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6.2 Land cover

Definition:

(INSPIRE, 2007) Physical and biological cover of the earth's surface including artificial surfaces, agricultural areas, forests, (semi-)natural areas, wetlands, water bodies.

Description:

Land cover data is a physical or biological description of the earth surface. In this way it is different from the land use data (Annex III, theme number 4), dedicated to the description of the use of the Earth surface.

Land cover information has to be homogenous and comparable between different locations in Europe, based on the infrastructures for Land Cover information created by the Member States (if existing), and made available and maintained at the most appropriate level.

DG ENV among other DGs, together with 37 participating countries are financing and implementing the European multi-annual land cover database, within the framework of the GMES precursor Fast Track Service on Land Management and as the result of the users' requirements at national and European levels.

Scope, use examples:

Policies from the European Community and UN:

- International Framework Convention on Climate Change (Kyoto protocol)
- Convention on Long-range Transboundary Air Pollution
- European Regional Development Fund
- Water Framework Directive
- Thematic Strategy for Soil Protection
- Convention for Biological Diversity
- Greening the EU Common Agriculture Policy

Use examples by policy framework:

- Regional planning / ESDP, ESPON, Structural funds: assessing impacts of policy against regional development perspectives
- Implementation of Common Agricultural Policy: rural development (less favored areas), statutory management requirements (environment directives: e.g. Nitrate Directive, Habitat Directive; Water Framework Directive), agri-environmental measures
- Environmental policy / Habitat Directive: implementing biodiversity conventions, habitats and protected sites,
- Environmental policy / Water Framework Directive : integrated watershed analysis,
- Environmental policy / Air quality Directives, IPCC, UNFCCC): assessing air emission and air quality measures
- Transport policy / Common transport policy, SEA: strategic environmental assessment of Trans-European transport networks, transport and Environment Reporting Mechanism.

Examples of European/International classification schemes:

- CORINE (Coordination of Information on the Environment)
- LCCS (Land Cover Classification System)

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Important feature types and attributes:

Example (based on CORINE, for illustrative purpose only):

- Artificial surfaces
 - Urban fabric
 - Industrial, commercial and transport units
 - Mine, dump and construction sites
 - Artificial, non-agricultural vegetated areas
- Agricultural areas
 - Arable land
 - Permanent crops
 - Pastures
 - Heterogeneous agricultural areas
- Forests
- semi-natural areas
 - Scrub and/or herbaceous vegetation associations
 - Open spaces with little or no vegetation
- Wetlands
 - Inland wetlands
 - Maritime wetlands
- Water bodies
 - Inland waters
 - Marine waters

Important attributes: Area, perimeter, Land cover type.

Links and overlaps with other themes:

A strong link exists with Orthoimagery, which are the major source for information on land cover.

Land cover is related with Land use.

Moreover, strong links exist with other INSPIRE themes that can be considered elements of land cover, such as:

- Transport Networks
- Hydrography
- Buildings
- Production and industrial facilities
- Agricultural and aquaculture facilities
- Oceanographic geographical features

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Reference documents:

CORINE Land cover technical guide, 1994, Office for the Official Publications of the European Communities, Luxembourg.

CORINE Land Cover Technical guide, Addendum 2000, Technical Report N)40, Copenhagen, EEA, May 2000

FAO: Land Cover Classification System classification concepts and User Manual

GMES/OCS classification

Herold, Martin et al: International land cover harmonization initiative - GOF-C-GOLD report 20. Global Terrestrial Observing System (GTOS) of the United Nations.

Herold, M., Latham, J. S., Di Gregorio, A. & C. C. Schullius 2006. Evolving standards on land cover characterization, Journal of Land Use Science, 1, 2-4, 157-168.

IMAGE2000 and CLC2000, Products and methods. EUR 21757 EN; ISBN 92-894-9862-5

ISO 19144 "Geographic information - Classification Systems"

Latham, John et al: UN Global land cover network: an international framework for standardized development of land cover data. Global Terrestrial Observing System (GTOS) of the United Nations.

The Landcover Classification System LCCS. <http://www.glc-lccs.org/>

Several SDICs/LMOs from EU Member States or Regions have submitted data specifications for datasets that include information on land cover. See categorized list of reference material, compiled by JRC, March 2007