Natural hazards Egypt EEAA

LAND USE

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The CORINE programme

The three aims of the CORINE (Coordination of information on the environment) programme of the Commission European are:

- to compile information on the state of the environment with regard to certain topics which have priority for all the Member States of the Community
- to coordinate the compilation of data and the organization of information within the Member States or at international level
- to ensure that information is consistent and that data are compatible.

Two main types of complementary action have been taken to meet the programme's objectives:

- devising procedures for collating, standardising and exchanging data on the environment in the EC Member States
- creating a geographical information system to provide the information on the environment which is essential when preparing and implementing Community policies.

Needed knowledge to have a proper understanding of the different features of the environment:

- the state of individual environments
- the geographical distribution and state of natural areas
- the geographical distribution and abundance of wild fauna and flora
- the quality and abundance of water resources
- land cover structure and the state of the soil
- the quantities of toxic substances discharged into environments
- lists of natural hazards, etc.

Some issues:

- the gradual desertification of certain regions
- the rapid disappearance of vast areas of forest
- the wholesale of poor farmland
- the gradual drying-up of wetlands
- continuous urban development along coastlines, etc.

Needed more frequent surveys and inventories e.g. for the following:

- disappearance of areas of wetlands
- destruction of Mediterranean woodland by fire
- intensification of agriculture in vulnerable areas
- development of tourism along coastlines
- emergence of scrub on farmland
- disappearance of species deprived of their biotopes, etc.

Map inventory: relationship between scale and needs met

Scale	Needs met	Type of decision
1:1000 000	Main long-term trends in land cover International comparison of land cover patterns	Guiding national and Community programmes and preparing major development programmes
1:1 00 000	National management of the environment: identifying and locating major problem areas National land use policy: deciding which areas to protect	Monitoring the implementation of Community and national policies
1:25 000	Monitoring regional land use Managing sensitive areas	Local management

Table 2.2. CORINE land cover nomenclature

Level 1	Level 2	Level 3
1. Artificial surfaces	1.1. Urban fabric	1.1.1. Continuous urban fabric
		1.1.2. Discontinuous urban fabric
	1.2. Industrial, commercial and transport units	1.2.1. Industrial or commercial units
		1.2.2. Road and rail networks and associated land
		1.2.3. Port areas
		1.2.4. Airports
	1.3. Mine, dump and construction sites	1.3.1. Mineral extraction sites
		1.3.2. Dump sites
		1.3.3. Construction sites
	1.4. Artificial non-agricultural vegetated areas	1.4.1. Green urban areas
		1.4.2. Sport and leisure facilities

Table 2.2. CORINE land cover nomenclature

Level 1	Level 2	Level 3
2. Agricultural	2.1. Arable land areas	2.1.1. Non-irrigated arable land
		2.1.2. Permanently irrigated land
		2.1.3. Rice fields
	2.2. Permanent crops	2.2.1. Vineyards
		2.2.2. Fruit trees and berry plantations
		2.2.3. Olive groves
	2.3. Pastures	2.3.1. Pastures
	2.4. Heterogeneous agricultural areas	2.4.1. Annual crops associated with permanent crops
		2.4.2. Complex cultivation
		2.4.3. Land principally occupied by agriculture, with significant areas of natural vegetation
		2.4.4. Agro-forestry areas

Table 2.2. CORINE land cover nomenclature (3)

Level 1	Level 2	Level 3
3. Forests and semi-natural areas	3.1. Forests	3.1.1. Broad-leaved forest
		3.1.2. Coniferous forest
		3.1.3. Mixed forest
	3.2. Shrub and/or herbaceous vegetation association	3.2.1. Natural grassland
		3.2.2. Moors and heathland
		3.2.3. Sclerophyllous vegetation
		3.2.4. Transitional woodland shrub
	3.3. Open spaces with little or no vegetation	3.3.1. Beaches, dunes, and sand plains
		3.3.2. Bare rock
		3.3.3. Sparsely vegetated areas
		3.3.4. Burnt areas
		3.3.5. Glaciers and perpetual snow
4. Wetlands	4.1. inland wetlands	4.1.1. Inland marshes
		4.1.2.Peatbogs
	4.2. Coastal wetlands	4.2.1. Salt marshes
		4.2.2. Salines
		4.2.3. Intertidal flats

Establishment of the minimum surface area to be mapped must comply with three basic requirements:

•legibility of the printed map, or in the case of the land cover project, easy digitization from the interpretation manuscripts;

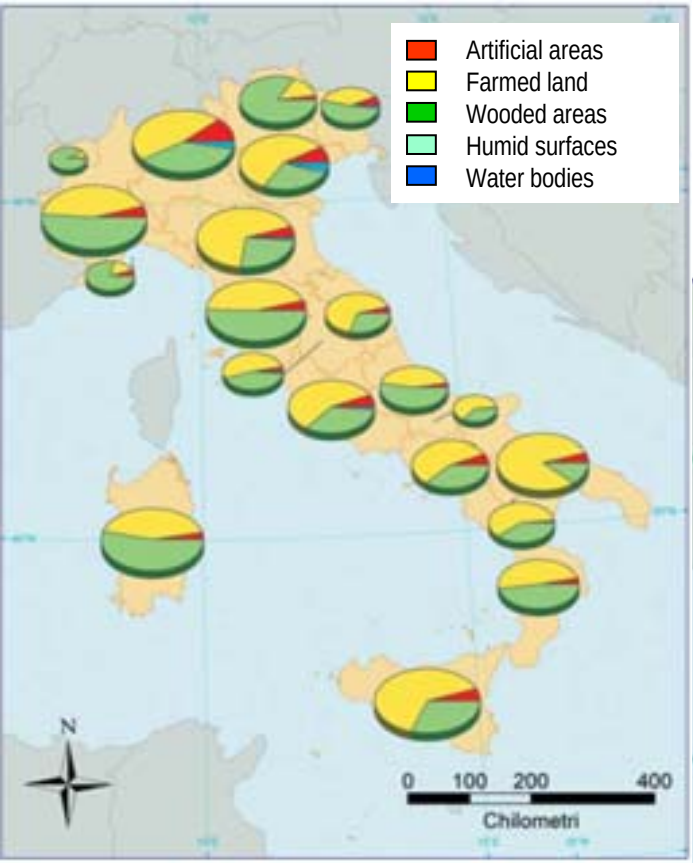
•it must provide a representation of the essential features of the terrain in terms that serve the thematic objectives of the project;

•it must represent a trade-off between project operating costs and provision of land cover information requirements within overall project budgetary constraints.

Taking these requirements into consideration, project managers set the minimum unit mapping size at **25 hectares**.

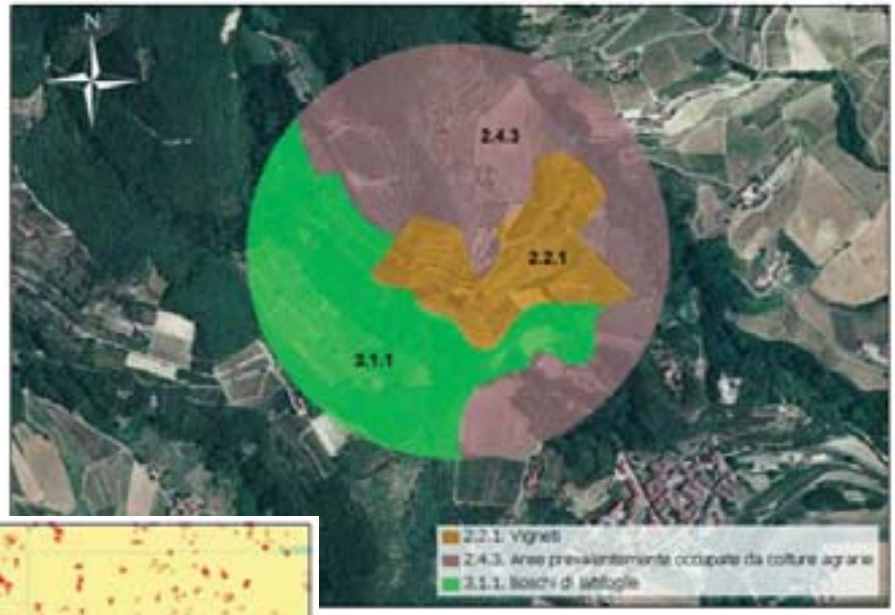
On a scale of 1: 100 000, 25 hectares is represented by a 5 x 5 mm square or a circle with a 2.8 mm radius.

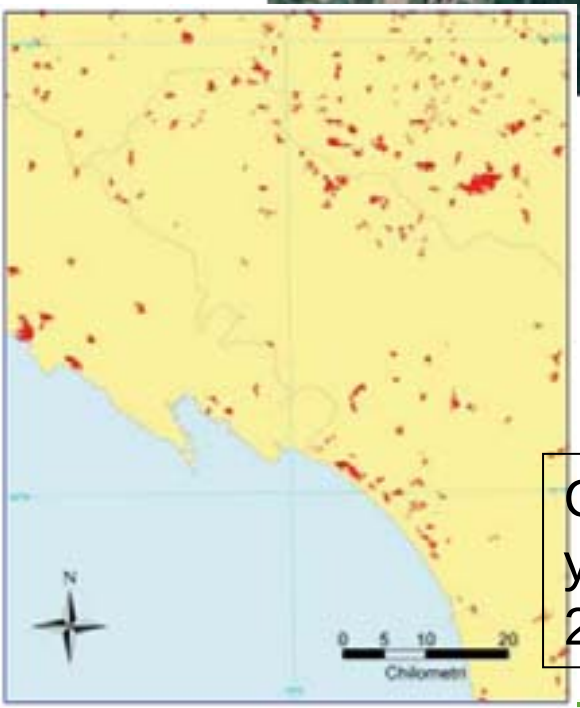
CORINE 2000 results



Main typologies by region

Wooded areas





Truth check on ground and orthophotos for chosen zones

Changes between years 1990 and 2000

MOLAND (Monitoring Land Use / Cover Dynamics) project

The overall aim of the JRC's MOLAND Project is to provide a spatial planning tool for assessing, monitoring, and modelling the development of urban and regional environments.

From a technical point of view, MOLAND has three specific aims:

- to produce quantitative information on the evolution of land use and transport networks, from 1950 onwards, in study areas subject to infrastructural changes (e.g. urbanisation, construction of transport links);
- to develop methods for performing a harmonised analysis of historical trends, including socio-economic aspects, impact of legislation, landscape fragmentation, etc.
- to develop models for the harmonised simulation of future European-wide scenarios, at local and regional scales.

MOLAND adopts the CORINE land cover legend, with a fourth, more detailed level of nomenclature added for artificial surfaces.

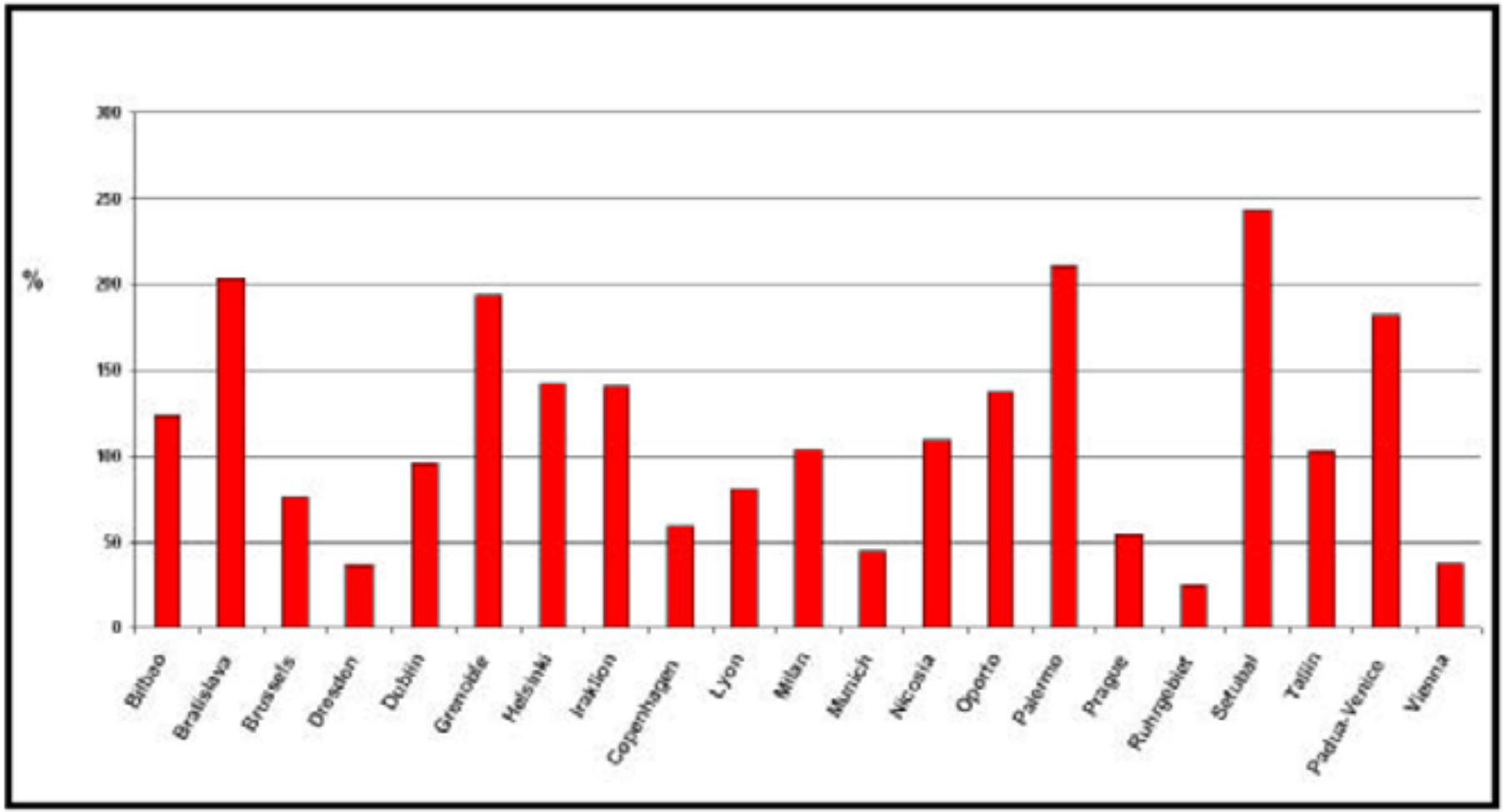


Figure 2: Urban sprawl (in %) for a selected set of European cities in the last 50 years.

From: C. Lavalle - Monitoring and forecasting territorial dynamics of urban and regional areas (pdf file: http://www.arpalombardia.it/7conferenza/atti/25_6territorio/25_6terr_nat_01_LAVALLErel.pdf)

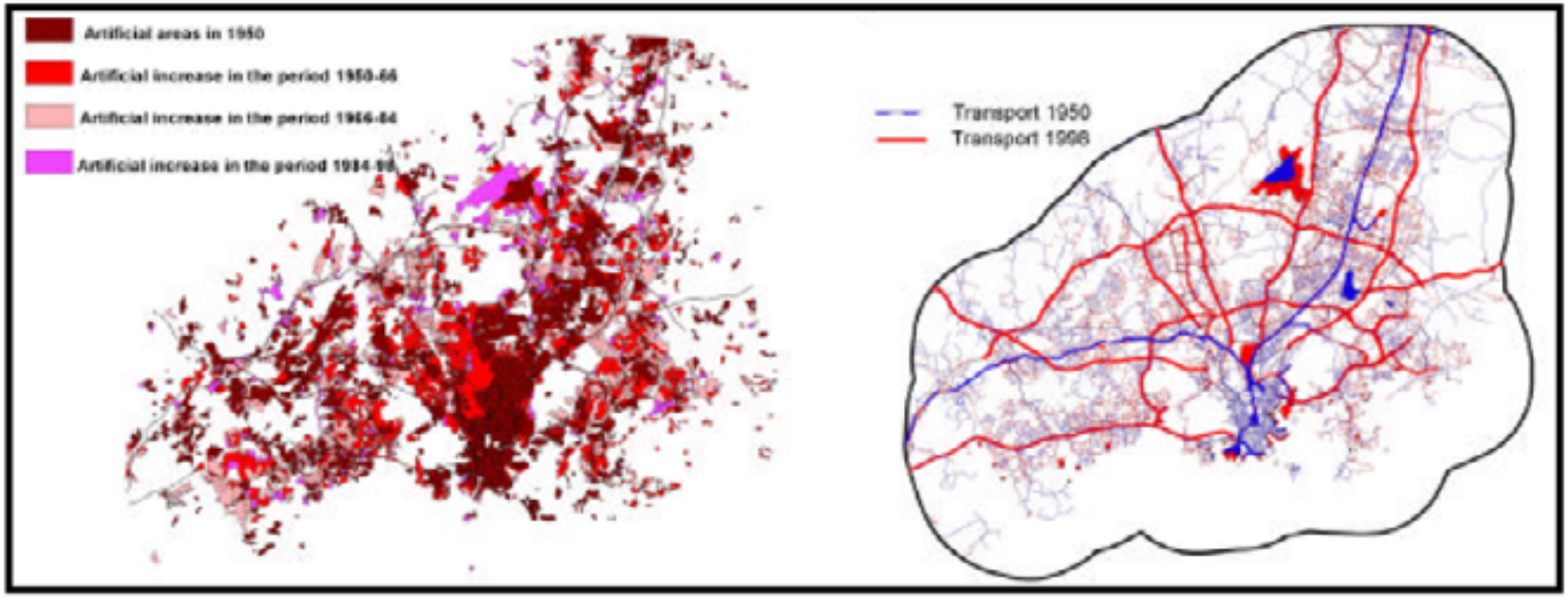


Figure 3: Land use evolution in Helsinki from 1950 to 1998.

From: C. Lavalle **-** Monitoring and forecasting territorial dynamics of urban and regional areas (pdf file: http://www.arpalombardia.it/7conferenza/atti/25_6territorio/25_6terr_nat_01_LAVALLErel.pdf)

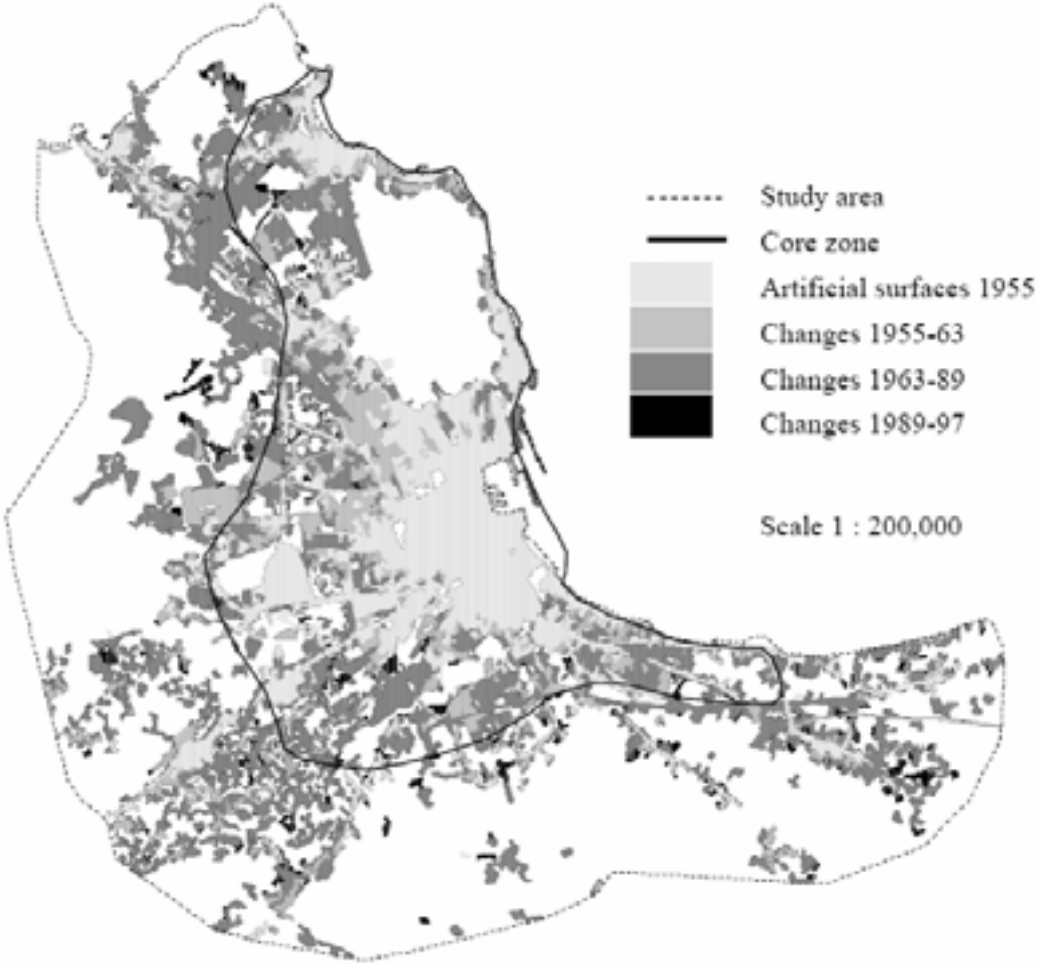
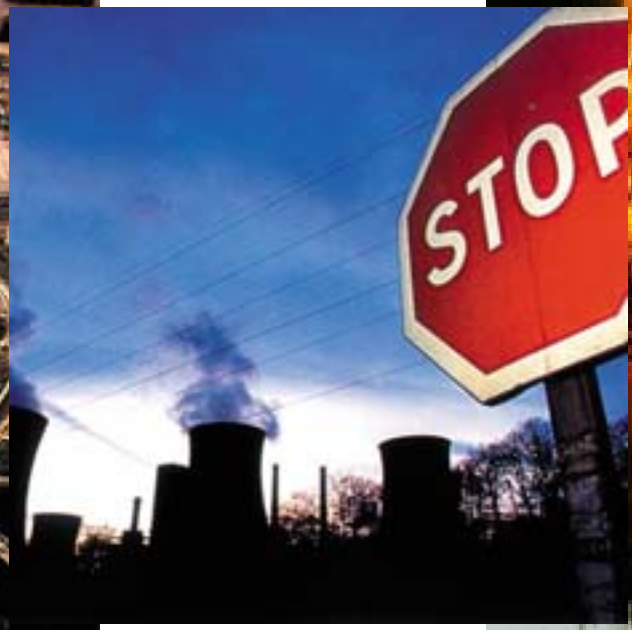


Figure 4
Development of urban settlement in Palermo

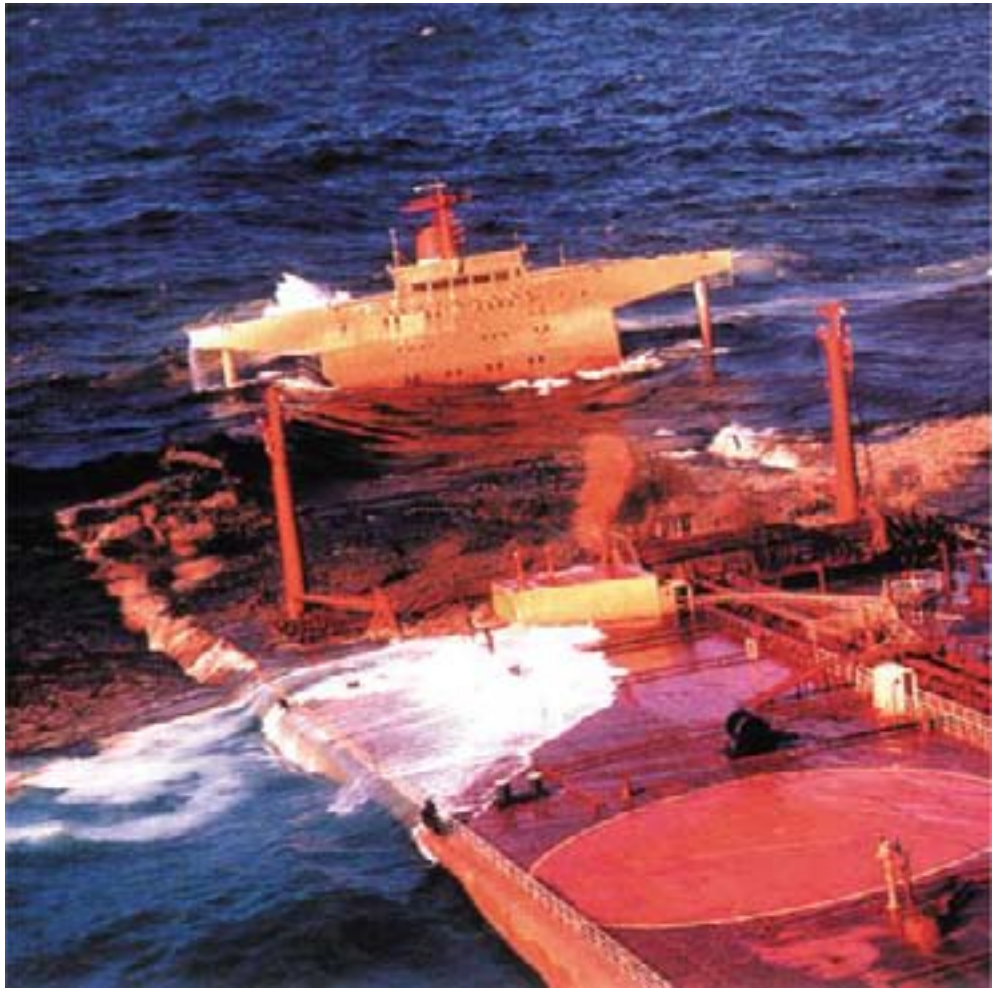
From: http://www.tu-dresden.de/ioer/PDF/PublikPDF/meinel_winkler_lavalle.pdf

Hazards/negative effects from borrow pits:

- Loss of farmable land/soil
- Ground water pollution
- Lowering of water table → pumping, enhanced evaporation



- Hazards to soil and ground water due to leaks and emissions from chemical plants
- Siting issues



Impact of infrastructures in coastal areas:
- Erosion/silt up
- Pollution
- Loss of wet habitats