Regional sustainability assessment: the sugar life-cycle in southern Sweden

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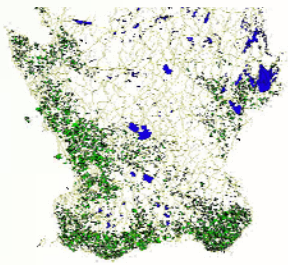


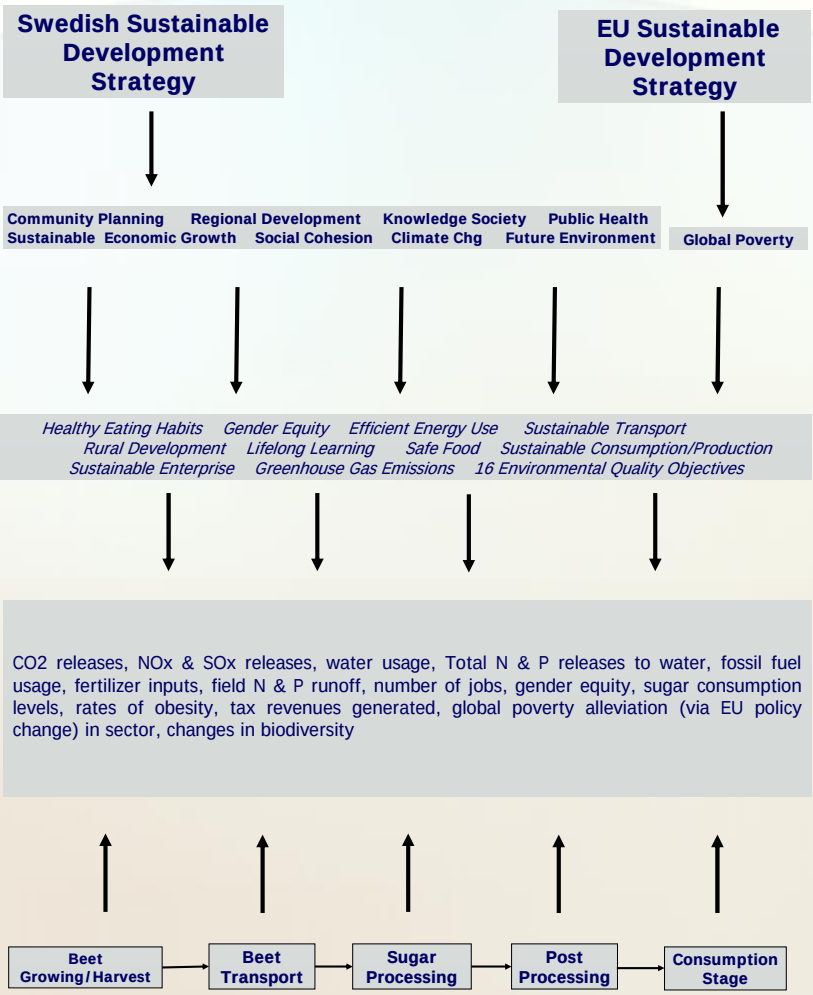
Swedish beet growing plots 2003

Project Aims:
The aims of this PhD project are to 1) develop a tool to assess the sustainability of a region via the life-cycle of one important sector/product operating the region, and 2) to carry out an *integrated* sustainability assessment of the sugar beet life-cycle in southern Sweden given recent (EU) political changes within the sector.

Methods & System Boundaries:
The assessment will include both quantitative and qualitative modeling parameters from the time periods 2004 until 2011. A variety of ecological and socio-economic parameters will be considered. The quantitative aspects will be carried out by a computer model built in the Stella 8.1 modeling environment. Scenario alternatives will also be explored due to decreased beet growing in the region.

The indicators chosen are based on the eight Swedish national sustainability objectives and the EU sustainability priority of *fighting global poverty* (since this component is weakened in the Swedish objectives). Specific parameters chosen are those that relate directly to the sugar (beet) life-cycle in recent years and the projected impacts in coming years.

Current efforts are focused on modeling ecological aspects. The specific assessment parameters are based on the relevant 16 Swedish Environmental Quality objectives, which are a part of the overall Swedish Sustainable Development Strategy (also, see point of interest below).



Expected Results:
Results of the project will be the furthered insights (both positive & negative) into the development and use of an integrated regional sustainability assessment tool based on life-cycle thinking. More concrete results will include a better understanding of the present and future impacts (socio-ecological) from the sugar production system in Sweden given EU policy changes.

Sustainability Assessment:
We define sustainability assessment as *an integrated evaluation of global to local nature-society systems in short and long term perspectives in order to assist decision-makers and policy-makers to determine which actions should or should not be taken in an attempt to make society sustainable.**

*Ness et al. (2006) Categorising tools for Sustainability Assessment. *Ecological Economics,* (in press)

Point of Interest:
Sweden has added the 16th Environmental Quality Objective of a ***Rich Diversity of Plant & Animal Life***, which relates to the content of this course. The hope is that this course will provide insights into how this objective can be measured within the specific case study of sugar production & consumption in Sweden.

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