

EEA Core Set of Indicators - CSI 014

Land take

May 2005 assessment

working draft

About this document

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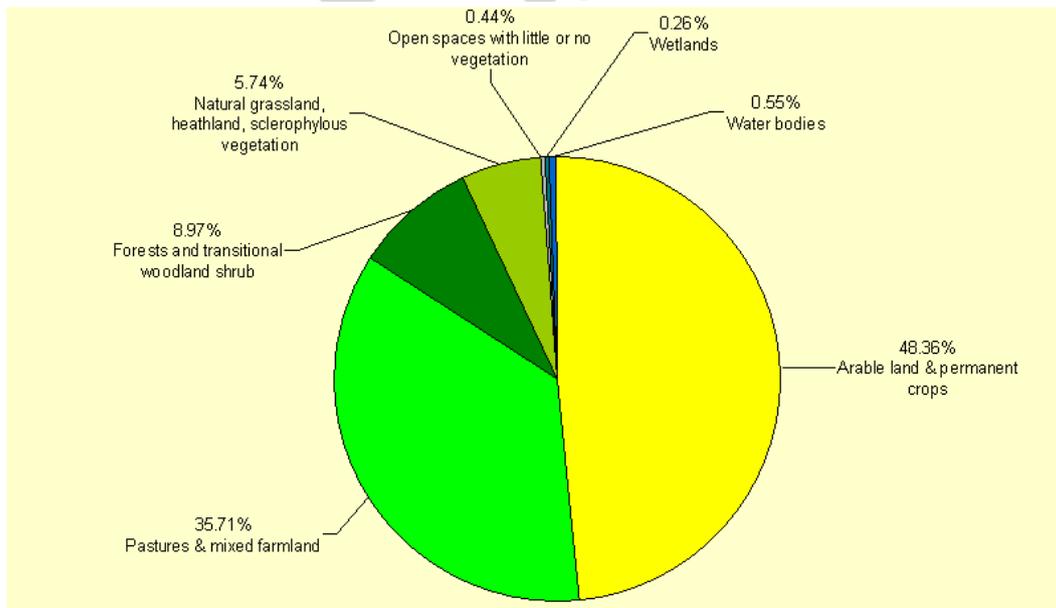
Key policy question: In which proportion are agriculture, forest and other semi-natural and natural land taken by urban development?

Key message: Land uptake due to the expansion of artificial areas and related infrastructure is the main type of land cover changes in all 25 countries of EU. Natural - forests - and semi-natural areas, as well as agricultural zones are disappearing in favour of the high development of artificial surfaces. This effect has influence on biodiversity as it decreases living space for number species and animals in nature. Beside that large cities are sources of energy affecting surrounding climate conditions on local and regional level.

Arable land and permanent crops is the largest land cover category used for uptake by urban sprawl (average of 22 European countries). 48% of all areas that changed to artificial surfaces were arable land or permanent crops. This process is very strong in Denmark and Germany, 80% and 72% respectively. Pastures and mixed farmland are, on the average, the following land cover categories taken by new artificial areas, representing 36% of the total. However, in several countries or regions, these landscapes are the major source for urban land take, such as in Ireland (80%) and The Netherlands (60%).

Significant uptake of forested and natural land for urban development has taken place during the period in Portugal (35%), Spain (31%) and Greece (23%).

Fig. 1: Relative contribution of land cover categories into uptake by urban



Data source: LEAC DB (based on CLC CHANGE DB)

Note: In some large countries, dates of satellite images for regions may differ by several years. Therefore, as a provisional solution, a conventional time period of 10 years has been set between the two databases. It could be used as well, an average European time span, weighted or not by country surface.



Specific policy question: What are the drivers of land take by urban development?

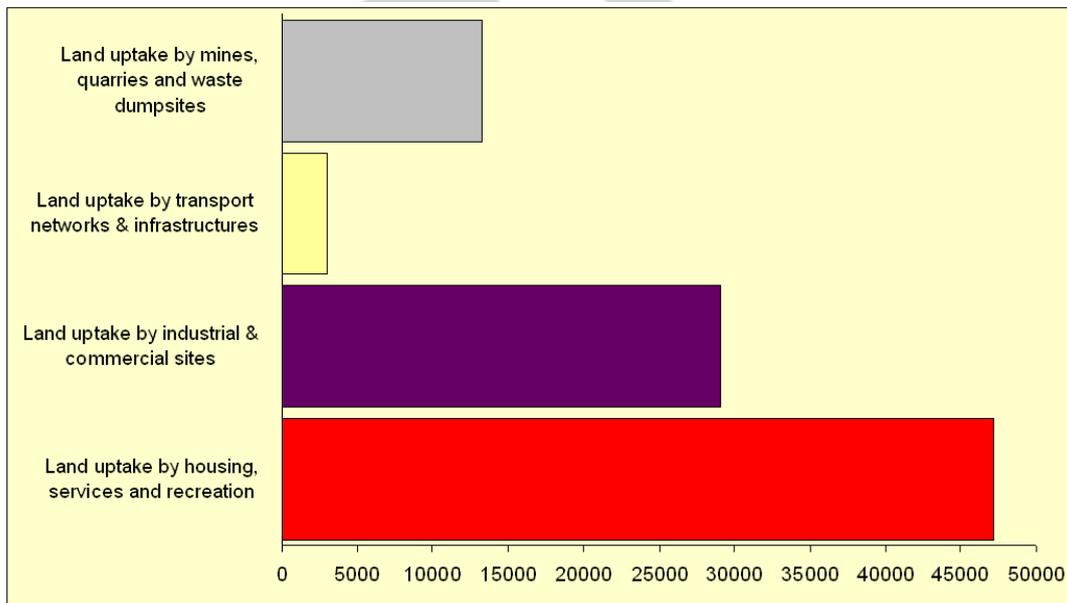
At the European level, the amount of urban surfaces used for housing services and recreation reaches 47162 ha/year, which represents the 51% of the overall urban sprawl. But the situation is contrasted, with countries ranking up to values of residential land uptake higher than 70% (Luxembourg and Ireland) to countries like Greece (16%) or Poland (22%) where urban development is mainly due to economic activities .

Industrial sites/ commercial sites is the following sector responsible for the land uptake, with 31,5% of the average European urban sprawl. However, this sector takes the main role in Belgium (48%), Greece (43%) and Hungary (32%).

Land take by mines, quarries and waste dumpsites is relatively important in countries with low urban land take during the period and in Poland (43%) where mines are a key sector of the economy. At the European level, the percentage of land uptake by mines, quarries and waste dumpsites is of 14%.

Land uptake by transport infrastructures (3,2% of the total urban land uptake) is underestimated in surveys based on remote-sensing like Corine land cover. The uptake by linear features such as roads and railways is not present in the statistics, which focus on area infrastructures only (airports, harbours....). Therefore, the soil sealing and fragmentation by linear infrastructures need to be observed by different means.

Fig. 2: Land take by several types of man's activity per year in 20 European countries (ha).



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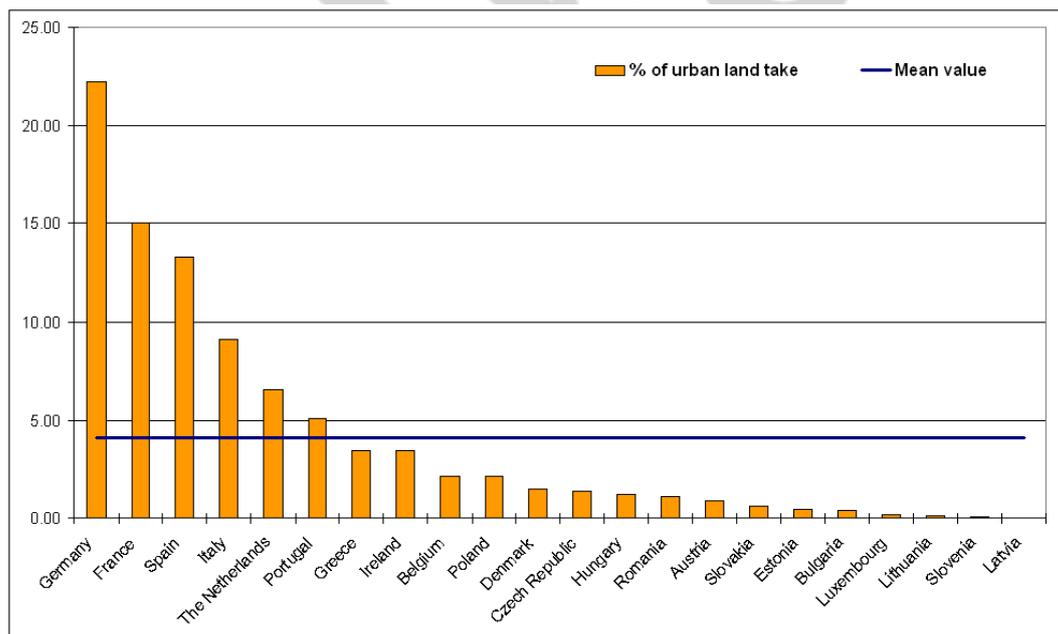
Specific policy question: Where is land take by urban development taking place?

Urban land take greatly diverge among European countries. Considering the contribution of each country to mean annual urban sprawl in Europe, values range from 22% (Germany) to 0.02% (Latvia), with intermediate values in France (15%) Spain (13,3%), and Italy (9,1%). Differences between countries are strongly related to their size and their population density.

Smaller countries face a fast urban sprawl, that can be shown by comparing it with the initial 1990 extension of urban areas. From this perspective, Portugal (+39% of total sprawl & 2.8% of annual increase), Ireland (+31% & 3.1), and the Netherlands (+23% & 1.6) are, with Spain (+27% & 1.9), the countries where urban development is the most important. Its worthwhile to note that urban sprawl in new Member States is always lower than former EU-15 countries, in absolute and relative terms.

Figure 4 shows the contribution of urbanisation to total land cover changes per country. The Netherlands are the only country where most of the changes (51%) can be attributed to new urbanisation. In general, the smaller countries are those where urbanisation contributes to a higher percentage to the total land cover changes. However, Germany, France and Italy are also above the mean value of the European countries (9,5%). New member states are below the average, except Slovenia.

Fig. 3: Mean annual urban land take as % of total Europe-22 urban land take

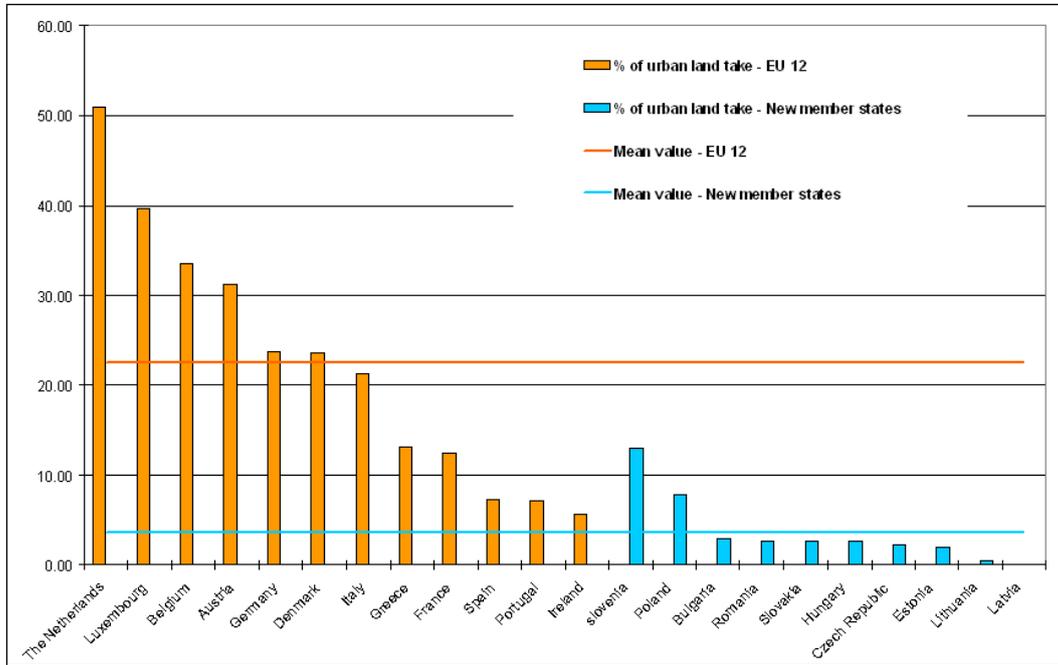


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Fig. 4: Mean annual urban land take as % of total land cover change



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