Country fact sheet

Land cover 2012

Greece

September 2017

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European Environment Agency

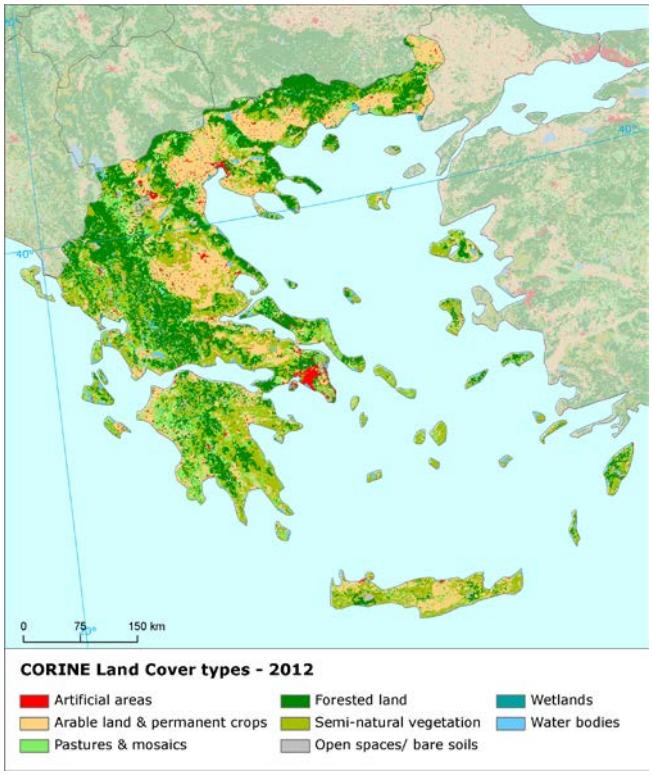
Greece

Land cover 2012

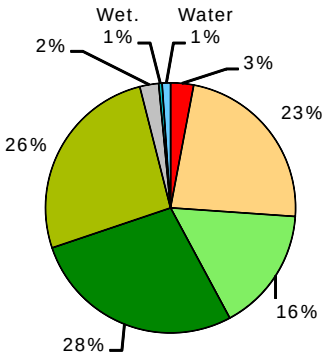
Overview of land cover & change 2006-2012

The overall pace of land cover development in Greece is average, compared to other European countries. The annual land cover change rate of 0,19% means a significant increase of the intensity of landscape development in the country, comparing with the previous period 2000-2006.
The landscape development is driven mainly by forest creation and management and also by changes due to natural and multiple causes, both of them having doubled their intensities, compared to the previous period. Recent felling and transition is the most frequent flow, however, also other exchanges of natural landscape are quite usual in Greece.
The artificial sprawl in the country is very intensive, with artificial land take rate of 0,71% being one of the highest in Europe. However, comparing with previous period 2000-2006, characterized by a rate 0,93%, it means a slight slowdown. In both periods, artificial development is represented mainly by construction, however, also other artificial flows are intensive, with the exception of residential sprawl, which is rather insignificant in Greece after the year 2000.

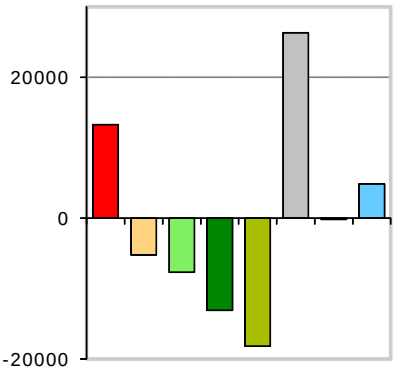
Note: The results presented here are based on a change analysis of 44 land cover types mapped consistently on a 1:100.000 scale across Europe over more than decade between 2000-2006-2012 - see Corine land cover (CLC) programme for details.
Number of years between CLC2006-CLC2012 data for Greece: 6



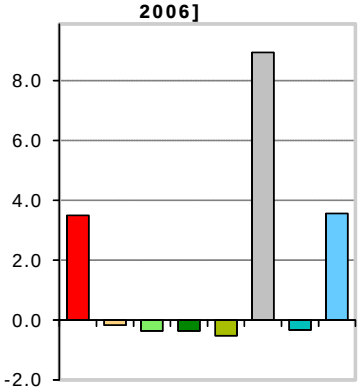
1.1. Land cover 2012 [% of total]



1.2. Net change in land cover 2006-2012 [ha]



1.3. Net change in land cover [% of initial year 2006]



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

Summary balance table 2006-2012

	Artificial areas	Arable land & permanent crops	Pastures & mosaics	Forested land	Semi-natural vegetation	Open spaces / bare soils	Wetlands	Water bodies	TOTAL [hundreds ha]
Land cover 2006	**3790**	**30488**	**21200**	**36563**	**34701**	**2943**	**589**	**1362**	**131636**
Consumption of initial LC	76.7	97.6	90.4	855.5	285.5	99.2	4.1	3.5	1512
Formation of new LC	209.2	45.2	13.6	724.3	103.6	362.4	2.1	52.0	1512
Net Formation of LC	**132.6**	**-52.4**	**-76.8**	**-131.2**	**-181.9**	**263.1**	**-2.0**	**48.5**	**0**
Net formation as % of initial year	*3.5*	*-0.2*	*-0.4*	*-0.4*	*-0.5*	*8.9*	*-0.3*	*3.6*	
Total turnover of LC	**285.9**	**142.8**	**104.1**	**1579.8**	**389.1**	**461.6**	**6.2**	**55.5**	**3025**
Total turnover as % of initial year	*7.5*	*0.5*	*0.5*	*4.3*	*1.1*	*15.7*	*1.0*	*4.1*	*2.3*
Land cover 2012	**3922**	**30436**	**21124**	**36431**	**34519**	**3206**	**587**	**1410**	**131636**

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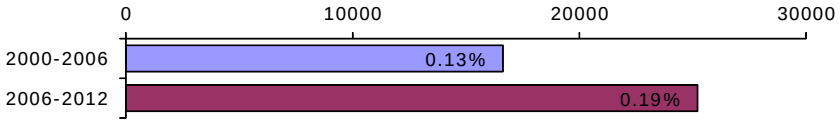
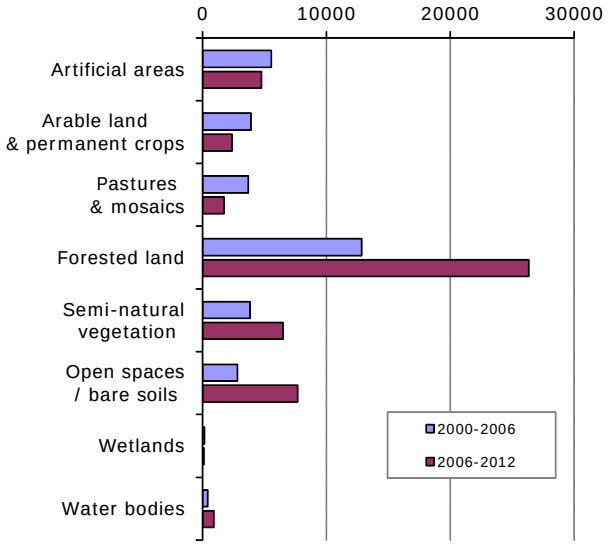
Land cover trends comparison 2000-2006 vs. 2006-2012

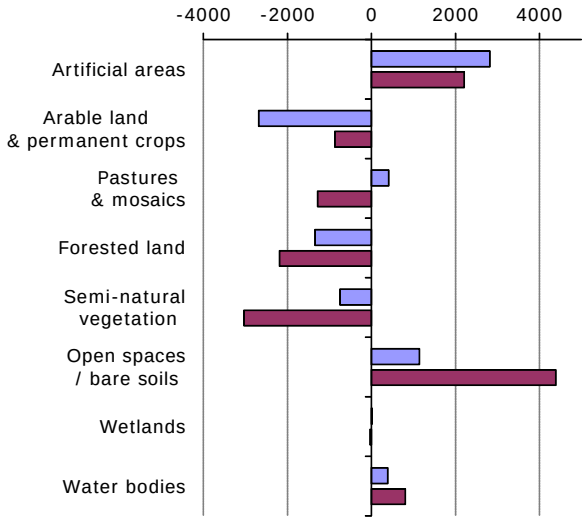
2.4. Annual land cover change [ha/year, % of total area]



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

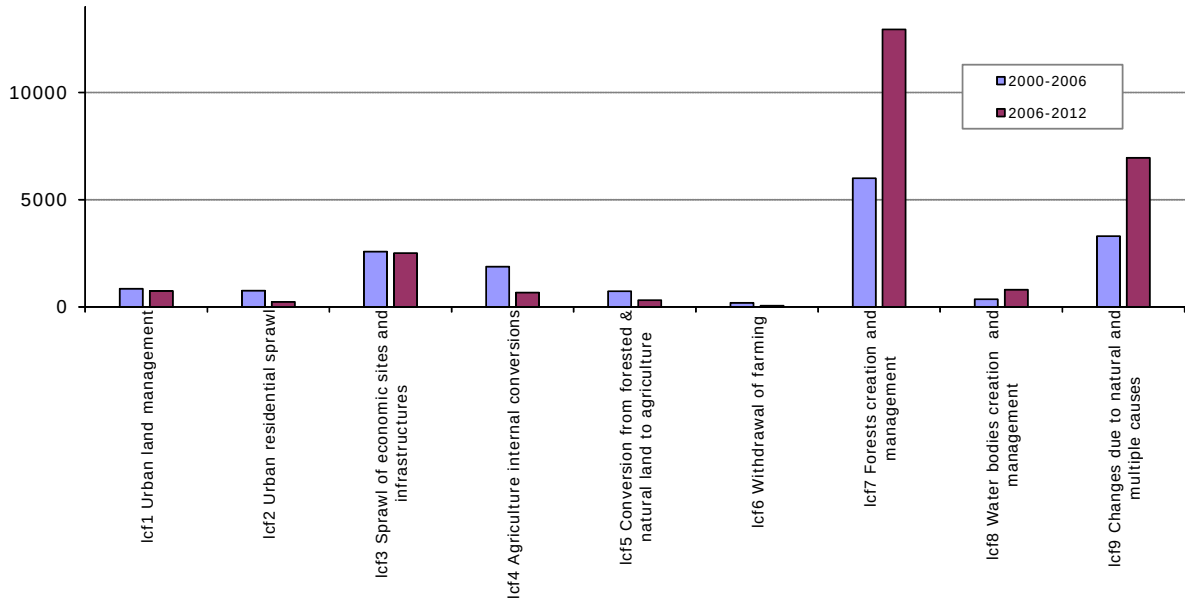


2.6. Net annual change of LC types [ha/year]



Summary trend figures	2000-2006	2006-2012
Annual land cover change [ha/year]	**16629**	**25208**
Annual land cover change as % of initial year	**0.13%**	**0.19%**
Land uptake by artificial development as mean annual change [ha/year]	3256	2657
Agricultural land uptake by urban and infrastructures development as mean annual change [ha/year]	2618	2362
Net uptake of forests and semi-natural land by agriculture as mean annual change [ha/year]	394	162
Net conversion from pasture to arable land and permanent crops as mean annual change [ha/year]	-1321	4
Forest & other woodland net formation as mean annual change [ha/year]	-1344	-2187
Dry semi-natural land cover net formation as mean annual change [ha/year]	512	1449
Wetlands & water bodies net formation as mean annual change [ha/year]	405	775

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



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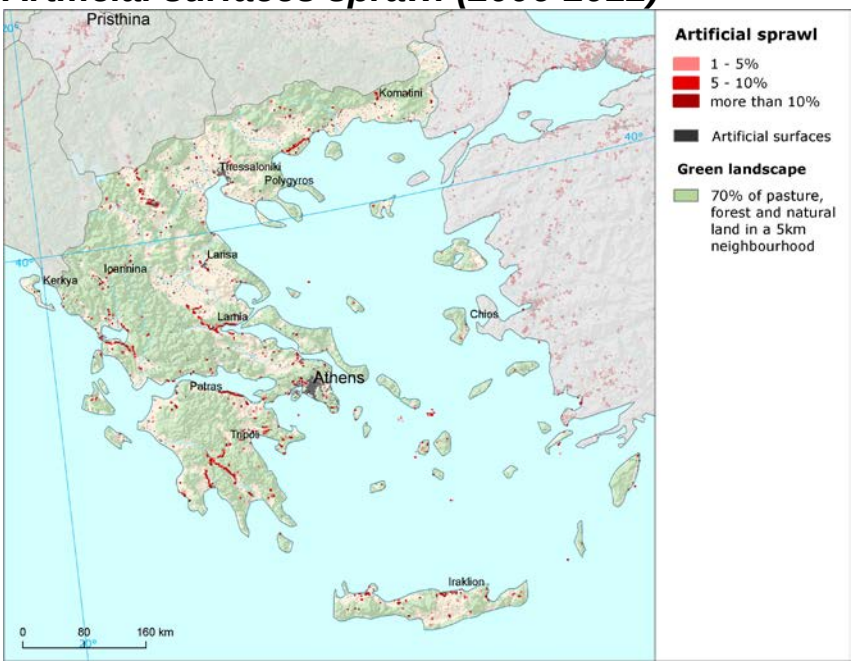
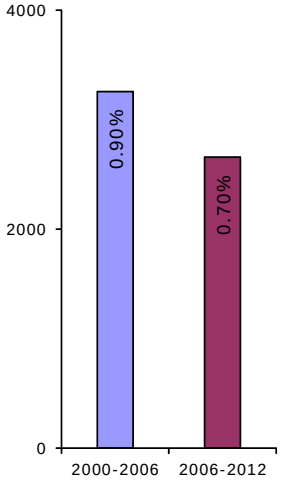
Artificial surfaces sprawl (2006-2012)



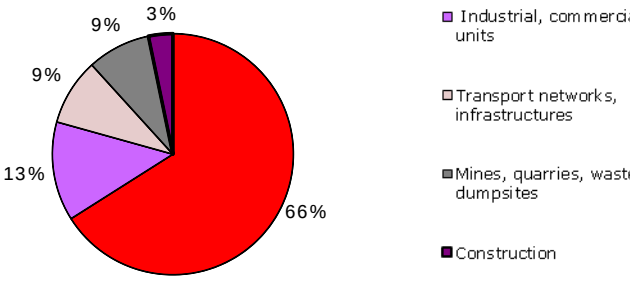
3.8. Artificial land take [ha/year, % of initial year]



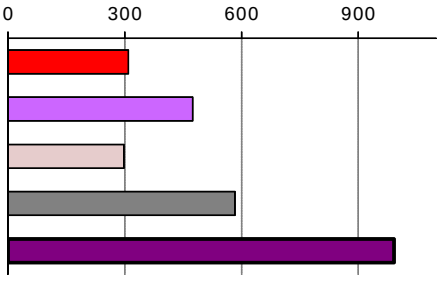
Artificial development driven by construction

Despite its slight slowdown, artificial development in Greece is still one of the most intensives in Europe in the period 2006-2012. It is driven by construction, but also extension of mines and quarrying areas as well as the sprawl of industrial and commercial sites which are quite significant in the country. On the other hand, urban diffuse residential sprawl, which was quite intensive during the previous period, is much slower in 2006-2012. The artificial development is frequently realized also through recycling of developed urban land, represented mostly by transformation of construction sites into developed urban units. As a result of these processes, transportation networks and industrial or commercial units are the artificial classes with the highest formation of area.

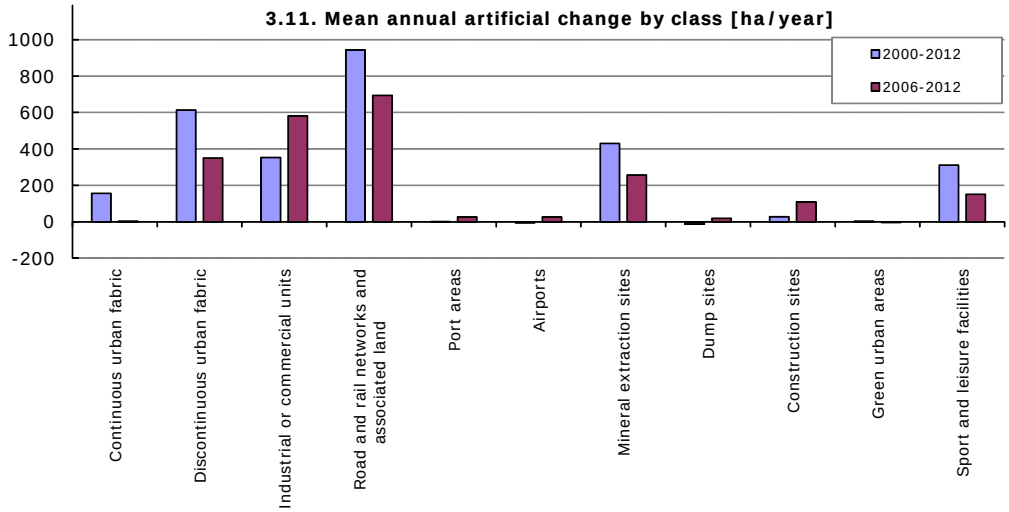
3.9. Artificial surfaces 2012 [% of total area]



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



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



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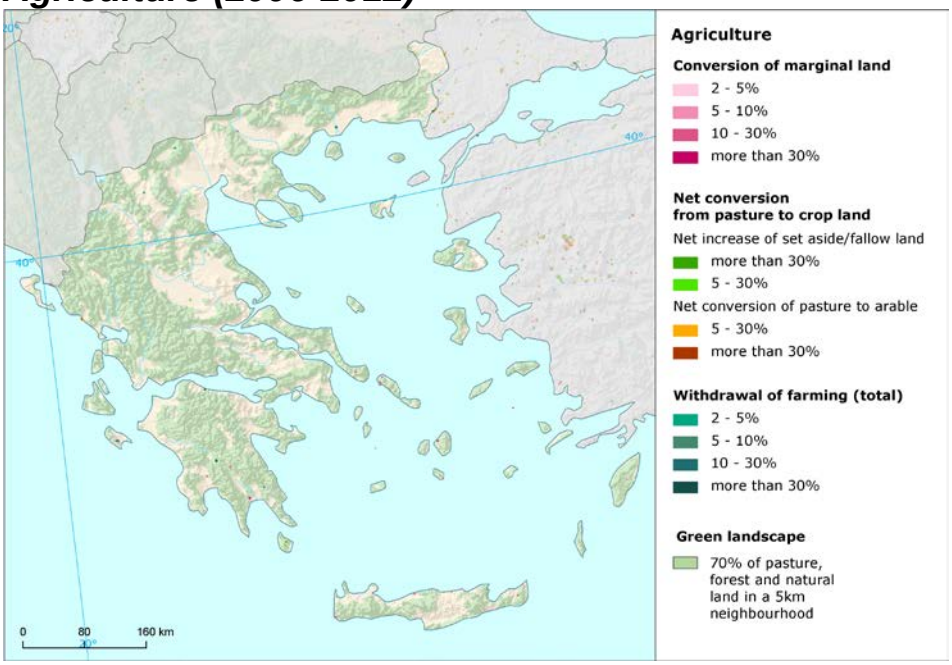
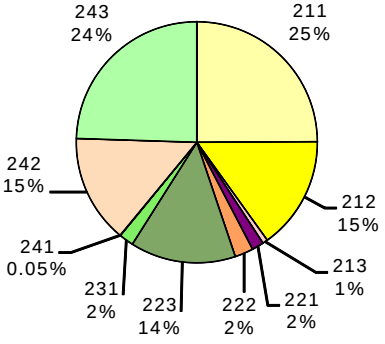
Agriculture (2006-2012)

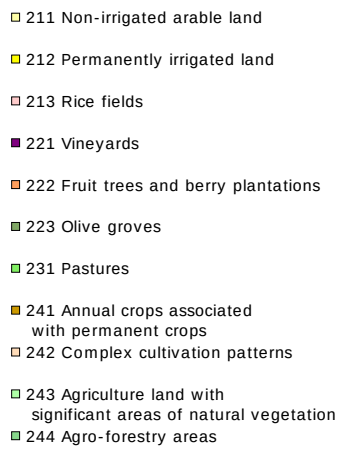


Decrease of conversion from arable to pasture

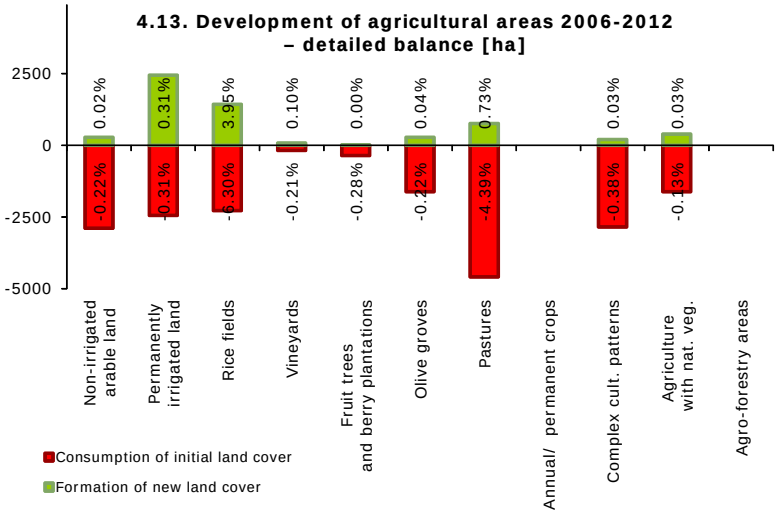
The intensity of agricultural development in Greece is low, compared with other land cover flows in the country as well as with the intensity from the previous period 2000-2006. The overall decrease of agricultural development has been caused in particular by decrease of extension of pasture over former arable land, which was the main driver of internal agriculture development in the country during the previous period. On the other hand, an increase of the other internal conversions of arable land has been observed, represented by conversion between permanently irrigated land and rice fields. However, the most significant process in agricultural development in Greece between 2006 and 2012 is the consumption of land with the following structure: pasture (30%), complex cultivation patterns (20%), non-irrigated arable land (18%), agriculture with natural vegetation (11%) and olive groves (11%) by artificial sprawl and also by water bodies creation. As a result, most of agricultural land cover classes show a negative balance of net change, with the exception of permanently irrigated land.

4.12. Agricultural areas 2012 [% of total area]

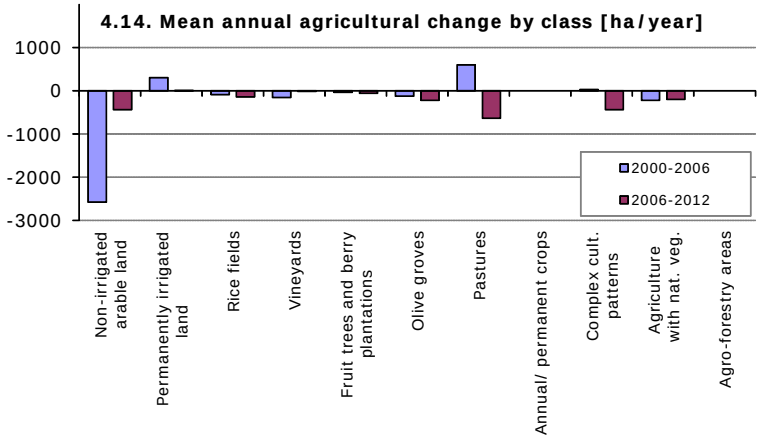




4.13. Development of agricultural areas 2006-2012 – detailed balance [ha]



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



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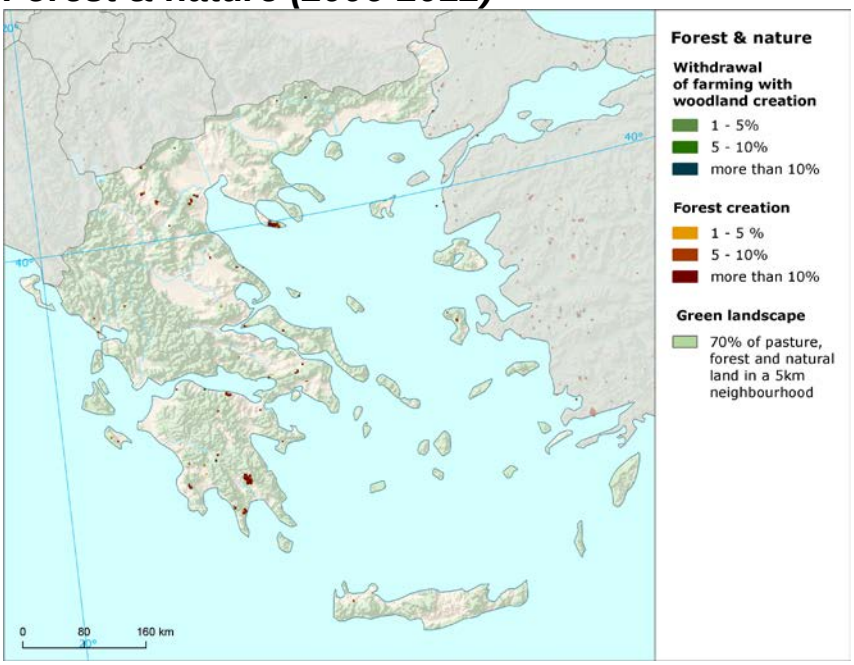
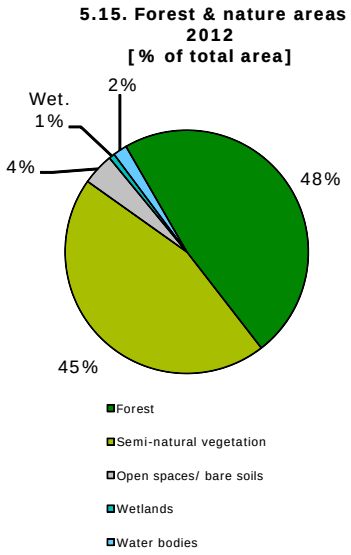
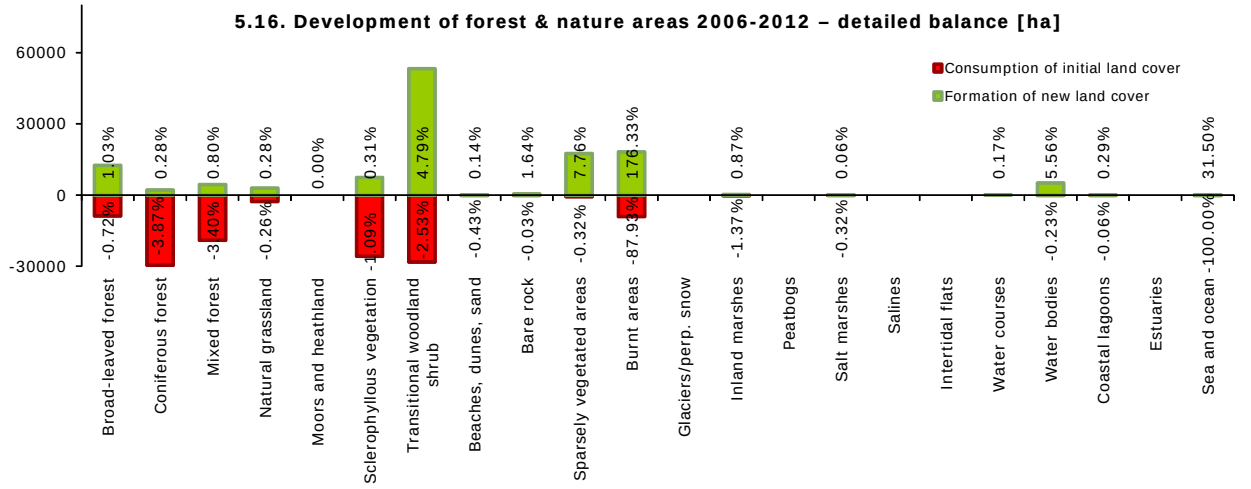
Forest & nature (2006-2012)

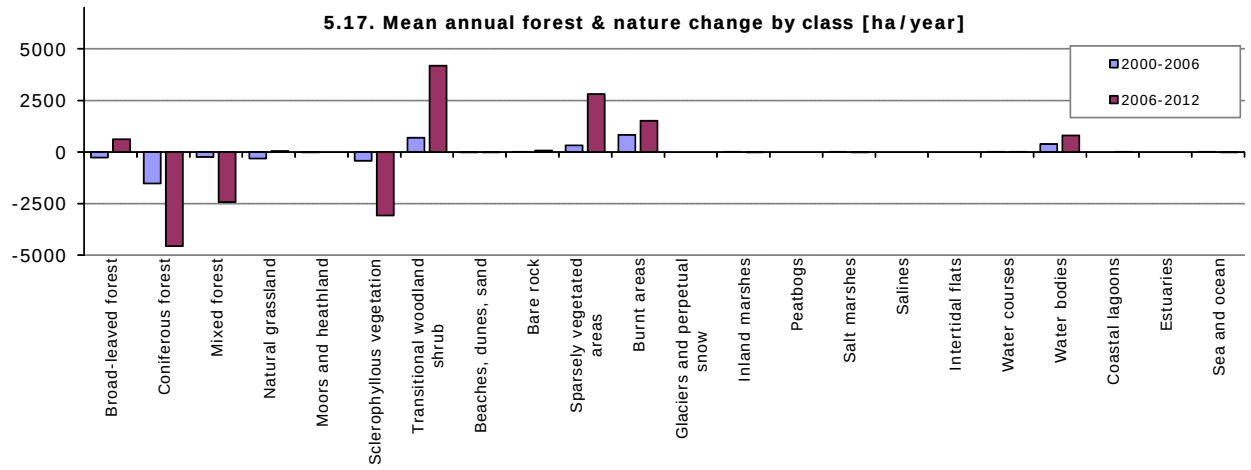




Increased intensity of natural development

The development of natural landscape in Greece is very intensive, driven mainly by increased forest creation and management as well as changes due to natural and multiple causes, both of them having doubled their intensities, compared to the previous period 2000-2006. Increased recent felling and transition was the most frequent flow in the country, however, also other exchanges of natural landscape are quite usual in Greece. Forest and shrub fires destroyed mainly mixed and coniferous forests and sclerophyllous vegetation areas. Afforestation was represented by transformation of burnt and sclerophyllous vegetation areas into mainly transitional woodland. There also occurs a large amount of semi-natural rotation (conversions between sclerophylous vegetation and burnt areas into sparsely vegetated areas and sclerophyllous vegetation), semi-natural creation (conversion from transitional woodland into sparsely or sclerophyllously vegetated areas) and water bodies creation (mainly over former pastures). All these flows have significantly higher intensity, compared with the previous period 2000-2006.

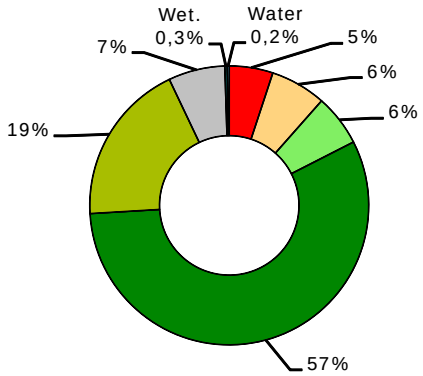




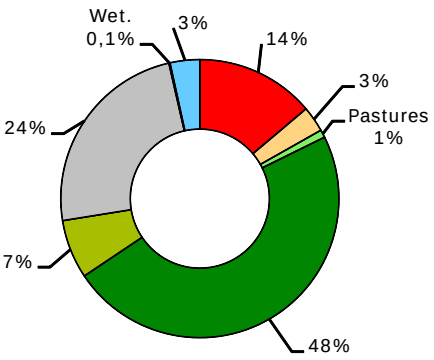
Annex: Land cover flows and trends

Land cover flows 2006-2012

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

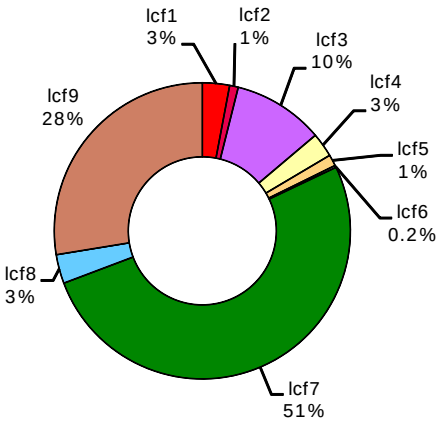


6.19. Formation of land cover 2006-2012 [% of total change area]



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

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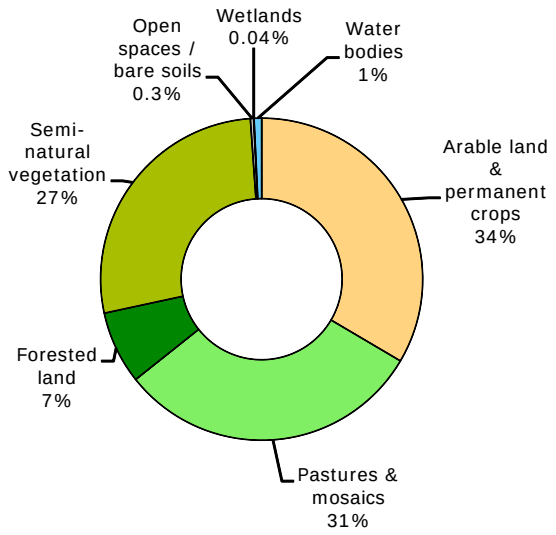
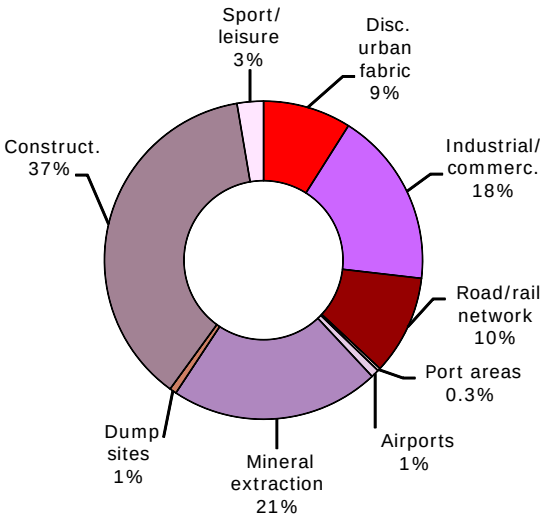
Artificial areas

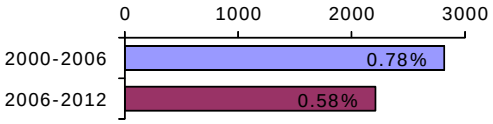
7.21. Consumption by artificial land take 2006-2012 [% of total]



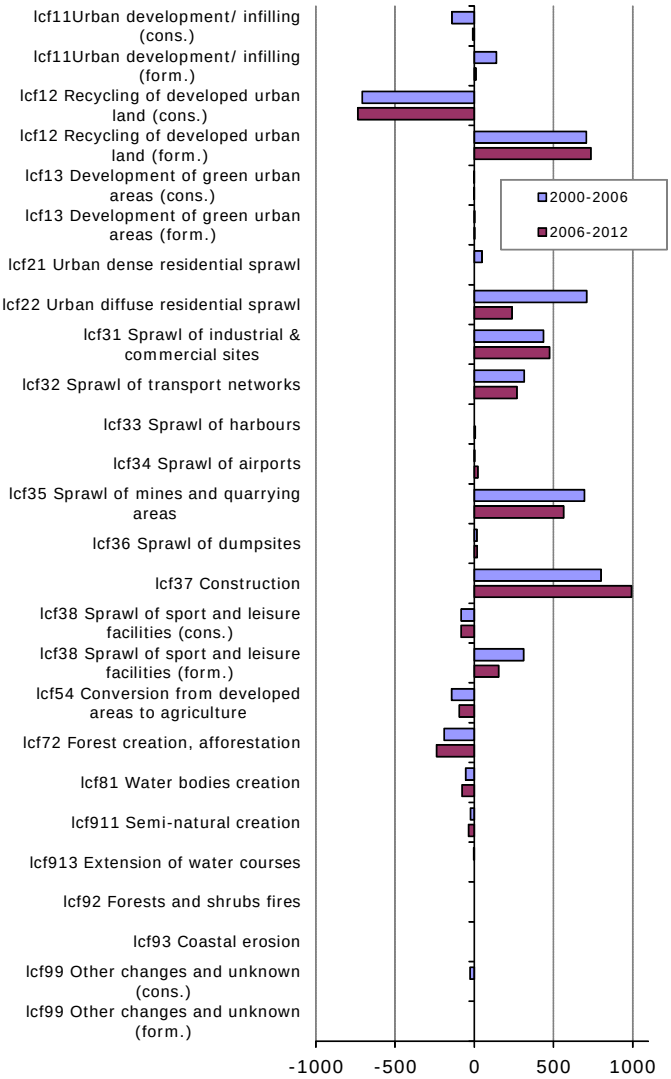
7.22. Formation by artificial land take 2006-2012 [% of total]



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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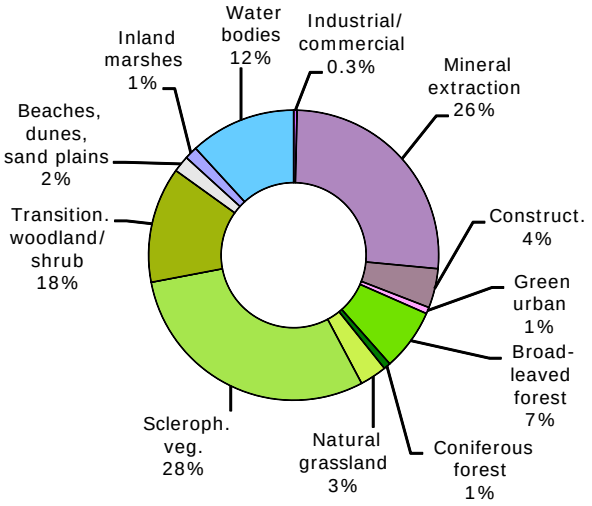
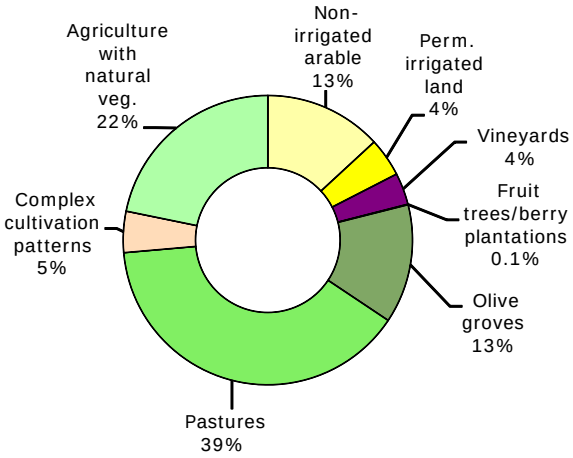
Agriculture

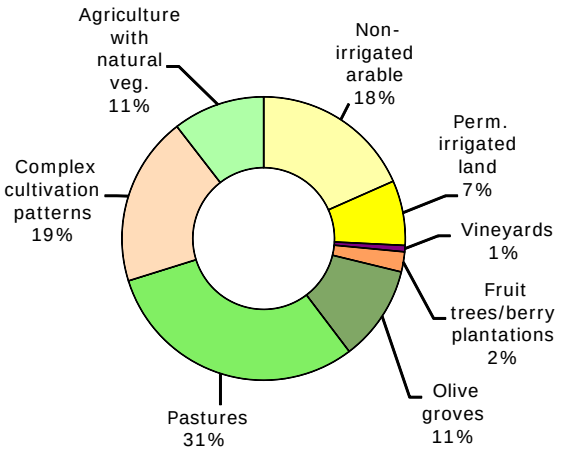
8.25. LC consumed by agriculture 2006-2012 [% of total]



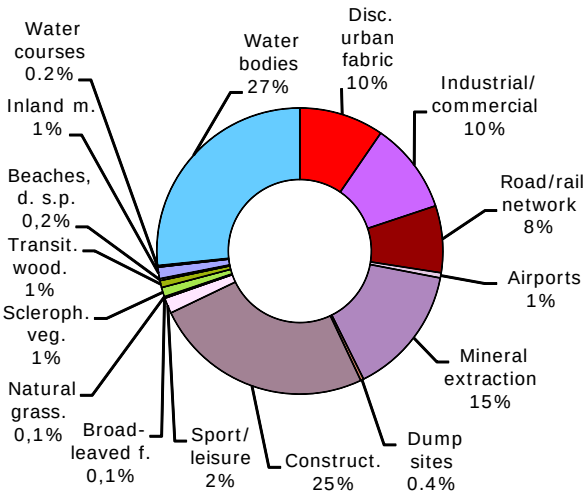
8.26. Formation of agricultural land from non-agriculture 2006-2012 [% of total]



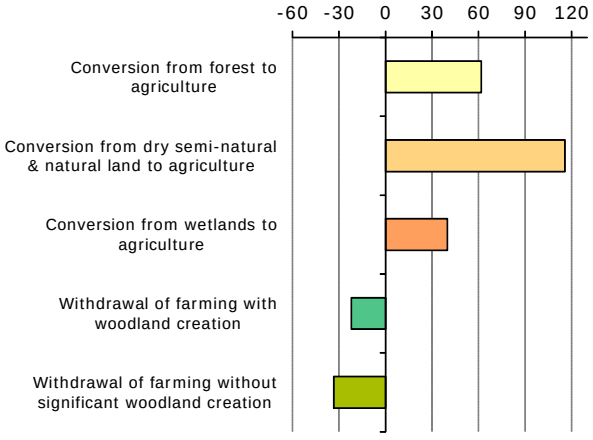
8.27. Consumption of agricultural land by non-agriculture 2006-2012 [% of total]



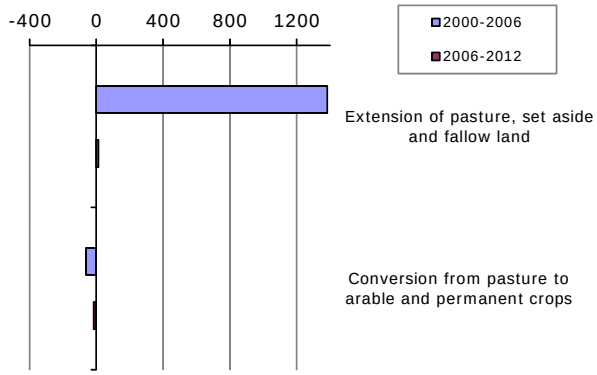
8.28. Formation of non-agricultural land from agriculture 2006-2012 [% of total]



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



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



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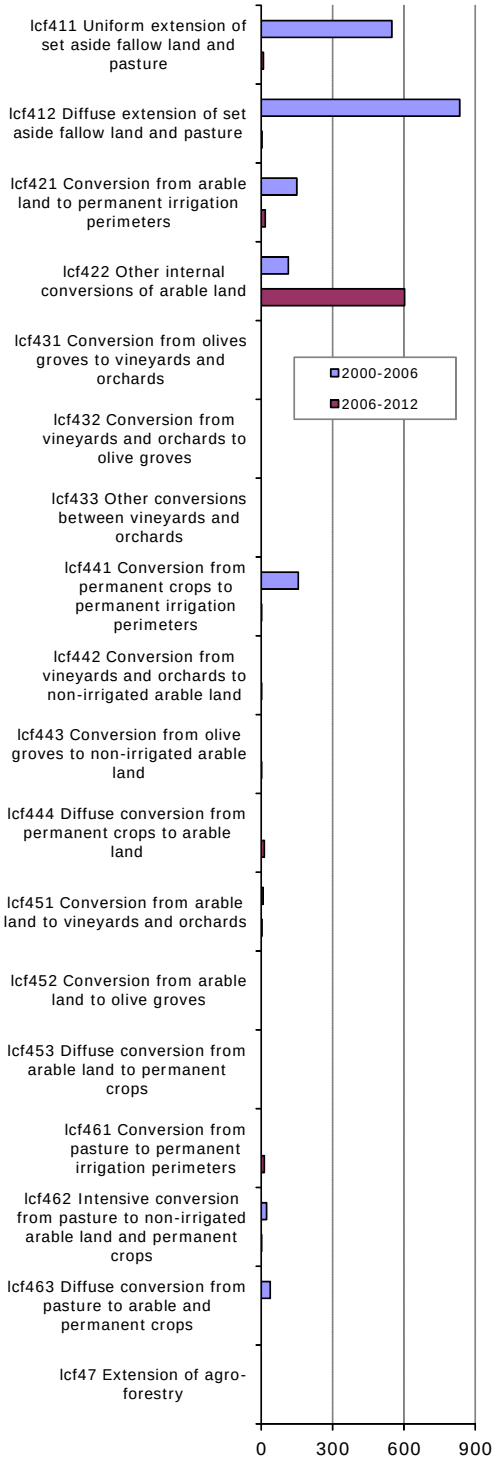
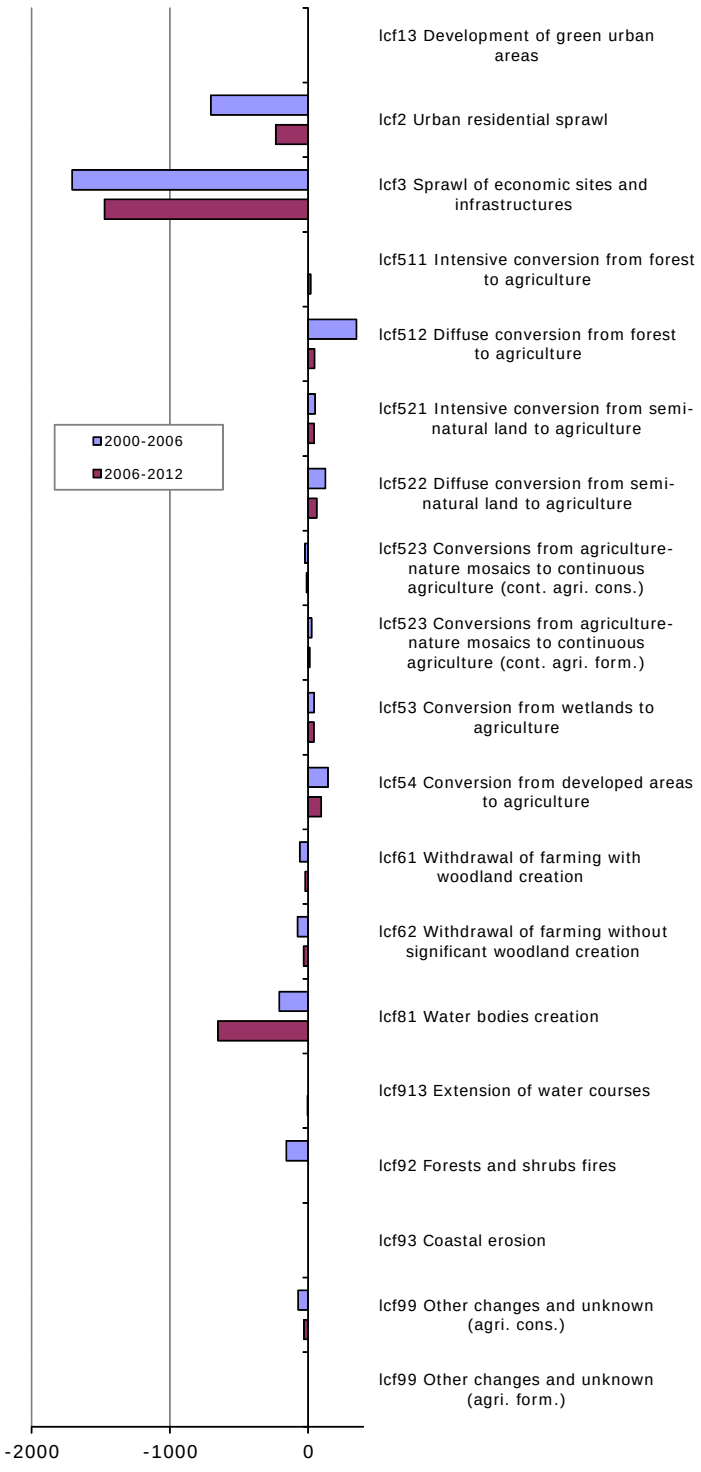
9.31. Mean annual agriculture internal conversions [ha / year]



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



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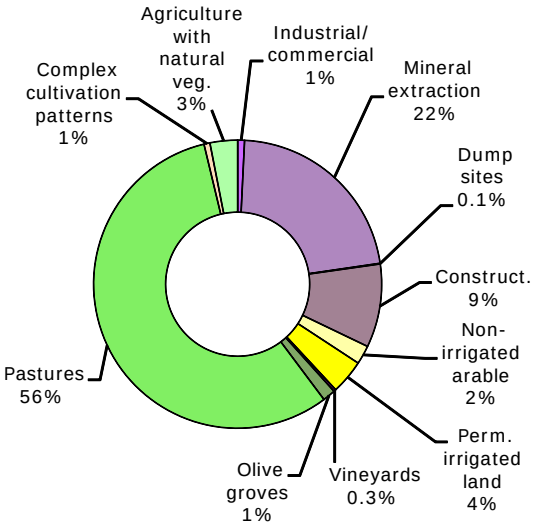
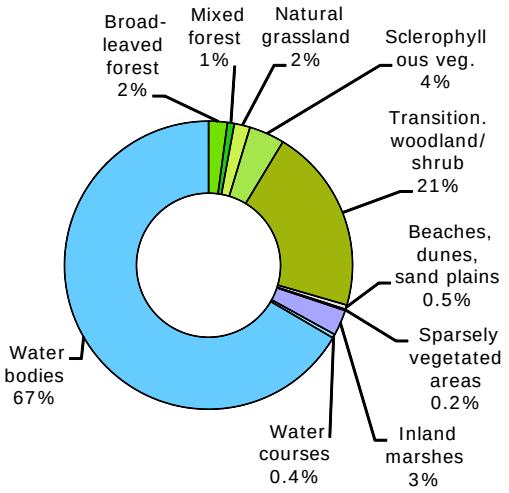
Forest & nature

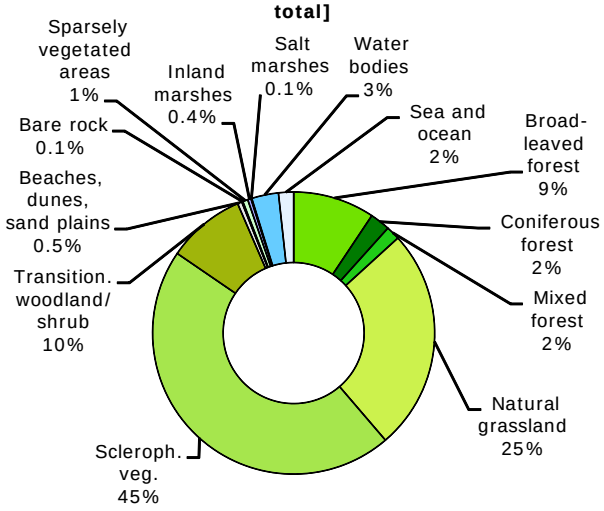
10.33. LC consumed by forest & nature 2006-2012 [% of total]



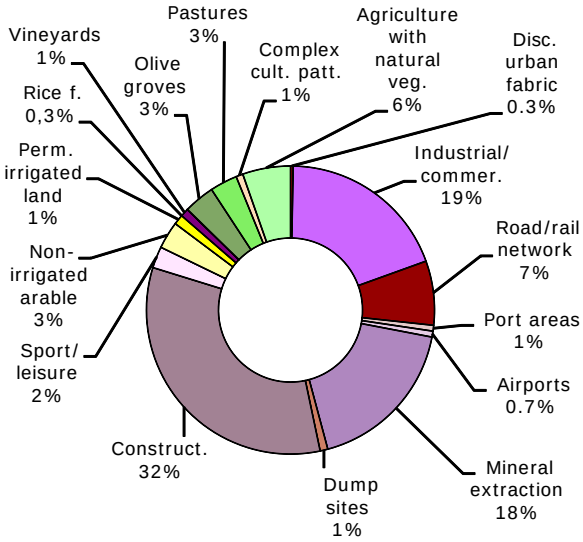
10.34. Formation of forest & nature land from non-forest /nature 2006-2012 [% of total]



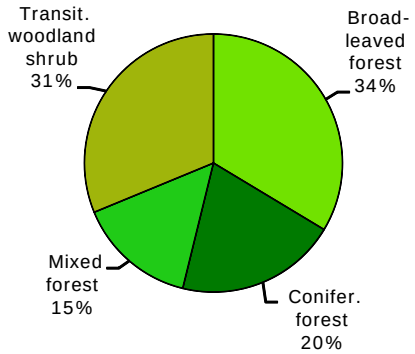
10.35. Consumption of forest & nature land by non-forest/nature 2006-2012 [% of total]



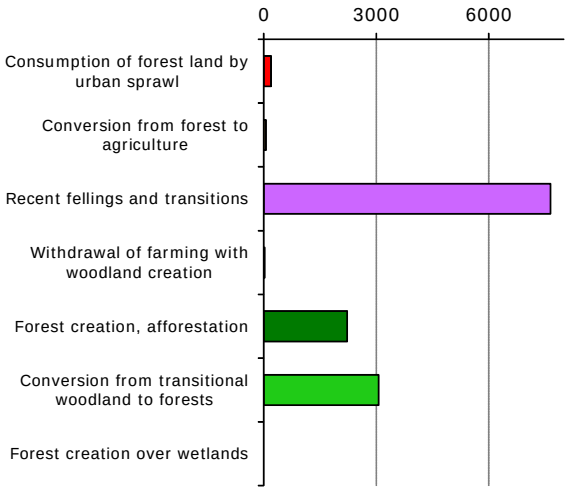
10.36. Formation of non-forest/nature land from forest & nature 2006-2012 [% of total]



10.37. Forested land 2012 [% of total area]

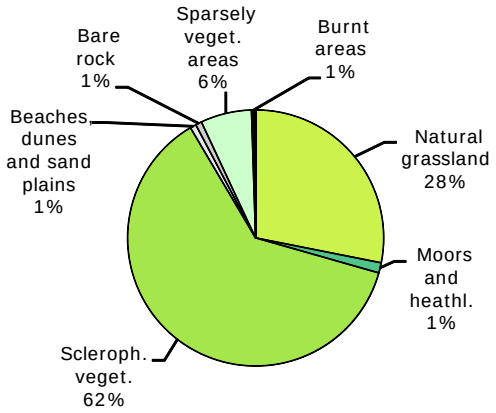


10.38. Main trends in woodland & forests consumption/formation 2006-2012 [ha/year]

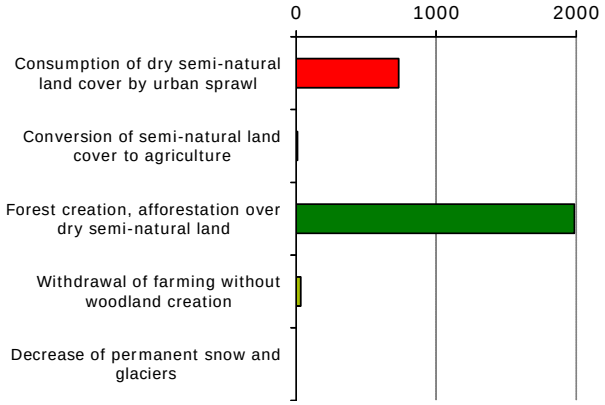


Greece

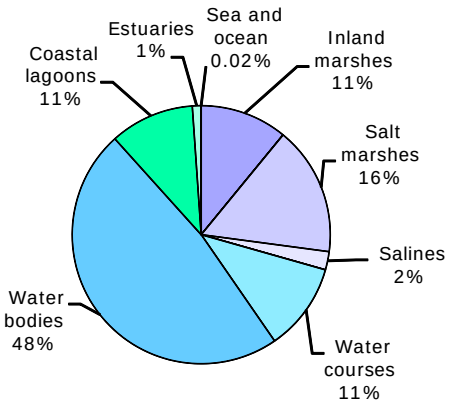
11.39. Dry semi-natural areas 2012 [% of total area]



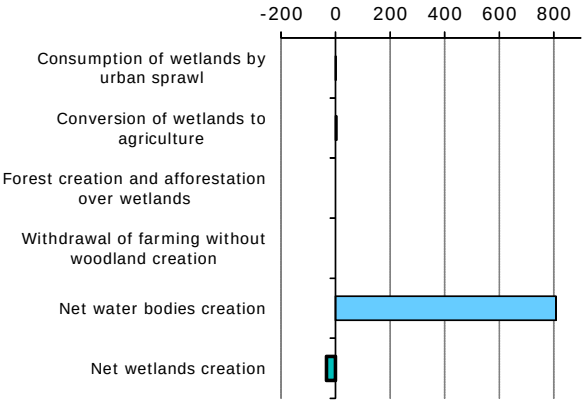
11.40. Main trends in dry semi-natural land consumption/formation 2006-2012 [ha/year]



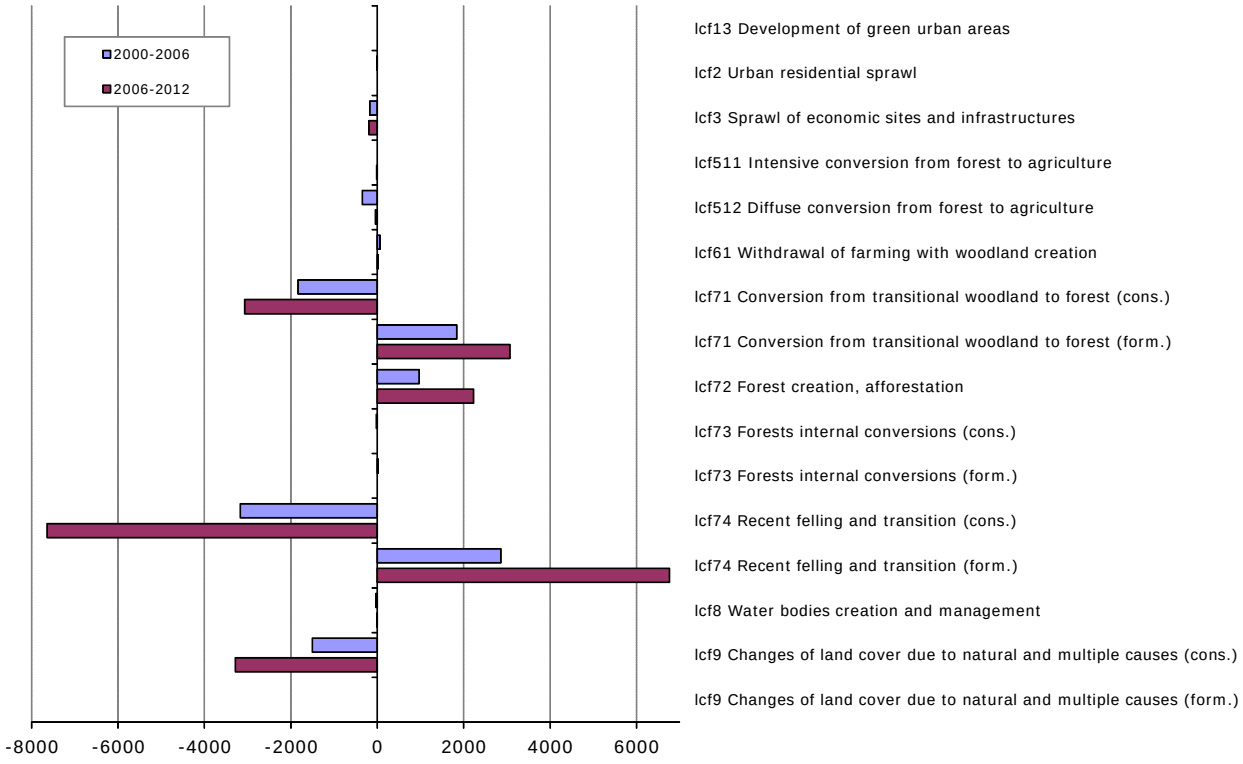
11.41. Wetlands & water 2012 [% of total area]



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

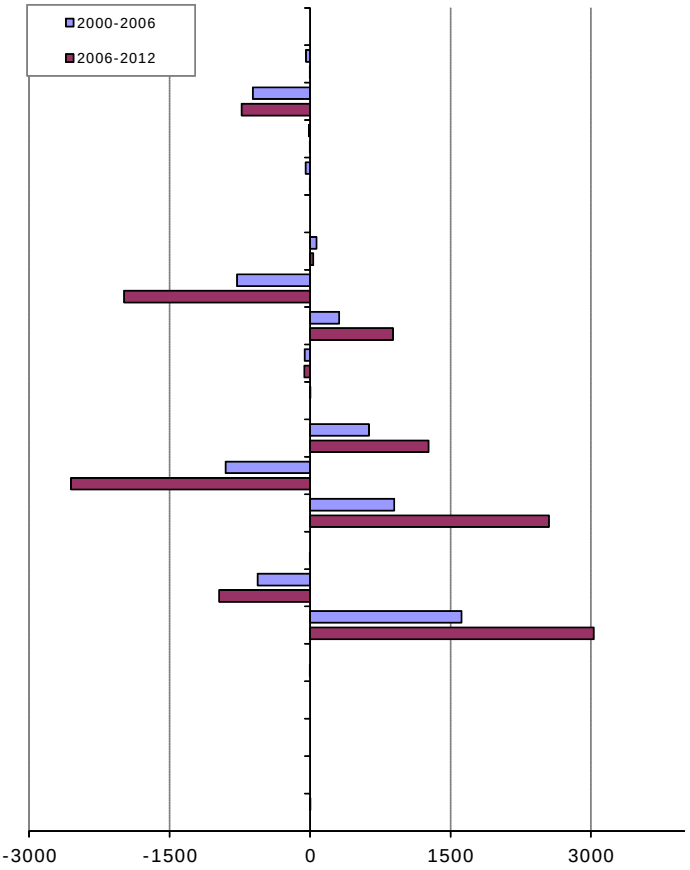


11.43. Mean annual conversions of forest & other woodland [ha/year]



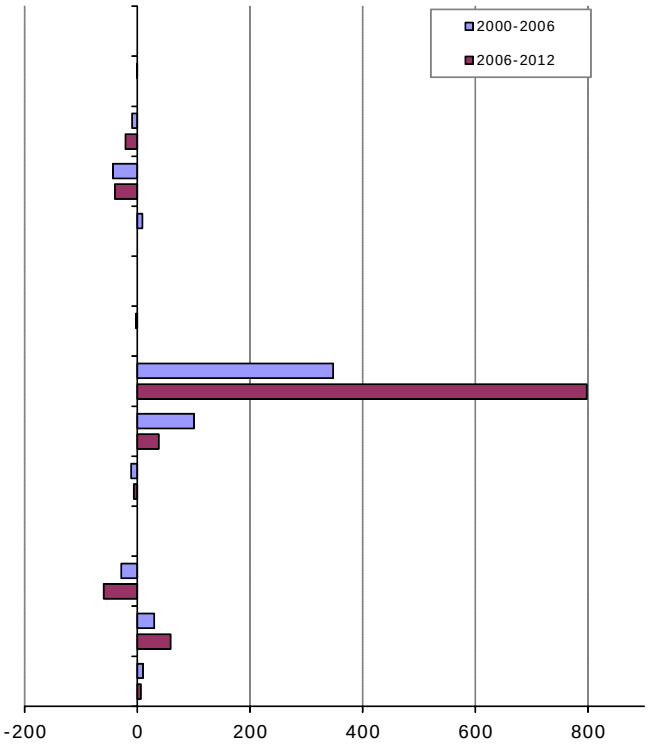
Greece

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



lcf13 Development of green urban areas
lcf2 Urban residential sprawl
lcf3 Sprawl of economic sites and infrastructures
lcf521 Intensive conversion from semi-natural land to agriculture
lcf522 Diffuse conversion from semi-natural land to agriculture
lcf523 Conversions from agriculture-nature mosaics to continuous.
lcf62 Withdrawal of farming without significant woodland creation
lcf72 Forest creation, afforestation
lcf74 Recent felling and transition
lcf8 Water bodies creation and management
lcf82 Water bodies management
lcf911 Semi-natural creation (form.)
lcf912 Semi-natural rotation (cons.)
lcf912 Semi-natural rotation (form.)
lcf913 Extension of water courses (cons.)
lcf92 Forests and shrubs fires (cons.)
lcf92 Forests and shrubs fires (form.)
lcf93 Coastal erosion (cons.)
lcf94 Decrease in permanent snow and glaciers cover (cons.)
lcf94 Decrease in permanent snow and glaciers cover (form.)
lcf99 Other changes and unknown (cons.)
lcf99 Other changes and unknown (form.)

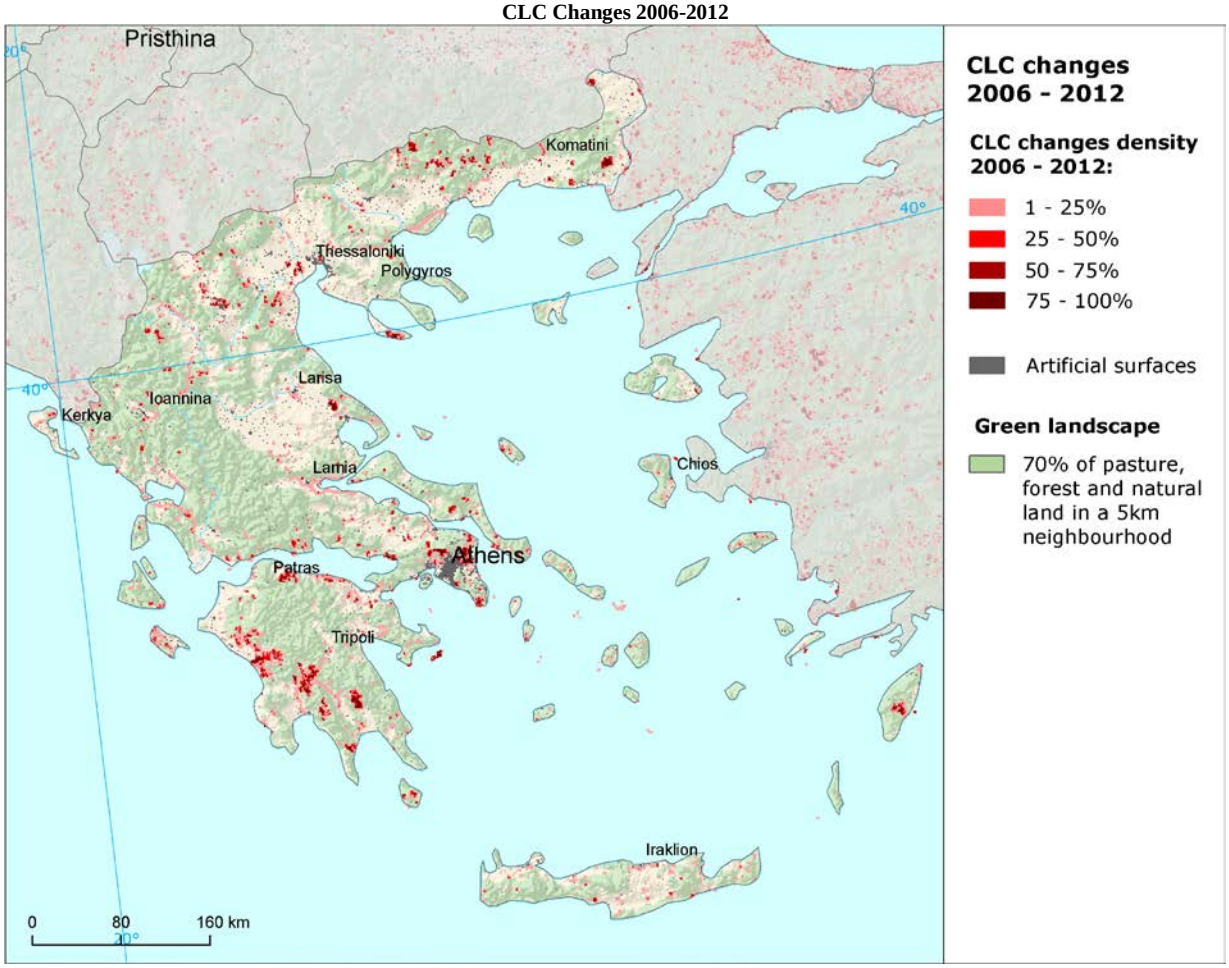
12.45. Mean annual conversions of wetlands and water LC [ha/year]



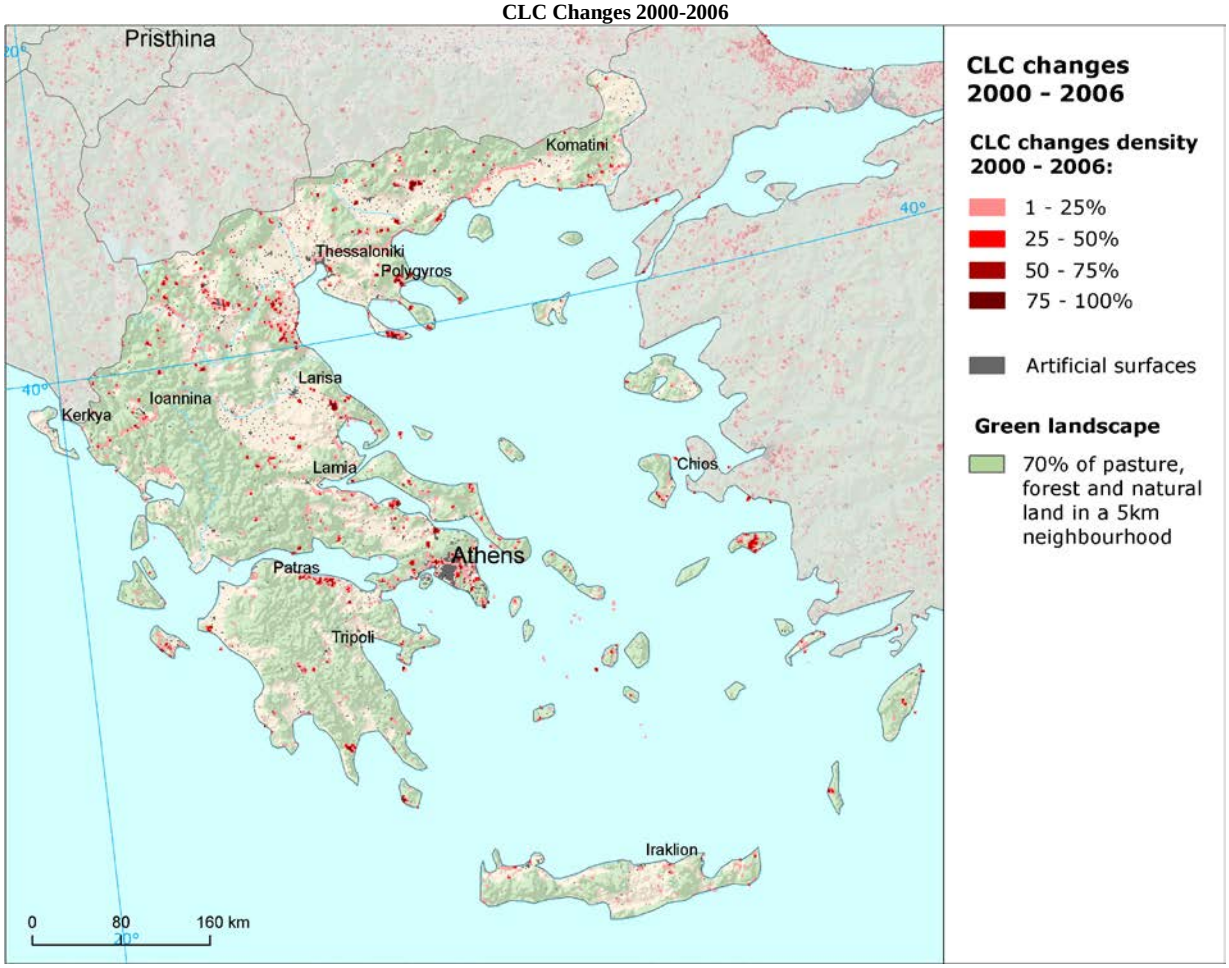
lcf13 Development of green urban areas
lcf2 Urban residential sprawl
lcf3 Sprawl of economic sites and infrastructures
lcf53 Conversion from wetlands to agriculture
lcf62 Withdrawal of farming without significant woodland creation
lcf72 Forest creation, afforestation
lcf8 Water bodies creation and management (cons.)
lcf81 Water bodies creation
lcf9 Changes of land cover due to natural and multiple causes (other than LCF91)
lcf9 Changes of land cover due to natural and multiple causes (other than LCF912)
lcf911 Semi-natural creation (form.)
lcf912 Semi-natural rotation (cons.)
lcf912 Semi-natural rotation (form.)
lcf913 Extension of water courses (form.)

Greece

CLC Changes 2006-2012

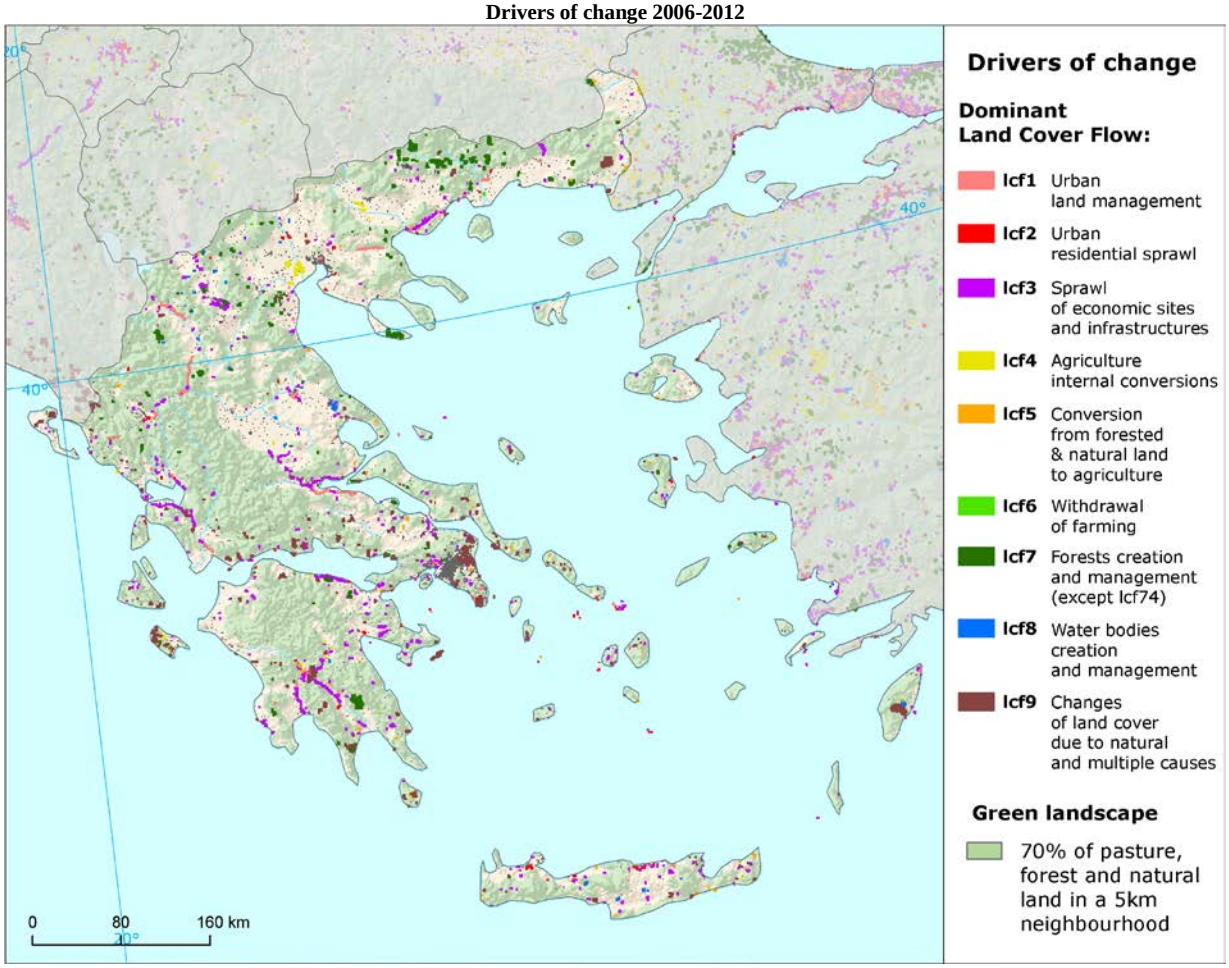


CLC Changes 2000-2006

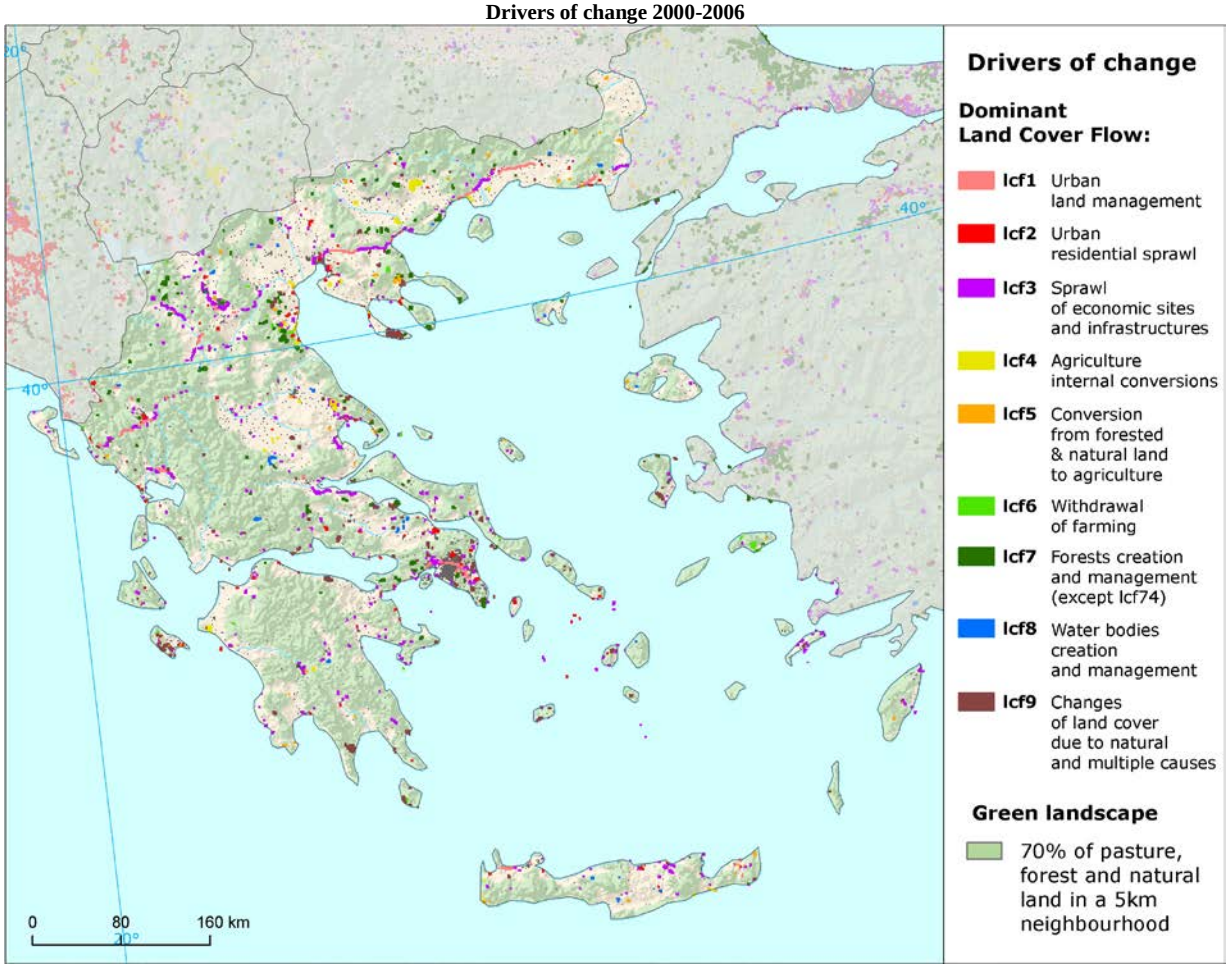


Greece

Drivers of change 2006-2012

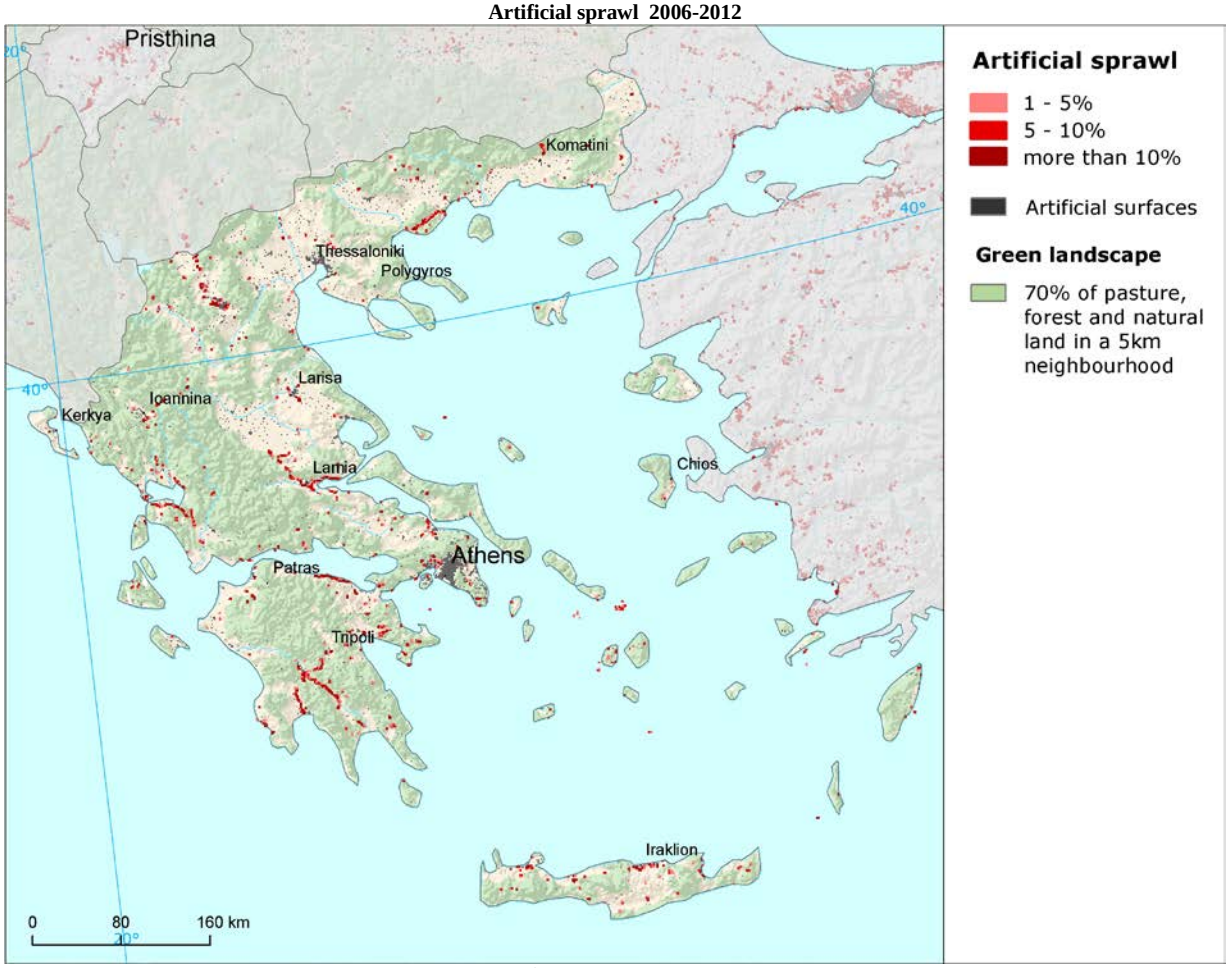


Drivers of change 2000-2006

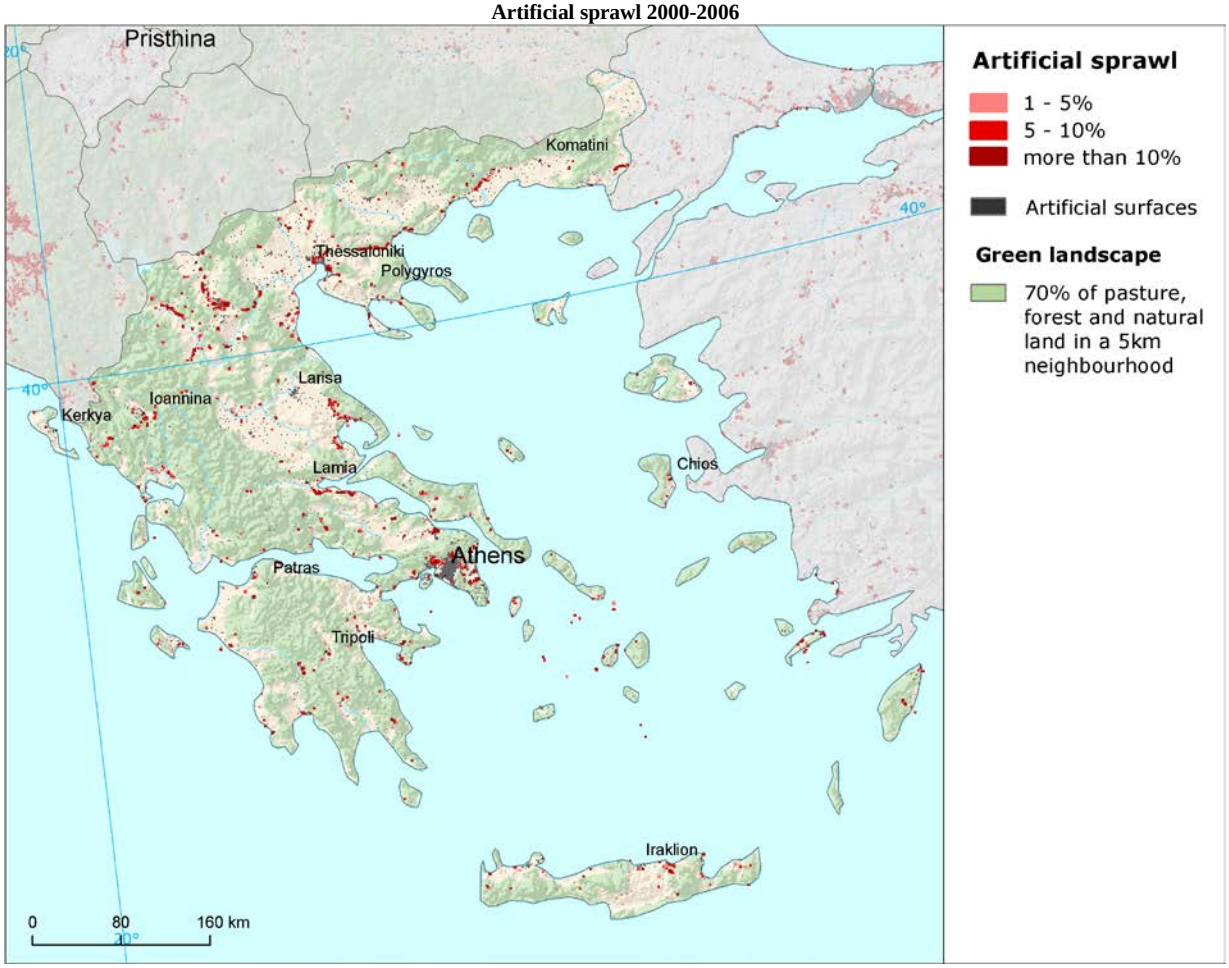


Greece

Artificial sprawl 2006-2012

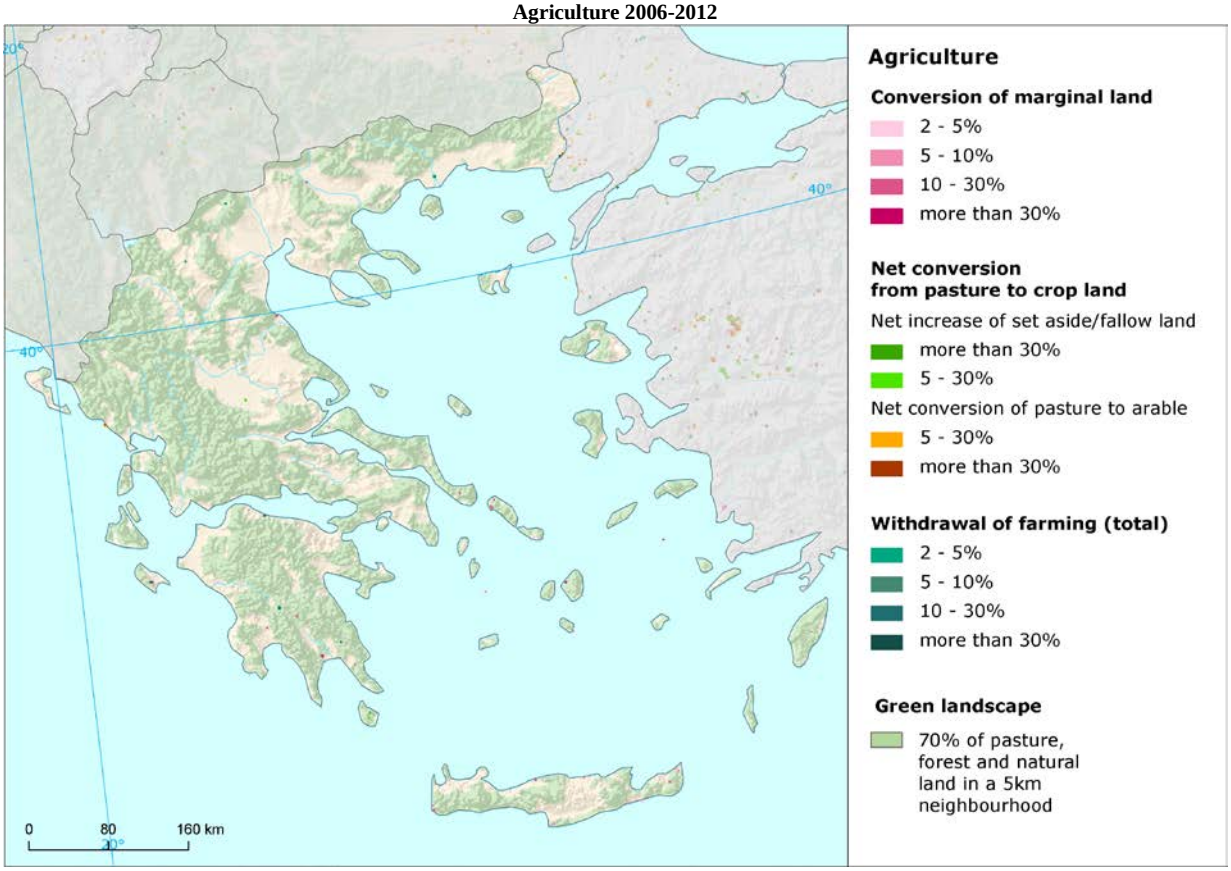


Artificial sprawl 2000-2006

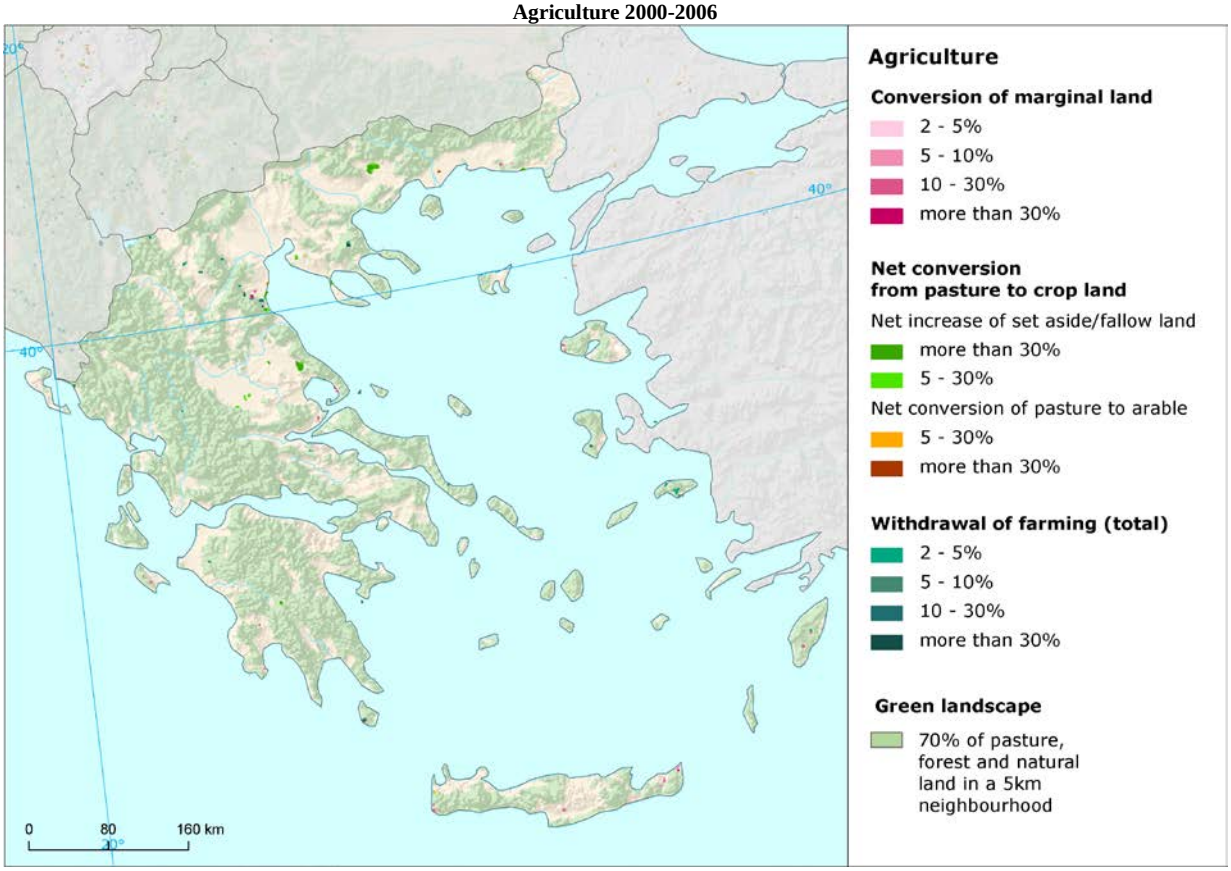


Greece

Agriculture 2006-2012

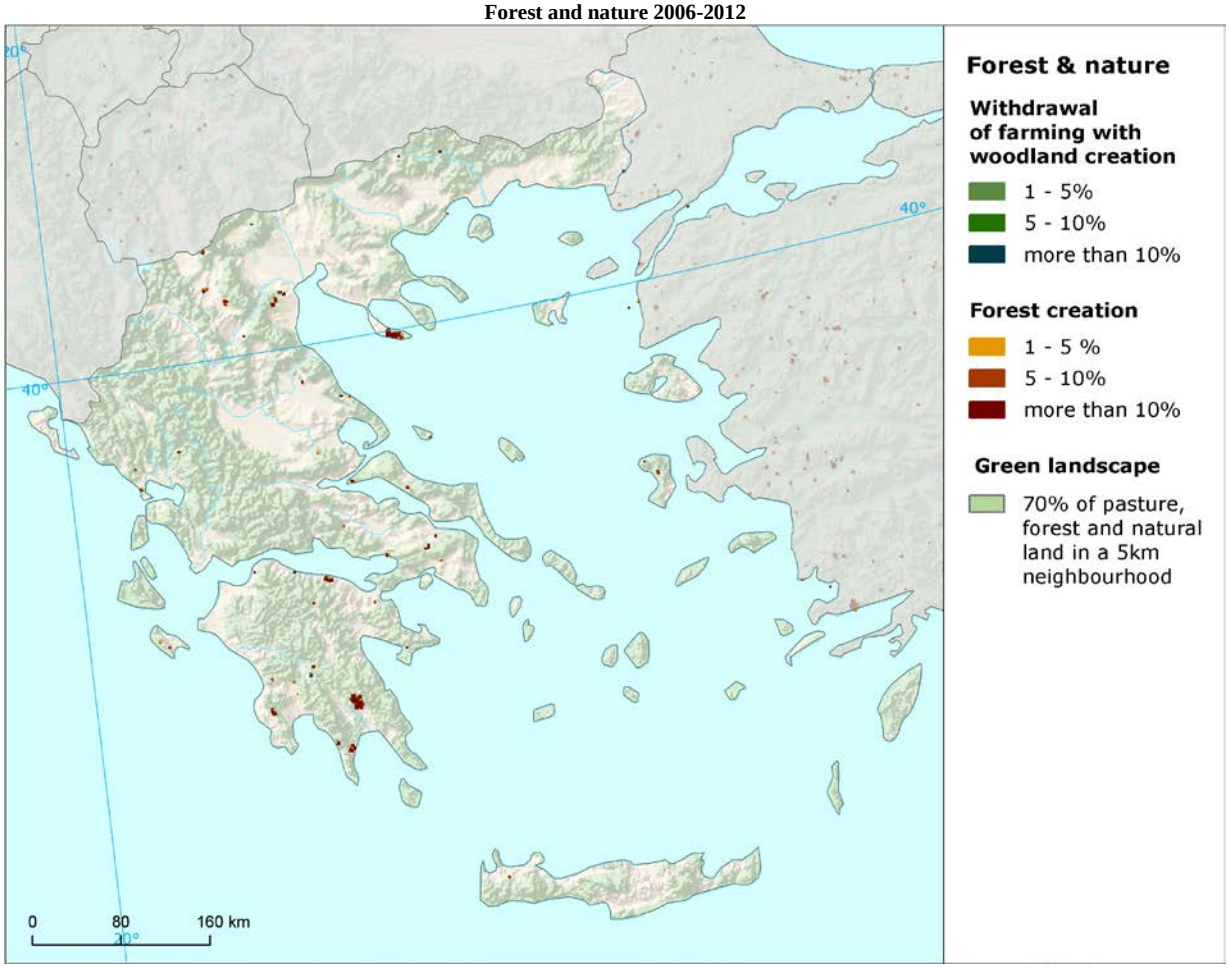


Agriculture 2000-2006



Greece

Forest and nature 2006-2012



Forest and nature 2000-2006