

## Metadata-catalogue of European spatial datasets



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## ABSTRACT

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In order to facilitate a more effective accessibility of European spatial datasets, an assessment was carried out by the GeoDesk of the WUR to identify and describe key datasets that will be relevant for research carried out within WUR and MNP. The outline of the Metadata catalogue European spatial datasets, the classification of the datasets and the use of specific standards, is based on the work which was be done by the INSPIRE (INfrastructure for SPatial InfoRmation in Europe) initiative.

The objective of the report is that it can speed up the process for identification of suitable datasets during the following steps:

- to inform on the existence of European spatial datasets that could be relevant for a specific project;
- to evaluate if a dataset will be suitable by exploring the metadata;
- to indicate if a relevant spatial dataset is available and give directions how it can be obtained.

Keywords: European Commission, European spatial datasets, Geo-information, INSPIRE, ISO 19115 standard, metadata, spatial datasets.

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## Contents

Map Illustrations	11
Preface	13
Summary	15
Samenvatting	17
1 Introduction	19
1.1 Background	19
1.2 Objectives	20
1.3 How to use this report	20
2 The Approach used for the description and selection of datasets	23
2.1 Description based on the INSPIRE initiative	23
Thematic structure	23
2.2 Selection of relevant spatial datasets	24
2.3 Use of standards for metadata and reference systems	25
2.3.1 Metadata Standard	25
2.3.2 Coordinate Reference System	26
2.3.3 Scale	27
2.4 Structure of the catalogue	28
3 Metadata identified European and Global datasets	31
3.1 Topographic datasets (covering various themes)	31
Bartholomew: Europe digital map data	31
DCW: Digital chart of the world	32
ESRI World basemap Data	33
EuroGlobalMap	33
EuroRegionalMap	36
3.2 Geographical location	37
3.2.1 Geodetic reference system	37
3.2.2 Geographical grids	37
Common Chorological Grid Reference System (CGRS)	37
EMEP grid 50 and 150	38
3.2.3 Monitoring sites	39
Water quality monitoring stations in rivers and lakes	39
Airbase	40
Ozone in cities (urban background stations)	42
3.2.4 Geographical names	43
Bartholomew: Europe place name gazetteer	43
3.3 Administrative units	44
3.3.1 Official administrative units	44

SABE 2001 Census (commune boundaries)	44
Europe NUTS regions: version 6	45
Boundaries for NUTS regions: version 7	46
Administrative Regions Pan Europe	49
3.3.2 Blocks and census districts	50
3.3.3 General government management units	50
3.3.4 Sector management & reporting units	50
3.4 Properties, buildings and addresses	51
3.4.1 Properties	51
3.4.2 Buildings	51
3.4.3 Addresses	51
3.5 Elevation	52
3.5.1 Elevation	52
USGS GTOPO30 Digital Elevation Model	52
Elevation Europe Images	54
Digital Elevation Model Pan Europe	56
World Altimetry data	56
3.5.2 Bathymetry	57
3.5.3 Coastline	57
3.6 Geo-physical environment	58
3.6.1 Bedrock geology	58
3.6.2 Geomorphology	58
Coastal Erosion	58
3.6.3 Soil	59
Soil type Europe (European soil database version 2)	60
European Soil Database (Eurosoil) Version 3	60
FAO-Unesco Soil map of the world	63
Soil sensitivity (Soil quality index)	64
3.6.4 Erosion	66
Land Quality Southern Europe	66
Soil Erosion Risk Southern Europe Actual	67
Soil Erosion Risk Southern Europe Potential	68
3.7 Climate	71
3.7.1 Climate zones	71
IIASA Climate database	71
European interpolated climate data (Meteorological database)	73
Climate CRU database (high resolution climate data)	74
Climate Sensitivity	76
3.8 Hydrography	78
3.8.1 Hydrography	79
Water Pattern	79
3.8.2 Water catchments	79
European rivers and catchments - ERICA	80
Water catchments Pan-Europe 1: 1.000.000	80
Watershed boundaries Pan-Europe 1: 3.000.000	81
Watershed boundaries Pan-Europe 1: 10.000.000	82
3.8.3 Groundwater bodies/aquifers	84

Eurowaternet Groundwater bodies	84
3.9 Ocean and seas	85
3.9.1 Sea regions	85
3.10 Biota/biodiversity	86
3.10.1 Biomes/ Bio-ecological regions	86
Biogeographical regions, Europe 2001	86
Biogeographical regions, Europe 1998	87
Digital Map of European Ecological Regions	88
Ecoregions for rivers and lakes	89
European Environmental classification	90
3.10.2 Vegetation	91
Map of the Natural Vegetation of Europe	91
Vegetation sensitivity (Vegetation quality index)	94
European Nature Information System (EUNIS)	95
3.10.3 Habitats and biotopes	96
CORINE Biotopes	96
3.10.4 Species distribution	98
Atlas Florae Europaeae (AFE)	98
3.11 Land surface	101
3.11.1 Land cover	101
CORINE: Landcover 100m grid	102
CORINE: Land Cover 250m grid	103
GLC2000: Global Land Cover dataset	106
PELCOM	108
SEI Land Cover Map of Europe	109
IGBP-DIS Land Cover	110
3.11.2 Ortho-images	111
3.11.3 Unclassified satellite data	111
3.11.4 Landscape	112
Landscape types Pan-Europe – Meeus map	112
3.12 Natural resource	114
3.12.1 Water resources	114
3.12.2 Agricultural land and soil resources	114
Monitoring Agriculture through Remote sensing Techniques (MARS)	115
Less Favoured Areas	116
Sensitivity to desertification and drought in the Mediterranean Basin	118
3.12.3 Forest resources	119
3.12.4 Fishery resources	119
Fishing areas Pan Europe	119
3.12.5 Geological resources	120
3.12.6 Renewable energy resources	120
3.13 Transport	121
3.13.1 Transport infrastructure/networks	121
Road network Pan Europe version 4	121
Rail network Pan Europe	122

Airports Pan Europe	124
Ports Pan Europe	125
3.13.2 Transport facilities	126
3.14 Utilities	126
3.14.1 Transmission lines	126
3.15 Facilities	127
3.15.1 Environmental protection facilities	127
3.15.2 Production facilities, industry	127
3.15.3 Agricultural production facilities	127
3.16 Economy	128
3.16.1 Economic statistics	128
3.17 Area regulation	129
3.17.1 Land regulation/land use plan	129
3.17.2 Protected sites	129
World database on protected areas	130
Protected Areas IUCN (categories I-IV); Percent of total area	131
Nationally Designated Areas	134
3.17.3 Sector regulation	135
3.18 Natural and technological risks	136
3.18.1 Natural risk vulnerability zones	136
3.18.2 Technological risk vulnerability zones	136
Pressures from urbanization and transport on semi-natural areas	136
3.18.3 Technological accidents and natural disasters	137
3.19 Polluted areas/areas under anthropogenic stress	138
3.19.1 Local soil/land contaminated areas	138
3.19.2 Diffuse soil contamination	138
Trends in emissions of acidifying pollutants (CLRTAP/EMEP)	138
Use of pesticides across Europe	139
Use of herbicides across Europe	140
3.19.3 Noise zones	141
3.20 Society	142
3.20.1 Demography	142
3.20.2 Settlement	142
European settlements (Urban centres Pan Europe)	142
3.20.3 Green urban areas	144
3.20.4 Derelict urban land	144
3.20.5 Cultural heritage	144
3.20.6 Natural amenities	144
3.21 Health	145
3.21.1 Epidemiology	145
3.21.2 Health services	145
References	147

Appendices	149
Appendix 1 Acronyms and abbreviations	151
Appendix 2 Weblinks	155
Appendix 3 INSPIRE: Datacomponent by environmental issue	159



## Map Illustrations

### Topographic maps

- Fig. 1.1 DCW: Digital Chart of the World page 35
- Fig. 1.2 EuroGlobalMap
- Fig. 1.3 Bartholomew: Europe digital map data
- Fig. 1.4 EuroRegionalMap

### Geographical Location maps

- Fig. 2.1 EMEP grid 150 page 41
- Fig. 2.2 Ozone in Cities
- Fig. 2.3 CGRS: Common Chorological Grid Reference System
- Fig. 2.4 Water quality monitoring stations

### Administrative units maps

- Fig. 3.1 World administrative regions page 47
- Fig. 3.2 Boundaries NUTS regions Version 7
- Fig. 3.3 Source Saba 2001 Commune boundaries
- Fig. 3.4 Administrative regions Central Europe

### Elevation maps

- Fig. 4.1 USGS GTOPO30 Digital Elevation Model page 55
- Fig. 4.2 Digital elevation Pan-Europe
- Fig. 4.3 GTOPO30 Global 3D Elevation data
- Fig. 4.4 World altimetry data

### Soil maps

- Fig. 5.1 Soil types Europe page 65
- Fig. 5.2 FAO European Soil database
- Fig. 5.3 Eurosoil: European soil database
- Fig. 5.4 Soil sensitivity

### Erosion maps

- Fig. 6.1 (Potential) Land quality Southern Europe page 69
- Fig. 6.2 (Potential) Land quality Southern Europe
- Fig. 6.3 Actual Soil erosion risk
- Fig. 6.4 Potential Soil erosion risk

### Climate maps

- Fig. 7.1 IIASA Climate database: Temperature, mean monthly values page 75
- Fig. 7.2 IIASA Climate database: Precipitation, mean monthly values
- Fig. 7.3 Meteorological database: European interpolated climate data
- Fig. 7.4 Climate sensitivity

<b>Hydrography maps</b>	page 83
Fig. 8.1 Water pattern	
Fig. 8.2 Water catchments Pan-Europe	
Fig. 8.3 Built-up land by major river catchment area (ERICA)	
Fig. 8.4 Eurowaternet: groundwater bodies	
<b>Biodiversity – Bio-ecological regions maps</b>	page 93
Fig. 9.1 Biogeographic regions	
Fig. 9.2 Ecoregions for rivers and lakes	
Fig. 9.3 Digital Map of European Ecological Regions (DMEER)	
Fig. 9.4 European Environmental Classification	
<b>Biodiversity – Vegetation maps</b>	page 99
Fig. 10.1 Map of the Natural Vegetation of Europe	
Fig. 10.2 Vegetation sensivity	
Fig. 10.3 CORINE biotopes	
Fig. 10.4 European Nature Information System (EUNIS)	
<b>Landsurface maps</b>	page 105
Fig. 11.1 CORINE landcover	
Fig. 11.2 PELCOM (Pan-European Land Cover Monitoring)	
Fig. 11.3 Global landcover 2000 (GLC2000)	
Fig. 11.4 Landscape types Pan-Europe	
<b>Natural resource maps</b>	page 113
Fig. 12.1 Less Favoured Areas- France	
Fig. 12.2 Less Favoured Areas Pan-Europe	
Fig. 12.3 Sensitivity to desertification	
Fig. 12.4 Fishing areas Pan-Europe	
<b>Transport maps</b>	page 123
Fig. 13.1 Road network Pan-Europe	
Fig. 13.2 Rail network Pan-Europe	
Fig. 13.3 Airport types Pan-Europe	
Fig. 13.4 Port facilities Pan-Europe	
<b>Area Regulation - Risks – Polluted areas maps</b>	page 133
Fig. 14.1 Nationally designated areas	
Fig. 14.2 Protected areas IUCN 2000	
Fig. 14.3 Pressures from urbanisation and transport	
Fig. 14.4 Use of herbicides across Europe	

## **Preface**

The project 'Information infrastructure for the Netherlands Environmental Agency' (DINO) is working on the development of an efficient and effective information-infrastructure to support the activities of the Netherlands Environmental Agency (MNP). The project is a cooperation between The National Institute for Public Health and the Environment (RIVM) and Wageningen University and Research Centre (WUR). One of the goals of the project is to develop an efficient infrastructure for management and presentation of spatial datasets relevant for the research areas of MNP. As an increasing number of MNP activities require spatial datasets at a European scale-level, a project was initiated to assess the availability and accessibility of European spatial datasets.

We would like to thank Sander Mùcher and Monica Wachowicz for their advice in preparing this report.



## Summary

As the European dimension is gaining importance, high-quality information for monitoring and evaluation is required at EU-level. Spatial information can play a special role in this new approach because it allows information to be integrated from a variety of disciplines for a variety of uses. However, recent experiences from research projects carried out within Wageningen University and Research Centre (WUR) and the Netherlands Environmental Assessment Agency (MNP) has shown that the general situation of spatial information in Europe is fragmented, due to the gaps in data availability and a lack of harmonization.

Recently the INSPIRE (INfrastructure for SPatial InfoRmation in Europe) proposal for a Directive on the gathering and use of geo-information has been adopted by the EU Commission. The idea behind INSPIRE is to make more and better spatial data available in support of both national and European Community policies. In a long term, initiatives like INSPIRE will lead to improved availability of European spatial datasets, however there is still need for short term solutions that can assist researchers in their search of geo-information.

A first assessment was carried out by the GeoDesk (WUR) in order to identify and describe the key spatial European datasets that can be relevant for research carried out within WUR and MNP. **Chapter 1** gives an overview of the current status and developments on the availability of European datasets. **Chapter 2** describes the approach for the description and selection of relevant European spatial datasets. The main idea behind this report is that it can improve the identification process of suitable datasets. In **Chapter 3**, this metadata catalogue can assist researchers to assess the data availability during the following steps:

1. to inform the existence of European spatial datasets that could be of relevance for a specific project;
2. to evaluate if a dataset is suitable by exploring the metadata information;
3. to indicate if a relevant spatial dataset is available and to give directions how it can be obtained.

It is important to note that the actual spatial datasets presented in this report are not directly available via a central data provision service. Therefore, it is indicated in this metadata-catalogue how the described spatial datasets are accessible via individual data-providers that often have on-line delivery services.

The ambition of the GeoDesk (WUR) is to continue this identification of relevant European spatial datasets, update the current datasets and add the description of more datasets to the next (digital) version of this catalogue. Users are asked to inform the GeoDesk (WUR) about changes or errors in descriptions, web locations and updates and to provide suggestions for spatial datasets that could be added to this metadata-catalogue. For more information and suggestions you can contact: [geodesk.cgi@wur.nl](mailto:geodesk.cgi@wur.nl).

GeoDesk is part of the Centre for Geo-Information: [www.dow.wur.nl/UK/cgi/](http://www.dow.wur.nl/UK/cgi/)



## Samenvatting

Naarmate de invloed van Europees beleid belangrijker wordt is informatie van hoge kwaliteit vereist voor het monitoren en evalueren op Europees niveau. Ruimtelijke informatie kan daarin een belangrijke rol spelen, omdat hierbij informatie uit verschillende vakgebieden voor een verscheidenheid aan gebruikers gecombineerd kan worden.

Recente ervaringen van onderzoeksprojecten binnen Wageningen Universiteit & Researchcentrum (WUR) en het Milieu- en Natuurplanbureau (MNP) leren echter dat ruimtelijke informatie op Europees niveau over het algemeen versnipperd is, dat er problemen zijn met de beschikbaarheid en dat er een gebrek is aan harmonisatie.

Onlangs is het voorstel van INSPIRE (INfrastructure for SPatial InfoRmation in Europe), om te komen tot richtlijnen met betrekking tot het gebruik van geo-informatie, geaccepteerd door de EU Commissie. De achterliggende gedachte van INSPIRE is om meer geo-informatie van een hogere kwaliteit beschikbaar te stellen aan beleidsmakers zowel op nationaal als op Europees niveau. Hoewel initiatieven als die van INSPIRE op de lange termijn zullen leiden tot een betere beschikbaarheid van Europese ruimtelijke datasets, bestaat op de korte termijn behoefte aan oplossingen die onderzoekers kunnen helpen bij het zoeken naar relevante datasets.

De GeoDesk van de WUR heeft een eerste inventarisatie uitgevoerd om ruimtelijke datasets, die relevant zijn voor onderzoeksprojecten op Europees niveau, te identificeren en te beschrijven. **Hoofdstuk 1** geeft een overzicht van de huidige stand van zaken en de ontwikkelingen met betrekking tot de beschikbaarheid van Europese datasets. **Hoofdstuk 2** beschrijft hoe relevante datasets zijn geselecteerd en op welke manier ze worden beschreven. De belangrijkste gedachte achter deze catalogus is het proces om ruimtelijke datasets te identificeren te versnellen. Om te kunnen oordelen over de geschiktheid van een dataset kan **Hoofdstuk 3** van deze catalogus helpen op de volgende manieren:

1. Door te wijzen op het bestaan van Europese ruimtelijke bestanden, die voor een specifiek product belangrijk kunnen zijn;
2. Door via de metadata te laten zien of een dataset geschikt is;
3. Door te beschrijven of een waardevolle dataset beschikbaar is en op welke manier het verkregen kan worden.

Het is belangrijk erop te wijzen dat van de in dit rapport beschreven datasets, de data zelf niet beschikbaar zijn via een centrale dataservice. In de metadata wordt beschreven of en op welke manier de ruimtelijke bestanden toegankelijk zijn via de afzonderlijke dataproviders. Deze geven vaak de mogelijkheid om on-line data te downloaden.

De GeoDesk (WUR) streeft ernaar om door te gaan met het identificeren van Europese datasets door de catalogus te actualiseren en uit te breiden. Om de informatie up-to-date te houden worden de gebruikers gevraagd om te reageren, als

er wijzigingen of fouten zijn in de metadata beschrijvingen of weblinks en als er updates van bestanden beschikbaar zijn. Daarnaast zouden we graag suggesties ontvangen welke datasets toegevoegd kunnen worden aan de catalogus. Voor informatie en suggesties kunt u contact opnemen met de GeoDesk: [geodesk.cgi@wur.nl](mailto:geodesk.cgi@wur.nl)

GeoDesk is onderdeel van het centrum Geo-Informatie: [www.dow.wur.nl/UK/cgi/](http://www.dow.wur.nl/UK/cgi/)

# 1 Introduction

## 1.1 Background

For several policy themes (e.g., agriculture, environment) regulations are increasingly required by the European Community. Good policy depends on high-quality information, therefore monitoring and evaluation of these regulations is required at the EU-level. To achieve this, new approaches and policies are needed for data management and delivery across different levels of government. Spatial information can play a special role in this new approach because it allows information to be integrated from a variety of disciplines for a variety of uses. A coherent and widely accessible spatial network could serve as a basis for coordinating information delivery and monitoring across the EU. In addition, spatial information presented in the form of maps allows a good way of communicating with the public.

As the European dimension is gaining importance, also an increasing number of research projects require spatial datasets at the European scale-level. Recent experiences from projects carried out within Wageningen University and Research Centre (WUR) and the Netherlands Environmental Assessment Agency (MNP) show that the current situation of management and delivery of spatial information in Europe is characterised by a fragmentation of datasets and sources, gaps in availability, lack of harmonization between datasets at different geographical scales and duplication of information collection. These problems make it difficult to identify, access and use datasets, which in principle are available. The main reasons appear to be the unclearness of the European data policy and the resulting time it takes to actually obtain these datasets.

Recently the INSPIRE (INfrastructure for SPatial InfoRmation in Europe) proposal for a Directive has been adopted by the EU Commission (<http://inspire.jrc.it/home.html>). The idea behind INSPIRE is to make more and better spatial data available in support of both national and European Community policies. This initiative intends to support the creation of a European spatial information infrastructure that delivers integrated spatial information services to users. These services should allow the users to identify and access spatial or geographical information from a wide range of sources. The INSPIRE implementation will follow a step-wise approach, starting with unlocking the potential of existing spatial data and spatial data infrastructures and then gradually harmonising data and information services allowing eventually the seamless integration of systems and datasets at different levels into a coherent European spatial data infrastructure. Achieving this objective will require the establishment of appropriate coordination mechanisms and common rules for data policies (Wiberg and Engberg, 2002).

## 1.2 Objectives

The main motivation for starting this metadata catalogue can be described as the struggle to get the right spatial information, mainly (a) to find out which spatial datasets are available at the European scale, (b) to know if a specific dataset is suitable for the objectives of a research project carried out within WUR and MNP and finally, (c) to determine how difficult it is to obtain them. In practice, a significant amount of a project time can easily be spent on these activities meanwhile there is no guarantee that in the end a dataset will be obtained. Although it is anticipated that on a long term initiatives like INSPIRE will lead to improved availability of European spatial datasets, there is also need for short term initiatives that can assist researchers in their search of spatial information. In order to facilitate a more effective accessibility to European spatial datasets, a first assessment was carried out by the GeoDesk of the WUR to identify and describe key datasets that can be relevant for the research projects carried out within WUR and MNP.

Therefore, the specific objectives of this report are:

- To provide an overview of the availability of spatial datasets at the European scale-level focussing on topics that provide spatial information on the state of the environment;
- To provide the metadata characteristics of these spatial datasets and set-up a thematic structure in accordance with the INSPIRE initiative;
- To provide a basis for the development of a spatial data infrastructure for the sustainable management and delivery of European spatial datasets

## 1.3 How to use this report

This report is divided into two chapters. **Chapter 2** describes the main approach used for the description and selection of relevant European spatial datasets that are relevant for the research projects carried out within WUR and MNP. A short description of the background of the INSPIRE initiative is also provided. The selected datasets have been arranged according to the INSPIRE thematic structure. In addition, background information is provided about the standard that was used for the description of the metadata and about the standards for reference systems which can be used at European level.

**Chapter 3** is the core component of this report because it consists of the metadata-catalogue with a structured description of the selected European spatial datasets. Moreover, colour maps are also available in this report in order to illustrate the contents that is presented in these datasets. In the appendices, an overview of the consulted references and weblinks, a list of acronyms, and a table are given to allow a concise assessment of spatial data needs per environmental issue.

As indicated above, often a significant amount of a project time is spent on the assessment of the availability of European spatial datasets. The main purpose of this

report is to improve the process for the identification of suitable datasets. Therefore, this metadata-catalogue provided in Chapter 3 can assist users during the following steps:

1. to inform them about the existence of European spatial datasets that could be of relevance for a specific project;
2. to evaluate if a dataset is suitable for a specific project by exploring the metadata information provided in this report;
3. to indicate if a relevant spatial dataset is available and give directions how it can be obtained.

It is important to note that the actual spatial datasets presented in this report are **not directly available** via a central data provision service. In the metadata-catalogue it is indicated how the described spatial datasets are accessible via individual data-providers that often have on-line delivery services. However, the accessibility of spatial datasets varies a lot. For example, the European Environment Agency (EEA) has a policy of more open and easy access to data and several spatial datasets are provided for free or at low costs. Other datasets are sometimes more difficult to obtain due to an unclear data policy while also the associated costs for some datasets can be considerable.

The spatial datasets presented in this report are mainly a selection of all datasets available from different data-providers. The presented metadata-catalogue is a first identification, especially focusing on a selection of datasets that will be relevant for research carried out within MNP and WUR. The description of the datasets is based on the metadata as provided by the copyright holders or distributors. In addition, the map examples are in most cases the ones presented by the data distributors on internet

The ambition of the GeoDesk (WUR) is to continue this identification process, update the current status of these datasets and add the description of more datasets to the next (digital) version of this catalogue. In the near future (beginning of 2005) the catalogue information will be made available via a Geo-portal.

Users are kindly asked to inform the GeoDesk (WUR) about changes or errors in descriptions, web locations and updates and to provide suggestions for spatial datasets that could be added to this metadata-catalogue. For more information and suggestions please **contact: [geodesk.cgi@wur.nl](mailto:geodesk.cgi@wur.nl)**.



## 2 The Approach used for the description and selection of datasets

### 2.1 Description based on the INSPIRE initiative

INSPIRE, according to its five principles, envisages a distributed network of databases, linked by common standards and protocols to ensure compatibility and interoperability of data and services. In fact, by ensuring that electronic data content and services residing at national and regional organisations are implemented to common standards, they become easily accessible and can be combined seamlessly across administrative borders, thus creating what can be called the technical part of a Spatial Data Infrastructure (SDI). This initiative can only become successful, if individual countries contribute to the implementation of its principles. In this way, the GI community will become familiar with standards and data structures.

***INSPIRE** (INfrastructure for SPatial InfoRmation in Europe) is an initiative launched by the European Commission and developed in collaboration with Member States and accession countries. It aims at making available relevant, harmonised and quality geographic information to support formulation, implementation, monitoring and evaluation of Community policies with a territorial dimension or impact. INSPIRE intends to trigger the creation of a European spatial data infrastructure that delivers to the users integrated spatial information services linked by common standards and protocol.  
URL: <http://inspire.jrc.it/home.html>*

*The implementation of INSPIRE is based upon five principles*

- *data should be collected once and maintained at the level where this can be done most effectively*
- *It must be possible to combine seamlessly spatial data from different sources across the EU and share it between many users and applications.*
- *It must be possible for spatial data collected at one level of government to be shared between all levels of government.*
- *Spatial data needed for good governance should be available on conditions that are not restricting its extensive use.*
- *It should be easy to discover which spatial data is available, to evaluate its fitness for purpose and to know which conditions apply for its use.*

The target users of INSPIRE include policy-makers, planners and managers at European, national and local level and the citizens and their organisations. Possible services are the visualisation of information layers, overlay of information from different sources, spatial and temporal analysis, etc.

#### ***Thematic structure***

The classification of the datasets that are described in this catalogue, is based on the main recommendations from the INSPIRE Environmental Thematic Coordination Group as well as the INSPIRE Reference Data and Metadata Group (Lillethun, 2002). In total, 20 data themes have been identified and should be covered by a

spatial data infrastructure in order to provide both cross-sector data and data on the environment.

Therefore, the thematic structure used in this catalogue consists of the following 20 themes:

- Geographical location
- Administrative units
- Properties, buildings and addresses
- Elevation
- Geophysical environment (geology, soils, terrain)
- Climate
- Hydrography
- Ocean and seas
- Biota/biodiversity
- Land surface / land cover
- Natural resources (soil/land for agriculture, forestry, fishery, geological, energy)
- Transport
- Utilities
- Facilities
- Economy
- Area regulations
- Natural and technological risks
- Polluted sites/areas under anthropogenic stress
- Society/demography/culture
- Health

A detailed definition of each individual theme is given in Chapter 3.

Moreover, these 20 themes were further divided in approximately 60 core spatial data components, containing information about broad categories of related data. The list comprises data termed as reference data, thematic data, sector data and environmental data. These spatial data components can be found in the Appendix 3. Although INSPIRE has initially been focused on the needs of environmental policy, the initiative is also relevant to other sectors such as agriculture, transport and energy.

## **2.2 Selection of relevant spatial datasets**

The selection of spatial datasets for this catalogue was done by focussing on datasets already in use within the European Commission (GISCO database manual and EEA data service), datasets found via European-geoportals or data distributors, and datasets which have been already used within European projects carried out within our institute (Mücher et al. 2003; Mücher et al. 2004). To limit the number of datasets, most attention was paid to identify the basic datasets and the themes which were most relevant to the needs of MNP and WUR. The survey was carried out using the Internet and literature sources (e.g. Dobris Report (Stanners and Bourdeau, 1995)).

The **GISCO** (Geographic Information System for the European Commission) **Database Manual** gives information on the GISCO reference database. It contains general information on the GISCO project and the reference database as well as detailed information on the contents of the database.

The GISCO project was initiated, because the GIS element of the statistical database of Eurostat was missing. Eurostat is responsible for the collection and maintenance of statistical data within the European Commission.

The reference database consists of around 120 spatial datasets. Most of the datasets are not disseminated outside the European Commission because of copyright restrictions. A part of the spatial datasets is available on CD and disseminated via Eurostat Data shop Network.

URL: <http://data-dist.jrc.it/eu4u/metadata/home.htm>

The **EEA** (European Environment Agency) **data service** provides almost all data sets and applications which have been used in EEA's periodical environmental reports. The EEA aims to support sustainable development and to help achieve significant and measurable improvement in Europe's environment through the provision of timely, targeted, relevant and reliable information to policy making agents and the public. The European Environment Agency has a policy of open and easy access to the data. The Data service to the public is an experimental service aimed at putting this policy into practice by providing access to a limited number of the data sets/applications/maps/ graphs used at EEA. At least a hundred of spatial datasets are downloadable for free. Access to the remaining data is restricted, for copyright reasons only, to EIONET institutions and to consultants working on specific projects within the EEA management plan. Those interested in obtaining access to these data sets/applications/maps/graphs for other projects should contact the copyright holders directly.

URL: <http://dataservice.eea.eu.int/dataservice/>

## 2.3 Use of standards for metadata and reference systems

To facilitate the harmonisation processes in which spatial datasets can be used and exchanged within a large user network, it is very important to agree on standards and specifications on formats and data models for description and management of spatial datasets.

### 2.3.1 Metadata Standard

Metadata describe the content, quality, condition, and other characteristics of a spatial dataset. In the Netherlands, the CEN/TC287 (1998) standard, sponsored by the European Committee for Standardization, has been widely adopted for the description of spatial datasets. On the other hand, for projects requiring Geo-information at a European level, the metadata according to the ISO 19115 (international) standard are often required (Smits, 2002; Rase *et al.*, 2002). Since the ISO 19115 standard became definitive in May 2003, and also INSPIRE initiative supports a metadata profile which will follow the guidelines in ISO 19115, it was decided to use this ISO 19115 standard in this document.

*This International **Standard ISO19115** defines the schema required for describing geographic information and services. It provides information about the identification, the extent, the quality, the spatial and temporal schema, spatial reference, and distribution of digital geographic data. The ISO19115 standard became definitive on 01/05/03 and was registered on 17/06/03.*  
 URL: <http://www2.nen.nl> (Dutch website) or <http://www.iso.org>

Since the main goals of this catalogue are to inform the users about the existence of the data (sets) and to give them information on the suitability of a dataset for a specific purpose, only the most important elements of the ISO19115 metadata standard have been described. For more information of a dataset, links to the metadata source have been provided. How a data set can be obtained is described in Chapter 3, using the element “distribution information”.

### 2.3.2 Coordinate Reference System

In order to compare spatial datasets from different sources at the European level it is important to know the Coordinate System and the datum which were used to represent the datasets. The coordinate system used for the representation of each data set is mentioned in the metadata description (Chapter 3). More information can be found at the website <http://crs.bkg.bund.de/crs-eu/> where you will find a description of national and pan-European Coordinate Reference Systems (CRS) for position and height orientates on the international standard 19111 (Table 1). It also contains the descriptions of transformations of national Coordinate Reference Systems of European countries to pan-European CRS.

Some workshops organised by the Joint Research Centre (JRC) of the European Commission together with Eurogeographics and EUREF, have laid the foundations for the definition of a uniform European coordinate reference systems in position and height, with the main goal of defining a unique georeferencing for all spatial data sets.

*Table 1: European Coordinate Reference Systems (CRS) for position and height*

European Coordinate Reference System(s)	
CRS Identifier	CRS Annotation
<b>Position</b>	
ETRS89	pan-European CRS with Datum ETRS89 in ellipsoidal (geodetic) coordinates
ETRS-LCC	Pan-European CRS with Datum ETRS89 in European Lambert Conformal Conic Projection
ETRS89 / (X, Y, Z)	pan-European CRS with Datum ETRS89 in cartesian coordinates
ETRS-TMzn	Pan-European CRS with Datum ETRS89 in European Transverse Mercator Projection
ETRS-LAEA	Pan-European CRS with Datum ETRS89 in European Azimuthal Equal Area Projection
<b>Height</b>	
EVRF_AMST / NH	normal heights of the UELN_95/98 in relation to the tide gauge Amsterdam (NAP) (also known as EVRF2000)
EVRF_AMST / CP	geopotential numbers of the UELN_95/98 in relation to the tide gauge Amsterdam (NAP)(also known as EVRF2000)

### 2.3.3 Scale

This report mainly describes the datasets that are appropriated for their use at the European scale. As a result, the majority of the datasets described in this catalogue has a scale of 1:1.000.000 or smaller. The ultimate aim of the INSPIRE initiative is to have spatial data available at a scale of 1:250.000, in order to provide information at the European level, especially when concerning reference data. Figure 1 gives an overview of the relation between a scale-level and its appropriate assessment level ranging from the global and local levels (Lillethun, 2002).

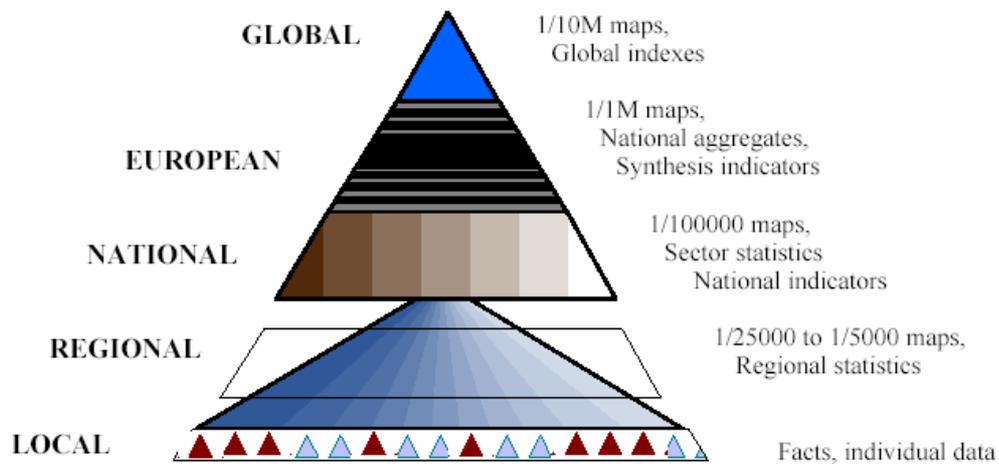


Figure 1: Overview of the relation between scale level and its appropriate level of assessment (lillethun, 2002)

## 2.4 Structure of the catalogue

Within the metadata catalogue presented in Chapter 3, the selected datasets have been classified according to 20 themes (see Section 2.3.1). Each theme starts with a textbox containing the INSPIRE description of the spatial data components of such a theme.

Datasets within a theme can be described in 2 different ways:

1. Extensively: more than 70 spatial datasets have been described using the selected ISO 19115 metadata standard elements.
2. Briefly, with a few metadata elements in a table. This can occur for the following datasets:
  - datasets, which contain elements belonging to the specific data component, but have been described already in chapter 3.1: topographic datasets
  - datasets, which belong to the specific theme, but are not fully described in this catalogue
  - datasets, which belong to the GISCO Reference Data Base. Often this includes that the dataset is not disseminated outside the European Commission because of copyright restrictions. Some of these datasets are available via Bartholomew, ESRI ArcWorld or other data distributors

Table 2 gives an overview of the number of datasets which have been described for the 20 themes. Some themes do not contain any datasets in this report, but they have been mentioned in order to remain consistent with the INSPIRE recommendations.

Map illustrations of a selected number of datasets have been printed on separate pages.

Table 2: Number of spatial datasets described in this report

	Themes	Number of datasets described in this report with ISO metadata	Number of Datasets internally used by the European Commission (GISCO database)	Number of datasets mentioned, without extended metadata
0	Topographic datasets (datasets covering more themes)	5	-	2
1	Geographical location	6	3	-
2	Administrative units	5	2	-
3	Properties, buildings and addresses	-	-	-
4	Elevation	4	1	3
5	Geo-physical environment	8	-	7
6	Climate	4	-	-
7	Hydrography	6	7	3
8	Ocean and seas	-	-	-
9	Biota/Biodiversity	10	1	3
10	Land surface	7	0	9
11	Natural resource	4	1	7
12	Transport	4	0	0
13	Utilities	0	5	0
14	Facilities	0	1	0
15	Economy	0	2	1
16	Area regulation	3	2	6
17	Natural and technological risks	1	0	0
18	Polluted areas/areas under anthropogenic stress	3	0	0
19	Society	1	2	2
20	Health	0	0	0
	<b>Total</b>	<b>71</b>	<b>27</b>	<b>43</b>



### 3 Metadata identified European and Global datasets

#### 3.1 Topographic datasets (covering various themes)

Datasets not fully described yet by this report

Name	Content	Year	Scale	Extent	Source
ArcWorld Database	Consists of data to generate thematic maps of the world at the country level.	1992	1:3.000.000	Global	ESRI
ArcWorld	Data extracted from database 1:3.000.000	1992	1:25.000.000	Global	ESRI

#### *Bartholomew: Europe digital map data*

(see figure 1.3 for map illustration)

General Information	
Year / Edition	August 2003
Title of content	Europe map data
Abstract	Pan-European dataset covering 52 countries, available either as 22 separate vector layers to provide a solution for geographic analysis, or as a high resolution raster with European styling. Alternatively both can be purchased together to provide the ultimate European coverage.
Metadata source	<a href="http://www.bartholomewmaps.com/europe_data_products.htm">http://www.bartholomewmaps.com/europe_data_products.htm</a>
History dataset	
History	Used to create the road maps in the Collins Road Atlas of Europe as well as reference maps for the Times and Collins range of world atlases
Dataset Identification	
Extra keywords	See objects/attributes
Maintenance	Regular updates
Scale	1: 1.000.000
Spatial Information	
Coordinate system	Longitude/latitude; decimal degrees
Extent	From The Canaries in the west to the western edge of the Black Sea in the East. North Africa in the South to Northern Norway in the North. (Coordinates (long/lat) -32°W,-27°S to 32°E,71°N)
Objects/attributes	ADM – Administrative layer CON – Contours and bathymetry. DRA – Drainage: permanent and impermanent. DES – Deserts: includes lava flows. HTS – Heights: summits, spot heights/depths and passes. NPK – National parks. PTS – Points: road numbers, airports, places of interest, etc LNS – Lines: escarpments, walls. RPK – Regional parks. RES – Reserves. RDS – Roads. RFS – Rail: railways and ferry routes. SAN – Sand. SCA – Scenic areas: only in UK URB – Major built-up-areas. WOO – Woodland: only GB at present. WAT – Water: lake, lagoon, marsh, glacier, etc. TOWN – Town stamps

		TEXT – Point and lines of all non town features DRATEXT – Lines with river names.
<b>Distribution information</b>		
Copyright		Collins Bartholomew
Distributor		Collins Bartholomew: <a href="http://www.bartholomewmaps.com/">http://www.bartholomewmaps.com/</a>
Availability		Example fees and licensing: Europe: 1:1.000.000, vector file, single use, year 1:£1100. Year 2, £275, etc. For more prices see website.
Format		ARC/INFO: Vector - SHAPE file, MapInfo (tab or mif/mid). Raster – TIFF
On-line delivery		Internet license possible
Ordering process		For orders contact Collins Bartholomew.

### ***DCW: Digital chart of the world***

*(see figure 1.1 for map illustration)*

<b>General Information</b>		
Year / Edition		1997
Title of content		DCW
Abstract		The Digital Chart of the World is a worldwide basemap of coastlines, international boundaries, cities, airports, elevations, roads, railroads, water features, cultural landmarks, and much more. It is the most detailed global database providing consistent treatment of geographic information worldwide, and is the best source of data for many areas of the globe.
Metadata source		<a href="http://www.maproom.psu.edu/dcw/dcw_about.shtml">http://www.maproom.psu.edu/dcw/dcw_about.shtml</a>
<b>History dataset</b>		
History		The Digital Chart of the World (DCW) is an Environmental Systems Research Institute, Inc. (ESRI) product originally developed for the US Defense Mapping Agency (DMA) using DMA data. The DCW 1993 version at 1:1.000.000 scale was used.  The original format of the DCW from ESRI has 2094 separate ARC/INFO workspaces. Each workspace is bounded by latitude and longitude, 5-by-5 degrees. Each can contain up to 25 different thematic layers. The original workspaces were compiled into countries, territories and states; the server contains about 340 of these areas, from the original 2094 workspaces. Parts of the tiles were aggregated one country at a time, and each country-boundary coverage was used as a "cookie cutter" to select the thematic data according to country boundaries.
<b>Dataset Identification</b>		
Maintenance		THIS DATABASE IS NOT UP TO DATE
Scale		1:1.000.000
Restrictions		Acknowledge the source of the data in all publications and applications.
<b>Spatial Information</b>		
Coordinate system		WGS84 - ETRS89
Extent		Global
Temporal coverage		1993
Objects/attributes		More than 200 attributes are organized into 17 thematic layers with text annotation for cities, mountains, and lakes.
<b>Distribution information</b>		
Copyright/		ESRI
Distributor		ESRI
Availability		Available on CD or download, no password
Format		ARC/INFO export file
On-line delivery		Via <a href="http://www.maproom.psu.edu/dcw/dcw_about.shtml">http://www.maproom.psu.edu/dcw/dcw_about.shtml</a>

### ***ESRI World basemap Data***

<b>General Information</b>	
Year / Edition	1999
Title of content	World basemap
Abstract	The ESRI World Basemap map service includes data layers from a variety of ESRI data sets, including ArcWorld, ArcAtlas, Digital Chart of the World, and Data and Maps. ESRI has assembled these data layers into a single map service to provide a continuous display of basemap data from a small-scale global display to a medium-scale regional display. The data layers include administrative boundaries, populated places, water bodies, rivers, major roads, major railroads, and airports for the world.
Metadata source	<a href="http://www.geographynetwork.com">http://www.geographynetwork.com</a>
<b>History dataset</b>	
History	This map service is intended as a basemap layer on which other layers may be displayed.
<b>Dataset Identification</b>	
Extra keywords	Geographic Boundaries, General Reference Data, Soils and Vegetation, Transportation Networks, Hydrologic Data, Natural Resources Data, Infrastructure Data, Transportation Data, Cultural Data, Country Boundaries, Cities, Roads, Railroads, Populated Places.
Maintenance	Irregular
Scale	1:1.000.000 and variable
Restrictions	Data available to use freely for non-commercial purposes
<b>Spatial Information</b>	
Coordinate system	Latitude/Longitude (ARC/INFO 'Geographic' projection)
Extent	World
Temporal coverage	01-01-1970 till 01-01-1992
Objects/attributes	Administrative and political boundaries
<b>Distribution information</b>	
Copyright	ESRI
Publisher	ESRI
Availability	Via geographynetwork, via ESRI website or on a CD, which comes with ESRI software.
Format	SDE layer on web
On-line access	<a href="http://www.geographynetwork.com">http://www.geographynetwork.com</a> and via <a href="http://www.esri.com/data/download/basemap/index.html">http://www.esri.com/data/download/basemap/index.html</a>

### ***EuroGlobalMap***

*(see figure 1.2 for map illustration)*

<b>General Information</b>	
Year / Edition	Spring 2003
Title of content	EuroGlobalMap
Abstract	EuroGlobalMap is the digital topographic dataset that covers Europe at the scale 1:1 Million. It is seamless and harmonised data and is produced in cooperation by the National Mapping and Cadastral Agencies of Europe, using official national databases. At the moment 36 countries have agreed to contribute to the dataset. The database contains six themes, each theme contains one or more data layers: administrative boundaries, Hydrography, Transport, Settlements, Elevation, Named location (geographical names)
Metadata source	<a href="http://www.eurogeographics.org/eng/04_products_globalmap.asp">www.eurogeographics.org/eng/04_products_globalmap.asp</a>
Documentation	Complete description dataset: egmspec2-4.pdf downloadable Releases par country: <a href="#">EGM_Releases.pdf (Adobe PDF-file)</a>
<b>History dataset</b>	
History	The project started on July 1, 2002 and the duration is 21 months.

<b>Dataset Identification</b>	
Extra keywords	Administrative boundaries, Hydrography, transport, settlements, elevation, geographical names.
Maintenance	The product is updated over a two years cycle (on average)
Scale	1:1.000.000
Restrictions	Delivered with product.
<b>Spatial Information</b>	
Coordinate system	Geographical in degrees (longitude, latitude) with decimal fraction and based on the ETRS 89 spatial reference system.
Extent	This release covers 30 European countries – Andorra, Austria, Belgium, Croatia, Czech Republic, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Great Britain, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Monaco, Northern Ireland, Portugal, San Marino, Slovenia, Spain, Sweden, Switzerland, The Netherlands and The Vatican.
Objects/attributes	<p><b>Theme: administrative boundary</b></p> <ul style="list-style-type: none"> <li>Coverage ADMIN: Administrative boundary, Sea coastline, Administrative area, Void Collection Area</li> </ul> <p><b>Theme: hydrography</b></p> <ul style="list-style-type: none"> <li>Coverage WATER: Sea coastline, Inland shoreline, River/Stream, Canal, Ditch, Sea water, Foreshore, Island, Lake, Reservoir, River/Stream, Background area.</li> <li>Coverage DAMWE: Dam / Weir,</li> <li>Coverage SPRIN (springs and river vanishing points): Spring / Waterhole, River vanishing point</li> <li>Coverage GLACI (ice): Borderline of an ice feature, Glacier, Ice peak / Nunatak, Ice shelf, Snow field / Ice field.</li> <li>Coverage FICRI (fictitious rivers): River / Stream</li> </ul> <p><b>Theme: transportation</b></p> <ul style="list-style-type: none"> <li>Coverage TRANS (transportation network):. Railway, Road, Ferry route, Railway station, Border crossing point, Artifact Location,</li> <li>Coverage AIRPO (airports): Airport</li> </ul> <p><b>Theme: built-up areas</b></p> <ul style="list-style-type: none"> <li>Coverage SETTP (settlement points):Built-up area as a point,</li> <li>Coverage CITYA (built-up areas):Built-up area as an area</li> </ul> <p><b>Theme: elevation</b></p> <ul style="list-style-type: none"> <li>Coverage ELEVP (elevation points):Height point</li> </ul> <p><b>Theme: named location</b></p> <ul style="list-style-type: none"> <li>Coverage NAMES: Named location</li> </ul>
<b>Distribution information</b>	
Copyright	Eurogeographics
Distributor	Eurogeographics: <a href="mailto:contact@eurogeographics.org">contact@eurogeographics.org</a> Eurostat: contact: <a href="mailto:christine.kormann@cec.eu.int">christine.kormann@cec.eu.int</a> Geodan IT: contact: <a href="mailto:jan.meijer@geodan.nl">jan.meijer@geodan.nl</a>
Availability	Available at costs. For prices: <a href="http://www.eurogeographics.org/eng/04_products_EGM_prices.asp">www.eurogeographics.org/eng/04_products_EGM_prices.asp</a> The data is available country by country basis on CD ROM
Format	ESRI (ARC/INFO .e00)
On-line delivery	Internet license is possible. Sample data are available on: <a href="http://www.eurogeographics.org/eng/04_products_EGM_samples.asp">www.eurogeographics.org/eng/04_products_EGM_samples.asp</a>
Ordering process	Via several distributors: <a href="http://www.eurogeographics.org">www.eurogeographics.org</a> , <a href="http://europa.eu.int/comm/eurostat">europa.eu.int/comm/eurostat</a> , <a href="http://www.geodan.nl">www.geodan.nl</a>

# Map 1: Topographic datasets

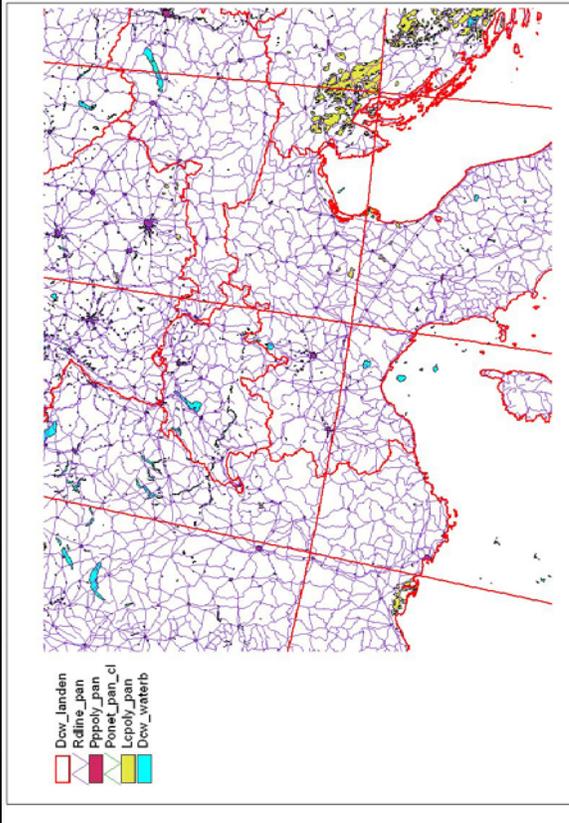


Fig 1.1 DCW: Digital chart of the world

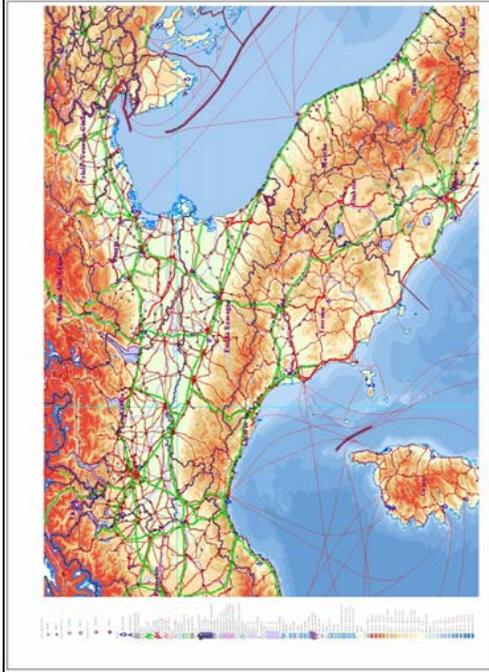


Fig 1.3 Bartholomew: Europe digital map data

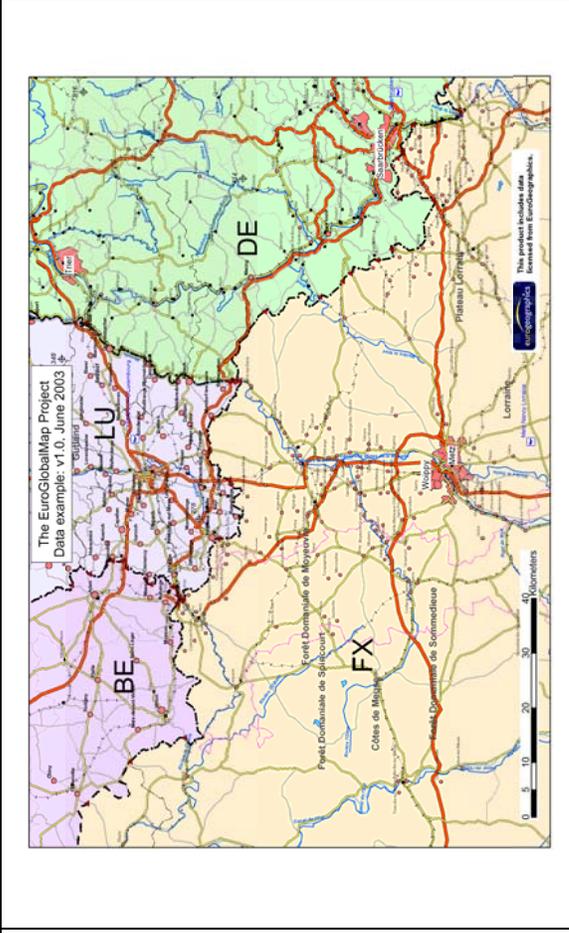


Fig 1.2 EuroGeographics: EuroGlobalMap

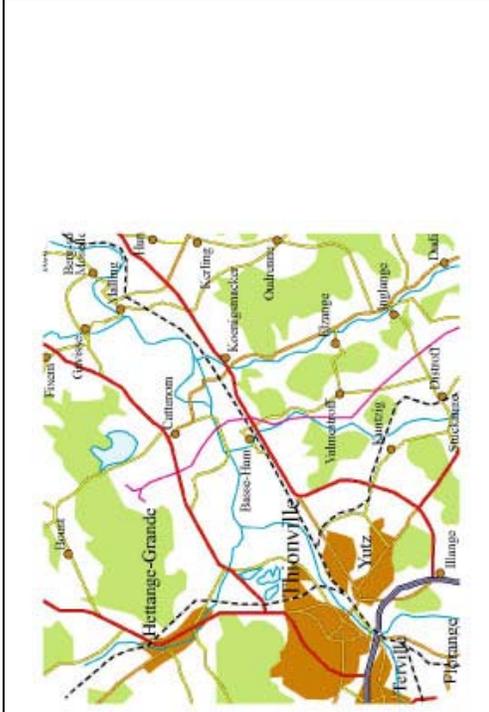


Fig 1.4 EuroGeographics: EuroRegionalMap

## ***EuroRegionalMap***

(see figure 1.4 for map illustration)

<b>General Information</b>	
Year / Edition	Spring 2003
Title of content	EuroRegionalMap
Abstract	<p>EuroRegionalMap is a multi-functional topographic reference dataset at the scale 1:250 000. It is seamless and harmonised data that is produced in cooperation by National Mapping and Cadastral Agencies (NMCAs), using the official national databases</p> <p>The dataset contains following themes: administrative boundaries, hydrography, transport, settlements, vegetation, named locations, miscellaneous (monuments, power lines, towers etc).</p> <p>EuroRegionalMap is designed for business use and enables to process comprehensive spatial analysis, e.g. – transport and water networks have full connectivity, administrative boundaries are topologically consistent.</p>
Metadata source	<a href="http://www.eurogeographics.org/eng/04_products_regionalmap.asp">www.eurogeographics.org/eng/04_products_regionalmap.asp</a>
Documentation	<p>Information projects: <a href="#">EuroRegionalMap project pages</a>.</p> <p>Downloads project information- presentation  <a href="http://www.eurogeographics.org/eng/03_projects_erm_deliverable.asp">www.eurogeographics.org/eng/03_projects_erm_deliverable.asp</a></p>
<b>History dataset</b>	
History	"Incremental Development of a pan-European Database at Medium Scale" has been carried out in the framework of the multi annual Community program to stimulate the development and use of European digital content in the global networks, which is the eContent Program ( 2001-2005). The project has been registered as a demonstration project under action line 1.2.1 dealing with the establishment of European digital data collections and for a duration of 22 months from January 2002 till October 2003.
<b>Dataset Identification</b>	
Keywords	Administrative boundaries, Hydrography, transport, settlements, vegetation, geographical names.
Maintenance	No information available
Scale	1: 250.000
Restrictions	Delivered with product.
<b>Spatial Information</b>	
Coordinate system	Geographical in degrees (longitude, latitude) with decimal fraction and based on the ETRS 89 spatial reference system.
Extent	The first release currently covers 7 countries: Belgium, Denmark, Germany, France, Luxembourg, Ireland and Northern Ireland. The dataset will be gradually extended targeting to cover the whole of the Europe.
Objects/attributes	Administrative boundaries, Hydrography, transport, settlements, vegetation, geographical names.
<b>Distribution information</b>	
Copyright	Eurogeographics
Distributor	<p>Eurogeographics: <a href="mailto:contact@eurogeographics.org">contact@eurogeographics.org</a></p> <p>Eurostat: contact: <a href="mailto:christine.kormann@cec.eu.int">christine.kormann@cec.eu.int</a></p> <p>Geodan IT: contact: <a href="mailto:jan.meijer@geodan.nl">jan.meijer@geodan.nl</a></p>
Availability	The EuroRegionalMap will be supplied on annual subscription by country, by a group of the countries and by themes
Format	ARC/INFO export file (.e00)
Ordering process	Via distributors: <a href="http://www.eurogeographics.org">www.eurogeographics.org</a> , <a href="http://europa.eu.int/comm/eurostat">europa.eu.int/comm/eurostat</a> and <a href="http://www.geodan.nl">www.geodan.nl</a>

## 3.2 Geographical location

### 3.2.1 Geodetic reference system

Inspire:

Geodetic reference areas should include leveling benchmarks, permanent satellite observation stations, tide gauges, marker id, Access information, coordinates and system for definition and transformation data of the reference system. A common European Coordinate Reference system has been agreed upon: ETRS89. All users of GIS-data need geodetic reference data to be in place. National Mapping agencies are commonly in charge of establishment and setup of the geodetic reference systems.

### 3.2.2 Geographical grids

Inspire:

Geographical grids is an agreed, defined and harmonised grid net for Pan-Europe with standardised and stable location and size of grid cells. Different resolutions, example of cell sizes could be 100x100 m, 1x1 km, 16x16 km. Existing grid systems in common use should also be available, e.g. EMEP 50 and EMEP 150.

Such data is used for reference of a long range of environmental and sector information. It allows for spatial analysis in time-series of statistics without the burden of changes in statistical units as often is the case for administrative units. In many cases it is possible to handle fairly detailed information without compromising the individual rights of privacy.

Datasets internally used by the European commission (GISCO Database)

Description	GISCO ref. code	Scale	Extent	Source, Copyright
Latitude/longitude grid for Pan Europe	GGEU	1 degree	PAN-Europe	CEC-Eurostat/GISCO
Geographical grid World	GGWDGG ( <i>fig 2.1</i> )	1 degree	World	CEC-Eurostat/GISCO

Datasets not fully described yet by this report

Name	Content	Scale	Extent	Source
UTM grid UTM/MGRS	Grid based on Universal Transverse Mercator projection. The UTM system divides the earth into 60 zones each 6 degrees of longitude wide	50x50 km	global	NIMA/Military maps

### ***Common Chorological Grid Reference System (CGRS)***

(see figure 2.3 for map illustration)

General Information	
Year / Edition	Version 1 (last upload 23/10/2003)
Title of content	CGRS
Abstract	Map of CGRS grid covering Pan Europe and North Africa. In year 2000 representatives of the atlas groups mapping the European vascular plants, mammals, birds, amphibians, reptiles, fungi and invertebrates agreed to use this as a common grid for species distribution mapping. Grid size 50 km x 50 km.
Metadata source	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>
Documentation	Via <a href="http://www.fmnh.helsinki.fi/map/afc/E_newgrid.htm">http://www.fmnh.helsinki.fi/map/afc/E_newgrid.htm</a>
History dataset	
History	The CGRS grid is modified from the Military Grid Reference System (MGRS). The MGRS itself is an alphanumeric version of a numerical UTM (Universal

		Transverse Mercator) or UPS (Universal Polar Stereographic) grid coordinate. Methodology: see <a href="http://www.fmnh.helsinki.fi/map/afc/E_newgrid.htm">http://www.fmnh.helsinki.fi/map/afc/E_newgrid.htm</a>
<b>Dataset Identification</b>		
	Keywords	Geographic, grid, biodiversity, species
	Maintenance	Non applicable
	Scale	Grid size 50 km x 50 km
	Restrictions	See EEA dataservice - terms of use
<b>Spatial Information</b>		
	Coordinate system	Datum: WGS84
	Extent	Pan Europe, Middle East and Africa north of Equator
	Attributes	Grid cells
<b>Distribution information</b>		
	Technical producer	European Environment Agency
	Creator	The European Topic Centre on Nature Protection and Biodiversity
	Distributor	European Environment Agency - Data service
	Availability	Available via download, no password
	Format	ARC/INFO grid
	On-line delivery	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>

### ***EMEP grid 50 and 150***

*(see figure 2.1 for map illustration)*

<b>General Information</b>		
	Year / Edition	1984
	Title of content	EMEP 50, EMEP 150
	Abstract	Grid used in analysis and reporting of air quality. According to the definition given in the Protocol on Long-term Financing of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP): “ The geographical scope of EMEP means the area within which, coordinated by the international centres of EMEP, monitoring is carried out.
	Metadata source	<a href="http://www.emep.int">http://www.emep.int</a>
	Documentation	Technical documents available via website.
<b>History dataset</b>		
	History	Since its adoption in 1984, the geographical scope of EMEP has broadened.
<b>Dataset Identification</b>		
	Maintenance	No information available
	Scale	50x50 km and 150x150 km
	Restrictions	No information available
<b>Spatial Information</b>		
	Coordinate system	The EMEP grid system is based on polar-stereographic projection with real area at latitude 60° N.
	Extent	Pan-Europe
	Attributes	Grid cells
<b>Distribution information</b>		
	Distributor	Co-operative programma for monitoring and evaluation of the long-range tarnsmissons of air pollutants in Europe
	Availability	Via EMEP website
	Format	Fortran library for EMEP grid interpolation and coordinate conversion from the EMEP grid to longitude/latitude and text files.
	On-line delivery	<a href="http://www.emep.int">http://www.emep.int</a>

### 3.2.3 Monitoring sites

Inspire:

Monitoring sites are locations where monitoring of physical, biological or other aspects occurs. The monitoring sites may be permanently located at a site or can be temporal, only used once. Usually monitoring sites are defined as points, and thus simple to report and generate.

Many different conventions, directives and other agreements direct monitoring and the flow of monitoring information linked to the monitoring sites. At present different institutions use different data models and definitions. WFD has started to model a more general model of monitoring sites.

- surface monitoring stations
- groundwater monitoring stations

Examples: Weather stations, air quality monitoring stations, water monitoring stations (surface water-groundwater), biotic registration site, soil/unstable terrain monitoring site, bathing sites, snow monitoring site.

Datasets internally used by the European Commission (GISCO Database)

Description	GISCO ref. code	Scale	Extent	Source, Copyright
Climate database EU: 19 climatic variables for 5308 stations	CTEC	Location of stations	EU12	CEC – DGX!/CORINE: member states

#### *Water quality monitoring stations in rivers and lakes*

(see figure 2.4 for map illustration)

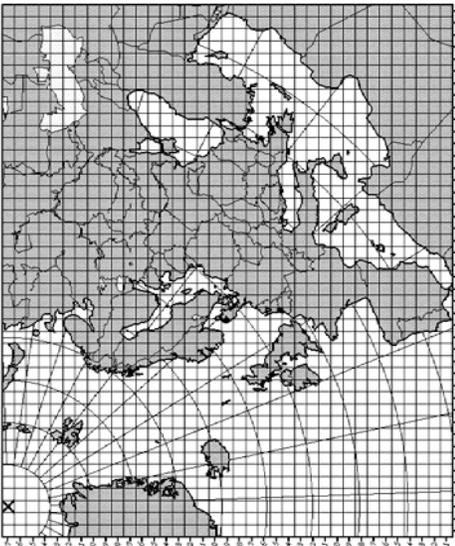
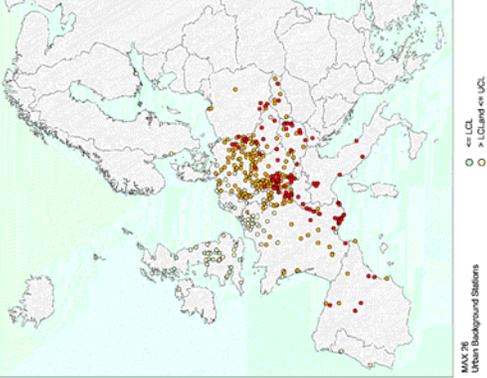
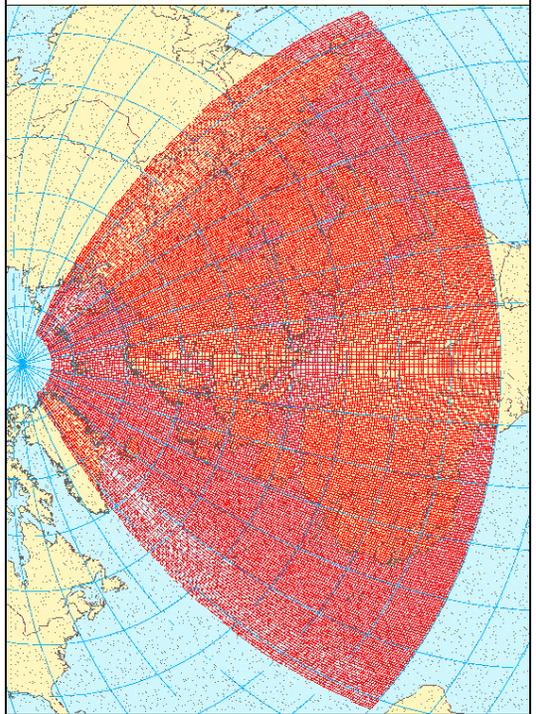
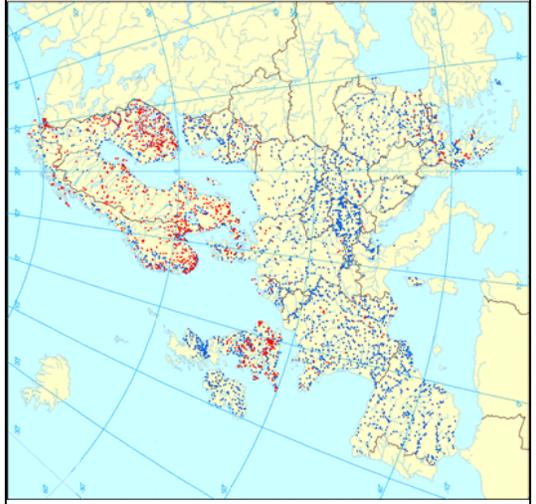
General Information	
Year / Edition	2003
Title of content	Water quality monitoring stations in rivers and lakes
Abstract	Location of the water quality monitoring stations in rivers and lakes in Europe
Metadata source	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>
Documentation	EWN-1: River quality EWN-2: Lake quality <a href="#">EWN-3: Groundwater quality</a>
History dataset	
History	<p><b>Source datasets:</b> Reference Waterbase- rivers Reference Waterbase- lakes Reference Waterbase is the EEA's database on the status and quality of Europe's rivers, lakes and groundwater bodies. The data contained in this database can be accessed through a series of web pages which form part of the <a href="#">EEA Data Service's</a> public web site. Pre-defined applications have been designed to assist the user to extract and analyse the data in a format that is both helpful and meaningful.</p> <p>"Reference Waterbase" contains timely, reliable and policy-relevant data collected from EEA member countries through the <a href="#">Eurowaternet</a> (EWN) process. EWN selects validated, mostly aggregated, monitoring data from national databases and adds information on the physical characteristics of the water bodies being monitored and on the pressures potentially affecting water quality.</p> <p>Although many countries make their highly aggregated data available over the Internet, the level and form of aggregation often varies from country to country making detailed quantitative comparisons difficult. The added value of Reference Waterbase is that data collected through the EWN process are from statistically stratified monitoring stations and groundwater bodies and are</p>

		comparable at European level. These data are primarily used in the production of the EEA's <u>indicator-based fact sheets</u> . The data in Reference Waterbase are sub-samples of national data assembled for the purpose of providing comparable indicators of pressures, state and impact of waters on a Europe-wide scale and the datasets are not intended for assessing compliance with any European Directive or any other legal instrument. Information on the national and sub-national scales should be sought from other sources.
<b>Dataset Identification</b>		
	Maintenance	Continuously
	Scale	Non applicable
	Restrictions	<u>See EEA dataservice- terms of use</u>
<b>Spatial Information</b>		
	Coordinate system	LAEA
	Extent	EU 15 (with the exception of Belgium, Luxembourg, Portugal) , AC 13 (with the exception of Cyprus, Malta, Romania, Turkey), Bosnia-Herzegovina, Macedonia- the Former Yugoslav Republic of, Norway
	Objects/attributes	Location of stations
<b>Distribution information</b>		
	Copyright	Member states
	Creator	Eurowaternet
	Distributor	European Environment Agency - Data service
	Availability	Available via download, no password
	Format	ASCII delimited, Dbase IV, Microsoft access (2000) or excel.
	On-line delivery	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>

### *Airbase*

<b>General Information</b>		
	Year / Edition	2004
	Title of content	Airbase
	Abstract	<u>AirBase</u> , the European air quality information system, contains air quality data for a selection of stations and a number of components and meta information on air quality monitoring networks and stations. Airbase builds on two preceding EU databases APIS (Air Pollution Information System; air quality data) and GIRAFE (meta information on air quality networks and stations) by extending their information with recent air quality information. The current database contains information which was transmitted by EIONET partner states in the framework of 'Exchange of Information' (EoI) Decisions, or as part of <u>EuroAirnet</u> (the European Air Quality monitoring network, is a selection of existing air quality monitoring stations in Europe)
	Metadata source	Via <a href="http://air-climate.eionet.eu.int/databases/airbase.html">http://air-climate.eionet.eu.int/databases/airbase.html</a>
	Documentation	Via website
<b>History dataset</b>		
	History	See abstract
<b>Dataset Identification</b>		
	Keywords	Ozone, CO2, greenhouse gases, acidifying pollutants.
	Maintenance	Continuously
	Scale	Monitoring stations
	Restrictions	EEA conditions
<b>Spatial Information</b>		
	Coordinate system	N.A.

## Map 2: Geographical Location

<p>Extended EMEP grid - 150 km</p> 	<p>Ozone</p> 
<p>Fig 2.1 EMEP grid 150</p> 	<p>Fig 2.2 Ozone in Cities</p> 
<p>Fig 2.3 CGRS: Common Chorological Grid Reference System</p>	<p>Fig 2.4 Water quality Monitoring stations</p>

Extent	Pan-Europe but not Albania, Serbia/Montenegro, Cyprus, Croatia, Lichtenstein and Turkey
Temporal coverage	Till 2002
Objects/attributes	Data on emissions of ozone, CO <sub>2</sub> , greenhouse gases, acidifying pollutants.
<b>Distribution information</b>	
Copyright	European Environment Agency
Creator	The European Topic Centre on Air and Climate Change <a href="http://etc-acc.eionet.eu.int/">http://etc-acc.eionet.eu.int/</a>
Distributor	The European Topic Centre on Air and Climate Change
Availability	XML + ASCII export files of all Airbase data up to 2002 per country
Format	XML and raw data formatted file structure.
On-line delivery	Via <a href="http://air-climate.eionet.eu.int/databases/AirBaseXML.html">http://air-climate.eionet.eu.int/databases/AirBaseXML.html</a> Data + guidance document

### ***Ozone in cities (urban background stations)***

*(see figure 2.2 for map illustration)*

<b>General Information</b>	
Year / Edition	14/04/2004
Title of content	Ozone in cities
Abstract	Urban background stations, 26th highest daily eight-hour max value. The maximum station in each city, relative to EU target value and selected upper and lower 'classification levels' (UCL, LCL) (5). Target value: 120 µg/m <sup>3</sup> , UCL: 100 µg/m <sup>3</sup> , LCL: 80 µg/m <sup>3</sup> .
Metadata source	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>
Documentation	Published in report: <a href="#">Air pollution in Europe 1990-2000</a>
<b>History dataset</b>	
History	Source: data of Urban background stations
<b>Dataset Identification</b>	
Keywords	Ozone, air quality
Maintenance	Data of background stations continuously
Scale	Non applicable
Restrictions	<a href="#">See EEA dataservice- terms of use</a>
<b>Spatial Information</b>	
Coordinate system	LAEA
Extent	Pan-Europe
Temporal coverage	2000
Objects/attributes	Upper and lower 'classification levels' (UCL, LCL)
<b>Distribution information</b>	
Copyright	European Environment Agency
Creator	The European Topic Centre on Air and Climate Change <a href="http://etc-acc.eionet.eu.int/">http://etc-acc.eionet.eu.int/</a>
Distributor	European Environment Agency - Data service
Availability	Available via download, no password
Format	ARC/INFO
On-line delivery	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>

### 3.2.4 Geographical names

Inspire:

“Geographical names” describes features on Earth – a location or a landscape object. Often the term topographical name is used to emphasize the spatial dependency and relation to the adjacent topographical features.

Geographical names can be associated to different kind of spatial features:

**Areal features** (e.g. geographical regions, lakes, forests...).

**Linear features** (e.g. rivers, railways, shipping lines, boundary lines...).

**Point features** (e.g. spot heights, monuments, villages, buildings...).

Used for search and overview, location at all layers and as a basis layer on maps. Important part of reference data. Important for effective operations at local level. Different sector use different sets of names, e.g. mapping and transport sectors. Commonly produced by mapping agencies and local authorities.

Gazetteer: According to the definition in ISO19112 a gazetteer provides a master record of all location instances for a particular location type or types. Gazetteers are not just geographical names' indexes but may be records of any kind of feature type or types. The positional information may include a coordinate reference, but it may be purely descriptive.

See also EuroGlobalMap, DCW, ESRI ArcWorld Chapter 3.1

#### *Bartholomew: Europe place name gazetteer*

<b>General Information</b>	
Year / Edition	August 2003
Title of content	
Abstract	With over 144.000 European place names with geographic co-ordinates this is the ideal choice for those seeking a comprehensive European Gazetteer. Each entry is classified by country/province, population and feature type.
Metadata source	<a href="http://www.bartholomewmaps.com/europe_data_products.htm">www.bartholomewmaps.com/europe_data_products.htm</a>
<b>History dataset</b>	
History	Used to create the road maps in the Collins Road Atlas of Europe as well as reference maps for the Times and Collins range of atlases
<b>Dataset Identification</b>	
Maintenance	Regular updates
Scale	1: 1.000.000
Restrictions	See <a href="http://www.bartholomewmaps.com/barts.asp?pid=1530">www.bartholomewmaps.com/barts.asp?pid=1530</a>
<b>Spatial Information</b>	
Coordinate system	Longitude/latitude; decimal degrees
Extent	From The Canaries in the west to the western edge of the Black Sea in the East. North Africa in the South to Northern Norway in the North. (Coordinates (long/lat) -32°W,-27°S to 32°E,71°N)
Objects/attributes	Names with a geographic coordinates.
<b>Distribution information</b>	
Copyright	Collins Bartholomew
Distributor	Collins Bartholomew: <a href="http://www.bartholomewmaps.com/">http://www.bartholomewmaps.com/</a>
Availability	Fees and licensing: European gazetteer, single use, year 1:£ 600. Year 2, £150, etc. for more prices see website.
Format	Colon delimited TXT file: 20Mb
On-line delivery	Internet license possible. Samples for downloading via website Free Arc explorer data via ESRI: <a href="http://gis.esri.com/download/index.cfm?fuseaction=download.all">http://gis.esri.com/download/index.cfm?fuseaction=download.all</a>
Ordering process	For orders contact Collins Bartholomew

### 3.3 Administrative units

#### 3.3.1 Official administrative units

Inspire:

Each national territory is divided into administrative units. The administrative units are divided by administrative boundaries. On the national level, datasets of administrative boundaries are available in most European countries. The national datasets differ with respect to resolution, data model and geometry of international boundaries.

Is a key dataset for any kind of spatial data handling. Important in operations and management, showing competent authorities, in referencing of information and statistics, as a basis for generation of statistical map showing economic phenomena, demography etc. Used as reference for correct location of objects and “cutting” or databases.

See also EuroGlobalMap, EuroRegionalMap, Bartholomew, DCW, ESRI ArcWorld: chapter 3.1

Datasets internally used by the European commission (GISCO Database)

Description	GISCO ref. code	Scale	Extent	Source, Copyright
World administrative regions	WAWD3MGG <i>(see figure 3.1)</i>	1:3.000.000	World	CEC-Eurostat/GISCO ESRI ArcWorld
World administrative regions	WAWD25MGG	1:25.000.000	World	CEC-Eurostat/GISCO ESRI ArcWorld

#### **SABE 2001 Census (commune boundaries)**

*(see figure 3.3 for map illustration)*

General Information	
Year / Edition	2001 Version 1.0 New update of SABE2001 v1.1 was launched on 1st May 2004
Title of content	Version 1.0 <ul style="list-style-type: none"> <li>SABE commune Boundaries (1991, scale 1:1.000.000) and population figures 1981, 1991.</li> <li>SABE commune Boundaries (1991, point objects) and population figures 1981, 1991.</li> <li>SABE commune Boundaries (1991, scale 1:100.000) and population figures 1981, 1991.</li> </ul> Version 1.1 release refers to the last census
Abstract	Seamless Administrative Boundaries of Europe (SABE) dataset has been compiled from source data provided by 32 National Mapping organisations, members of EuroGeographics. It contains all administrative units from the country level down to commune level. The term "seamless" means that there are no gaps or overlaps between polygons initially derived from different sources.
Metadata source	<a href="http://www.eurogeographics.org/eng/04_sabe.asp">www.eurogeographics.org/eng/04_sabe.asp</a>
Documentation	SABE Product.doc via website
History dataset	
History	Initially created for 1991 (to allow links to census statistics) and revised in 1995 and 1997, the SABE2001 version 1.1 is now available. In this version the status of the national administrative data refers to the census data in the countries.
Dataset Identification	
Maintenance	No information available
Scale	SABE2001/Census is available for applications at scale 1:100.000 and 1:1.000.000.
Restrictions	SABE is sold on a perpetual license basis which includes copyright fees for

		internal business use
<b>Spatial Information</b>		
	Coordinate system	Geographical in degrees (longitude, latitude) with decimal fraction and based on the ETRS 89 spatial reference system. No map projection is applied.
	Extent	Austria, Belgium, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Great Britain, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, The Netherlands, Northern Ireland, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine. <u>SABE2001 version 1.1 includes:</u> <ul style="list-style-type: none"> <li>• “new” countries Bulgaria, Moldova, Romania</li> <li>• updates of Spain, Latvia, Poland and Slovakia</li> <li>• extended territories of Denmark (incorporating Greenland and Faroer), France (incorporating Guyana, Reunion, Martinique, Guadeloupe) and Portugal (incorporating Azores and Madeira)</li> </ul>
	Objects/attributes	<b>Content:</b> <ul style="list-style-type: none"> <li>• Boundaries of administrative units- Names of different levels in national administrative units and the relations between them</li> <li>• Names and codes of administrative units on the basis of the national nomenclature and representing the national administrative hierarchy</li> <li>• A unified coding system for all the administrative levels including also names of different national administrative levels and the relations between them</li> <li>• Location of residences of authorities of the units for the countries (not for all countries)</li> <li>• Coastline information for the countries where the physical and administrative boundaries do not coincide</li> </ul>
<b>Distribution information</b>		
	Copyright	<u>Members of Eurogeographics (various countries)</u>
	Distributor	<u>EuroGeographics or its distributors</u>
	Availability	SABE is sold on a perpetual license basis which includes copyright fees for internal business use.
	Format	Standard: ESRI ARC/INFO® Export format on CD-ROM
	Ordering process	Price depending on country: SABE 1:100.000: € 200 to € 7300, all countries € 15 200. SABE 1:1.000.000: all countries € 5100.

### ***Europe NUTS regions: version 6***

<b>General Information</b>		
	Year / Edition	Version 6 – 1998
	Title of content	NUECV6
	Abstract	The NUTS layer contains several boundary and point datasets which serve as a base map of regional boundaries covering the entire EU territory. The NUTS nomenclature, a hierarchical coding system defined by Eurostat, subdivides the EU economic territory into 6 administrative levels, from country (level 0), through regional (level 1,2,3) to local (level 4,5) level. The local levels are not contained in the NUTS layer but in the Commune Boundaries layer.
	Metadata source	<u>The GISCO Database Manual.</u>
	Documentation	Information on the NUTS and Statistical Regions Classification are also available on the following web site: <a href="http://www.europa.eu.int/comm/eurostat/ramon">www.europa.eu.int/comm/eurostat/ramon</a>
<b>History dataset</b>		
	History	The NUTS boundaries for the 1 Million coverages have been derived from the Commune Boundaries dataset, which is itself a compilation of boundary data

		of various sources, all of a detail of 1:1.000.000 scale or better. The 1 Million coverages were created by retaining only the NUTS 0, 1, 2 and 3 boundaries.
<b>Dataset Identification</b>		
	Scale	1:1.000.000 (also 1:3.000.000 )
	Restrictions	<u>See the restrictions in the GISCO Database Manual</u>
<b>Spatial Information</b>		
	Coordinate system	LAEA
	Extent	EU 15 Member states
	Temporal coverage	1995 – 1998
	Objects/attributes	<i>coverages:</i> NUEC10MV6, NUEC3MV6, NUEC1MV6, NUECV6PTL0, NUECV6PTL1, NUECV6PTL2, NUECV6PTL3
<b>Distribution information</b>		
	Copyright	CEC-Eurostat/GISCO derived from commune NUTS 1M, updated with boundaries from SABE 1997 and codes from Eurostat
	Distributor	Eurostat Data Shop
	Availability	On GISCO CD
	Format	ARC/INFO format. Attribute data in INFO files
	Ordering process	Requests for Data GISCO Database Manual should be sent to Eurostat Data Shop.

### ***Boundaries for NUTS regions: version 7***

*(see figure 3.2 for map illustration)*

<b>General Information</b>		
	Year / Edition	Version 7 – 2000
	Title of content	NUECV7
	Abstract	<p>The NUTS layer contains several boundary and point datasets which serve as a base map of regional boundaries covering the entire EU territory. The NUTS nomenclature, a hierarchical coding system defined by Eurostat, subdivides the EU economic territory into 6 administrative levels, from country (level 0), through regional (level 1,2,3) to local (level 4,5) level. The local levels are not contained in the NUTS layer but in the Commune Boundaries layer. At present, three scale ranges (1M, 3M and 10M) for 3 NUTS versions (V5, V6 and V7) and a 20M scale version for V7 are maintained in the <u>GISCO</u> database. The boundary coverages delineate the regions while the point coverages provide a label for each region. Associated tables contain basic information such as the region's name and area.</p> <p>Since its creation, the NUTS has been modified several times following successive enlargements of the Community or changes in the regional structure of certain Member States; modifications were made, for example, in 1990 (German unification and subsequent creation of 5 new Bundesländer) and in 1995 (introduction of the Union's three new Member States: Austria, Finland, Sweden as well as several structural changes in Germany, Belgium, Ireland and Italy). NUTS version 7 is the same as version 6 for EU15, except for the five countries Sweden, Finland, Germany, Ireland and United Kingdom. Furthermore in the coverage for NUTS version 7 the four EFTA countries Liechtenstein, Switzerland, Norway and Iceland are present. The NUTS regions in these countries are only pseudo NUTS and are not fully comparable with the real NUTS regions.</p>

### Map 3: Administrative units

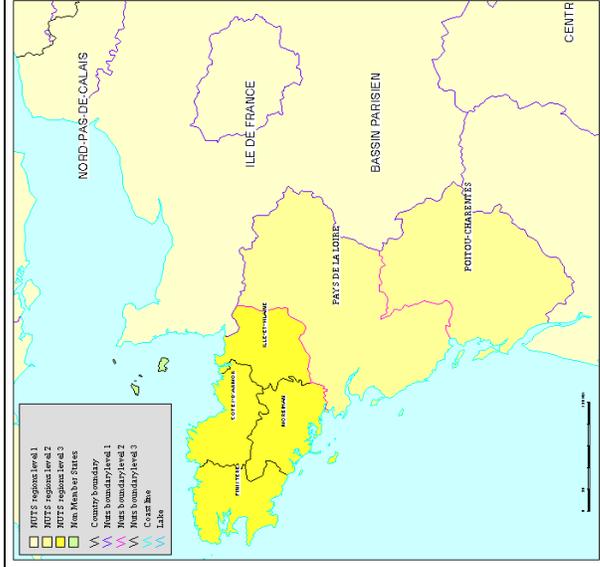
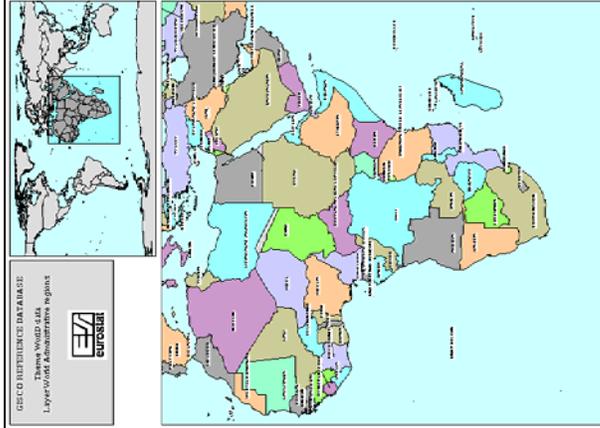


Fig 3.1 World administrative regions

Fig 3.2 Boundaries NUTS regions Version 7



Fig 3.3 Source S.AB.A 2001 Commune Boundaries

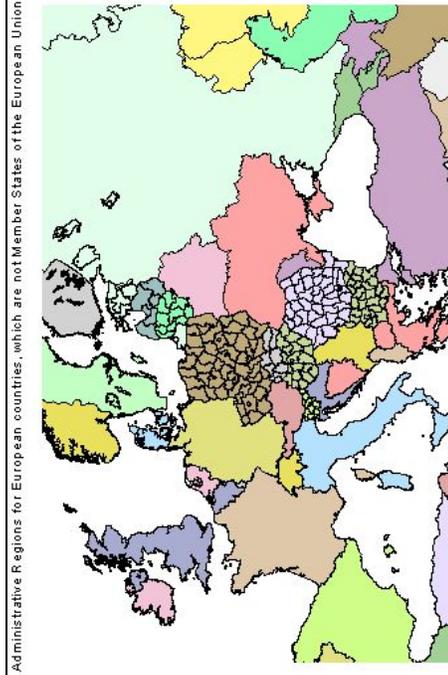


Fig 3.4 Administrative regions Central Europe

		Since 2001 also the NUTS levels 0-3 are included for 10 candidate member states (Bulgaria, Czech Republic, Latvia, Lithuania, Hungary, Poland, Romania, Slovak Republic and Slovenia). Further background information on the NUTS regions can be found on <a href="http://data-dist.jrc.it/eu4u/metadata/adnu_dob.htm">http://data-dist.jrc.it/eu4u/metadata/adnu_dob.htm</a>
Metadata source		<a href="#">The GISCO Database Manual</a> .
Documentation		Information on the NUTS and Statistical Regions Classification are also available on the following web site: <a href="http://www.europa.eu.int/comm/eurostat/ramon">http://www.europa.eu.int/comm/eurostat/ramon</a>
<b>History dataset</b>		
History		The base coverage for the NUTS coverage 1M version 7 was the NUTS boundaries for NUTS version 6 (1M) together with the 1998 NUTS nomenclature supplied by EUROSTAT. The reason for using the NUTS V6 coverage was that for most European countries the NUTS territories had not been changed, neither the boundaries nor the codes. However, for Finland, Sweden, Germany, Ireland and United Kingdom there were significant changes and a different approach had to be used. For Sweden and Finland the commune codes in 1995 were known as well as the link between the 1995 and 1998 coding. Therefore the commune boundaries from 1995 (SABE 95, source: Megrin) were used and the new NUTS boundaries were derived through a dissolve on NUTS level 3 (1998 coding). When the commune boundaries for 1997 (SABE 97, source: Megrin) arrived, the boundaries were controlled with these to verify that the NUTS boundaries were the same as in 1995. For more information about the sources for the commune boundaries see layer CM (communes).
<b>Dataset Identification</b>		
Scale		1:1.000.000 / (also 1:3.000.000, 1:10.000.000, 1:20.000.000)
Restrictions		<a href="#">See the restrictions in the GISCO Database Manual</a>
<b>Spatial Information</b>		
Coordinate system		LAEA
Extent		Version 7: 15 EU Member States, 4 EFTA countries (Switzerland, Iceland, Norway and Liechtenstein), 10 candidate member states
Temporal coverage		NUTS version 5 (1992 - 1995), NUTS version 6 (1995 - 1998), NUTS version 7 (1998 - )
Objects/attributes		Coverage: NUEC20MV7, NUEC10MV7, NUEC3MV7, NUEC1MV7, NUECV7PTL0, NUECV7PTL1, NUECV7PTL2, NUECV7PTL3.
<b>Distribution information</b>		
Copyright		CEC-Eurostat/GISCO
Distributor		Eurostat Data Shop
Availability		On GISCO CD
Format		ARC/INFO format. Attribute data in INFO files
Ordering process		Requests for Data GISCO Database Manual should be sent to Eurostat Data Shop.

## ***Administrative Regions Pan Europe***

(see figure 3.4 for map illustration)

<b>General Information</b>	
Year / Edition	Version 7: 2001
Title of content	Arnev7
Abstract	Dataset ARNEV7 contains the administrative boundaries for 9 Central European Countries (CEC), these are: EE - Estonia, LT - Lithuania, LV - Latvia, BG - Bulgaria, SK - Slovakia, SI - Slovenia, RO - Romania, HU - Hungary, CZ - Czech Republic, Poland will also be available soon. These datasets can be used together with the NUTS boundaries for EU12 (V5), EU15 (V6) and EU15+EFTA (V7). If all available administrative boundaries should be shown when using version 7, parts of version 6 have to be used too.
Metadata source	<u>See the restrictions in the GISCO Database Manual</u>
<b>History dataset</b>	
History	The boundaries for ARNE1MV7 are the same as in version 6 for most countries. However, in version 7 only 9 countries' regional divisions are kept, for all other ones only the country borders remain in the coverage. For two countries new boundaries have been introduced with the following sources: Sources: LV based on SABE 1997, CZ based on SABE 1995, PL based on SABE 1997, LT based on SABE 1997. Version 7 is representing the situation 1999 and is valid until new versions are available. These datasets can be used together with the <u>NUTS</u> boundaries for EU12 (V5), EU15 (V6) and EU15+EFTA (V7). If all available administrative boundaries should be shown when using version 7, parts of version 6 have to be used too.
<b>Dataset Identification</b>	
Scale	1:1.000.000 (resolution 500m)
Restrictions	See restrictions in <u>The GISCO Database Manual</u> .
<b>Spatial Information</b>	
Coordinate system	LAEA
Extent	Estonia, Lithuania, Latvia, Bulgaria, Slovakia, Slovenia, Romania, Hungary, Czech Republic, Poland will also be available soon.
Temporal coverage	Changes agreed upon with Eurostat until September 2001 have been integrated.
Objects/attributes	Coverage: ARNE1MV7, ARNEV7PTL0, ARNEV7PTL1, ARNEV7PTL2, ARNEV7PTL3
<b>Distribution information</b>	
Copyright	CEC-Eurostat/GISCO derived from commune NUTS 1M, updated with boundaries from SABE 1997 and codes from Eurostat
Distributor	Eurostat Data Shop
Availability	On GISCO CD
Format	ARC/INFO format. Attribute data in INFO files
Ordering process	Requests for Data GISCO Database Manual should be sent to Eurostat Data Shop.

### 3.3.2 Blocks and census districts

Inspire:

The component includes blocks in urban areas commonly used for statistical information. Used in urban and rural planning, demographic studies of regional development, estimates on exposure to pressures and availability of services

### 3.3.3 General government management units

Inspire:

These include major common operational spatial units, such as fire, police, ambulance, coastguard etc. Of very high value both in the sectors own operations and in cross-sector emergency operations, e.g. at occasions of natural and technological hazards, accidents where health, economy or ecology is affected.

### 3.3.4 Sector management & reporting units

Inspire:

These are major sector or thematic management areas being used primarily by the sector itself.

A wide range of management areas are relevant both at European, national, regional and local levels.

Being used primarily by the sector itself, but is usually also relevant for other sectors.

- WFD River Basin Districts, not strictly being defined of subsets of water catchments, needs to be defined as a separate management area.
- OSPAR reporting units at sea.
- Coastal zone management areas

## 3.4 Properties, buildings and addresses

### 3.4.1 Properties

Inspire:

Units of property rights: A parcel is a piece of land with defined boundaries, on which a property right of an individual person or a legal entity applies.

Parcels, as the fundamental features of the cadastre (or land administration system), give reliable and complete information of the legal situation of land by providing

- basic information for planning institutions, for economic development, for transparency of administration activities,
- information for taxation,
- A proof for the scope of any kind of rights on real properties.

### 3.4.2 Buildings

Inspire:

Information on location of buildings, as points or with the actual basic form of the building. Relevant to couple with information on e.g. ownership, size, height. A building is a covered facility, usable for the protection of humans, animals, things or the production of economic goods.

Important in local planning and management, emergency operations, property agents, construction sector, taxation. In environmental assessment also to locate buildings over noise levels, in follow up of cultural heritage sites etc.

### 3.4.3 Addresses

Inspire:

An address is the local or officially determined designation of the position of buildings and/or parcels, which consists of a defined (unique) geo-referenced location. This unique location is generally realised through the postal address (house number, street and city) and is related to coordinates. Geographical location of addresses is commonly located to entrance at ground level, some sophisticated also include level/floor (x,y,z).

Used in local management, transport routing system, important in government, hazards operations/management.

Many address parallel registers and sources occur. Commonly part of reference data, produced and managed at regional or national levels. Route systems etc are containing such information for Europe.

## 3.5 Elevation

### 3.5.1 Elevation

Inspire:

Digital elevation information and digital elevation models for land surface and surface of inland waters. Points, raster versions or simplified or pre-processed data as contours. Elevation grid/DEM Elevation grid/DEM of low accuracy (ca. 1: 100.000) is needed in Pan-European analysis. Important in modeling of land slides and avalanches, flooding vulnerability, risk to erosion, flow of water and pollutants, spread of air pollution, fires, noise, biodiversity. Used in many sectors, amongst others environment, water supply, energy sector, agricultural and forestry.

See also EuroGlobalMap, Bartholomew, DCW, ESRI ArcWorld: chapter 3.1

Datasets internally used by the European commission (GISCO Database)

Description	GISCO ref. code	Year	Scale	Extent	Source, Copyright
Digital Terrain Model	DEEU3M	?	1:3.000.000	PAN-Europe	GISCO (ref) EDC, USGS

Datasets not fully described yet by this report

Dataset name	Content	Year	Scale	Extent	Source
ETOPO5	5-minute gridded elevation data	1988-1990	5 min. lat/long grid	World	NOAA/NGDC
ETOPO2	Global elevation data base gridded at 2-minute (latitude-longitude) resolution	2001	2 min. lat/long grid	World	NOAA/NGDC
MONA Pro Europe	Digital elevation Model	?	Grid sizes of 75m, 100m or 250m.	Pan-Europe, 22 countries	GEOSYS

### ***USGS GTOPO30 Digital Elevation Model***

(see figures 4.1 and 4.3 for map illustrations)

General Information	
Year / Edition	1996: Version 1
Title of content	DTM + DTM_slope_dgr
Abstract	<u>GTOPO30</u> is a global digital elevation model (DEM) resulting from a collaborative effort led by the staff at the U.S. Geological Survey's <u>EROS Data Centre</u> . Elevations in GTOPO30 are regularly spaced at 30-arc seconds (approximately 1 kilometer). GTOPO30 was developed to meet the needs of the geospatial data user community for regional and continental scale topographic data. This release represents the completion of global coverage of 30-arc second elevation data that have been available from the EROS Data Centre beginning in 1993. Several areas have been updated and the entire global dataset has been repackaged, so these data supersede the previously released continental datasets. Comments from users of GTOPO30 are welcomed and encouraged.
Metadata source	<a href="http://edcdaac.usgs.gov/gtopo30/README.asp">http://edcdaac.usgs.gov/gtopo30/README.asp</a>
Documentation	<a href="http://edcdaac.usgs.gov/gtopo30">http://edcdaac.usgs.gov/gtopo30</a>
History dataset	
History	GTOPO30 is based on data derived from 8 sources of elevation information, including vector and raster datasets. The following table lists the percentage of

	the global land surface area derived from each source (a full description of each source is provided below):																				
	<table> <thead> <tr> <th>Source</th> <th>% of global land area</th> </tr> <tr> <th>-----</th> <th>-----</th> </tr> </thead> <tbody> <tr> <td>Digital Terrain Elevation Data</td> <td>50.0</td> </tr> <tr> <td>Digital Chart of the World</td> <td>29.9</td> </tr> <tr> <td>USGS 1-degree DEM's</td> <td>6.7</td> </tr> <tr> <td>Army Map Service 1:1,000,000-scale maps</td> <td>1.1</td> </tr> <tr> <td>International Map of the World 1:1,000,000-scale maps</td> <td>3.7</td> </tr> <tr> <td>Peru 1:1,000,000-scale map</td> <td>0.1</td> </tr> <tr> <td>New Zealand DEM</td> <td>0.2</td> </tr> <tr> <td>Antarctic Digital Database</td> <td>8.3</td> </tr> </tbody> </table>	Source	% of global land area	-----	-----	Digital Terrain Elevation Data	50.0	Digital Chart of the World	29.9	USGS 1-degree DEM's	6.7	Army Map Service 1:1,000,000-scale maps	1.1	International Map of the World 1:1,000,000-scale maps	3.7	Peru 1:1,000,000-scale map	0.1	New Zealand DEM	0.2	Antarctic Digital Database	8.3
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Antarctic Digital Database	8.3																				
<b>Dataset Identification</b>																					
Maintenance	No information available																				
Scale	1:1,000,000 to 1:2,000,000. The horizontal grid spacing is 30-arc seconds																				
Restrictions	Any use of trade, product, or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government																				
<b>Spatial Information</b>																					
Coordinate system	WGS84/ETRS89: The horizontal coordinate system is decimal degrees of latitude and longitude referenced to WGS84. The vertical units represent elevation in meters above mean sea level. The elevation values range from -407 to 8,752 meters.																				
Extent	GTOPO30 is a global dataset covering the full extent of latitude from 90 degrees south to 90 degrees north, and the full extent of longitude from 180 degrees west to 180 degrees east																				
Temporal coverage	GTOPO30 was developed over a 3 year period during which continental and regional areas were produced individually. As such, processing techniques were developed and refined throughout the duration of the project. Although the techniques used for the various continental areas are very similar, there were some differences in approach due to varying source material. More details about data development for several of the continental areas are reported by Verdin and Greenlee (1996), Bliss and Olsen (1996), and Gesch and Larson (1996).																				
Objects/attributes	Grid: value height in meters																				
<b>Distribution information</b>																					
Copyright	EDC DAAC, U.S. Geological Survey, EROS Data Centre (The EDC DAAC was established as part of NASA's Earth Observing System (EOS) Data and Information)																				
Distributor	U.S. Geological Survey's <u><a href="#">EROS Data Centre</a></u>																				
Availability	GTOPO30 is available electronically through an Internet anonymous File Transfer Protocol (FTP) account at the EROS Data Centre (at no cost). Procedures for Obtaining Data: <u><a href="http://edcdaac.usgs.gov/gtopo30/README.asp">http://edcdaac.usgs.gov/gtopo30/README.asp</a></u>																				
Format	<b>DEM file:</b> The DEM is provided as 16-bit signed integer data in a simple binary raster. There are no header or trailer bytes imbedded in the image. The data are stored in row major order (all the data for row 1, followed by all the data for row 2, etc.). <b>Source Map (.SRC):</b> The source map is a simple 8-bit binary image which has values that indicate the source used to derive the elevation for every cell in the DEM. The source map is the same resolution and has the same dimensions and coordinate system as the DEM. For other files see the readme.asp																				
On-line delivery	<u><a href="http://edcdaac.usgs.gov/gtopo30/gtopo30.asp">http://edcdaac.usgs.gov/gtopo30/gtopo30.asp</a></u> To facilitate electronic distribution, GTOPO30 has been divided into 33 pieces or tiles. Data for each GTOPO30 tile are distributed electronically as a compressed tar file.																				

## *Elevation Europe Images*

<b>General Information</b>	
Year / Edition	2003
Title of content	Elevation1x1, elevation3x3, elevation9x9, hillshade1x1: tiff files
Abstract	This is a 256 color image of global digital elevation model (DEM) derived from a horizontal grid. Several resolutions are available: 30 arc seconds (approximately 1 km <sup>2</sup> ), 3 km <sup>2</sup> and 9 km <sup>2</sup> .
Metadata source	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>
Documentation	
<b>History dataset</b>	
History	Methodology: The data set was compiled by EEA and is derived from the GTOPO30 dataset. The DTM was converted to raster (georeferenced tiff) using Arcview and Grid Pig extension. The Caspian Sea border, the Africa depression and some areas from the Netherlands, all under sea level were corrected. The DTM was hillshaded using ArcMap and Spatial Analyst using following parameters: Azimuth: 315, Altitude: 45, Model shadows: Yes, Z factor: 10, Cell size: 1000 m.
<b>Dataset Identification</b>	
Keywords	Elevation, DEM, geographic
Maintenance	No information available
Scale	Resolutions available: 1x1 km, 3x3 km and 9x9 km grids
Restrictions	This data, accompanied by its metadata, is freely available subject to acknowledgement of the source(s). For EEA the acknowledgement should read: © EEA, Copenhagen, 2003.
<b>Spatial Information</b>	
Coordinate system	LAEA
Extent	EU 25, EFTA 4, AC 3, Albania, Armenia, Belarus, Bosnia and Herzegovina, Croatia, FR Yugoslavia, Georgia, Macedonia- the Former Yugoslav Republic of, Moldova- Republic of, Russian Federation, Serbia and Montenegro, Ukraine.
Temporal Coverage	No information available
Objects/attributes	Grid cells with value for altitude
<b>Distribution information</b>	
Source	Data available from U.S. Geological Survey, EROS Data Center, Sioux Falls, South Dakota
Creator	European Environment Agency
Distributor	European Environment Agency - Data service
Availability	Available via download, no password. Last upload: 08/03/2004
Format	1 km x 1 km, 3 km x 3 km, 9 km x 9 km, Hillshade 1 km x 1 km: all data in ZIP compressed TIFF format. .prj file: ArcGis projection file
On-line delivery	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>

# Map 4: Elevation

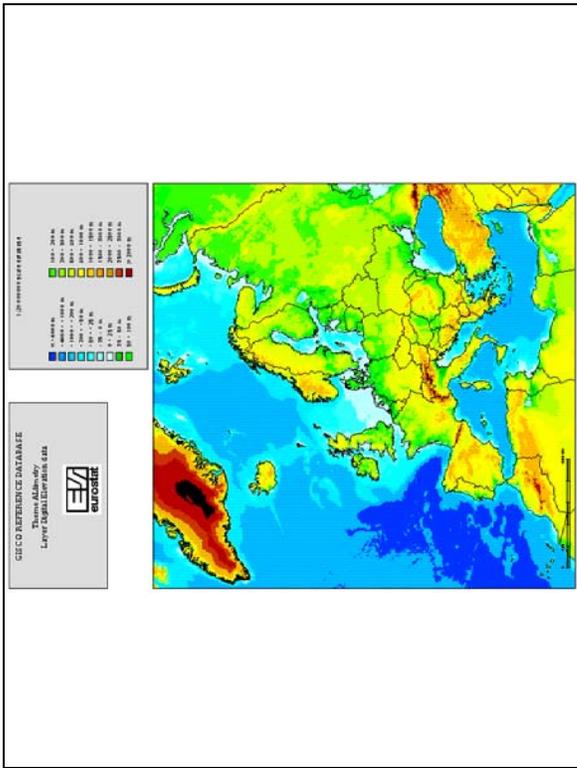


Fig 4.1 USGS GTOPO30 Digital Elevation Model

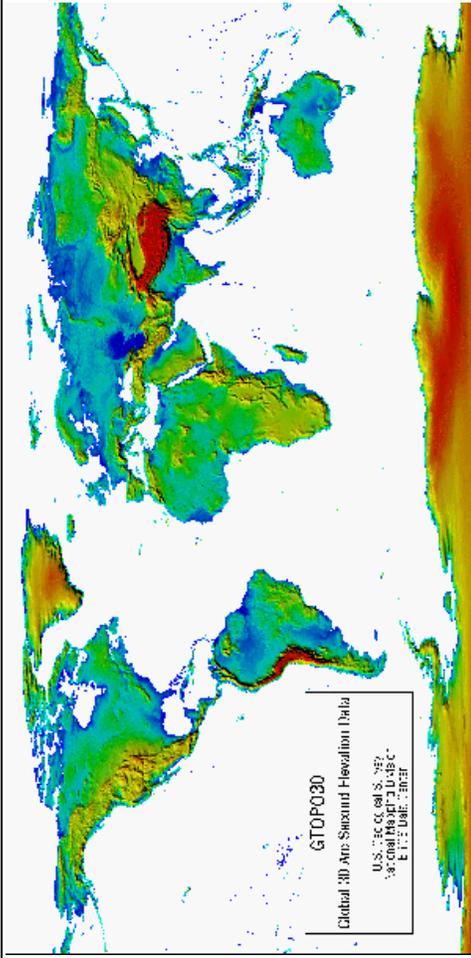


Fig 4.3 GTOPO30 Global 3D Elevation data

Fig 4.2 Digital elevation Pan-Europe

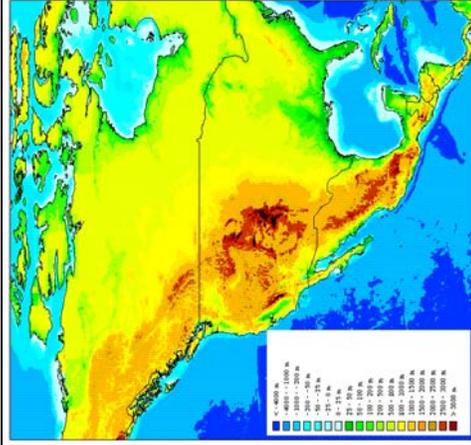


Fig 4.4 World altimetry data

### ***Digital Elevation Model Pan Europe***

*(see figure 4.2 for map illustration)*

<b>General Information</b>	
Year / Edition	No information available
Title of content	DEEU20M
Abstract	Digital Elevation (altitude in meters) Grid for Pan Europe. 5 minutes longitude/latitude resolution
Metadata source	<u>The GISCO Database Manual.</u>
<b>History dataset</b>	
History	The DEEU20M dataset is derived from the dataset ALWDGG (Theme World data, Layer Altimetry), which contains digital elevation data for the entire world. These data originate from the U.S. National Geophysical Data Centre in Boulder, Colorado (USA).
<b>Dataset Identification</b>	
Maintenance	No information available
Scale	1:20.000.000 (5 arc-minutes grid with a 1 m. contour intervals)
Restrictions	<u>See the restrictions in the GISCO Database Manual.</u> When using dataset should be referred to as 'Digital Elevation model for Pan Europe 20 Million scale'.
<b>Spatial Information</b>	
Coordinate system	LAEA
Extent	Pan-Europe
Temporal coverage	No information available
Objects/attributes	DEEU20M: Value: Cell value in a grid: elevation of the cell (in meter). Count: number of occurrences of the value in the grid Lookup table DEGRLUT: Symbol: number used as shade-symbol in grid shading
<b>Distribution information</b>	
Copyright	US NGDC: Etopo-5
Distributor	Eurostat Data Shop
Availability	via GISCO (CD)
Format	ARC/INFO GRID
Ordering process	Requests for Data GISCO Database Manual should be sent to Eurostat Data Shop.

### ***World Altimetry data***

*(see figure 4.4 for map illustration)*

<b>General Information</b>	
Year / Edition	No information available
Title of content	ALWDGG
Abstract	Elevation values for the whole world. Digital elevation data are data that are typically suited for a raster data model: the considered surface is divided into rectangular cells, each cell having a particular elevation.
Metadata source	<u>The GISCO Database Manual.</u>
<b>History dataset</b>	
History	These data originate from the U.S. National Geophysical Data Center in Boulder, Colorado (U.S.A.) ( <u>UNEP/GRID: ETOPO-5</u> ).
<b>Dataset Identification</b>	
Maintenance	No information available
Scale	Approx. 1:20.000.000. The original dataset contains elevation data for a 5' grid (9.3 km x 9.3 km), with a one meter contour interval.
Restrictions	When using this dataset, it should be bibliographically referred to as 'World

		Altimetric data Geographical degrees'
<b>Spatial Information</b>		
	Coordinate system	LAEA
	Extent	World
	Temporal coverage	No information available
	Objects/attributes	Cell value in a grid: elevation of the cell (in meter).
<b>Distribution information</b>		
	Copyright	US NGDC: Etopo-5
	Distributor	Eurostat Data Shop
	Availability	via GISCO (CD)
	Format	ARC/INFO GRID
	Ordering process	Requests for Data GISCO Database Manual should be sent to Eurostat Data Shop.

### 3.5.2 Bathymetry

Inspire:

Digital depth information for sea areas, also including large inland waters (?). Could be represented in spatial data as digital models or as isolines.

Safety at sea, will anticipated effect of fewer accidents and thereby pollution, location of valuable biodiversity sites in shallow waters, location of sea resources and valuable sites for fish farming. Understanding of flow pattern and chemical composition in water. Also important in assessment of location of pipelines at sea.

### 3.5.3 Coastline

Inspire:

Important element to be treated separately in connection with height and bathymetry is also important for the definition of land, and of boundaries of administrative units. Different methods for definition and observation of coastline. Harmonised data needed at all levels. Important as reference in production of all features on land and sea, when integrated with all kinds of data presentations/maps. Detailed coastline data important in assessing climate change.

## 3.6 Geo-physical environment

### 3.6.1 Bedrock geology

Inspire:

Classification of bedrock geology according to composition and structure of bedrock. A variety of classification systems.

General data used to understand regional environmental diversity, to study geo-chemical content and effects on natural environment and health, to estimate buffer capacities in soil, to locate groundwater aquifers in bedrock. EuroGeoSurveys coordinates harmonisation processes.

### 3.6.2 Geomorphology

Inspire:

Geomorphologic processes and results of processes commonly monitored both as landscape changes and as potential risks. Important also in loss of land and gain of land.

Example: coastal erosion and progradation, land rise, natural hazards – land slide probability assessments.

#### *Coastal Erosion*

<b>General Information</b>	
Year / Edition	1990
Title of content	CEEC and CEEC1M
Abstract	The CORINE coastal erosion database (Version 1990) at scale 1:100.000 is an inventory on coastal morphology and erosion risk. The prime objective of the CORINE coastal erosion project was to provide a scientific database allowing the risks from possible coastal-erosion problems to be identified.
Metadata source	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>
Documentation	CORINE Coastal erosion manual (downloadable from EEA site)
<b>History dataset</b>	
History	The data were collected during the CORINE soil erosion project.
<b>Dataset Identification</b>	
Keywords	Geographic, Natlan, coastal, erosion
Maintenance	No information available
Scale	CEEC: 1:100.000 CEEC1M: 1:1.000.000
Restrictions	<a href="#">See EEA dataservice- terms of use</a>
<b>Spatial Information</b>	
Coordinate system	LAEA
Extent	EU - 12 except the Greek Islands, former GDR, Madeira and Azores
Temporal Coverage	The data were collected during the CORINE soil erosion project, i.e. during the last part of 1980.
Objects/attributes	Topology: Coverage CEEC: > 17.000 arcs Coverage CEEC1M: > 14.000 arcs
<b>Distribution information</b>	
Creator	European Environment Agency
Distributor	European Environment Agency - Data service
Availability	Available via download, no password. Last upload: 21/09/2000
Format	ARC/INFO export format (vector)
On-line delivery	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>

### 3.6.3 Soil

#### Inspire:

Categorisation of soils and subsoil according to depth, texture, structure and content of particles and organic material, stoniness, sometimes mean slope and anticipated water storage capacity. FAO nomenclature is widely used, with 350 soil classes. Other relevant attributes: mean slope angle, description of soil class, including parent material, soil texture, depth, stoniness.

Important in assessment and management of soil as a resource for agriculture and forestry, including also special effects such as erosion, salinisation, desertification. Also used in location of areas for gravel and peat extraction, groundwater resources, as a habitat.

#### Datasets not fully described yet by this report

Dataset name	Content	Year	Scale	Extent	Source
SOTERLAC	Soil and terrain database for Northeastern Africa (CD 2)	1998	1:5.000.000	northeastern Africa, in particular for the IGAD countries bordering the Nile basin	FAO/ISRIC
SOTERLAC	Soil and terrain database for Latin America and the Caribbean (CD 5)	1998	1:5.000.000	for Latin America and the Caribbean	FAO/ISRIC
SOTER	Soil and physiographic database for North and Central Eurasia (CD 7)	2002	1:5.000.000	North and Central Eurasia, more specifically for the countries of the CIS and Baltic states, China and Mongolia.	FAO/ISRIC
SOTER	Soil and terrain database, Land Degradation Status and Soil Vulnerability Assessment for Central and Eastern Europe (CD 10)	2002	1:2.500.000	thirteen countries in central and eastern Europe	FAO/ISRIC
SOTERSAF	Soil and terrain database for Southern Africa (CD 25)	2003	1:2.000.000	8 countries southern Africa	FAO/ISRIC
Dataset from WISE database	Global data sets of derived soil properties on a 0.5 by 0.5 degree grid, version 2.0	2003	0.5 by 0.5 degree grid	global	FAO
Dataset from WISE database	Global distribution of Soils with a High Inferred P-deficiency	2003	0.5 by 0.5 degree grid	global	FAO

### ***Soil type Europe (European soil database version 2)***

*(see figure 5.1 for map illustration)*

<b>General Information</b>	
Year / Edition	Version 2
Title of content	Soil
Abstract	European soil database version 2. The soil units of Europe at a scale of 1:1.000.000 were digitised during the CORINE project. Information from archives of national soils information was subsequently added and the results have been submitted to experts for each of the member countries for verification and harmonisation of cross-border soil classifications. Another more recent version of the soils of the European Union already exists at the European Soils Bureau in Ispra (see version 3). This data includes improvement of the spatial accuracy of the dataset as well as expansion of its coverage into Central and Eastern Europe. Footnote: January 2004: An error in the projection parameters has been identified. This is visible on scale 1:1.000.000 and below.
Metadata source	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>
Documentation	Soil - Background information from GISCO Database Manual History of the development of the Soil Map of the EC. Downloadable via EEA-Dataservice.
<b>History dataset</b>	
History	See European Soil Database Version 3
<b>Dataset Identification</b>	
Keywords	Natlan, DISMED, desertification, soil
Scale	1:1.000.000
Restrictions	<a href="#">See EEA dataservice- terms of use</a>
<b>Spatial Information</b>	
Coordinate system	LAEA
Extent	Andorra, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Monaco, Netherlands, Portugal, San Marino, Spain, Sweden, United Kingdom
Objects/attributes	Soil mapping units and their characteristics; soil typological units and their characteristics
<b>Distribution information</b>	
Copyright	CEC member states
Creator	Joint Research Centre. <a href="http://www.jrc.it/">http://www.jrc.it/</a>
Distributor	European Environment Agency - Data service
Availability	Available via download, no password
Format	Downloads: coverages Soil + country in ESRI E00 files Tables SMU, STU, STU.ORG in ESRI E00 files Info files: tables describing countries, paper legend, soil mapping units, soil typological units.
On-line delivery	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>

### ***European Soil Database (Eurosoil) Version 3***

*(see figure 5.3 for map illustration)*

<b>General Information</b>	
Year / Edition	Version 3- 2000
Title of content	Eurosoil – Soil
Abstract	Basic inventory of soil units of the EC according to F.A.O. nomenclature. The Soil Geographical Data Base of Europe at Scale 1:1.000.000 is part of the European Soil Data Base. It is the resulting product of a collaborative project involving all the European Union and neighbouring countries. It is a simplified representation of the diversity and spatial variability of the soil coverage. The

	<p>methodology used to differentiate and name the main soil types is based on the terminology of the F.A.O. legend for the Soil Map of the World at Scale 1:5.000.000. This terminology has been refined and adapted to take account of the specificities of the landscapes in Europe. It is itself founded on the distinction of the main pedogenetic processes leading to soil differentiation: brunification, lessivage, podzolisation, hydromorphy, etc.</p> <p>- The database contains a list of Soil Typological Units (STU). Besides the soil names they represent, these units are described by variables (attributes) specifying the nature and properties of the soils: for example the texture, the water regime, the stoniness, etc. The geographical representation was chosen at a scale corresponding to the 1:1.000.000. At this scale, it is not feasible to delineate the STU's. Therefore they are grouped into Soil Mapping Units (SMU) to form soil associations and to illustrate the functioning of pedological systems within the landscapes.</p> <p>- Harmonisation of the soil data from the member countries is based on a dictionary giving the definition for each occurrence of the variables. Considering the scale, the precision of the variables is weak. Furthermore these variables were estimated over large areas by expert judgment rather than measured on local soil samples. This expertise results from synthesis and generalization tasks of national or regional maps published at more detailed scales, for example 1:50.000 or 1:25.000 scales. Delineation of the Soil Mapping Units is also the result of expertise and experience. Heterogeneity can be considerable in European regions. The spatial variability of soils is very important and is difficult to express at global levels of precision. Quality indices of the information (purity and confidence level) are included with the data in order to guide usage.</p>
Metadata source	<a href="http://www.FAO.org/">www.FAO.org/</a>
Documentation	<ul style="list-style-type: none"> <li>• FAO-Unesco, 1974 - Soil Map of the World - Legend. Unesco, Paris, France. 62 pp.</li> <li>• CEC, 1985 - Soil map of the European Communities at 1:1.000.000. CEC-DGVI. Brussels, Belgium. 124 pp.</li> <li>• Platou S.W., Norr A.M., Madsen H.B., 1989 - Digitizing of the EC soil map. In: Jones R.J.A. and Biagi, B. (Eds). Computerizations of Land Use Data. CEC, Brussels, Belgium. 12-24.</li> <li>• FAO-Unesco, 1990 - Soil Map of the World - Revised Legend. World Soil Resources Report 60. FAO, Rome, Italy. 120 pp.</li> <li>• King D., Daroussin J. and Tavernier R., 1994 - Development of a soil geographical database from the soil map of the European Communities. Catena (21). 37-56.</li> <li>• EC-JRC, 1995 - European land information systems for agro-environmental monitoring. King D., Jones R.J.A and Thomasson A.J. (Eds.), Brussels, Belgium. 286 pp.</li> <li>• Daroussin J., King D., 1996 - A Pedotransfer Rules Database to interpret the Soil Geographical Data Base of Europe for environmental purposes. In: The use of pedotransfer in soil hydrology research in Europe, workshop proceedings, Orléans, France, 10-12 October 1996. 25-40.</li> </ul>
<b>History dataset</b>	
History	<p>1974: soil information was compiled and harmonized over Europe at 1:1.000.000 scale by Prof. R. Tavernier (B) (co-coordinator) and national representatives under FAO funding.</p> <p>1985: a map limited to the 12 EC member countries is published.</p> <p>1986: the EC Soil Map and legend are computerized at ADK (Danish Bureau of Land Data, DK) under CORINE program</p> <p>1988: the database is geo-registered to ONC (Operational Navigation Charts) map sheets at Birbeck College (GB)</p>

	<p>® EC Soil Database version 1.</p> <p>1991: 1) soil database attributes are added using the original FAO project archives by D. King (MARS project, CEC-DG VI);</p> <p>® EC Soil Database version 2 (King et al., 1994).</p> <p>1992: start computerization of Eastern countries from FAO project archives under MARS project funding;</p> <p>® Eastern countries Soil Databases at level of EC Soil Db version2.</p> <p>1995: 1) database is further geo-registered through "rubber-sheeting" adjustment to drainage, political, ocean and populated places layers in DCW (Digital Chart of the World database) by INRA (F) under MARS project funding;2) database is checked for errors and new attributes are added by Contributing Organisations within database member countries, co-ordination and data management by INRA (F), funding from MARS project;</p> <p>® EC Soil Database version 3 (King et al., 1995).</p> <p>1996: database is extended to several non EU countries by Contributing Organisations within new database member countries, co-ordination and data management by INRA (F), funding from MARS project:</p> <p>® EC Soil Database version 3.1.</p> <p>1996-1998: corrections, minor database structure modifications by INRA (F), border harmonization for some countries by Contributing Organisations, extension to several non EU countries by Contributing Organisations within new database member countries, co-ordination and data management by INRA (F), funding from MARS project:</p> <p>® EC Soil Data Base version 3.22, 3.23... 3.27.</p> <p>For a detailed history of the database, see also file gazette.txt.</p>
<b>Dataset Identification</b>	
Maintenance	No information available
Scale	1:1.000.000
Restrictions	Licensed usage, by project licensing, project should cover more than one country, yearly licensing.
<b>Spatial Information</b>	
Coordinate system	LAEA
Extent	PAN-Europe
Temporal coverage	The earliest data are from 1980, the latest from 1996
Objects/attributes	Soil mapping units and their characteristics; soil typological units and their characteristics
<b>Distribution information</b>	
Copyright	Copyright Holder on behalf many organisations: European Soil Bureau (ESB), JRC.
Distributor	European Soil Bureau
Availability	Version 3.0: The Soil Profile Analytical Data Base of Europe is distributed only together with the Soil Geographical Data Base of Europe.
Format	ARC/INFO export files
Ordering process	Yearly leasing, reduced pricing for multiple years.

## ***FAO-Unesco Soil map of the world***

*(see figure 5.2 for map illustration)*

<b>General Information</b>	
Year / Edition	1992
Title of content	Soil map of the world, Grid Geneva: GNV6
Abstract	<p>The FAO-Unesco Soil Map of the World (1:5.000.000 scale) published from 1974 to 1978 was first digitized by the ESRI Corporation of Redlands, California (USA) from a total of 18 map sheets in the early 1980s.</p> <p>The FAO Soil Map of the World legend includes an estimated 1650 different mapping units, consisting of soil units or associations thereof, which occur within the limits of a mapable physiographic unit. When a given map unit is non-homogeneous, it is composed of dominant and component soils, the latter being associated soils and inclusions (which cover respectively at least 20%, and less than 20% of the unit).</p> <p>The number of soil type classes which compose the FAO Soil Map legend is 106, and these are often grouped into 26 major categories ("Great Soil groups").</p> <p>A total of 12 soil phases, three texture classes, three slope classes and so-called "miscellaneous (e.g., non-soil) land units" are also recognized in this digital version of the FAO-Unesco Soil Map.</p>
Metadata source	Grid Geneva
Documentation	<p>The original source document for this dataset is as follows: "FAO-Unesco Soil Map of the World", 1:5.000.000, ten vols., Unesco-Paris 1974.</p> <p>A more recent publication explaining FAO's 1992 digital version of the dataset is as follows: "The Digitized Soil Map of the World - Notes", World Soil Resources Report 67 (2-7), Release 1.1, FAO-Rome, June 1992, 32 pages.</p>
<b>History dataset</b>	<p>The original FAO-Unesco Soil Map of the World was in the Bipolar Conic Conformal Projection for the Western Hemisphere, and in the Miller Oblated Stereographic Projection for the Eastern Hemisphere. In order to have a global digital dataset that was consistent and uniform, the Latitude/Longitude coordinate system (what ARC/INFO calls a 'Geographic' projection) was used for the 1992 updated version of the FAO Soil Map.</p> <p>Also, "some errors in the original maps, in the original digitized version, and consistency errors in the expansion file have been corrected. The soil legend has been updated and parts of the maps may also be updated in the future" (FAO 1992). For the accurate computation of areas on the digital map, FAO transformed the Americas into the Mollweide equal-area projection, and the rest of the world into the McBride-Thomas flat polar quartic, another equal-area projection.</p> <p>A template containing water-related features and country boundaries from the World Databank-II was used to overlay the soils data, and this final map was used to develop tabular data defining the extent of mapping units, soil units, and texture and slope classes for all countries/areas.</p>
<b>Dataset Identification</b>	
Maintenance	No information available
Scale	1:5.000.000
Restrictions	No information available
<b>Spatial Information</b>	
Coordinate system	Latitude/Longitude (ARC/INFO 'Geographic' projection)
Extent	World
Temporal coverage	1975-1990
Objects/attributes	Aside from the geographic data (location of soil class boundaries), the updated FAO-Unesco Soil Map of the World contains the following attribute files with information for each soil polygon on the map: an expansion file for the World

		containing additional information on the soil mapping units; and tabular data files containing information on the areal extent of mapping units or their texture and slope classes.
<b>Distribution information</b>		
Copyright		FAO
Distributor		GRID Center: GRID-Geneva
Availability		Free Access
Format		ARC/INFO for geographic data. The expansion file and tabular data are in a format suitable for importing into any standard DBMS software such as Dbase III/IV
On-line delivery		Via UNEP- GRID Geneva: <a href="http://www.grid.unep.ch/">www.grid.unep.ch/</a>

### ***Soil sensitivity (Soil quality index)***

*(see figure 5.4 for map illustration)*

<b>General Information</b>		
Year / Edition		English version 1: 18/11/2003
Title of content		Soil index
Abstract		This index is one of the components of the sensitivity to desertification index. It is based on: soil parent material, soil depth, soil texture and the slope of the land surface.
Metadata source		Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>
Documentation		Desertification Information System for the Mediterranean <a href="http://dismed.eionet.eu.int/">http://dismed.eionet.eu.int/</a>
<b>History dataset</b>		
History		No information available
<b>Dataset Identification</b>		
Keywords		Desertification, soil, DISMED
Maintenance		No information available
Scale		Grids
Restrictions		<a href="#">See EEA dataservice- terms of use</a>
<b>Spatial Information</b>		
Coordinate system		LAEA
Extent		Greece, Italy, Portugal, Spain Including parts of France
Temporal coverage		
Objects/attributes		Grid cells with values for Soil quality
<b>Distribution information</b>		
Source		ETC Terrestrial Environment
Technical Producer		The European Topic Centre on Terrestrial Environment <a href="http://terrestrial.eionet.eu.int/">http://terrestrial.eionet.eu.int/</a>
Creator		Desertification Information System for the Mediterranean(DISMED) <a href="http://dismed.eionet.eu.int/">http://dismed.eionet.eu.int/</a>
Distributor		European Environment Agency - Data service
Availability		Available via download, no password
Format		Zipped ARC/INFO GRID file
On-line delivery		Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>



### 3.6.4 Erosion

Inspire:

Land, slopes and coast are evolutionary and changing over time due to erosion. Erosion is accelerated by human intervention. Erosion risk data for land and coast represent a reference data towards assessment of general trends and anthropogenic pressures.

Relevant in agriculture, forestry, in coastal management, and in actions to combat desertification. Can be divided into

- monitoring of actual soil erosion
- modeling erosion risk

#### ***Land Quality Southern Europe***

*(see figures 6.1 and 6.2 for map illustrations)*

<b>General Information</b>	
Year / Edition	1990
Title of content	LQSU
Abstract	<p>The CORINE Land Quality project (Version 1990) is an assessment of land quality in Southern Europe based on four factors: soil, climate, slopes, land improvements.</p> <p>Given the increasing threat to land resources, and especially the growing problem of soil erosion in Mediterranean regions, there is an urgent need to provide information which can help to target policy actions to the areas of greatest need. The aims of the Soil Erosion risk and Land Quality project, from which the data of the LQ-layer originate, were to contribute to this objective by:</p> <ul style="list-style-type: none"> <li>• collecting and collating data referring to land quality and soil erosion risk in southern Community Member States;</li> <li>• integrating these data into a consistent and coherent information system which will allow the analysis and mapping of land quality and soil erosion risk at a scale suitable for policy application;</li> <li>• developing methods for the assessment of land quality and soil erosion risk which can be used with these data;</li> <li>• producing preliminary maps of land quality and soil erosion risk, on the basis of these methods, which can both illustrate the potential of the information system, and provide information for immediate policy use;</li> </ul> <p>Evaluating the methods used, and the results obtained, to indicate future research needs and ways in which the current work may be developed, extended and improved.</p>
Metadata source	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>
Related datasets	Sesuae_pan: Soil Erosion Risk Southern Europe Actual Sesupo_pan: Soil Erosion Risk Southern Europe Potential
Documentation	CORINE land resources manual (downloadable from EEA site)
<b>History dataset</b>	
History	<p>The Land Quality datasets were supplied by the Directorate-General for Environment, Nuclear Safety and Civil Protection (DG XVI) at the European Commission in 1990. The data were collected during the <u>CORINE</u> Soil Erosion project.</p> <p>Process: There raster processing resulted in a major saving of both CPU time and disk space requirements. The final analysis was conducted wholly in raster form. The raster analysis was performed country by country.</p> <p>The overlay process itself was a sequence of mathematical combinations and Boolean operations for the different data layers. A neighbouring cell majority (3 x3) filter was applied to remove noise from the resulting data. Finally, raster data were transferred back to the vector system. The results for the individual</p>

		countries were subsequently edge-matched to each other, and combined to a single coverage.
<b>Dataset Identification</b>		
	Keywords	Land quality, soil, climate, slopes, land improvements
	Maintenance	No information available
	Scale	1:3.000.000 Resolution: The grid definition was chosen to cover completely the national territories with a grid of 1 km by 1 km.
	Restrictions	When using this dataset, it should be bibliographically referred to as 'Land Quality Southern Europe'.
<b>Spatial Information</b>		
	Coordinate system	LAEA
	Extent	Southern Europe (southern France, Italy, Greece, Spain, Portugal)
	Temporal Coverage	The data were collected during the CORINE soil erosion project, i.e. during the last part of 1980.
	Objects/attributes	Items LQSUPO PAT: <ul style="list-style-type: none"> <li>• Potential land quality index.</li> <li>• Identification of an adm. region on level 0</li> </ul> Items LQPO INF: <ul style="list-style-type: none"> <li>• Description of the potential land quality indices</li> </ul>
<b>Distribution information</b>		
	Creator	European Environment Agency
	Analytical work	Eurostat
	Distributor	European Environment Agency - Data service
	Availability	Available via download, no password Last upload: 21/09/2000
	Format	Zipped ArcInfo Export Format (land quality data) ArcInfo Export Format (info file)
	On-line delivery	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>

### ***Soil Erosion Risk Southern Europe Actual***

*(see figure 6.3 for map illustration)*

<b>General Information</b>		
	Year / Edition	1990
	Title of content	SESUAC
	Abstract	<p>The CORINE Soil Erosion Risk project (Version 1990) is an assessment of the potential and actual soil erosion risk in Southern Europe based on four factors: soil, climate, slopes and vegetation.</p> <p>Encouraged in recent decades by the EC own agricultural policy, intensification has caused changes in farming practices which damage the soil.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>- Increased mechanization/ use of heavy machinery</li> <li>- Lack of maintenance</li> <li>- Terrain leveling</li> <li>- Monoculture and continuous cultivation</li> <li>- Reduced levels of manure</li> <li>- Careless or excessive ploughing</li> </ul> <p>Concerns of soil erosion are especially acute in Southern of the European community. Here, high quality is scarce - limited by a range of physical and historic factors:</p> <ul style="list-style-type: none"> <li>- The irregular terrain and steep slopes</li> <li>- Drought and uneven seasonal distribution of rainfall</li> <li>- Soil limitations such as shallowness, stoniness, unstable structure and chemical deficiency</li> <li>- long periods of past misuse which have degraded the soil fertility and</li> </ul>

		encouraged soil erosion
Metadata source		Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>
Related datasets		LQSUPO: Land Quality Southern Europe, SESUPO: Soil Erosion Risk Southern Europe Potential
Documentation		CORINE land resources manual is downloadable from Natlan site. <a href="http://data-dist.jrc.it/eu4u/metadata/en-se-dob.htm">http://data-dist.jrc.it/eu4u/metadata/en-se-dob.htm</a>
<b>History dataset</b>		
History		The extent of soil erosion has until now been difficult to assess, for consistent data have been scarce. Grazziana (1988) attempted to give some indication of the scale of the problem. He suggested that 25% of the land area of Greece, and 22% in France, was affected by serious erosion, while 62% of Italy had a potential erosion risk. As a result of the project reported here, however, better estimates can be made. The datasets for the Soil Erosion risk are supplied by the Directorate-General for Environment, Nuclear Safety and Civil Protection (DG XI) at the European Commission. The datasets were collected during the <u>CORINE</u> Soil Erosion project in 1990.
<b>Dataset Identification</b>		
Keywords		Geographic, DISMED, desertification, Natlan, erosion, soil.
Maintenance		No information available
Scale		1:3.000.000
Restrictions		When using this dataset, it should be bibliographically referred to as 'Soil Erosion risk Southern Europe'
<b>Spatial Information</b>		
Coordinate system		LAEA
Extent		Southern Europe (southern France, Italy, Greece, Spain, Portugal)
Temporal coverage		1985-1990
Objects/attributes		Items SESUAC PAT: <ul style="list-style-type: none"> <li>• The actual soil erosion risk index.</li> <li>• Identification of an adm. region on level 0</li> </ul>
<b>Distribution information</b>		
Distributor		European Environment Agency - Data service
Availability		Available via download, no password last upload: 28/09/2000
Format		Zipped ArcInfo Export Format (soil erosion data) Zipped ArcInfo Export Format (info files)
On-line delivery		Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>

### ***Soil Erosion Risk Southern Europe Potential***

*(see figure 6.4 for map illustration)*

<b>General Information</b>		
Year / Edition		1990
Title of content		SESUPO
Abstract		Assessment of the potential soil erosion risk in Southern Europe by combining three sets of factors: soil, climate, steepness For the background see abstract of dataset: Soil Erosion Risk Southern Europe Actual
Metadata source		Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>
Related datasets		LQSUPO: Land Quality Southern Europe, SESUAC: Soil Erosion Risk Southern Europe Potential
Documentation		CORINE land resources manual is downloadable from Natlan site. <a href="http://data-dist.jrc.it/eu4u/metadata/en-se-dob.htm">http://data-dist.jrc.it/eu4u/metadata/en-se-dob.htm</a>

# Map 6: Erosion

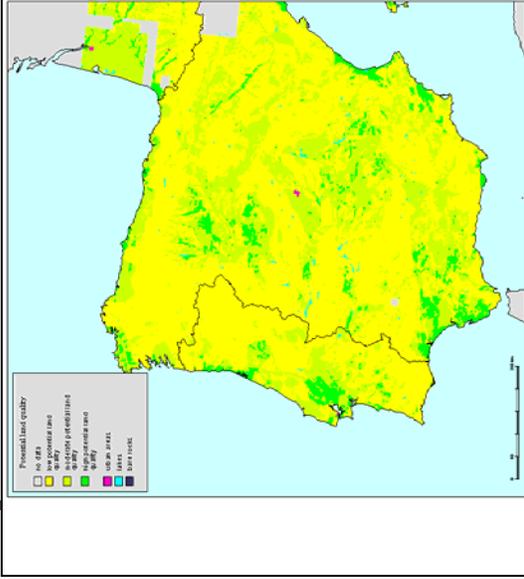


Fig 6.1 (Potential) Land Quality Southern Europe

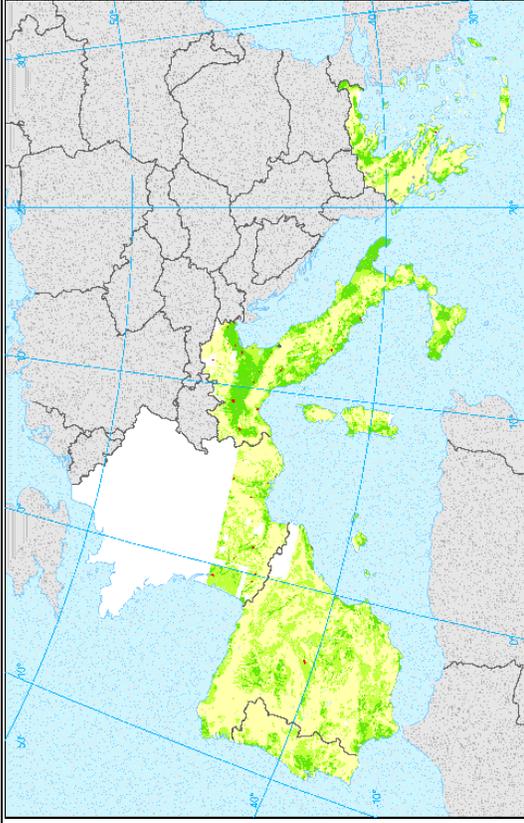


Fig 6.2 (Potential) Land Quality Southern Europe

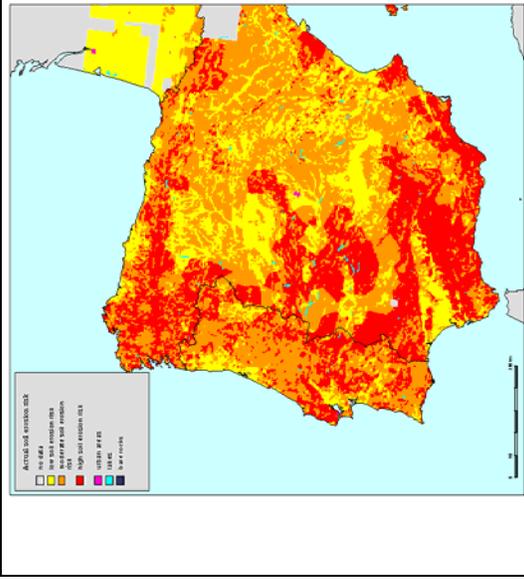


Fig 6.3 Actual Soil erosion Risk

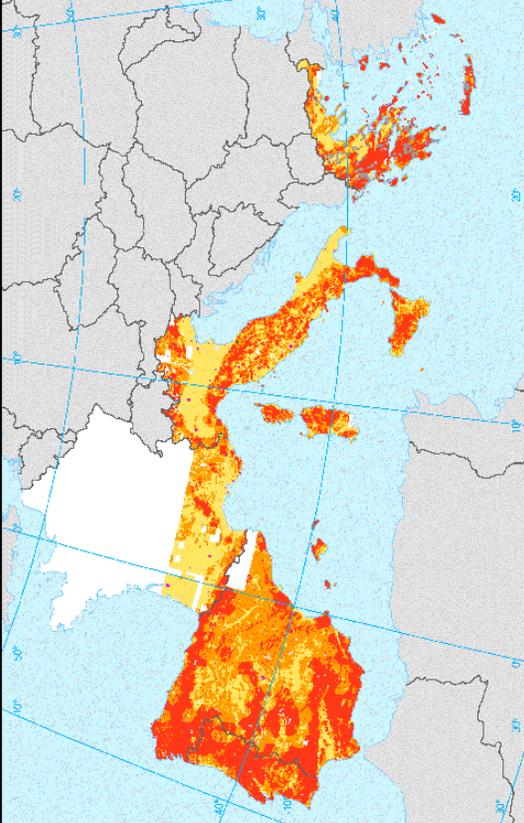


Fig 6.4 Potential Soil erosion Risk

History dataset	
History	See history of dataset: Soil Erosion Risk Southern Europe Actual
Dataset Identification	
Maintenance	No information available
Scale	1:3.000.000
Restrictions	When using this dataset, it should be bibliographically referred to as 'Soil Erosion risk Southern Europe'
Spatial Information	
Coordinate system	LAEA
Extent	Southern Europe (southern France, Italy, Greece, Spain, Portugal)
Temporal coverage	1985-1990
Objects/attributes	Items SESUPO PAT: The potential soil erosion risk index Identification of an adm. region on level 0
Distribution information	
Creator	European Environment Agency
Distributor	European Environment Agency - Data service
Availability	Available via download, no password Last upload: 28/09/2000
Format	Zipped ArcInfo Export Format (soil erosion data) Zipped ArcInfo Export Format (info files)
On-line delivery	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>

## 3.7 Climate

### 3.7.1 Climate zones

Inspire:

Categorisation of past, present and future climatic conditions, focusing on temperature, humidity. Data have a relatively simple nature, based on recordings at monitoring sites or analysis/ modeling.

Used in assessment of climate change, biodiversity, modeling of erosion and natural hazards. Is also important in agricultural and forestry planning and in adaptation to climatic changes.

#### ***IIASA Climate database***

*(see figures 7.1 and 7.2 for map illustrations)*

<b>General Information</b>	
Year / Edition	Version 1
Title of content	IIASA
Abstract	<p>A database for current climate for a global terrestrial grid has been created using weather records from many different sources. Average monthly temperature, precipitation, and cloudiness values are included in the dataset. The weather records were mostly constrained to include at least five observational years from the period 1931 - 1960. In order to achieve reliable data coverage in regions with especially sparse data, this constraint was not always strictly adhered to.</p> <p>Despite certain data gaps and inconsistencies, the IIASA Climate Database is considered appropriate for use at least at regional scales and above, in various applications relating to agriculture, biogeography, ecology, geography and especially vegetation models.</p> <p>The IIASA mean <b>monthly temperature</b> dataset consists of nearly 6300 records of data derived from at least five existing sources. The mean <b>monthly precipitation</b> dataset consists of nearly 6100 records of data derived from at least five existing sources</p> <p>The IIASA mean <b>monthly cloudiness</b> dataset is based on fewer stations, and thus contains only about one-quarter the number of data records (approximately 1600) compared with the other two variables</p>
Metadata source	<a href="http://www-cger.nies.go.jp/grid-e/griddoc/iiasatme.html">http://www-cger.nies.go.jp/grid-e/griddoc/iiasatme.html</a> <a href="http://www.grid.unep.ch/activities/metadata/index.php">http://www.grid.unep.ch/activities/metadata/index.php</a>
Documentation	The IIASA Database for mean monthly values of temperature, Precipitation, and Cloudiness on a global Terrestrial Grid: Rik Leemans and Wolfgang P.Cramer. RR-91-18, November 1991
<b>History dataset</b>	
History	<p>The selected weather records were interpolated onto a grid with a resolution of 0.5 grade longitude and latitude using a triangulation network followed by smooth surface fitting. Temperature values were corrected to mean sea level using an estimated moist adiabatic lapse rate and a global topography dataset. This technique has enhanced the quality of the dataset, especially for temperature in data-sparse mountainous areas. Precipitation was not corrected, due to the more complex relationships between precipitation and altitude.</p> <p>The cloudiness dataset, defined as the number of the recorded bright sunshine hours as a percent of its potential number, is based on fewer stations and often derived from estimated rather than computed data. Although the major annual cloud dynamics are shown, the regional reliability of the data is low. The final database can be improved by including more weather records and by using local correction methods, especially for precipitation.</p> <p>Format of the Raw Databases; All data from the different sets with weather stations have been transformed into a unified format for the checking, selecting</p>

		and interpolation algorithms Format of the Interpolated databases: All data (monthly values of temperature, precipitation and cloudiness, obtained from an irregular array of weather stations from different sources), is screened for outliers, doublets and unreliable stations.
<b>Dataset Identification</b>		
	Maintenance	One edition
	Scale	Non applicable
	Restrictions	The full and proper reference to the Database is: Leemans, Rik and Wolfgang P. Cramer, 1991. The IIASA Database for Mean Monthly Values of Temperature, Precipitation and Cloudiness of a Global Terrestrial Grid. IIASA, Laxenburg, Austria, RR-91-18, 62 pages
<b>Spatial Information</b>		
	Coordinate system	Non applicable
	Extent	Global: The areas with the best data coverage are Europe, the USA, southern Canada, East Asia and Japan, while Africa and Australia have less complete coverage. High latitude, arid and mountainous zones exhibit the least coverage, especially Siberia, northern Canada, South America, China, Mongolia and the Tibetan Plateau.
	Temporal coverage	1931 – 1960
	Objects/attributes	Mean monthly values of temperature, Precipitation, and Cloudiness
<b>Distribution information</b>		
	Copyright	IIASA: International Institute for Applied Systems Analysis
	Distributors	The original IIASA Climate Database Leemans and Cramer. Converted tables GRID-Geneva.
	Availability	Free of charge by GRID Geneva
	Format	The original IIASA Climate Database, distributed by Leemans and Cramer in tabular form (a series of ASCII files, with binary conversion program) on diskettes. There are three tables (one for cloudiness, precipitation and temperature variables) each having a long series of data records with 14 values as follows: longitude, latitude, 12 monthly values (January to December). GRID-Geneva has converted these tables into separate monthly data files with a standard image format. That is, for each of the three variables/12 months there exists a 360-row (line, record) by 720-column (element, pixel, sample) array of values which can be manipulated as an image. The original data values have been preserved by storing them in four-byte real (floating point) or two-byte integer arrays, where the geographic location (center point) of each pixel is known. GRID has also produced simplified one-byte image arrays for all three variables' data files, which are generalized versions for portrayal on most image display systems, rather than being suitable for analysis.
	On-line delivery	<a href="http://www.grid.unep.ch/">http://www.grid.unep.ch/</a> GNV13: Cloudiness, long-term mean monthly values (IIASA) GNV14: Precipitation, mean monthly (IIASA climate database) GNV15: Temperature, mean monthly (IIASA climate database)

## ***European interpolated climate data (Meteorological database)***

*(see figure 7.3 for map illustration)*

<b>General Information</b>	
Year / Edition	Monthly updated
Title of content	(GISCO: CIEU)- Climate interpolated
Abstract	Long term average interpolated monthly data for a grid of 50 x 50 km covering Europe and Maghreb (average period 1975 - 1999). The monthly data have been recalculated from long term average daily data. The majority of the original observations data originates from around 1500 meteorological stations across European continent, Maghreb countries and Turkey. The Observations at station level are <b>not</b> available in the database, only spatially interpolated data are.
Metadata source	GISCO
Documentation	There is no relevant information available
<b>History dataset</b>	
History	<p>The interpolated climate data are extracted from the MARS database. The MARS meteorological database contains daily meteorological data spatially interpolated on a 50 x 50 grid-cell. The data from the 1500 meteorological observations at stations is received via the Global Telecommunication System (GTS) of the World Meteorological Organisation (WMO).</p> <p><u>Data processing:</u></p> <ul style="list-style-type: none"> <li>• The whole area of Pan Europe and the Magreb is divided into grid-cells of 50 x 50 km. Each "GRID" cell is geo-referenced in Latitude/Longitude into Lambert Azimuth projection system.</li> <li>• The meteorological parameters are spatially interpolated into the GRID system (i.e. each cell contains a set of interpolated meteorological parameters).</li> <li>• The interpolation procedure consists of selecting for each grid the best combination of surrounding available meteorological stations, the grading being a function of distance to the grid, spatial distribution of stations around the grid, distance to nearest coastline, altitude difference and climatic barrier.</li> <li>• Then in performing for each relevant parameter the average of the observations from the stations, except for precipitation which is taken from the most suitable station.</li> </ul> <p><u>Aggregating daily climate data to monthly data:</u></p> <p>The original MARS daily climate data consists of daily weather parameters averaged during a long period (1975 to present). For each grid the average was calculated on all years of the archive (from 1975 to last full year) on a Julian day number day basis (366 days). The following meteorological parameters have been available on a daily level:</p> <ul style="list-style-type: none"> <li>• Absolute minimum temperature</li> <li>• Average minimum temperature</li> <li>• Absolute maximum temperature</li> <li>• Sum of precipitation</li> <li>• Sum of potential evaporation</li> <li>• Sum of global radiation</li> </ul> <p>The daily averaged information is kept in an Oracle database. The monthly parameters have been calculated, exported to INFO files and have been implemented as regions subclasses in the grid cell coverage. Regions have been created only for those grid cell where values are available for every day of a year (number of days = 366).</p>

<b>Dataset Identification</b>	
Keywords	Climate, temperature, precipitation, evaporation, radiation
Maintenance	Monthly: Aggregated daily average values from 1975 to present
Scale	50km grids
Restrictions	When using this dataset, it should be bibliographically referred to as 'European interpolated climate data'
<b>Spatial Information</b>	
Coordinate system	LAEA
Extent	The data covers in principle the geographical extent of Europe and coastal zones of the north-African countries Morocco, Algeria and all of Tunisia. Ireland and Great Britain are covered; the grid does not cover other islands in the Atlantic Ocean. In particular, the EU territories of Shetland, the Canary Islands, Madeira and the Azores are missing, as well as Iceland and the Faeroe Islands.
Temporal coverage	No information available
Objects/attributes	The following parameters are shown for each month: <ul style="list-style-type: none"> <li>• Absolute minimum temperature</li> <li>• Average minimum temperature</li> <li>• Absolute maximum temperature</li> <li>• Sum of precipitation</li> <li>• Sum of potential evaporation</li> <li>• Sum of global radiation</li> </ul>
<b>Distribution information</b>	
Copyright	© European Communities, 1995-2001
Distributor	JRC via MARS project
Availability	Data before 31/12/2001 are available without registration. For other data you have to be granted for access to the extranet via registration on <a href="http://www.marsop.info/">http://www.marsop.info/</a>
Format	ARC/INFO + supporting .txt and INFO files
On-line access	<a href="http://www.marsop.info/">http://www.marsop.info/</a>

### *Climate CRU database (high resolution climate data)*

<b>General Information</b>	
Year / Edition	2003
Title of content	CRU TS 1.2 data-set
Abstract	The CRU TS 1.2 data-set comprises 1200 monthly grids of observed climate, for the period 1901-2000 for 5 climate variables: cloud cover, precipitation, DTR, temperature, vapor pressure
Metadata source	Via CRU website <a href="http://www.cru.uea.ac.uk/">http://www.cru.uea.ac.uk/</a>
Documentation	Reference documentation downloadable from website
<b>History dataset</b>	
History	The Climatic Research Unit (CRU) of the University of East Anglia, UK, is widely recognised as one of the world's leading institutions concerned with the study of natural and anthropogenic climate change. Together with the Tyndall Centre for Climate Change it offers several high-resolution European and global climate data sets on their website. There are data sets that give the average climate in the recent past, i.e. climatology, data sets that offer time-series and data sets that offer scenarios of possible futures climates. Furthermore, climate data have been averaged on a country basis to allow international comparison made in conjunction with socio-economic data.
<b>Dataset Identification</b>	
Maintenance	Continuously
Scale	10'

# Map 7: Climate

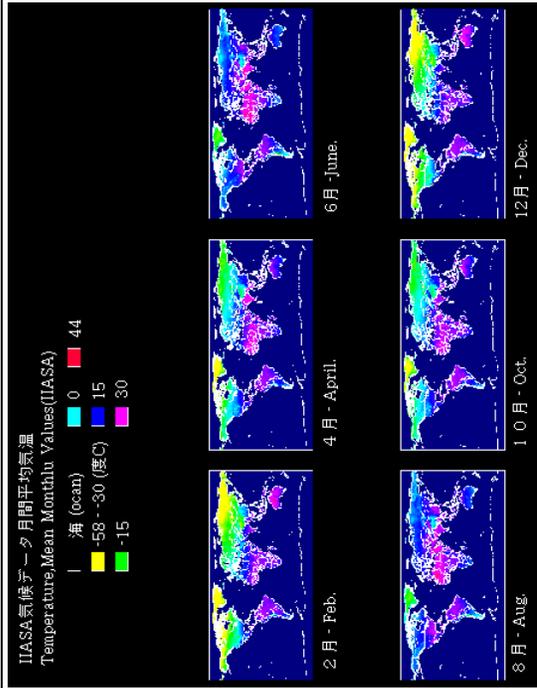


Fig 7.1 IASA Climate database: Temperature, mean monthly values

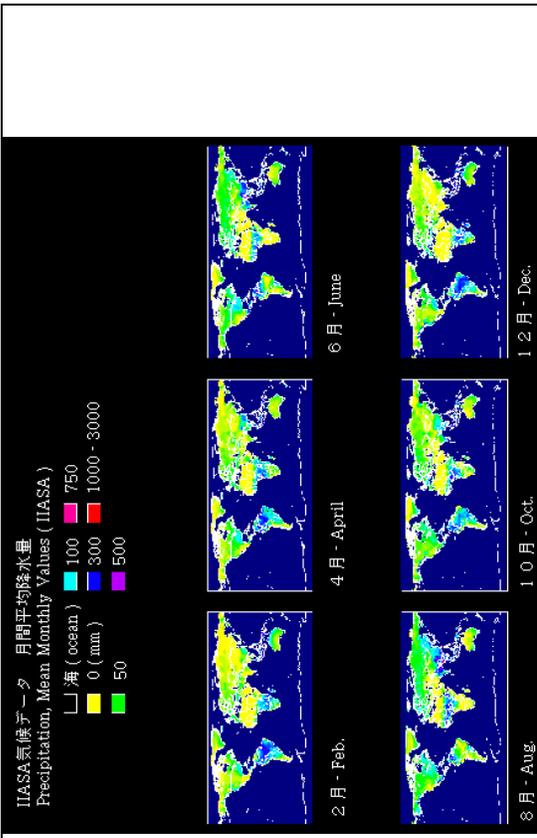


Fig 7.2 IASA Climate database: Precipitation, mean monthly values

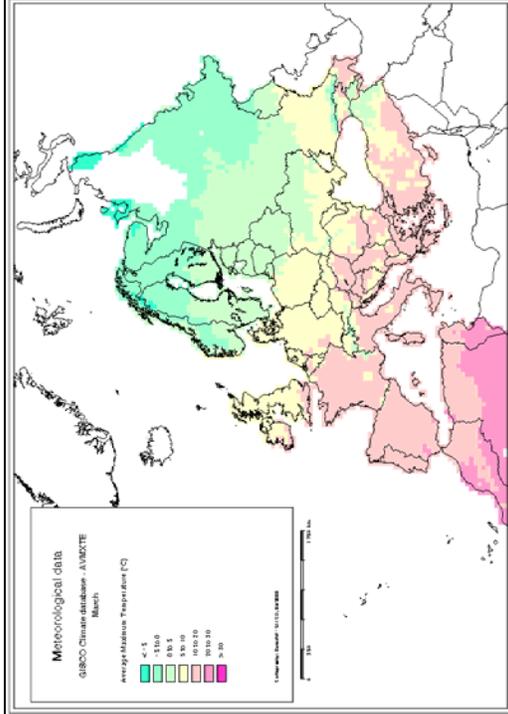


Fig 7.3 Meteorological database: European interpolated climate data

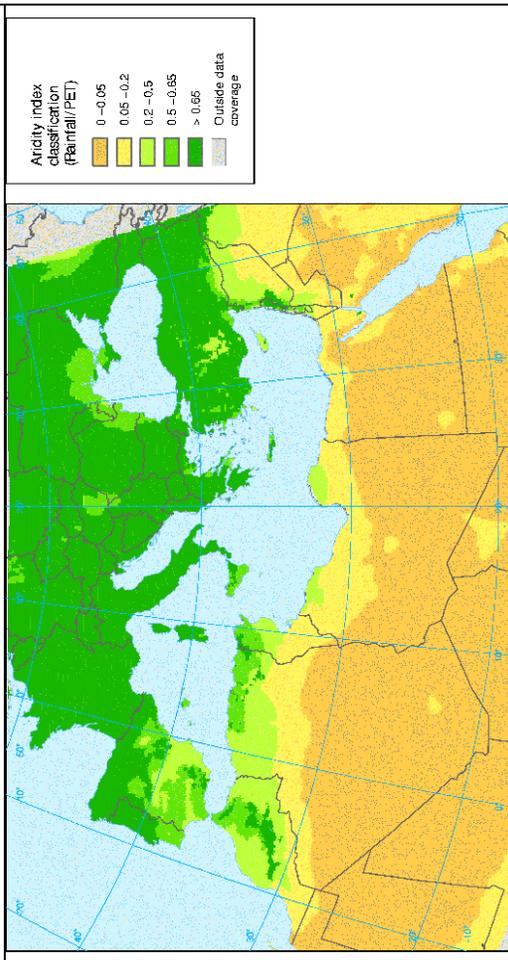


Fig 7.4 Climate sensitivity

Restrictions	The various datasets on the CRU website are provided for all to use, provided the sources are acknowledged.					
<b>Spatial Information</b>						
Coordinate system	Various					
Extent	European land surface					
Temporal coverage	Monthly 1901-2000					
Objects/attributes	Examples see table below					
High resolution gridded datasets available at CRU:						
Data-set	Space	Time	Variety	Variables	Reference	
CRU CL 1.0	0.5°	1961-1990	Climatology	pre, wet, tmp, dtr, vap, spc, cld, frs, wnd	New et al, 1999	
CRU CL 2.0	10'	1961-1990	Climatology	pre, wet, tmp, dtr, rhm, ssh, frs, wnd	New et al, 2002	
CRU CL 2.1	10'	1961-1990	Climatology	cld, vap	Mitchell et al, 2003	
CRU TS 1.0	0.5°	1901-1995	Time-series	pre, tmp, dtr, wet, vap, cld, frs	New et al, 2000	
CRU TS 1.1	0.5°	1996-1998	Time-series	pre, tmp	New et al, 2000; extended	
CRU TS 1.2	10' Europe	1901-2000	Time-series	pre, tmp, dtr, vap, cld	Mitchell et al, 2003	
CRU TS 2.0	0.5°	1901-2000	Time-series	pre, tmp, dtr, vap, cld	Mitchell et al, 2003	
TYN SC 1.0	10' Europe	2001-2100	Scenarios	pre, tmp, dtr, vap, cld	Mitchell et al, 2003	
TYN SC 2.0	0.5°	2001-2100	Scenarios	pre, tmp, dtr, vap, cld	Mitchell et al, 2003	
TYN CY 1.0	Country	1901-1998	Countries	pre, tmp, dtr, wet, vap, cld, frs	Mitchell et al, 2002	
TYN CY 2.0	Country	2070-2099	Countries	pre, tmp	Mitchell et al, 2002; extended	
<b>Distribution information</b>						
Copyright	Climate Research Unit (CRU)					
Distributors	Various distributors					
Availability	Datasets are managed by a variety of people and projects within CRU. Some are available on-line, others must be requested from the person responsible for them					
Format	Various formats					
On-line available	<a href="http://www.cru.uea.ac.uk/cru/cru.htm">http://www.cru.uea.ac.uk/cru/cru.htm</a>					

### ***Climate Sensitivity***

*(see figure 7.4 for map illustration)*

<b>General Information</b>	
Year / Edition	English version 2: 25/08/2003
Title of content	Aridity index
Abstract	The Climate Sensitivity Index is a part of the Sensitivity Desertification Index (SDI) along with Soil Sensitivity Index and Vegetation Sensitivity Index. Climate quality index: Climate data in DISMED will be based on the aridity index, which requires a harmonized way of computing evapotranspiration, which at present differs among countries. In this respect FMA will be in charge of defining the most suitable algorithm(s) concerning evapotranspiration and the correct time frame, which depends on the available data and on the methodological approach adopted.
Metadata source	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>
Documentation	Desertification Information System for the Mediterranean <a href="http://dismed.eionet.eu.int/">http://dismed.eionet.eu.int/</a>

<b>History dataset</b>	
History	<ul style="list-style-type: none"> <li>Sources: Coast Layer : - ESRI Digital Chart of the World 1:1M Digital Elevation Model : - USGS/EDC GTOPO 30 Rainfall data : - FAOCLIM 2 database (version 2.01) - IPCC CRU Global Climate Dataset 0.5 degrees 1961-90 Mean Monthly Climatology Temperature data : - FAOCLIM 2 database (version 2.01) Penman values : - FAOCLIM 2 database (version 2.01) - Portuguese Meteorological Institute (for Portugal only).</li> <li>Methodology: Aridity Index = P (Yearly mean rainfall) / PET (Yearly mean potential evapotranspiration). Data spatialisation procedures: Rainfall spatialisation procedure: - Kriging interpolation Temperature spatialisation procedure: - Multilinear regression using DEM, Latitude, Longitude and sea distance PET calibration procedure: - monthly calibration of Thornthwaite PET values with Penman-Monteith PET values : kriging interpolation of the ratio between the two estimated PET to obtain 12 correction grids</li> </ul>
<b>Dataset Identification</b>	
Keywords	Climate, DISMED, desertification
Maintenance	No information available
Scale	As Source: grids 250m x 250m
Restrictions	<u>See EEA dataservice- terms of use</u>
<b>Spatial Information</b>	
Coordinate system	LAEA
Extent	Pan Europe (except Northern countries), North Africa and Middle East.
Temporal coverage	Structural analysis 1961-1990.
Objects/attributes	Unit: Rainfall/PET (yearly mean rainfall / yearly mean potential evapotranspiration)
<b>Distribution information</b>	
Copyright	Owners source datasets
Technical Producer	Applied Meteorology Foundation (FMA) <a href="http://www.ibimet.cnr.it/programmi/Pcase/index.htm">http://www.ibimet.cnr.it/programmi/Pcase/index.htm</a>
Creator	Desertification Information System for the Mediterranean (DISMED) <a href="http://dismed.eionet.eu.int/">http://dismed.eionet.eu.int/</a>
Distributor	European Environment Agency - Data service
Availability	Available via download, no password
Format	Zipped ArcView GIS Grid file in decimal degrees.
On-line delivery	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>

### 3.8 Hydrography

Inspire:

Representation of all main hydrographical elements, both natural and artificial: Rivers, lakes, transitional waters, reservoirs, channels.

Hydrographical network: rivers, lakes and other hydrographical features are connected into a network, making flow analysis possible.

Is one of the basic components for cartographic presentation and used by nearly all GIS users at all levels. Is being used in environmental assessment and monitoring in estimation of water resources, pollution monitoring, wastewater cleaning estimation, species migration and biodiversity assessment, the hydrological elements being habitats. Inland fisheries management. Hazardous waste disposal sites. Land use planning/management, recreation planning and management, transport routes. Assessment of flow patterns of particles and pollutants must be based on high quality hydrographical networks.

See EuroGlobalMap, EuroRegionalMap, Bartholomew, DCW, ESRI ArcWorld: chapter 3.1

Datasets internally used by the European commission (GISCO Database)

Description	GISCO ref. code	Year	Scale	Extent	Source
Coastlines	EUCL	2001	1:1.000.000	PAN-Europe	GISCO (ref)
Lakes	EULK	2001	1:1.000.000	PAN-Europe	GISCO (ref)
Drainage pattern	WPEU1M	1999	1:1.000.000	PAN-Europe	GISCO (ref) See Bartholomew
Lakes/ waterbodies	WPEU1MLK	1999	1:1.000.000	PAN-Europe	GISCO (ref) See Bartholomew
Rivers/Lakes	WPEU3M	1996	1: 3.000.000	PAN-Europe	GISCO (ref) See ArcWorld-ESRI
Inland waterways eligible to Trans Europe. Networks prog	WPEUTNV2	Version 2	1:3.000.000	PAN-Europe	GISCO (ref) See Bartholomew See ArcWorld/DCW
Inland navigable waterways Europe	WPEUTNV1M	1996	1:1.000.000	PAN-Europe	GISCO (ref)

Datasets not fully described yet by this report

Dataset name	Content	Year	Scale	Extent	Source
Catchments database	Contains results of a modeling of elevation data into delineations	Still under process	1 km resolution	Pan-Europe	JRC
Rivers and catchments	database of rivers and catchments	Still under construction	1:250.000	Pan-Europe	JRC
Hydro1k	DEM, derived flow directions, flow accumulations, slope, aspect, and a compound topographic (wetness) index (raster), derived streamlines and basins (vector). Derived from GTOPO30.	1997	1 km resolution	Global	USGS All layers downloadable

### 3.8.1 Hydrography

#### **Water Pattern**

(see figure 8.1 for map illustration)

<b>General Information</b>	
Year / Edition	Version 2
Title of content	WPeu10M
Abstract	Most important rivers and lakes. 1100 river segments and 330 lakes. The dataset has limited attribute data without normalisation. This means, for example, that although there is an attribute <i>WPRVNM</i> , containing the river name, this item is only available for the most important rivers and lakes. Besides this, there is no consistency regarding the spelling of the names.
Metadata source	<u>The GISCO Database Manual.</u>
<b>History dataset</b>	
History	Digitised from various sources
<b>Dataset Identification</b>	
Keywords	Rivers, lakes
Maintenance	No information available
Scale	1:10.000.000 (resolution 5000 m)
Restrictions	<u>See the restrictions in the GISCO Database Manual</u> This dataset should be referred to as 'Water Pattern Europe, scale 10 million, version 2'.
<b>Spatial Information</b>	
Coordinate system	LAEA
Extent	Pan-Europe
Temporal coverage	Different sources
Objects/attributes	WPRVNM: Water Pattern RiVer NaMe, name of river WPLKNM: Water Pattern LaKe NaMe, name of lake
<b>Distribution information</b>	
Copyright	CEC - Eurostat/GISCO
Distributor	Eurostat Data Shop
Availability	Via GISCO (CD)
Format	ARC/INFO export files
Ordering process	Requests for Data GISCO Database Manual should be sent to Eurostat Data Shop.

### 3.8.2 Water catchments

#### Inspire:

Synonymous with river basins. As defined in WDF: art 2, annex I, ii): River basin means the area of land from which all surface run-off flows through a sequence of streams, rivers and, possibly, lakes into the sea at a single river mouth, estuary or delta. Sub-basin means the area of land from which all surface run-off flows through a series of streams, rivers and, possibly, lakes to a particular point in a water course (normally a lake or a river confluence)

Is used in assessment of water flow and flooding, flow of contaminants, erosion monitoring.

Catchments are used to create WFD River Basin Management Districts, but do not have full correspondence in boundaries.

### ***European rivers and catchments - ERICA***

*(see figure 8.3 for map illustration)*

<b>General Information</b>	
Year / Edition	1998
Title of content	ERICA-1M, WS
Abstract	The European rivers and catchments database (ERICA Version 1998) at scale 1:1.000.000 contains over 1500 catchments to river confluences for the largest rivers in EEA member states.
Metadata source	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>
Documentation	Report ERICA: European Rivers and Catchments via EEA website (This report is accompanied by an ERICA-CD that holds both digital databases.)
<b>History dataset</b>	
History	The dataset was developed by EEA to promote analysis using practical hydrological units. For methodology download Erica report via EEA site.
<b>Dataset Identification</b>	
Extra keywords	Geographic, pattern, watershed, waterway, river, lake, Natlan
Maintenance	Last update WS 21/09/2000
Scale	1:1.000.000
Restrictions	Use of data on rivers and lakes is restricted to internal EEA use by copyright agreement with the owners, Bartholomew. Catchments boundaries are not subject to this agreement. For more details see section 2.10 'Copyright and licensing' in download PDF-files on the original dataset page.
<b>Spatial Information</b>	
Coordinate system	LAEA
Extent	EU 15, EFTA 4, Andorra, Bulgaria, Czech Republic, Macedonia- the Former Yugoslav Republic of, Turkey (only partly covered)
Temporal coverage	Regular updates
Objects/attributes	Layer WS (watersheds, polygon coverage) Layer WP (Waterpattern, line coverage) Layer CN (canals, line coverage) Layer LK (lakes and reservoirs, polygon coverage) Layer CL (coast line, line coverage) Layer IB (international boundary, line coverage)
<b>Distribution information</b>	
Copyright	Produced by the UK's CEH Institute of Hydrology
Creators	EEA- Collins Bartholomew
Distributor	European Environment Agency - Data service
Availability	Layers WS and Erica available via download, no password
Format	Items for the polygon attribute table of layer WS Water catchments in ARC/INFO export format (vector)
On-line delivery	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>

### ***Water catchments Pan-Europe 1: 1.000.000***

*(see figure 8.2 for map illustration)*

<b>General Information</b>	
Year / Edition	2001
Title of content	WSEU1M
Abstract	Boundaries of major European drainage basins 240 drainage basins defined.
Metadata source	<u>The GISCO Database Manual.</u>
<b>History dataset</b>	
History	The dataset WSEU1M is based on the drainage layer of the Euro 1million

		dataset, which was obtained from Bartholomew, UK. For areas outside the coverage of the dataset the Digital Chart of the World data was used. The drainage layer was combined with a DEM of 1km grid spacing, as contained in the Eurostat GISCO Database Manual. The new watersheds were calculated using a stream burning method, where by the calculated drainage pattern is forced to follow existing rivers. The network was checked for outlets, connecting drainage systems and geography. Independent data was used to verify the general correctness of the modifications made.
<b>Dataset Identification</b>		
Maintenance		The dataset WSEU1M was created in May 2000. The first major up-date occurred in November 2000. The present version was processed in June 2001
Scale		1:1.000.000 (resolution 1000m)
Restrictions		<u>See the restrictions in the GISCO Database Manual</u> When using this dataset, it should be referred to as 'Water Sheds Pan Europe, scale 10 million'.
<b>Spatial Information</b>		
Coordinate system		LAEA
Extent		Pan-Europe
Temporal coverage		
Objects/attributes		The attribute information in the dataset contains the size of the catchments in km <sup>2</sup> . Added are catchment identifier codes, which link to attribute tables.
<b>Distribution information</b>		
Copyright		CEC, Eurostat/GISCO
Distributor		Eurostat Data Shop
Availability		via GISCO (CD)
Format		ARC/INFO polygon and line topology. This dataset also contains a grid.
Ordering process		Requests for Data GISCO Database Manual should be sent to Eurostat Data Shop.

### ***Watershed boundaries Pan-Europe 1: 3.000.000***

<b>General Information</b>		
Year / Edition		1999
Title of content		WSEU3M
Abstract		Boundaries of major European drainage basins 240 drainage basins defined. The dataset WSEU3M was updated in 1999. The number of water sheds was extended, and names were added and corrected where necessary. The changes were mainly located within EU15.
Metadata source		<u>The GISCO Database Manual.</u>
<b>History dataset</b>		
History		Dataset WSEU3M : Original source WHO (based on WSEU10M), updates and corrections (in 1999) were performed by using the GISCO digital elevation model and atlases.
<b>Dataset Identification</b>		
Maintenance		Last update 1999
Scale		1:3.000.000 (resolution 1500 m)
Restrictions		<u>See the restrictions in the GISCO Database Manual</u> When using this dataset, it should be referred to as 'Water Sheds Pan Europe, scale 3 million'.
<b>Spatial Information</b>		
Coordinate system		LAEA
Extent		Pan-Europe
Temporal coverage		Different sources
Objects/attributes		Items of WSEU3M

	<ul style="list-style-type: none"> <li>• WSBNLV: Water Shed BouNdary LeVel</li> <li>• WSCD: WaterShed CoDe</li> <li>• WSNM: WaterShed NaMe</li> <li>• WSCDL0: WaterShed CoDe Level 0; Indicating the sea drainage basin to which watershed belongs</li> </ul>
<b>Distribution information</b>	
Copyright	CEC, Eurostat/GISCO modified from various sources
Distributor	Eurostat Data Shop
Availability	via GISCO (CD)
Format	ARC/INFO polygon topology
Ordering process	Requests for Data GISCO Database Manual should be sent to Eurostat Data Shop.

### ***Watershed boundaries Pan-Europe 1: 10.000.000***

<b>General Information</b>	
Year / Edition	Different sources
Title of content	WSEU10M
Abstract	Boundaries of major European drainage basins 190 drainage basins defined. <i>WSEU10M</i> and <i>WSEU3M</i> : Both datasets contain the same attribute information. The only difference between the two datasets is the scale of the geographic data. The available attribute information for the watersheds data contains the sea drainage basin and the name of river catchment area
Metadata source	<u>The GISCO Database Manual.</u>
<b>History dataset</b>	
History	Dataset <i>WSEU10M</i> : Digitised from various sources.
<b>Dataset Identification</b>	
Maintenance	No information available
Scale	1:10.000.000 (resolution 5000m)
Restrictions	<u>See the restrictions in the GISCO Database Manual</u> When using this dataset, it should be referred to as 'Water Sheds Pan Europe, scale 10 million'.
<b>Spatial Information</b>	
Coordinate system	LAEA
Extent	Pan-Europe
Temporal coverage	Different sources
Objects/attributes	Items of WSEU10M <ul style="list-style-type: none"> <li>• WSBNLV: Water Shed BouNdary LeVel</li> <li>• WSCD: WaterShed CoDe</li> <li>• WSNM: WaterShed NaMe</li> <li>• WSCDL0: WaterShed CoDe Level 0; Indicating the sea drainage basin to which watershed belongs</li> </ul>
<b>Distribution information</b>	
Copyright	CEC, Eurostat/GISCO
Distributor	Eurostat Data Shop
Availability	via GISCO (CD)
Format	ARC/INFO polygon topology
Ordering process	Requests for Data GISCO Database Manual should be sent to Eurostat Data Shop.

# Map 8: Hydrography

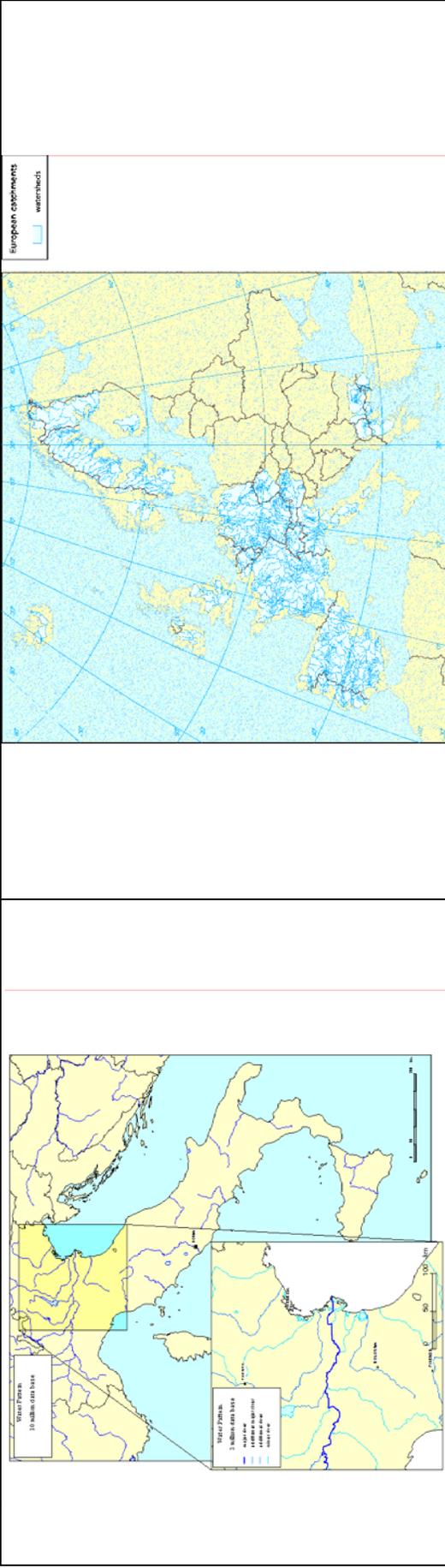


Fig 8.1 Water Pattern 1:10,000,000

Fig 8.2 Water catchments Pan-Europe

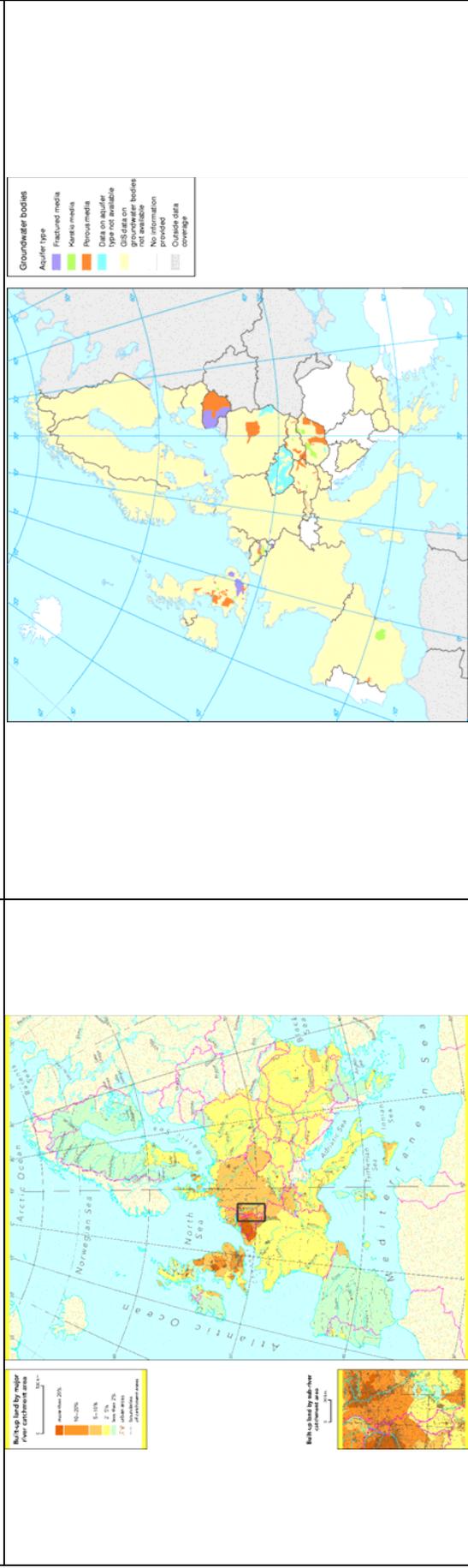


Fig 8.3 Built-up land by major river catchment area (ERICA)

Fig 8.4 Eurowaternet: groundwater bodies

### 3.8.3 Groundwater bodies/aquifers

Inspire:

Groundwater aquifers are areas with significant amounts of groundwater, for human consumption or anthropogenic production. Knowledge about groundwater aquifers is essential when managing areas of multi-purpose, use and where pollution/hazards, in order to secure quality water sources. WFD is requesting data and reporting about groundwater body situation (impact/pressure)

(WFD attributes: annex V – 2.5, VII – 4.2)

Member States shall provide in the river basin management plan a map showing for each groundwater body or groups of groundwater bodies....)

#### ***Eurowaternet Groundwater bodies***

*(see figure 8.4 for map illustration)*

General Information	
Year / Edition	Version 3: data delivery 31/03/03
Title of content	Waterbase: groundwater bodies
Abstract	<p>Waterbase-Groundwater Bodies (730 records): The Bodies table contains the physical characteristics of the Eurowaternet groundwater bodies. Each groundwater body has been assigned a unique Waterbase identifier (WaterbaseID) which can be used to link the Bodies with their respective Quality and Pressure data.</p> <p>Reference Waterbase- groundwater bodies: Reference Waterbase is the EEA's database on the status and quality of Europe's rivers, lakes and groundwater bodies. The data contained in this database can be accessed through a series of web pages which form part of the "EEA Data Service's" public web site. Pre-defined applications have been designed to assist the user to extract and analyze the data in a format that is both helpful and meaningful.</p>
Metadata source	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>
Documentation	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>
History dataset	
History	<p>Reference Waterbase contains timely, reliable and policy-relevant data collected from EEA member countries through the <u>Eurowaternet</u> (EWN) process. EWN selects validated, mostly aggregated, monitoring data from national databases and ads information on the physical characteristics of the water bodies being monitored and on the pressures potentially affecting water quality. Although many countries make their highly aggregated data available over the Internet, the level and form of aggregation often varies from country to country making detailed quantitative comparisons difficult. The added value of Reference Waterbase is that data collected through the EWN process are from statistically stratified monitoring stations and groundwater bodies and are comparable at European level. These data are primarily used in the production of the EEA's <u>indicator-based fact sheets</u>.</p> <p>The data in Reference Waterbase are sub-samples of national data assembled for the purpose of providing comparable indicators of pressures, state and impact of waters on a Europe-wide scale and the datasets are not intended for assessing compliance with any European Directive or any other legal instrument. Information on the national and sub-national scales should be sought from other sources.</p>
Dataset Identification	
Keywords	Waterbase, Eurowaternet, ETC/WTR, groundwater body.
Maintenance	Continuously

	Scale	Non applicable
	Restrictions	Data disclaimer: the data in Waterbase are sub-samples of national data assembled for the purpose of providing comparable indicators of pressures, state and impact of waters on a Europe-wide scale and the datasets are not intended for assessing compliance with any European Directive or any other legal instrument. Information on the national and sub-national scales should be sought from other sources
Spatial Information		
	Coordinate system	LAEA
	Extent	EU 15 (with the exception of Luxembourg, Portugal) , EFTA 4 (with the exception of Iceland, Switzerland) , AC 13 (with the exception of Cyprus, Malta, Romania, Turkey) , Bosnia and Herzegovina, Macedonia- the Former Yugoslav Republic of
	Temporal coverage	Range of years available: 1960 – 2002: last update 05/04/2004
	Objects/attributes	Unit: DO (Dissolved Oxygen), Ammonium, Nitrite, Nitrate: mg/l Simazine, Lindane, Atrazine: µg/l
Distribution information		
	Copyright	Member countries- Eurowaternet
	Creator	ETC/WTR: The European Topic Centre on Water <a href="http://water.eionet.eu.int/">http://water.eionet.eu.int/</a>
	Distributor	European Environment Agency
	Availability	EEA members via Eurowaternet. Data download at no costs
	Format	Data in ASCII delimited, Dbase IV, Access, and Excel.
	On-line delivery	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>

### 3.9 Ocean and seas

#### 3.9.1 Sea regions

##### Inspire:

Seas and saline water bodies divided into regions and sub-regions. Each region with common characteristics, concerning water flow/ circulation, adjacent river catchments, bio-chemical or temperature of water. Detailed region at regional level. Based on scientific criteria.

The WFD classes of surface saline water bodies, transitional waters, and coastal waters to some extent coincide with sea regions, but have boundaries based on administrative/ reporting criteria, not scientific definitions.

### 3.10 Biota/biodiversity

#### 3.10.1 Biomes/ Bio-ecological regions

Inspire:

Bio-geographical regions show the extent of areas with common characteristics, usually based on climatic, topographic and geo-botanical information. Thus the bio-geographical regions show areas with relatively homogeneous ecological conditions.

The data are used for comparisons and assessments of biodiversity and conservation. Includes both data termed bio-geographical regions and ecological regions. WFD is referring to the use of ecological regions, Natura2000 to bio-geographical regions. DMEER: Potential vegetation: Harmonised pan-European data exists.

Datasets not fully described yet by this report

Dataset name	Content	Year	Scale	Extent	Source
BIOME classification	The map was realized by application of a supervised decision tree classifier on the 1km <sup>2</sup> – resolution imagery of SPOT-Vegetation of the year 1998/99.	1998-1999	1 km resolution	Global	Vito, Belgium

#### ***Biogeographical regions, Europe 2001***

(see figure 9.1 for map illustration)

<b>General Information</b>	
Year / Edition	July 2002
Title of content	Biogeo_01 or BRME (Biogeographical Regions Map of Europe)
Abstract	The bio-geographic regions dataset contains the official delineations used in the Habitats Directive (92/43/EEC) and for the EMERALD Network set up under the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention).
Metadata source	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>
Documentation	In .pdf format: Basic principles of the Biogeographical Regions Map creation and overview of its development.
<b>History dataset</b>	
History	<p>In the absence of a clear definition of the Biogeographical Regions mentioned in the text of the Habitats Directive, the Scientific Working Group (SWG) of the directive agreed upon the following principles for the creation of the Biogeographical Regions Map:</p> <ul style="list-style-type: none"> <li>• Only regions related to the terms mentioned in art. 1 c (iii) are to be mapped; as a consequence no ‘sub-classes’ are considered such as ‘sub-continental, sub-alpine, hemi-boreal, etc.</li> <li>• The mapping procedure is based on an interpretation of the digital version of the ‘Map of Natural Vegetation of the member countries of the European Community and of the Council of Europe’ (Noirfalise A., 1987).</li> <li>• The final map is only to be used at a small scale (<math>\pm</math> 1:10.000.000 or smaller)</li> <li>• As a consequence the basic background natural vegetation map (scale 1:3.000.000) needs to be generalized</li> <li>• Generalization is performed by removing smaller ‘islands’ of different regions within a major region and by attributing the ‘azonal units’ of the map to the neighbouring Biogeographical Region.</li> </ul>
<b>Dataset Identification</b>	

Keywords	Macaronesia, Mediterranean, Pannonian, Steppic, Natlan, ETC/NPB, DISMED, biogeographical, region, Alpine, Anatolian, Arctic, Atlantic, Black Sea, Boreal, Continental, geography
Maintenance	No information available
Scale	1:10.000.000
Restrictions	<u>See EEA dataservice- terms of use</u>
<b>Spatial Information</b>	
Coordinate system	LAEA
Extent	EU 25, EFTA 4, AC 3, Albania, Andorra, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Croatia, FR Yugoslavia, Georgia, Kazakhstan, Macedonia-the Former Yugoslav Republic of, Moldova- Republic of, Monaco, Russian Federation, San Marino, Ukraine (Pan European coverage (Russian Federation covered to Ural. Parts of Georgia, Armenia, Azerbaijan and Kazakhstan)
Objects/attributes	BGCD: Bio-geographic Region code Name: Name of Bio-geographic Region
<b>Distribution information</b>	
Source	European Topic Centre on Nature Protection and Biodiversity (ETC-NPB)
Distributor	European Environment Agency Data service
Availability	Available via download, no password
Format	Coverage in ARC/INFO Export file, tables in ASCII Delimited, Dbase IV, Access 2000 or Excel.
On-line delivery	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>

### ***Biogeographical regions, Europe 1998***

<b>General Information</b>	
Year / Edition	1998
Title of content	Biogeo_v4pan (= GISCO BGEC)
Abstract	The bio-geographic regions dataset (Version 1998) contains the official delineations used in the Habitats Directive (92/43/EEC) and for the EMERALD Network set up under the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention). The current dataset contains the Bio-geographic Regions for the whole of Europe. Applied results on Biodiversity change: <ul style="list-style-type: none"> <li>• Regional predominant pressures on coniferous forest</li> <li>• Regional predominant pressures on dry grassland</li> <li>• Regional predominant pressures on wet grassland</li> <li>• Fragmentation by major roads of large forest complexes</li> <li>• Agricultural intensification of grassland</li> <li>• Agricultural abandonment of grassland</li> <li>• EUNIS Habitat types per Biogeographical Region</li> </ul>
Metadata source	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>
Documentation	-Natural Vegetation map of Europe, 1987 CEC and Council of Europe, 1987. ISBN 42-871-1047-6 -Bohn, U, 1996: Natürliche Vegetation Europas. Map. Bundesamt für Naturschutz Bonn, Germany
<b>History dataset</b>	
History	The map of Bio-geographic Regions was developed to be a tool for assessment of the NATURA 2000 Network of EU (EU Council Directive 92/43/EEC). Bio-geographic Regions (version 4) was delivered by ETC/NC in May 1998. The original data was in MAPinfo format. It was converted to ARC/INFO format by ETC/LC. There have been no quality checks or improvements on

		<p>the data (i.e. some polygons have no label).</p> <p>The current dataset contains the Bio-geographic Regions for the whole of Europe. To the originally 5 regions (Alpine, Atlantic, Continental, Macaronesian and Mediterranean) the Boreal region was added when Finland and Sweden joined the European Union. The resulting EU15 map of Bio-geographic Regions was based on the map of natural vegetation (The European Commission and The Council of Europe, 1987) taking climatic types into account and eliminating edaphic vegetation zones and isolated islands. It is the first time a geographical frame that differs from administrative boundaries was recognized for use for official evaluation of sites. The current Pan-European Map of Bio-geographic Regions is an extension of the EU15 map by the Council of Europe (Secretariat of the Bern Convention) to be used for the setting up of the Emerald Network. The non-EU part of the map is based on an aggregation of the units of the Pan-European Map of Natural Vegetation (Bohn, 1996). Only 5 regions were added to the EU15 map (Anatolian, Arctic, Pannonian, Black Sea and Steppic). The same interpretation principles were used as for the EU15 map. It has an equivalent objective of site assessment and reporting on a pan-European scale. (The Council of Europe, 1997)</p>
<b>Dataset Identification</b>		
	Maintenance	No information available
	Scale	1:10.000.000
	Restrictions	<u>See EEA dataservice- terms of use</u>
<b>Spatial Information</b>		
	Coordinate system	LAEA
	Extent	Pan-Europe
	Attributes	BGCD: Bio-geographic Region code Name: Name of Bio-geographic Region
<b>Distribution information</b>		
	Source	European Topic Centre on Nature Protection and Biodiversity
	Distributor	European Environment Agency - Data service
	Availability	Available via download, no password
	Format	The dataset is an ARC/INFO shape file with a single attribute table
	On-line delivery	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>

### ***Digital Map of European Ecological Regions***

*(see figure 9.3 for map illustration)*

<b>General Information</b>		
	Year / Edition	June 2000 (last upload 21/09/2000)
	Title of content	DMEER
	Abstract	The Digital Map of European Ecological Regions DMEER- delineates and describes ecological distinct areas in Europe, on the basis of updated knowledge of climatic, topographic and geobotanical European data, together with the judgment of a large team of experts from several European nature related Institutions and the WWF. The objective of the map of ecological regions in Europe is to show the extent of areas with relatively homogeneous ecological conditions, within which, comparisons and assessments of different expressions of biodiversity are meaningful.
	Metadata source	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>
	Documentation	- Dmeer_report.doc - Map of Natural Vegetation of Europe (Bonn, 1994) - Topographic and climate data –The European Land (Bunce, 1995)
<b>History dataset</b>		
	History	The DMEER maps draw on information sources of potential vegetation map of Natural Vegetation of Europe (Bonn, 1994) - and topographic and climate

		data The European Land (Bunce, 1995). The cluster analysis model was used to place similar samples into clusters, which are arranged in a hierarchical treelike structure called a dendrogram. These clusters or classes of sorting objects represent different ecological regions, and depending on their position on the dendrogram, or the level of aggregation, they represent homogenous sub-ecological regions, inside the primary ecological regions. Subsequently, an agreement between EEA, ETC/NC and WWF to come to two compatible maps of ecological regions for Europe, by EEA and by WWF, made necessary a series of compromises from both initiatives comprise the acceptance of DMEER lines and units on the WWF map, and the acceptance of WWF units on DMEER.
<b>Dataset Identification</b>		
Keywords		Natlan, DISMED, landcover
Maintenance		No information available
Scale		1: 2.500.000
Restrictions		<a href="#">See EEA dataservice- terms of use</a>
<b>Spatial Information</b>		
Coordinate system		ALBERS- CLARKE1866
Extent		EU 25, EFTA 4, AC 3, Albania, Andorra, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Croatia, FR Yugoslavia, Georgia, Kazakhstan, Macedonia-the Former Yugoslav Republic of, Moldova- Republic of, Russian Federation, Ukraine. Turkey and Russian Federation are partly covered. Israel and Lebanon are covered. Small parts of Iran, Syria, Jordan and Egypt are covered.
Objects/attributes		
<b>Distribution information</b>		
Copyright		Owners source datasets
Creator		The European Topic Centre on Nature Protection and Biodiversity
Distributor		European Environment Agency - Data service
Availability		Available via download, no password
Format		ARC/INFO Export file
On-line delivery		Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>

### ***Ecoregions for rivers and lakes***

*(see figure 9.2 for map illustration)*

<b>General Information</b>		
Year / Edition		07/01/2004
Title of content		Ecoregions
Abstract		Ecoregions are based on fauna living in European inland waters.
Metadata source		Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>
Documentation		The data was published as a map in Annex XI, Water Framework Directive, in Official Journal of the European Communities, L327/71, 22-02-2000. <a href="http://europa.eu.int/eur-lex/en/archive/2000/1_32720001222en.html">http://europa.eu.int/eur-lex/en/archive/2000/1_32720001222en.html</a>
<b>History dataset</b>		
History		The outline made by J. Illies (1978) on Limnofauna Europaea (G. Fischer Verlag, Stuttgart) has been used as a basis for the Ecoregions.
<b>Dataset Identification</b>		
Keywords		Water, river, lake

Maintenance	No information available
Scale	No information available
Restrictions	<u>See EEA dataservice- terms of use</u>
<b>Spatial Information</b>	
Coordinate system	LAEA
Extent	Pan-Europe excluding Turkey
Objects/attributes	English and French names of ecoregions
<b>Distribution information</b>	
Copyright	European Environment Agency
Distributor	European Environment Agency - Data service
Availability	Available via download, no password
Format	ARC/INFO shapefile
On-line delivery	Via <a href="http://dataservice.cea.eu.int/dataservice/">http://dataservice.cea.eu.int/dataservice/</a>

### ***European Environmental classification***

*(see figure 9.4 for map illustration)*

<b>General Information</b>	
Year / Edition	2004
Title of content	EnC
Abstract	Stratification of Europe into 84 homogeneous regions. Created by a Principal Component Analysis and statistical clustering of climatic and topographic variables. "The Environmental classification of Europe" is appropriate for strategic random sampling for source assessment, measurement of change and modelling. EnC is considered as the most robust and scientifically constructed bio-geographical database available and is independent of individual judgement. The only limitation is that the database does not cover pan-Europe entirely. The EnC is appropriate for strategic random sampling for resource assessment, measurement of change, and modelling. Three levels of aggregation are described to further facilitate analysis within thirteen Environmental Zones that are considered appropriate for summary purposes
Metadata source	Alterra-report 832, ISSN 1566-7197
Documentation	C.A.Mucher, R.G.H. Bunce, R.H.G. Jongman, J.A.Klijn, A.J.M. Koomen, M.J.Metzger and D.M.Wascher, 2003. Identification and characterisation of environments and landscapes in Europe.
<b>History dataset</b>	
History	A first statistical approach, carried out by Jones and Bunce (1985), was followed by a grid based European Land Classification by the Institute for Terrestrial Ecology (ITE) – now Centre for Ecology and Hydrology (CEH) – in 1992 (Bunce et al, 1996a, b and c). The grid size of 0.5° degrees is too coarse for adequate definition at the local level. When more detailed climate data sets became (Mücher et al, 2003) available, a new version has been produced resulting in an eighty-four class Environmental Classification of Europe (EnC), as shown in Figure 3.2. The EnC has been constructed by Principal Component Analysis (PCA) and statistical clustering of climatic and topographic variables.
<b>Dataset Identification</b>	
Keywords	Environment, Landscapes, Climate, Classification.
Maintenance	One edition
Scale	Km <sup>2</sup> grid
Restrictions	Only for non-commercial use
<b>Spatial Information</b>	
Coordinate system	LAEA
Extent	The classification extends from 11° west to 32° east and from 34° north to 72°

	north.
Objects/attributes	The Environmental Classification of Europe in eighty-four classes. Where the size of the class permits, the individual classes are labelled within the main Environmental Zones.
<b>Distribution information</b>	
Copyright	Alterra
Creator	Department of Plant Production of Wageningen University and Alterra were involved in the production of the environmental database
Distributor	Marc Metzger, Alterra, Wageningen UR, The Netherlands
Availability	The EnC is currently used within several EU project and is available for non-commercial use by contacting <a href="mailto:Marc.Metzger@wur.nl">Marc Metzger</a> (Marc.Metzger@wur.nl)
Format	ARC/INFO shape file

### 3.10.2 Vegetation

Inspire:

The determination of structure and composition of the vegetation is based essentially on stands of ecosystems and their correlation with particular site conditions. Vegetation can be mapped both as existing vegetation and potential vegetation.

The classification of potential vegetation depicts the potential distribution of the main natural plant communities. The mapping is based essentially on remaining stands of natural or near-natural ecosystems corresponding to the actual climatic and edaphic conditions.

The classification of natural vegetation can be used to interpret ecological/ edaphic/ temperature conditions, environmental pressure and biodiversity modeling.

Used in assessment at European or regional/ local level, on natural production suitability, ecology, changes. Scattered data with a variety of classification systems exist at lower levels

Datasets not fully described yet by this report

Dataset name	Content	Year	Scale	Extent	Source
Maximum NDVI compositing	Available every 10 days, based on SPOT-Vegetation images	Since April 1998	1 km resolution	Global	Vito, Belgium

### *Map of the Natural Vegetation of Europe*

(see figure 10.1 for map illustration)

<b>General Information</b>	
Year / Edition	2003
Title of content	PNV map (Potential Natural Vegetation map) Karte der natürlichen Vegetation Europas / Map of the Natural Vegetation of Europe 1:2.500.000
Abstract	This spatial database contains information on the different potential natural vegetation classes in Europe. The database was produced on a combination of climatic and soil information with expert judgement. More than 100 geobotanists from 31 countries cooperated to produce the map, its legend and the explanatory text. The vector map defines the distribution of plant communities and their complexes, which are adapted to existing climatic and edaphic conditions, excluding, as far as possible, human impact. This map consists of 699 mapping units organised into a hierarchical classification.
Metadata source	Alterra-report 952, ISSN 1566-7197. C.A. Múcher et al. Mapping European Habitats to support the design and implementation of a Pan-European Ecological Network.
Documentation	Map of Natural Vegetation of Europe (Bohn et al.,2003)

		More documentation and information via: <a href="http://www.floraweb.de/informationsnetz/informationsnetz.html?informationsnetz/pnvdatenquellen.html">http://www.floraweb.de/informationsnetz/informationsnetz.html?informationsnetz/pnvdatenquellen.html</a>
<b>History dataset</b>		
	History	Predicting such patterns of potential natural vegetation, whether forest or other plant communities, is not easy because often only fragments remain or replacement vegetation developed to a greater or lesser degree through human influence. For understanding how the landscape of Europe might look, however, the Map is an invaluable tool. It can show how far remnants of more natural vegetation fall short of their potential extent and how they are related spatially, one to another, in isolated islands of biodiversity or in corridors along which migration of species might permit restoration of a more natural character to the landscape. A map of potential natural vegetation can also provide a guide for more ecologically sensitive landscape design.
<b>Dataset Identification</b>		
	Maintenance	One edition
	Scale	1:2.500.000
	Restrictions	Price € 85,-
<b>Spatial Information</b>		
	Coordinate system	No information available
	Extent	Pan-Europe
	Temporal coverage	1979-2003
	Objects/attributes	19 physiognomic-structurally and ecologically characterised formations or formation complexes, of which 14 (A to O) represent the macroclimatic zones in the progression from northern to southern and southeastern Europe and their corresponding altitudinal belts in the mountains. The differentiation and spatial progression of these zones has been determined primarily by the temperature gradient. The last 5 formations (P-U) represent azonal vegetation types marked by dominant edaphic site factors such as saline and wet soils and are modified only secondarily by macroclimatic factors.
<b>Distribution information</b>		
	Copyright	U.Bohn, Institute fur Bundesamt fur Naturschutz. Bonn
	Distributor	BfN, Bonn-Bad Godesberg, GERMANY, 2000-2003
	Producer Cd-Rom	Stephan Hennekens, Alterra, The Netherlands
	Availability	An interactive CD-ROM "Map of the Natural Vegetation of Europe" contains all information – except the General Map at the scale of 1:10 million – relating to the complete printed work published in 2003. The work is comprised of three parts: explanatory text (with CD-ROM), legend and maps, in digital form and in both German and English
	Format	Shapefile, database and application to consult database
	On-line ordering	via <a href="http://www.lv-h.de/bfn/">http://www.lv-h.de/bfn/</a>

# Map 9: Biodiversity

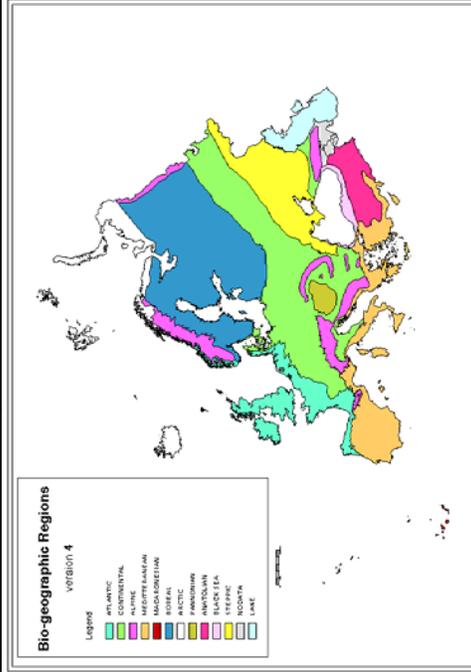


Fig 9.1 Digital Map of European Ecological Regions (Dmeect)

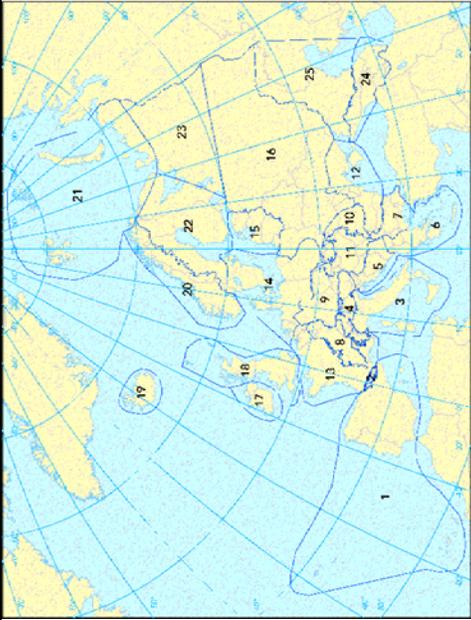


Fig 9.2 Ecoregions for rivers and lakes

**Ecoregions for rivers and lakes**

1. Ibero-Macaronesian region
2. Pyrenees
3. Italy, Corsica and Malta
4. Alps
5. Dinaric western Balkan
6. Hellenic western Balkan
7. Eastern Balkan
8. Western highlands
9. Central highlands
10. The Carpathians
11. Hungarian lowlands
12. Pontic province
13. Western plains
14. Central plains
15. Baltic province
16. Eastern plains
17. Ireland and Northern Ireland
18. Great Britain
19. Ireland
20. Borwick uplands
21. Tundra
22. Fennoscandian shield
23. Targa
24. The Caucasus
25. Caspian depression

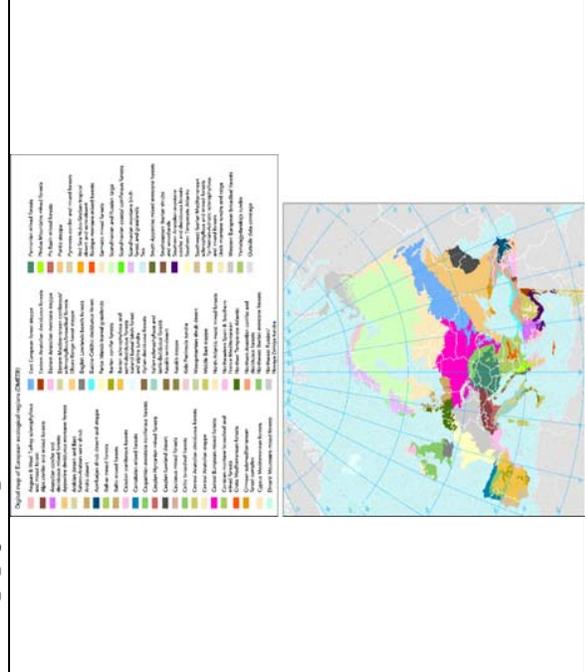


Fig 9.3 Digital Map of European Ecological Regions (Dmeect)

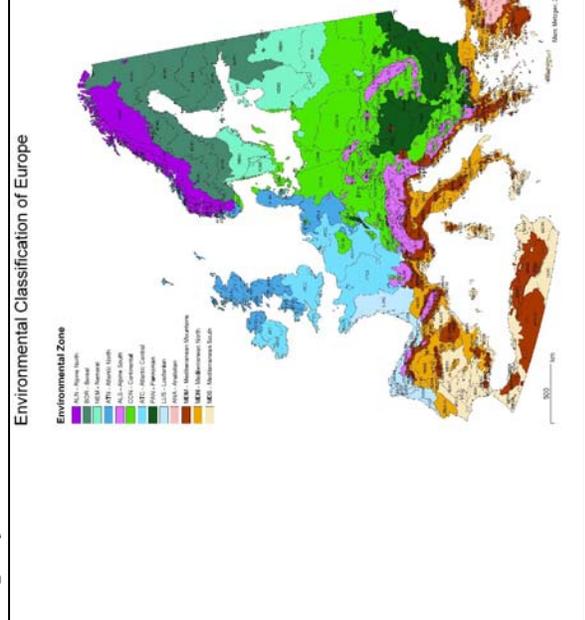


Fig 9.4 European Environmental Classification

**Environmental Classification of Europe**

**Environmental Zone**

1. Ibero-Macaronesian region
2. Pyrenees
3. Italy, Corsica and Malta
4. Alps
5. Dinaric western Balkan
6. Hellenic western Balkan
7. Eastern Balkan
8. Western highlands
9. Central highlands
10. The Carpathians
11. Hungarian lowlands
12. Pontic province
13. Western plains
14. Central plains
15. Baltic province
16. Eastern plains
17. Ireland and Northern Ireland
18. Great Britain
19. Ireland
20. Borwick uplands
21. Tundra
22. Fennoscandian shield
23. Targa
24. The Caucasus
25. Caspian depression

## ***Vegetation sensitivity (Vegetation quality index)***

(see figure 10.2 for map illustration)

<b>General Information</b>	
Year / Edition	English version 1: 18/11/2003
Title of content	Vegetation_index
Abstract	This index is one of the components of the sensitivity to desertification index. It is based four aspects of the vegetation: the fire risk, the protection provided against different types of erosion, the resistance to water shortages and the amount of land surface coverage. The dataset was created by assigning values for each parameter to CORINE Land Cover third level classes.
Metadata source	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>
Documentation	Desertification Information System for the Mediterranean <a href="http://dismed.eionet.eu.int/">http://dismed.eionet.eu.int/</a>
<b>History dataset</b>	
History	Each CLC class was assigned a value for each of these four parameters: erosion protection, resistance to drought, ground coverage. The same range of values was used for all four parameters: 0 (excluded from further consideration), 1 (good), 1.5 (moderate), 2 (bad). VQI is given by the geometric average of the indexes for the four parameters: $VQI = (\text{ResistFire} + \text{Erosion Protection} + \text{ResistDrought} + \text{Coverage}) * 10 / 4$ . For more information see website: <a href="http://dismed.eionet.eu.int/Facilities/dismed_products/VQI">http://dismed.eionet.eu.int/Facilities/dismed_products/VQI</a>
<b>Dataset Identification</b>	
Keywords	Landcover, vegetation, desertification
Maintenance	No information available
Scale	Grids 250x250 meter
Restrictions	<a href="#">See EEA dataservice- terms of use</a>
<b>Spatial Information</b>	
Coordinate system	LAEA
Extent	Greece, Italy, Portugal, Spain Including parts of Albania, Bosnia-Herzegovina, France, Morocco and Tunisia.
Temporal coverage	As source: CORINE Land Cover (CLC90) 250 m - version 12/2000
Objects/attributes	Grid cells with a value for each parameter.
<b>Distribution information</b>	
Source	ETC/TE: European Topic centre on Terrestrial Environment.
Technical Producer	ETC/NPB: European Topic Centre on Nature Protection and Biodiversity. <a href="http://nature.eionet.eu.int/">http://nature.eionet.eu.int/</a>
Creator	Desertification Information System for the Mediterranean (DISMED) <a href="http://dismed.eionet.eu.int/">http://dismed.eionet.eu.int/</a>
Distributor	European Environment Agency - Data service
Availability	Available via download, no password
Format	Zipped ARC/INFO GRID file
On-line delivery	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>

## **European Nature Information System (EUNIS)**

(see figure 10.4 for map illustration)

<b>General Information</b>	
Year / Edition	2001
Title of content	EUNIS
Abstract	EUNIS (European Nature Information System) consists of information on Species, Habitat types and Sites. The information includes: Data on Species and Habitats compiled in the framework of the NATURA2000 (EU Habitats and Birds Directives), but also data collected by ETC/NPB (European Topic Centre for Nature Conservation) from literature and other sources as reference data; Information on Species and Habitats taken into account in relevant international conventions; Specific data collected in the framework of the EEA reporting activities, which also constitute a core set of data to be up-dated periodically. The EUNIS web application allows user's access to the EUNIS publicly available data on Species in a consolidated database.
Metadata source	<a href="http://eunis.eea.eu.int/about.jsp">http://eunis.eea.eu.int/about.jsp</a>
<b>History dataset</b>	
History	EUNIS data are collected and maintained by the European Topic Centre for Biodiversity and Nature Protection (ETC/NPB) for the European Environment Agency (EEA) and the European Environmental Information Observation Network (EIONET) to be used for environmental reporting and for assistance to the NATURA2000 process (EU Birds and Habitats Directives) and coordinated to the related EMERALD Network of the Bern Convention
<b>Dataset Identification</b>	
Keywords	Biodiversity, environmental information system, habitat, nature protection, site protection, species
Maintenance	Up-dated periodically
Scale	N.A.
Restrictions	Non-commercial use only. For total Copyright, disclaimer and privacy statement notice see <a href="http://eunis.eea.eu.int/copyright.jsp">http://eunis.eea.eu.int/copyright.jsp</a>
<b>Spatial Information</b>	
Coordinate system	N.A.
Extent	Europe
Temporal coverage	No information available
Objects/attributes	<ul style="list-style-type: none"> <li>• Data on Species, Habitats and Sites compiled in the framework of the NATURA2000 (EU Habitats and Birds Directives), but also data collected by ETC/NPB (formerly the European Topic Centre for Nature Conservation) from literature and other sources as reference data.</li> <li>• Information on Species, Habitats and Sites taken into account in relevant international conventions.</li> <li>• Specific data collected in the framework of the EEA reporting activities, which also constitute a core set of data to be up-dated periodically</li> </ul>
<b>Distribution information</b>	
Copyright	European Topic Centre on Nature Protection and Biodiversity (ETC/NPB) and member states
Distributor	(ETC/NPB)
Availability	Via EUNIS website
Format	Various
On-line available	<a href="http://nature.eionet.eu.int/activities/products/EUNIS/data_coll/">http://nature.eionet.eu.int/activities/products/EUNIS/data_coll/</a>

### 3.10.3 Habitats and biotopes

Inspire:

Habitats and biotopes and their boundaries. Description of living areas for any kind of biota, usually used as a term for describing areas used by zoo-biota. Habitats commonly follow bio-geographical regions/vegetation types, but habitats can also be described at more detailed levels. Includes small features of the rural landscape – hedgerows, creeks etc. In rough terms land cover classes and vegetation classes represent terrestrial habitats. Shallow areas, and differences in sediments may indicate different habitats at sea. A selection of valuable habitats has been designated according to the Habitats and Birds Directives. The habitats designated to the directive are mentioned in the "area regulation" data component, Protected areas.

Datasets internally used by the European commission (GISCO Database)

Description	GISCO ref. code	Year	Scale	Extent	Source, Copyright
Biotopes: Inventory of sites of major importance for nature conservation	BPECV2		Location of centre point	EU12+ Finland	DGXI – TF – EEA, CEC- /GISCO-Eurostat

Datasets not fully described yet by this report

Dataset name	Content	Year	Scale	Extent	Source
Natura2000 database	Natura2000	2004		EU15 + EU12	EC

#### ***CORINE Biotopes***

(see figure 10.3 for map illustration)

General Information	
Year / Edition	Version April 2000
Title of content	biotopes_pan
Abstract	The CORINE biotopes (Version 2000) database is an inventory of major nature sites. The database began under the CORINE Biotopes project to enhance reliable and Accessible information about vulnerable ecosystems, habitats and species of important as background information for Community environmental assessment.
Metadata source	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>
Documentation	The original documentation of the dataset and its compilation is available in the following report: <a href="#">CORINE Biotopes - The design, compilation and use of an inventory of sites of major importance for nature conservation in the European Community.</a> The data collection is also described in report: <a href="#">CORINE Biotopes Sites - Database Status and Perspectives 1995.</a>
History dataset	
History	CORINE data are based on field studies and summaries of existing data base information. The requirement for reliable and Accessible information on the location and status of the ecosystems, habitat types and species in need of protection is fundamental to the implementation of nature conservation policy. To be applicable on the European level, the nature information must be consistent in every region. The CORINE Biotopes inventory aims at identifying the sites of major importance for nature conservation on the European level (Biotopes sites). The consistent and comparable information on these sites is compiled and recorded into the Biotopes sites data-base. One of the main aims is to make the information easily applicable for environmental policy-makers. It was expected that the main user of the information would be the European Commission, but the information proved to be useful also for other international organisations. On the national level the information has been useful to the environmental

		administration, environmental policy planning, research, and is also used by non-governmental organisations and others.
<b>Dataset Identification</b>		
	Keywords	Biotope, species, geographic
	Maintenance	The Biotope database, which is a part of a large information system on nature for Europe, is a dynamic database. Updates occur regularly, and new data are added. Last update: 28/01/2003
	Scale	Non applicable
	Restrictions	<u>See EEA dataservice- terms of use</u>
<b>Spatial Information</b>		
	Coordinate system	LAEA
	Extent	EU 25 (with the exception of Austria, Sweden, Cyprus, Malta, Slovenia) , AC 3 (with the exception of Turkey)
	Objects/attributes	CORINE biotopes consists of many tables containing information on: Site code, Date, Update, Complex code, Respondent, Site name, Site-complex, Sub-site codes, Designated areas, Region name, District name, Region code, Surface area, Longitude and latitude, Altitude, Habitat codes, Habitat cover, Designation codes, Motivation, Species, Site description, Site boundaries
<b>Distribution information</b>		
	Copyright	Member states
	Creator	The European Topic Centre on Nature Protection and Biodiversity (April 2000).
	Distributor	European Environment Agency - Data service
	Availability	The datasets and tables cannot be downloaded without permission from EEA. The agreement " <u>Corine biotopes</u> " which the applicant will have to sign, will appear when requesting the download of the dataset.
	Format	ARC/INFO: point data. Many tables available in ASCII Delimited, Dbase IV, Access (2000) or Excel.
	On-line delivery	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>

### 3.10.4 Species distribution

Inspire:

Distribution maps for European vascular plants, birds, mammals, amphibians and reptiles and other species. Digital datasets can be used for conservation and statistical analysis, as the base of research in ecology and biodiversity, applied to the conservation and management of nature.

Often species distribution is being recorded by grid cells.

In biodiversity assessment it is essential to have information on species distribution, quantities, development through time. Needed for Natura2000

Example datasets:

Bird species distribution data: 440 different breeding birds in Europe on 50x50 km grid squares. European ornithological Atlas Committee

Plant species distribution data: presence of plant species in 50x50 grid squares across Europe.

Amphibian and reptile species distribution: Species distribution in 50 km grid squares.

Datasets not fully described yet by this report

Dataset name	Content	Year	Extent	Source
IUCN Threatened plants	IUCN Red List of Threatened Plants	1997	Europe	IUCN /WCMC
UNEP-WCMC species database	Subsets of database: Animals: mammals, birds, herpetofauna, fish and invertebrates. Plants: trees, medicinal plants, crop wild relatives	Continuously updated	Global	UNEP-WCMC
Species Atlas data	Spatial database with indicator species. The data were collected with help of several scientists and volunteers all over the world		Global	Natural History Museum, London

### *Atlas Florae Europaeae (AFE)*

General Information	
Year / Edition	2004
Title of content	AFE
Abstract	<p>Atlas Florae Atlas Florae Europaeae (AFE) is a project for mapping the distribution of vascular plants in Europe. The project was launched already in 1965 as a collaborative effort of European botanists and since then the <u>secretariat</u> has functioned at the Botanical Museum of the Finnish Museum of Natural History, Helsinki.</p> <p>The principal aim of the AFE is to offer complementary maps with taxonomic notes of species and subspecies for the Flora Europaeae. The chorological data are gathered by national collaborators in each European country (<u>members of the Committee for Mapping the Flora of Europe</u>) and are aggregated into <u>volumes</u> by the Secretariat of the Committee. In 1972 - 1999 the Committee and <u>Societas Biologica Fennica Vanamo</u> have published twelve volumes of the Atlas, with altogether 2039 pages and 3270 maps. Today the maps cover the families which include more than 20% of the vascular plants of European flora (Lycopodiaceae - Platanaceae). Vol. 13 (Rosaceae: Spiraea to Fragaria, excl. Rubus) is published in August 2004 and contains 320 pages with 286 bicolour maps</p> <p>All the distribution maps published in AFE Volumes 1 to 12 were made manually. Later the maps were scanned into a digital database. For the last volume (vol. 13) distribution data have been entered directly into the database.</p>

# Map 10: Biodiversity- vegetation - habitat

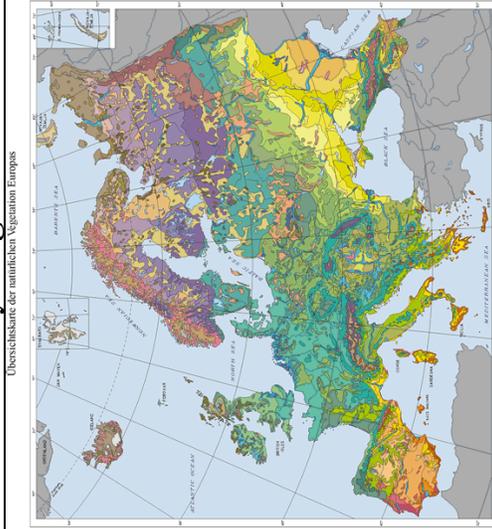


Fig 10.1 Map of the Natural vegetation of Europe

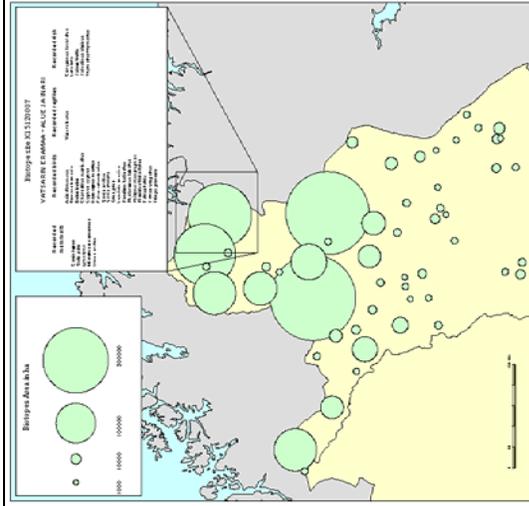


Fig 10.3 CORINE biotopes

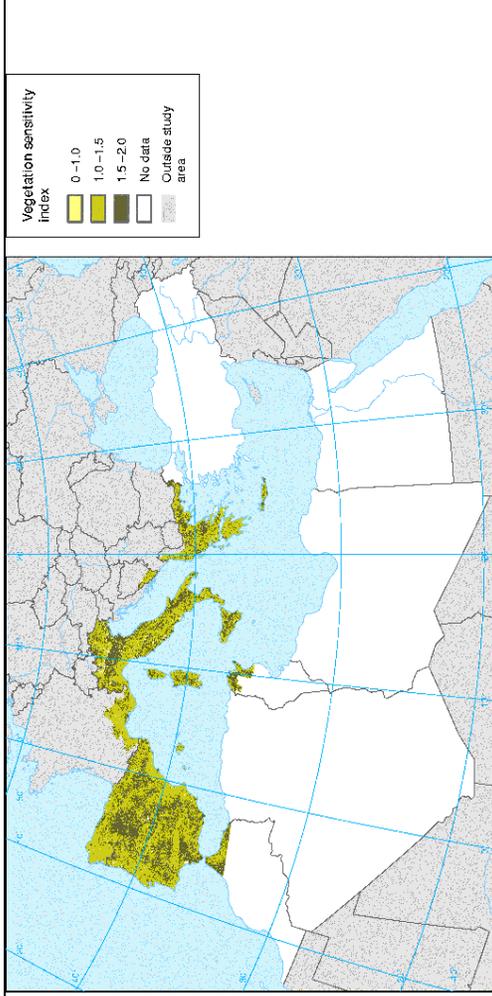


Fig 10.2 Vegetation sensitivity

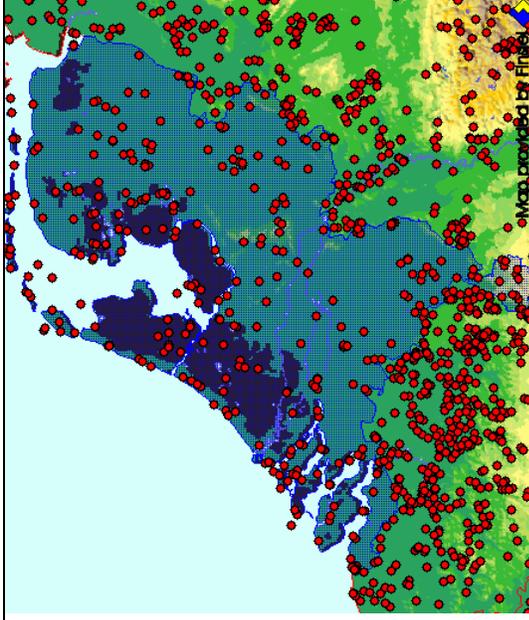


Fig 10.4 European Nature Information System (EUNIS)

		A simple computer program has been made and distributed among the members of the Committee. It facilitates and defines data recording in electronic format and data entering into the database. The area mapped follows the area of Flora Europaeae, but the mapping territories used in Atlas Florae Europaeae are slightly different from those used in <i>Flora Europaeae</i> . The mapping symbols are used to indicate the status of the taxa in different parts of Europe
Metadata source		<a href="http://www.fmnh.helsinki.fi/english/botany/afe/">http://www.fmnh.helsinki.fi/english/botany/afe/</a>
Documentation		Plant distribution data in this product are based on the printed volumes 1 to 11 of Atlas Florae Europaeae (1972-1996), edited by Jaakko Jalas and Juha Suominen, together with Raino Lampinen (Vol. 11). At present the maps cover about 20% of the European vascular flora (pteridophytes to crucifers).
<b>History dataset</b>		
History		During the first thirty years of Atlas Florae Europaeae (AFE), the basic technology for the collection of distribution data and publication of distribution maps has remained practically unchanged. Manual map production as such is rather tedious. Furthermore, distribution data available only on printed maps are not suitable for further (computerized) analyses. The construction of the <i>Atlas Florae Europaeae</i> database was started in 1992. The primary goal was to make the distribution data available in digital format, and the additional goal was the computerization of the editorial process of AFE
<b>Dataset Identification</b>		
Maintenance		No information available
Scale		Grids 50x50km
Restrictions		free software for map viewing
<b>Spatial Information</b>		
Coordinate system		The chorological data are inserted into the map with squares of c. 50 x 50 km, based on the <u>Universal Transverse Mercator (UTM) projection and the Military Grid Reference System (MGRS)</u>
Extent		An important region within pan-Europe that is not covered by the AFE is a part of south-eastern Europe, including; Turkey, Azerbaijan, Armenia, Georgia and the southern part of Russia close to the border of Georgia.
Temporal coverage		1972 - 1999
Objects/attributes		Grids with the distribution of vascular plants in Europe
<b>Distribution information</b>		
Copyright		Botanical Museum: Finnish Museum of Natural History
Creator		Prof. Jaakko Jalas († 1999) and Dr. Juha Suominen edited the Volumes 1-12; Mr. Raino Lampinen assisted them in the Vols. 11 & 12, and Mr. Arto Kurtto in Vol. 12. From Vol. 13 Mr. Arto Kurtto (Editor-in-Chief) and Mr. Leo Junikka (Secretary of the Mapping Committee) continue with the editorial work. Chairman of the Committee is prof. Pertti Uotila.
Distributor		Finnish Museum of Natural History
Availability		The AFE database can be used by means of a free windows program, which is available via AFE Database home page
On-line delivery		<a href="http://www.fmnh.helsinki.fi/english/botany/afe/publishing/database.htm">www.fmnh.helsinki.fi/english/botany/afe/publishing/database.htm</a>

## 3.11 Land surface

### 3.11.1 Land cover

Inspire:

Land cover reflects the visible surface cover of the earth, with special emphasis on land areas. Land cover categories are primarily based on visible or physical differences in the structure of the land cover, and not functional or ecological differences. However, as these aspects are interlinked, some classification systems also to some extent are based on elements of function or ecological setting. Agricultural and forest inventories usually has land cover presentations as a bi-product.

Used as a source for a wide range of Pan-European environmental assessments, e.g. defined in EEA indicators. Review of land use changes requires repetitive mapping.

Special needs for assessment and follow up in certain geographical areas produces needs for higher frequency and higher resolution Their methodology is harmonised at European level for the purpose of comparison: coastal assessment - LACOST , cities - MOLAND. Relevant for designated sites

The CORINE land cover database provides Pan-European data of biophysical land cover (44 class nomenclature). It is made available on 100 and 250m grid database and original vector formats in 1:100 000. CLC 1990 is currently updated - CLC 2000.

Datasets not fully described yet by this report

Dataset name	Content	Year	Scale	Extent	Source
CLC90 vector database	A pan-European inventory of biophysical land cover, using a 44 class nomenclature.	1986-1996	1:100.000	See CORINE landcover 100m grid	CEC member states ETC/TE
CLC2000 vector database	A pan-European inventory of biophysical land cover, using a 44 class nomenclature.	From 2000	1:100.000		CEC member states
Vega2000	The <u>VEGA 2000</u> dataset: a dataset of 14 months of pre-processed daily global data acquired by the VEGETATION instrument on board the SPOT 4 satellite.	2000		Global	Members of the vegetation programme, including JRC.
Land use	Total Area is the total area of the country	Last update 26/02/04	1000 Ha	EU 25, EFTA 4, EECCA, AC 3, Andorra, Bosnia Herz., Croatia, Macedonia- For-Yugoslav, San Marino, Serb/M	FAO via EEA
LUCAS database	Land use, Land cover, statistical survey 2001 and 2003	Spring 2001 and 2003	18 km grid consisting of 10 points 300meters apart	EU15?	Eurostat

## ***CORINE: Landcover 100m grid***

*(see figure 11.1 for map illustration)*

<b>General Information</b>																																								
Year / Edition	2000																																							
Title of content	Corine44_100m, CLC90 grid (GISCO LCEUGR100)																																							
Abstract	<p>The CORINE land cover database provides a pan-European inventory of biophysical land cover, using a 44 class nomenclature. CORINE land cover is a key database for integrated environmental assessment. The main objective of the CORINE Land Cover Directory is to provide the potential users of the CORINE Land Cover data with information describing the CORINE Land Cover project in each Member state.</p> <p>The CORINE Land Cover Directory is based on the information sheets on CORINE Land Cover prepared by the former CORINE Land cover technical Unit, where administrative and technical information regarding each national team was gathered. These information sheets were sent out by the ETC/LC Technical Unit to each national team for corrections and update and joined to produce the CORINE Land Cover Directory.</p>																																							
Metadata source	<a href="http://dataservice.eea.eu.int/dataservice/metadetails.asp?id=309">http://dataservice.eea.eu.int/dataservice/metadetails.asp?id=309</a>																																							
<b>History dataset</b>																																								
History	<p>New techniques of data obtaining and processing contributed to objectification of the available knowledge of landscape. Remote sensing methods make possible to perceive the visible layer of the material contents of landscape, which we identify by means of physiognomic and morphostructural features as landscape cover. Simultaneously the physiognomic aspect of objects often indicates their material contents or function.</p> <p>Main stages of the used method: 1. preliminary work, 2. Production of false colour images on scale of 1:100.000, 3. Computer-aided photo-interpretation / Delineation / identification / Controlling the quality of the photo-interpretation 4. Digitisation 5. Validation of the database.</p>																																							
<b>Dataset Identification</b>																																								
Scale	1:100.000 (100m pixel size, smallest mapping unit 25ha.)																																							
Restrictions	The data files for this dataset are password protected. In order to receive the password, an agreement signature form needs to be filled in, it can be found under the "Downloads" tab on web.																																							
<b>Spatial Information</b>																																								
Coordinate system	LAEA																																							
Extent	Belgium, Bulgaria, Czech Republic, Denmark, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Poland, Portugal, Romania, Slovakia, Spain.																																							
Temporal coverage	The CORINE Land Cover inventory was performed in a 10 years period from 1986 to 1996																																							
Objects/attributes	<table border="0"> <tr><td>1</td><td>1.1.1</td><td>Continuous urban fabric</td></tr> <tr><td>2</td><td>1.1.2</td><td>Discontinuous urban fabric</td></tr> <tr><td>3</td><td>1.2.1</td><td>Industrial or commercial units</td></tr> <tr><td>4</td><td>1.2.2</td><td>Road and rail networks and associated land</td></tr> <tr><td>5</td><td>1.2.3</td><td>Port Areas</td></tr> <tr><td>6</td><td>1.2.4</td><td>Airports</td></tr> <tr><td>7</td><td>1.3.1</td><td>Mineral extraction sites</td></tr> <tr><td>8</td><td>1.3.2</td><td>Dump sites</td></tr> <tr><td>9</td><td>1.3.3</td><td>Construction sites</td></tr> <tr><td>10</td><td>1.4.1</td><td>Green urban areas</td></tr> <tr><td>11</td><td>1.4.2</td><td>Sport and leisure facilities</td></tr> <tr><td>12</td><td>2.1.1</td><td>Non-irrigated arable land</td></tr> <tr><td>13</td><td>2.1.2</td><td>Permanently irrigated land</td></tr> </table>	1	1.1.1	Continuous urban fabric	2	1.1.2	Discontinuous urban fabric	3	1.2.1	Industrial or commercial units	4	1.2.2	Road and rail networks and associated land	5	1.2.3	Port Areas	6	1.2.4	Airports	7	1.3.1	Mineral extraction sites	8	1.3.2	Dump sites	9	1.3.3	Construction sites	10	1.4.1	Green urban areas	11	1.4.2	Sport and leisure facilities	12	2.1.1	Non-irrigated arable land	13	2.1.2	Permanently irrigated land
1	1.1.1	Continuous urban fabric																																						
2	1.1.2	Discontinuous urban fabric																																						
3	1.2.1	Industrial or commercial units																																						
4	1.2.2	Road and rail networks and associated land																																						
5	1.2.3	Port Areas																																						
6	1.2.4	Airports																																						
7	1.3.1	Mineral extraction sites																																						
8	1.3.2	Dump sites																																						
9	1.3.3	Construction sites																																						
10	1.4.1	Green urban areas																																						
11	1.4.2	Sport and leisure facilities																																						
12	2.1.1	Non-irrigated arable land																																						
13	2.1.2	Permanently irrigated land																																						

	14	2.1.3	Rice fields
	15	2.2.1	Vineyards
	16	2.2.2	Fruit trees and berry plantations
	17	2.2.3	Olive groves
	18	2.3.1	Pastures
	19	2.4.1	Annual crops associated with permanent crops
	20	2.4.2	Complex cultivation patterns
	21	2.4.3	Land principally occupied by agriculture, with significant areas of natural vegetation
	22	2.4.4	Agro-forestry areas
	23	3.1.1	Broad-leaved forest
	24	3.1.2	Coniferous forest
	25	3.1.3	Mixed forest
	26	3.2.1	Natural grassland
	27	3.2.2	Moors and heath land
	28	3.2.3	Sclerophyllous vegetation
	29	3.2.4	Transitional woodland-scrub
	30	3.3.1	Beaches, dunes, sands
	31	3.3.2	Bare rocks
	32	3.3.3	Sparsely vegetated areas
	33	3.3.4	Burnt areas
	34	3.3.5	Glaciers and perpetual snow
	35	4.1.1	Inland marshes
	36	4.1.2	Peat bogs
	37	4.2.1	Salt marshes
	38	4.2.2	Salines
	39	4.2.3	Intertidal flats
	40	5.1.1	Water courses
	41	5.1.2	Water bodies
	42	5.2.1	Coastal lagoons
	43	5.2.2	Estuaries
	44	5.2.3	Sea and ocean
	49		Missing Data
<b>Distribution information</b>			
	Copyright	CEC member states	
	Distributor	European Environment Agency	
	Availability	EEA maintains the aggregated European dataset for CORINE Land Cover. Information concerning individual national datasets should be requested from the <a href="#">National Reference Centre</a> . Information concerning progress on the update of CORINE Land Cover through the project CLC2000 is available from <a href="#">ETC Terrestrial Environment</a> .	
	Format	ARC/INFO grid: 60 Mb	
	Ordering process	Via European Environment Agency	

### ***CORINE: Land Cover 250m grid***

*(see figure 11.1 for map illustration)*

<b>General Information</b>	
Year / Edition	Version 12/2000 (last update 22/08/02) (extended coverage in comparing with version 06/1999)
Title of content	CLC90 250m
Abstract	The CORINE land cover database provides a pan-European inventory of biophysical land cover, using a 44 class nomenclature. It is available on a 250m by 250m grid database which has been aggregated from the original vector data at 1:100 000. CORINE land cover is a key database for integrated environm. assessment.

Metadata source	<a href="http://dataservice.eea.eu.int/dataservice/metadetails.asp?id=571">http://dataservice.eea.eu.int/dataservice/metadetails.asp?id=571</a>
Documentation	More documentation available via website
<b>History dataset</b>	
History	The dataset is made available on a 250m by 250m grid database which has been aggregated from the original vector data at 1:100.000. History of CORINE landcover project per country available on <a href="http://dataservice.eea.eu.int/dataservice/other/land_cover/lcsource.asp">http://dataservice.eea.eu.int/dataservice/other/land_cover/lcsource.asp</a>
<b>Dataset Identification</b>	
Keywords	Landcover, DISMED, CORINE
Maintenance	Information concerning progress on the update of CORINE Land Cover through the project CLC2000 is available from <a href="#">ETC Terrestrial Environment</a>
Scale	250 x 250 meter Geographic accuracy: All features were digitised from an interpretation of satellite image printouts of the scale 1:100 000. 150 m. positional accuracy (according to CLC specifications), 25 ha minimum mapping unit.
Restrictions	The data files for this dataset are password protected. In order to receive the password, an agreement signature form needs to be filled in, it can be found under the "Downloads" tab on web.
Products	<p>Maps produced with CORINE 250 version 06/99:</p> <ul style="list-style-type: none"> <li>• <a href="#">Agricultural abandonment of grassland</a></li> <li>• <a href="#">Agricultural areas</a></li> <li>• <a href="#">Agricultural intensification of grassland</a></li> <li>• <a href="#">Areas in EU eligible under the regional Objective of the Structural Funds (1994-1999)</a></li> <li>• <a href="#">Areas remote from urban and transport pressures</a></li> <li>• <a href="#">Areas with relatively little influence from urbanisation, transport or intensive agriculture</a></li> <li>• <a href="#">Built-up land by major river catchment area</a></li> <li>• <a href="#">Comparison of population distribution by administrative unit and by land cover unit</a></li> <li>• <a href="#">Data availability in EU for hot-spots analysis</a></li> <li>• <a href="#">Deposition of sulphur in the Black Triangle, 1997</a></li> <li>• <a href="#">Designated Areas under pressure from agricultural areas</a></li> <li>• <a href="#">Designated Areas under pressure from railways</a></li> <li>• <a href="#">Designated Areas under pressure from roads</a></li> <li>• <a href="#">Designated Areas under pressure from urban areas</a></li> <li>• <a href="#">Distribution of major habitats</a></li> <li>• <a href="#">Dominant landscapes</a></li> <li>• <a href="#">EUNIS habitat types per biogeographic region</a></li> <li>• <a href="#">EUNIS habitats based on CORINE land cover</a></li> <li>• <a href="#">Forest and semi-natural area per inhabitant by administrative unit</a></li> <li>• <a href="#">Forest around capitals in Europe</a></li> <li>• <a href="#">Forested areas</a></li> <li>• <a href="#">Forests</a></li> <li>• <a href="#">Fragmentation by major roads of large forest complexes (&gt;600 km<sup>2</sup>)</a></li> <li>• <a href="#">Fragmentation by urbanisation, infrastructure and agriculture</a></li> <li>• <a href="#">Fragmentation of large forests</a></li> <li>• <a href="#">Geographic view of landcover and its 44 classes</a></li> <li>• <a href="#">Grassland and sparsely vegetated areas</a></li> <li>• <a href="#">Population density and land cover in coastal areas</a></li> <li>• <a href="#">Pressures by urban areas and transport network</a></li> <li>• <a href="#">Ratio of forest and semi-natural areas to agriculture and urban areas by administrative unit</a></li> <li>• <a href="#">Regional coincidence of some environmental pressures and impacts (hot-spots)</a></li> <li>• <a href="#">Regional predominant pressures on coniferous forest I</a></li> <li>• <a href="#">Regional predominant pressures on dry grassland</a></li> <li>• <a href="#">Regional predominant pressures on wet grassland</a></li> <li>• <a href="#">Urban, rural, coastal and mountain areas in Europe</a></li> <li>• <a href="#">Wetlands and water bodies</a></li> <li>• <a href="#">Wooded species</a></li> <li>• <a href="#">Zoom in on urban and rural areas</a></li> </ul>



<b>Spatial Information</b>	
Coordinate system	LAEA
Extent	EU 15, AC 13 (with the exception of Cyprus, Malta, Turkey), Albania, Andorra, Bosnia and Herzegovina, Macedonia- the Former Yugoslav Republic of. Coastal zone of Tunisia and Northern Morocco also covered.
Temporal coverage	The CORINE Land Cover inventory was performed in a 10 years period from 1986 to 1996.
Objects/attributes	See CORINE 100m grid
<b>Distribution information</b>	
Copyright	CEC member states
Creator	The European Topic Centre on Terrestrial Environment
Distributor	European Environment Agency
Availability	Available via download, password needed (also Version 06-1999) - EEA maintains the aggregated European dataset for CORINE Land Cover. Information concerning individual national datasets should be requested from the <u>National Reference Centre</u> -Information concerning progress on the update of CORINE Land Cover through the project CLC2000 is available from <u>ETC Terrestrial Environment</u> .
Format	ARC/INFO Grid export file
On-line delivery	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>

### ***GLC2000: Global Land Cover dataset***

*(see figure 11.3 for map illustration)*

<b>General Information</b>	
Year / Edition	1.0 (15/05/03)
Title of content	GLC2000
Abstract	The global Land Cover dataset is a product of "The Global Land Cover 2000 database. European Commission, Joint Research Centre, 2003. <a href="http://www.gvm.jrc.it/glc2000">http://www.gvm.jrc.it/glc2000</a> ." It is realized by the harmonization of all the regional products, into a full resolution global product, with a generalized legend. The driving force behind the GLC2000 project is the Implementation of the ecosystem-related International Conventions, such as FCCC, CCD or CBD. These are signed by countries, and therefore, although there is a need for a global understanding of the environment, all environmental assessments and actions for policy implementation must be consistent at the <i>national level</i> . The global land-cover information to be provided by GLC 2000 must also be consistent at the national level. The FAO Land Cover Classification Scheme ( <u>LCCS</u> ) offers the framework by which the various scale levels can be interconnected without defining every single category of the legend.
Metadata source	<a href="http://www.gvm.jrc.it/glc2000">http://www.gvm.jrc.it/glc2000</a>
Documentation	The Land Cover Map for Southern Europe in the Year 2000. J-F.Pekel, N.Vancutsem, P.Defourney, J-L.Champeaux, C.Gouveia, A.Lobo, S.Griguolo, A.Perdigao, E.Bartholomé. GLC2000 database, European Commission Joint Research Centre, 2003. <a href="http://www.gvm.jrc.it/glc2000">http://www.gvm.jrc.it/glc2000</a>
<b>History dataset</b>	
History	Data source: SPOT Vegetation The general objective is to provide for the year 2000 a harmonized land cover database over the whole globe. The year Two Thousand is considered as a reference year for environmental assessment in relation to various activities, in particular the United Nation's Ecosystem-related International Conventions. To achieve this objective GLC2000 makes use of the <u>VEGA 2000</u> dataset: a

		dataset of 14 months of pre-processed daily global data acquired by the VEGETATION instrument on board the SPOT 4 satellite, made available through a sponsorship from members of “the VEGETATION programme”, including JRC. Derived dataset: <u>Vegetation quality index</u>
<b>Dataset Identification</b>		
	Keywords	Global Land Cover, SPOT Vegetation
	Maintenance	No information available
	Scale	Resolution: 1km at Equator
	Restrictions	Free of charge for non-commercial use, provided it is properly referenced.
<b>Spatial Information</b>		
	Coordinate system	Lat/Long WGS84
	Extent	World
	Temporal coverage	01/01/00 - 31/12/00
	Objects/attributes	<a href="http://www.gvm.jrc.it/glc2000/legend.htm">http://www.gvm.jrc.it/glc2000/legend.htm</a> Land Cover Classification Scheme(LCCS) based on FAO LCCS tool: <a href="http://www.africover.org/lccs.htm">http://www.africover.org/lccs.htm</a> <b>Cultivated areas</b> <ul style="list-style-type: none"> <li>• Cultivated and managed terrestrial area(s)</li> <li>• Cultivated aquatic or regularly flooded area</li> </ul> <b>Natural (semi-) vegetation</b> <ul style="list-style-type: none"> <li>• Natural and semi-natural terrestrial vegetation <ul style="list-style-type: none"> <li>○ Woody</li> <li>○ Trees</li> <li>○ Shrubs</li> <li>○ Herbaceous</li> <li>○ Lichens &amp; mosses</li> </ul> </li> <li>• Natural and semi-natural aquatic or regularly flooded vegetation <ul style="list-style-type: none"> <li>○ Woody</li> <li>○ Trees</li> <li>○ Shrubs</li> <li>○ Herbaceous</li> </ul> </li> </ul> <b>Artificial surfaces</b> <b>Bare areas</b> <b>Water, snow, ice</b>
<b>Distribution information</b>		
	Copyright	GLC2000 partners
	Distributor	GLC2000 website
	Compiler	European Commission Joint Research Centre
	Availability	Downloadable from internet <a href="http://www.gvm.jrc.it/glc2000/ProductGLC2000.htm">http://www.gvm.jrc.it/glc2000/ProductGLC2000.htm</a> In order to gain Access to the download site, you will have to fill in some general information about yourself.
	Format	Various formats
	On-line delivery	All data for all <b>regional</b> windows of the world, as well as the <b>global</b> landcover classification are available for download in various formats, both at full resolution, and in the form of a poster.

## **PELCOM**

(see figure 11.2 for map illustration)

<b>General Information</b>	
Year / Edition	2000
Title of content	PELCOM
Abstract	PELCOM (the Pan-European Land Cover Monitoring project) is a 1-km pan-European land cover database. The PELCOM project is aimed at developing a consistent methodology to derived land cover information on a European scale for environmental monitoring based on the integrative use of multi-spectral and multi-temporal NOAA-AVHRR satellite imagery and ancillary data. PELCOM is a three-year project as a shared cost action under the Environment & Climate section of the European Union 4th Framework RTD Programme
Metadata source	<a href="http://cgi.girs.wageningen-ur.nl/cgi/projects/eu/pelcom/public/index.htm">http://cgi.girs.wageningen-ur.nl/cgi/projects/eu/pelcom/public/index.htm</a>
Documentation	PELCOM Homepage: <a href="http://cgi.girs.wageningen-ur.nl/cgi/projects/eu/pelcom/">http://cgi.girs.wageningen-ur.nl/cgi/projects/eu/pelcom/</a>
<b>History dataset</b>	
History	Data Sources: One of the data sources for the PELCOM Project was the MARS (Monitoring Agriculture by Remote Sensing) archive provided by the Space Applications Institute (SAI) of the Joint Research Institute (JRC). This archive contains pre-processed daily multi-spectral mosaics of AVHRR (Advanced Very High Resolution Radiometer) images covering the European continent. Normalized Difference Vegetation Index (NDVI) composites are also available in these archives, but they were considered inadequate for the PELCOM project due to the low geometric accuracy of the single AVHRR images. As a result, the NDVI monthly maximum value composites for the year of 1997 available from DLR (Deutsches Zentrum für Luft und Raumfahrt) were used as the main data source for the classification process. Various ancillary data sources have also been used as reference datasets in the PELCOM Project. Some examples are the Digital Chart of the World (DCW) and the CORINE (Coordination of Information on the Environment) land cover database.
<b>Dataset Identification</b>	
Maintenance	The database could be updated periodically.
Scale	1:1.000.000 (1000m grid)
Restrictions	Acknowledge the source of the data in all publications and applications.
<b>Spatial Information</b>	
Coordinate system	Albers Conical Equal Area- WGS_1972
Extent	EU 15
Temporal coverage	1996-1999
Objects/attributes	Landcover classes: <ul style="list-style-type: none"><li>• 0 FOREST :1 Coniferous forest - 2 Deciduous forest - 3 Mixed forest</li><li>• 20 GRASSLAND: 21 Natural grassland - 22 Cultivated grassland</li><li>• 30 ARABLE LAND - 31 Non-irrigated arable land - 33 Winter crops - 34 Summer crops - 32 Irrigated arable land</li><li>• 40 PERMANENT CROPS</li><li>• 50 SHRUBLAND</li><li>• 60 BARREN LAND -61 Rocks -62 Bare soil</li><li>• 70 PERMANENT ICE AND SNOW</li><li>• 80 WETLANDS</li><li>• 90 WATER BODIES</li><li>• 100 URBAN AREAS</li><li>• 110 DATA GAPS</li></ul>

<b>Distribution information</b>		
Copyright	Alterra on behalf of many organisations	
Distributor	Centre for Geo-information, Alterra, Wageningen UR	
Availability	CD-ROM free of charge or downloadable.	
Format	ARC/INFO grid	
On-line delivery	Downloadable via: <a href="http://cgi.girs.wageningen-ur.nl/cgi/projects/eu/pelcom/index.htm">http://cgi.girs.wageningen-ur.nl/cgi/projects/eu/pelcom/index.htm</a>	
Ordering proces	Via Centre for Geo-information, Alterra, Wageningen UR	

### ***SEI Land Cover Map of Europe***

<b>General Information</b>		
Year / Edition	1999	
Title of content	SEI landcover	
Abstract	<p>The map is the product of 4 years work and is being used as a base-map for air pollution mapping. It has been created by combining information from a variety of existing digital and mapped sources. The map is intended for European scale mapping projects and national datasets are recommended for country studies. SEI has used this map for: mapping nitrogen deposition, level II mapping of ozone across Europe, biogenic emissions, collaboration with EMEP to model ozone deposition at a 50km x 50km scale.</p>	
Metadata source	<a href="http://www.york.ac.uk/inst/sci/gis/land-use.html">www.york.ac.uk/inst/sci/gis/land-use.html</a>	
Documentation	See documentation on <a href="http://www.york.ac.uk/inst/sci/gis/GIS-Pubs.html">www.york.ac.uk/inst/sci/gis/GIS-Pubs.html</a>	
<b>History dataset</b>		
History	<p>The SEI European Land Cover dataset has been created by combining information from a variety of existing digital and mapped sources. The distribution of European tree species has been derived from two data sources. The distribution of tree cover for Europe was obtained from the European Space Agency (ESA) "Forest Map of Europe" (ESA, 1992). The distribution of deciduous, coniferous and mixed woodland forest types was digitised from the Food and Agricultural Organisation (FAO) "Land Use Map of Europe" (FAO-Cartographia, 1980). Also described by FAO-Cartographia (1980) are the distributions of orchards and vineyards. This map is manipulated within the GIS to describe the distribution of forest types and the respective dominant species for the whole of Western Europe. The identification of arable areas was also achieved using the FAO "Land Use Map of Europe" (FAO-Cartographia, 1980). This was digitised and used as a basemap to classify European agricultural areas into individual parcels of agricultural land. These parcels of land were adjusted where necessary to correlate with areas for which statistical information describing yield data for various crops have been compiled (Eurostat, 1994). These statistics enabled the dominant crop type to be assigned to each parcel of agricultural land. For countries outside the European Union (EU), agricultural statistics from AGRISTAT database were used (FAO-Agristat, 1990), which describe dominant crop types at an international level. Maps of the former USSR ("Land Use Map of the Former USSR", at 1:4.000.000, 1991, CCCP, Moscow) which were of suitable scale, spatial coverage and classification. The legends for the map were then translated from Russian into English. These hard copy paper maps were then digitised by SEI-Y and combined with the original land cover datasets to produce the maps.</p>	
<b>Dataset Identification</b>		
Maintenance	No information available	
Scale	1:5.000.000	
Restrictions	No information available	
<b>Spatial Information</b>		
Coordinate system	No information available	

Extent	The whole of Europe and has recently been extended to include eastern Russia.
Temporal coverage	
Objects/attributes	The map is divided in to 90 dominant cover types.
<b>Distribution information</b>	
Copyright	SEI Stockholm Environment Institute Available at a nominal costs
Distributor	SEI Stockholm Environment Institute
Availability	The SEI Land Cover map will be available from November 1999. It is free to collaborators on projects that SEI is participating in and at a nominal cost (on request) to outside users.
Format	The data are supplied on CD ROM in ARC-INFO format (e00). It is also possible to supply the data in other formats
Ordering process	<a href="http://www.york.ac.uk/inst/sci/gis-contact.html">www.york.ac.uk/inst/sci/gis-contact.html</a>

### ***IGBP-DIS Land Cover***

<b>General Information</b>	
Year / Edition	1997
Title of content	IGBP-DIS
Abstract	IGBP-DIS (International Geosphere-Biosphere Programme-Data and Information System) began a project in 1992 to produce a global land cover data set at a spatial resolution of 1-km, derived from the Advanced Very High Resolution Radiometer (AVHRR) onboard the US National Oceanic and Atmospheric Administration's (NOAA) polar-orbiting satellite series (Loveland and Belward 1997). The methodology is based on unsupervised clustering of monthly NDVI maximum value composites (MVC's) on a continental basis. The MVC's covers a 18 month period from April 1992 to September 1993 (Townshend 1992). Clusters are labeled by expert knowledge. A major limitation of the approach is that it is implemented on a continental basis without any stratification. Therefore, the result is more closely related to agro-ecological zones, i.e. zones of similar phenology, than to the different land cover types existing in each agro-climatic zone. The European landscape is heterogeneous and fragmented and requires a stratified approach. As a result the IGBP global land cover database called 'DISCover' does not reveal much spatial variety in land cover for Europe. Moreover, in the data set about 1/3 of the pan-European land surface is covered by the land cover class "cropland/natural vegetation mosaics", which can cover all kind of land cover types and is therefore difficult to apply in environmental studies. However, it must be stressed that the project is unique and enormous efforts have been invested in order to establish an up-to-date global land cover database at a 1-km resolution in a consistent manner. Still, application of the database in environmental and climate studies for pan-Europe may be limited. The GLC2000 global land cover database on basis of SPOT-Vegetation satellite data, give much better results.
Metadata source	<a href="http://www.gcc.ntu.edu.tw/gcrc_databank/datamanager/DISasia/igbp-dis/dis_home.html">http://www.gcc.ntu.edu.tw/gcrc_databank/datamanager/DISasia/igbp-dis/dis_home.html</a>
Documentation	Loveland and Belward 1997
<b>History dataset</b>	
History	See abstract
<b>Dataset Identification</b>	
Maintenance	One edition only
Scale	1-km resolution
Restrictions	No information available
<b>Spatial Information</b>	
Coordinate system	No information available

	Extent	Global
	Temporal coverage	1992-1993
	Objects/attributes	Landcover classes
<b>Distribution information</b>		
	Copyright	IGBP-DIS landcover project
	Availability	No information available
	Format	ARC/INFO

### 3.11.2 Ortho-images

Inspire:

Pre-processed “picture” data. Source either satellite or air-borne sensors. Different data exists for Pan-Europe, e.g. Landsat, SPOT. The use is refrained due to high costs. Image2000 will constitute the first European wide free Access ortho-image database.

Small-scale data for Pan-European overview and analysis. Large-scale data for local and regional needs. Commonly used in environmental and land use management, environmental impact assessment, forestry, agriculture.

Ortho-imagery:

- Is airborne or space borne image data of the surface of the earth
- Is rectified to fit to a defined coordinate reference and cartographic projection system at a defined accuracy
- should be presented in digital format at a defined pixel resolution
- should be acquired by optical sensors with different spectral characteristics, i.e. panchromatic, true-colour, infrared
- can be used to extract reference data components
- should allow for multi-temporal analysis, implying the supply of images with different acquisition dates

Dataset not fully described yet by this report

Dataset name	Content	Year	Scale	Extent	Source
Image 2000 (based on Landsat7 ETM+ images	Image2000 will constitute the first European wide free Access Roth-image database.	2004?	30m resolution	EU15 + Access countries	JRC/EEA The use is refrained due to high costs

### 3.11.3 Unclassified satellite data

Inspire:

**Unclassified multipurpose data:** Unclassified spatial coverage of the earth surface. This could be based on recordings of visible light, infra-red bands, radar or other sensors. It is essential in broad environmental assessments and has a high potential also in sector management.

Different data exists for Pan-Europe, e.g. Landsat, SPOT. The use is refrained due to high costs.

Datasets not fully described yet by this report

Dataset name	Content	Year	Scale	Extent	Source
MODIS satellite data	36 wavelengths bands	Since Feb. 2000	250, 500 or 1000m resolution, depending on band	Global	NASA
MERIS satellite data	15 wavelengths bands	March 2002	300m or 1200m depending on the mode	Global	ESA/Envisat

### 3.11.4 Landscape

Inspire:

Landscape can be divided into homogenous areas or certain important visible features may be mapped. Landscape data are used in different kinds of environmental analysis and management.

Mostly local and regional level data exists.

National examples based on different criteria/ nomenclature

Dataset not fully described yet by this report

Dataset name	Content	Year	Scale	Extent	Source
LANMAP	The European Landscape Classification	2003	1km resolution	Pan-Europe	Alterra

#### ***Landscape types Pan-Europe – Meeus map***

*(see figure 11.4 for map illustration)*

<b>General Information</b>	
Year / Edition	1993
Title of content	LSEU
Abstract	Landscape types of Europe
Metadata source	<u>The GISCO Database Manual</u> .
Documentation	"The Major Landscapes of Europe", J.H.A. MEEUS, Arnhem, December 1993. Report written under the responsibility of the European Environment Agency 'Task Force', Directorate General of Environment, Nuclear Safety and Civil Protection (EEA-TF, DG XI) of the European Commission in Brussels.
<b>History dataset</b>	
History	The goal of the report "The Major Landscapes of Europe" was to describe the landscape diversity of the continent and to explain the ecological, economic, cultural and scenic aspects of the different types of European landscapes. This leads to a landscape map of Europe, scale 1: 25.000.000. The report contributes to the chapter of 'landscapes' in the report on 'Europe's Environment 1993' (' <u>DOBRIS</u> report') which means to provide an assessment of the state of the environment in the whole of Europe. Source map: hand drawn map on 1: 6.000.000
<b>Dataset Identification</b>	
Maintenance	No information available
Scale	1:25.000.000
Restrictions	<u>See the restrictions in the GISCO Database Manual</u> When using this dataset, it should be bibliographically referred to as 'Landscape types of Europe'
<b>Spatial Information</b>	
Coordinate system	LAEA
Extent	Pan-Europe
Temporal coverage	No information available
Objects/attributes	Items LSEU: NPEC.PAT: Point attribute table <ul style="list-style-type: none"> <li>• LSTPCD: Landscape type codification: hierarchical code consisting of landscape complex + landscape type</li> <li>• LSCXCD: Landscape complex codification.</li> </ul> LSTP.INF: Contains description of the landscape type. LSCX.INF: Contains description of the landscape complex

# Map 12: Natural Resource

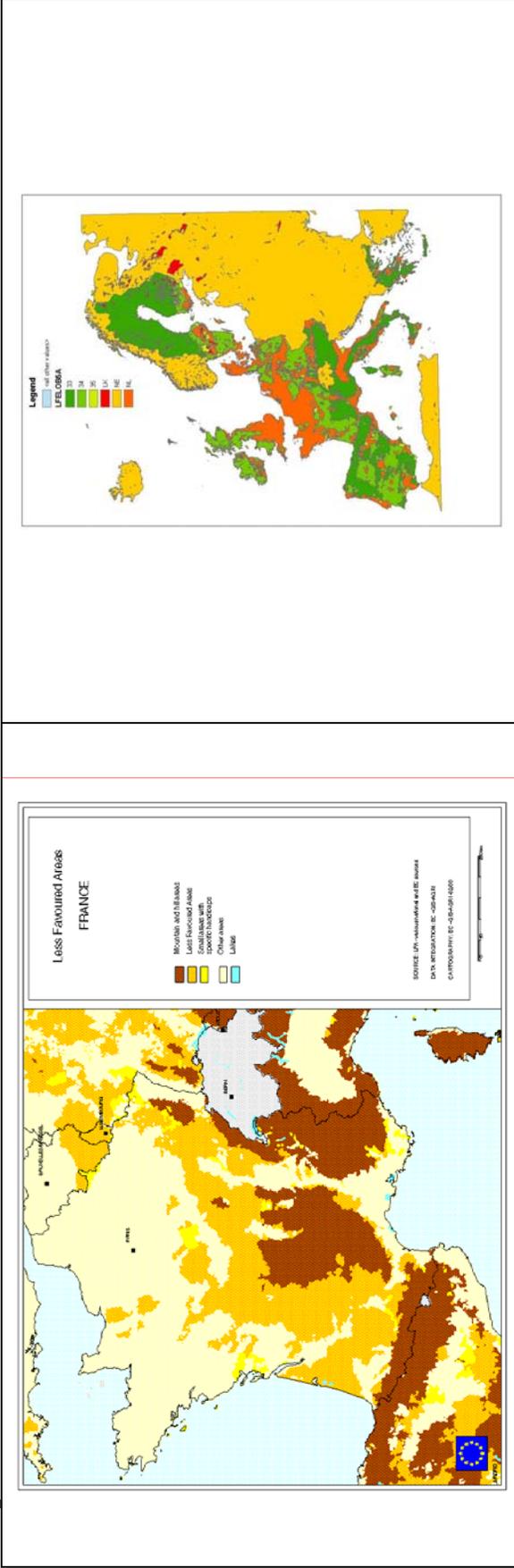


Fig 12.1 Less Favoured Areas, France

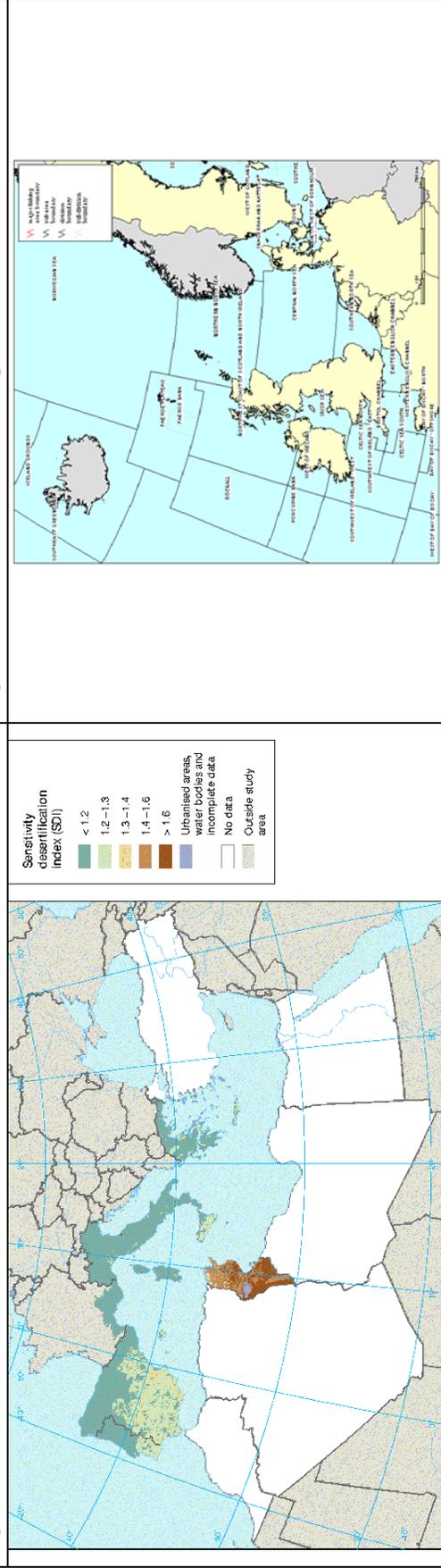


Fig 12.3 Sensitivity to desertification

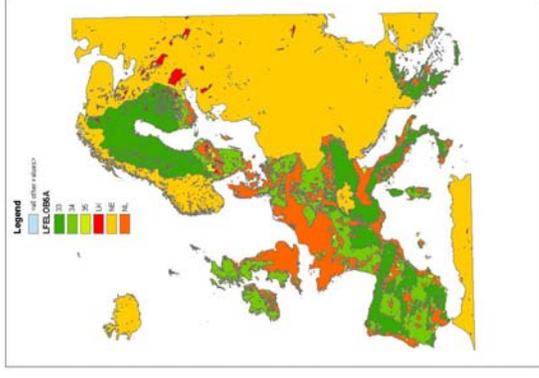


Fig 12.2 Less Favoured Areas Pan-Europe



Fig 12.4 Fishing areas Pan-Europe

Distribution information		
Copyright	CEC-Eurostat/GISCO-DGXI-TF-EEA	
Distributor	Eurostat Data Shop	
Availability	via GISCO (CD)	
Format	ARC/INFO polygons	
Ordering process	Requests for Data GISCO Database Manual should be sent to Eurostat Data Shop.	

## 3.12 Natural resource

### 3.12.1 Water resources

#### Inspire:

Features presenting the water resources for consumption, processes, energy or other uses. Usually linked to water features already documented in the data component “hydrography” and “groundwater bodies”  
Information about resources should be linked to the hydrography data by id's. Used in water and energy supply management, risk and hazards management, agriculture sustainability assessments.  
Data via Eurowaternet

### 3.12.2 Agricultural land and soil resources

#### Inspire:

Agricultural inventories, with mapping of existing and potential land for cultivation. Description of quality, production potential, suitable farming systems and crops, limiting factors under natural conditions. Land use by agriculture Includes categories such as irrigated areas and organic farming areas. Usually agricultural inventories are coordinated by national agricultural bodies.  
Important statistics should be available. Used in agriculture, in assessment of pressures – impact and responses to erosion, salinisation, desertification.

#### Datasets not fully described yet by this report

Dataset/ database name	Content	Actualisation	Extent	Source
Agro-maps	A global spatial database of subnational agricultural land-use statistics	2003	global	FAO
Agricultural data (FAO)	Consistent data available on various agriculture themes (e.g. production, crops, food, trade, land), nutrition, fisheries, forestry, food quality)	Updated annually	National, regional and global level	All data available from the FAO website <a href="http://faostat.fao.org/faostat/default.jsp">http://faostat.fao.org/faostat/default.jsp</a>
Farm accountancy Data Network (FADN)	The Farm Accountancy Data Network (FADN) is an instrument for evaluating the income of agricultural holdings and the impacts of the Common Agricultural Policy	From 1965 annual surveys	Member states EU	Data holder: DG agriculture <a href="http://europa.eu.int/comm/agriculture/rca/index_en.cfm">http://europa.eu.int/comm/agriculture/rca/index_en.cfm</a>
Farm structural Survey (FSS)	Data on the structure of farms in the EU. Main indicators: land use,	Data-collection each 10 years census, each 2	EU15	Part of the NewCronos database (macro-economic

	types of livestock, stocking density, machinery and labour input, farm types	years sample surveys		data) Data holder Eurostat
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### ***Monitoring Agriculture through Remote sensing Techniques (MARS)***

<b>General Information</b>	
Year / Edition	2004
Title of content	MARS database
Abstract	<p>For the implementation of the Common Agricultural Policy, the European Commission needs timely information on the agricultural production to be expected in the current season. This is a main concern of the MARS-project (Monitoring Agriculture through Remote Sensing techniques). The MARS project is one of the projects of the Directorate General Joint Research Centre (<u>JRC</u>) of the European Commission in Ispra (Italy).</p> <p>The MARS extranet site offers wide variety of information about the current agricultural season in Europe and other important agricultural areas in the world. Available products are:</p> <ul style="list-style-type: none"> <li>• maps of <b>weather indicators</b> based on observations and numerical weather models (see interpolated climate data)</li> <li>• maps and time profiles of <b>crop indicators</b> based on agro-meteorological models</li> <li>• maps of <b>vegetation indices</b> and <b>cumulated dry matter</b> based on remote sensing images.</li> </ul> <p><u>Operational services:</u></p> <p>Alterra leads the consortium which is in charge of the operational services of this project. The main goal of the MARS-project is to monitor weather and crop conditions during the current growing season and to estimate final crop yields for Europe by harvest time. To facilitate the monitoring and estimation, tools ranging from remote sensing techniques to agro-meteorological models are applied. Within the consortium, the Dutch meteorological institute <b>MeteoConsult</b> collects and processes daily weather data. Each decade, <b>VITO</b> (Flemish Institute for Technological Research, Belgium) applies high and low resolution remote sensing methods to compile products such as crop area estimates and leaf area coverage. <b>Alterra</b> is the third partner of the project with a focus on the 10-day operation of CGMS (Crop Growth Monitoring System), based on the agro-meteorological model WOFOST (WOrld FOod Studies).</p>
Metadata source	<a href="http://www.marsop.info/frameset.htm">http://www.marsop.info/frameset.htm</a>
Documentation	You can browse the literature database of the website <a href="http://www.marsop.info/">http://www.marsop.info/</a>
<b>History dataset</b>	
History	<p>MARS (Monitoring Agriculture through Remote Sensing techniques) is a long term project that has provided technical support and expertise to the European Commission's Directorate General for Agriculture (DG VI) for more than ten years. The MARS project is one of the projects in which the Institute for the Protection and Security of the Citizen (<u>IPSC</u>, formerly SAI) of the Directorate General Joint Research Centre (<u>JRC</u>) of the European Commission in Ispra (Italy) participates. The project is carried out in its totality within the <u>MARS Unit</u> (formerly ARIS).</p> <p>Most of the activities in the MARS project are the continuation of existing activities that were previously known under names like MARS-STAT, for area statistics and yield monitoring, and MARS-PAC, for all activities related to the implementation of the Common Agricultural Policy. These activities have a strong regulatory basis as they are linked to specific requests from DG VI and the member states.</p>

<b>Dataset Identification</b>	
Maintenance	Continuously
Scale	50x50 km grid cells
Restrictions	Reproduction is authorised, provided the source is acknowledged, save where otherwise stated.
<b>Spatial Information</b>	
Coordinate system	LAEA
Extent	Europe
Temporal coverage	1975-2004
Objects/attributes	weather indicators - crop indicators - vegetation indices - cumulated dry matter
<b>Distribution information</b>	
Copyright	© European Communities, 1995-2001
Distributor	JRC via Mars Project
Availability	Data before 31/12/2001 are available without registration. For other data you have to be granted for access to the extranet via registration on <a href="http://www.marsop.info/">http://www.marsop.info/</a>
Format	Maps, graphs or tables
On-line delivery	via <a href="http://www.marsop.info/">http://www.marsop.info/</a>

### ***Less Favoured Areas***

*(see figures 12.1 and 12.2 for map illustrations)*

<b>General Information</b>	
Year / Edition	April 1997: version 1
Title of content	LFEC3MV1
Abstract	<p>“Areas eligible for the Less Favoured Areas Programme, according to the criteria of 1975.”</p> <p>The Less Favoured Areas programme is part of the programme for Rural Development of the EC, DG AGRI. Sometimes they are referred to as 'Objective 5a' areas. These are areas in which, from the agricultural point of view, activities are difficult to perform. Three types of LFA's are distinguished: mountain and hill areas (article 3.3), less favoured areas in danger of depopulation (article 3.4) and areas with specific handicaps (article 3.5).</p> <p>The Less Favoured Areas were initially defined in 1975 for 8 Member States. This was done at communal or intra-communal level. Directive 75/268/EEC gives the overall criteria for the Less Favoured Areas. The programme saw an extension every time that new Member States adhered, while at several occasions, other Member States added communes to the already defined zones. In consequence, the Less favoured Areas do not have a clear 'end-date' as is the case for the Structural Funds (1994-1999). They overlap spatially with the Objective 1, 2, 5b and 6 Structural Funds Areas.</p> <p>Remarks: There are no LFA's for Denmark. However, this is not due to a lack of data for this country, but simply because the LFA programme is not applicable for this country.</p> <p>The LFA's for The Netherlands were so small that they were prepared as point data for the official map and therefore will reside in a separate coverage.</p> <p>The user should be aware of the fact that the LFA do <b>not</b> match with the <u>NUTS</u> boundaries (version 7) and the communes layer. The mismatch can be explained by the fact that the datasets have different sources.</p>
Metadata source	Via GISCO
Documentation	DGX The European Union, Agriculture. Map at scale 1:4.000.000 published by Lovell Johns.
<b>History dataset</b>	
History	The dataset has been created in the framework of the publication of the official 'Agricultural Map' (DGX - DGVI).

		<p>The datasets for the Less Favoured Areas are supplied by the Directorate-General for Agriculture of the European Commission - (DG AGRI) after several intermediate stages.</p> <p>The definition of the communes which belong to one of the three sub-programs of the Less favoured Areas can be found in the Official Journal of the EC for every Member State. It is on basis of these original sources that the database was built.</p> <p>The sources of the digital data are variable. The preparation of the datasets was done by different partners in the project, depending on the country concerned. Two different types of data processing were used before integration in one seamless database, depending on the country:</p> <p>(1) Digitizing (digitizer or on screen) from existing paper maps: DE, IE, GR, NL, PT and UK</p> <p>(2) Coding communes belonging to the LFA's on basis of paper maps indicating the LFA's: BE, FI, LU</p> <p>(3) Linking the GISCO commune database with digital lists of communes belonging to the LFA's: AT, ES, FR</p> <p>(4) Mixed methodology: IT, SE (1 &amp; 2)</p>
<b>Dataset Identification</b>		
	Keywords	Community Support frameworks
	Maintenance	No information available
	Scale	1: 3.000.000, resolution is around 1500m. The source material was at variable scale (between 1:500.000 and 1:2.000.000), but due to generalisation procedures for map publication, the resulting dataset is at a smaller scale.
	Restrictions	When using this dataset, it should be bibliographically referred to as 'Less Favoured Areas EU (15 Member States) Version 1 (situation April 1997)'.
<b>Spatial Information</b>		
	Coordinate system	LAEA
	Extent	15 member States EU (without Islands, NL)
	Temporal coverage	The dataset gives the status of LFA early 1997
	Objects/attributes	<u>Less Favoured areas ELigible for OBjective 5A</u> Areas where agriculture is difficult: 33: mountain/hill areas (article 3.3) 34: less favoured areas in danger of depopulation (article 3.4) 35: areas with specific handicaps (article 3.5) NL: non LFA areas of the EC NE: non-EC areas LK: lakes
<b>Distribution information</b>		
	Copyright	CEC-DG AGRI
	Distributor	European Environment Agency - Data service
	Availability	Available via download, no password
	Format	ARC/INFO
	On-line delivery	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>

## ***Sensitivity to desertification and drought in the Mediterranean Basin***

(see figure 12.3 for map illustration)

<b>General Information</b>	
Year / Edition	2003
Title of content	
Abstract	Sensitivity to desertification and drought in the Mediterranean Basin. The Sensitivity Desertification Index (SDI) is derived from three datasets (also maps): Vegetation Sensitivity Index, Soil Sensitivity Index and Climate Sensitivity Index.
Metadata source	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>
Documentation	Desertification Information System for the Mediterranean <a href="http://dismed.eionet.eu.int/">http://dismed.eionet.eu.int/</a>
<b>History dataset</b>	
History	The Sensitivity Desertification Index (SDI) is derived from three datasets (also maps): Vegetation Sensitivity Index, Soil Sensitivity Index and Climate Sensitivity Index
<b>Dataset Identification</b>	
Keywords	Desertification, climate, vegetation, Mediterranean
Maintenance	No information available
Scale	No information available
Restrictions	<a href="#">See EEA dataservice- terms of use</a>
<b>Spatial Information</b>	
Coordinate system	LAEA
Extent	Mediterranean Basin
Temporal coverage	As source data
Objects/attributes	Grid cells with value for Sensitivity to desertification and drought
<b>Distribution information</b>	
copyright	See source data: Vegetation Sensitivity Index, Soil Sensitivity Index and Climate Sensitivity Index
Technical Producer	The European Topic Centre on Terrestrial Environment <a href="http://terrestrial.eionet.eu.int/">http://terrestrial.eionet.eu.int/</a> European Environment Agency <a href="http://www.eea.eu.int">http://www.eea.eu.int</a>
Creator	Desertification Information System for the Mediterranean (DISMED) <a href="http://dismed.eionet.eu.int/">http://dismed.eionet.eu.int/</a>
Distributor	European Environment Agency - Data service
Availability	Available via download, no password
Format	Zipped ARC/INFO GRID file
On-line delivery	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>

### 3.12.3 Forest resources

Inspire:

Mapping of forest resources, areas potential production at detailed levels also forest stand quality. Information on sustainable exploitation levels. Forest resources are usually mapped at regional and local levels, coordinated by national inventory mapping bodies. Used for management for sustainable exploitation of forest, planning for multi-purpose use of forest areas. Environmental assessment of erosion, biodiversity, water flow.

Datasets not fully described yet by this report

Dataset name	Content	Year	Scale	Extent	Source
EEFR (EFISCEN) European Forest resource database	Collection of national forest inventory data	1999	variable	30 European countries + Russia	EFI/Alterra
Dfde	Database on Forest Disturbances in Europe (DFDE)	2001		Pan-Europe	EFI/Alterra
Natura2000 forest sampling			16x16 km		
Remote Sensing forest map of Europe	RS forest map	1992	1 km <sup>2</sup>	Pan-Europe	ESA/ESTEC

### 3.12.4 Fishery resources

Inspire:

Localisation of the most important breeding, living and migration areas for economically important fish species, prawns and other economically important marine organisms. Datasets for each species, with information on time during year, also categorisation of when the risk towards selected risks/ pollution will be most destructive. Does not include constructions/production facilities, treated elsewhere. Fishery institutions at national and regional levels. Fishery data is used for adjusting exploitation to carrying capacity levels, assessment of sustainability in the fishery sector and effects on other sectors and resources, biodiversity in particular.

Datasets internally used by the European Commission (GISCO Database Manual)

Description	GISCO ref. code	Year	Scale	Extent	Source/ Copyright
Fishing areas World	FAWD25MGG	1995	1:25.000.000	World	GISCO CD CEC-Eurostat/GISCO

#### *Fishing areas Pan Europe*

(see figure 12.4 for map illustration)

General Information	
Year / Edition	No information available
Title of content	FAEU3M / FAEU10M
Abstract	Delineation of major Pan European fishing areas. The codification and the delineation of the areas are based on the <u>FAO</u> classification of fishing areas for statistical purposes. Subdivision of Marine area's for statistical purposes
Metadata source	<u>The GISCO Database Manual.</u>
History dataset	
History	FAO (Food and Agriculture Organisation) is the source for these

		datasets. The codification and the delineation of the areas is based on the FAO classification of fishing areas for statistical purposes
<b>Dataset Identification</b>		
	Maintenance	No information available
	Scale	1:3.000.000 and 1:10.000.000
	Restrictions	<u>See the restrictions in the GISCO Database Manual</u> When using this dataset, it should be bibliographically referred to as 'Fishing areas Pan Europe'
<b>Spatial Information</b>		
	Coordinate system	LAEA
	Extent	Pan-Europe
	Temporal coverage	No information available
	Objects/attributes	Relevant items of the Point Attribute Table (FAEU*.PAT) FACDL0, -1, -2, -3: Fishing Area CoDe Level 0,1,2,3 0: major fishing area boundary 1: sub-area boundary 2: division boundary 3: sub-division boundary FALBLV: Indication of largest polygon of fishing area: FACD: Full FAO code of fishing area INFO files: FAEUAT.INF: FAO codes + names for all areas
<b>Distribution information</b>		
	Copyright	CEC - Eurostat/GISCO
	Distributor	Eurostat Data Shop
	Availability	via GISCO (CD)
	Format	ARC/INFO polygons
	Ordering process	Requests for Data GISCO Database Manual should be sent to Eurostat Data Shop.

### 3.12.5 Geological resources

#### Inspire:

Geological resources, such as minerals, stone resources and deposits (sands/gravel), including hydrocarbons (oil, gas).

European level mapping of geological resources. Local level resource estimates. Important for assessment material flows, exploitation of definite resources, climate change, biodiversity.

Examples: national geological surveys.

Coordination of the national geological surveys: Eurogeosurvey: European Geological Data Resource. <http://geixs.brgm.fr/en/geodata.html>

### 3.12.6 Renewable energy resources

#### Inspire:

Energy resources excluding hydrocarbons: hydropower, bio-energy, solar, wind etc. For some data relevant with depth/height information on the extent of the resource, e.g. wind.

Of major importance to the sectors. In environmental assessments and planning used to view trends in extent and effect on other land cover or natural values, effect on sustainability or over-exploitation on resource use.

## 3.13 Transport

### 3.13.1 Transport infrastructure/networks

#### Inspire:

The transport component should comprise an integrated transport network, and related features, that are seamless within each national border.

Transportation data includes topographic features related to transport by road, rail, water, and air. It is important that the features form networks where appropriate, and that links between different networks are established. At European level of prime importance to have Access to an updated version of the road network in 1: 1 mill or 1: 250.000, one version per year. Additional information on transport network segments on kind of traffic, frequency, speed etc. At national level the same data should be available, and in addition names and numbering - addresses. Accuracy should be 1 meter or better.

See also EuroGlobalMap, EuroRegionalMap, Bartholomew, DCW, ESRI ArcWorld: chapter 3.1

#### ***Road network Pan Europe version 4***

(see figure 13.1 for map illustration)

<b>General Information</b>	
Year / Edition	Version 4
Title of content	RDEU1MV4
Abstract	Major Road network +Access points. The road segment types do not form seamless networks. For cartographic purposes, it is important to be able to show the road hierarchy in an uninterrupted way. The item RDSGLV was therefore added to Version 3 of the European road network dataset. The highest road segment level can consist of different types of road segments, but together they form a consistent network.
Metadata source	<u>The GISCO Database Manual.</u>
<b>History dataset</b>	
History	The road infrastructure version 4 is based on a digital dataset delivered by IRPUD - Institut für Raumplanung, Universität Dortmund. This dataset was originally digitised using various basic maps. In the RD metadata of The GISCO Database Manual you will find a table with all data sources used, presented by country. Source maps have different date, scale, and producer.
<b>Dataset Identification</b>	
Maintenance	No information available
Scale	1:1.000.000
Restrictions	<u>See the restrictions in the GISCO Database Manual</u> It should be referred to as 'European road network, Version 4'.
<b>Spatial Information</b>	
Coordinate system	LAEA
Extent	Pan-Europe
Temporal coverage	1991-1999 (depending on the source)
Objects/attributes	Attributes are available for both arcs and nodes. Typical road attributes are the length of each segment, the road number (national and European), and the type of road segment.
<b>Distribution information</b>	
Copyright	IRPUD (Institut für Raumplanung, Universität Dortmund)
Distributor	Eurostat Data Shop
Availability	via GISCO (CD)
Format	ARC/INFO line and node topology
Ordering process	Requests for Data GISCO Database Manual should be sent to Eurostat Data Shop.

## ***Rail network Pan Europe***

(see figure 13.2 for map illustration)

<b>General Information</b>	
Year / Edition	Version 4
Title of content	RWEU1MV4
Abstract	Major Rail network +Access points On a European scale, railways are represented as arcs. This means that they are to be considered having a length but no area. The arc represents the centerline of the route that the track takes. Each segment has a start and end node, being a track crossing, a country border node or a railway station.
Metadata source	<u>The GISCO Database Manual.</u>
<b>History dataset</b>	
History	The railway infrastructure version 4 is based on a digital dataset delivered by IRPUD - Institut für Raumplanung, Universität Dortmund. This dataset was originally digitised using various basic maps. In the RW metadata of The GISCO Database Manual you will find a table with all data sources used, presented by country. Source maps have different date, scale, and attribute source. The alignments of railway lines were taken from the maps, whereas the characteristics of the rail links were obtained from national railway companies or European-wide sources.
<b>Dataset Identification</b>	
Maintenance	No information available
Scale	1:1.000.000 (resolution 500m)
Restrictions	<u>See the restrictions in the GISCO Database Manual</u> When using this dataset, it should be bibliographically referred to as 'European railway network, Version 4'.
<b>Spatial Information</b>	
Coordinate system	LAEA
Extent	Pan-Europe
Temporal coverage	No information available
Objects/attributes	For each railway segment, different attributes are available such as the type of railway, the use of the segment (distinction between railway lines that are used for transport of goods only, persons only and lines that are used for transport of people and goods). For the nodes, information is kept concerning the type of node (border node, border station, railway station, rail ferry port), and concerning the railway segments leaving from each node. Version 4 of the European railway network dataset introduces five new themes of data: <ul style="list-style-type: none"> <li>• Planned TEN project data (tables RWEU1MV4.RATRWPPTNS, RWPTN.INF).</li> <li>• Traffic data 1995 (RWEU1MV4.RATRWLKTR).</li> <li>• Traffic data 1997 (RWEU1MV4.RATRWLNTR).</li> <li>• Infrastructure data (RWEU1MV4.RATRWLNTE).</li> <li>• Railway line project infrastructure data (RWEU1MV4.RATRWLPTTE).</li> </ul> For more attribute information see The GISCO Database Manual.
<b>Distribution information</b>	
Copyright	IRPUD (Institut für Raumplanung, Universität Dortmund)
Distributor	Eurostat Data Shop
Availability	via GISCO (CD)
Format	ARC/INFO line and node topology
Ordering process	Requests for Data GISCO Database Manual should be sent to Eurostat Data Shop.

# Map 13: Transport

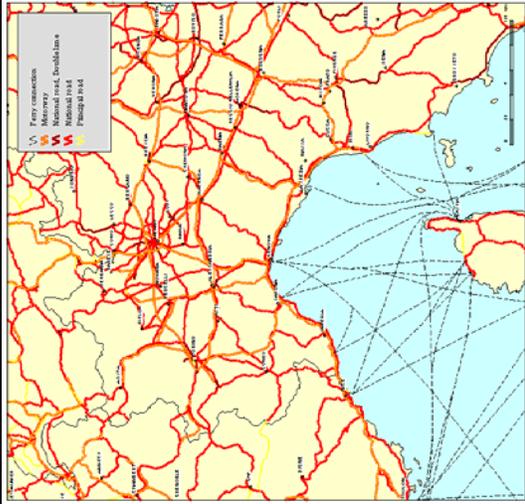


Fig 13.1 Road network Pan-Europe

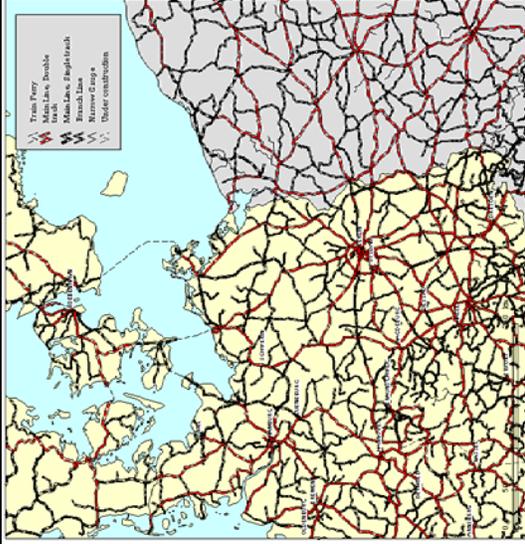


Fig 13.2 Rail network Pan-Europe

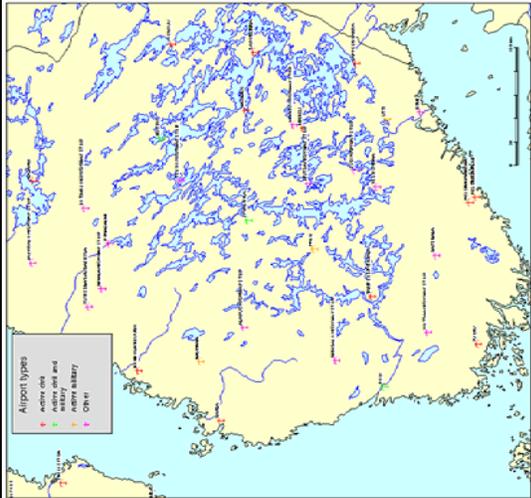


Fig 13.3 Airport types Pan-Europe

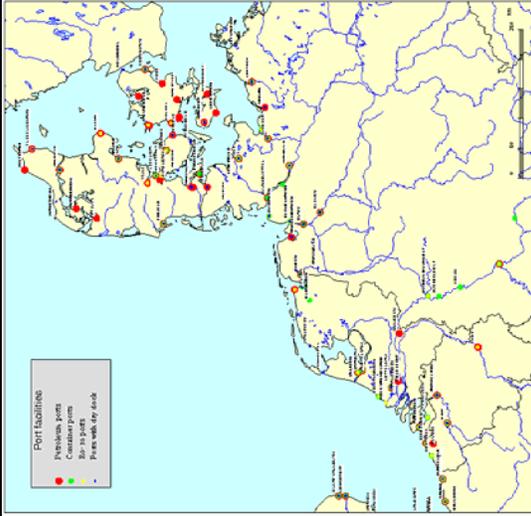


Fig 13.4 Port facilities Pan-Europe

## *Airports Pan Europe*

(see figure 13.3 for map illustration)

<b>General Information</b>	
Year / Edition	1993 (from DCW)
Title of content	APEU
Abstract	Location of 1612 European airports. This dataset forms an Excellent basis for transport modelling at a European scale. Because an airport can be identified via different codes, airport statistics from various sources can be geo-referenced
Metadata source	<u>The GISCO Database Manual.</u>
<b>History dataset</b>	
History	The main source for the location of most of the European airports in APEU is ESRI's Digital Chart of the World of 1993. A selection of all European airports was made and put in the coverage APEU. The location of all of these airports is checked with ONC and GNC maps. Minor changes can occur because of fitting the airports to the ONC/GNC airports and to the <u>GISCO NUTS</u> layer at a 1 million scale in background (version 5 and version 6). Therefore, the so-called 'official' coordinates of the airports (the position in <u>DCW</u> as provided by the original sources) can differ from the geographical location as stored in the GISCO Database Manual. On the ONC/GNC maps, a distinction is made between minor and major airports. When present, the minor airports were removed.
<b>Dataset Identification</b>	
Maintenance	No information available
Scale	Location of airport with accuracy of 1 minute This means that they can be located with an accuracy of about 1 to 2 kilometres on the earth's surface. It is recommended not to use these datasets on a scale larger than 1:1.000.000.
Restrictions	<u>See the restrictions in the GISCO Database Manual</u> When using this dataset, it should be bibliographically referred to as 'Airports Pan Europe'.
<b>Spatial Information</b>	
Coordinate system	LAEA
Extent	Pan-Europe
Temporal coverage	Source DCW 1993
Objects/attributes	Attribute APSICD: Unique identification of an airport consists of <u>ISO</u> code of country followed by a serial number per country. Other attributes: altitude, Type and name of airport, UN location code, identification codes of administrative regions.
<b>Distribution information</b>	
Copyright	CEC, Eurostat/GISCO modified from various sources
Distributor	Eurostat Data Shop
Availability	via GISCO (CD)
Format	ARC/INFO point data
Ordering process	Requests for Data GISCO Database Manual should be sent to Eurostat Data Shop.

## ***Ports Pan Europe***

(see figure 13.4 for map illustration )

<b>General Information</b>	
Year / Edition	1991-1999 various sources
Title of content	POEU
Abstract	Location of 1848 European ports This dataset forms an excellent basis for transport modelling at a European scale. Because a port can be identified via different codes, port statistics from various sources can be georeferenced.
Metadata source	<u>The GISCO Database Manual.</u>
<b>History dataset</b>	
History	The main source for the location of more than 1.500 European ports, is Lloyd's Port dictionary. On July 1992, Eurostat received from Lloyd's Maritime Information Services Ltd. a port file containing the longitude and latitude of approximately 19.000 places of Maritime significance, worldwide. From this amount of localities, a selection is made of all European 'Ports of Registry'. In addition, some ports (12 Member States) were added from a list received from Eurostat D4 for the 'Europe in Figures' publication in 1991. In fact this list originates as well from Lloyd's Maritime Information Services Ltd.
<b>Dataset Identification</b>	
Maintenance	No information available
Scale	Location of port with accuracy of 1 minute This means that they can be located with an accuracy of about 1 to 2 kilometres on the earth's surface. It is recommended not to use these datasets on a scale larger than 1:1.000.000
Restrictions	<u>See the restrictions in the GISCO Database Manual</u> When using this dataset, it should be bibliographically referred to as 'Ports Pan Europe'.
<b>Spatial Information</b>	
Coordinate system	LAEA
Extent	Pan-Europe
Temporal coverage	1991-1999 different sources
Objects/attributes	POSICD: Unique identification of the port, consisting of the 2character <u>ISO</u> country code followed by a sequential number per port, within each country. Other attributes: name port, UN location code and name, Lloyd's port list names, identification codes of administrative regions, etc
<b>Distribution information</b>	
Copyright	CEC, Eurostat/GISCO
Distributor	Eurostat Data Shop
Availability	via GISCO (CD)
Format	ARC/INFO point data
Ordering process	Requests for Data GISCO Database Manual should be sent to Eurostat Data Shop.

### 3.13.2 Transport facilities

## 3.14 Utilities

### 3.14.1 Transmission lines

Inspire:

Physical construction for transport of defined products: These may include pipelines for transport of oil, gas, water, sewage or other pipelines, Transmission lines may include electrical, phone, cable-TV or other networks. Transmission lines for both land and at sea/water (bottom) are important. Rough pipeline databases exist at European level. Data within countries in-homogenous.

Used on construction industry - examples of national portals warning on construction, distributing maps/data on location of pipelines. Relevant for environmental sector e.g. on land use, urban and rural planning, risk and hazards management, assessment of material flows.

Datasets internally used by the European commission (GISCO Database)

<b>Description</b>	<b>GISCO ref. code</b>	<b>Year</b>	<b>Scale</b>	<b>Extent</b>	<b>Source, Copyright</b>
Electricity lines and power/transformation stations	ETEUEL	1998 (data 1990-1993)	1:20.000.000	PAN-Europe	CEC-Eurostat/GISCO
Terminals and refineries for transport of oil and gas	ETEUOG PT	1998 (data 1990-1993)	Location of terminal/refinery	PAN-Europe	CEC-Eurostat/GISCO
Pipelines and terminals/refineries for transport of oil and gas	ETEUOG	1998 (data 1990-1993)	1:20.000.000	PAN-Europe	CEC-Eurostat/GISCO
Planned electricity projects for the Trans European Networks Program	ETEUELTPR	1998 (data 1990-1993)	1:20.000.000	PAN-Europe	CEC-Eurostat/GISCO - DGXVII
Planned oil and gas lines and terminals for the Trans European Networks Program	ETEUEL OGTN	1998 (data 1990-1993)	1:20.000.000	PAN-Europe	CEC-Eurostat/GISCO - DGXVII

## 3.15 Facilities

### 3.15.1 Environmental protection facilities

Inspire:

Environmental protection facilities include a series communal or private facilities of sewage/ wastewater treatment sites, waste treatment facilities (e.g. incineration , landfills), anti-noise constructions facilities, protection facilities against natural hazards (slide walls, flood walls etc). It is important to identify the environmental protection facilities with unique identifiers. The data component category coincides with economic/statistical categories (NACE/SERIEE). Location by geographical point, by address or in some cases as area.

National databases probably existing.

Environmental protection facilities as listed in the SERIEE (Classification of environmental protection facilities) (Eurostat 1994).

Datasets internally used by the European commission (GISCO Database)

Description	GISCO ref. code	Year	Scale	Extent	Source, Copyright
938 power and transformation stations. Attributes: capacity, type of reactor, energy	EPEUEL	1992	Points: Location of station. 1:6.000.000	PAN-Europe	CEC-Eurostat/GISCO

### 3.15.2 Production facilities, industry

Inspire:

Facility location of production industry, mines and energy production facilities. Concerning industry these may be chemical, hydrocarbons (oil-gas), mines or any other industry. The categories should as far as possible follow the NACE and SERIEE classifications for such facilities

Important in handling of emissions, production flows and risks. Identification important in connection to the IPPC/EPER Register, the Seveso Directive, the Large combustion plants Directive, as well as Inventory of Contaminated sites, Emissions to water, Nuclear reporting

### 3.15.3 Agricultural production facilities

Inspire:

Agricultural production facilities:

Farming production facilities. Incl. Farming equipments/facilities (irrigation systems, greenhouses, stables...).

Important in local land use planning and agricultural and water management.

## 3.16 Economy

### 3.16.1 Economic statistics

Inspire:

Economic activities including production, consumption, stocks, income, and employment: statistics referred to administrative units, grids, facilities, networks, addresses, monetary and physical units. Economic data on transport and traffic are classified here. In general, economic activities are described according to the NACE rev.1.1. The NACE is the official classification of economic activities in the European Union and covers all industries.

Datasets not fully described yet by this report

Dataset/ database name	Content	Actualisation	Extent	Source
REGIO Regional Data Bank	REGIO emphasises the rural perspective, including information on rural economies, demographic characteristics and socio-economic characteristics. Regio covers the principal aspects of the economic and social life of the EU, such as demography, economic accounts, employment etc.	Time frame of data collection depending on type information	EU 15 and since a couple of years data on the 10 new member states	Part of the NewCronos database (macro-economic data) Data holder Eurostat

### 3.17 Area regulation

#### 3.17.1 Land regulation/land use plan

Inspire:

Land regulation is the general spatial planning tool at regional and local levels. The land use plans regulate actual and future use of areas. The land use plans commonly have significant textual regulations to each area/ land category.

Diverse situation in Europe. No known harmonisation.

Each country has its own system. The documents are frequently seen as legal documents, and the categories remain for decades as rights directing use of property.

Not interesting at small scales. Municipal data at 1:25.000 - 1:50.000, detailed regulation plans at e.g. 1: 5000.

Datasets internally used by the European commission (GISCO Database)

Description	GISCO ref. code	Year	Scale	Extent	Source, Copyright
Inventory of sites designated under community legislation and international conventions and programmes (1812 points)	DAEUINPT	?	Points	Pan-Europe and Northern Africa	CEC-DGX!/CORINE modified from RAMSAR, UNEP-map, Unesco, WCMC
Inventory of sites designated at national or sub-national level (33165 points)	DAEUINPTV 2	1999	Points	Pan-Europe	EEA- CoE-WCMC, updated through EIONET

#### 3.17.2 Protected sites

Inspire:

Areas with certain protection as defined by sectors. Many of the categories refer to conservation of nature, but could also refer to other objectives.

Several databases are based on areas designated through international conventions, EU legislation, national legislation e.g. Natural 2000, Habitat directive sites, Birds directive sites, Ramsar sites, nationally designated sites.

**Examples:**

Dataset title	Description	Source institution
<b>Habitat directive sites</b>	Sites designated under the Habitat directive (1992) (Directive 92/43/EEC) most sites registered as points. Coverage: All EU countries	Environmental authorities. MS, DGEnv, INSPIRE
<b>Birds directive sites</b>	Sites designated under the bird directive (1979), most sites registered as points. Coverage: All EU countries. Natura2000-programme.	Environmental authorities. MS, DGEnv, INSPIRE
<b>Other internationally designated sites</b>	Internationally designated areas A survey of all the sites within Europe that are under international designation. All locations are represented by points except for the Ramsar, World Heritage and Biosphere areas that have digitized boundaries. It is an aim that all sites are to be digitized with real boundaries/ polygons. Scale: 1: 180.000 The following designations are included: <ul style="list-style-type: none"> <li>• Biogenetic Reserves</li> <li>• European Diploma</li> </ul>	Environmental authorities Ratifying countries The different conventions DGEnv

	<ul style="list-style-type: none"> <li>• Biosphere Reserves</li> <li>• UNESCO World Heritage Sites</li> <li>• Ramsar Convention Sites</li> <li>• Barcelona Convention Sites</li> <li>• Helsinki Convention Sites</li> </ul>	
<b>Nationally designated sites</b>	<u>Nationally designated areas</u> The dataset contains the geographic location and size of the nationally designated areas.	Environmental authorities. MS, INSPIRE members INSPIRE
<b>Protected cultural heritage – land and sea</b>	Protected objects or sites, kind of object, reference to law/directive, protection date. The protected sites is only a small proportion of the full occurrence of localities of ancient old houses, mid-evil sites/ constructions, ship wrecks or other cultural values at sea. In order to see the conservation and management of valuable	

#### Datasets not fully described yet by this report

Dataset name	Content	Year	Scale	Extent	Source
IBA	Important Bird areas	Up to date	1:1.000.000	Global	Birdlife
Endemic Bird areas	Endemic Bird areas	Up to date	1:1.000.000	Global	Birdlife
World Heritage Sites	Spatial database with location, size and description of UNESCO World Heritage Sites	Cont. updated	Scale various	Global	UNEP-WCMC
Wetland areas	Areas under RAMSAR Convention designation	Cont. updated	1:1.000.000	Global	UNEP-WCMC
Designated areas	A spatial database with world wide information on location, size, type of designation, year of foundation	Cont. updated	Scale various	Global	UNEP-WCMC

#### *World database on protected areas*

General Information	
Year / Edition	2004
Title of content	WDPA 2004
Abstract	<p>The 2004 version of the WDPA on CD-ROM contains a total of 15 map layers of information, of which eight layers on Protected Areas information. Six base layers provide context for visualizing the protected area information. The WDPA 2004 was based in the 2003 version launched at the World Congress on Protected Areas. It includes substantial updates and new records to the previous version. Currently, the WDPA 2004 is the best global database on protected areas.</p> <p>Nevertheless, there are some limitations of this dataset: data gaps, inaccuracies either of the geographic or attribute data.</p> <p>Many of the inaccuracies are the result of differences in the source documents, the use of conflicting base maps, or the result of mixing data digitized at very different scales. These can only be solved with better and newer data sources.</p>
Metadata source	Extensive metadata can be found at the internet site of WDPA

		<a href="http://sea.unep-wcmc.org/wdbpa/download/wdpa2004/WDPA_Info/metadata.html">http://sea.unep-wcmc.org/wdbpa/download/wdpa2004/WDPA_Info/metadata.html</a>
	Documentation	IUCN (1994). <i>Guidelines for Protected Areas Management Categories</i> . IUCN, Cambridge, UK and Gland, Switzerland.
<b>History dataset</b>		
	History	The CD is the product of the WDPA Consortium efforts as part of a broad strategy for sharing conservation information for the <u>Vth World Parks Congress</u> and beyond.
<b>Dataset Identification</b>		
	Keywords	Protected Area, Conservation, environment
	Maintenance	Updated on an annual basis
	Scale	1:1.000.000
	Restrictions	Non Commercial Use Only. Suggested citation: WDPA Consortium. "World Database on Protected Areas" 2004 – Copyright World Conservation Union (IUCN) and UNEP-World Conservation Monitoring Centre (UNEP-WCMC), 2004.
<b>Spatial Information</b>		
	Coordinate system	GCS_WGS_1984
	Extent	Global
	Temporal coverage	2003
	Objects/Attributes	<ul style="list-style-type: none"> <li>• Established Protected Areas of IUCN cat. I through VI. <ul style="list-style-type: none"> <li>○ I Nature reserves/ wilderness areas</li> <li>○ II National park</li> <li>○ III natural monument</li> <li>○ IV Habitat/Species Management Area</li> <li>○ V Protected Landscape/Seascape</li> <li>○ VI Managed Resource Protected Area</li> </ul> </li> <li>• WDPA International Protected Areas: Biosphere Reserves, RAMSAR sites, and World Heritage Sites.</li> <li>• Other National Protected Areas (national Protected Areas point data that are not assigned both an IUCN classification and a "designated" status).</li> <li>• WDPA International Regional Protected Areas</li> </ul> <p>Base layers: Several data layers in image or vector format that provide context for visualizing Protected Areas data. These include topography, hydrology, cities and roads, country boundaries</p>
<b>Distribution information</b>		
	Copyright	World Conservation Union (IUCN) and UNEP-World Conservation Monitoring Centre (UNEP-WCMC)
	Publisher	WDPA Consortium, UNEP, IUCN
	Availability	CD-Rom: Free downloadable
	Format	SDE Feature Class
	On-line delivery	Via <a href="http://sea.unep-wcmc.org/wdbpa/download/wdpa2004/WDPA_Info/About.html">http://sea.unep-wcmc.org/wdbpa/download/wdpa2004/WDPA_Info/About.html</a>

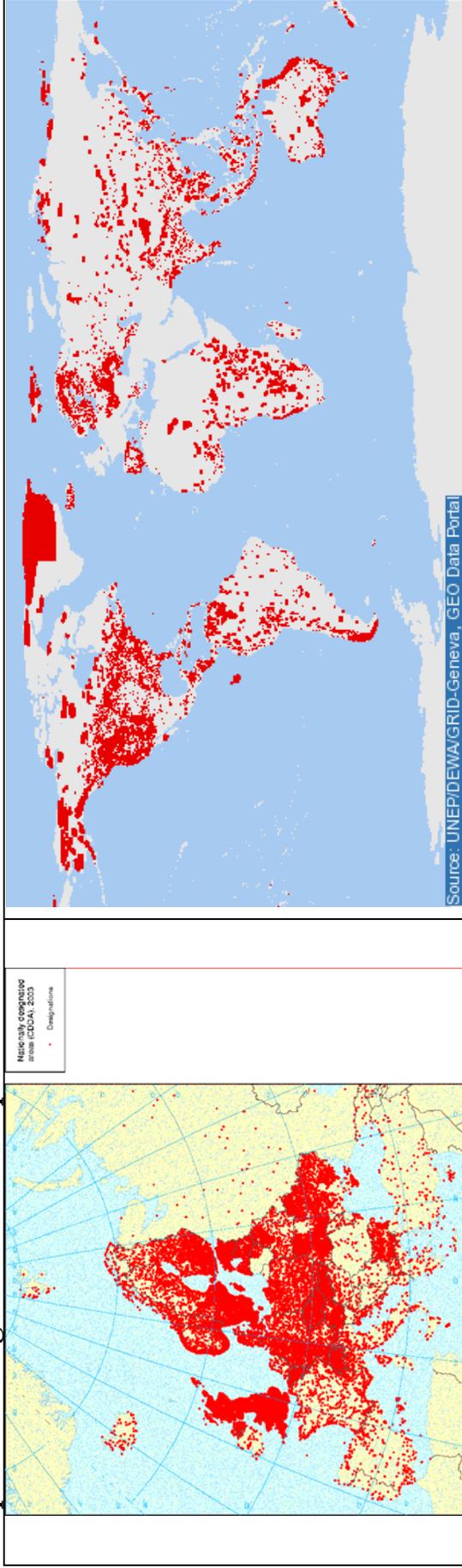
### ***Protected Areas IUCN (categories I-IV); Percent of total area***

(see figure 14.2 for map illustration)

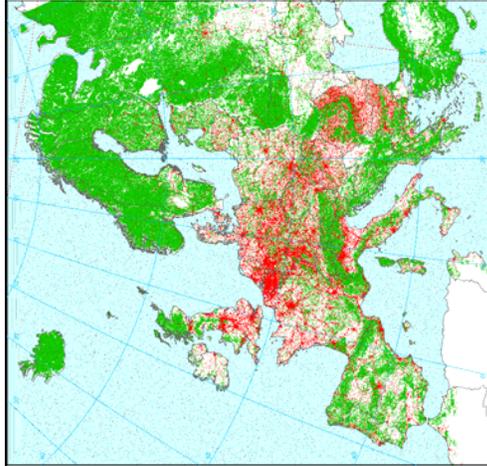
<b>General Information</b>		
	Year / Edition	December 2003
	Title of content	reg_land_protected_ratio
	Abstract	Dataset with the Percentage protected area of total area A protected area is defined by The World Conservation Union (IUCN) as: An area of land and/or sea especially dedicated to the protection and maintenance

	<p>of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means.</p> <p>Although all protected areas meet the general purposes contained in this definition, in practice the precise purposes for which protected areas are managed differ greatly. Following are the definitions of IUCN Management categories I-VI.</p> <p>Ia. Strict Nature Reserve  Ib. Wilderness Area  II. National Park  III. Natural Monument  IV. Habitat/Species Management Area  (V. Protected Landscape/Seascape)  (VI. Managed Resource Protected Area)</p>
Metadata source	<a href="http://geodata.grid.unep.ch/page.php">http://geodata.grid.unep.ch/page.php</a>
Documentation	Most recent data via: <a href="http://quin.unep-wcmc.org/wdbpa/">http://quin.unep-wcmc.org/wdbpa/</a> UNEP WCMC: <a href="http://quin.unep-wcmc.org/">http://quin.unep-wcmc.org/</a>
<b>History dataset</b>	
History	As international efforts to preserve biological diversity have evolved, it has become clear that protected areas are at the heart of any global strategy for success. Without the preservation of core areas of habitat - as well as the preservation of buffer zones around cores and linking wildlife corridors - biodiversity as we know it will be lost. Moreover, protected areas preserve landscapes, seascapes and natural areas for appropriate, long-term, appreciation and use by human beings. Of those areas most critically in need of preservation (as habitats of intense endemism, as ecologically exceptional communities, or as unique landscapes) significant numbers fall within the borders of the world's less developed countries.
<b>Dataset Identification</b>	
Keywords	Protected areas, IUCN classification, GEOAS 2003, AGS 2003,
Maintenance	Every 4 to 5 years
Scale	Non applicable
Restrictions	This data is copyright to UNEP-WCMC or its collaborators. Use and reproduction of this data is authorised for educational or other non-commercial purposes without prior permission from the copyright holders.
<b>Spatial Information</b>	
Coordinate system	Non applicable
Extent	World in regions (Africa, Asia+Pacific, Europe, Latin America + Caribbean, North America, Polar, West Asia)
Temporal coverage	1975, 1980, ..., 2000, 2004 Data as of December 2003. Data aggregation made by UNEP-WCMC (GEO3 Protected Areas Snapshot- <a href="http://quin.unep-wcmc.org/wdbpa/GEO3.cfm">http://quin.unep-wcmc.org/wdbpa/GEO3.cfm</a>
Attributes	Percentage protected area of total area
<b>Distribution information</b>	
Copyright	c 2003 United Nations Environment Programme /DEWA/ GRID-Geneva
Distributor	UNEP-WCMC (World Conservation Monitoring Centre)
Availability	Downloadable
Format	Web page
On-line delivery	<a href="#">Protected Areas (IUCN Categories I-VI and not Classified) - Percent of Total Area</a> regional data <a href="#">Protected Areas (IUCN Categories I-VI and not Classified) - Percent of Total Area</a> sub-regional data

**Map 14: Area regulation – risks – polluted areas**

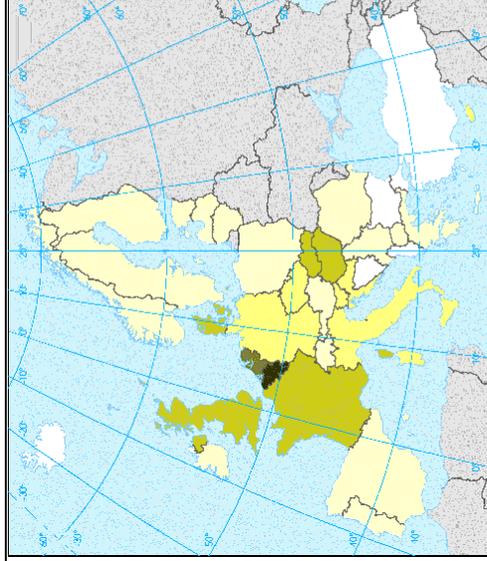


*Fig 14.1 Nationally designated areas*



*Fig 14.3 Pressures from urbanisation and transport on semi-natural areas*

*Fig 14.2 Protected areas IUCN 2000*



*Fig 14.4 Use of herbicides across Europe*

### ***Nationally Designated Areas***

(see figure 14.1 for map illustration)

<b>General Information</b>	
Year / Edition	Last upload 07/06/2004
Title of content	CDDA
Abstract	The dataset contains the geographic location and size of the nationally designated areas.
Metadata source	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>
Documentation	No information available
<b>History dataset</b>	
History	The inventory of nationally designated areas began under the CORINE program. It is now maintained for EEA by the European Topic Centre on Nature Protection and Biodiversity and is being updated through EIONET.
<b>Dataset Identification</b>	
Keywords	Nature, geographic, designated, area, ETC/NPB
Maintenance	No information available
Scale	Non applicable
Restrictions	<a href="#">See EEA dataservice- terms of use</a>
<b>Spatial Information</b>	
Coordinate system	LAEA
Extent	EU 25, EFTA 4, AC 3, Albania, Bosnia and Herzegovina, Croatia, Macedonia-the Former Yugoslav Republic of, Monaco, Serbia and Montenegro
Temporal coverage	2003
Attributes	DataTables: List of designations by country, Site habitats table, Site relations table, Nationally designated areas. Look-up tables: National designation type category, Site relations lookup table, EUNIS habitat classification, IUCN category look-up table, CDDA tables metadata, CDDA database model.
<b>Distribution information</b>	
Source/ Creator	European Topic Centre on Nature Protection and Biodiversity
Distributor	European Environment Agency Data service
Availability	Available via download, no password
Format	Tables in ASCII Delimited, Dbase IV, Access 2000 or Excel format
On-line delivery	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>

### 3.17.3 Sector regulation

#### Inspire:

The data component group is containing all land, resource and action restrictions that can be defined to specific locations. Each sector has a wide variety of detailed regulations. The group does not contain general land regulations, land use plans and conservation areas.

Examples: defined dumping sites, restricted areas around drink water sources. The data is most relevant at medium to low scale levels. A very wide range of sector regulations can be identified.

Examples datasets:

- Nitrate vulnerable zones (agricultural/environmental authorities)
- Regulated(official) fairways (sea transport/marine authorities)
- Regulated areas for dumping of waste at sea (marine/waste/environmental authorities)
- Regulated noise restriction zones (health/agriculture authorities)
- Prospecting and mining permit areas (industry/energy authorities)
- Permit areas for sand extraction
- Fishing zones (fishery authorities)
- Economically significant aquatic species protection areas (fishery authorities)
- Regulated fish farm zones (fishery authorities)
- Polluted areas food restriction zones (environmental/fishery authorities)
- Drinking water protection areas (water utilities / health authorities)
- Fish water protection areas
- Recreational waters

### 3.18 Natural and technological risks

#### 3.18.1 Natural risk vulnerability zones

Inspire:

1. Categorisation of land according to estimated/ registered anticipated risk for natural hazards; floods, landslides, avalanches, forest fires etc.
2. Physical mapping of areas susceptible to natural hazards commonly divided into zones with different susceptibility classes.
3. Methods for assessing risk zones are based on a variety of data. Important data include physical data about terrain, vegetation, climate, geology.

Data needed: high level regional/local data

Example datasets:

- Flooding vulnerable zone
- Land slide vulnerable zone
- Snow slide vulnerable zone
- Forest fire vulnerable zone
- Earthquake vulnerable zones

#### 3.18.2 Technological risk vulnerability zones

Inspire:

Technological risk zones:

Categorising areas according to their vicinity to locations producing, storing, transporting potential artificial/ technological hazards, chemical industry, nuclear power plants, dams etc.

Seveso II Directive describes certain kinds of technological risks. Extension of fields covered by the Directive is proposed. Used in land use planning to decrease population exposed to risks.

Risk zone generation is depending on other data components, e.g. roads, industrial location, terrain, meteorological data.

Data needed: high level regional/local data

#### ***Pressures from urbanization and transport on semi-natural areas***

(see figure 14.3 for map illustration)

<b>General Information</b>	
Year / Edition	English version 3
Title of content	
Abstract	Urban sprawl is increasing, but there are insufficient data available to enable an assessment of the extent to which the re-use of previously developed land is reducing pressures for development on virgin land
Metadata source	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>
Documentation	Full references in European Environment Agency: Environmental signals 2002, Benchmarking the millennium. Environmental assessment report No 9. Luxembourg: Office for Official Publications of the European Communities, p. 107. The report is also available as PDF from <a href="http://www.eea.eu.int/">http://www.eea.eu.int/</a> . Reports: <u>Environmental signals 2002 - Benchmarking the millennium</u> : This report provides an insight into the state of Europe's environment and is targeted at high-level policy makers in EEA member countries and the European Union, as well as the wider public. The publication of this report demonstrates that the annual routine of reporting on the state of the environment, and above all the progress that has been made, is now well established.

<b>History dataset</b>	
History	Source datasets: <u><a href="#">NUts boundaries EU, 3M, Version 7 (NUEC3MV7)</a></u> <u><a href="#">RoaDs, pan EUrope, 1M, Version 4 (RDEU1MV4)</a></u> <u><a href="#">PELCOM</a></u> <u><a href="#">RailWay, pan EUrope, 1M, Version 4 (RWEU1MV4)</a></u> <u><a href="#">CORINE Land Cover</a></u>
<b>Dataset Identification</b>	
Maintenance	No information available
Scale	Non applicable
Restrictions	<u><a href="#">See EEA dataservice- terms of use</a></u>
<b>Spatial Information</b>	
Coordinate system	LAEA
Extent	EU 15, EFTA 4, AC 13, Albania, Belarus, Bosnia and Herzegovina, Croatia, FR Yugoslavia, Macedonia- the Former Yugoslav Republic of, Moldova- Republic of, Russian Federation, Ukraine.
Objects/attributes	Indicators for
<b>Distribution information</b>	
Copyright	European Environment Agency
Distributor	European Environment Agency - Data service
Availability	Available via download, no password
Format	ARC/INFO export file
On-line delivery	Via <u><a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a></u>

### 3.18.3 Technological accidents and natural disasters

Inspire:

Location of actual events, site of occurrence, cause, effects, e.g. the European forest fire mapping project. Important in disaster operations, assessment of risks and climate change, and follow up actions in areas affected.

### 3.19 Polluted areas/areas under anthropogenic stress

#### 3.19.1 Local soil/land contaminated areas

Inspire:

Local contaminated sites, often sites near or at large industrial sites or at places of dumping of waste, mines and mine dump sites. Both land and sea.

Terrestrial local contamination areas are used for different purposes, but use is restricted. Clean-up actions or other measures need to be undertaken before use. Sea: Submission of data for the Annual OSPAR Report on Dumping of Wastes at Sea from OSPAR Convention for the protection of the marine environment of the north-east Atlantic.

Data needed: high level regional/local data

Examples datasets:

- Local land contamination
- Local land contamination- detailed data
- Sea waste disposal (OSPAR Convention)

#### 3.19.2 Diffuse soil contamination

Inspire:

Contamination usually by long-range transport of pollutants. Can be mapped by monitoring and further modeling. Example of moss sampling has been done in Northern Europe

Several projects, e.g. initiatives under UNECE- convention on long range Tran boundary air pollution (e.g. critical loads map for heavy metals. Relevant for agriculture, health, food and water supply.

#### *Trends in emissions of acidifying pollutants (CLRTAP/EMEP)*

General Information	
Year / Edition	Last update 05/12/2003
Title of content	CLRTAP/EMEP
Abstract	Data on anthropogenic emissions of acidifying pollutants (NH <sub>3</sub> , NO <sub>x</sub> , SO <sub>2</sub> ) sent by countries to CLRTAP/EMEP with copies to EEA and ETC/ACC. Data compiled and held by ETC/ACC are annual national total emissions of NH <sub>3</sub> , NO <sub>x</sub> and SO <sub>2</sub> from individual countries. Sectoral data is provided following EMEP (NFR02) classification for the following main source categories: combustion in power plants and industry, transport above 1000m, transport below 1000m, commercial, residential and other stationary combustion, fugitive emissions from fuels, industrial processes, solvent and other product use, agriculture, waste, other, natural. From this classification the EEA proposes a simplified classification (EEA classification) in the categories: energy, industry, transport, agriculture, waste, other.
Metadata source	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>
Documentation	Applications <a href="#">Trends in emissions of acidifying pollutants (NFR02 format)</a> <a href="#">Percentage change of NO<sub>x</sub> and SO<sub>2</sub> total anthropogenic emission</a> <a href="#">Trends in emissions of acidifying pollutants (EEA sector classification based on the NFR02 format)</a>
History dataset	
History	Countries official submissions under CLRTAP are required in NFR02 format which provides a detailed breakdown of emissions according to sectoral activities. However many countries are still in the process of converting their emissions inventories from earlier reporting formats into NFR02. Data in earlier formats is available for downloading.

<b>Dataset Identification</b>	
Keywords	Air, ozone, ETC/ACC, acidification, CLRTAP Pollutants: NH3, NOX, SO2
Maintenance	Continuously
Scale	Non applicable
Restrictions	<u>See EEA dataservice- terms of use</u>
<b>Spatial Information</b>	
Coordinate system	LAEA
Extent	EU 15, EFTA 4, AC 13 (with the exception of Malta), Armenia, Belarus, Bosnia and Herzegovina, Croatia, FR Yugoslavia, Georgia, Kazakhstan, Kyrgyzstan, Macedonia- the Former Yugoslav Republic of, Moldova- Republic of, Monaco, Russian Federation, Ukraine.
Objects/attributes	Metadata on table and item level available via EEA data service: <ul style="list-style-type: none"> <li>• EMEP SNAP97 sector classification</li> <li>• NFR01 and EEA sector classification based on the NFR01 sector classification</li> <li>• NFR02 and EEA sector classification based on the NFR02 sector classification</li> <li>• Sectors classification look-up tables</li> </ul>
<b>Distribution information</b>	
Copyright	European Environment Agency
Creator	The European Topic Centre on Air and Climate Change <a href="http://etc-acc.eionet.eu.int/">http://etc-acc.eionet.eu.int/</a>
Distributor	European Environment Agency - Data service
Availability	Available via download, no password
Format	ASCII Delimited, Dbase IV, Microsoft Access(2000), Excel
On-line delivery	Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>

### *Use of pesticides across Europe*

<b>General Information</b>	
Year / Edition	Last upload: 11/12/2001
Title of content	Use of pesticides across Europe
Abstract	Data refer to the quantity of pesticides used in or sold to the agricultural sector expressed in Metric Tons (MT) of active ingredients (N, P2O5 and K2O). Data are presented for the following major groups: 1.insecticides 2. mineral oils 3. herbicides 4. fungicides, bactericides and seed treatments 5. plant growth regulators 6. rodenticides.
Metadata source	FAO Statistics Division. Official web site: <a href="http://apps.fao.org/">http://apps.fao.org/</a>
Documentation	Full references in European Environment Agency (2003): Europe's water: An indicator-based assessment. Topic report No 1/2003, p. 65. The report is available as PDF from below link or <a href="http://www.eea.eu.int/">http://www.eea.eu.int/</a>
<b>History dataset</b>	
History	Source dataset: <u>Pesticide consumption</u> Source: FAO.
<b>Dataset Identification</b>	
Keywords	Agriculture, pesticide, insecticide, oil, herbicide, fungicide, bactericide.
Maintenance	Last update 11/12/2001
Scale	Non Applicable
Restrictions	<u>See EEA dataservice- terms of use</u>
<b>Spatial Information</b>	
Coordinate system	LAEA
Extent	EU 25, EFTA 4 (with the exception of Iceland, Liechtenstein) , AC 3 (with the exception of Turkey) , Albania, Armenia, Croatia, FR Yugoslavia, Kazakhstan,

		Kyrgyzstan, Macedonia- the Former Yugoslav Republic of, Russian Federation, Tajikistan, Turkmenistan, Ukraine
Temporal coverage		Range: 1986-1999
Objects/attributes		Data: Pesticide consumption (5152 records)
<b>Distribution information</b>		
Copyright		FAO
Creator		The Food and Agriculture Organisation <a href="http://www.fao.org">http://www.fao.org</a>
Distributor		European Environment Agency / FAO
Availability		Available via download, no password
Format		ASCII Delimited, Dbase IV, Microsoft Access(2000) or Excel
On-line delivery		Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>

### *Use of herbicides across Europe*

(see figure 14.4 for map illustration)

<b>General Information</b>		
Year / Edition		2003
Title of content		Use of herbicides across Europe
Abstract		Part of the data presented in the dataset: <u>Pesticide consumption</u> . Data refer to the quantity of pesticides used in or sold to the agricultural sector expressed in Metric Tons (MT) of active ingredients (N, P2O5 and K2O). Data are presented for the following major groups: 1.insecticides 2. mineral oils 3. herbicides 4. fungicides, bactericides and seed treatments 5. plant growth regulators 6. rodenticides. Source: FAO.
Metadata source		Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>
Documentation		Full references in European Environment Agency (2003): Europe's water: An indicator-based assessment. Topic report No 1/2003, p. 65. The report is available as PDF via <a href="http://www.eea.eu.int/">http://www.eea.eu.int/</a> .
<b>History dataset</b>		
History		Source dataset: <u>Pesticide consumption</u> Source: FAO.
<b>Dataset Identification</b>		
Keywords		Agriculture, pesticide, insecticide, oil, herbicide, fungicide, bactericide
Scale		Non Applicable
Restrictions		See EEA dataservice- terms of use
<b>Spatial Information</b>		
Coordinate system		LAEA
Extent		EU 15, EFTA 4 (with the exception of Iceland, Liechtenstein) , AC 13 (with the exception of Bulgaria, Turkey), Croatia, FR Yugoslavia, Macedonia- the Former Yugoslav Republic of
Objects/attributes		Data: Herbicide consumption
<b>Distribution information</b>		
Copyright		European Environment Agency
Creator		The European Topic Centre on Air and Climate Change <a href="http://etc-acc.eionet.eu.int/">http://etc-acc.eionet.eu.int/</a>
Distributor		European Environment Agency - Data service
Availability		Available via download, no password
Format		ASCII Delimited, Dbase IV, Microsoft Access(2000), Excel
On-line delivery		Via <a href="http://dataservice.eea.eu.int/dataservice/">http://dataservice.eea.eu.int/dataservice/</a>

### 3.19.3 Noise zones

#### Inspire:

Areas affected by noise. Commonly these appear as zones with different levels of noise disturbance due to distance from source. Common noise producing elements being used in calculation of noise zones are roads, rail, airports, and ports. Could also be:

Air routes, sailing lanes/fairways, rifle course, motor cross course, military training courses.

Data needed: high level regional/local data.

Objective of 6EAP describes that there should be focus on actions at the local level to reduce noise levels.

One action mentioned is to produce noise maps.

## 3.20 Society

### 3.20.1 Demography

Inspire:

Demographic data on population increase, gender, age, mortality, life expectancy, migration. Resolution to administrative units or grids.

Important in regional and urban planning, planning of facilities, utilities, social services, transport infrastructure. Also important for estimates on exposure to pollution or hazards, and for the use in disaster operations.

Datasets not fully described yet by this report

Dataset name	Content	Year	Scale	Extent	Source
Population density by municipality	Population density by municipality	1997	1:1.000.000	PAN-Europe	Eurostat
Population density remapped to landcover	Population density remapped to landcover	?	250m grid	EU 15	JRC/Eurostat (via GISCO)

### 3.20.2 Settlement

Inspire:

The category includes the physical distribution of the cities, towns and settlements, including also industrial sites and other built-up areas.

Information on settlement structure and spatial extent is important for urban planning in general and land use planning in particular. Time-series makes it possible to assess policies directed towards urban sprawl and new settlement and land use patterns.

See also EuroGlobalMap, EuroRegionalMap, Bartholomew, DCW, ESRI ArcWorld: chapter 3.1

#### Data GISCO Database Manual

Description	GISCO ref. code	Year	Scale	Extent	Source, Copyright
Urban centres being national/regional capital, EU15 + EFTA	STEUCPV7	1995-2000	Location of urban centres	EU15 + EFTA	GISCO CD, CEC-Eurostat/ GISCO
Urban centres being national/regional capital for the PECO countries	STARCPV7	1995-2000	Location of urban centres	PECO countries	GISCO CD, CEC-Eurostat/ GISCO

#### *European settlements (Urban centres Pan Europe)*

General Information	
Year / Edition	2000
Title of content	STEU
Abstract	Settlements with a population of greater than 10.000 inhabitants (in some countries greater than 20.000 inhabitants), 7269 points. Information on settlements allows referencing on population attributes and can be used in conjunction with other infrastructure data for planning purposes. It also serves as part of the cartographic 'background' against which other results may be presented
Metadata source	<a href="#">The GISCO Database Manual.</a>
History dataset	
History	The coverage STEU is an extension of the former coverage STEC (Settlements

		<p>of the European Community, 12 Member States), established in the framework of the <u>CORINE</u> programme.</p> <p>In May 1997, the population number for a number of settlements (751 out of 3649 at that time) was updated, using more recent population figures.</p> <p>In 1998 - 2000, more updates have been made and the population threshold has been lowered to 10.000 for the revised countries. Only Germany and the Netherlands have not been revised (data for some individual settlements in other countries have not been updated either). Metadata country by country are available via the GISCO database manual.</p>
<b>Dataset Identification</b>		
	Maintenance	No information available
	Scale	Points: Location of urban centres. It is recommended not to use these datasets on a scale larger than 1:1.000.000.
	Restrictions	<u>See the restrictions in the GISCO Database Manual</u> When using this dataset, it should be bibliographically referred to as 'European settlements'.
<b>Spatial Information</b>		
	Coordinate system	LAEA
	Extent	Pan-Europe
	Temporal coverage	The settlements database is created with data from different points in time, generally from the early or mid-1990. The population figures for a number of settlements were updated between May 1997 and February 2000 according to more recent population and area figures. Some coordinates have been improved with more correct data. For some countries both delimitation and population data refer to early or mid-1990's.
	Objects/attributes	<p>Items coverage STEU:</p> <ul style="list-style-type: none"> <li>• STSICD: unique identification of the settlement</li> </ul> <p>Items INFO files</p> <ul style="list-style-type: none"> <li>• STEUAT.INF: National spelling, Population number, Source codes, NUTS level codes</li> <li>• STPUSR.INF- STARSR.INF- STCOSR.INF : description of sources</li> <li>• STUKAN.INF: official name of settlement + name for use as annotation.</li> </ul>
<b>Distribution information</b>		
	Copyright	CEC - Eurostat/GISCO: modified from WHO. with different sources
	Distributor	Eurostat Data Shop
	Availability	via GISCO (CD)
	Format	ARC/INFO point topology
	Ordering process	Requests for Data GISCO Database Manual should be sent to Eurostat Data Shop.

### 3.20.3 Green urban areas

Inspire:

“Green urban areas” is the broad spectrum of natural, semi-natural and cultural landscapes covered by vegetation. The source could be specific kinds of land cover classifications, based on air photo interpretation, satellite images or field registration. Frequent updating is necessary. Information on vegetation structure is important, together with the kind of use within the areas.

It is necessary to evaluate the situation, by identifying the remaining green areas within urban centres, register their qualities, and prioritise according to their actual and potential value.

Green areas are important for outdoor activities and health, are positive landscape elements, and are habitats for urban animals and plants. The green urban areas in cities and other settlements are under change; fragmentation, reduction in coverage and other structure and content of the green areas. The grey areas, e.g. roads and parking, are increasing at the expense of the green areas. Transport and expansion of urban land are pushing factor in the deterioration of the green structures.

### 3.20.4 Derelict urban land

Inspire:

Shows abandoned urban and industrial sites, shipyards and other built-up areas not being utilized. The areas are commonly contaminated sites, with large constructions being abandoned as waste.

Knowledge on location, extent, characterisation, actions and possible uses of these areas are important knowledge in follow-up actions and re-use strategies towards derelict land.

### 3.20.5 Cultural heritage

Inspire:

Databases on cultural heritage will show areas or objects with cultural values, some being protected, others not. The objects can be remnants of ancient and medieval civilizations, religious objects, catch pitfalls, grave sites, or objects from more recent cultures such as valuable buildings, industrial constructions. Includes objects at both land and sea.

Important in managing the cultural heritage. Cultural protected sites are commonly also including buffer zones and valuable landscapes. Relevant for land use planning, citizen and land owner information, also in planning of nature conservation areas.

### 3.20.6 Natural amenities

Inspire:

The spatial data component includes data on free services/ natural qualities of areas and landscapes used in recreation other activities. Includes bathing sites, local recreation sites, viewpoints, track and viewpoints, hunting areas and areas for use of other non-commercial resources in forests.

Important aspects for land use planning, regional planning, health management, also important aspects in multi-purpose use of forests, agricultural regions, habitat conservation.

## **3.21 Health**

### **3.21.1 Epidemiology**

Inspire:

In particular for the diseases directly (air pollution, chemicals, depletion of the ozone layer, noise...) and indirectly (food, gene-modified organisms, stress...)  
Important aspects on health in the 6EAP, followed by the health communication. High concern for the citizen.

### **3.21.2 Health services**

Inspire:

Important to citizens, also in large disaster operations.



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## **Appendices**

Appendix 1: Acronyms and abbreviations

Appendix 2: Weblinks

Appendix 3: INSPIRE: Data component by environmental issue  
(Taken from Lillethun, 2002)



## Appendix 1 Acronyms and abbreviations

AC13	Countries Central Europe: the thirteen Accession countries to the EU: Bulgaria, Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, the Slovak Republic, Slovenia and Turkey.
AVHRR	Advanced Very High Resolution Radiometer
CEC	Commission of the European community
CEN	European Committee for Standardisation
CDDA	The Common Data base on Designated Areas for Europe
CLRTAP	Convention on Long-range Transboundary Air Pollution
COGI	Interservice Committee for Geographical Information within the Commission
CORINE	CO-ordination on INformation on the Environment (CEC)
CRS	Coordinate Reference Systems
Dataset	Any set of data which has a common theme or similar attributes.
Datum	A model of the earth's shape used for Geodetic calculations.
DCW	Digital Chart of the World
DEM	Digital Elevation Model: A generic term describing a digital representation of a topographic surface.
DG AGRI	Directorate-General for Agriculture of the European Commission
DISMED	Desertification Information System for the Mediterranean
DOBRIS	Refers to the report 'Europe's Environment - The DOBRIS Assessment' edited by David Stanners and Philippe Bourdeau
<u>DSM</u>	Digital Surface Model: A digital surface model representing the upper surface, including buildings, woodland etc.
DTM	Digital Terrain Model(ling): A DEM primarily defining the ground surface. This will normally exclude ground features such as buildings, woodland etc...
EC	European Commission: Commission of the European Communities
ECNC	European centre for nature conservation
EEA	European Environment Agency
EECCA	Eastern Europe, Caucasus and Central Asia): the EECCA comprise Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine, Uzbekistan.
EFI	European Forrest Institute
EFTA 4	European free trade association: The four countries of the European Free Trade Area: Iceland (IS), Liechtenstein(LI), Norway(NO) and Switzerland(ch)
EIONET	European Environment Information and Observation Network
EMEP	European Monitoring and Evaluation Programme
EMERALD Network	The Emerald network is a network of Areas of Special Conservation Interest (ASCIs), which is to be established in the territory of the Contracting parties and Observer States to the Bern Convention, including, among others, Central and Eastern European countries and the EU member States. For EU member States Emerald network sites are those of the Natura 2000 network
EOS	Earth Observing System
ESA	The European Space Agency
ESPON	European Spatial Planning Observation Network
ETC/ACC	European Topic centre on air and climate change
ETC/NPB	European Topic centre on nature protection and biodiversity
ETC/TE	European Topic centre on terrestrial environment
ETC/WTR	European Topic centre on water
ETC/ACC	European Topic centre on air and climate change
ETRS89	European Terrestrial Reference System 1989
EU	European Union
EU15	The fifteen countries of the European Union: Austria, Belgium, Denmark, Germany, Greece, Finland, France, Ireland, Italy, Luxembourg, Netherlands,

	Portugal, Spain, Sweden, United Kingdom.
EUNIS	European Information System on Nature
EUROSION	European Initiative for Sustainable Coastal Erosion Management
Eurostat	Statistical office of the EC communities
EVRF2000	European Vertical Reference Frame 2000
EWN	Eurowaternet: The European Environment Agency's Monitoring and Information Network for Inland Water Resources
FAO	Food and Agriculture Organisation of the United Nations
FMA	Applied Meteorology Foundation
FTP	File Transfer Protocol
GDDD	Geographical Data Description Directory; Metadata portal European countries.
GISCO	Geographic Information System of the European Commission
GMES	Global Monitoring for Environment and Security
GSDI	Global spatial data infrastructure association
GTS	Global Telecommunication System
IAEA	International Atomic Energy Agency (UN)
IIASA	International Institute for Applied Systems Analysis
IGBP	International and Bios[here Programme
INSPIRE	INfrastructure for SPatial InfoRmation in Europe
INTERREG	Community initiative concerning border development, cross-border cooperation and selected energy networks.
IRPUD	Institute für Raumplanung, Universität Dortmund
ISRIC	International Soil Reference and Information centre
ISO	International Standards Organization. A worldwide federation of national standards bodies (for example, ANSI from the United States). ISO maintains many computing standards, including a SQL standard.
IUCN	The World Conservation Union
JRC	Joint Research Institute. Institute for Environment and Sustainability.
LACOAAT	LANd cover changes in COASTal zones
LAEA	Lambert Azimuthal Equal Area Projection An Azimuthal projection that sacrifices shape and distance, but preserves area. Useful for comparing features in which area is important, such as population densities. Often used for polar projections because it is originated in a centre point
LUCC	Land Use and LandCover Change project
MARS	Major Accident Reporting System
MEGRIN	Multi-purpose European Ground Related Information (organization)
MERIS	Medium resolution Imaging spectrometer on board Envisat
MODIS	Moderate resolution Imaging spectroradiometer
NATLAN	Nature and land cover information system
NDVI	Normalized Difference Vegetation Index
NEN	Institute for Standardization.
NUTS	Nomenclature of territorial units for statistics. The NUTS nomenclature is a hierarchical coding system defined by Eurostat, subdivides the EU economic territory into 6 administrative levels, from country (level 0), through regional (level 1,2,3) to local (level 4,5) level.
OGC	Open Gis Consortium
OSPAR	Convention for the protection of the marine environment of the north-east Atlantic
PAN-Europe	All countries of European continent
PECO	PECO countries (were candidate countries) are: Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia and Slovenia.
Point	A zero-dimensional abstraction of an object represented by a single X, Y coordinate. A point normally represents a geographic feature too small to be displayed as a line or area

RAMSAR sites	The Ramsar Database contains information on wetlands designated as internationally important <a href="http://www.ramsar.org/">http://www.ramsar.org/</a> under the <u>Convention on Wetlands</u> (Ramsar, 1971). These wetlands are commonly known as Ramsar Sites.
SDI	Sensitivity Desertification Index
SAI	Space Applications Institute
SABA	Seamless Administrative Boundaries of Europe (MEGRIN)
SEI	Stockholm Environment Institute
SIRE	Infra - Regional Information system (Eurostat)
STEC	Settlements of the European Community
TEN	Trans European Network
UTM	Universal Transverse Mercator projection
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational and Socio-cultural organisation
UPS	Universal Polar Stereographic
USGS	U.S. Geological Survey
UTM	Universal Transverse Mercator
WCMC	World Conservation Monitoring Centre
WCRP	World Climate Research Programme
Western Balkans	Albania, Bosnia and Herzegovina, FYR Macedonia, Croatia, Serbia and Montenegro (formerly known as the Federal Republic of Yugoslavia).
WFD	Water Framework Directive
WHO	World Health Organisation
WMO	World Meteorological Organisation



## Appendix 2 Weblinks

### Geoportals

FAO Geonetwork	FAO's Spatial Data and Information Portal	<a href="http://www.fao.org/geonetwork/srv/en/main.search">www.fao.org/geonetwork/srv/en/main.search</a>
EC-GI&GIS	EC GI&GIS Web Portal	<a href="http://www.ec-gis.org/">www.ec-gis.org/</a>
INSPIRE: European Geo-portal	INSPIRE: European Geo-portal	<a href="http://eu-geoportal.jrc.it/gos">http://eu-geoportal.jrc.it/gos</a>
ESA Portal	European Space Agency	<a href="http://www.esa.int/esaCP/index.html">www.esa.int/esaCP/index.html</a>
Eurostat data shop	Eurostat Data shop services	<a href="http://europa.eu.int/comm/eurostat/Public/datashop/print-catalogue/EN?catalogue=Eurostat">http://europa.eu.int/comm/eurostat/Public/datashop/print-catalogue/EN?catalogue=Eurostat</a>
GDDD-(Geographical Data Description Directory)	Metadata portal European countries.	<a href="http://www.eurogeographics.org/gddd/INDEX.HTM">www.eurogeographics.org/gddd/INDEX.HTM</a>
UNEP.net Geo Dataportal	Environmental Database UNEP.Net, the Environment Network	<a href="http://gridca.grid.unep.ch/geoportal/">http://gridca.grid.unep.ch/geoportal/</a> <a href="http://geodata.grid.unep.ch/">http://geodata.grid.unep.ch/</a>
UNEP.net Europe Portal	Information on the European environment at regional, sub-regional and national levels.	<a href="http://europe.unep.net/">http://europe.unep.net/</a>
UNEP.net socio-economic portal	Major sources of social and economic assessment information used by UNEP and its partners.	<a href="http://socioeconomic.unep.net/">http://socioeconomic.unep.net/</a>
UNEP.net urban portal	Information on the urban environment used by UNEP and its partners.	<a href="http://urban.unep.net/">http://urban.unep.net/</a>
Geospatial one-stop	National Spatial data Infrastructure USA	<a href="http://www.geo-one-stop.gov/">http://www.geo-one-stop.gov/</a>
Geography Network (ESRI)	global network of geographic information users and providers	<a href="http://www.geographynetwork.com/index.html">http://www.geographynetwork.com/index.html</a>
GCMD: NASA- search machine	Global Change master directory: Earth science data and services	<a href="http://gcmd.gsfc.nasa.gov/">http://gcmd.gsfc.nasa.gov/</a>
ORBIT	Earth Observation Portal	<a href="http://orbits.eoportal.org/">http://orbits.eoportal.org/</a>
World GIS resources	GIS Resources for finding data, organization and other online information organized by country	<a href="http://gislounge.com/atlas/blworldindex.shtml">http://gislounge.com/atlas/blworldindex.shtml</a>

### Data providers

DISMED	Desertification Information System for the Mediterranean	<a href="http://dismed.eionet.eu.int/">http://dismed.eionet.eu.int/</a>
EAA/Natlan	European Environment Agency: access to data sets	<a href="http://dataservice.eea.eu.int/atlas/">http://dataservice.eea.eu.int/atlas/</a>
EIONET	European Environment Information and Observation Network	<a href="http://www.eionet.eu.int/datamap/2002/">www.eionet.eu.int/datamap/2002/</a>
ESA-spectra	European space agency-SPECTRA (Surface Processes and Ecosystem Changes Through Response Analysis). Sensor development.	<a href="http://www.esa.int/export/esaLP/SEMPOW_A6QD_spectra_0.html">http://www.esa.int/export/esaLP/SEMPOW_A6QD_spectra_0.html</a>
ESRI	ESRI data-online	<a href="http://www.esri.com/data/">www.esri.com/data/</a>
ETC/ACC	European Topic centre on air and climate change	<a href="http://etc-acc.eionet.eu.int/">http://etc-acc.eionet.eu.int/</a>
ETC/NPB	European Topic centre on nature protection and biodiversity	<a href="http://nature.eionet.eu.int/">http://nature.eionet.eu.int/</a>
ETC/TE	European Topic centre on terrestrial environment	<a href="http://terrestrial.eionet.eu.int/">http://terrestrial.eionet.eu.int/</a>
ETC/WTR	European Topic centre on water	<a href="http://water.eionet.eu.int/">http://water.eionet.eu.int/</a>
Eurimage	Multi-Mission Satellite Data	<a href="http://www.eurimage.com/index.html">www.eurimage.com/index.html</a>
Euro-Geographics	Represents nearly all European National	<a href="http://www.eurogeographics.org/eng/01_about.asp">www.eurogeographics.org/eng/01_about.asp</a>

	Mapping and Cadastral Agencies (NMCAs).	
Euro-GeoSurveys	European Geological Data Resource	<a href="http://geixs.brgm.fr/en/geodata.html">http://geixs.brgm.fr/en/geodata.html</a>
EFI	European forest Institute: An independent non-governmental organisation conducting European forest research	<a href="http://www.efi.fi/">www.efi.fi/</a>
Eurolandscape		<a href="http://eurolandscape.jrc.it/home.html">http://eurolandscape.jrc.it/home.html</a>
FAO	The Food and Agriculture Organisation	<a href="http://www.fao.org">www.fao.org</a>
Geoland	geoland is an Integrated Project (IP) within the European Commission`s Sixth Framework	<a href="http://www.gmes-geoland.info/">http://www.gmes-geoland.info/</a>
GISCO	GISCO Database Manual	<a href="http://data-dist.jrc.it/eu4u/metadata/home.htm">http://data-dist.jrc.it/eu4u/metadata/home.htm</a>
IAEA	The International Atomic Energy agency	<a href="http://www.iaea.org">www.iaea.org</a>
ISRIC	Institute Soil data	<a href="http://www.isric.org/">www.isric.org/</a> <a href="http://lime.isric.nl/">http://lime.isric.nl/</a>
JRC	The Joint Research Centre, Institute for Environment and Sustainability.	<a href="http://www.jrc.it/">www.jrc.it/</a>
JRC-IES	Institute for Environment and Sustainability	<a href="http://www.ei.jrc.it/">www.ei.jrc.it/</a>
MODIS	MODIS satellite data	<a href="http://modis.gsfc.nasa.gov/">http://modis.gsfc.nasa.gov/</a>
NGDC	National geophysical Data Centre (environmental satellite data)	<a href="http://globe.ngdc.noaa.gov/ngdc.html">http://globe.ngdc.noaa.gov/ngdc.html</a>
SPOT	SPOT-images Products and services	<a href="http://www.spotimage.fr/html/_167_171_.php">www.spotimage.fr/html/_167_171_.php</a>
UNECE/FAO	United Nations Economic Commission for Europe: statistical data	<a href="http://www.unece.org/">www.unece.org/</a>
UNEP	United Nations Environment Programme	<a href="http://www.unep.org">www.unep.org</a>
UNEP- GRID Arendal Norway	U.N. Regional environmental programme Arctic   <a href="#">Nordic/Baltic</a> Central & Eastern Europe   Other regions	<a href="http://www.grida.no/">www.grida.no/</a>
UNEP- GRID Geneva	Division of early warning and assessment (DEWA)	<a href="http://www.grid.unep.ch/">www.grid.unep.ch/</a>
USGS	U.S.Geological Survey	<a href="http://www.usgs.gov/">www.usgs.gov/</a>
VITO	Flemish Institute for Technological Research	<a href="http://directory.eoportal.org/info_VitoFlemishInstituteforTechnologicalResearch.html">http://directory.eoportal.org/info_VitoFlemishInstituteforTechnologicalResearch.html</a>

### Data providers statistics

Eurostat	Statistical office of the EC communities	<a href="http://europa.eu.int/comm/eurostat/">http://europa.eu.int/comm/eurostat/</a>
FAO stat	On-line and multilingual database currently containing over 3 million time-series records covering international statistics in various areas	<a href="http://faostat.fao.org/faostat/default.jsp">http://faostat.fao.org/faostat/default.jsp</a>
New Cronos	New Cronos contains more than 270 million social and economic statistical data covering the European Union Member States and also many other countries	<a href="http://europa.eu.int/newcronos/">http://europa.eu.int/newcronos/</a>
FSS	Farm structural Survey	Part of New Cronos <a href="http://europa.eu.int/newcronos/">http://europa.eu.int/newcronos/</a>
FADN	Farm accountancy Data Network	<a href="http://europa.eu.int/comm/agriculture/rica/index_en.cfm">http://europa.eu.int/comm/agriculture/rica/index_en.cfm</a>
EBRA	European Biomedical Research Association	<a href="http://www.ebra.org/stats/">http://www.ebra.org/stats/</a>

## Datasets / Databases

Airbase	the European air quality information system	<a href="http://etc-acc.eionet.eu.int/databases/airbase.html">http://etc-acc.eionet.eu.int/databases/airbase.html</a>
Bartholomew	Europe and World data	<a href="http://www.bartholomewmaps.com/">www.bartholomewmaps.com/</a>
BIOME classification	Global map representing the global distribution of the IGBP-biomes	<a href="http://www.geosuccess.net/geosuccess/relay.do?dispatch=BIOME_info">www.geosuccess.net/geosuccess/relay.do?dispatch=BIOME_info</a>
CGRS grid	Grid reference system	<a href="http://www.fmnh.helsinki.fi/map/afe/E_newgrid.htm">www.fmnh.helsinki.fi/map/afe/E_newgrid.htm</a>
DCW	Digital Chart of the World: downloads	<a href="http://www.maproom.psu.edu/dcw/">www.maproom.psu.edu/dcw/</a>
EFI /EEFR	European forest Resource database	<a href="http://www.efi.fi/projects/eefr/">www.efi.fi/projects/eefr/</a>
EFI/DFDE- Alterra	Database on Forest Disturbances in Europe	<a href="http://www.efi.fi/projects/dfde/">www.efi.fi/projects/dfde/</a>
EIONET Data maps	Dynamic map pages presenting the country scores 2002	<a href="http://www.eionet.eu.int/dataflows/2002">http://www.eionet.eu.int/dataflows/2002</a>
EPER	European Pollutant Emission Register.	<a href="http://eper.cec.eu.int/eper/">http://eper.cec.eu.int/eper/</a>
ERICA-EEA	European Rivers and Catchments	<a href="http://dataservice.eea.eu.int/dataservice/metadetails.asp?id=235">http://dataservice.eea.eu.int/dataservice/metadetails.asp?id=235</a>
EUNIS	European nature information System	<a href="http://eunis.eea.eu.int/index.jsp">http://eunis.eea.eu.int/index.jsp</a>
Euroglobalmap	Dataset that covers Europe at scale 1:1 Million	<a href="http://www.eurogeographics.org/eng/04_products_globalmap.asp">www.eurogeographics.org/eng/04_products_globalmap.asp</a>
GLC2000	Global landcover classification 2000	<a href="http://www.gvm.jrc.it/glc2000/">www.gvm.jrc.it/glc2000/</a>
GTOPO30	USGS Digital Elevation model	<a href="http://edcdaac.usgs.gov/gtopo30/gtopo30.asp">http://edcdaac.usgs.gov/gtopo30/gtopo30.asp</a>
IBA	Important Bird Areas	<a href="http://www.birdlife.net/action/science/sites/">http://www.birdlife.net/action/science/sites/</a>
IPA	Important Plant Areas	<a href="http://www.plantlife.org.uk/html/important_plant_areas/important_plant_areas_index.htm">www.plantlife.org.uk/html/important_plant_areas/important_plant_areas_index.htm</a>
IRENA Data in Dataservice	Indicator Reporting on the Integration of Environmental Concerns into Agriculture Policy	<a href="http://dataservice.eea.eu.int/dataservice/available2.asp?type=findkeyword&amp;theme=IRENA">http://dataservice.eea.eu.int/dataservice/available2.asp?type=findkeyword&amp;theme=IRENA</a>
Natura2000	Natura2000 Europe	<a href="http://europa.eu.int/comm/environment/nature/cgi.girs.wageningen-ur.nl/cgi/projects/eu/pelcom/">http://europa.eu.int/comm/environment/nature/cgi.girs.wageningen-ur.nl/cgi/projects/eu/pelcom/</a>
PELCOM	Pan-European Land Cover Monitoring	
Ramsar Sites	Areas under Ramsar Convention designation	<a href="http://ramsar.org/key_sitelist.htm">http://ramsar.org/key_sitelist.htm</a> <a href="http://www.wetlands.org/RDB/quick.html">http://www.wetlands.org/RDB/quick.html</a>
SABE	Seamless Administrative boundaries of Europe	<a href="http://www.datashop.org/en/bases/sabe.html">www.datashop.org/en/bases/sabe.html</a> <a href="http://www.eurogeographics.org/eng/04_sabe.asp">www.eurogeographics.org/eng/04_sabe.asp</a>

## Other weblinks

Biopress	Linking pan-European land cover changes to pressures on biodiversity	<a href="http://www.crea-f.uab.es/biopress/summary.htm">www.crea-f.uab.es/biopress/summary.htm</a>
Cadastre EU	Permanent Committee on Cadastre in the European Union	<a href="http://www.euocadastre.org/">www.euocadastre.org/</a>
CEN	European Committee for standardisation	<a href="http://www.cenorm.be">www.cenorm.be</a>
CRS	European Coordinate reference system	<a href="http://crs.bkg.bund.de/crs-eu/">http://crs.bkg.bund.de/crs-eu/</a>
ECNC	European centre for nature conservation	<a href="http://www.ecnc.nl/">http://www.ecnc.nl/</a>
Ecoland	Pan-European Forum for Countryside and Landscape Monitoring	<a href="http://www.ecoland-forum.org/">http://www.ecoland-forum.org/</a>
Emerald network	Network of Areas of Special Conservation interest	<a href="http://glossary.eea.eu.int/EEAGlossary/E/Emerald_network">http://glossary.eea.eu.int/EEAGlossary/E/Emerald_network</a>
Eursel	European association of Remote Sensing Laboratories. European network	<a href="http://www.earsel.org/welcome.html">http://www.earsel.org/welcome.html</a>
EVRS	European Vertical Reference System	<a href="http://crs.bkg.bund.de/evrs/">http://crs.bkg.bund.de/evrs/</a>
FMA	Applied Meteorology Foundation	<a href="http://www.ibimet.cnr.it/programmi/Pcase/index.htm">www.ibimet.cnr.it/programmi/Pcase/index.htm</a>
GMES	Global Monitoring for Environment and Security	<a href="http://www.gmes.info">www.gmes.info</a>
GSDI	Global spatial data Infrastructure	<a href="http://www.gsdi.org">www.gsdi.org</a>
Interreg	A community initiative which aims to stimulate interregional cooperation in the EU between 2000-06. It is financed under the European Regional Development Fund (ERDF)	<a href="http://europa.eu.int/comm/regional_policy/interreg3/index_en.htm">http://europa.eu.int/comm/regional_policy/interreg3/index_en.htm</a>
ISO	International organisation for standardisation	<a href="http://www.iso.org">www.iso.org</a>
ISO 19115 NEN	ISO Metadata standard	Via <a href="http://www2.nen.nl/">www2.nen.nl/</a>
KD-net	The KDNet (= Knowledge Discovery Network of Excellence) is an open Network of participants from science, industry and the public sector, funded by the EU.	<a href="http://www.kdnet.org/kdnet/control/index?cookie-test=success">http://www.kdnet.org/kdnet/control/index?cookie-test=success</a>
OGC	Open Gis consortium	<a href="http://www.opengis.org">www.opengis.org</a>
OSPAR	Convention for the protection of the marine environment of the north-east Atlantic	<a href="http://www.ospar.org/eng/html/welcome.html">http://www.ospar.org/eng/html/welcome.html</a>
SPOT-vegetation Programme	Vegetation programme based on SPOT images	<a href="http://www.spot-vegetation.com/">www.spot-vegetation.com/</a> <a href="http://vegetation.cnes.fr/">http://vegetation.cnes.fr/</a>
WasteBase.	WasteBase is an electronic database with information on waste and waste management in Europe.	<a href="http://waste.eionet.eu.int/wastebase/">http://waste.eionet.eu.int/wastebase/</a>
Waterbase	Waterbase datasets and applications in the EEA Data Service.	<a href="http://dataservice.eea.eu.int/dataservice/available2.asp?type=findkeyword&amp;theme=waterbase">http://dataservice.eea.eu.int/dataservice/available2.asp?type=findkeyword&amp;theme=waterbase</a>

### Appendix 3 INSPIRE: Datacomponent by environmental issue

Spatial data component	Environmental issue													
	Water – inland, sea	Air and climate change	Nature/biodiversity	Soil	Land	Waste	Noise	Health	Hazards/risks	Transport and environm.	Agriculture/forestry	Energy	Coast (land/sea)	Urban/local planning, EIA
<b>Geographical location</b>														
Geodetic reference system	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Geographical grids	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Monitoring sites	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Geographical names	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<b>Administrative units</b>														
Official administrative units	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Blocks and census districts	x							x	x	x				x
General government management units	x							x	x				x	x
Sector management & reporting units	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<b>Properties, buildings and addresses</b>														
Properties							x		?					x
Buildings									x					x
Addresses									x					x
<b>Elevation</b>														
Elevation	x		x	x	x		x		x				x	x
Bathymetry	x		x				x	x					x	x
Coastline	x						x	x					x	x
<b>Geo-physical environment</b>														
Bedrock geology	x		x	x				x					x	x
Geo-morphology					x		x		x				x	
Soil	x		x	x	x	x	x				x		x	x
<b>Climate</b>														
Climate zones/data	x		x	x				x	x		x	x	x	x
<b>Hydrography</b>														
Hydrography	x		x	x	x	x		x	x	x	x	x	x	x
Water catchments	x		x	x	x	x		x	x		x	x	x	x
Groundwater bodies/aquifers	x			x	x	x		x	x	x	x		x	x
<b>Ocean and seas</b>														
Sea regions	x		x			x		x	x				x	
<b>Biota/biodiversity</b>														
Biomes/ Bio-ecological regions	x	x	x		x						x		x	
Vegetation	x			x	x				x				x	x
Habitats and biotopes	x		x							x	x		x	x
Species distribution	x		x								x		x	
<b>Land surface</b>														
Land cover	x	x	x	x	x			x	x	x	x		x	x
Ortho-images	x		x	x	x				x	x	x		x	x
Unclassified satellite data	x	x	x	x	x			x	x	x	x	x	x	x

Spatial data component	Environmental issue													
	Water - inland, sea	Air and climate change	Nature/biodiversity	Soil	Land	Waste	Noise	Health	Hazards/risks	Transport and environm	Agriculture/forestry	Energy	Coast (land/sea)	Urban/local planning, EIA
<b>Natural resource</b>														
Water resources	x							x			x	x	x	x
Agricultural land and soil resources	x	x	x	x	x					x	x	x	x	x
Forest resources	x	x	x	x	x				x	x	x	x		x
Fishery resources	x		x										x	
Geological resources	x	x		x	x							x	x	
Renewable energy resources	x	x	x		x	x					x	x	x	x
<b>Transport</b>														
Transport networks	x	x	x	x	x		x	x	x	x	x	x	x	x
Transport facilities	x	x			x		x			x	x	x	x	x
<b>Utilities</b>														
Transmission lines	x	x	x	x	x			x	x	x		x	x	x
<b>Facilities</b>														
Environmental protection facilities, inciner+	x	x	x	x	x	x		x	x	x		x	x	x
Production facilities: industry+	x	x	x	x	x	x		x	x	x		x	x	x
Agricultural facilities, stores, tanks, dams+	x	x	x	x	x	x			x	x	x		x	
<b>Economy</b>														
Economic statistics/local statistics	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<b>Area regulation</b>														
Land regulation/land use plan	x	x	x	x	x	x	x	x	x	x	x		x	x
Protected sites	x	x	x		x					x	x		x	x
Sector regulation (env. sector/ other sector)	x		x	x	x	x	x	x	x	x	x	x	x	x
<b>Natural and technological risks</b>														
Natural risk vulnerability zones	x	x		x	x			x	x				x	x
Technological risk vulnerability zones	x	x		x	x			x	x	x		x	x	x
Technological accidents/ natural disasters	x	x	x					x	x			x	x	x
<b>Polluted areas/areas under anthropogenic stress</b>														
Local contaminated areas	x		x	x	x	x		x	x		x		x	x
Diffuse contamination	x	x	x	x	x	x		x		x	x	x	x	x
Noise zones					x		x			x			x	x
<b>Society</b>														
Demography	x	x	x	x	x	x	x	x	x	x		x	x	x
<b>Settlement</b>														
Green urban areas			x		x			x		x			x	x
Derelected urban land	x			x	x	x		x				x	x	x
Cultural heritage			x						x				x	x
Natural amenities	x	x	x	x	x	x	x	x	x	x	x			
<b>Health</b>														
Epidemiology	x		x					x	x		x	x	x	
Heath services								x	x			x	x	x

Table: Spatial data components needs by environmental policy issue. Not covered (yet): all assessments/spatial analysis, e.g. wilderness, waste dumping sites-non regulated, food catch restriction zones at sea/near-coast/fjords) Radon-problem-areas, details on monitoring sites, restriction zones, management & reporting areas, oil spill sites, fish farms?, fish regulated catch zones, meteorological stations, district of competent authority - regional seas, sea weed extraction areas, sub-categories of nature protection areas, potential soil erosion?, soil sealing, organic matter in soil, bog/mire, tidal zone, sand extraction zones, flood control constructions - inland/sea/coast, regulated anchoring grounds, regulated sea/traffic routes, transmission lines sub-divisions, water, oil, gas, sewage, electricity, tv/high-speed communication cable