The features of sustainably managed biocultural landscapes in Europe and their benefits for biodiversity conservation and well-being

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Global Workshop on the *Satoyama* Initiative

Ministry of the Environment of Japan
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- Some key factors of change
- Challenges

The Pan-European Biological and Landscape Diversity Strategy (PEBLDS)

- Conference of the environment ministers of the UN/ECE countries
- Endorsed by the third ministerial conference *Environment for Europe*. Sofia, Bulgaria (1995)
- Goals
  - European response to support implementation of the UN Convention on Biological Diversity (CBD)
  - Conserve biodiversity and landscapes of European importance
  - Promote coordinated action in a fragmented political framework
  - Integrate biodiversity conservation and sustainability into the activities of economic sectors
- Identifies additional actions that need to be taken over the next two decades (1996-2016), structured into four 5-year Action Plans

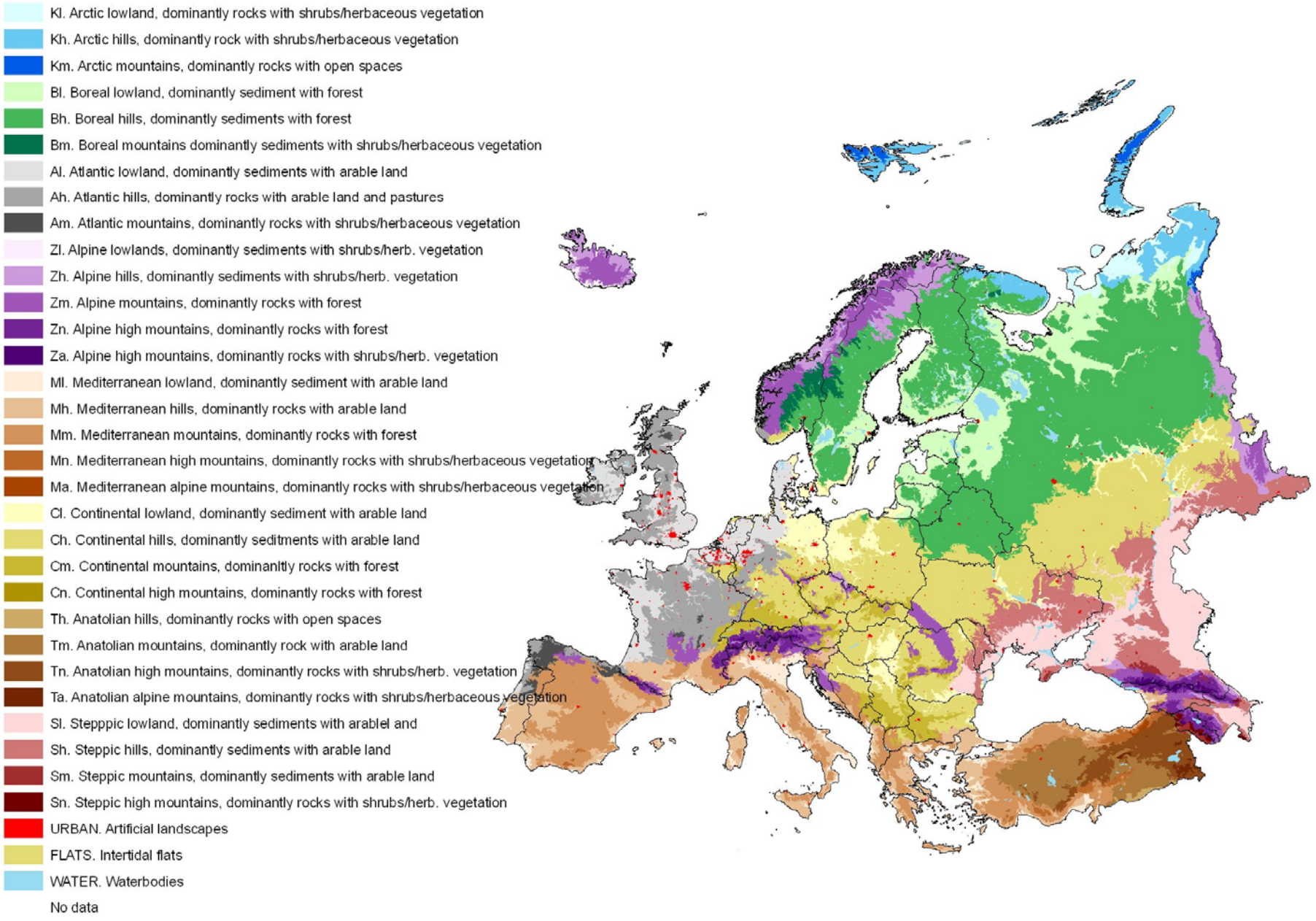
The Pan-European Biological and Landscape Diversity Strategy (PEBLDS)

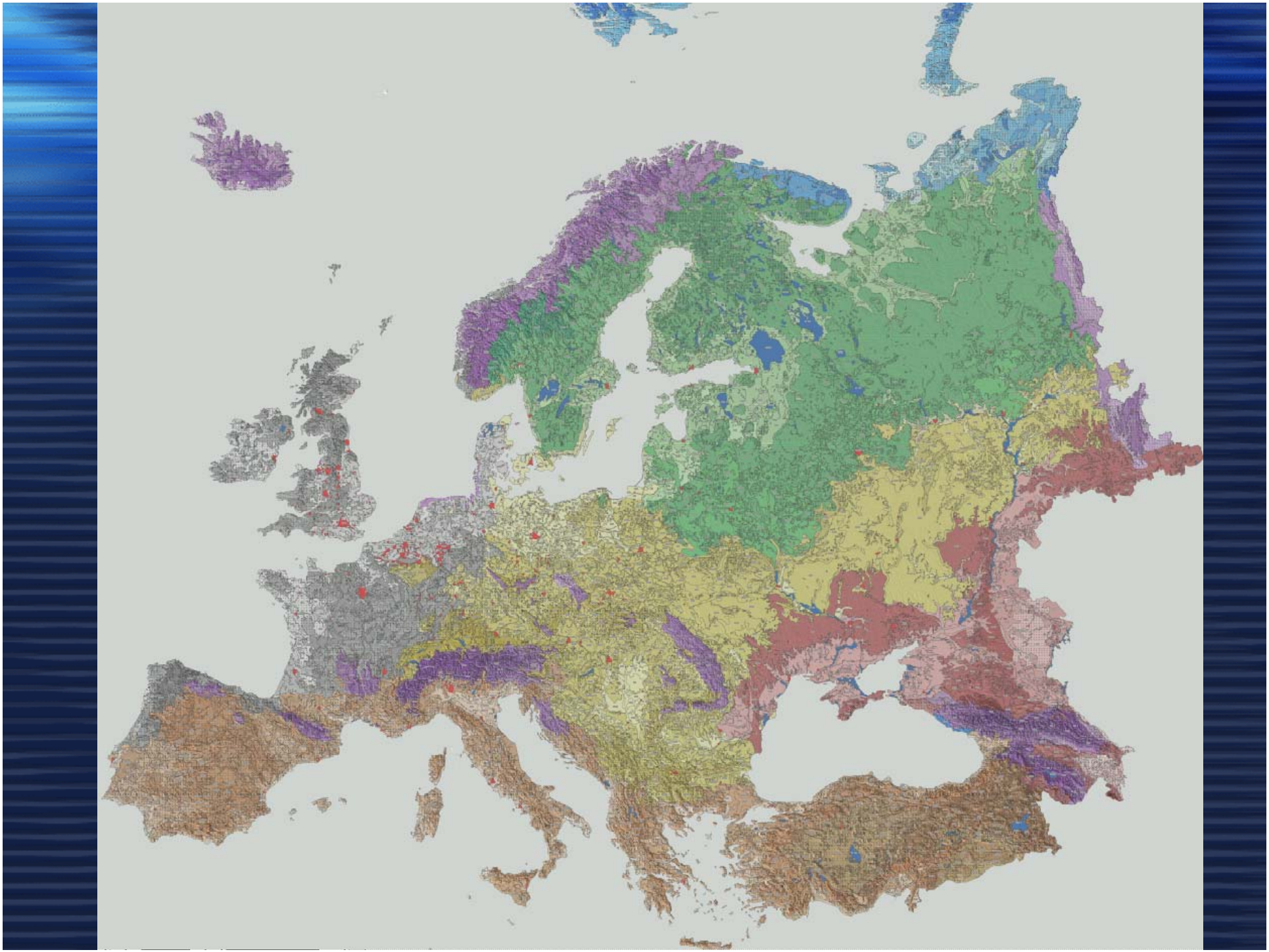
- 11 action-themes were defined
  - Action-theme 4
    - Establishment of a Pan- European Landscape Map
    - Development of landscape assessment criteria
    - SWOT analysis of European landscapes
  - Tool for European policy implementation

Landscapes of Europe (LANMAP2)

- Pan-European Landscape Database
- Alterra. 2002
- Scale 1:2M
- Pan-European landscape classification
  - Climate
  - Relief
  - Substrate (geology and soil)
  - Land use and land cover
- Hierarchical classification
  - First level (climate): 8 classes
  - Second level (climate and relief): 31 classes
  - Third level (climate, relief and substrate): 76 classes
  - Fourth level: 350 classes

Legend


Kl. Arctic lowland, dominantly rocks with shrubs/herbaceous vegetation
Kh. Arctic hills, dominantly rock with shrubs/herbaceous vegetation
Km. Arctic mountains, dominantly rocks with open spaces
Bl. Boreal lowland, dominantly sediment with forest
Bh. Boreal hills, dominantly sediments with forest
Bm. Boreal mountains dominantly sediments with shrubs/herbaceous vegetation
Al. Atlantic lowland, dominantly sediments with arable land
Ah. Atlantic hills, dominantly rocks with arable land and pastures
Am. Atlantic mountains, dominantly rocks with shrubs/herbaceous vegetation
Zl. Alpine lowlands, dominantly sediments with shrubs/herb. vegetation
Zh. Alpine hills, dominantly sediments with shrubs/herb. vegetation
Zm. Alpine mountains, dominantly rocks with forest
Zn. Alpine high mountains, dominantly rocks with forest
Za. Alpine high mountains, dominantly rocks with shrubs/herb. vegetation
Ml. Mediterranean lowland, dominantly sediment with arable land
Mh. Mediterranean hills, dominantly rocks with arable land
Mm. Mediterranean mountains, dominantly rocks with forest
Mn. Mediterranean high mountains, dominantly rocks with shrubs/herbaceous vegetation
Ma. Mediterranean alpine mountains, dominantly rocks with shrubs/herbaceous vegetation
Cl. Continental lowland, dominantly sediment with arable land
Ch. Continental hills, dominantly seditments with arable land
Cm. Continental mountains, dominanltly rocks with forest
Cn. Continental high mountains, dominantly rocks with forest
Th. Anatolian hills, dominantly rocks with open spaces
Tm. Anatolian mountains, dominantly rock with arable land
Tn. Anatolian high mountains, dominantly rocks with shrubs/herb. vegetation
Ta. Anatolian alpine mountains, dominantly rocks with shrubs/herbaceous vegetation
Sl. Stepppic lowland, dominantly sediments with arablel and
Sh. Steppic hills, dominantly sediments with arable land
Sm. Steppic mountains, dominantly sediments with arable land
Sn. Steppic high mountains, dominantly rocks with shrubs/herb. vegetation
URBAN. Artificial landscapes
FLATS. Intertidal flats
WATER. Waterbodies
No data

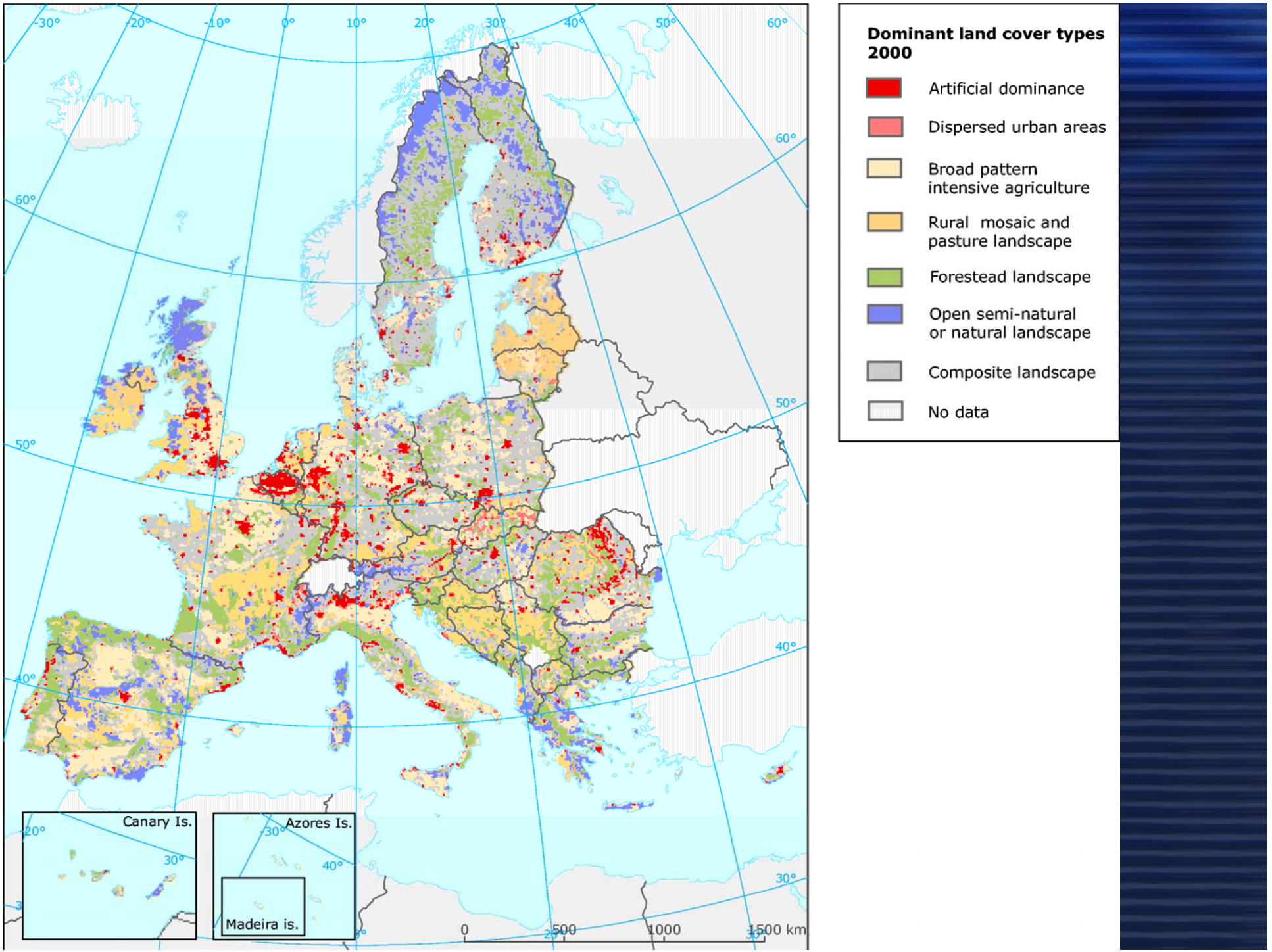


The European Landscape Convention (ELC)

- Florence Convention
- Adopted 20 October 2000, came into force on 1 March 2004
- Council of Europe
- Goals
  - Identification and assessment of European landscapes
  - Definition of landscape quality objectives
    - Result of a dialogue between decision-makers and citizens
    - Public participation in the design and implementation of policies
  - Protection, planning and management
  - Facilitate cooperation to enhance the effectiveness of the measures taken
    - Europe-wide, transboundary
    - Exchange of expertise - scientific and technical- and information
    - Education and training

Dominant landscape types of Europe

- European Environment Agency
- 11 Nov 2008
- Based on Corine Land Cover 2000


Dominant land cover types 2000
Artificial dominance
Dispersed urban areas
Broad pattern intensive agriculture
Rural mosaic and pasture landscape
Forestead landscape
Open semi-natural or natural landscape
Composite landscape
No data
Canary Is.
Azores Is.
Madeira is.
0
500
1000
1500 km

Cultural Landscapes and Cultural Landscape Ecosystems in Europe

- PAN European Thematic Network on Cultural Landscapes and their Ecosystems

Landscape Types

- Arable land
  - Field systems
  - Garden systems
  - Shifting cultivation systems
  - Vineyards
- Cultural grassland
  - Alvar grassland vegetation
  - Grazed grassland
  - Mown and/or grazed fen land
  - Mown and/or grazed orchards
  - Mown grassland (or mixed mown and grazed)
  - Steppic grassland
- Managed mires
  - Blanket bogs
  - Raised bogs
- Managed scrublands and heathlands
  - Broom fields
  - Dry heathlands
  - Garrigue
  - Maquis, macchia
  - Wet heathlands
- Managed woodlands
  - Coppice, coppice with standards, coppice for fruit production
  - Dehesa, montado
  - Grazed woodlands
  - Managed alder carrs

Landscape associations

- Environmental zones
  - Alpine north (ALN)
  - Alpine south (ALS)
  - Atlantic central (ATC)
  - Atlantic north (ATN)
  - Boreal (BOR)
  - Continental (CON)
  - Lusitanean (LUS)
  - Mediterranean mountains (MDM)
  - Mediterranean north (MDN)
  - Mediterranean south (MDS)
  - Nemoral (NEM)
  - Pannonic-Pontic (PAN)
- Land management
  - Burning
  - Clearing
  - Coppicing
  - Fertilizing
  - Field cultivation
  - Grazing
  - Mowing
  - Orchard cultivation
  - Pollarding
  - Thinning

Common Agricultural Policy (CAP)

- A key policy that has made progress in its environmental dimension
  - 50% of EU land is farmed
- Helsinki European Council (December 1999)
  - Adopted a strategy for integrating the environmental dimension into the CAP
  - Multifunctional character of agriculture
- Göteborg European Council (June 2001)
  - Adopted the EU Sustainable Development Strategy

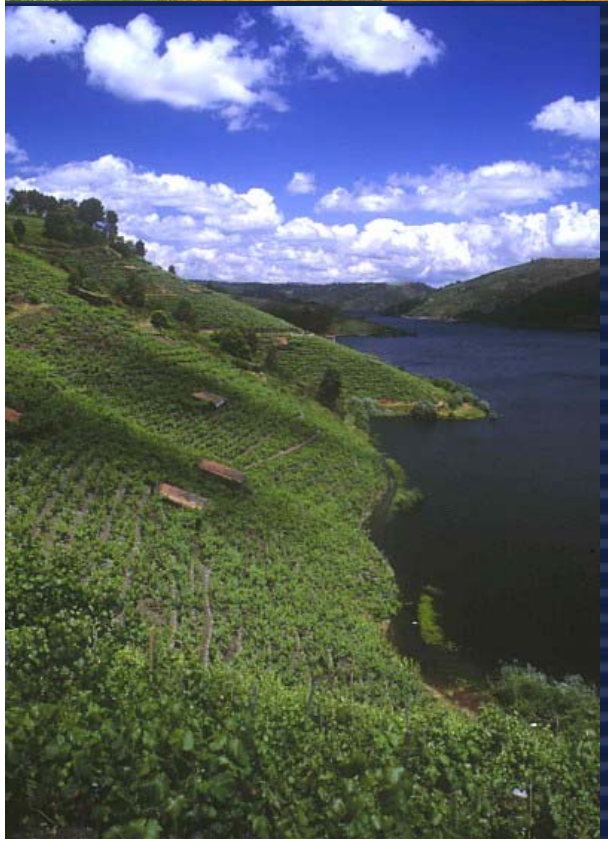
Common Agricultural Policy (CAP)

- Two environmental pillars
  - Cross compliance
  - Agri-environment measures

- Cross compliance
  - Mechanism that links direct payments to compliance by farmers with basic standards concerning the environment, food safety, animal and plant health and animal welfare, as well as the requirement of maintaining land in good agricultural and environmental conditions
  - Compulsory
  - Reference level for agri-environment measures
- Agri-environment measures
  - Encourage farmers to protect and enhance the environment on their farmland
    - adopt environmentally-friendly farming techniques
    - compensation for additional costs and income loss (co-financed by Member States)
  - Engage voluntarily in action beyond the mandatory requirements
  - Measures
    - Extensification and low-intensity pasture systems
    - Diversification
    - Integrated farm management and organic agriculture
    - Preservation of landscape and their historical features
    - Conservation of high-value habitats and their associated biodiversity

Two examples of fragile cultural landscapes

Bardenas Reales



Ribeira Sacra

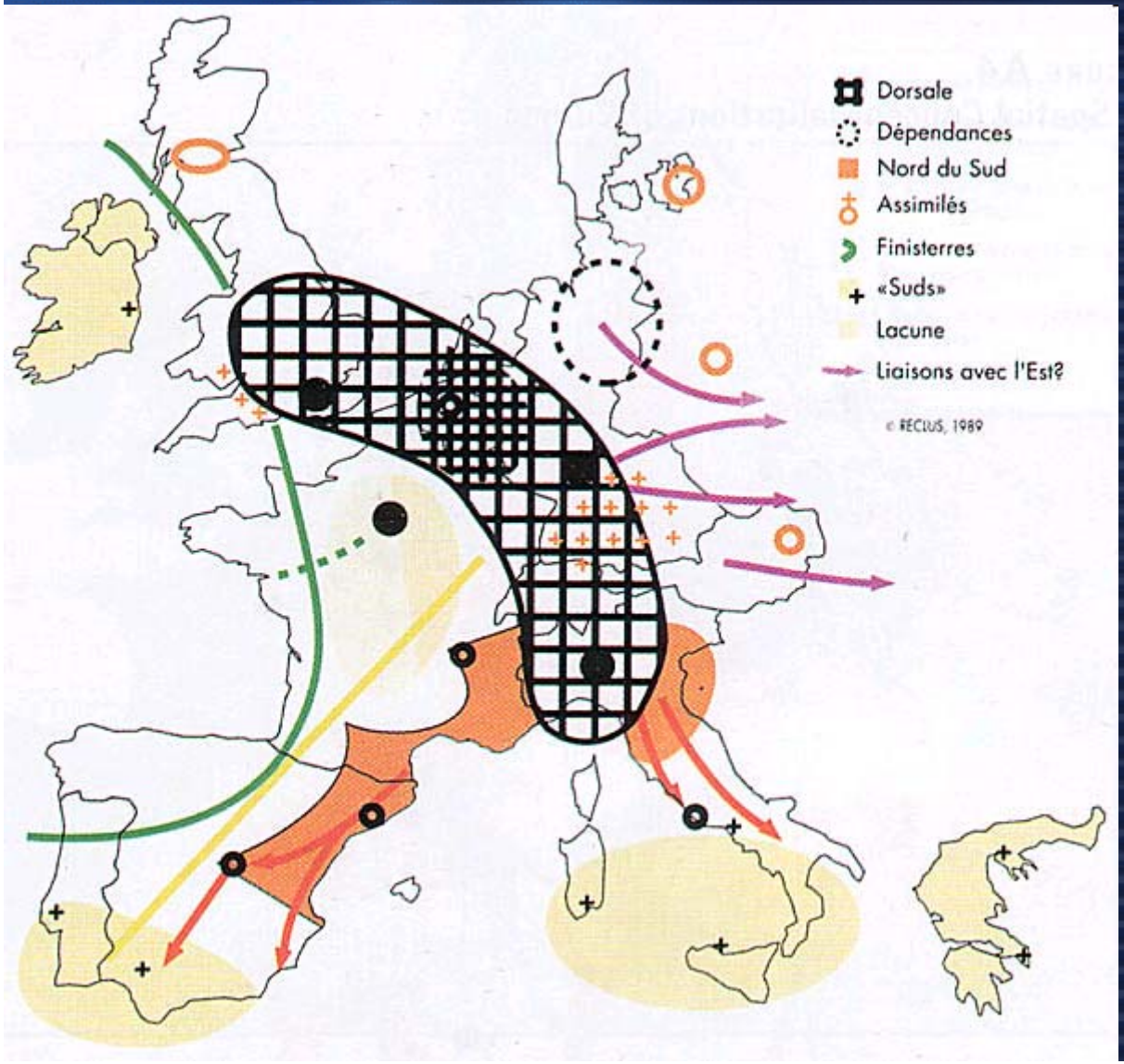
European Spatial Development Perspective (ESDP)

- Council of Ministers responsible for Spatial Planning in Potsdam, 1999
- Goals
  - Balanced development
    - Mitigating spatial disparities
    - Growing importance of EU sectoral policies with spatial impact: Common Agricultural Policy
  - Sustainable development
    - Agriculture as a main factor of landscape transformation
      - Uniformization of landscapes
    - New functions of rural areas
      - Pressure of mass tourism over fragile environments and landscapes

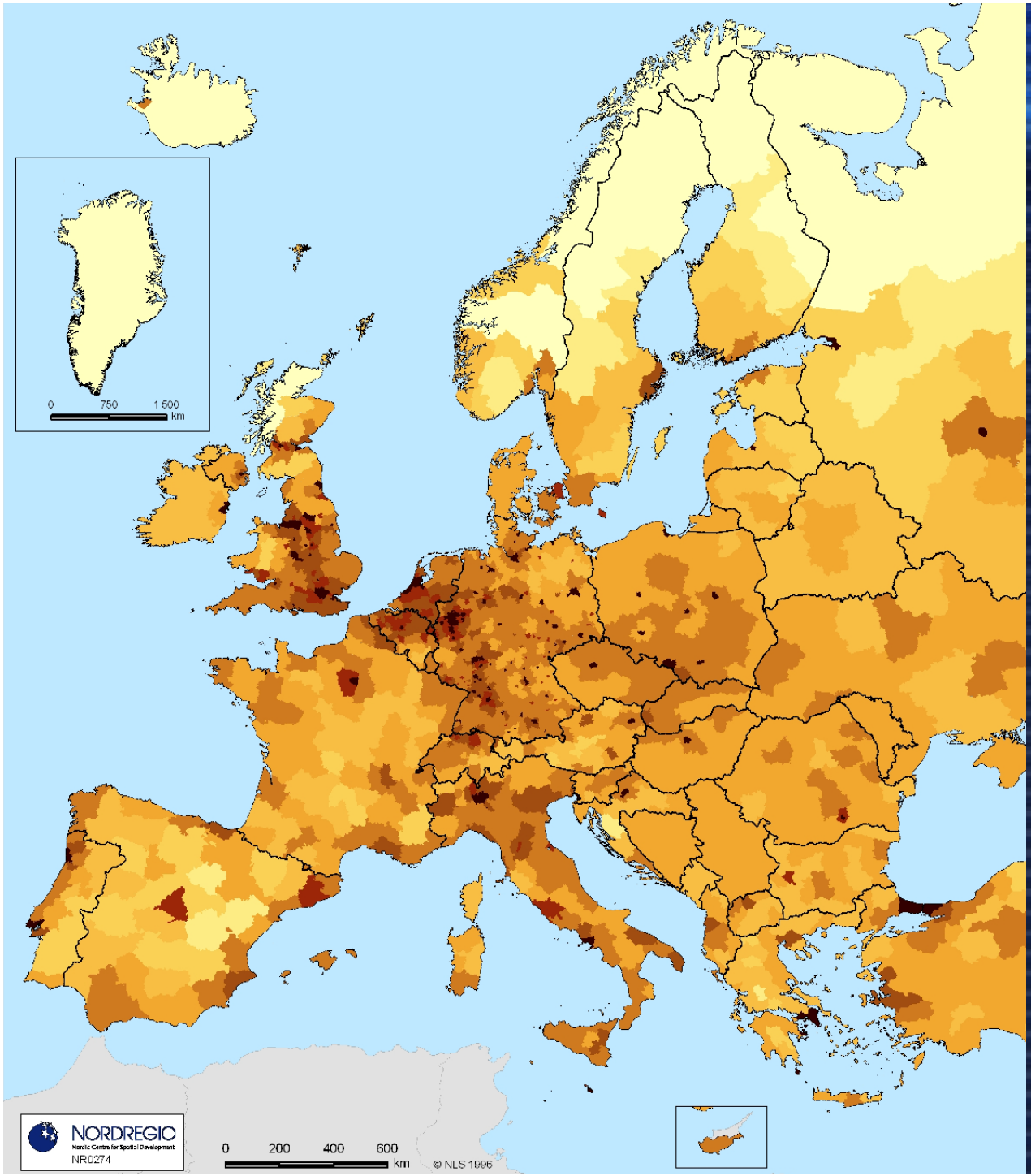
European Spatial Development Perspective (ESDP)

- Strategies
  - Coordination of development measures
  - Partnership between towns and their countryside: **the rural-urban partnership**
  - Natural and cultural heritage as a development asset: cultural landscapes and historical paths
  - Intervention in landscape restoration and where human management is neglected
  - Transboundary coordination: INTERREG Initiative

European Spatial Development Perspective (ESDP)

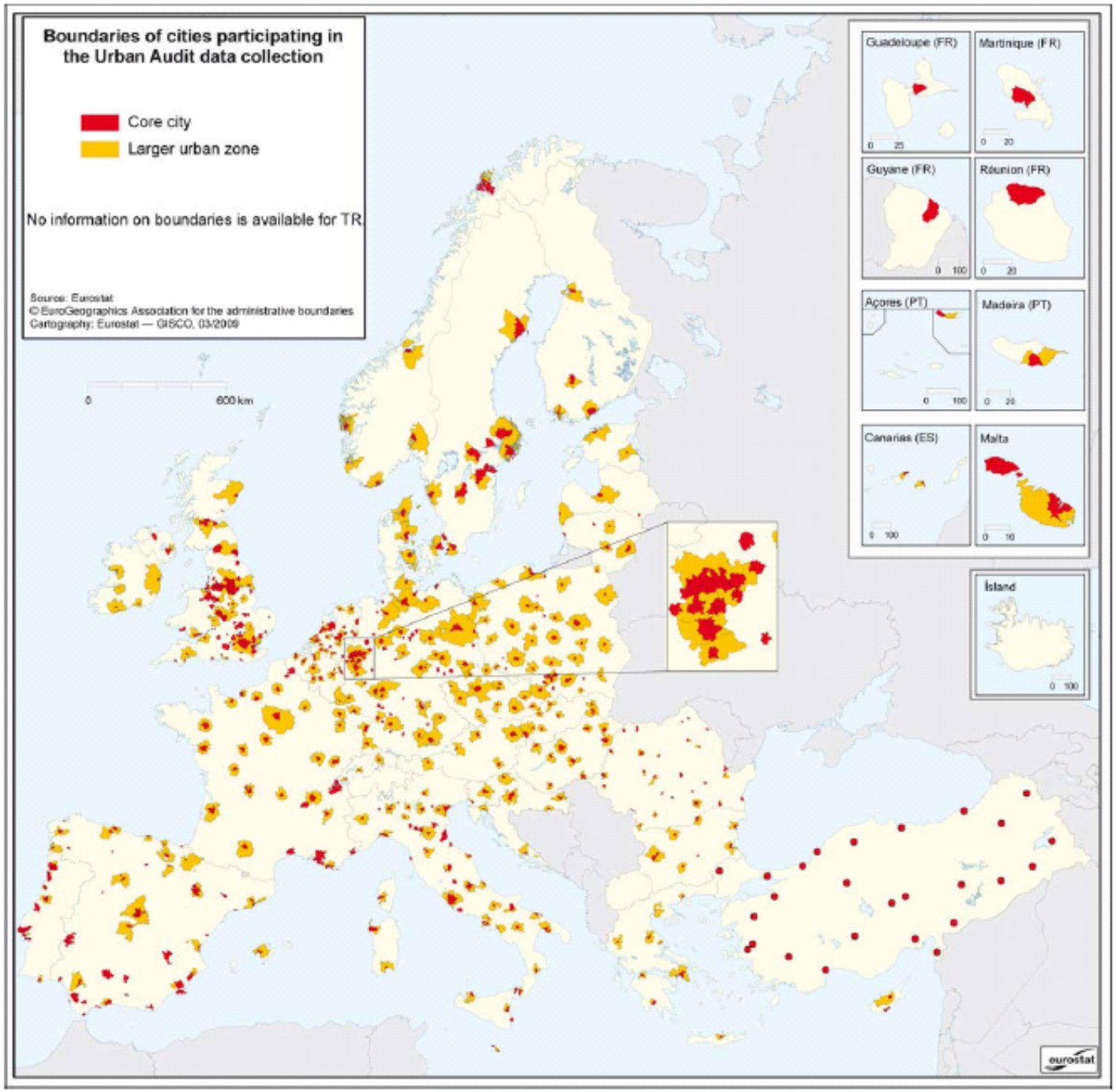


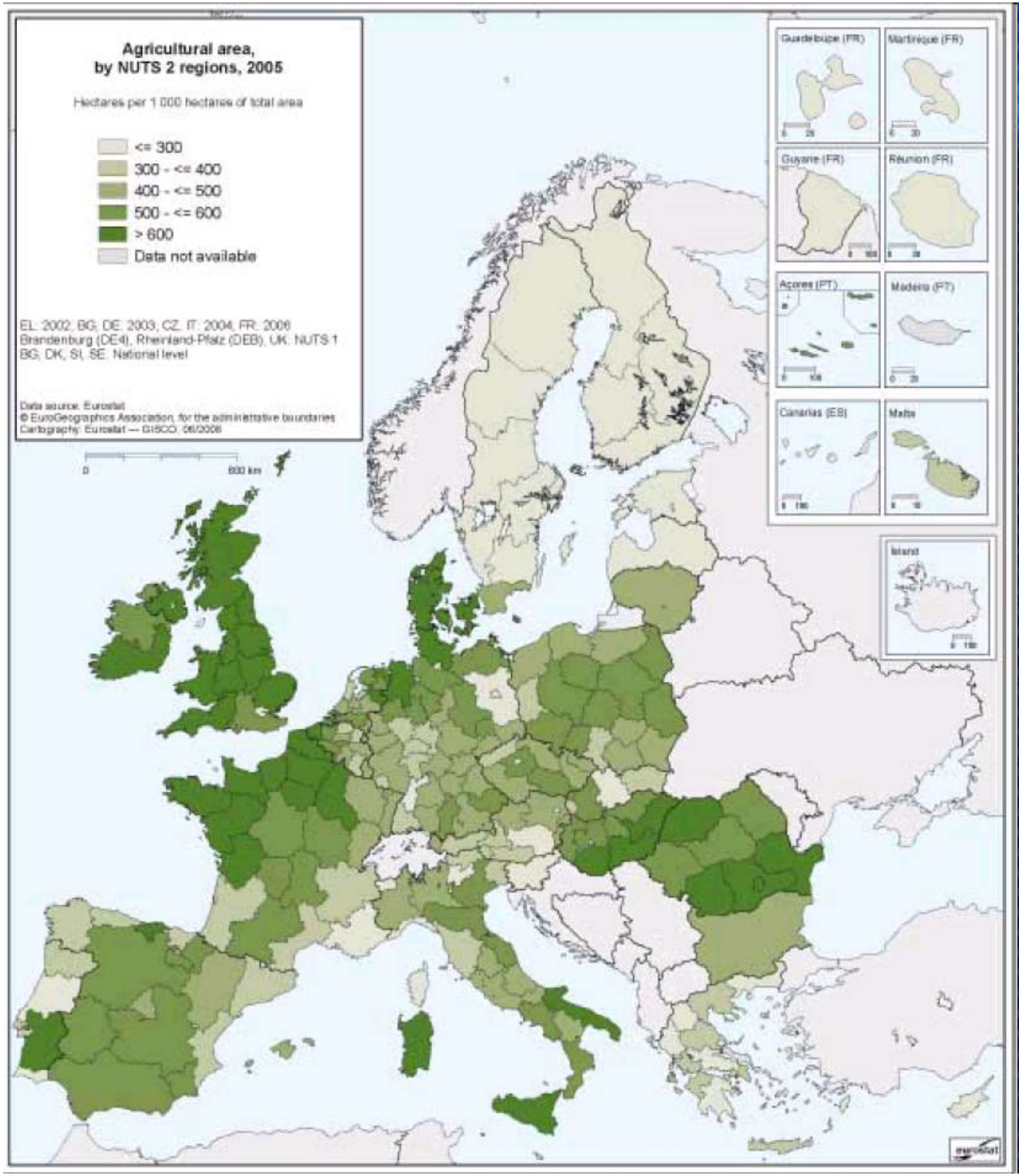
Some key factors of change at the EU scale



Population growth and urbanization processes

- Urban growth/sprawl
- Suburbanization (primarily second homes
- Transportation networks


Boundaries of cities participating in the Urban Audit data collection
Core city
Larger urban zone
No information on boundaries is available for TR
Source: Eurostat
© EuroGeographics Association for the administrative boundaries
Cartography: Eurostat — GISCO, 03/2009
0
600 km
Guadeloupe (FR)
Martinique (FR)
Guyane (FR)
Réunion (FR)
Açores (PT)
Madeira (PT)
Canarias (ES)
Malta
Ísland
eurostat

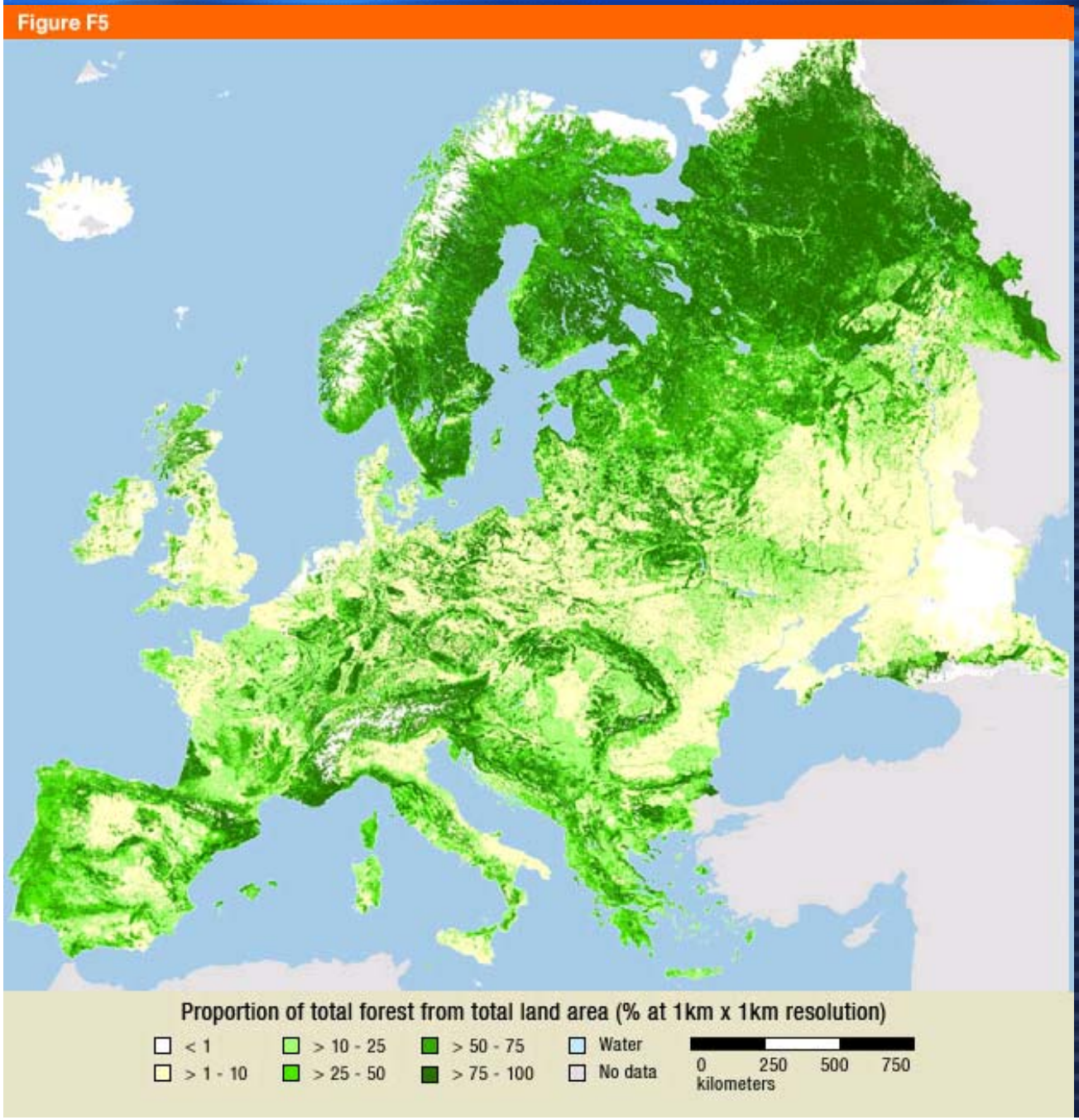


Agriculture intensification

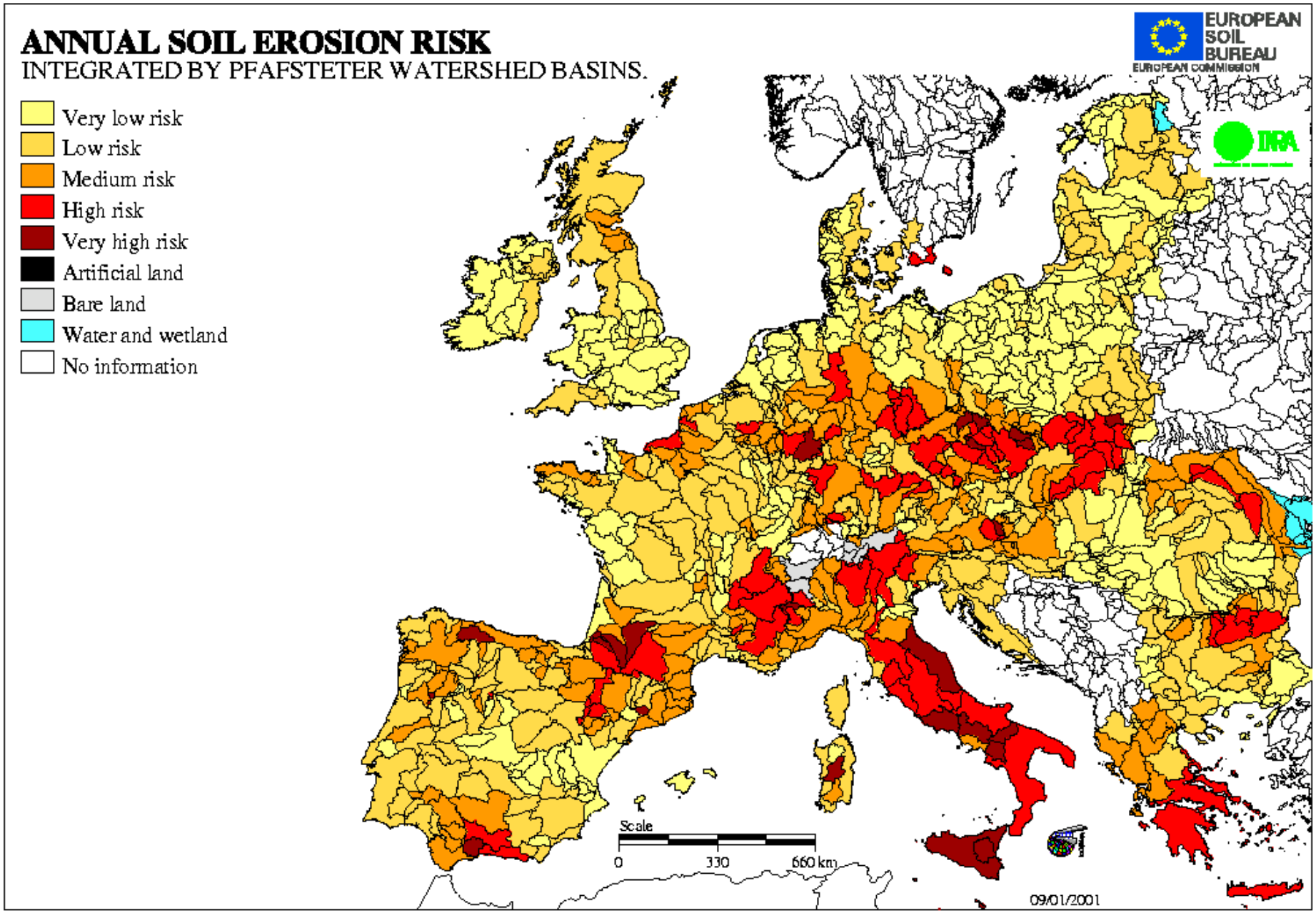
- Landscape standardization
- Loss of biodiversity
- Increased pollution levels
- Soil erosion

Afforestation

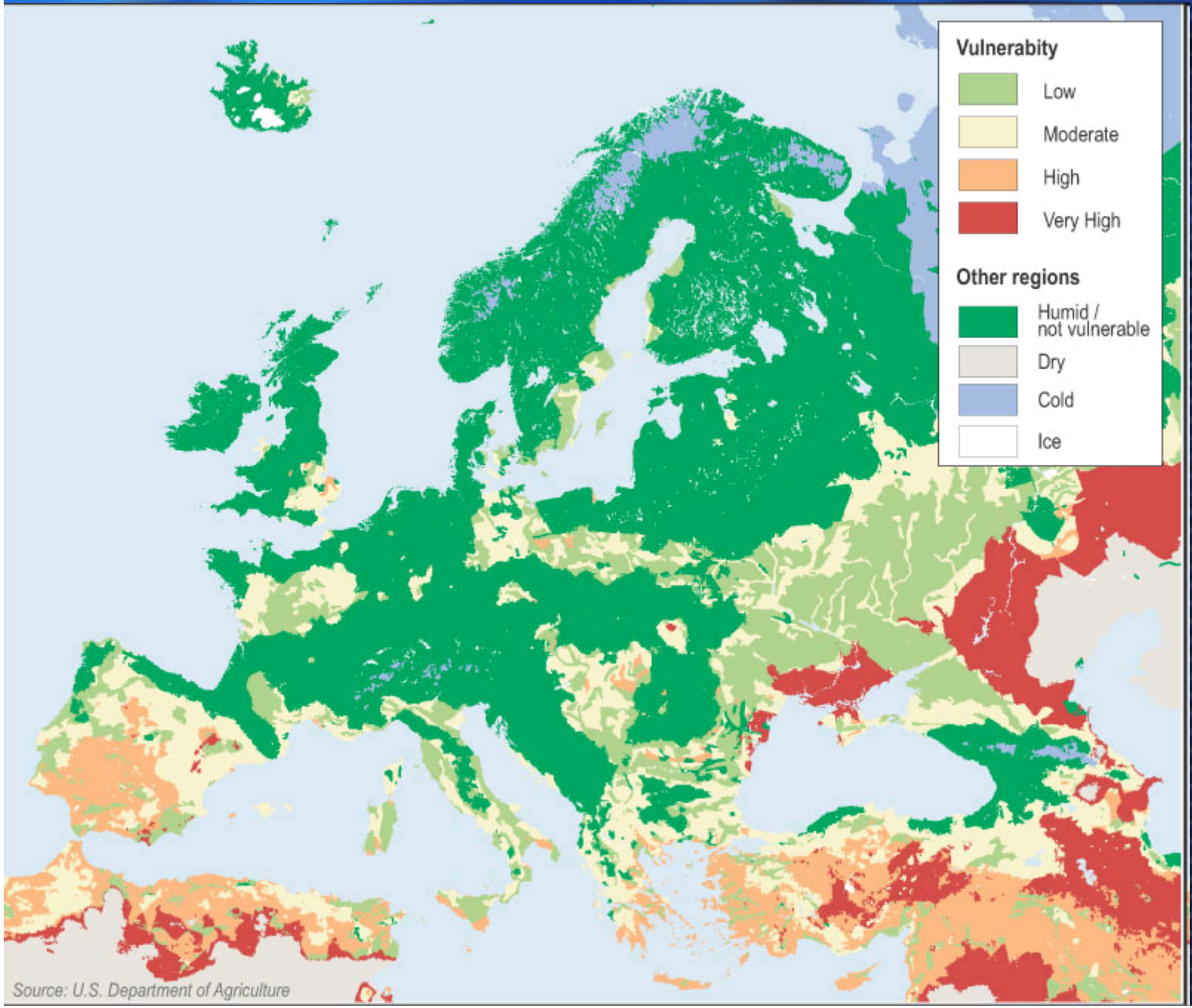
- Landscape standardization
- Exotic species

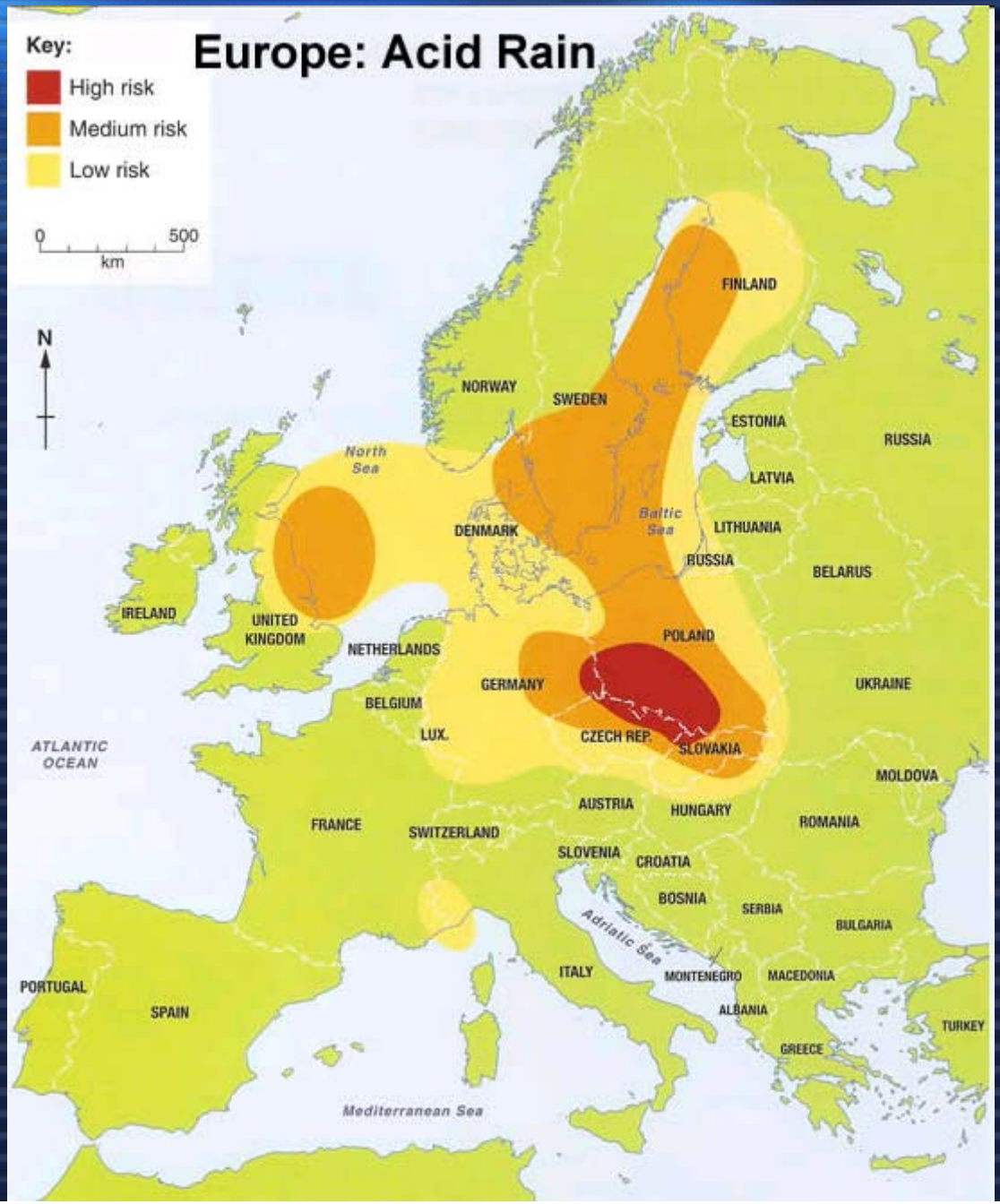


(Schuck et al 2002)

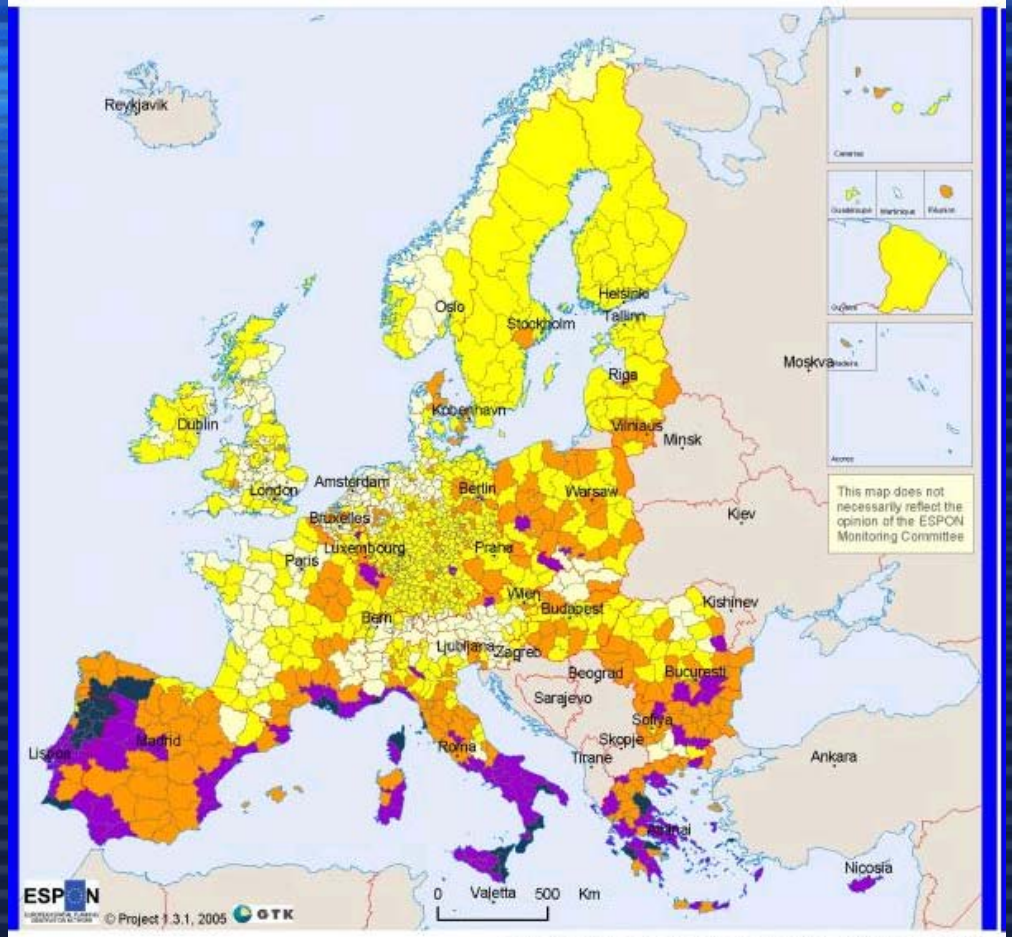

ANNUAL SOIL EROSION RISK
INTEGRATED BY PFAFSTETER WATERSHED BASINS.
Very low risk
Low risk
Medium risk
High risk
Very high risk
Artificial land
Bare land
Water and wetland
No information
EUROPEAN SOIL BUREAU
EUROPEAN COMMISSION
IRA
Scale
0
330
660 km
09/01/2001

Desertification vulnerability




Europe: Acid Rain
Key:
High risk
Medium risk
Low risk
0
500
km
N
FINLAND
NORWAY
SWEDEN
ESTONIA
RUSSIA
North Sea
LATVIA
Baltic Sea
LITHUANIA
DENMARK
RUSSIA
BELARUS
IRELAND
UNITED KINGDOM
NETHERLANDS
POLAND
GERMANY
UKRAINE
BELGIUM
LUX.
CZECH REP.
SLOVAKIA
ATLANTIC OCEAN
MOLDOVA
AUSTRIA
HUNGARY
FRANCE
SWITZERLAND
ROMANIA
SLOVENIA
CROATIA
BOSNIA
SERBIA
Adriatic Sea
BULGARIA
ITALY
MONTENEGRO
MACEDONIA
PORTUGAL
SPAIN
ALBANIA
TURKEY
GREECE
Mediterranean Sea

Wild fires



Forest fire hazard

- Very low
- Low
- Moderate
- High
- Very high
- Non ESPON space

Origin of the data: © EuroGeographics Association for the administrative boundaries
Forest fires years 1997-2003: ESA
Biogeographic regions: EEA
Source: ESPON Data Base

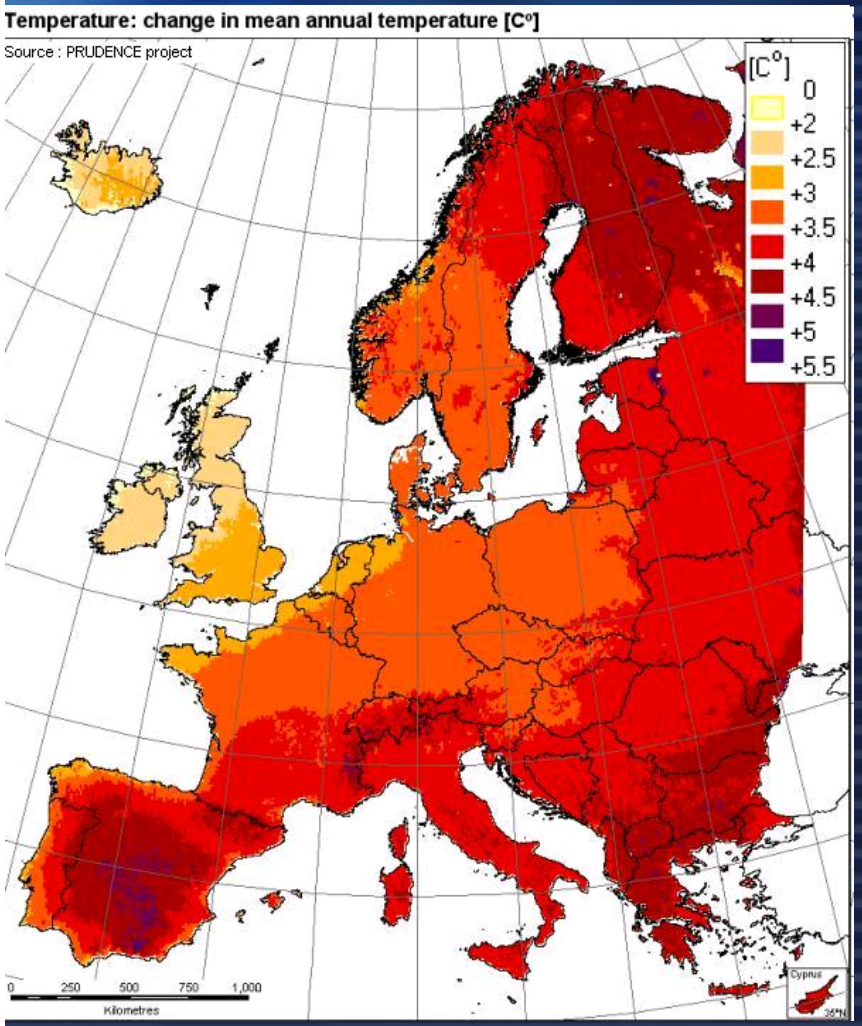
The classification of the forest fire hazard is based on a combination of the numbers of observed fires per 1000 sq. km 1997-2003 (ESA) and the biogeographic regions map of Europe (EEA).

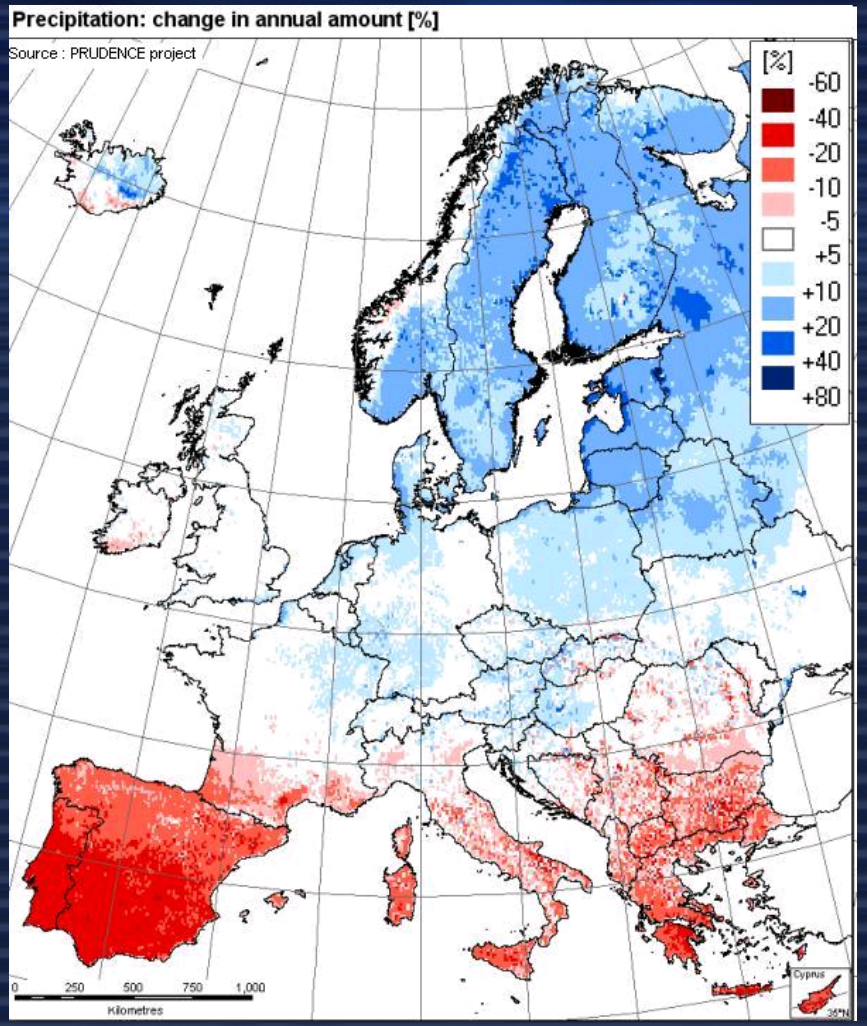
The number of observed fire per 1000 sq.km 1997-2003:
1 = No fores fires
2 = <1 observed fire
3 = 1-5 fires
4 = 5-10 fires
5 = >10 fires

Biogeographic regions:
1 = Alpine and Arctic,
2 = Atlantic,
3 = Boreal,
4 = Continental, Black sea, Pannonian and Steppic,
5 = Mediterranean

Climate Change

Absolute change in mean annual temperature and precipitation between control period 1961-1990 and 2071-2100, under the IPCC SRES scenario A2 (EC JRC/IES)





Challenges

- Understand the landscape both as a system and as the outcome of a historical process
  - Sometimes mixed land uses
  - Material and inmaterial components (particularly practices)
  - Macro and micro elements (not easily mappable)
- The whole landscape system needs to be managed
  - Not only individual components
  - Environmental protection does not fit well
    - Landscapes are the result of land use change
  - Spatial planning can contribute significantly
    - Help to define desirable land uses
    - Preclude other land uses that might change its nature
- Balance between new functions and landscape protection
  - Mass tourism may become a threat

Challenges

- Farming has contributed and should continue to creating and maintaining unique countrysides
- Public participation
  - Local residents have been the builders and agents of change and will continue to be
  - Identify their knowledge, needs and multiple interests
    - Communicate the multiple values of the landscape
    - Help to build a regional identity
    - Involve them in the processes of inventory, planning and decision-making
    - Recognise residents as stewards of the landscape
- Internal processes: Marginalization
  - Ageing
  - Out migration
  - Lack of services
  - Lack of opportunities

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