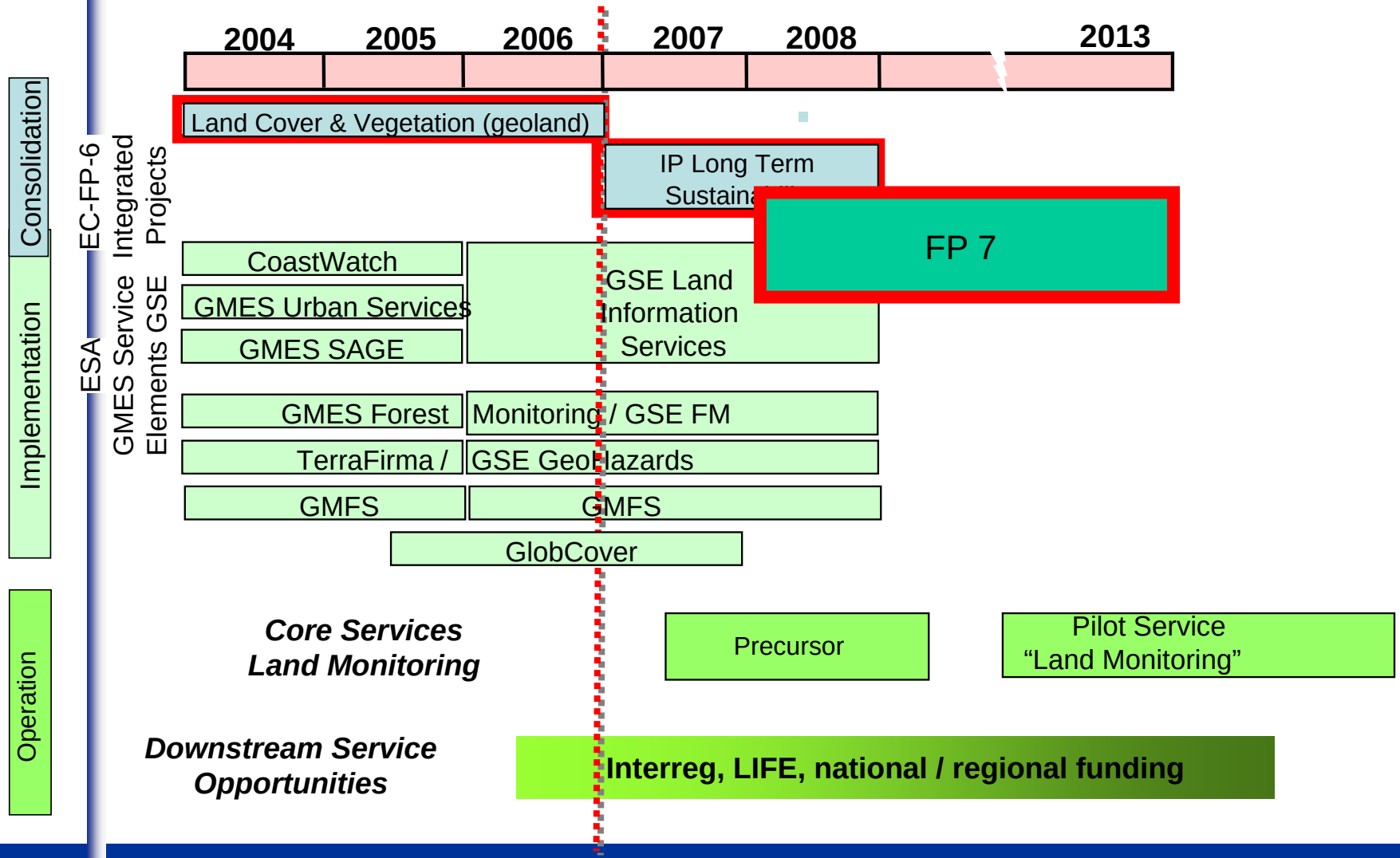
Geoland outlook

geoland

Co-funded by the European Commission within the GMES initiative in FP-6

geoland outlook



EU sectorial policies & directives

- Directives
  - Habitat
  - Water Framework
  - Soil Thematic Strategy
- Common agricultural policy
  - Outside Europe: International crop market
  - Inside Europe : crop production monitoring
- Multilateral environmental agreements, i. a.
  - UNFCCC,
  - CBD,
  - CCD
- International cooperation, i. a.
  - Humanitarian aid
  - Food security
  - Focus on Africa

Users

European Commission

- DG Regio
- DG Agri
- DG Env
- DG Relex family (Relex, Dev, Aidco)
  + EEA

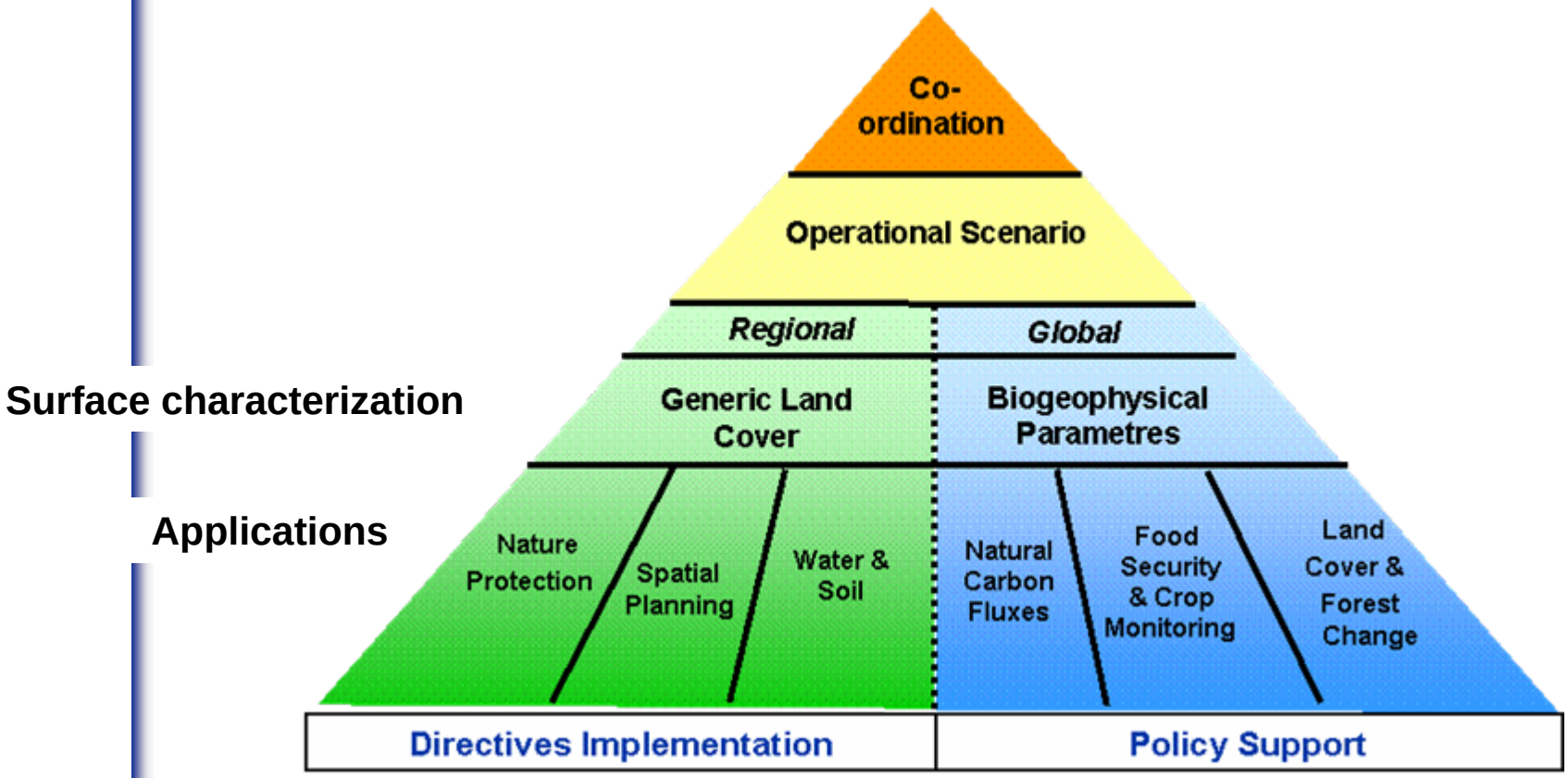
National, regional

International

- FAO
- UNEP
- IPCC
- GEOSS

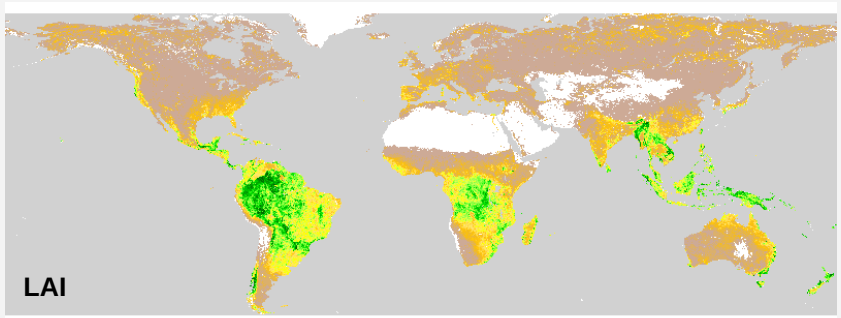
Science

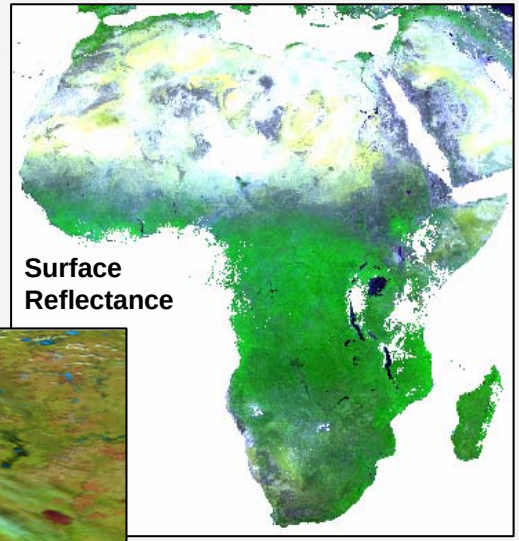
Geoland structure

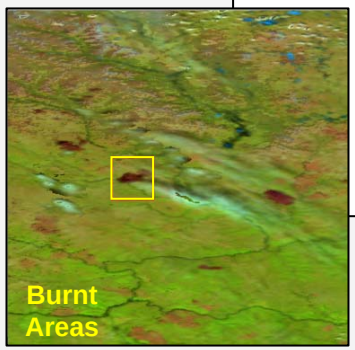


Biogeophysical Parameters : Vegetation

Leaf Area Index, Fapar, Fcover, Surface Reflectance, Burnt Areas



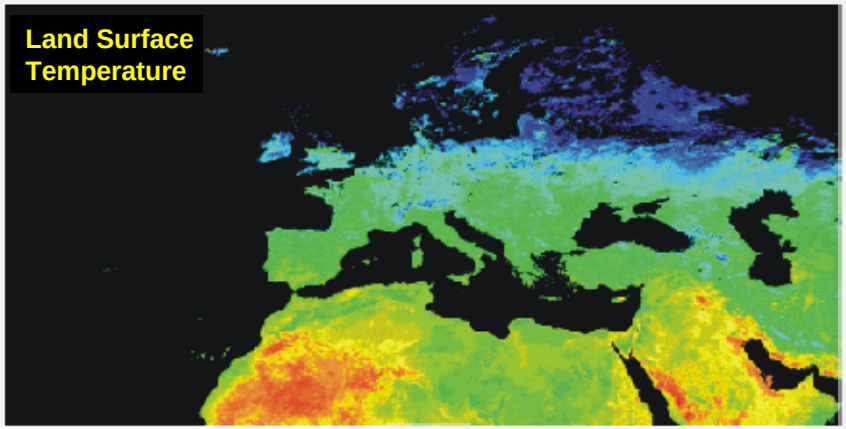


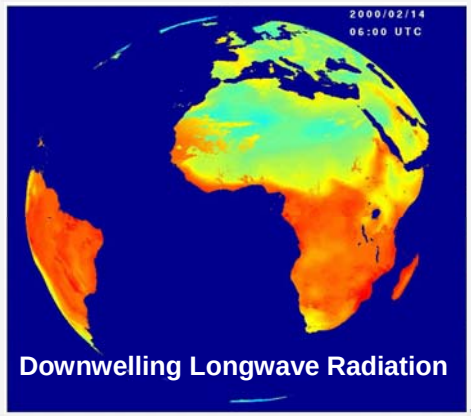


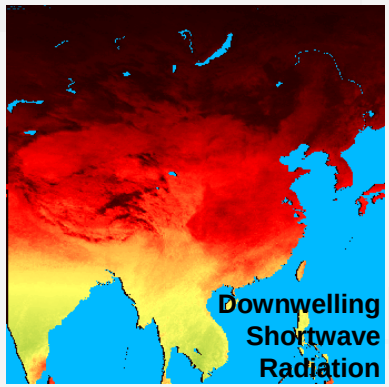
Roselyne Lacaze
Medias-France

Biogeophysical Parameters : Radiation

Surface Albedo, Downwelling Shortwave & Longwave Radiation, Land Surface Temperature



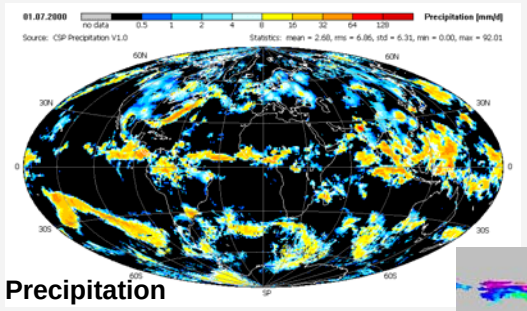




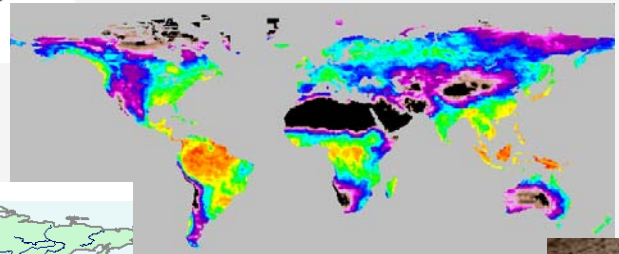
Roselyne Lacaze
Medias-France

Biogeophysical Parameters : Water

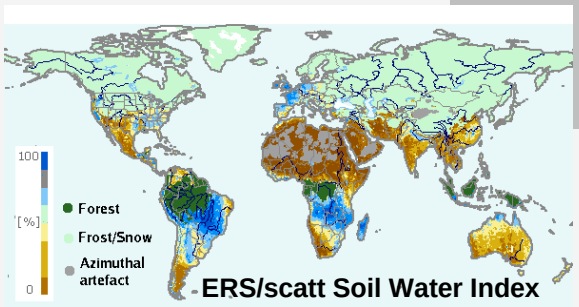
Precipitation, Soil Moisture, Evapotranspiration, Water Bodies



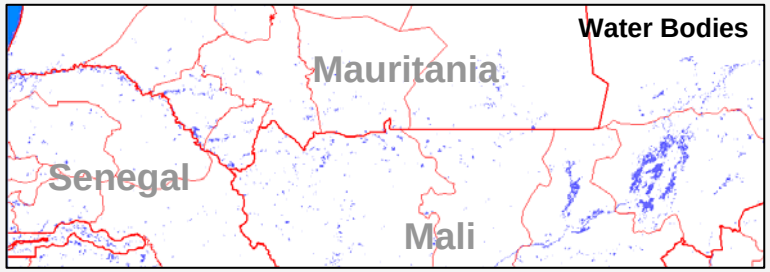
Precipitation



AMSR Soil moisture



ERS/scatt Soil Water Index



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Medias-France

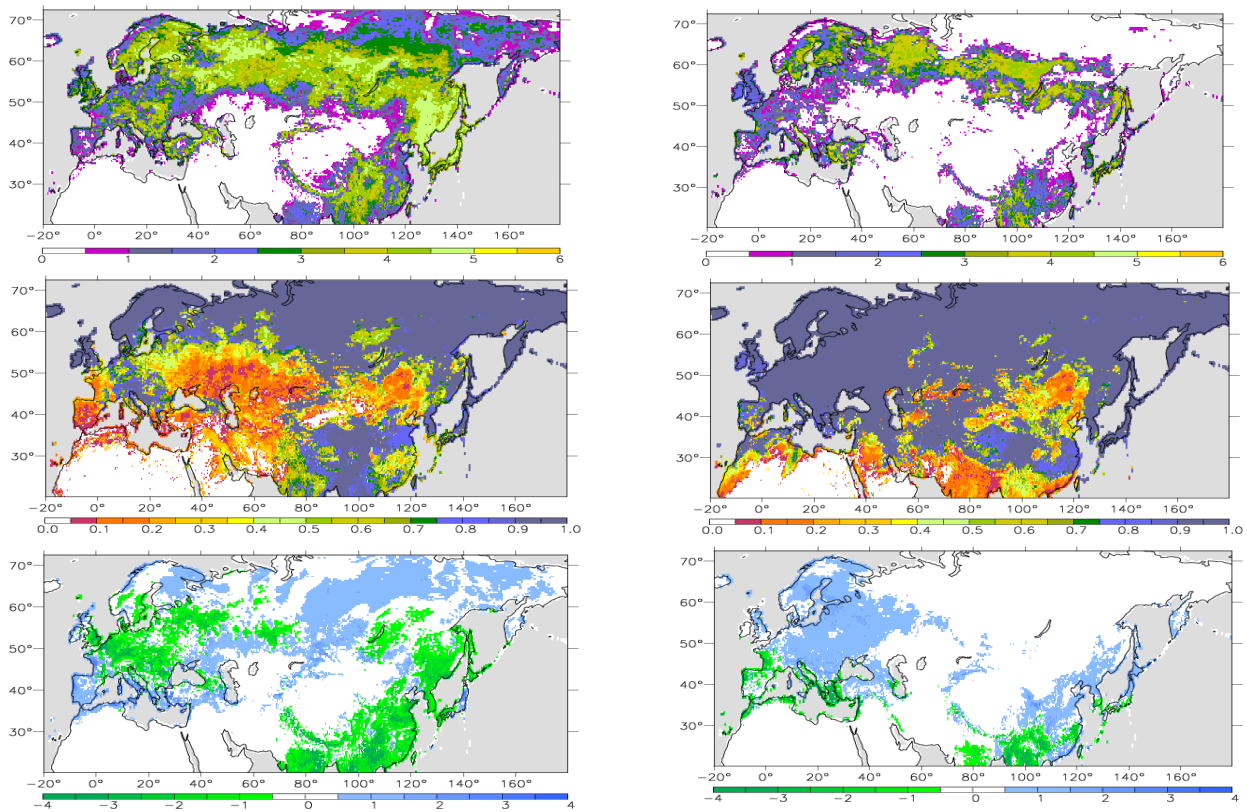
Application Natural Carbon Fluxes

Goal : monitoring of water & carbon fluxes on land

LAI

Soil Moisture

Net carbon flux



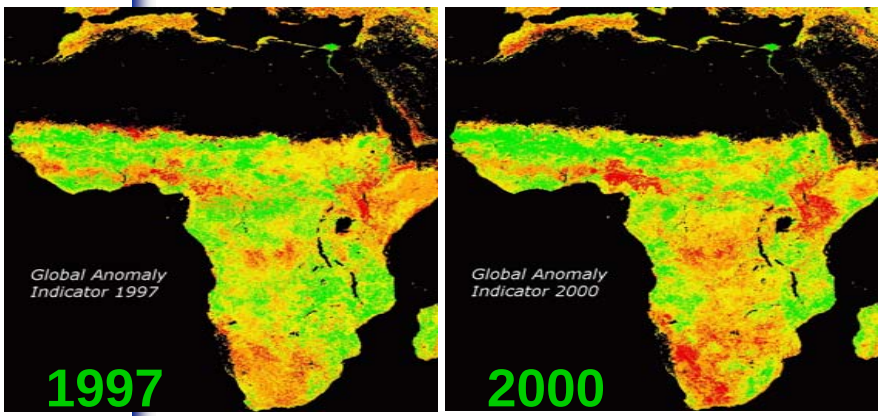
1 October 2005

30 January 2006

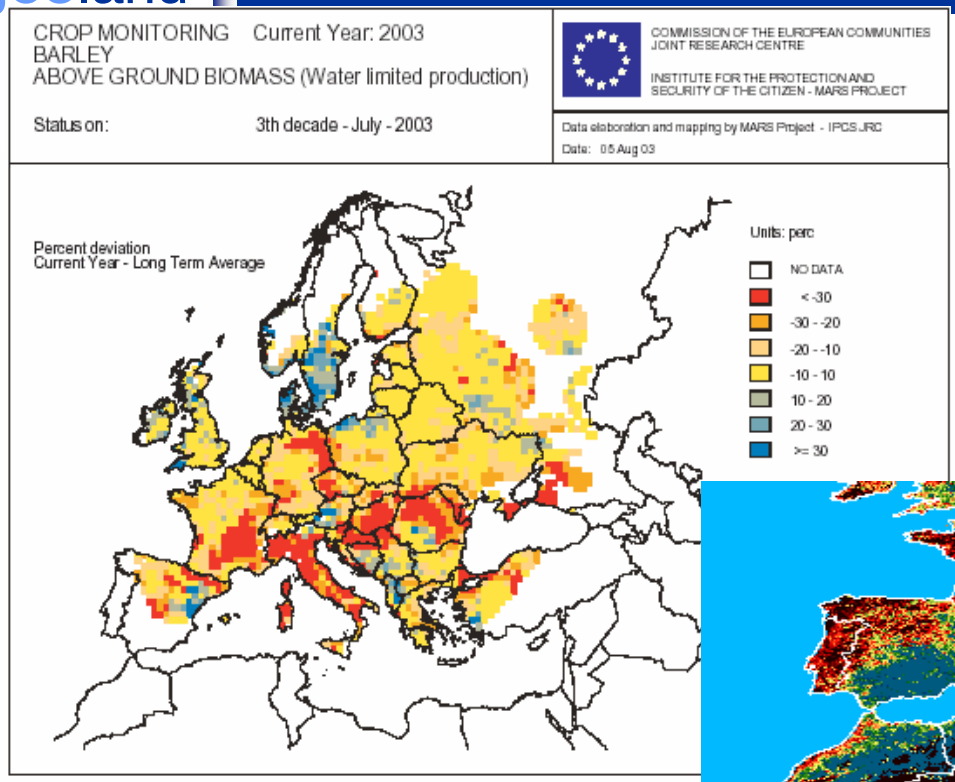
Application Land Cover & Forest Change

Goal : monitoring of environmental stress and land cover and forest conversion

Anomaly



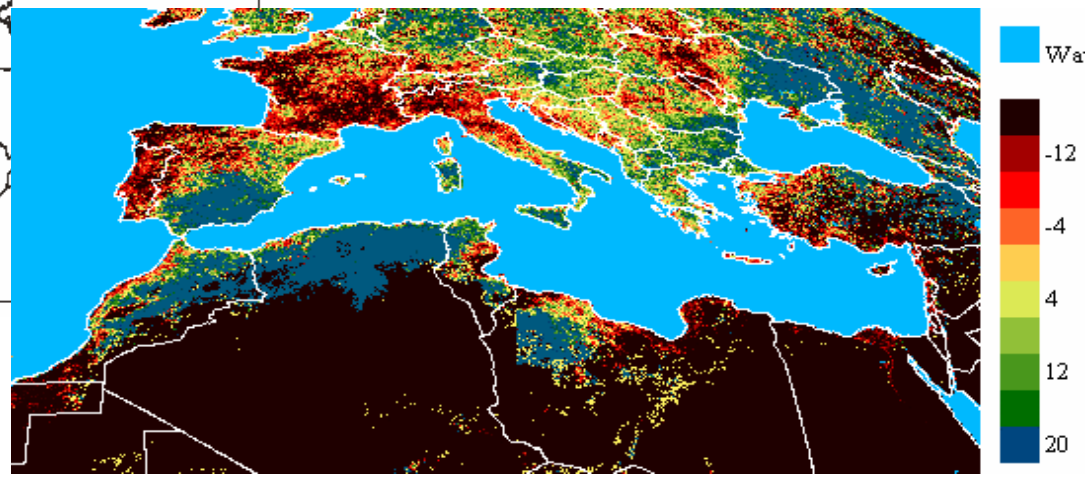
Application Food Security & Crop Monitoring



Relative deviation of above ground biomass for year 2003

Goal : monitoring of crop production and yield assessment

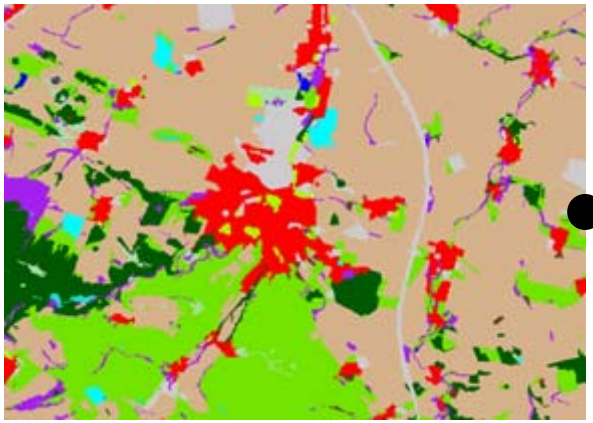
Input to Food Security Services and trade policies

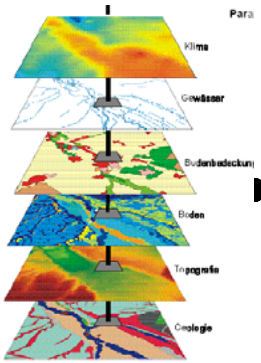


Difference yield forecast for wheat, 3rd dekad of July 2004

Land Cover

High res. EO data + in-situ data



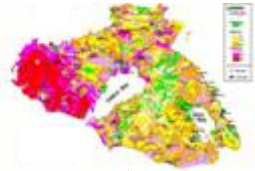


21 classes
5 ha mmu
1 ha mmu Urban

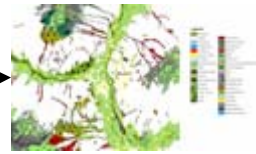
Risk

Geohazards

Soil



Nature Protection



Spatial Planning

Water

Forest Monitoring

Down-stream Services

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Service Portfolio Evolution

Answers to ‘quality of life’ policy questions

Administrative levels

- European level
- National level
- Sub-national level

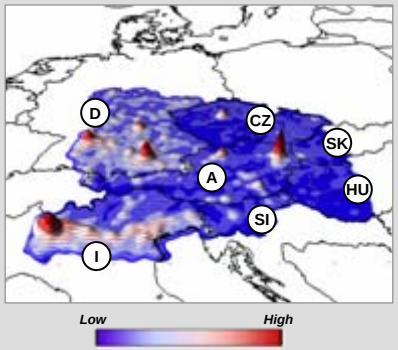
How productive is our land consumption?

How attractive is our living environment?

Do we have enough free

year 1

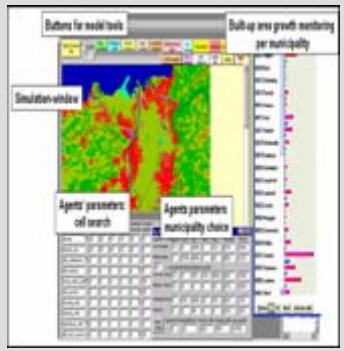
Spatial indicator:
Productivity of land consumption



Based on Image 2000 data; Produced by GeoVille within geoland

year 2

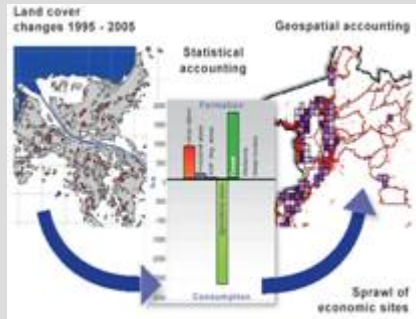
Urban Growth:
Rate of urban land use change



Based on SPOT data; Produced by GeoVille within Moland

year 3

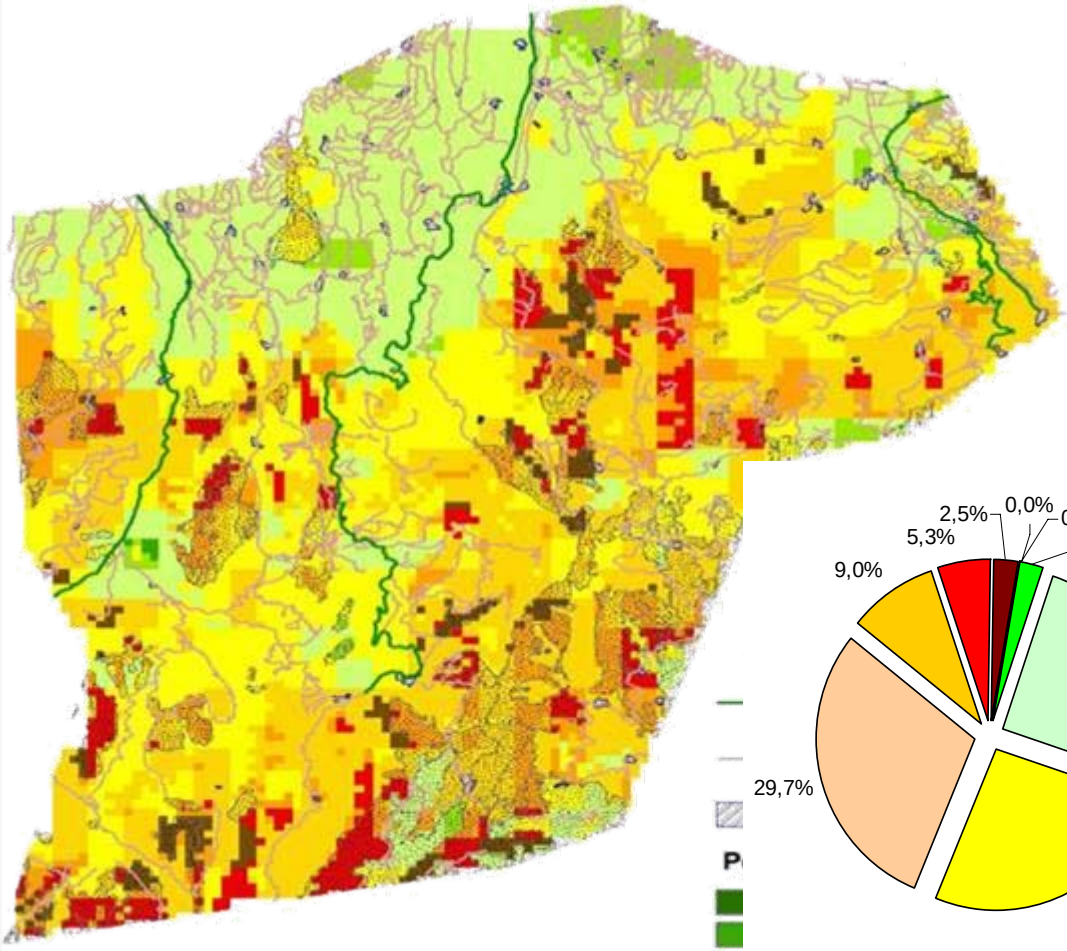
Model & Scenario:
Landscape transformation



Based on SPOT data; Produced by ARC/ GeoVille

Soil Observatory (OWS-S)

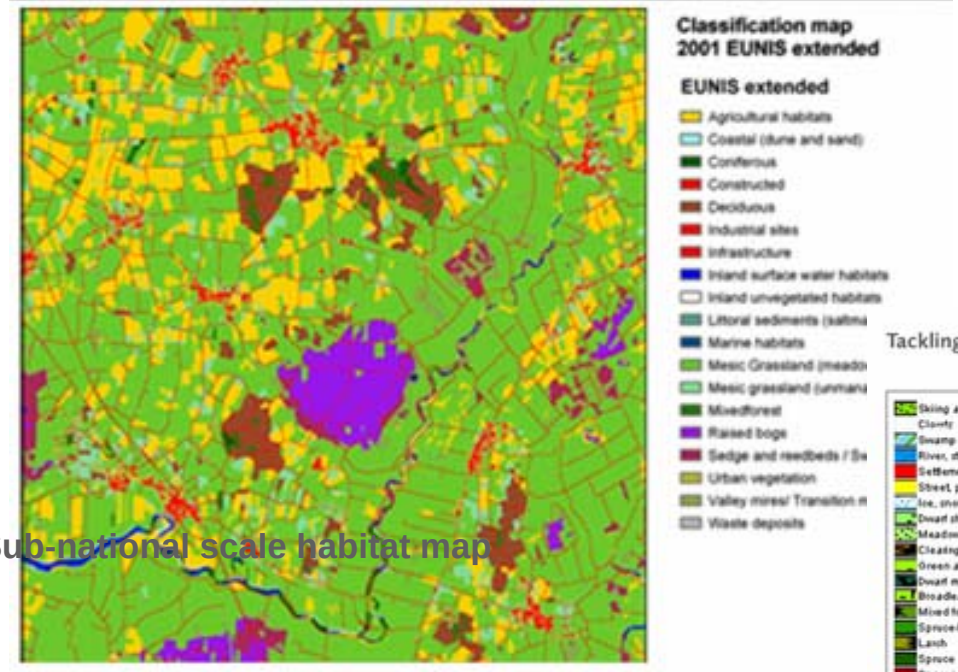
Soil Thematic Strategy – Regional Soil Erosion Risk



PESERA model

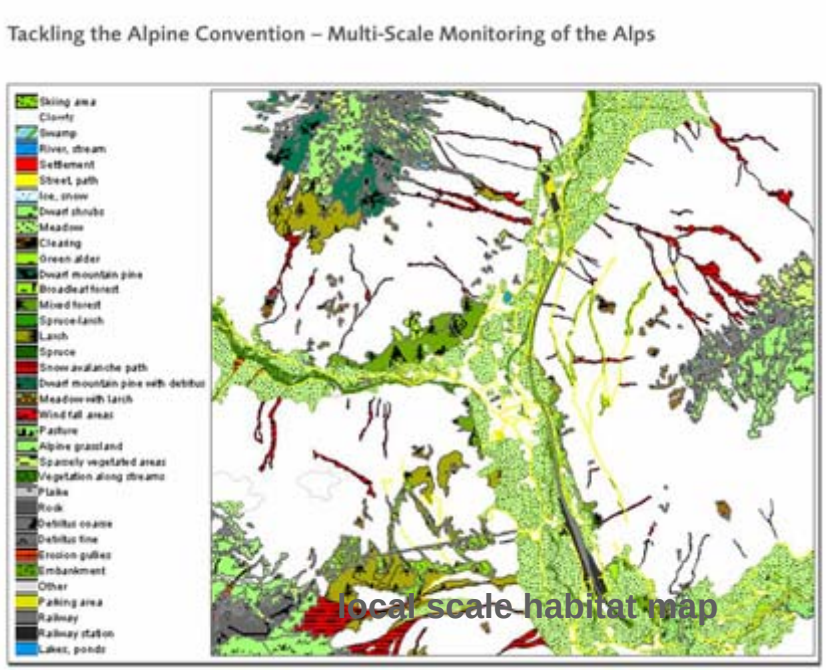
Ioannis Z. Gitas
MAICh-AUTh

Nature Protection



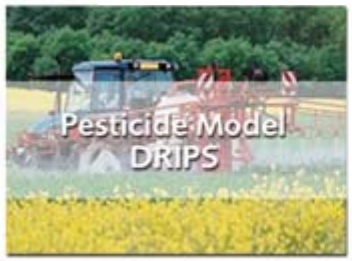
Sub-national scale habitat map

Space observations +
in-situ information =
habitat maps:
- fragmentation
- changing land use practice
- changing land cover



local scale habitat map

Water Quality & Quantity



Policies/Directives

- **Water Framework Directive**
- **Common Agricultural Policy**

Water Quality – Pesticides Example

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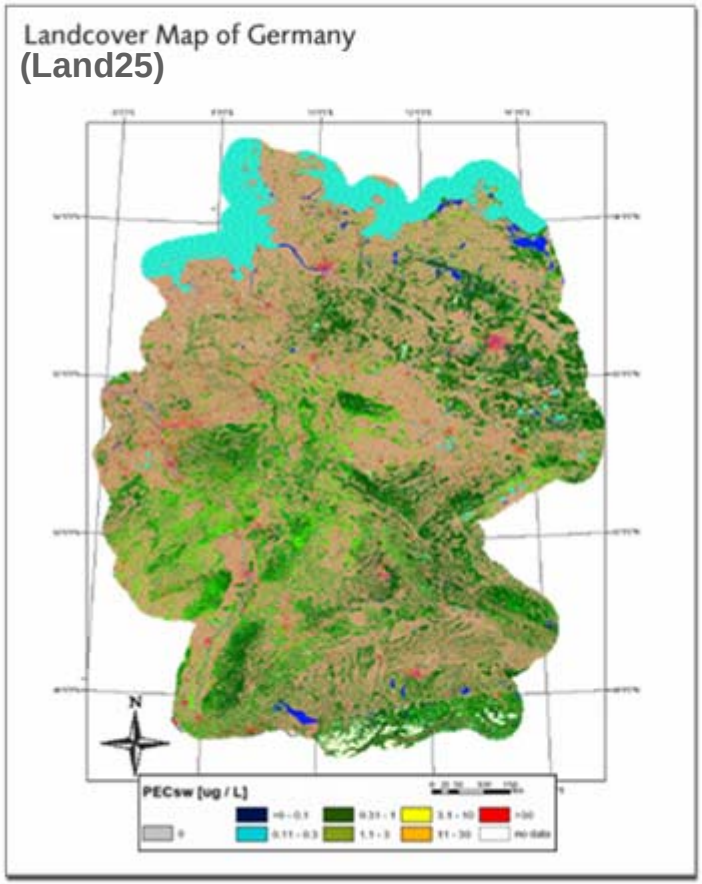
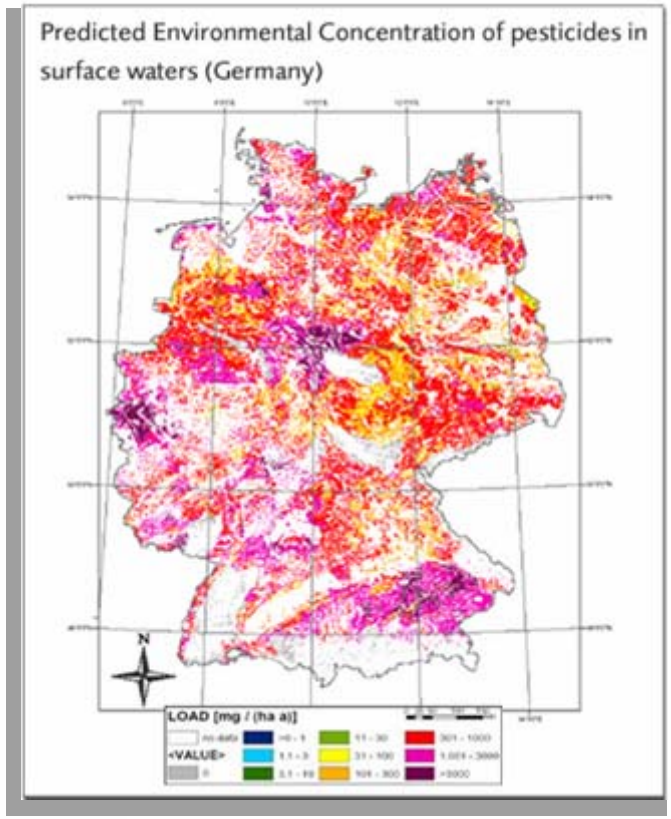
Pesticides

Predicted Environmental Concentration of surface waters (PECsw)

Landcover Map of Germany
(Land25)



Predicted Environmental Concentration of pesticides in surface waters (Germany)



Courtesy of Institute of Landscape Ecology and Resources Management, University of Giessen

Water Quantity – Consumption for Irrigation

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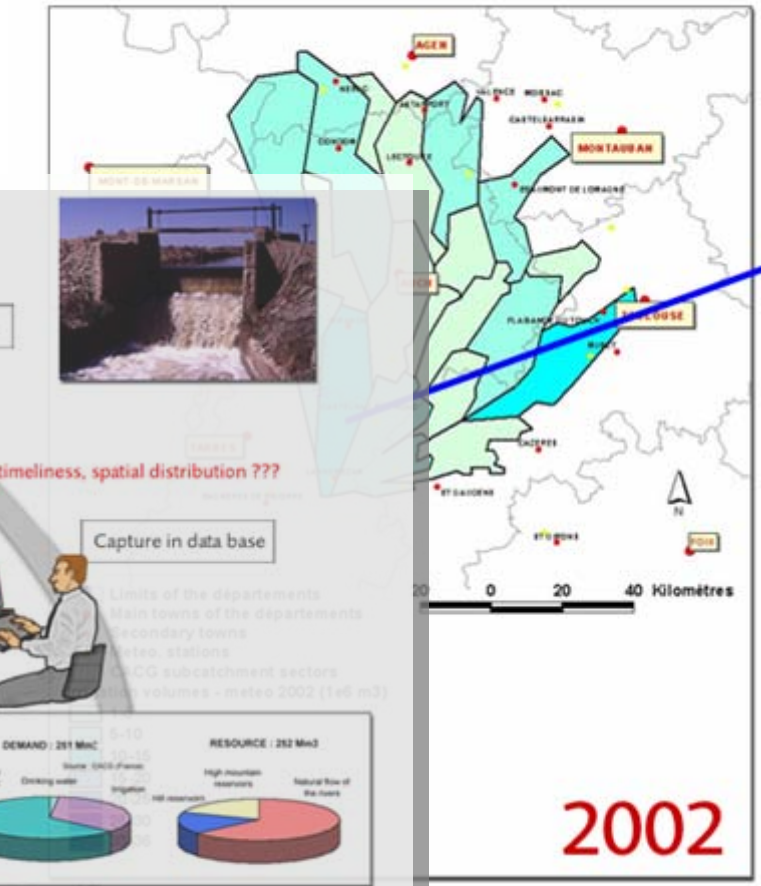
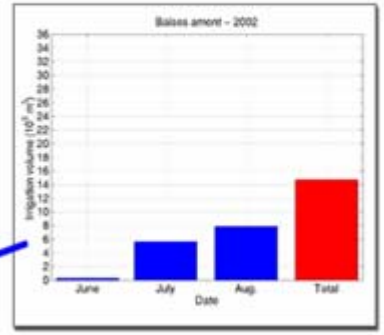
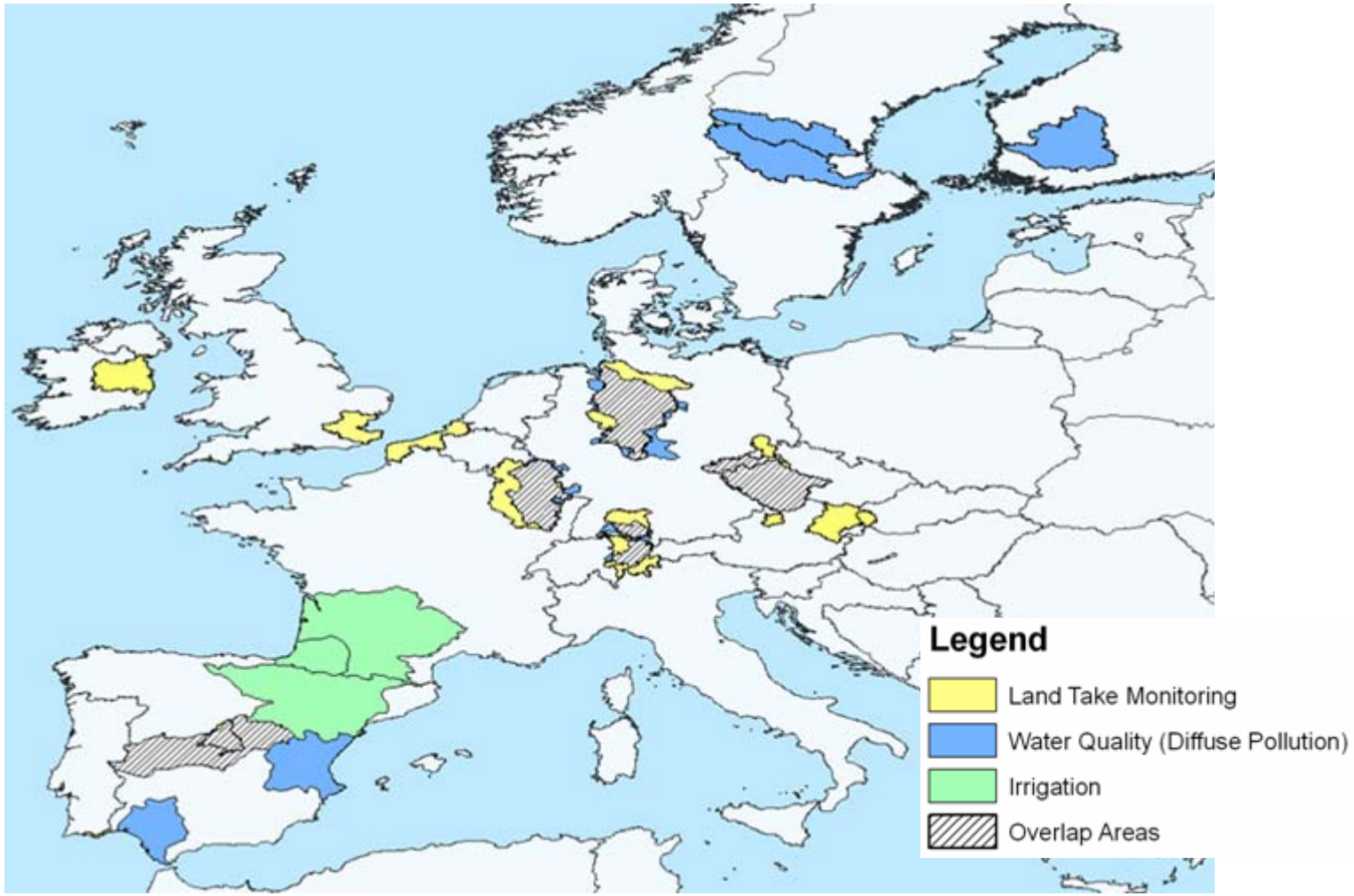
Example: Varying Irrigation Volumes - 2002, 1998, 1985





Year	Volume (10^6 m³)
2002	97.8
1998	152.4
1985	173.5

GSE Land (Baseline) **/ geoland roll-out** (equivalent services)



geoland-2 objectives

Make European integration of services visible

Global :

- Moving from off-line processing to near real time

Regional :

- harmonize data streams
- extend coverage to Europe

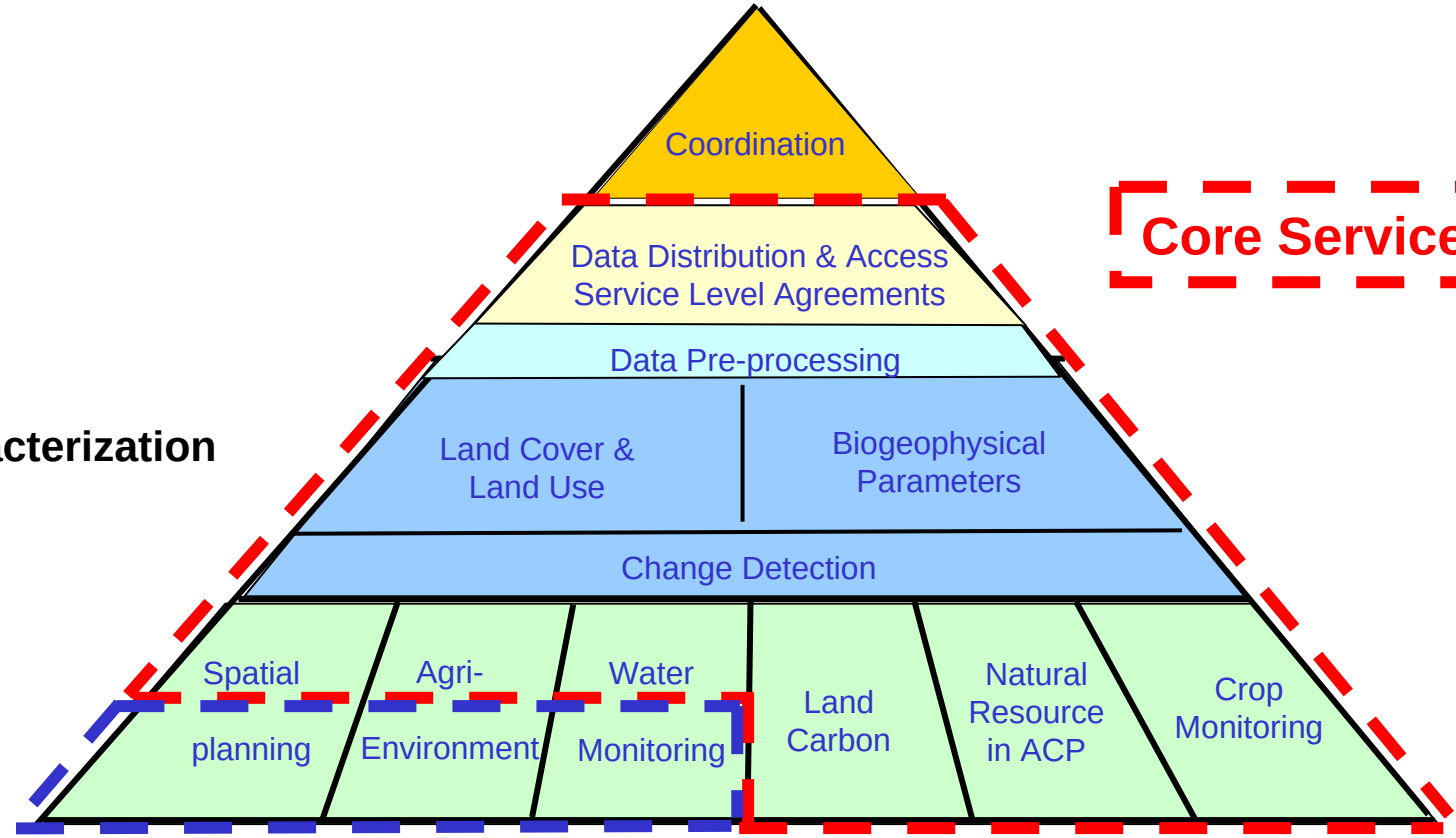
Stronger integration global-regional

Complement the application portfolio

- add forest monitoring
- emphasize land cover change

Build a strong user base

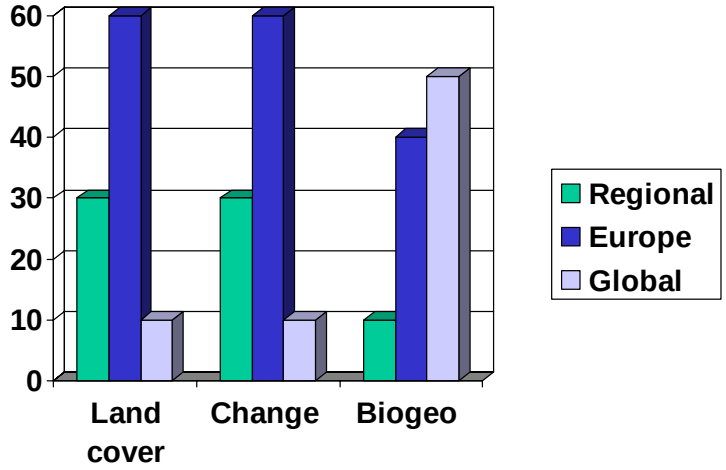
Geoland-2 layout

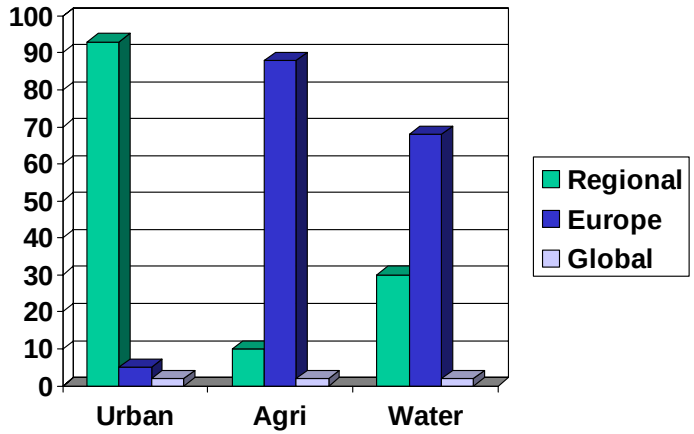


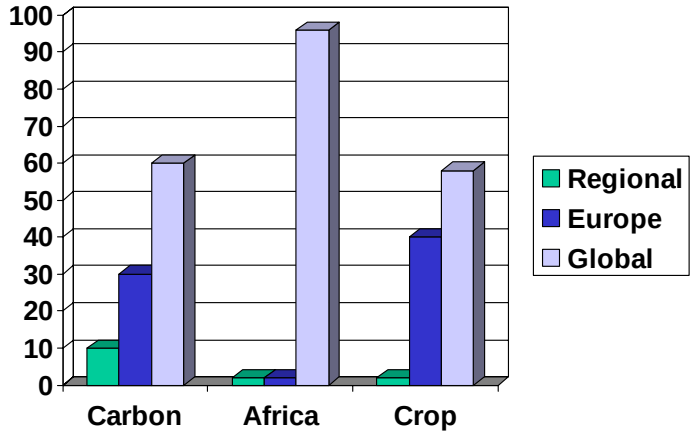
Surface characterization services

Application services

Percentage of activities (regional, Europe, global) of each Geoland-2 component







Near Real Time Operational Data Flow

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Space Segment

Core Service

Users