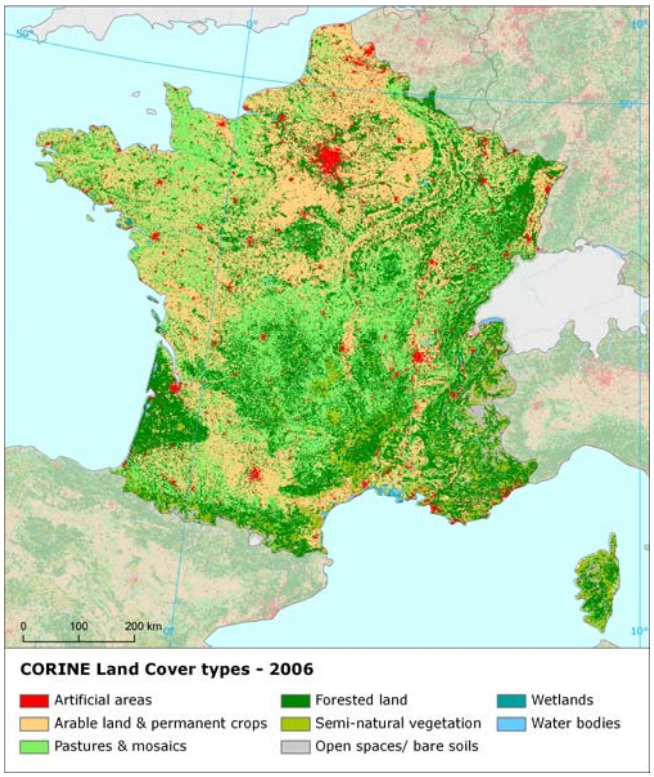
France

Land cover 2006

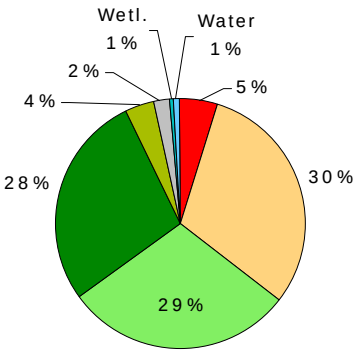
Overview of land cover & change 2000-2006

Overall dynamics of land cover change in France has been significantly slowed down, as seen on half the annual land cover change rate compared with the previous period 1990-2000.
Except artificial areas, all other land cover types have lower change dynamics, characterized by total turnover of land cover. Especially, the intensity of both forest creation and management and internal agriculture conversions (which were the main drivers of land cover development in the previous period) decreased significantly. Artificial land uptake, which shows constant intensity over the both periods, thus became the main driver of land cover change in France in the period 2000-2006.
Beside artificial areas (with significant formation of area), only open/spaces and water bodies have slightly positive balance of net change. All other natural land cover types together with arable/crop land and pastures/mosaics have negative balance of net change - prevailing consumption of area.
Concerning the spatial distribution of changes, artificial sprawl in France is concentrated mostly in surroundings of major cities (the capital Paris, Toulouse, Lyon, Lille) and along the Mediterranean coast in the south (Côte d'Azur, around Marseille). There is also significantly higher density of scattered residential sprawl over the western part of the country (in Bretagne, Pays de la Loire and Poitou-Charentes regions). Changes of forested land occur mostly in south-western France (Aquitaine region) and in Alsace-Lorraine.

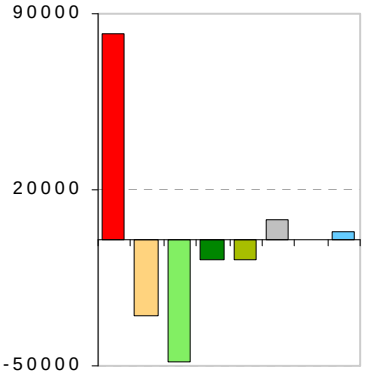
Note: The results presented here are based on a change analysis of 44 land cover types mapped consistently on a 1:100.000 scale across Europe over almost two decades 1990-2006 - see Corine land cover (CLC) programme for details.
Number of years between CLC2000-CLC2006 data for France: 6



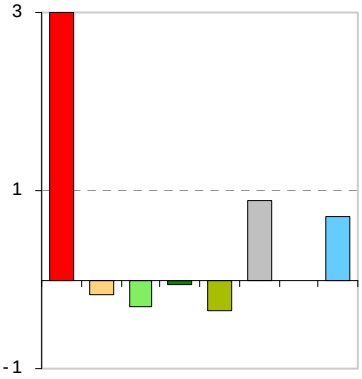
1.1. Land cover 2006 [% of total]



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

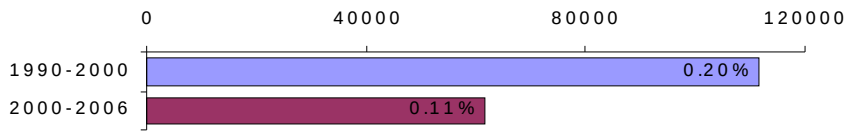
Summary balance table 2000-2006

	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	**27443**	**168037**	**160941**	**155483**	**22175**	**9259**	**3890**	**4371**	**551597**
Consumption of initial LC	142	430	515	2423	103	87	3	1	3704
Formation of new LC	965	131	31	2345	28	169	3	32	3704
Net Formation of LC	**823**	**-298**	**-484**	**-77**	**-75**	**82**	**0**	**30**	**0**
Net formation as % of initial year	*3.0*	*-0.2*	*-0.3*	*0.0*	*-0.3*	*0.9*	*0.0*	*0.7*	
Total turnover of LC	**1107**	**561**	**546**	**4768**	**132**	**256**	**6**	**33**	**7408**
Total turnover as % of initial year	*4.0*	*0.3*	*0.3*	*3.1*	*0.6*	*2.8*	*0.1*	*0.8*	*1.3*
Land cover 2006	**28266**	**167739**	**160457**	**155405**	**22100**	**9340**	**3890**	**4402**	**551597**

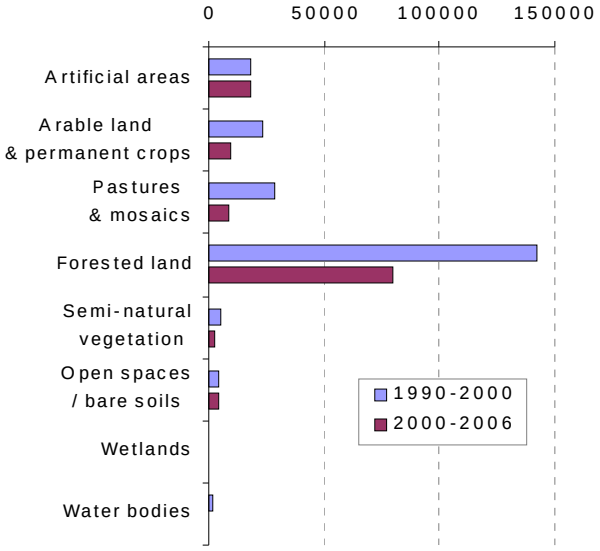
France

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

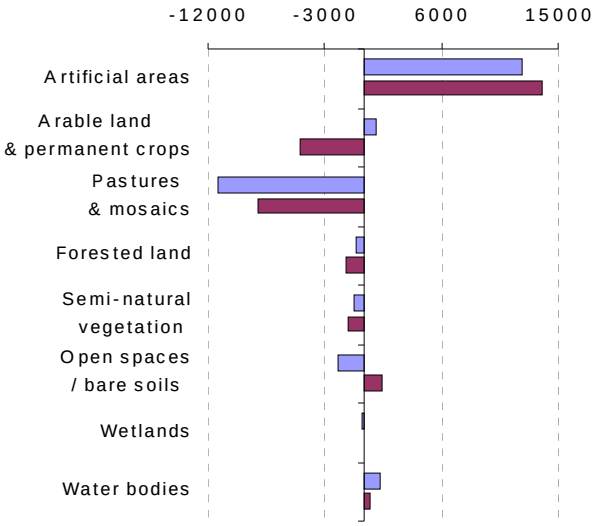
2.4. Annual land cover change [ha/year, % of total area]



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

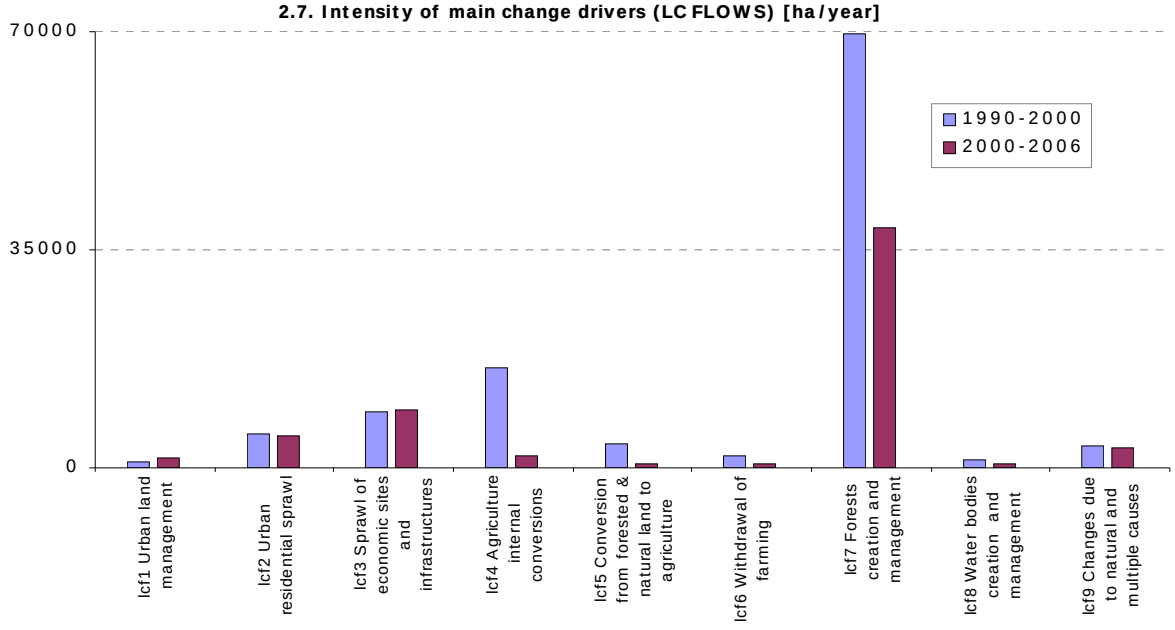


2.6. Net annual change of LC types [ha/year]



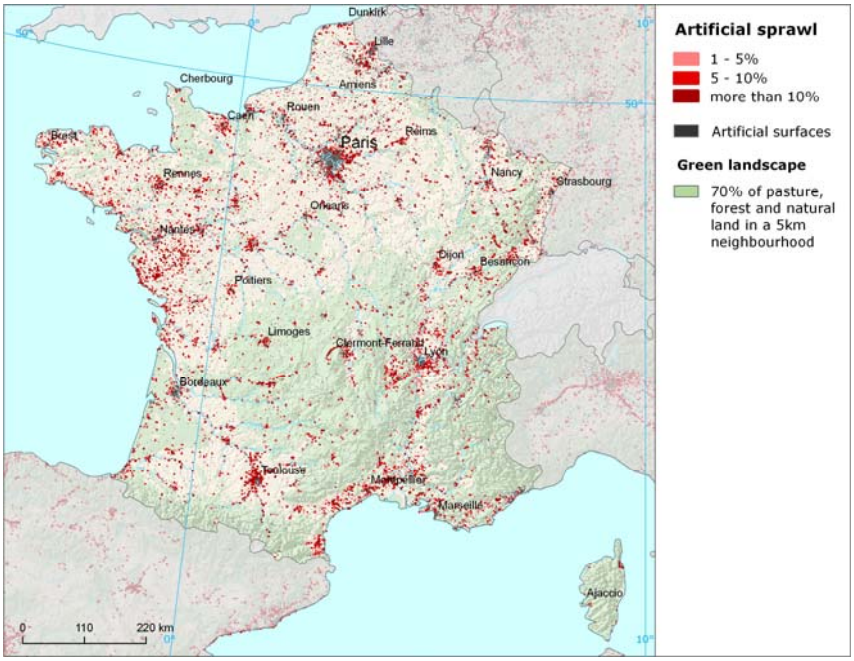
Summary trend figures	1990-2000	2000-2006
Annual land cover change [ha/year]	**111650**	**61736**
Annual land cover change as % of initial year	**0.20%**	**0.11%**
Land uptake by artificial development as mean annual change [ha/year]	13875	14461
Agricultural land uptake by urban and infrastructures development as mean annual change [ha/year]	12295	13072
Net uptake of forests and semi-natural land by agriculture as mean annual change [ha/year]	1319	-263
Net conversion from pasture to arable land and permanent crops as mean annual change [ha/year]	5569	1395
Forest & other woodland net formation as mean annual change [ha/year]	-523	-1291
Dry semi-natural land cover net formation as mean annual change [ha/year]	-2493	191
Wetlands & water bodies net formation as mean annual change [ha/year]	1179	508

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

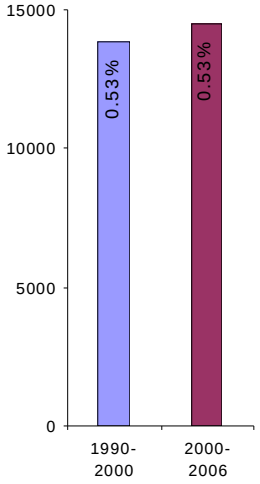


France

Artificial areas



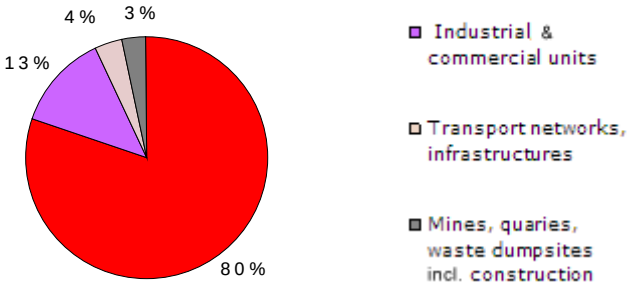
3.8. Artificial land take [ha/year, % of initial year]



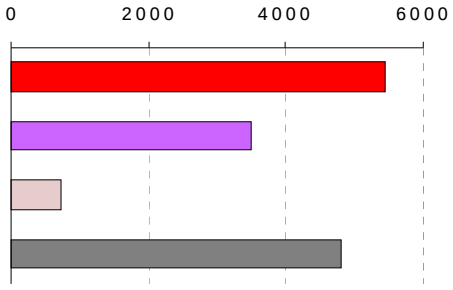
Urban development continue with constant share and intensity

Artificial land uptake became the main driver of land cover change in France. Driven mainly by diffuse residential sprawl (36%), land take in the period 2000-2006 has very similar structure and also comparable intensity as in the previous period. The other main drivers of land take are sprawls of commercial and industrial sites (25%) and accelerated construction (21%) followed by sprawl of mineral extraction sites (12%) and transport networks (4%).
With half the share on total land cover formation in the country, artificial land take occurs mostly at the expense of agricultural land (89%), with equal share of arable land and pastures uptaken. Besides the land take, also increased internal recycling of developed urban areas has significant share on all artificial changes. This flow is represented mainly by conversion of construction sites into transportation networks and residential or commercial/industrial units. Spatially, artificial sprawl in France is concentrated mostly in surroundings of major cities (the capital Paris, Toulouse, Lyon, Lille) and along the Mediterranean coast in the south (Côte d'Azur, around Marseille). There is also significantly higher density of scattered residential sprawl over western part of the country (in Bretagne, Pays de la Loire and Poitou-Charentes regions). Changes of forested land occur mostly in south-western France (Aquitaine region) and in Alsace-Lorraine.

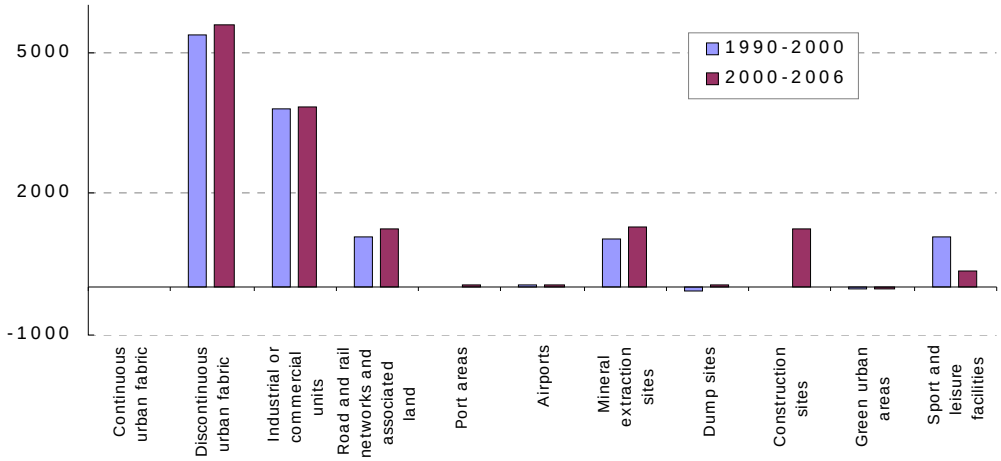
3.9. Artificial surfaces 2006 [% of total area]



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

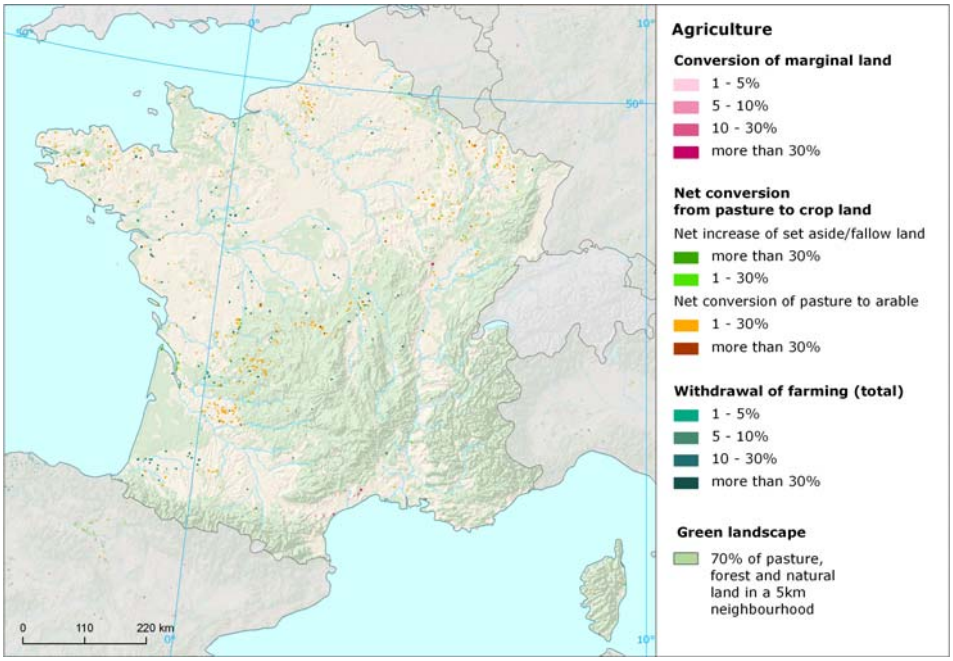


3.11. Mean annual artificial change by class [ha/year]



Agriculture

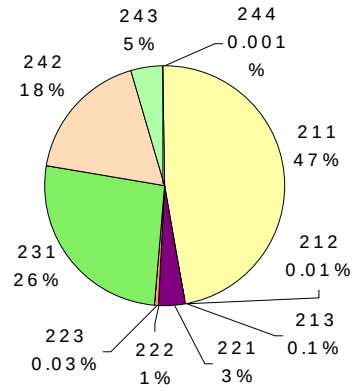
France



Agricultural internal conversions slow down, consumption by artificial land take is dominant

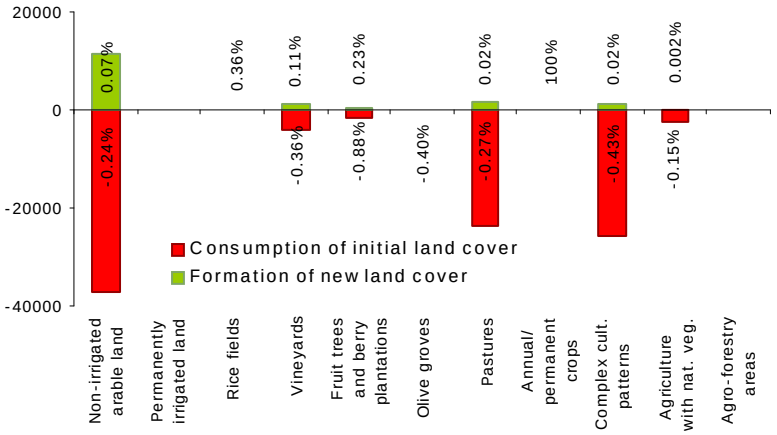
After significant decrease of internal change dynamic of agricultural land, consumption of agricultural areas by artificial sprawl became the most powerful driver of agriculture development in France. The main consumer of agricultural land is diffuse residential sprawl, followed by sprawl of commercial/industrial sites and construction. There is also certain amount of agricultural land consumed by withdrawal of farming and water bodies creation. Mostly arable land, complex cultivation patterns and pastures have been consumed by the sprawl during the period 2000-2006.
In this period, all agricultural classes have negative balance of net change. This consumption was observed already in previous period, with the only exception of arable land, which had slightly positive net change balance during 1990-2000. This inversion of arable land balance is caused by slow down of internal agriculture conversion from pasture to arable land. Both major internal conversions between pasture and arable land decreased, however, conversion from pasture to arable land still prevails over opposite extension of pasture areas.
In contrast, formation of agricultural land occurs at the expanse of both natural areas and former artificial areas, namely mineral extraction and construction sites. However, the intensity of this formation is much lower compared to overall consumption of agriculture land.

4.12. Agricultural areas 2006 [% of total area]

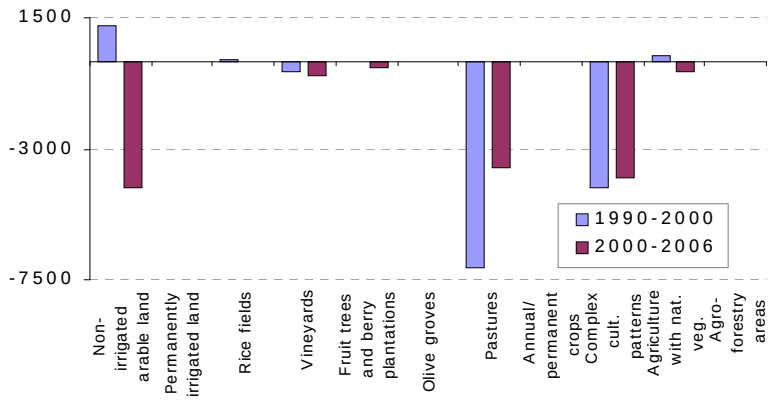


211 Non-irrigated arable land
212 Permanently irrigated land
213 Rice fields
221 Vineyards
222 Fruit trees and berry plantations
223 Olive groves
231 Pastures
241 Annual crops associated with permanent crops
242 Complex cultivation patterns
243 Agriculture land with significant areas of natural vegetation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

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

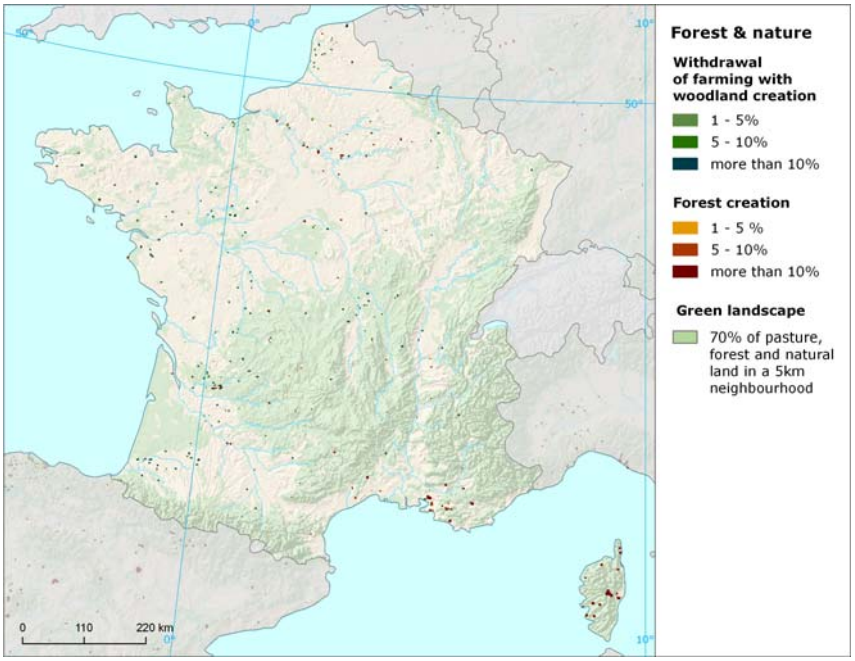


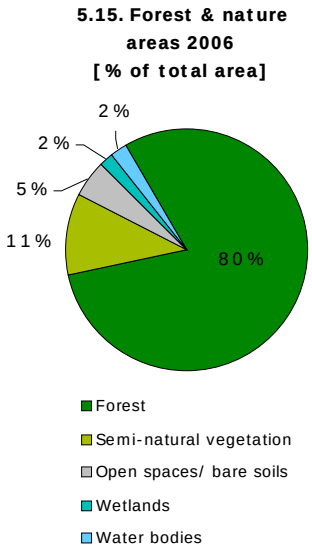
4.14. Mean annual agricultural change by class [ha/year]



France

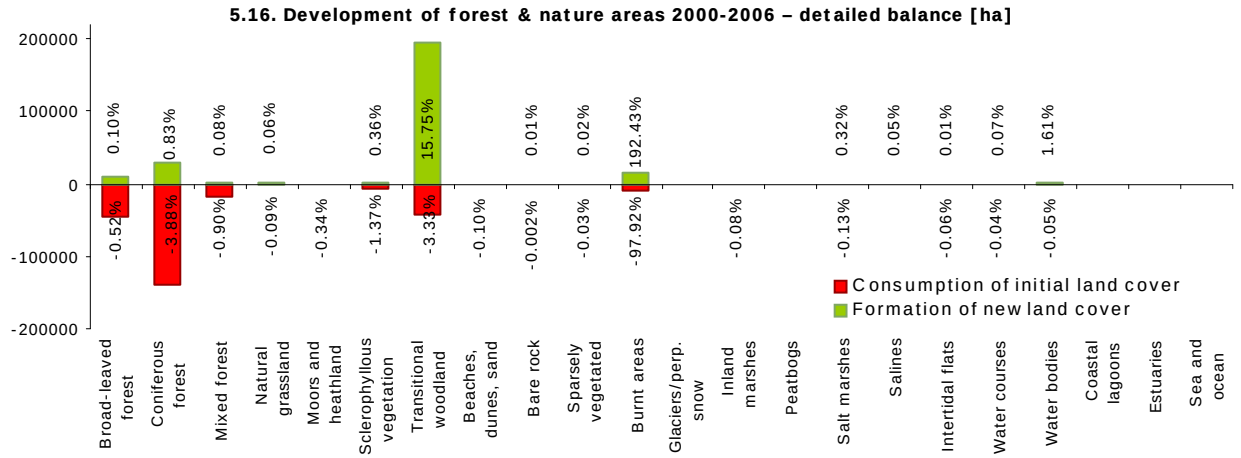
Forest & nature

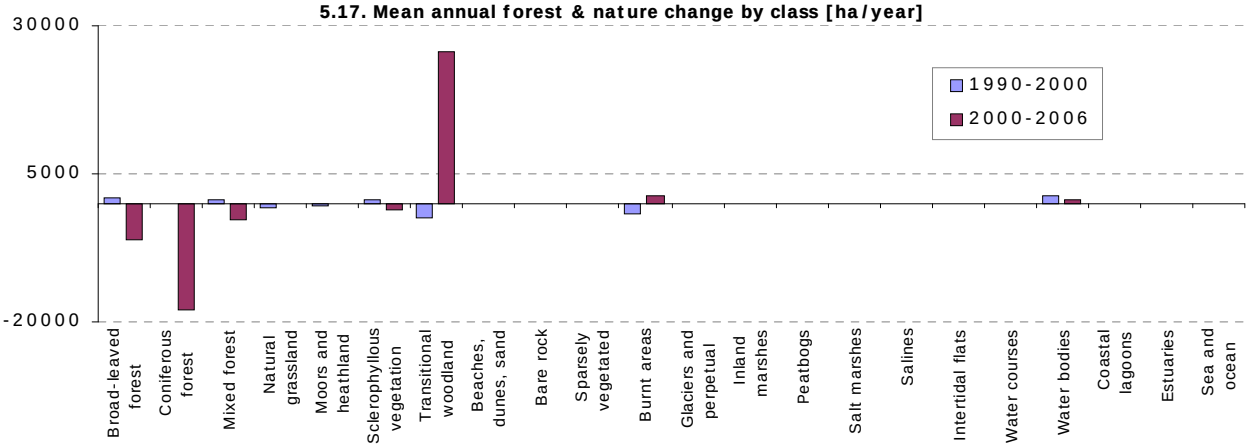




Slow down of change dynamic in forest & nature areas, forest and shrub fires

Also forest and nature land cover change dynamic significantly decreased compared to the period 1990/2000. This slow down is caused mostly by decrease of intensity of conversion from transitional woodland to forest and also by decrease of water bodies creation and afforestation of dry semi-natural land.
Still, recent felling and transition remains the most powerful driver of natural land development in the period. Besides, exchange of natural surfaces has been driven by forest and shrub fires and opposite afforestation of recent burnt areas. These changes occur mainly along the Côte d'Azur in southern France.
Development of wetlands and water is characterized by prevailing creation of water bodies mainly from agricultural land and former mineral extraction sites, while wetland areas are steady.

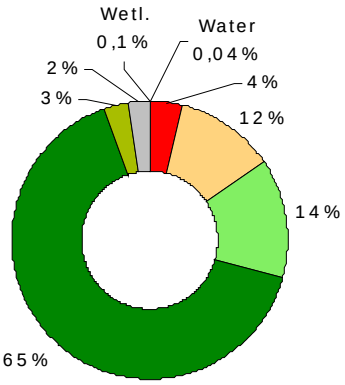




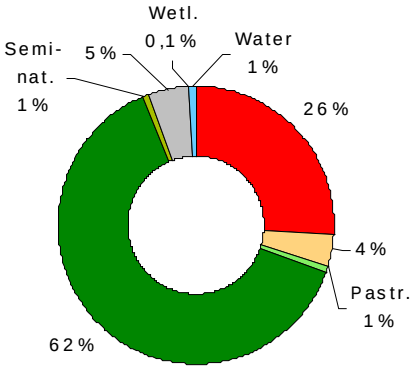
Annex: Land cover flows and trends

Land cover flows 2000-2006

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

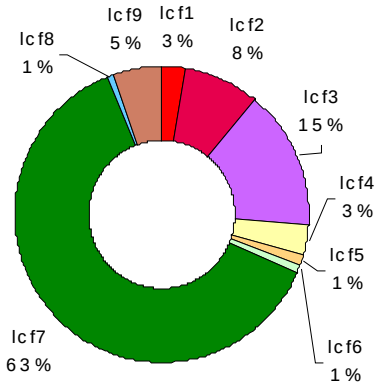


6.19. Formation of land cover 2000-2006 [% of total change area]



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]

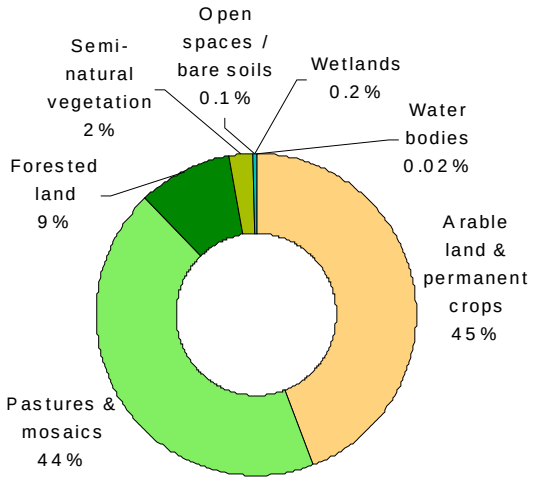


lcf1 Urban land management
lcf2 Urban residential sprawl
lcf3 Sprawl of economic sites and infrastructures
lcf4 Agriculture internal conversions
lcf5 Conversion from forested & natural land to agriculture
lcf6 Withdrawal of farming
lcf7 Forests creation and management
lcf8 Water bodies creation and management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

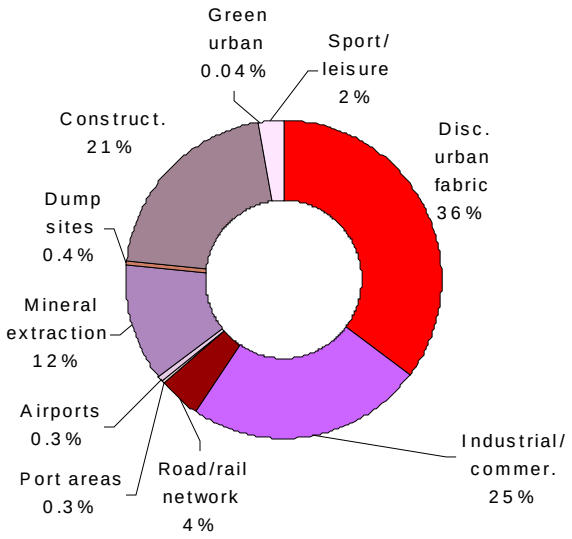
France

Artificial areas

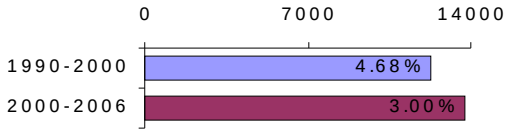
7.21. Consumption by artificial land take 2000-2006 [% of total]



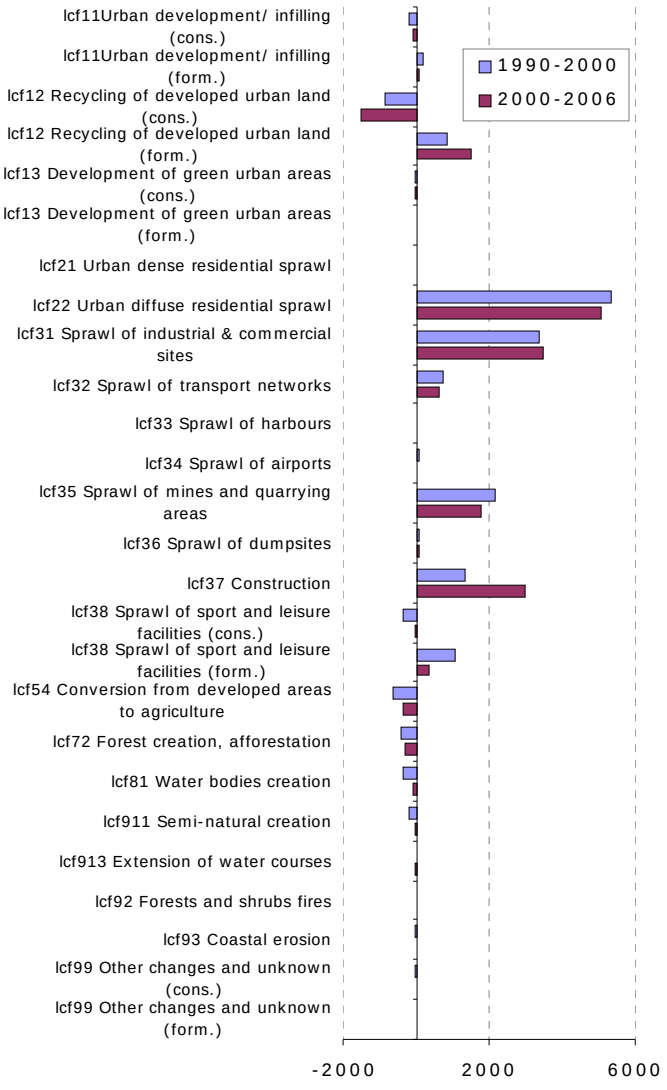
7.22. Formation by artificial land take 2000-2006 [% of total]



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



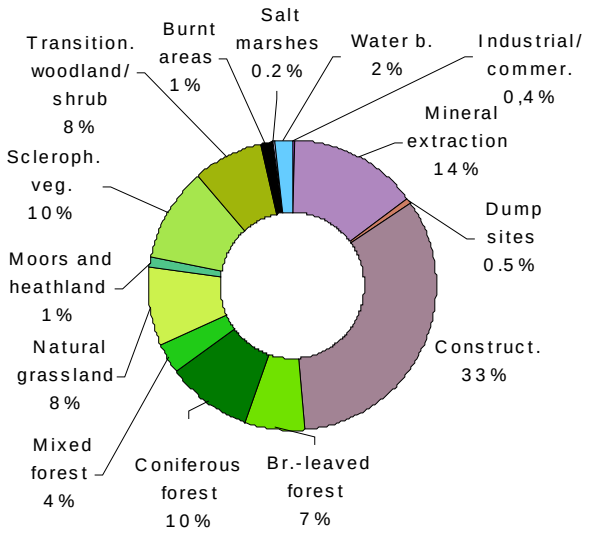
7.24. Artificial development by change drivers (LC FLOWS) [ha/year]



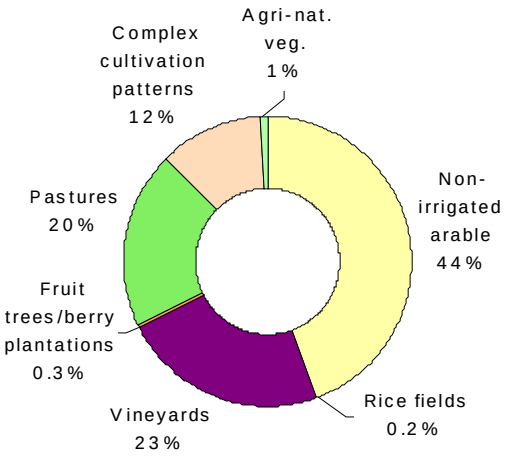
France

Agriculture

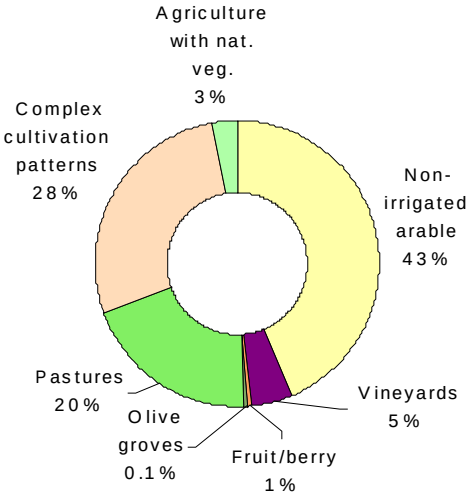
8.25. LC consumed by agriculture 2000-2006 [% of total]



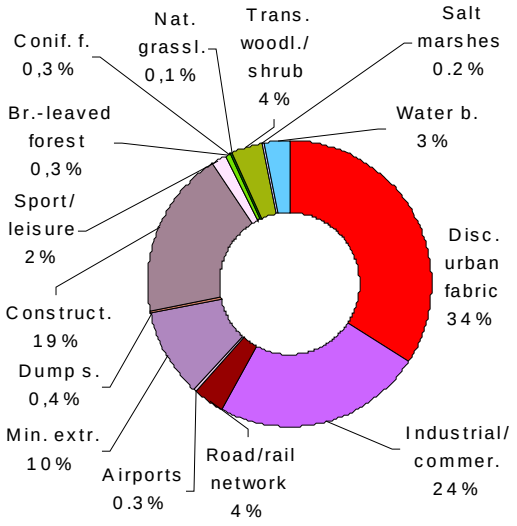
8.26. Formation of agricultural land from non-agriculture 2000-2006 [% of total]



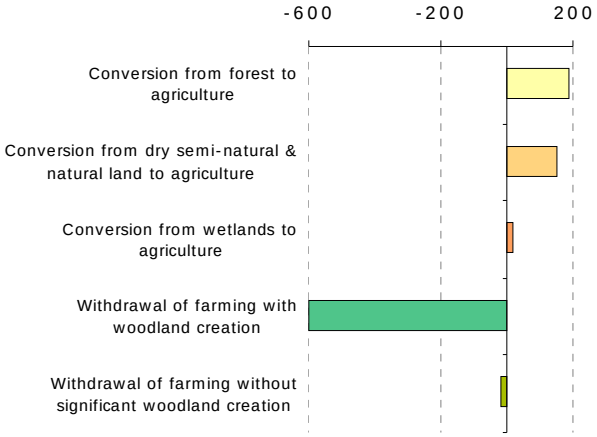
8.27. Consumption of agricultural land by non-agriculture 2000-2006 [% of total]



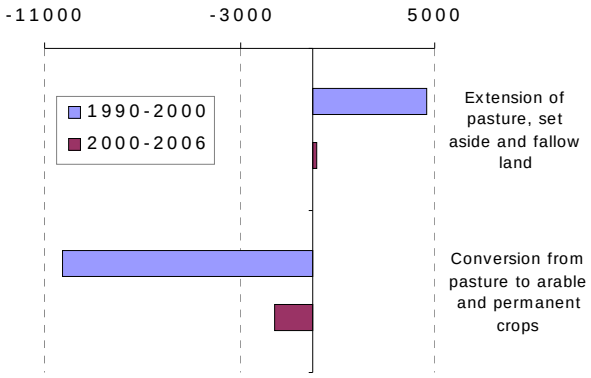
8.28. Formation of non-agricultural land from agriculture 2000-2006 [% of total]



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

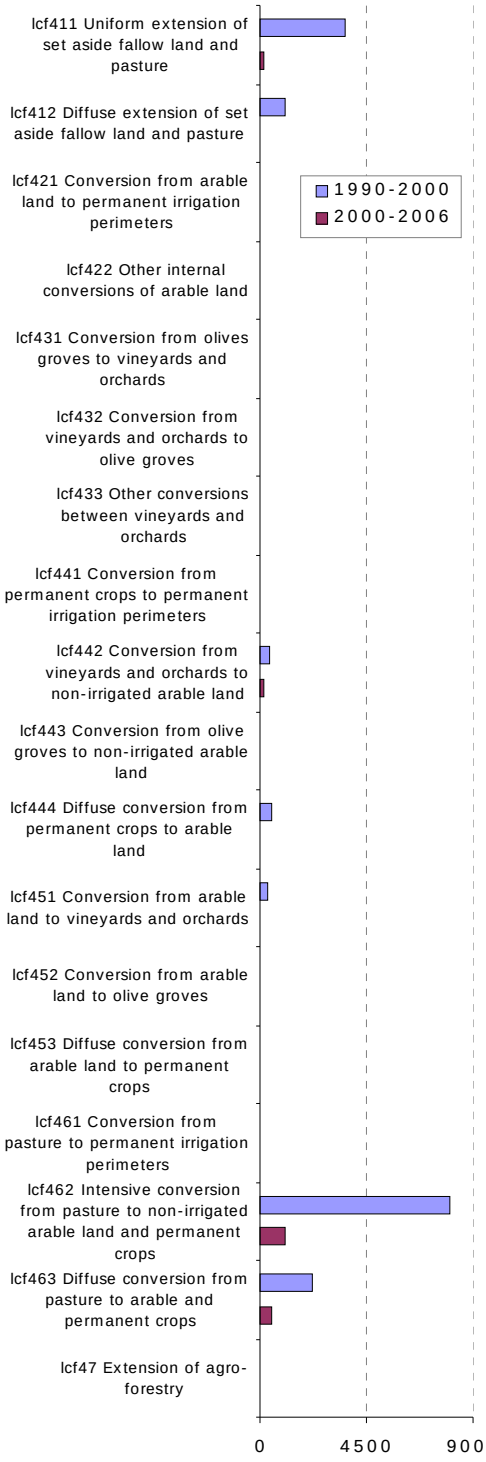


8.30. Mean annual conversion between arable land and pasture [ha/year]

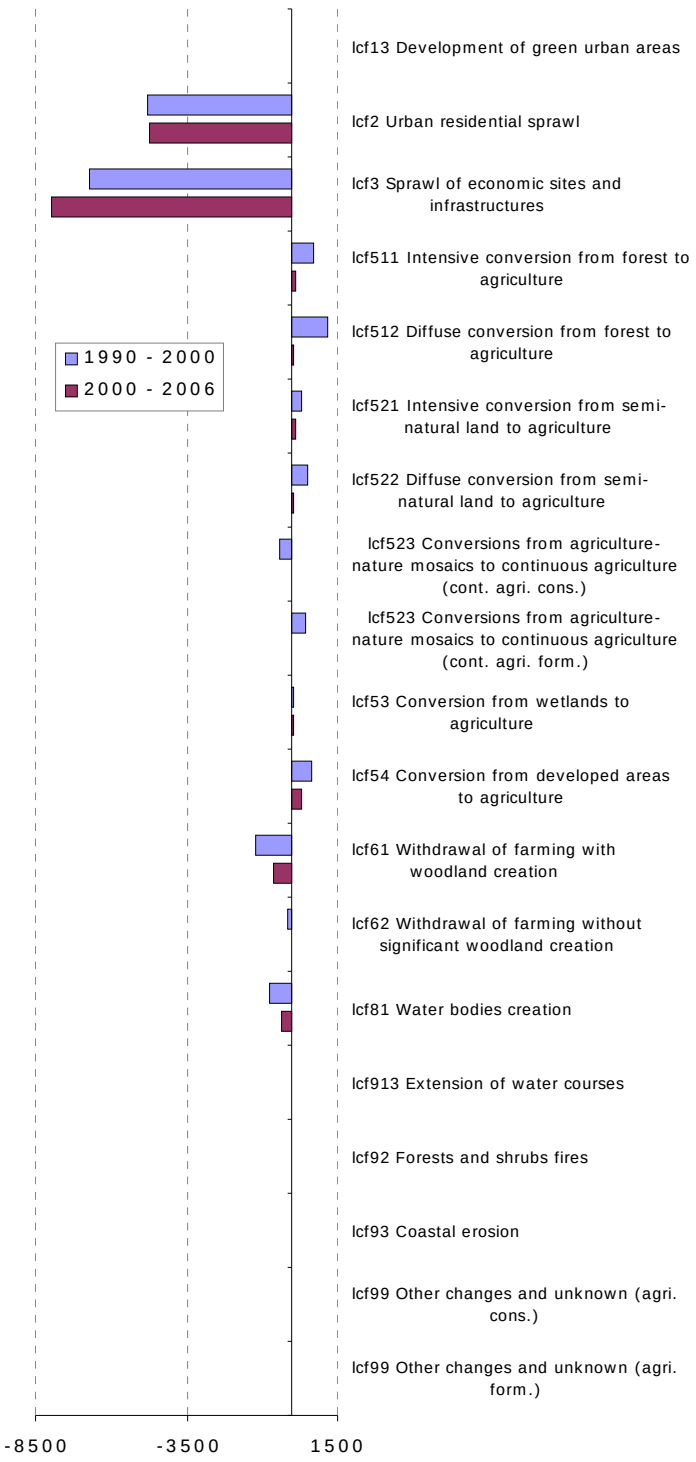


France

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



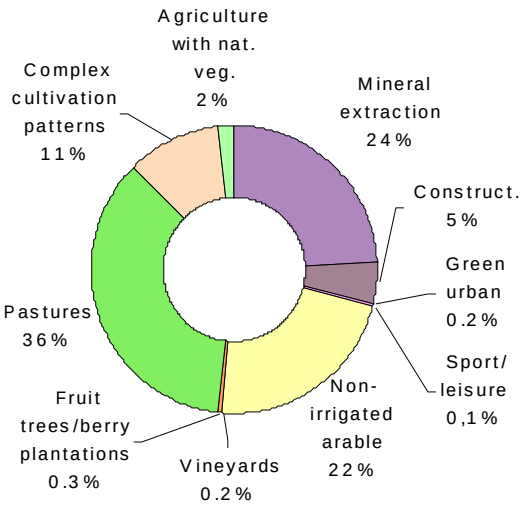
9.32. Mean annual conversions between agriculture and other LC types [ha/year]



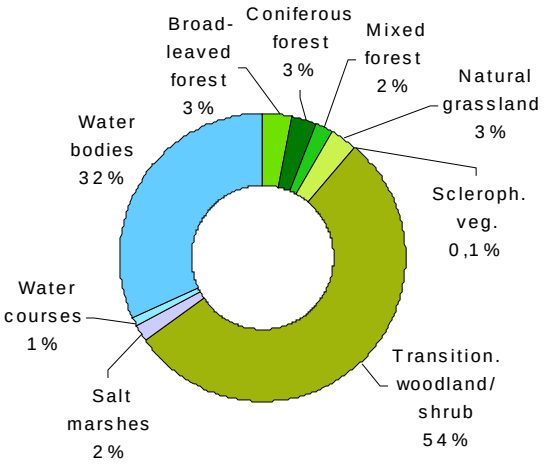
France

Forest & nature

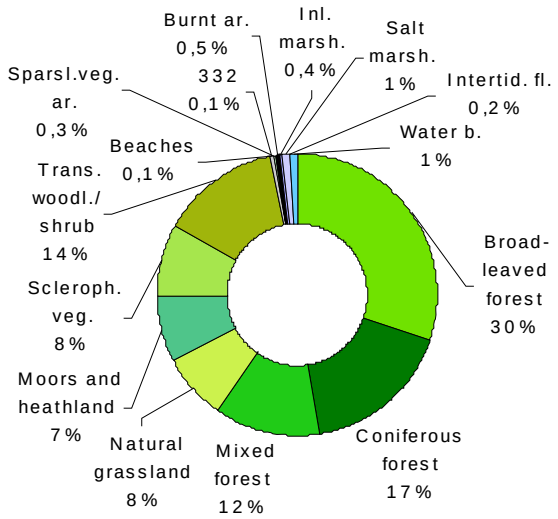
10.33. LC consumed by forest & nature 2000-2006 [% of total]



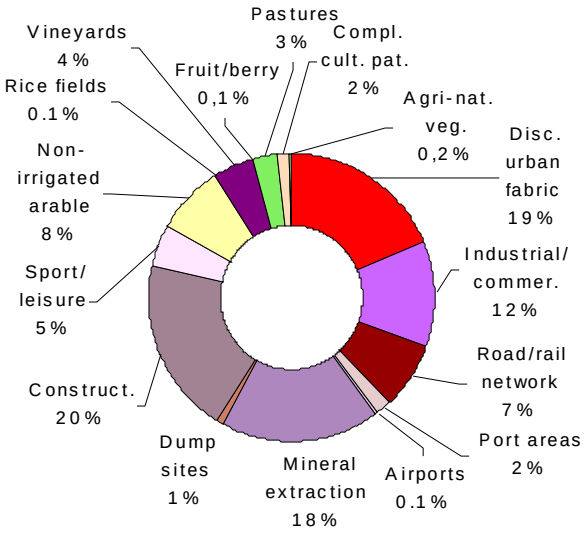
10.34. Formation of forest & nature land from non-forest /nature 2000-2006 [% of total]



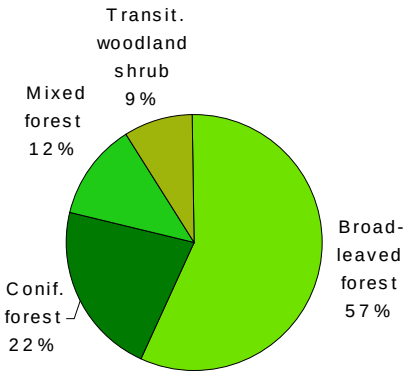
10.35. Consumption of forest & nature land by non-forest /nature 2000-2006 [% of total]



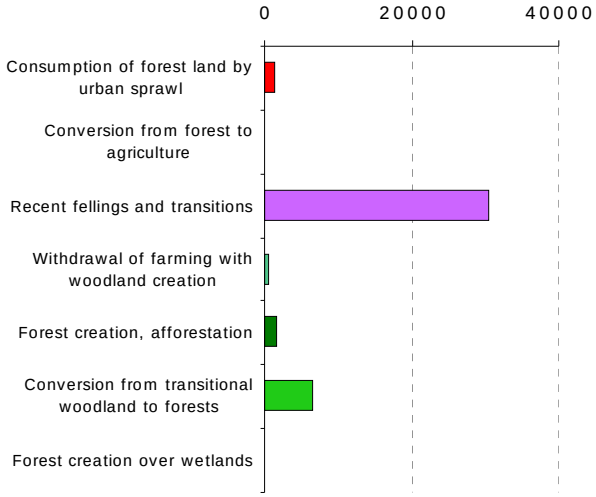
10.36. Formation of non-forest /nature land from forest & nature 2000-2006 [% of total]



10.37. Forested land 2006 [% of total area]

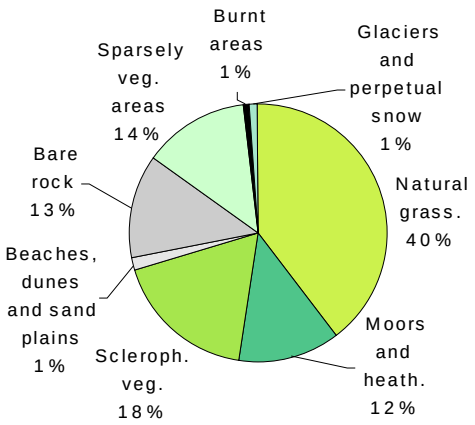


10.38. Main trends in woodland & forests consumption/formation 2000-2006 [ha/year]

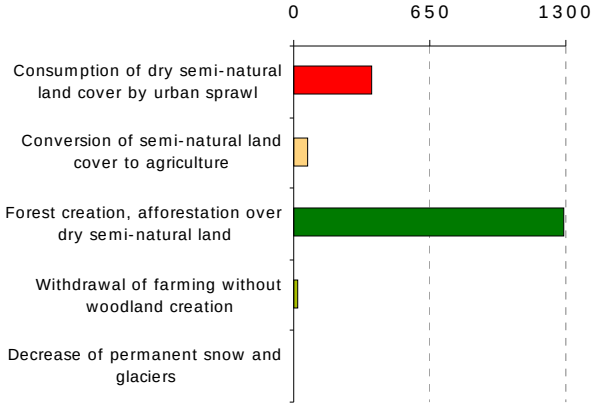


France

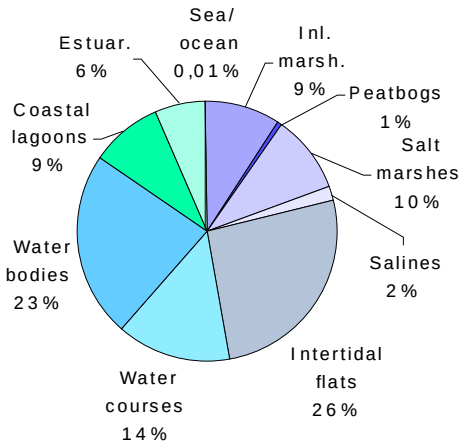
11.39. Dry semi-natural areas 2006 [% of total area]



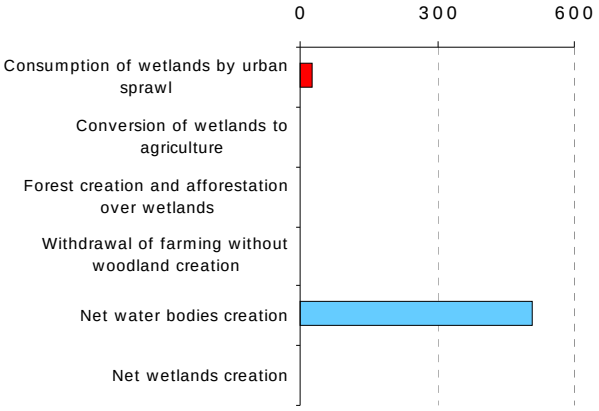
11.40. Main trends in dry semi-natural land consumption/formation 2000-2006 [ha/year]



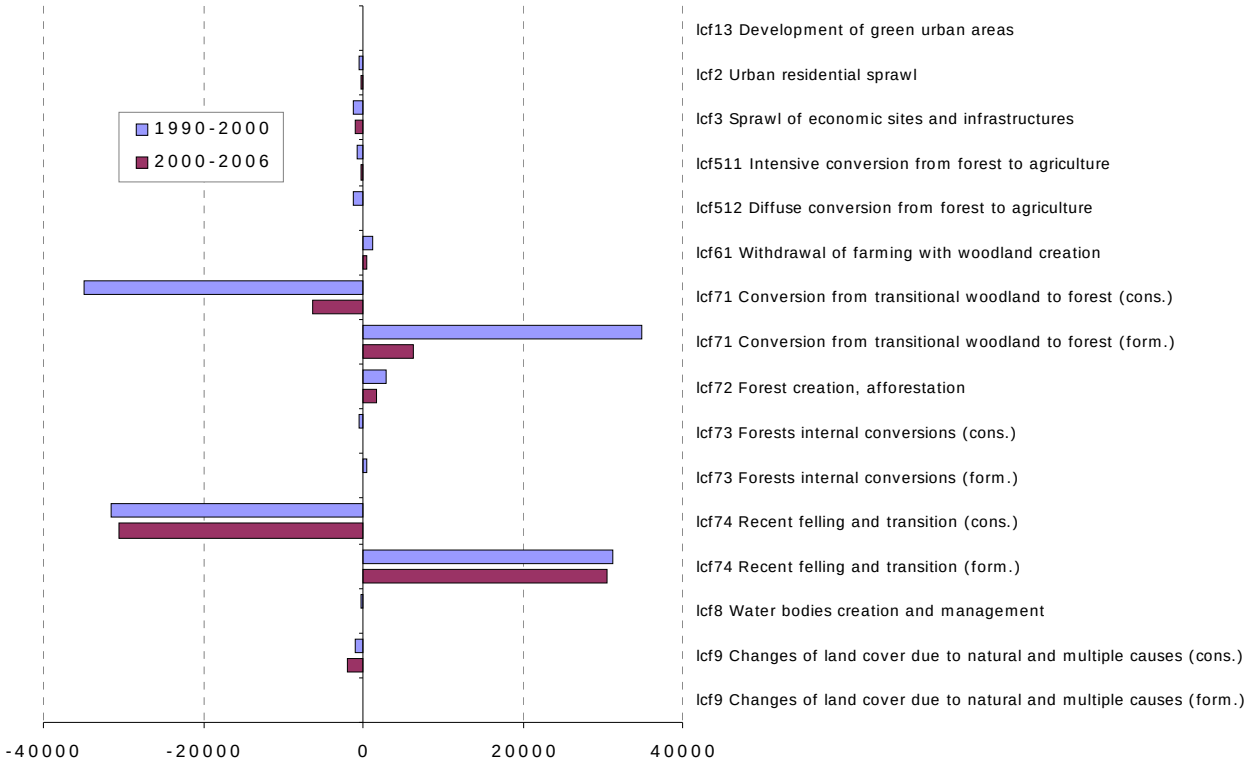
11.41. Wetlands & water 2006 [% of total area]



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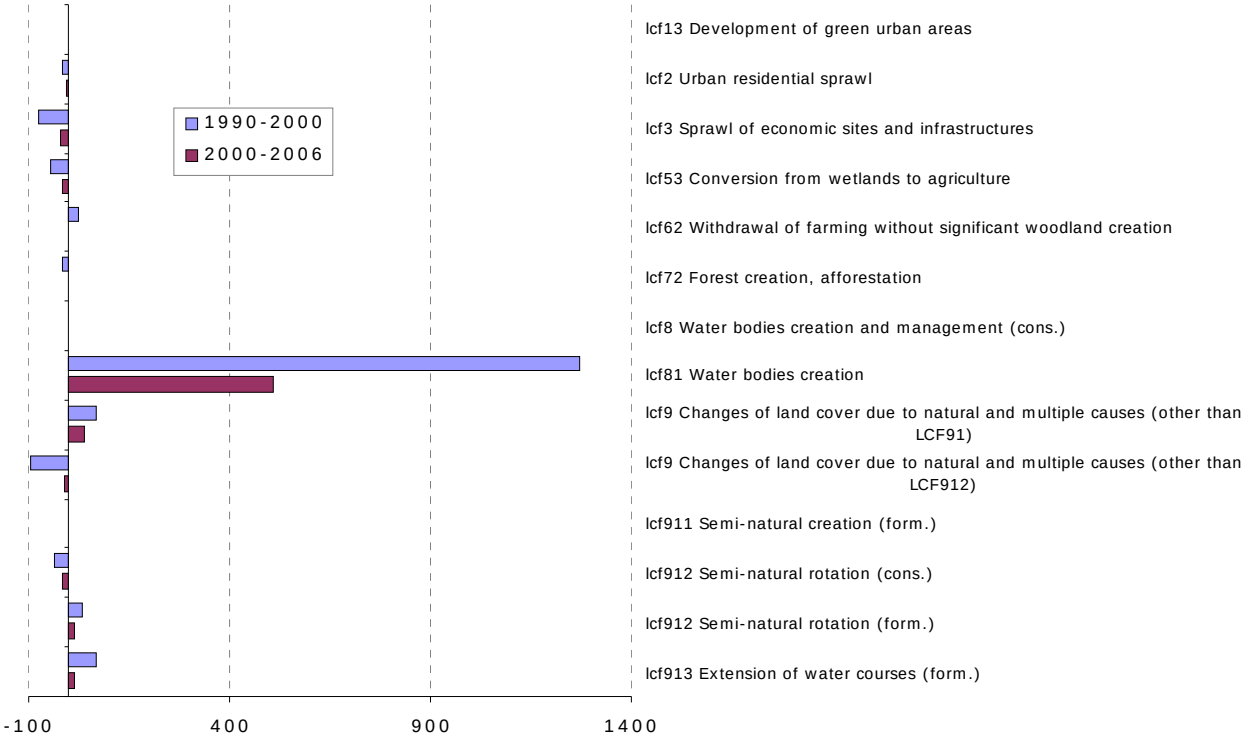
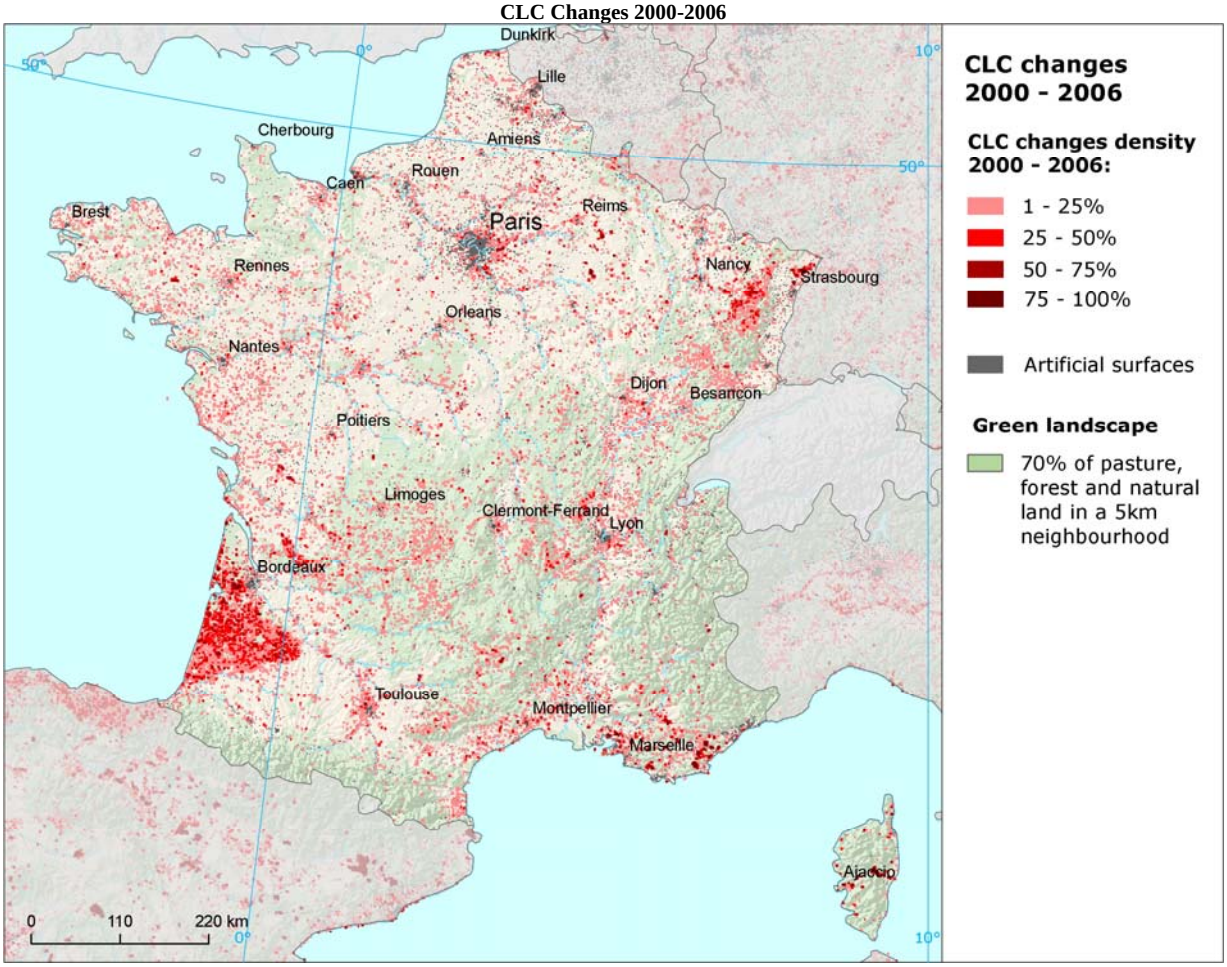
12.44. Mean annual conversions of dry semi-natural LC [ha/year]

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

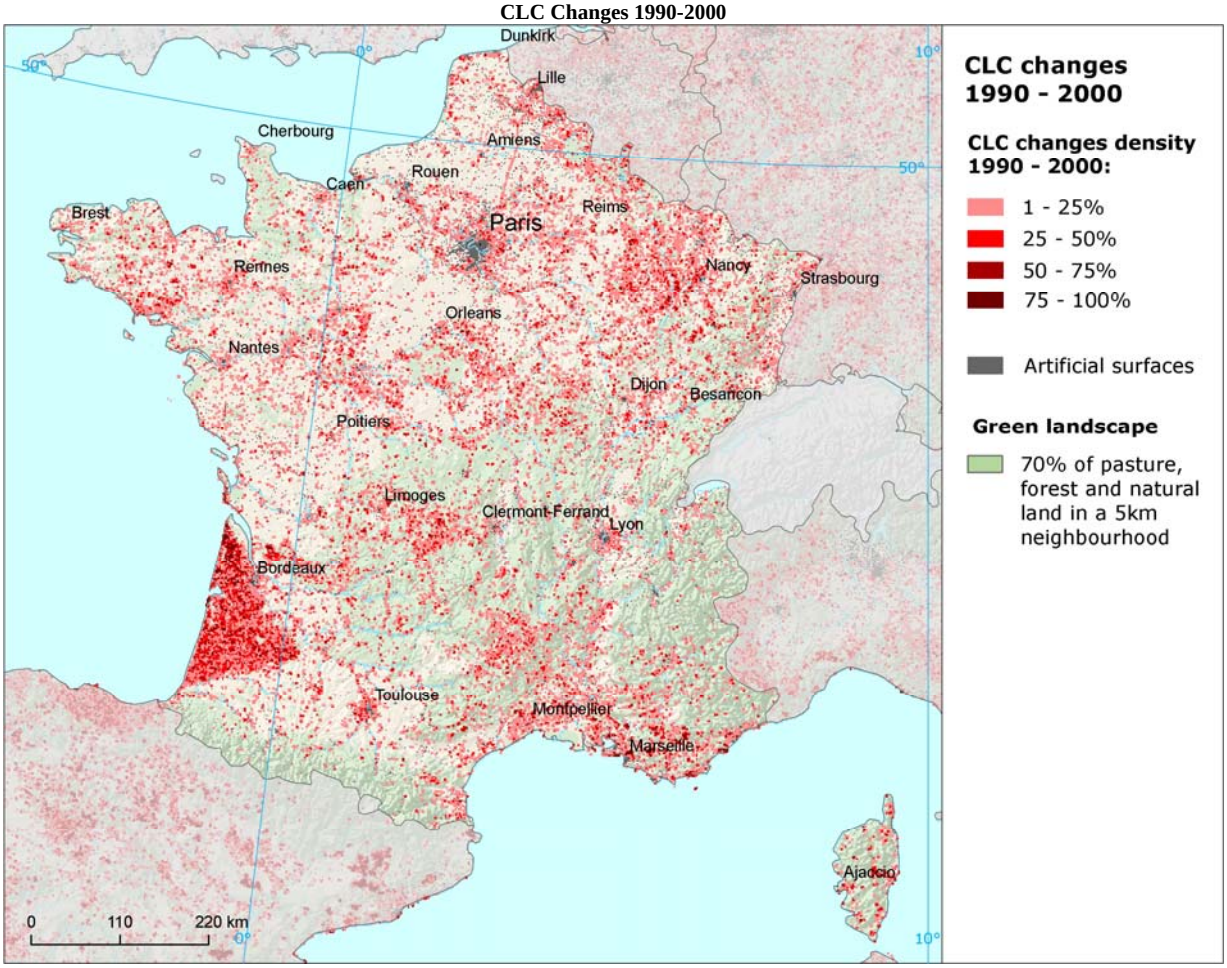


France

CLC Changes 2000-2006

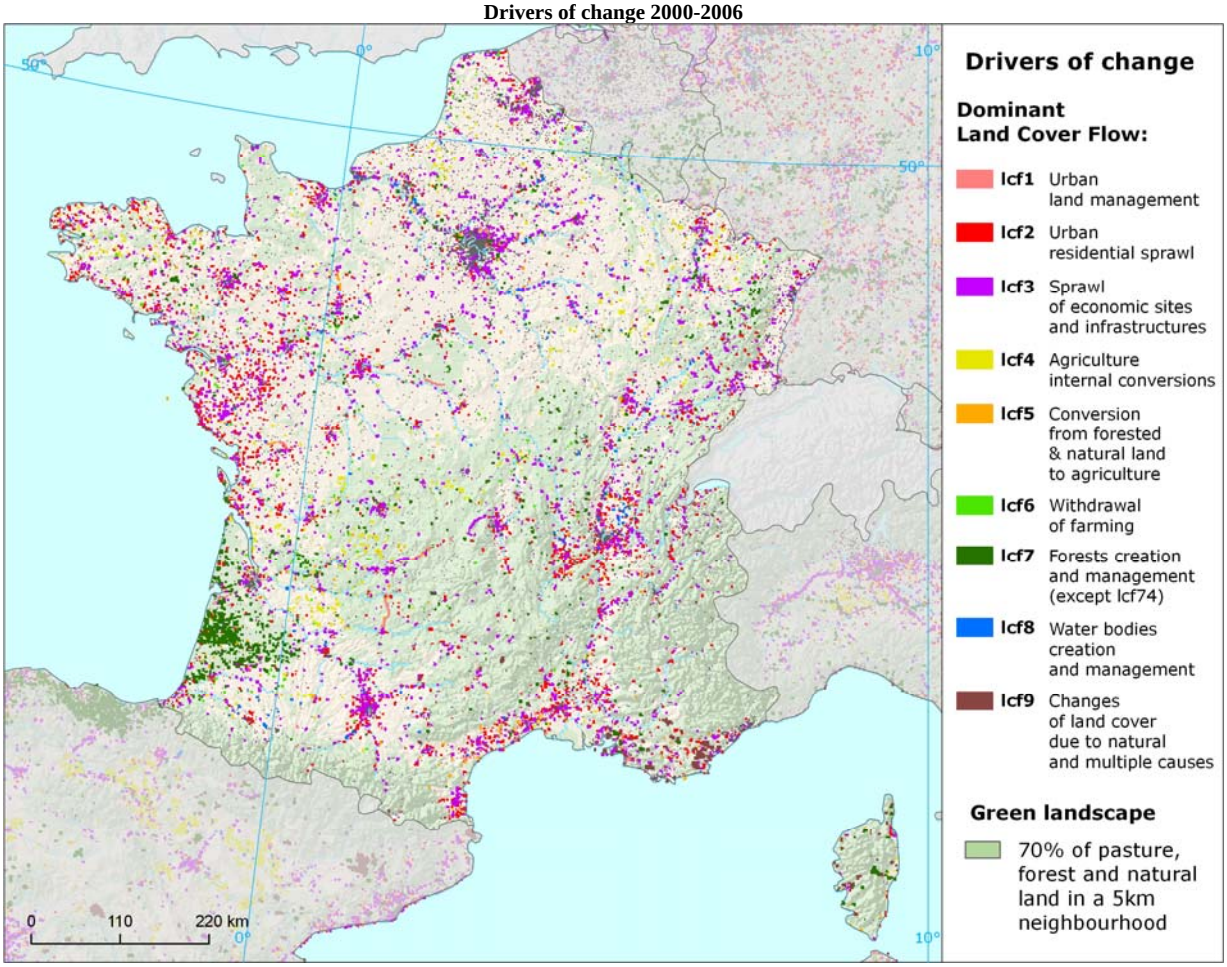


CLC Changes 1990-2000

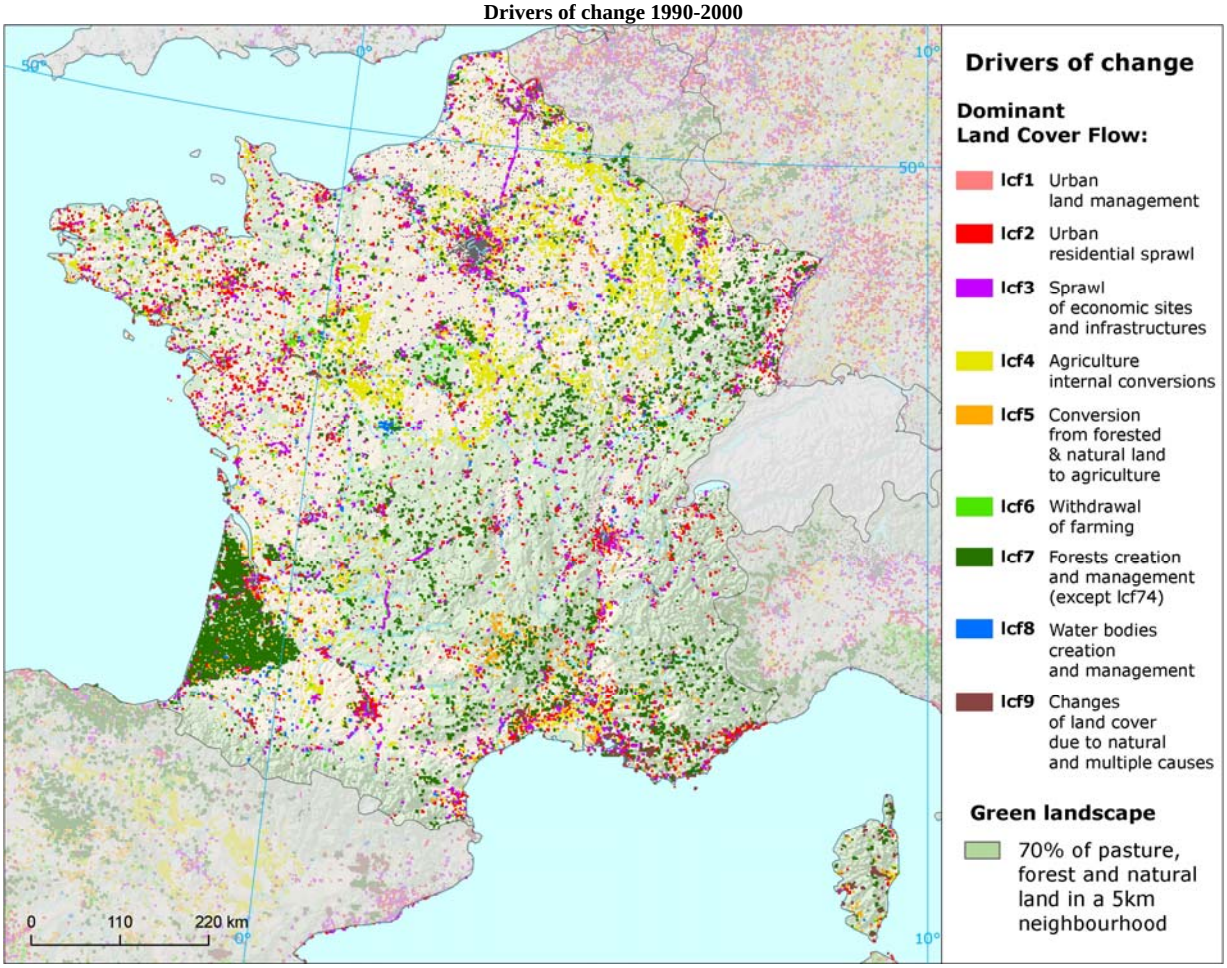


France

Drivers of change 2000-2006

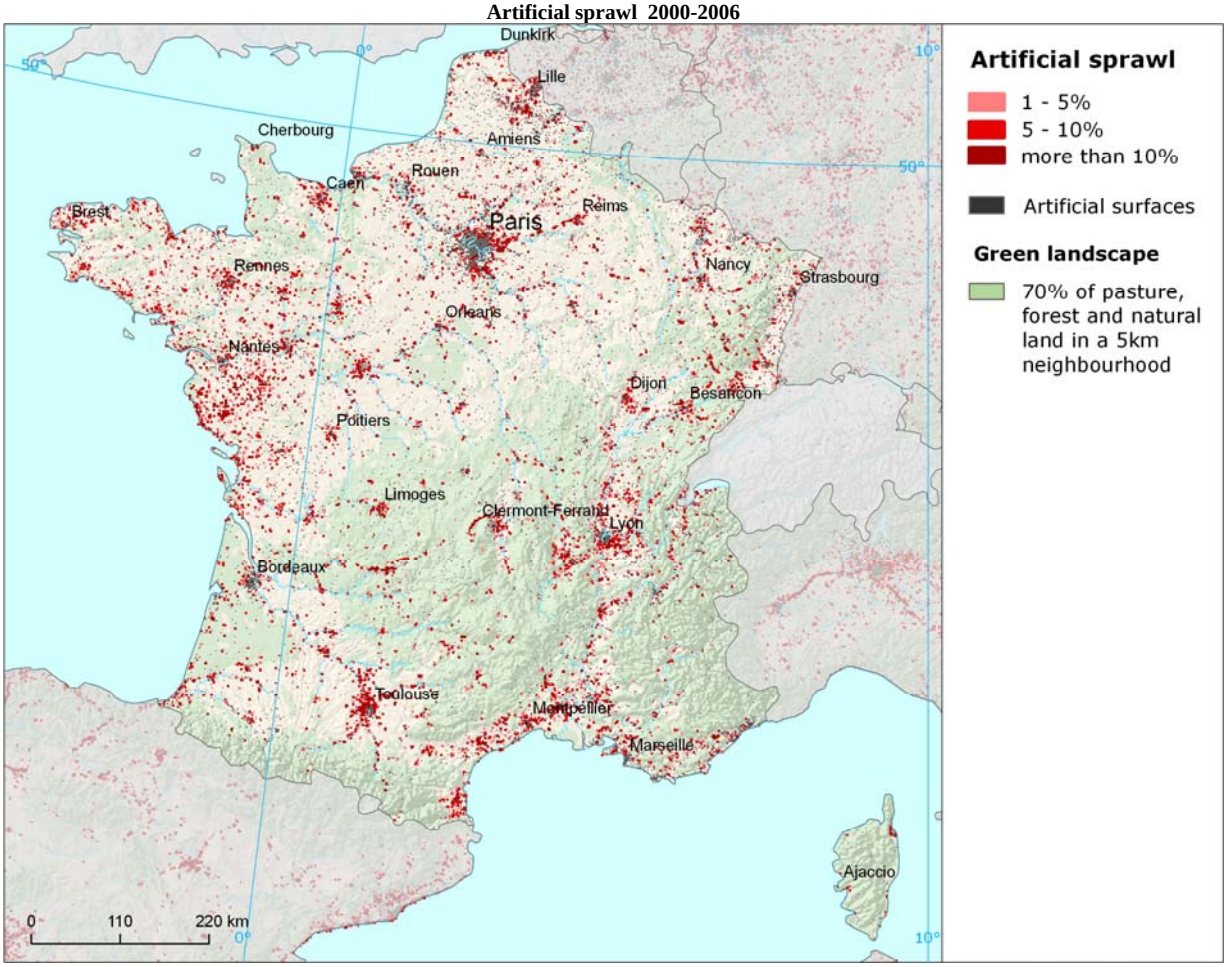


Drivers of change 1990-2000

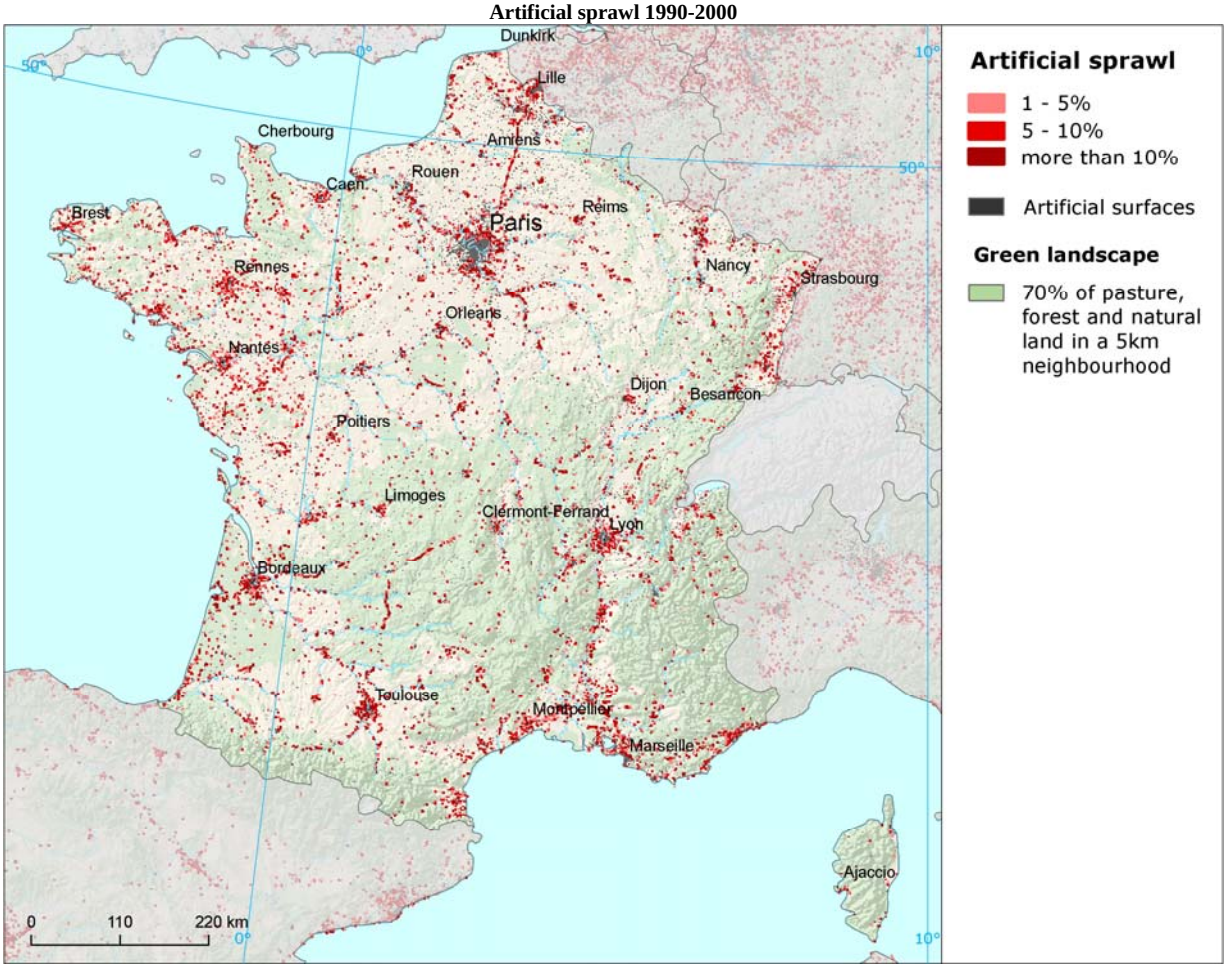


France

Artificial sprawl 2000-2006

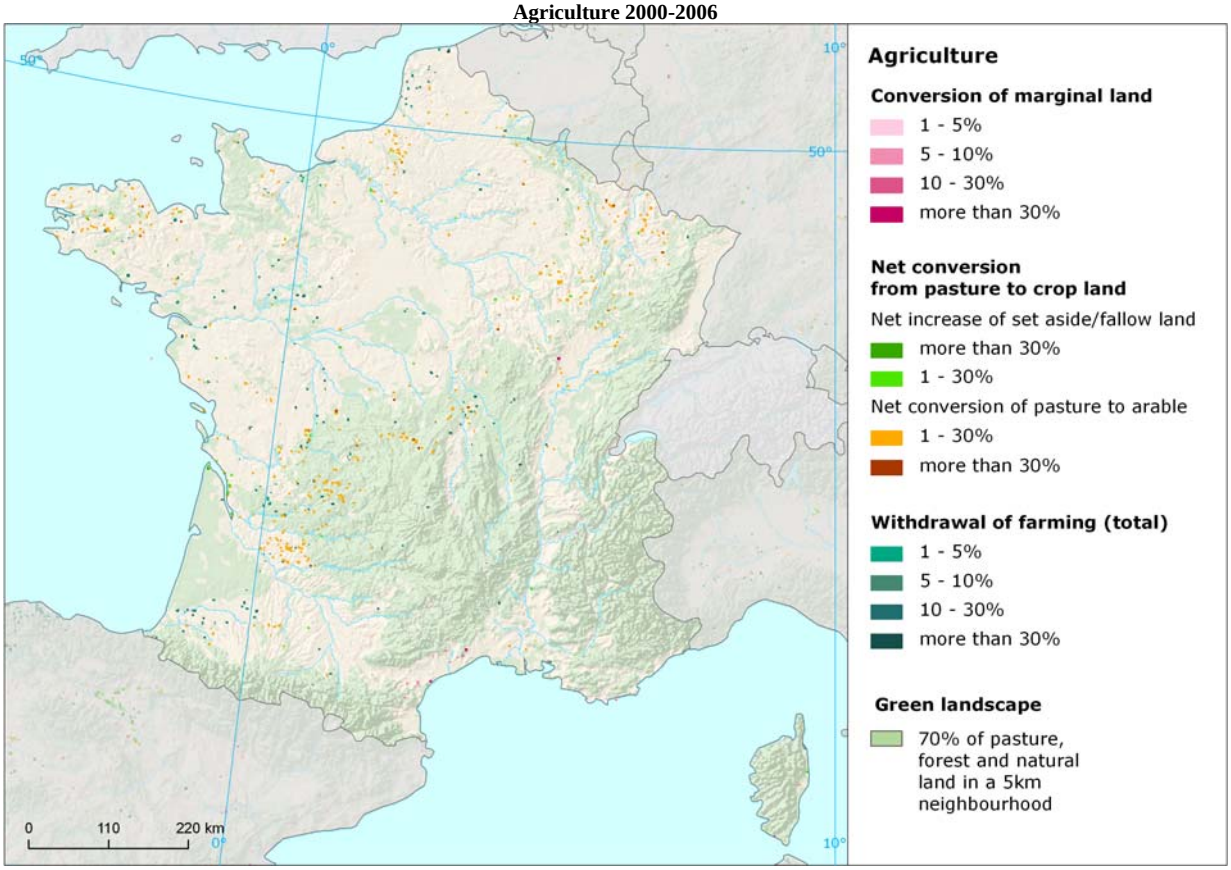


Artificial sprawl 1990-2000

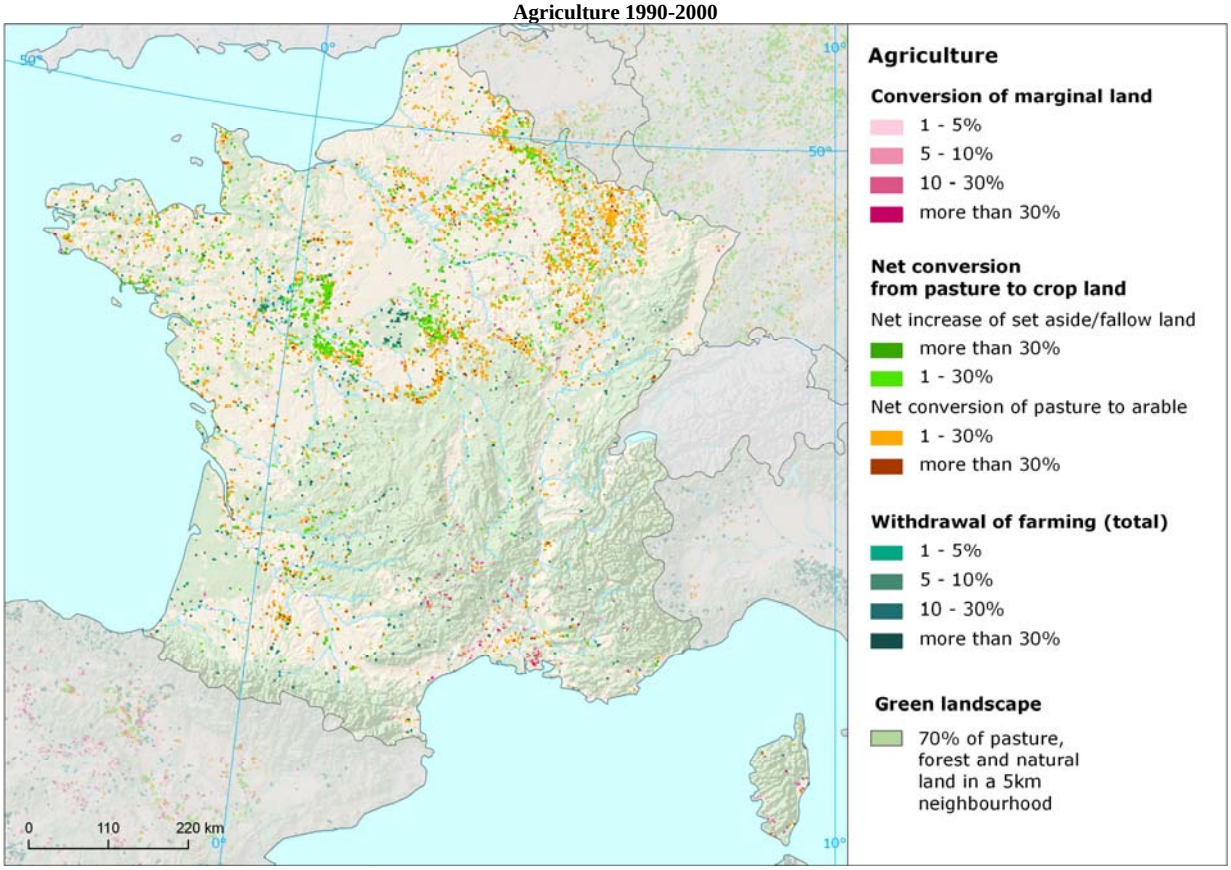


France

Agriculture 2000-2006

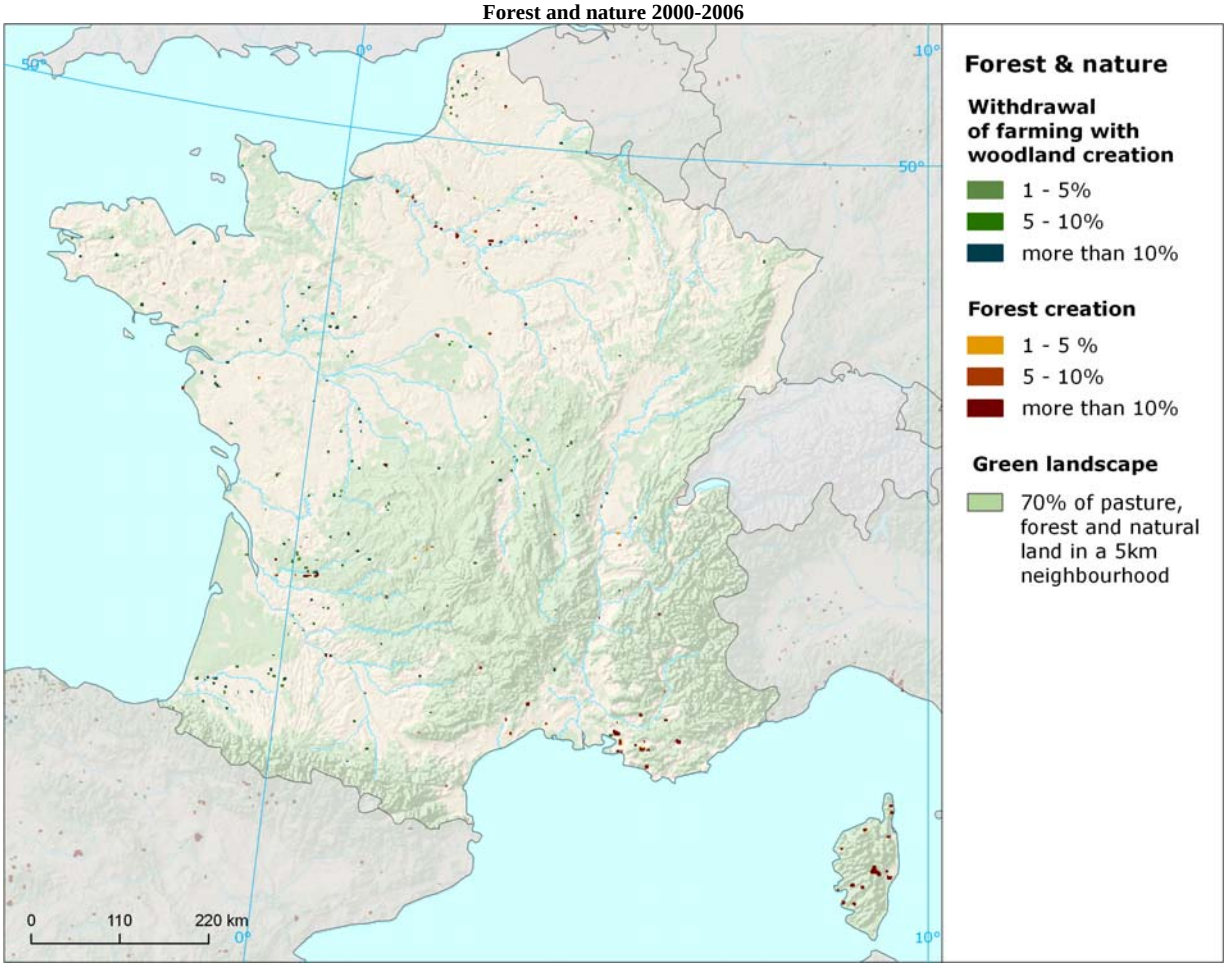


Agriculture 1990-2000



France

Forest and nature 2000-2006



Forest and nature 1990-2000