SOIL SEALING

SOIL SEALING **is the loss of soil resources due to the covering of land for housing, roads or other construction work.**

The covering of the soil surface with impervious materials as a result of urban development and infrastructure construction is known as soil sealing. The term is also used to describe a change in the nature of the soil leading to impermeability (e.g. compaction by agricultural machinery). Sealed areas are lost to uses such as agriculture or forestry while the ecological soil functions are severely impaired or even prevented (e.g. soil working as a buffer and filter system or as a carbon sink). In addition, surrounding soils may be influenced by change in water flow patterns or the fragmentation of habitats. Current studies suggest that soil sealing is nearly irreversible.

The greatest impacts of soil sealing are observable in urban and metropolitan areas. In already intensively urbanised countries like Holland or Germany the rate of soil loss due to surface sealing is high. There is little space for further urbanisation. Most of the growth will presumably take place within or on the edge of the suburban areas. In the Mediterranean region, soil sealing is a particular problem along the coasts where rapid urbanisation is associated with the expansion of tourism. Very high rates of sealing are now predicted for countries like Portugal, Finland or Ireland where urbanisation levels are generally low.

In Central and Eastern Europe soil sealing has been comparatively modest in the past decades. An accelerated increase of built-up areas can be recorded as a consequence of the political and economic changes during the late 1980s. Rural populations migrated to the cities and new settlements were developed. Rising pressures on soil can be expected in the course of a strengthened economic growth in these countries. Generally the enlargement of the EU and the integration of new countries in the common market will lead to a heightened movement of people and transport of goods. More infrastructure will be built in order to ensure a good connection between peripheral regions and the centre.

Built-up areas have been mainly enlarged at the expense of agricultural land. Progressive soil sealing will take place especially for Western Europe where the area of built-up land increases at a faster rate than the population. Besides the influence of tourism, the rising demand for land resources can be mainly caused by changes in population behaviour such as people's preference for living outside the city centres, an increased demand for bigger houses or out of- town developments such as supermarkets, leisure centres and associated development of transport infrastructure.

Spatial planning strategies determine to a great extent the progression of soil sealing. Unfortunately neither the economical nor the ecological or the social effects of irreplaceable soil losses have been considered adequately so far. In the meantime the necessity to include environmental concerns and objectives in spatial planning, in order to reduce the effects of uncontrolled urban expansion, is widely recognised in the EU. A rational land-use planning to enable the sustainable management of soil resources and the limiting of sealing of open space is demanded. Possible measures include the redevelopment of brown-fields and the rehabilitation of old buildings.

European Soil Data Centre

The European Soil Data Centre (ESDAC) is the thematic centre for soil related data in Europe and has been established according to a decision taken at the end of 2005 by the European Commission's DG ENV, DG JRC, ESTAT and the European Environment Agency (the so-called "group of four" or G04) to establish ten environmental data centres in Europe.

Each environmental data centre will act as the primary data contact point for DG ENV in order to fulfill its information needs. It will have the task of ensuring that the collected data fit DG ENV's requirements, that data collection is organized in an efficient way, that the necessary quality assurance is performed and that all relevant existing data are accessible to other Go4 parties. It will thus have the primary responsibility for organizing the availability and quality of the data required for policy.

The requirements of DG ENV in relation to the ESDAC are at the one hand to receive scientific and technical support for issues in relation to the proposed Soil Framework Directive and for the development of European datasets, and at the other hand the availability of a suitable IT facility that allows management of and access to the soil data and information collected during the course of providing the scientific and technical support. Scientific and technical support should include the specification of guidelines for the identification of risk areas and of associated guidelines on data issues (quality, data-exchange formats) and the production of maps of risk for the different soil threats in the EU.

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http://eusoils.jrc.ec.europa.eu/

SOIL SEALING

http://eusoils.jrc.it/search_results.cfm?form.criteria=Soil%20Sealing

LAND MANAGEMENT AND NATURAL HAZARDS UNIT

http://ies.jrc.cec.eu.int/lmnh.html