Core Information Service: AgriEnvironmental Service

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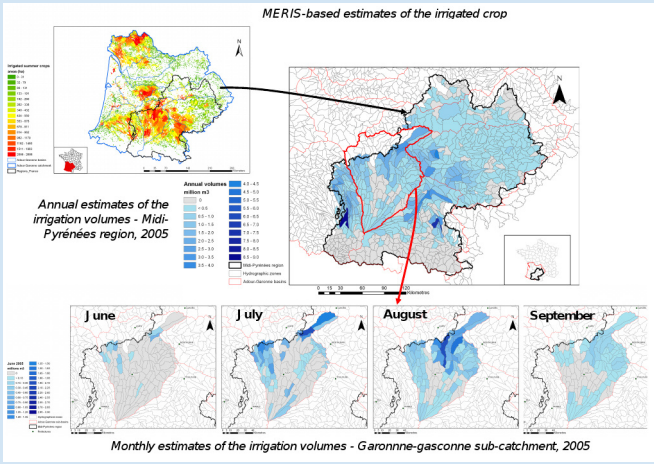
- **Provision of a consistent and integrated set of agri-environmental indicators covering various temporal, spatial and thematic scales**
- **Analysis of the impact of agricultural land use changes on the environment and biodiversity**
- **Indicators provided at national/catchment scale and for hot spot areas**

Service Objective

The policies integration process between agriculture and environment in Europe fosters the development of agricultural practices that preserve the environment and safeguard the countryside.

Various EU directives and programmes, such as the Rural Development Programme, the Water Framework Directive, the Nitrate Directive and others, set strategic guidelines for the Common Monitoring and Evaluation Framework by defining objectives and indicators to evaluate the progress and achievement in environmental protection measures.

The AgriEnvironment Core Information Service (AgriEnv CIS) will contribute to the improvement of the timely and accurate monitoring of agricultural land use state and its changes at European, national and regional levels by providing common methodologies and indicators to monitor the impact of the programmes and their measures.



Monthly and annual irrigation volumes estimate over the Midi-Pyrénées region in 2005. © Infoterra France

Service Description

Based on user requirements, the AgriEnvironmental Service aims at developing and improving agri-environmental indicators assessing:

- Agricultural land use and trends:
  - Land use changes (especially from agriculture to artificial surfaces between two reference dates);
  - Indicator of cropping patterns displaying the area share between annual crops;
  - Permanent crops and grassland at a given date, and indicator of crop rotation patterns.
  - Extensification (area, trend and degree);
  - Land Abandonment (area and rate of abandoned arable land);
  - Effectiveness of agri-environmental measures (state and trends of riparian vegetation).
- Farming pressure on water and soil resources:
  - Water abstraction by irrigation;
  - Intermediate crop coverage;
  - Bare soil rate;
  - Soil erosion maps.
- Impact of agricultural land use changes on biodiversity and landscapes:
  - High Nature Value farmland: detection of agricultural land use changes;
  - Landscape coherence between intensive agricultural areas;
  - Changes of land use diversity per landscape unit;
  - Changes of landscape heritage functions per landscape unit;
  - Changes of landscape closedness / openness.

These indicators will be generated simultaneously on four selected demonstration sites. They will be supplied at two scales: at the national/catchment scale to provide an overview of the general status of the site and at the scale of hot spot areas requiring more specific monitoring techniques.

Users

The AgriEnv Service is fulfilling the needs of users at European level who are in charge of the definition of directives and strategies (e.g. DG Agri, DG Environment, EEA, Eurostat, ETC-LUSI, European Soil Bureau, European Landscape Convention).

Users at National level (agriculture and environment ministries, national environmental agencies etc.) are supported in their implementation of European policies and in the management and monitoring of the effects of these measures.

And finally AgriEnv Services will also be used by regional institutions like water agencies and environmental institutions.

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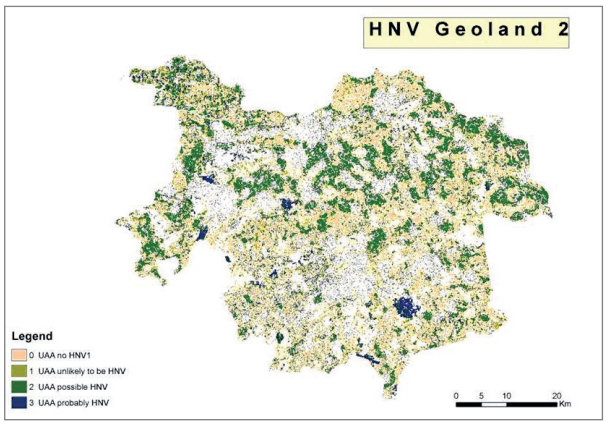


High Nature Value area in the Groene Woud region (Netherlands) in 2009 at local scale. © Alterra

Benefits

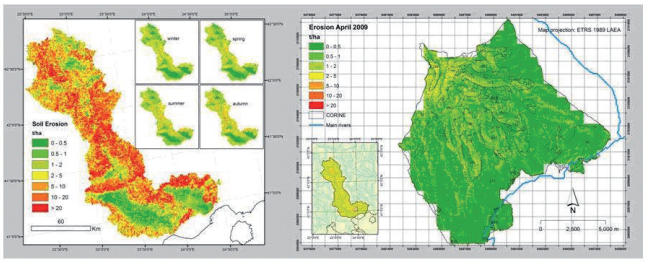
AgriEnv Service continues previous EU projects by :

- Visibly focusing on the agri-environmental field, which has not been done before;
- Providing a consistent and integrated set of agri-environmental indicators covering various temporal, spatial and thematic scales of interest for an end-user;
- Concretely integrating, in a pre-operational mode – and when relevant in NRT – the mature Core Mapping Service.

The prototype services developed by AgriEnv Services provide significant and strong basis for the strategic monitoring of the EC with respect to the implementation of Agri-Environmental Measures (AEM) and national Rural Development plans for the period 2007-2013.

Outlook

AgriEnv indicators allow the assessment of the initial situation and form the basis for the development of the programme strategy. Based on the achievements accomplished at the end of the project, an implementation plan will be supplied providing recommendations for the operational implementation of prototype services across Europe, detailing future sensor needs, in-situ data availability and data harmonisation, as well as giving insight on realistic business models, consistent with the output of the BOSS4GMES project.



Estimated Soil Risk Erosion Map in the cross border of Strymonas river located in South East of Europe (Greece/Bulgaria) at regional scale (2003-2006) and local scale (2009). © JRC/Aristole Univ. of Thessaloniki

	Agricultural land use and trends	Farming pressure on water and soil resources	Impact of agricultural land use changes on biodiversity and landscape
Methodology	GIS analysis (i.e. intersection of CMS products with other geospatial data and statistical information)		
Geometric Resolution	Resolution of reference grids: 300 m (regional), 10-20 m (local)		
Geographic Projection	National reference systems as requested by end-users		
Geolocation Accuracy	Based on EO data and ancillary data		
Thematic Accuracy	Validated in previous EU projects (geoland2, GSE Land, SAGE, BOSS4GMES)		
Data Type	2-3 years	Yearly	2 years
Delivery Format	Raster, vector and report		

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SEVENTH FRAMEWORK PROGRAMME

gl2/AgriEnv/001/0310