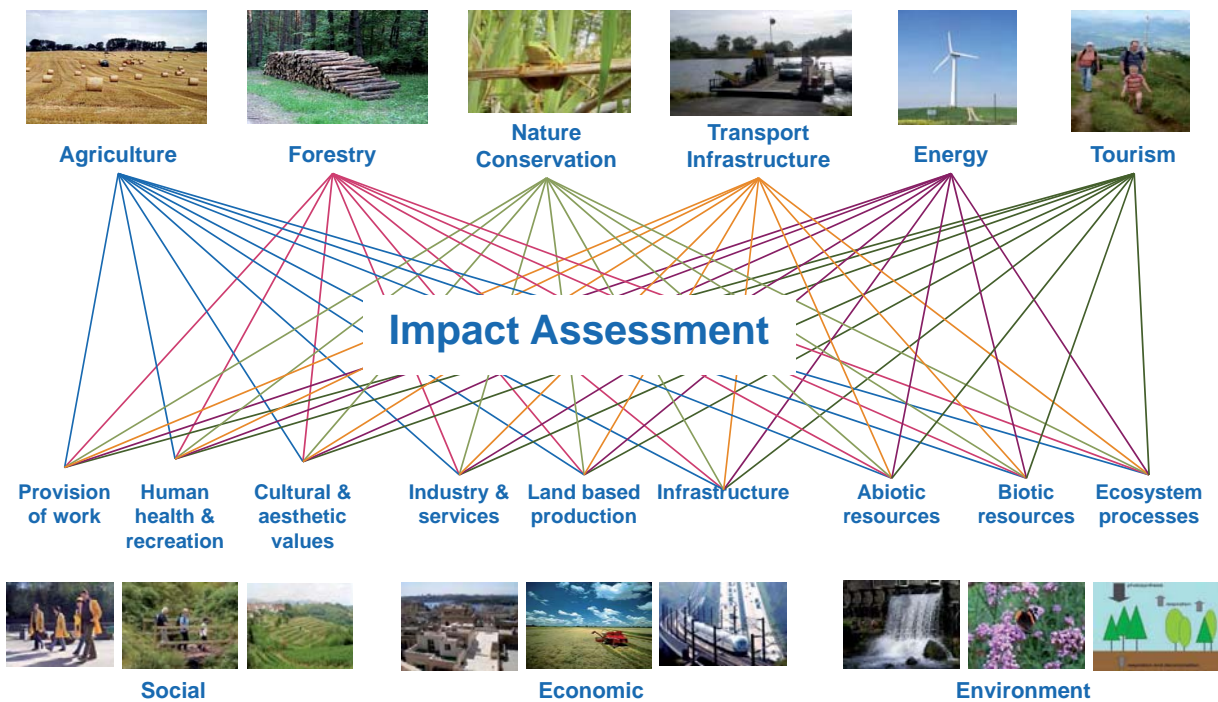


Sustainability Impact Assessment: Tools for Environmental, Social and Economic Effects of Multifunctional Land Use in European Regions

SENSOR is an Integrated Project in the 6th Framework Research Programme of the European Commission. 39 research partners from 15 European countries, China, Brazil, Argentina and Uruguay develop science based forecasting instruments to support decision making on policies related to land use in European regions.

Land Use Sectors



Land Use Functions

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SENSOR research

SENSOR's main objective is to develop Sustainability Impact Assessment Tools (SIAT). They allow the assessment of land use policy effects on sustainable development at regional scale for Europe. The research process addresses:

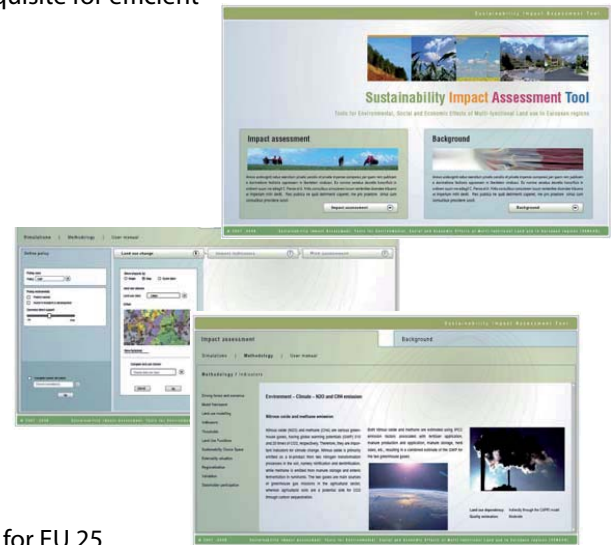
- 1. Policy scenarios.** Based on narratives of global economic and societal trends for the target year 2025, optional policy decisions on land use and rural development are formulated and analysed with respect to their implications on land use sectors.
- 2. Land use models.** Land use changes are simulated at 1km² grid resolution to reflect possible driving force changes as expressed in global economic and societal trends and policy scenarios.
- 3. Impact indicators.** The impacts of land use changes on social, economic and environmental land use functions are assessed by means of around 40 impact indicators.
- 4. Spatial reference framework.** To analyse land use impacts within a regional context, social, economic and environmental characteristics are integrated towards regional profiles and clusters.
- 5. Thresholds and targets.** Expert judgements and participatory tools are employed to identify and evaluate sustainability problems, thresholds and targets related to land use impacts.
- 6. Sensitivity analysis.** Critical sustainability issues in sensitive regions such as mountains, coastal zones, islands and post-industrialised areas are identified and analysed in the light of driving force changes.
- 7. Data and indicator management.** GIS based, GMES/GEO compatible data and indicator management systems are developed for land use impact analysis at regional scale for EU 25.
- 8. Sustainability Impact Assessment Tools.** The above steps are transferred into decision support instruments to analyse the impacts of land use policy options on regional sustainability issues.
- 9. Transferability test.** European approaches to impact assessment are adapted to regions in China, Brazil, Argentina and Uruguay.

SENSOR products: SIAT supports Sustainability Impact Assessment

Policies on land use are highly dynamic and have cross sectoral effects. Understanding beforehand the size and impacts of these effects is an important prerequisite for efficient policy making. SIAT facilitates this process.

SIAT prototype features:

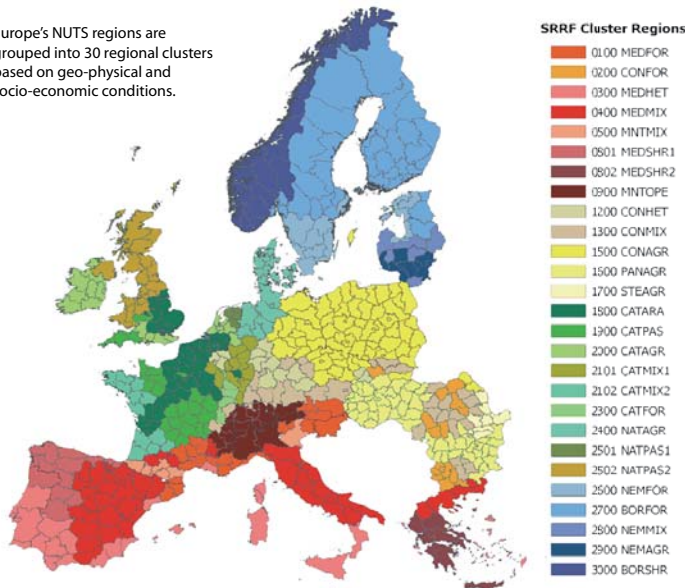
1. User oriented:
 - Provides quick scan decision support for policy makers at EU level
 - Allows choices of policy options and target setting
 - Illustrates cross-sectoral side effects of land use policies
 - Compares regional policy effects with reference scenarios
 - Provides interactive maps and 3D visualisation of future landscapes
2. Scenario-driven:
 - Considers global economic, demographic and policy trends for target year 2025
 - Provides trend based perspectives for land use changes in Europe
3. Multi-scale:
 - Cross-scale analysis at various NUTS levels and 1 km² grid scale for EU 25
4. Plausibility checked:
 - Builds upon stakeholder consultations on regional sustainability issues



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Spatial regional reference framework

Europe's NUTS regions are grouped into 30 regional clusters based on geo-physical and socio-economic conditions.



© Renetzeder, C., Eupen, M., van, Mücher C.A., Wrbka, T. 2007

SENSOR Organisation Information

Supported by:

European Commission, DG Research, Directorate I: Environment
Unit I-1: Policy aspects of research and sustainable development
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Duration: December 2004 - May 2009
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