

2.- Area of built-up land

Key message

- Over recent decades, built-up areas have been steadily increasing all over Europe.
- In Western European countries, built-up areas have been increasing faster than the population.
- There is intensive development near the coastline which is touching the most interesting coastal biotopes that represent an important barrier to the fluxes between land and sea.
- The proximity of these developments to the sea implies extreme vulnerability of settlements with regard to sea storms, floods and other exceptional events.



Cala del Mal Pas, Benidorm (Alacant), Spain

Why monitor the area of built-up land?

The increase in built-up areas has the highest impact on the environment due to the sealing of soil as well as disturbance resulting from transport, noise, resource use, waste dumping and pollution. Transport networks that connect cities add to the fragmentation and degradation of the natural landscape. The intensity and patterns of urban sprawl are the result of three main factors - economic development, demand for housing and extension of transport networks. Although subsidiarity rules assign land and urban planning responsibilities to national and regional levels, most European policies have a direct or indirect effect on urban development.

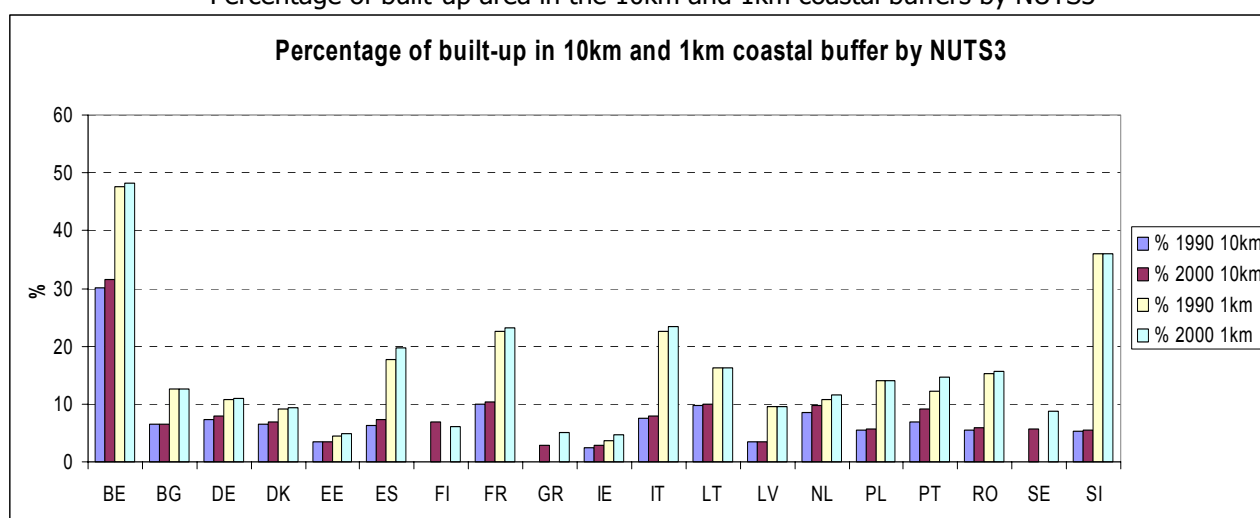
This indicator belongs to the set of six indicators that monitor progress towards achieving the first goal for coastal sustainability set out in the EU Recommendation concerning the implementation of ICZM - to control further development of undeveloped coast as appropriate.

The indicator has one measurement - the percentage of built-up land by distance from the coastline.

What does the indicator show from European to local level?

During the last decade, significant land use and land cover changes can be observed in the 10 kilometer coastal strip in the five European regional seas. In general terms, the artificial use of the coastal zone has grown intensively especially on the Mediterranean (804km²) and on the Atlantic (690km²) coasts. The North Sea coast shows a smaller growth of built up area (235km²), together with the Baltic Sea (142km²) coast and the Black Sea coast, with the lowest value of change (11km²). However, in relative terms, in relation to the total area of the assessed coastal zone, the change to artificial surfaces is almost 15% on the Atlantic coast, 10% on the Mediterranean, 8% on the North Sea and 5% on the Baltic Sea coast. On the Black Sea coast, changes to built-up land represent ca 2.5%. Gains in built up area represent the highest individual and cover change in the coastal zones of regional sea catchments.

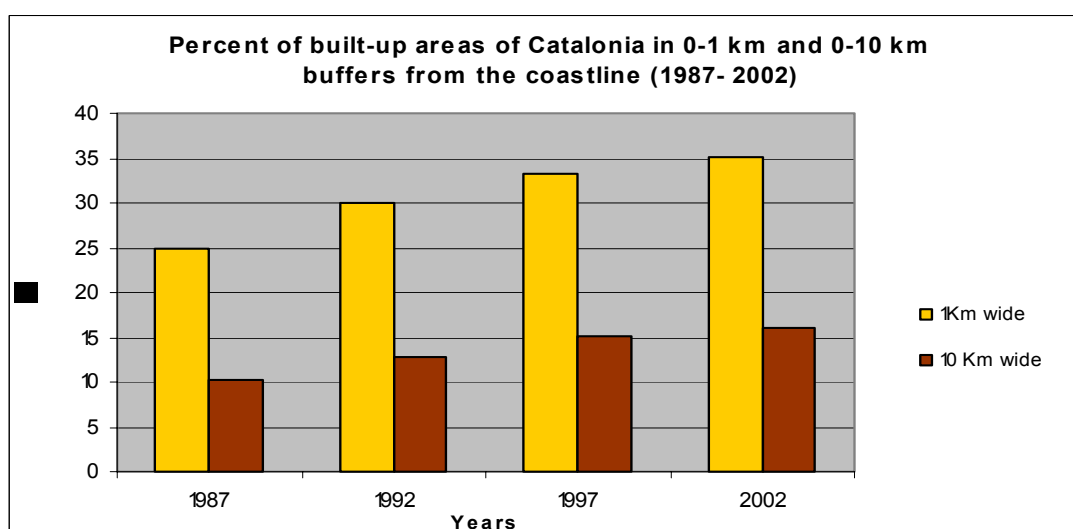
Percentage of built-up area in the 10km and 1km coastal buffers by NUTS3



Source: EEA, ETC-TE (2005)

Growth of urban artificial surfaces on the coastal zone of Europe has continued. Projected on the basis of annual growth rate observed during 1990-2000, by 2004 the 1990 levels are exceeded by 12%. In this period, the fastest development has occurred in Portugal (34%), Ireland (27%), Spain (18%), followed by France, Italy and Greece. The most affected regional sea coast is the Western Mediterranean. Inside the 10km coastal zone, urban surfaces are dominant in the first kilometer from the shoreline. In several coastal regions of Belgium, Italy, France and Spain the coverage of built-up areas in the first kilometer coastal strip exceeds 45%. In these areas further development is sprawling to the coastal hinterland. In 2000 the share of area covered by artificial surfaces was 25% higher on coasts than inland. During 1990-2000, trends in European coastal zones show that the growth rate of built up areas at the coast have been about 1/3 faster than inland.

Percentage of built-up areas of Catalonia in 1km and 10km buffers from the coastline

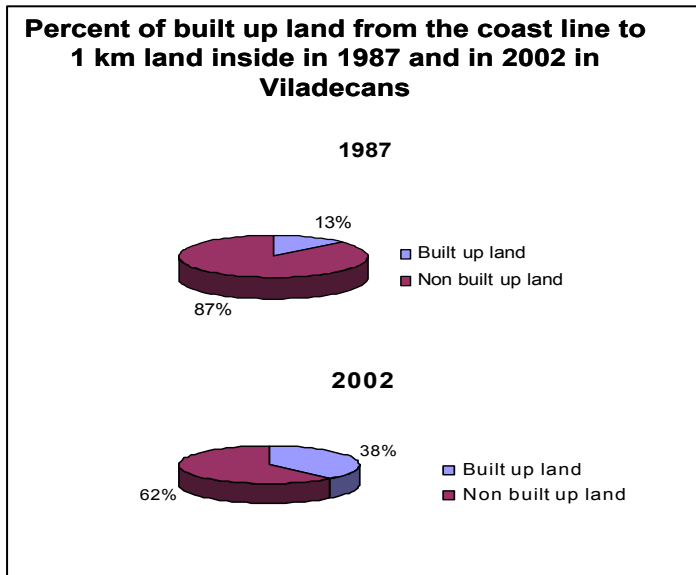


Source: Generalitat de Catalunya (2005)

Policy and management for a sustainable coast

Analyzing the built-up land by distance from the coastline in the Deduce regions, it becomes apparent, that urban surfaces are far more present on 1km from the coastline than in the 10km land area from the coast.

Percentage of built-up land in Viladecans from the coastline to 1km inland in 1987 and in 2002



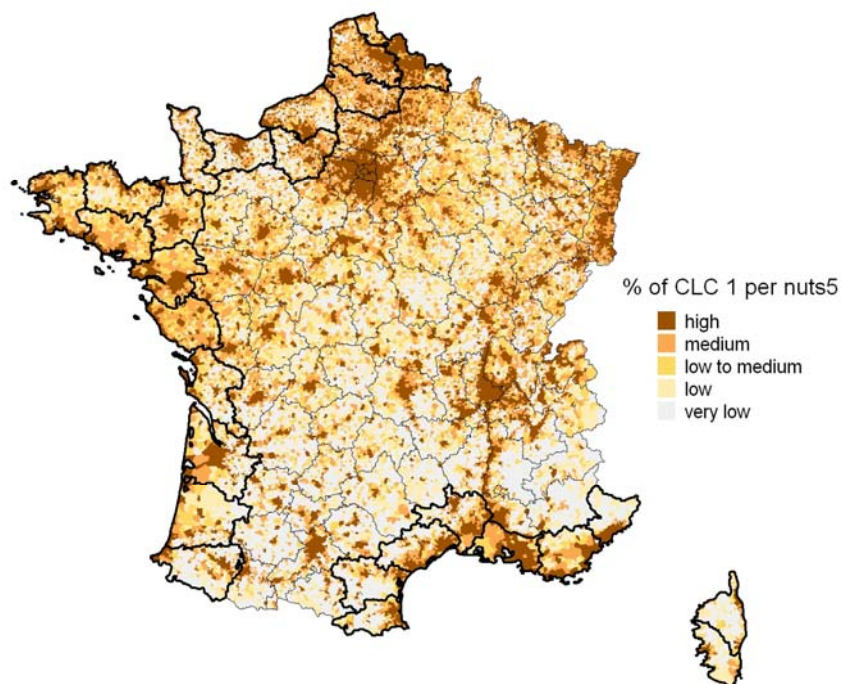
Therefore, the immediate coastal strip (first kilometer from the coastline inland) is the area receiving most pressure, which is really intense on some areas of the coast, especially on the Mediterranean (Catalonia, Viladecans and Malta, where the rate of increase in built-up land for the 0-1km for 1990 and 2000 period was 3%).

Source: Ajuntament Viladecans (2005)

On the Atlantic coast, a significant part of the French coastline is also intensively occupied, including even the wild coast of Brittany. However, trends show that new construction is sprawling further from the coastline, provoking a shift of more occupation of the second and third development front of the coast. The immediate coastline is reserved for the seasonal tourist while the coastal hinterland becomes the home location of the yearly residents, most of who continue to work in the coastal cities or in tourist activities.

Many North Sea coasts are also very intensively built up. The coastal zone of the southern North Sea is on average more urbanised than the inland areas (16% versus 10%) in 2000. There is considerable difference between sub-regions. Essex and Zeeland are the less urbanised (10% and 4% respectively).

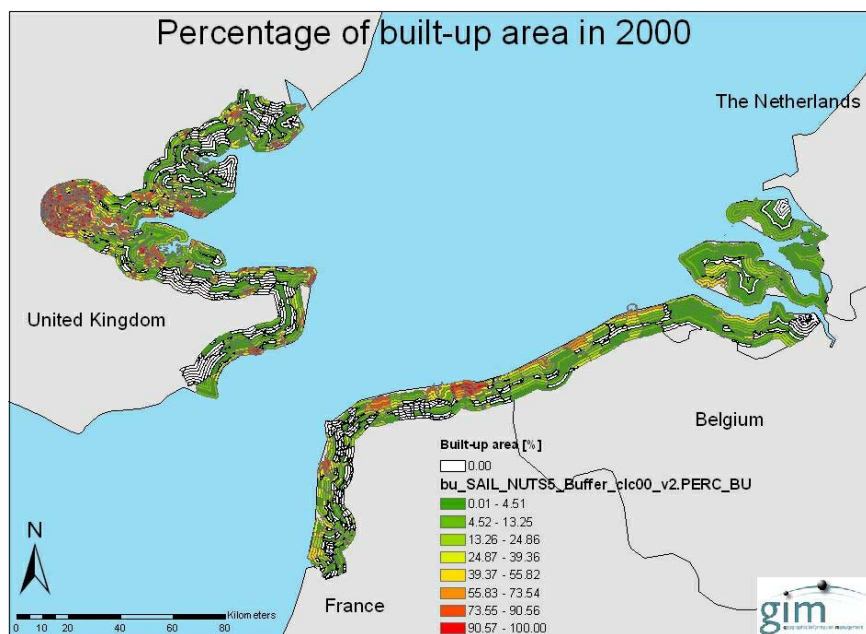
Built up land in France in 2000



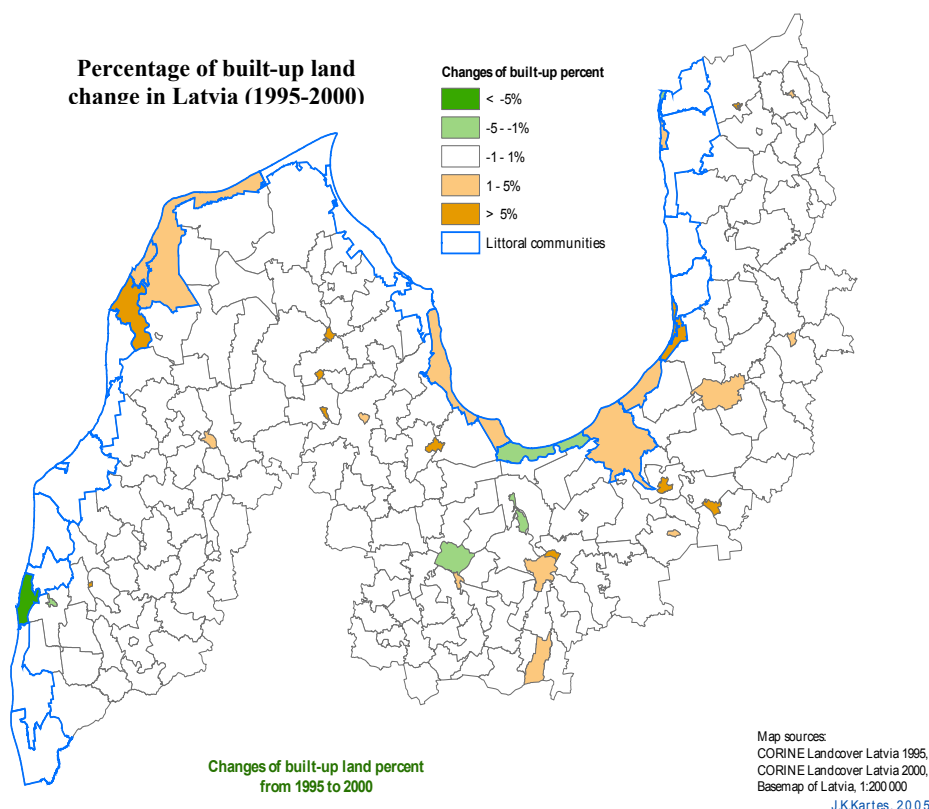
Source : UE, IFEN, CORINE Land Cover 2000, Observatoire du littoral

Policy and management for a sustainable coast

The average percentage of built-up land in the hinterland of Zeeland is higher (7%) and increasing more rapidly, compared to the coastal municipalities that border the Southern North Sea (4%). The coastal zones of West-Vlaanderen (27%) and Nord-Pas de Calais (26%) are highly urbanised. The rate of urbanisation in the coastal zone is still 1.32 times higher than in the hinterland.



On the contrary, in the Deduce regions located on the Baltic Sea coast, the situation is different due to the reduced share of built-up land located in the coastal areas by comparison with the Mediterranean coast and even with the Atlantic coast.



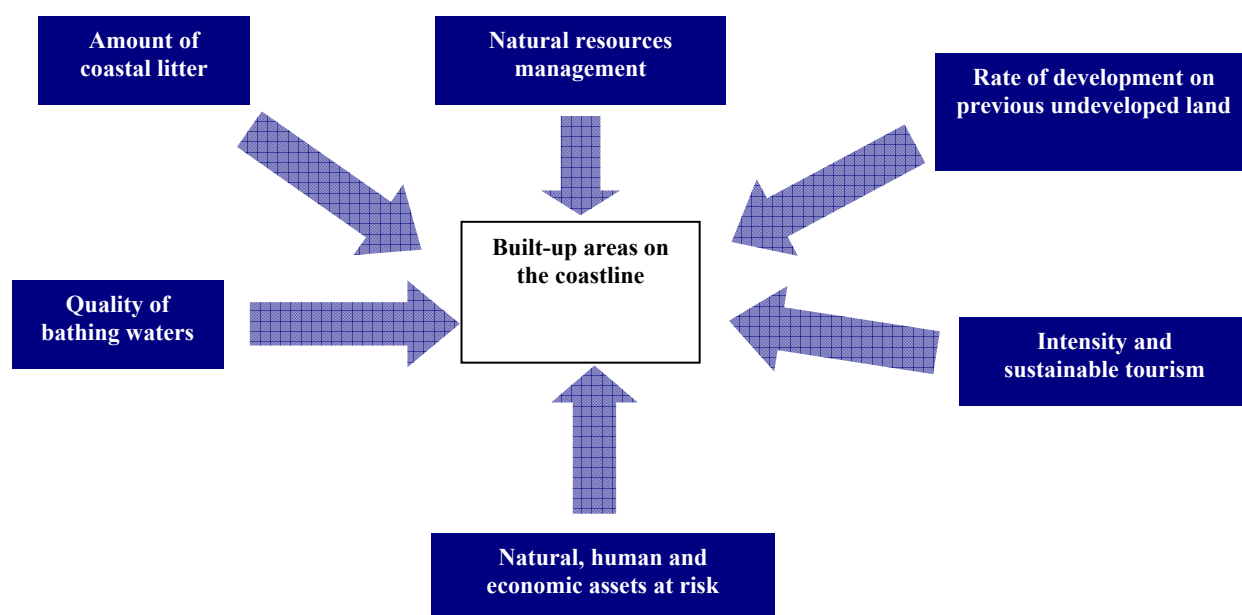
What are the implications for planning and managing the coastal zone?

Europe is one of the most urbanised continents and today some 70% of its population is urban, while urban areas (with a population density 117.5 people per km²), account for some 25% of the EU territory. By 2020, around 80% of all Europeans will be living in urban areas. As a result of Europe's increasing urban population, the phenomenon of urban sprawl – which occurs when the rate of land use conversion and consumption for urban uses exceeds the rate of population growth for a given area over a specified period - is a major issue for land use policy-makers.¹

During the last century, coastal urbanisation has grown dramatically and coastal cities have expanded rapidly, strongly influencing marine and coastal ecosystems, and missing the preservation of the coastal environment for sustainable development as a major urban planning issue

This indicator provides significant information to improve the planning, management and the land use of Europe's coastal zones - often the most vulnerable area from the environmental point of view.

Related indicators



Further work needed

Spatial assessment on a European level is severely limited by the availability of harmonised European data sets. Better coverage of data is needed in all aspects:

- temporal coverage (as a minimum 2 dates for change analysis),
- spatial coverage (maximum coverage of European countries)

Data sources

Europe: Corine Land Cover 90- 2000 (EEA)

West-Flanders (and local network of partners):

- West-Flanders: Corine Land Cover 90- 2000 (EEA)
- Nord-Pas-de-Calais: Corine Land Cover 90- 2000 (EEA)
- Zeeland: Corine Land 90-2000 (EEA) and additional dataset from Centraal Bureau voor de Statistiek CBS (Statistics Netherlands): Land use 1989-1993-1996.
- Kent, Essex and Thames: Corine Land Cover 90- 2000 (EEA)

Malta:

- Base map – 1988 (Malta Environment Planning Authority)
- Area of urban development 1994 to 2004 (Malta Environment Planning Authority)

Catalonia:

- Basic digital data on built-up areas were obtained from the Land use map of Catalonia. (1987, 1992, 1997 and 2002)
- The administrative boundaries (from Nut 5) were obtained by the Cartographical Catalan Institut (ICC).

Pomeranian Voivodship:

- Corine Land Cover 90- 2000 (EEA)
- Administrative units from Wojewódzki Ośrodek Dokumentacji Geodezyjno-Kartograficznej (Voivodship Centre for the Geodetic-Cartographic Documentation) in Gdansk.

Reliability of the indicator

The data on built-up land is not homogeneous for all Deduce partners. There are significant data gaps due to the spatial resolution (minimum mapping unit does not allow highly accurate interpretation) of the datasets available and temporal inconsistencies due to the different temporal periods analysed.

References

1. European Environment Agency, 2006, “The Urban Environment in its Broader Territorial Context” Background Paper for the Informal Meeting of Ministers for the Environment, Eisenstaedt, 19-21 May 2006

