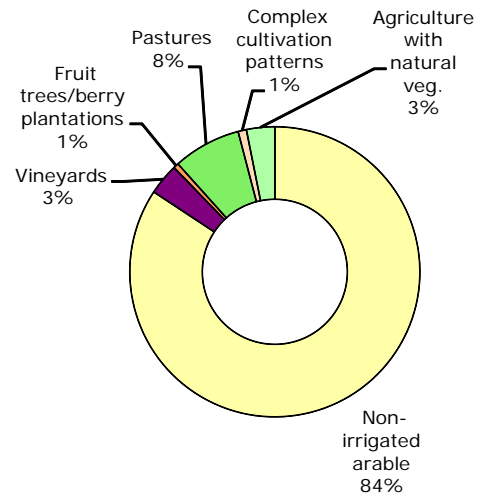


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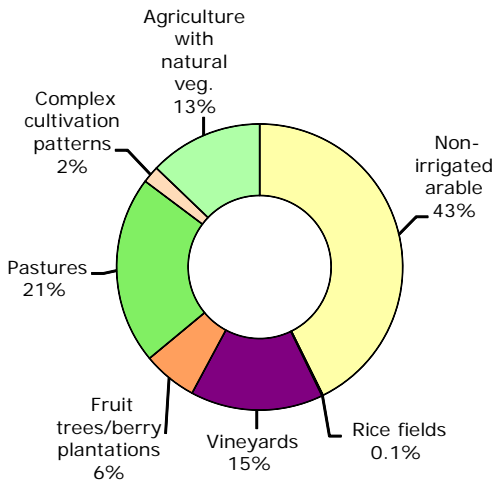
8.25. LC consumed by agriculture 2006-2012 [% of total]



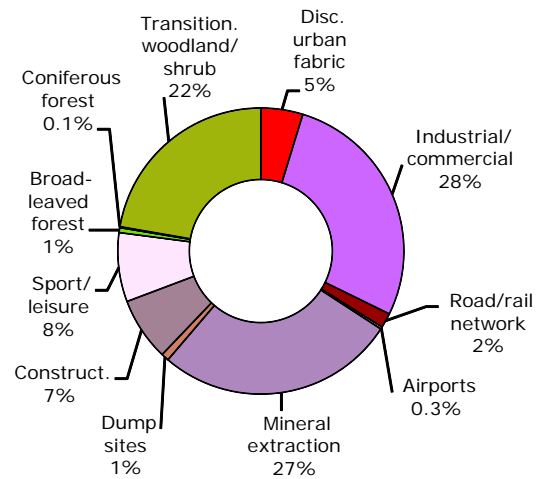
8.26. Formation of agricultural land from non-agriculture 2006-2012 [% of total]



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



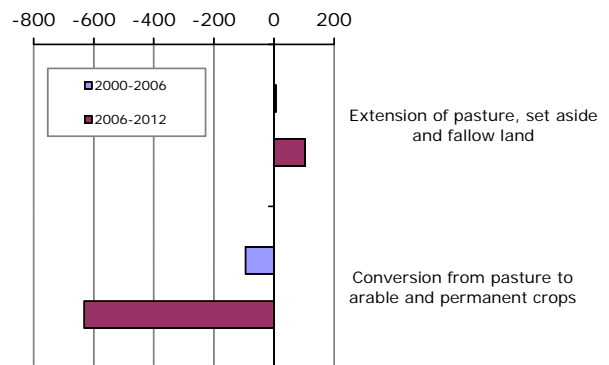
8.28. Formation of non-agricultural land from agriculture 2006-2012 [% of total]



8.29. Main annual conversions between agriculture and forests & semi-natural land 2006-2012 [ha/year]

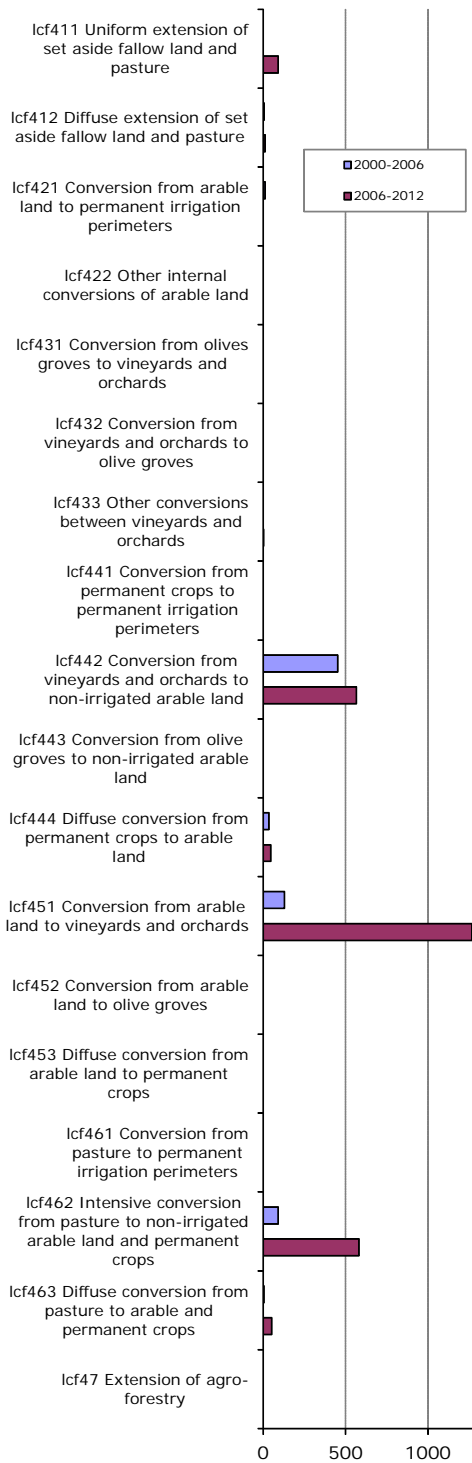


8.30. Mean annual conversion between arable land and pasture [ha/year]

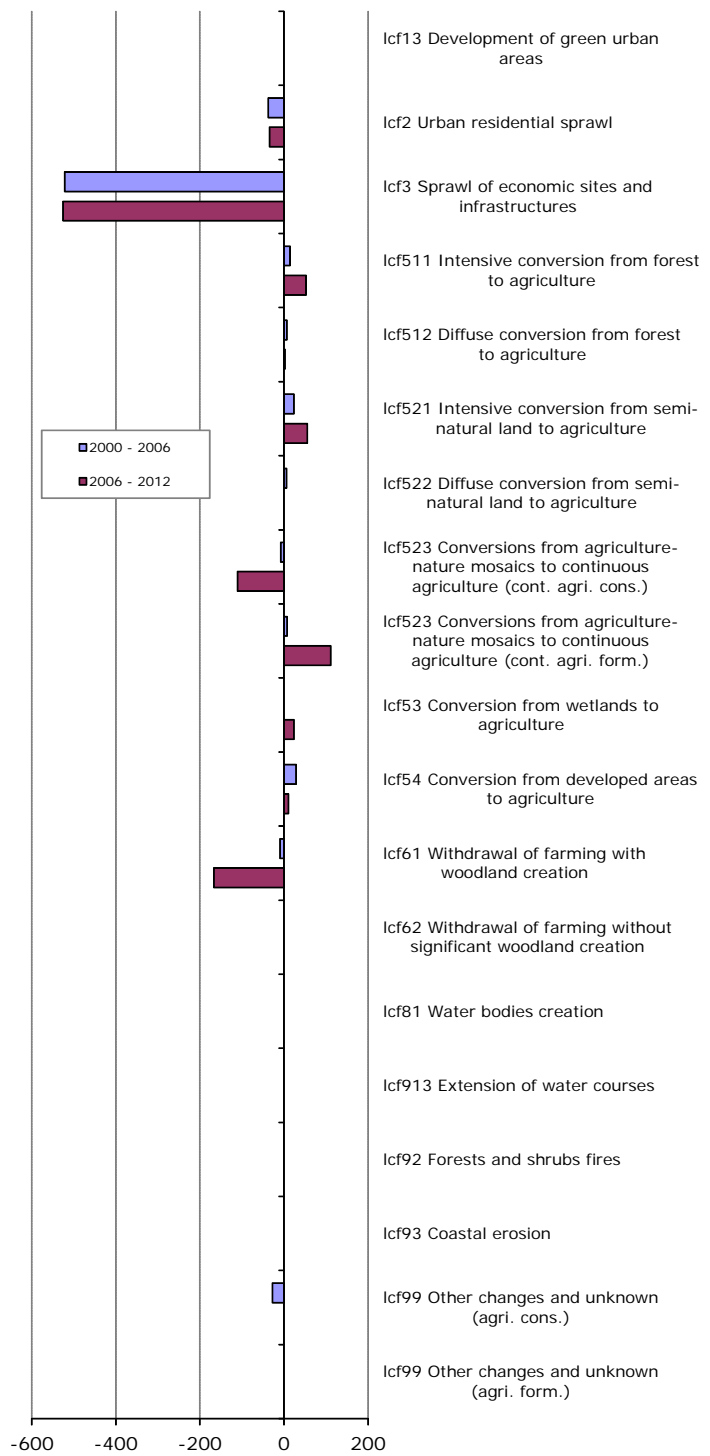


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9.31. Mean annual agriculture internal conversions [ha/year]

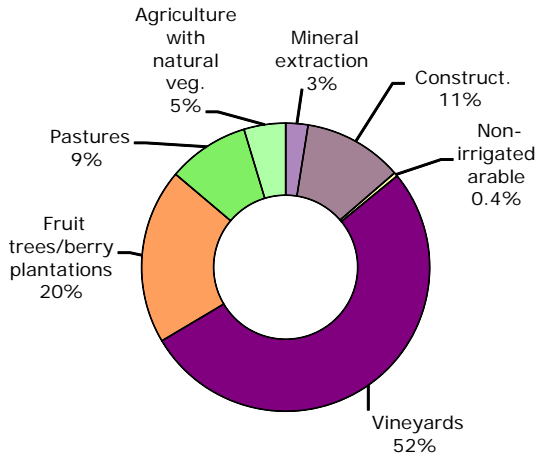


9.32. Mean annual conversions between agriculture and other LC types [ha/year]

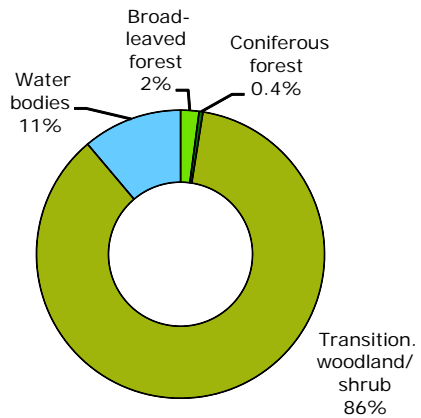


Forest & nature

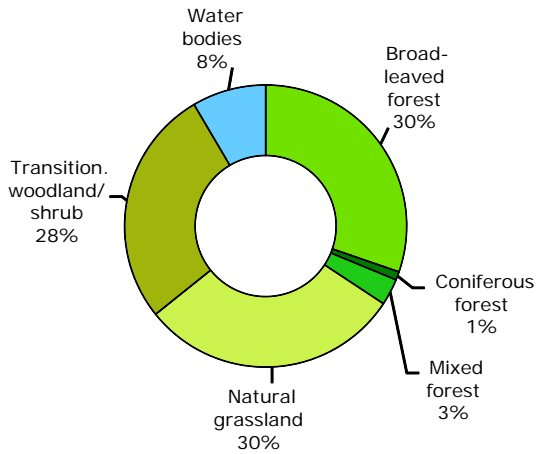
10.33. LC consumed by forest & nature 2006-2012 [% of total]



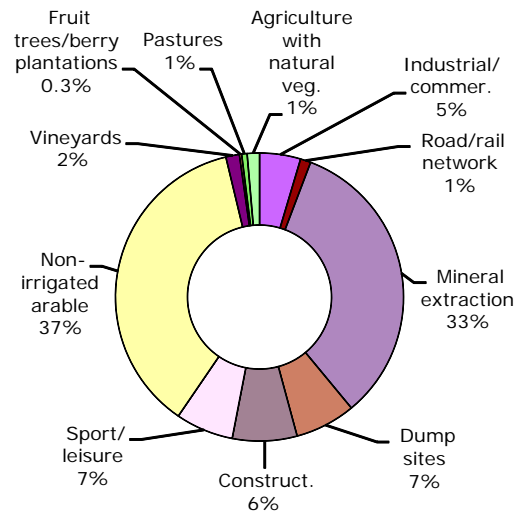
10.34. Formation of forest & nature land from non-forest /nature 2006-2012 [% of total]



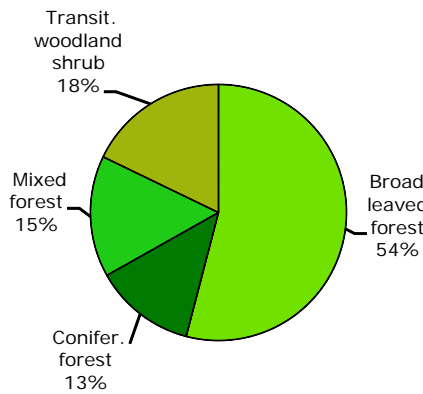
10.35. Consumption of forest & nature land by non-forest/nature 2006-2012 [% of total]



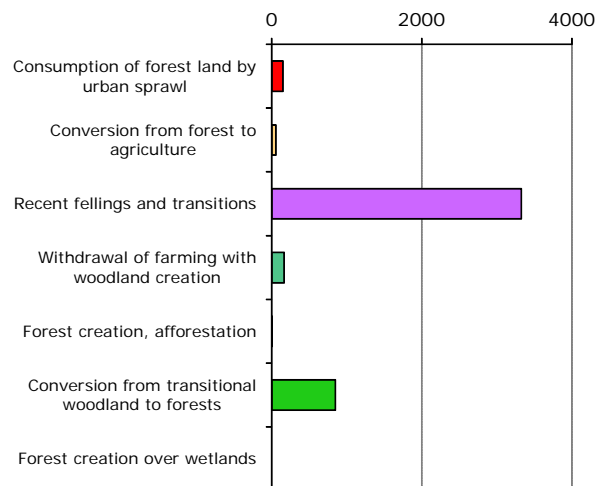
10.36. Formation of non-forest/nature land from forest & nature 2006-2012 [% of total]



10.37. Forested land 2012 [% of total area]

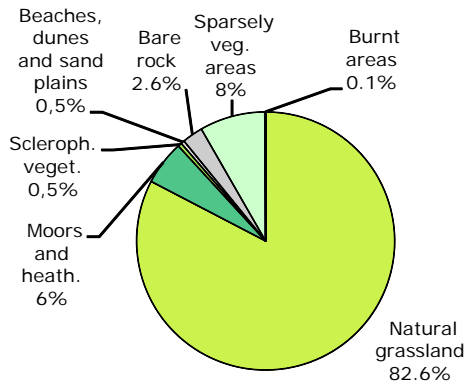


10.38. Main trends in woodland & forests consumption/formation 2006-2012 [ha/year]

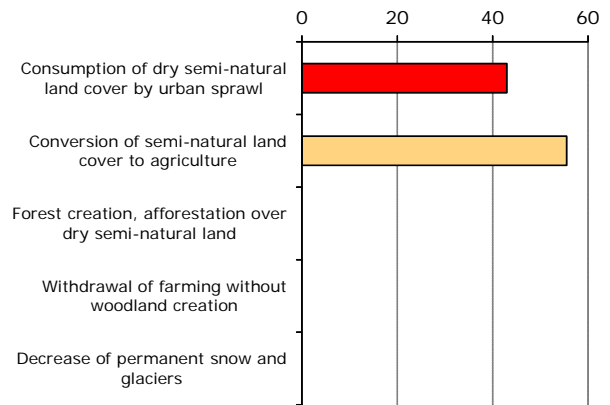


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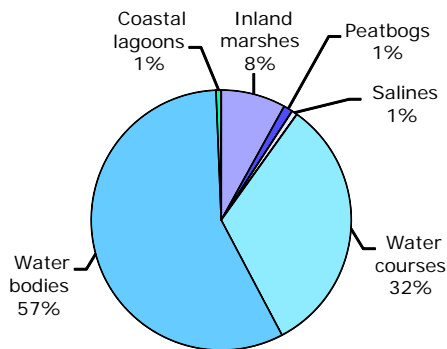
11.39. Dry semi-natural areas 2012
[% of total area]



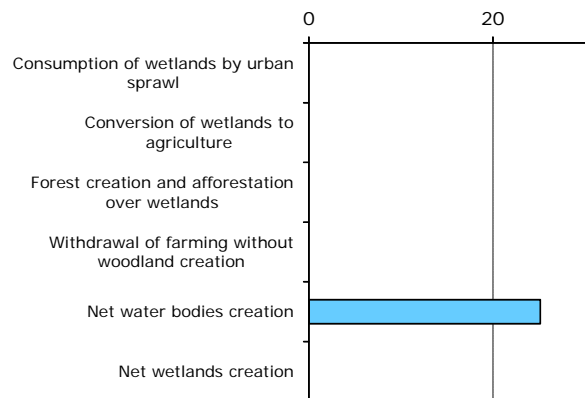
11.40. Main trends in dry semi-natural land consumption/formation 2006-2012
[ha/year]



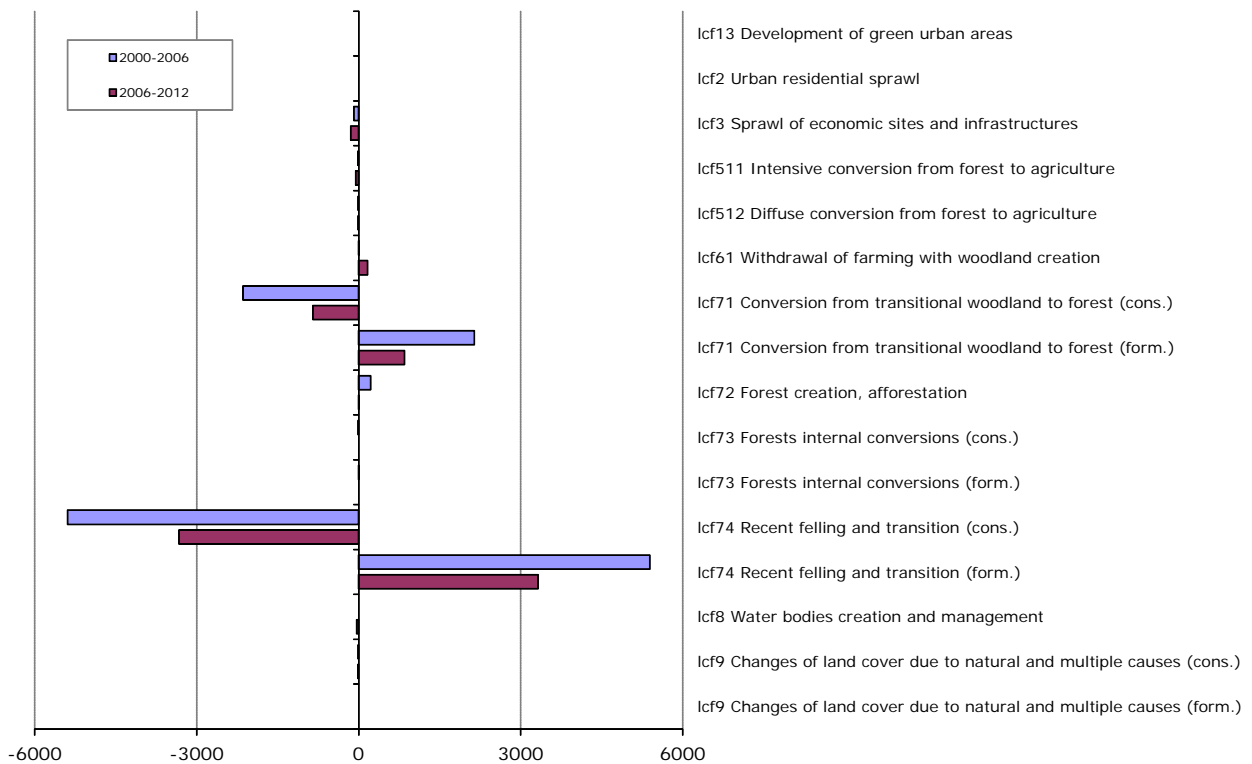
11.41. Wetlands & water 2012
[% of total area]



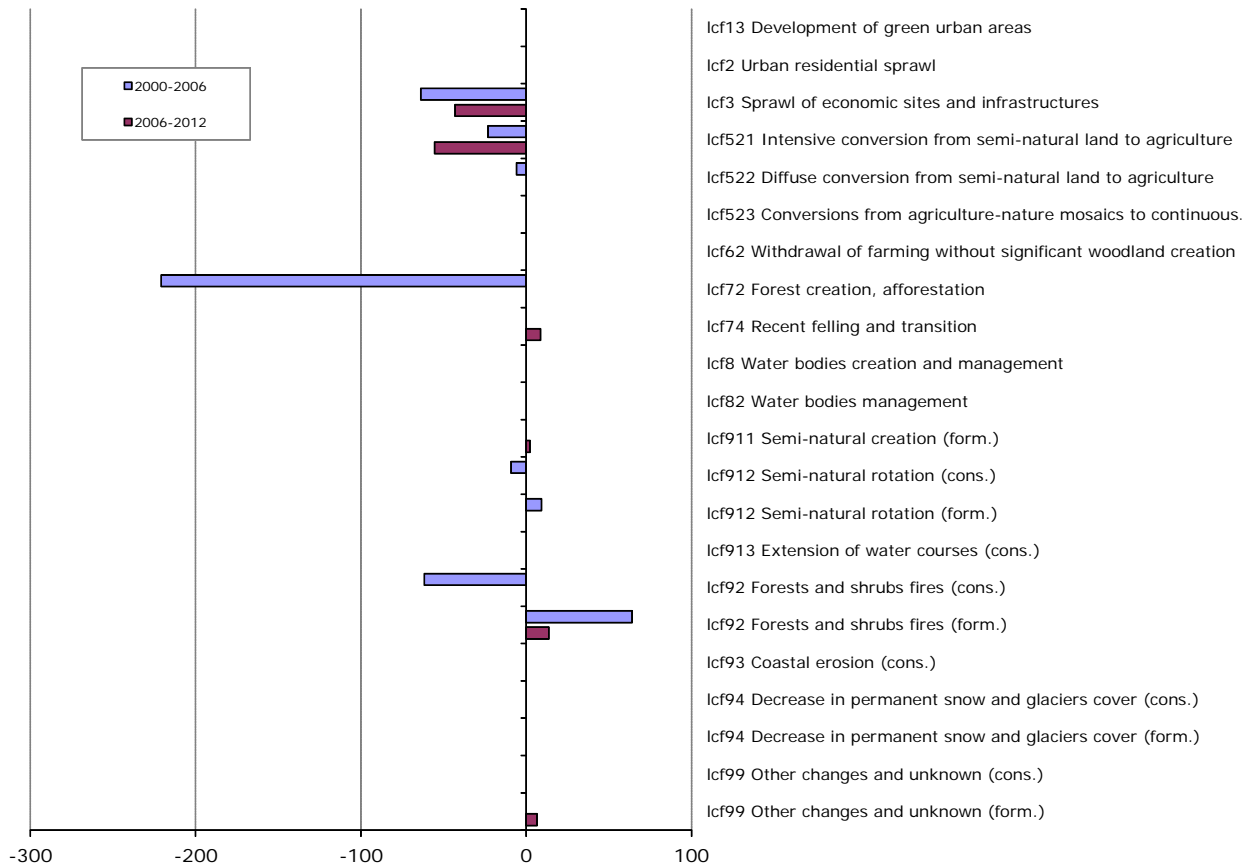
11.42. Main trends in wetlands & water consumption/formation 2006-2012
[ha/year]



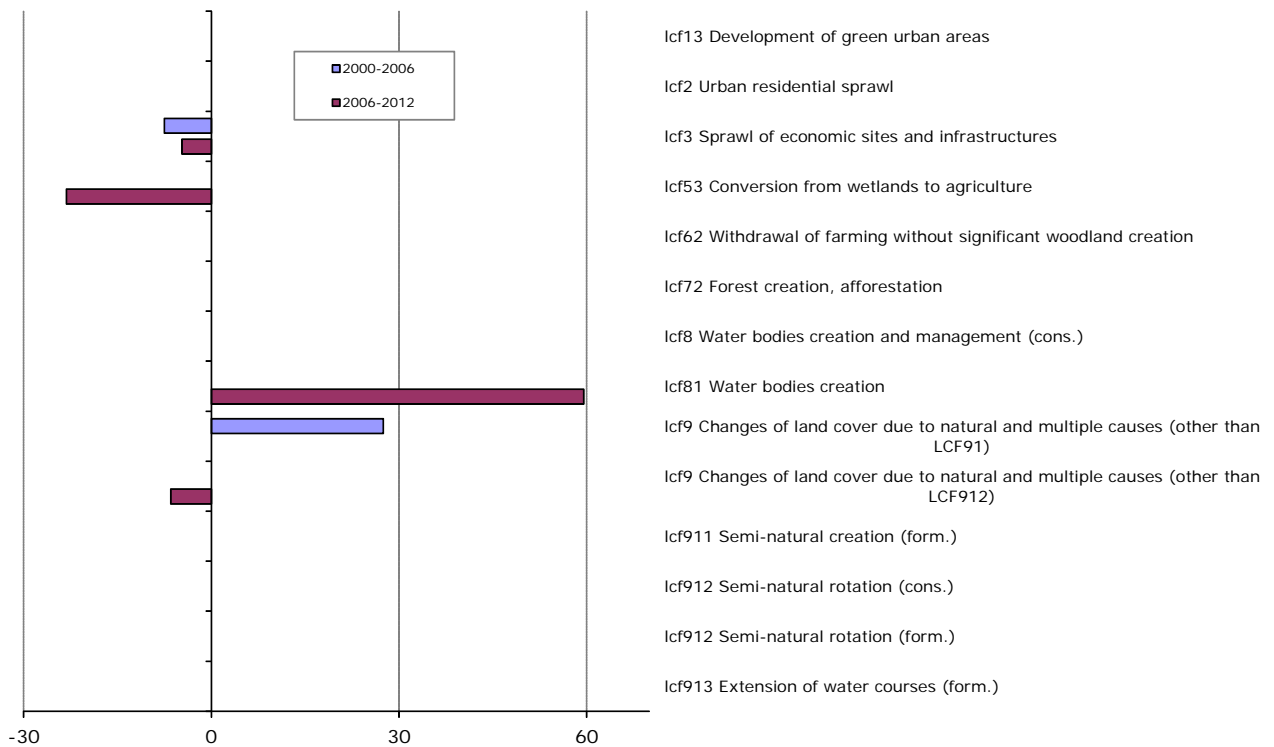
11.43. Mean annual conversions of forest & other woodland
[ha/year]



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

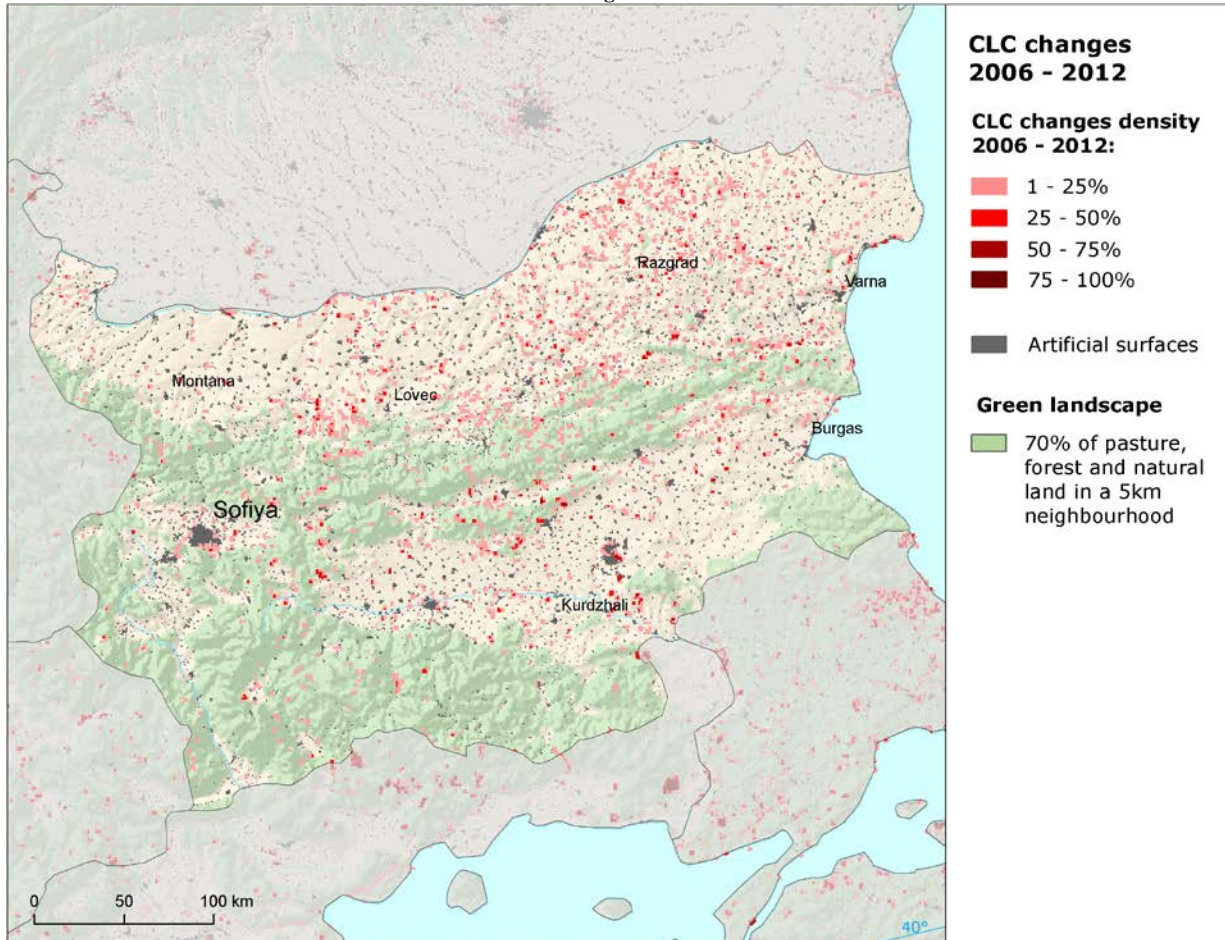


12.45. Mean annual conversions of wetlands and water LC [ha/year]

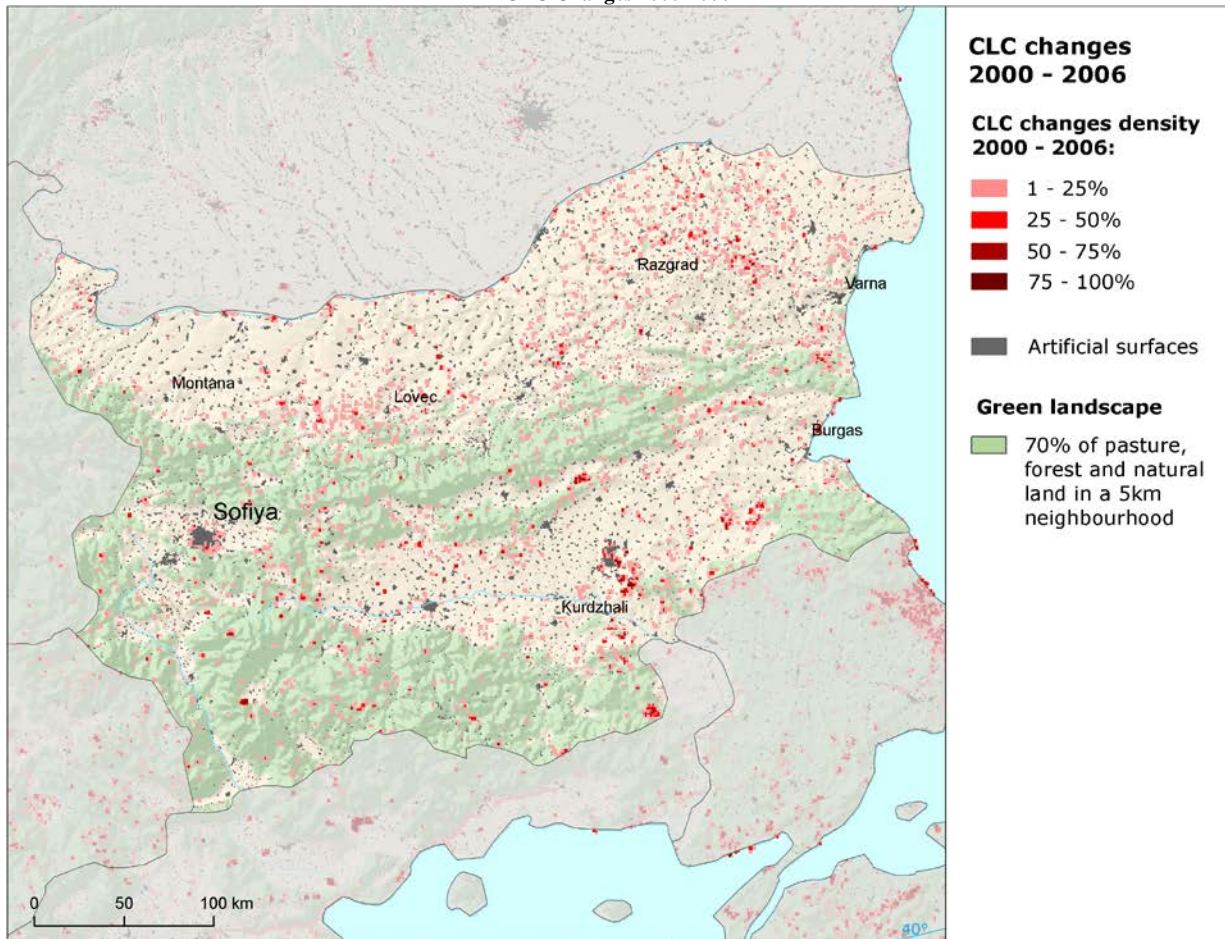


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CLC Changes 2006-2012

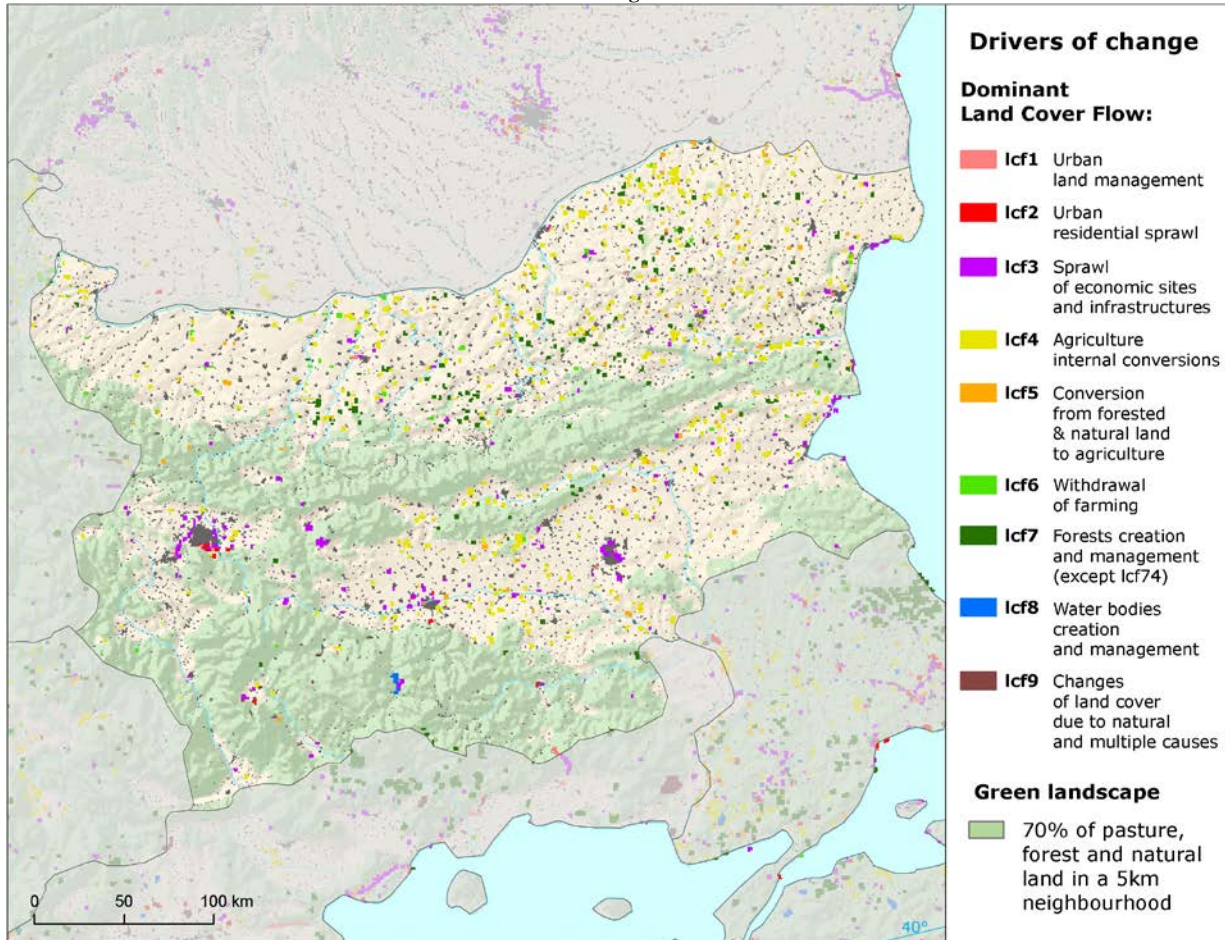


CLC Changes 2000-2006

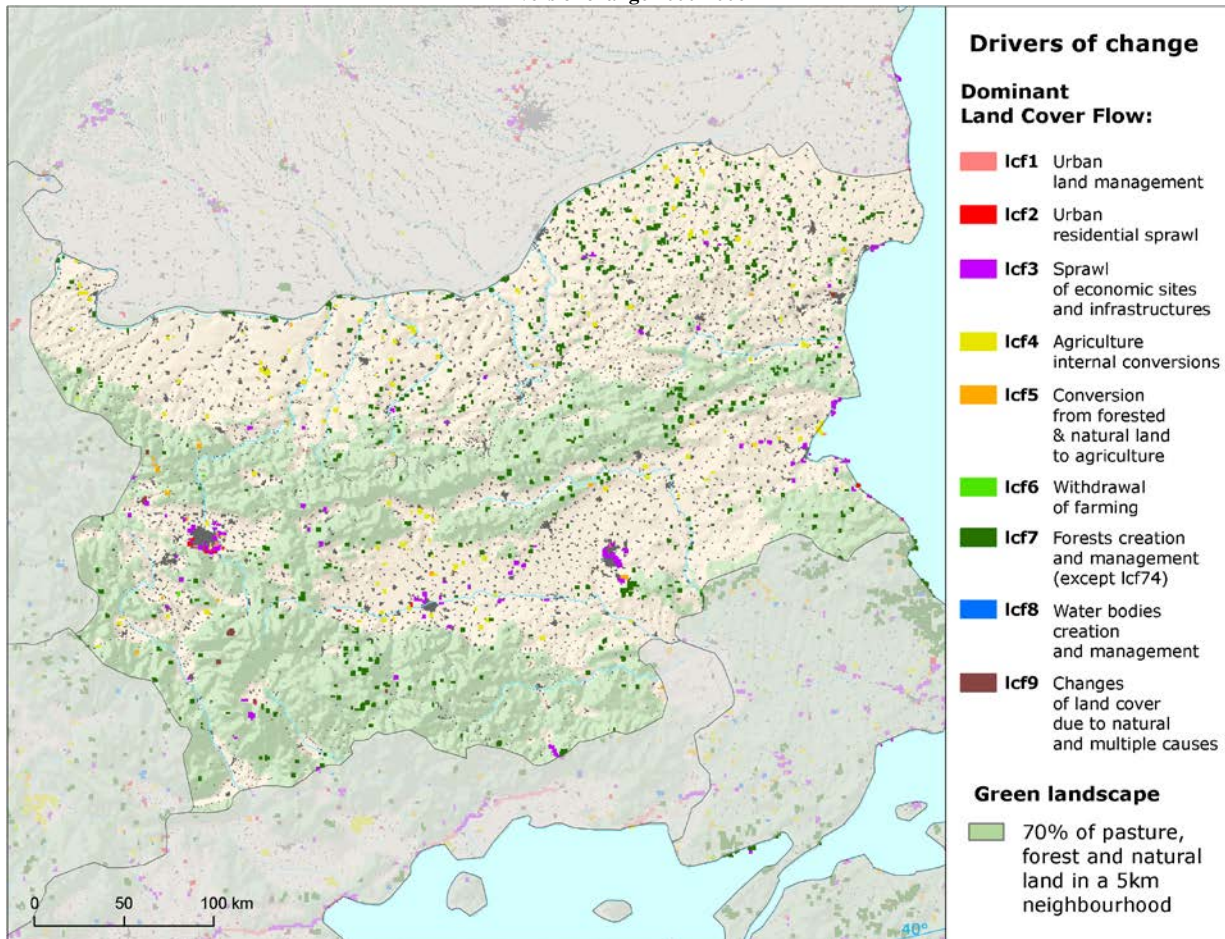


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Drivers of change 2006-2012

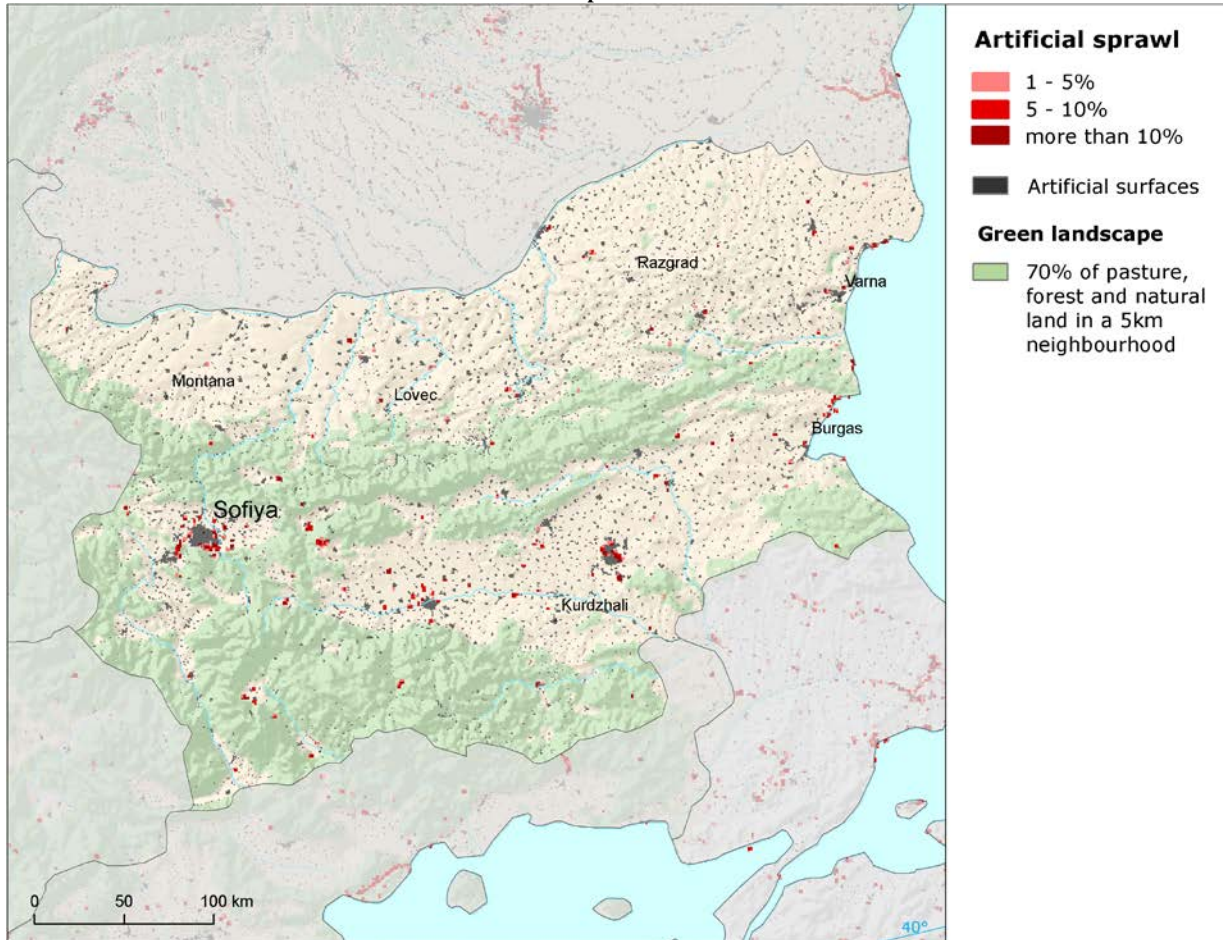


Drivers of change 2000-2006

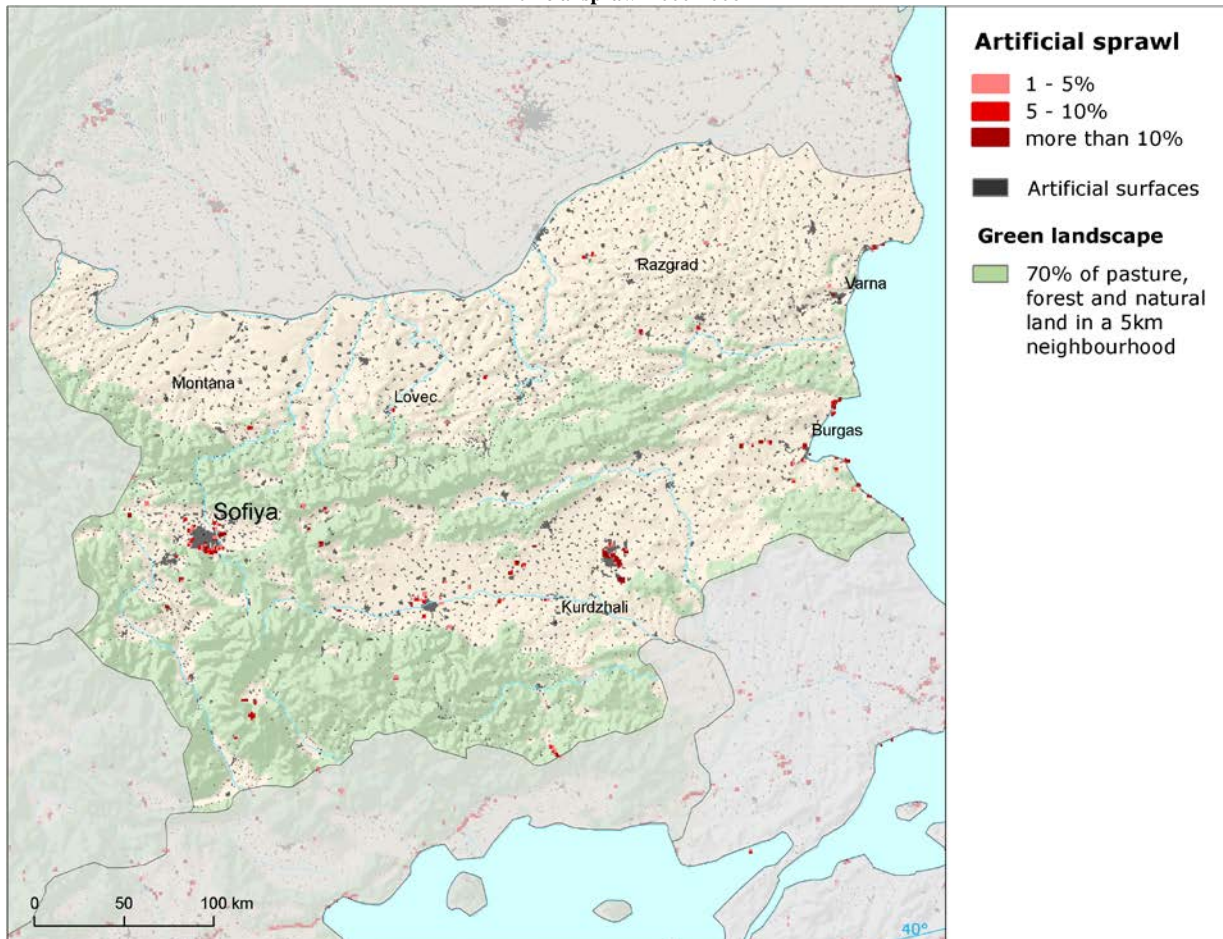


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Artificial sprawl 2006-2012

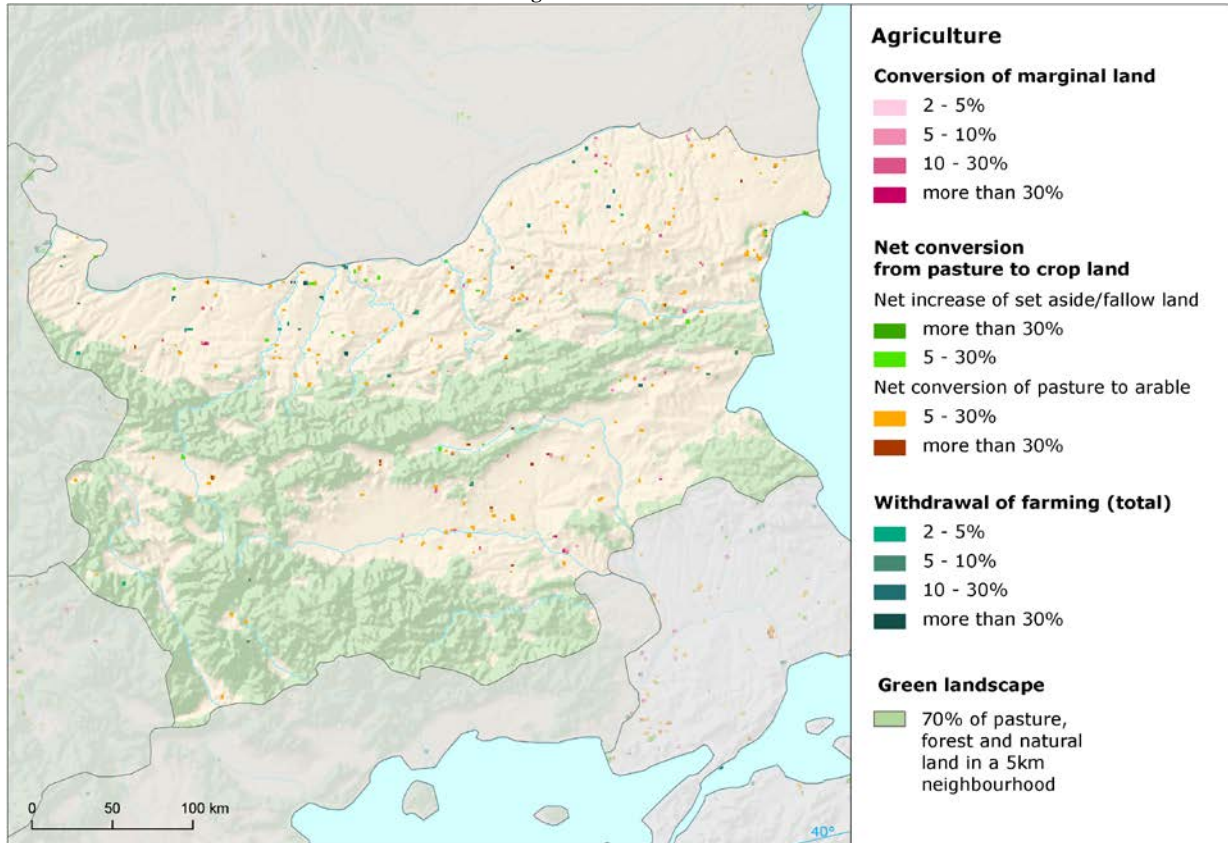


Artificial sprawl 2000-2006

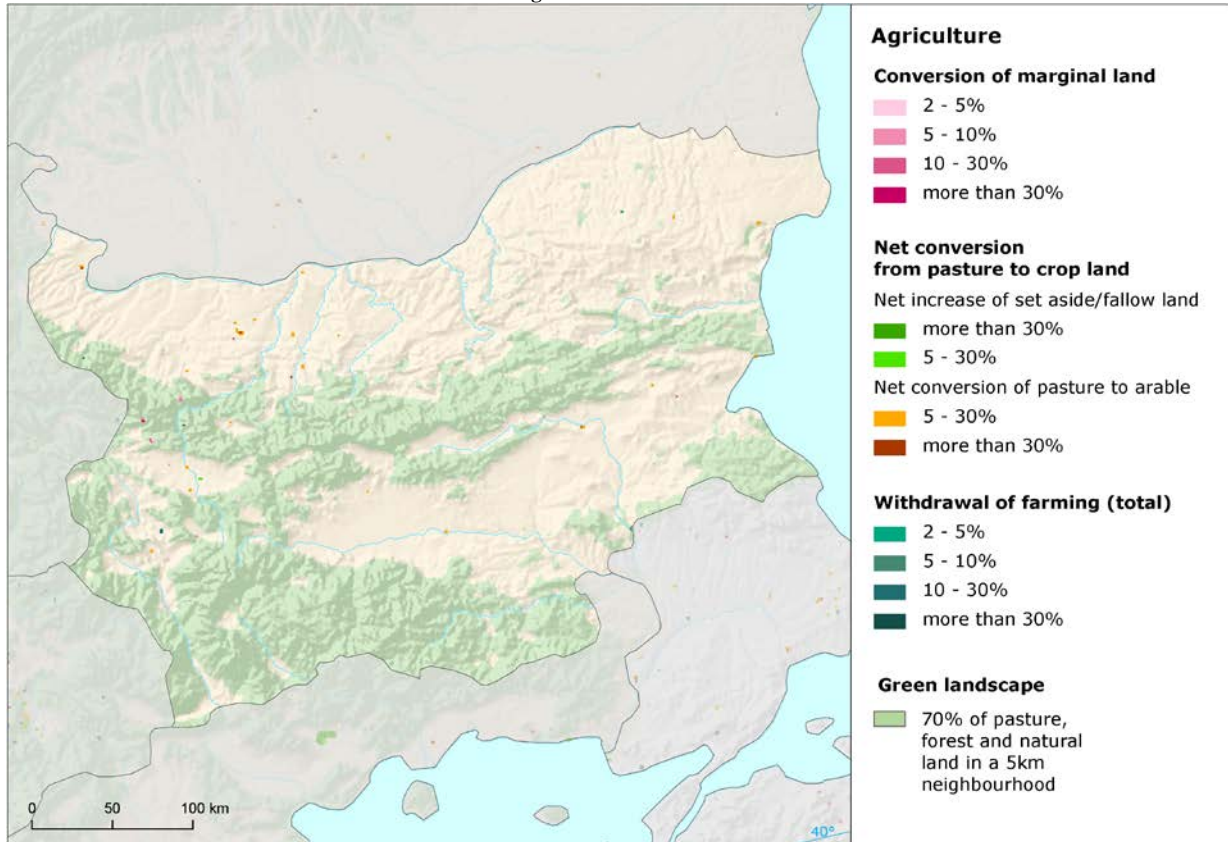


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Agriculture 2006-2012

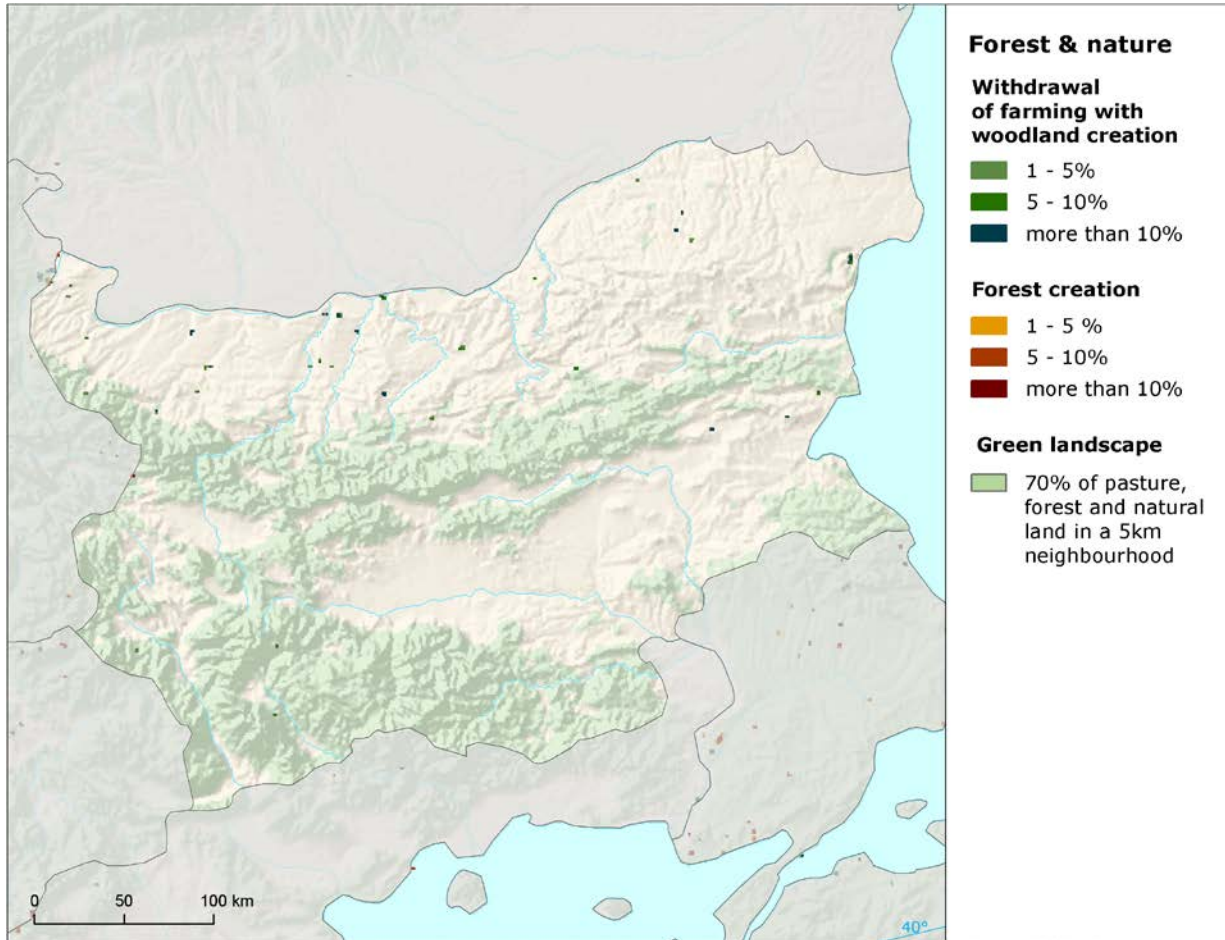


Agriculture 2000-2006



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Forest and nature 2006-2012



Forest and nature 2000-2006

