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System for Environmental and Agricultural Modelling; Linking European Science and Society

Policy Relevance



SEAMLESS - a System for Impact Assessment support

Efficient agricultural and environmental policies are needed to support a sustainable development of European agriculture. Assessing the strengths and weaknesses of new policies and innovations prior to their introduction, is part of the mandatory EC Impact assessment regulations.

SEAMLESS is an Integrated project within the 6th EU Framework Programme that develops a computerized and integrated framework, SEAMLESS-IF, to compare alternative agricultural and environmental policy options. SEAMLESS facilitates the process of assessing key indicators that characterize interactions between agricultural systems, natural and human resources, and society. The framework also enables linkage of quantitative models, pan-European databases and qualitative procedures to simulate the impact on society of biophysical, economic and behavioural changes.

SEAMLESS-IF facilitates ex-ante assessments at the full range of scales from the global to the field level to support policy and decision making for sustainable development.

It will be flexible, such that it allows application to the policy issues of today and those of, for example, 2012, such as:

– *What are the likely consequences of Common Agricultural Policy (CAP) reforms (e.g. elimination of milk quota) on agricultural systems, rural employment, landscape and environment?*

– *What are efficient and effective policy measures within the nitrate, bio-fuel or water framework directive and specific regions in the EU?*

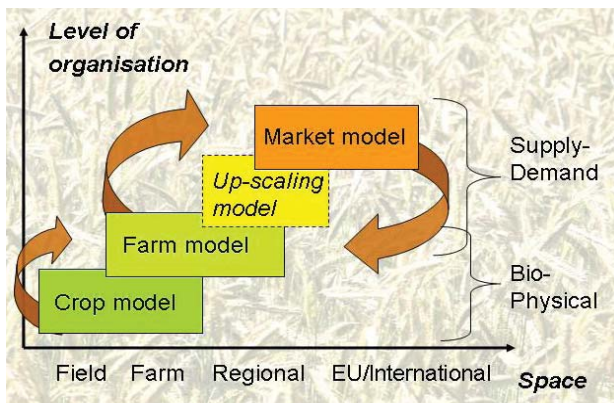
– *What could be the consequence of alternative outcomes of WTO negotiations as to trade liberalization on farming systems in Europe and in less developed countries?*



Enabling Micro-Macro and Economic-Biophysical analysis

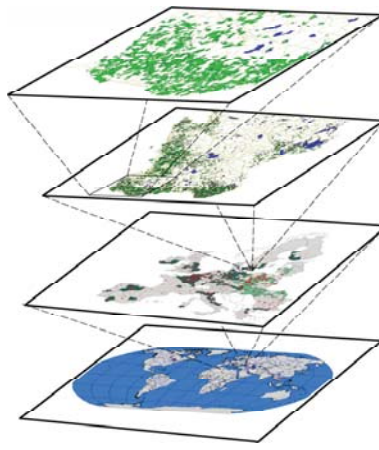
SEAMLESS-IF allows investigation of the effects of agricultural and environmental policies while accounting for technical innovations. Further, the interactions of such policies with other major trends such as climate change and increasing land used for bio-fuel crops can be studied efficiently in the near future.

Analyses with SEAMLESS-IF can be done at multiple scales and with varying time horizons, whilst focusing on the most important issues emerging at each scale. This is possible as the framework is based on research innovations in linking models across scales allowing consistent ‘micro-macro’ analysis as well as linking models across disciplines allowing ‘economic-biophysical’ analysis.



The linked models range from a bio-physical field model to a farm model and to an agricultural sector model for the EU; in other words they ensure a consistent analysis of what effects EC policies may have on agricultural markets, farming systems and the environment. In addition, the effectiveness of a policy in its institutional context is assessed by applying qualitative procedures. The interlinked pan-European database provides the relevant data needed at different scales.

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Why use SEAMLESS-IF?

- *State of the art model-based tool for Impact assessment of agricultural and environmental policies*
- *Results across biophysical, economic and social domains*
- *Well recognized key indicators for assessment of sustainable development*
- *Analysis at full range of scales and with different time horizons*
- *Generic set-up that allows re-use and linkage of models for new assessment problems*
- *User-friendly interface to set up and view assessments*
- *Access SEAMLESS-IF with your favourite Internet browser*

Participatory approach

Participation of users in the development of SEAMLESS is promoted. User forums and targeted meetings around specific issues have been held with users from the DGs from the European Commission involved in Agriculture and Environment, The Joint Research Centre (JRC) and the European Environmental Agency (EEA).

Farmers' organizations as well as national and regional policy makers and universities are other highly valuable groups for our user interaction and testing of SEAMLESS-IF. If you are interested in following the development of our project more closely, we encourage you to contact SEAMLESS Office at:

seamless.office@wur.nl

SEAMLESS partners

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 Agricultural Research Council, Bologna, Italy
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 AntOptima, Lugano, Switzerland
 CEMAGREF, Aubière, France
 Centre for Agricultural Landscape and Land Use Research, Müncheberg, Germany
 CIRAD, Montpellier, France
 Humboldt University, Berlin, Germany
 INRA, Paris, France
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 Institute of Landscape Ecology, Ceske Budejovice, Czech Republic
 Istituto Dalle Molle di Studi sull'Intelligenza Artificiale, Manno, Switzerland
 Joint Research Centre of the EC, Ispra and Sevilla, Italy/Spain
 Lund University, Lund, Sweden
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 Mediterranean Agronomic Institute, Montpellier, France
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 Norwegian University of Life Sciences, Aas, Norway
 Plant Research International, Wageningen, The Netherlands
 Research Institute of Agricultural Economics, Prague, Czech Republic
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