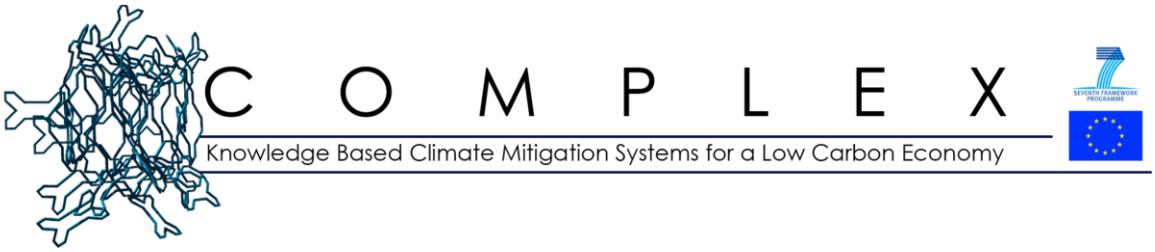

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Web portal with models and simulation results

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Coordinator: Nick Winder, University of Newcastle

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Title	Web portal with models and simulation results
Author	Hans Liljenström, SLU
Co-authors	

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Report for COMPLEX
"Knowledge Based Climate Mitigation Systems for a Low Carbon Economy"
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Web portal with models and simulation results

The WP 4 of the COMPLEX project was intended to provide process understanding and instruments for support of the transition to a low carbon society by 2050 - with application to the Stockholm-Mälar region of Sweden. This region relates to two NUTS2 regions and is one of the highly dynamic regions in northern Europe. Throughout the project period, we have analysed strategic societal choices and their consequences. This includes stakeholder involvement through several workshops dealing with challenges concerning alternative paths to reach the climate goals. (See Figure 1 below). The work also includes the design of models as tools for analysis, including the following topics:

- Economic development and the impact of policy instruments (regional level)
- Aspects of emerging land use patterns (county level)
- Energy system changes in a municipality case (municipal level)
- Neuro-cognitive aspects of decision making (individual level)

These analytical tools aim at connecting the scientific support to the decision making functions at various levels, including policy processes at shorter and longer time scales. Focus has been on finding integrative forms of support to guide the path to a low carbon society under varying climate scenarios and world situations. In particular, we have considered the integration of social science, natural science and technology as an important aspect.

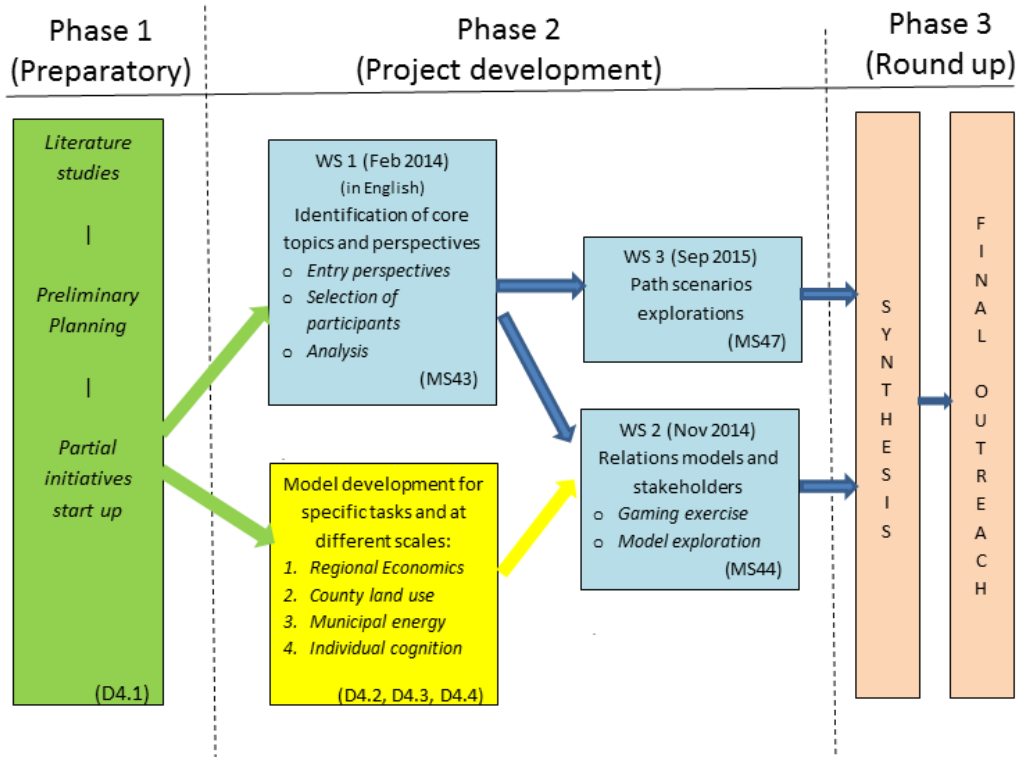

Fig. 1. our way of Adrressing the issue of Societal transformations facing Climate Change – towards a Low carbon mälar region 2050

WP4 contributes to the overall objectives of the COMPLEX project, in the form of a regional case study, inserted in a multilayered decision making frame concerning societal processes. In order to serve this overriding objective, we also use and develop specific models designed to address certain issues of interest, in particular related to land use, energy and behavioural change. Hence, WP4 provides an analysis of possible pathways for transition to a low carbon society in the Stockholm-Mälar region, aiming at the identification of bottlenecks and thresholds, as well as opportunities for individuals and societal institutions.

The WP4 contribution is to illustrate how the paths that may take us to a low carbon society in 2050 can be envisaged, analyzed and supported by measures to be identified in the region and elsewhere. Thus, decision making at various levels is at the heart of WP4 research and implementation, through studies related to the following issues:

- Analysis of the conditions for change and how the societal causal landscape may be understood for the time period until 2050
- Analysis of the governance conditions
- Specific model activities for the regional economy to understand distributional effects over the entire space of the region
- Specific model activity with regard to decision making at individual level using cognitive science approaches in connection with upscaling reflection to societal generalizations
- Specific model activities in order to understand municipality decision making challenges
- Specific model activities to probe the characteristics of decision making with regard to overriding societal decisions in the region at large using gaming techniques
- Specific model activities aiming at understanding of land use considerations
- Cross going analysis and synthesis around the regional case with generalizable reflections and comparisons with similar efforts for other European regions and policy domains (final report core task)
- Building of networks of relevant actor structures in order to get information, to extract ways of reasoning and to provide outlets for outreach of results at different steps of the project to relevant receivers.
- Exchange of views (and to some extent collaborative processes) with the other parts of the COMPLEX project

Our computational methods include a combination of cognitive and spatiotemporal modelling approaches with energy/life cycle and socio-economic models, which capture various perceptions, attitudes, and interests regarding regional land use under different scenarios on the path to a low carbon society.

The modeling efforts of WP4, with references to our stakeholder interactions, are listed and

described in a web portal at a SLU server (as all the WP4 computational models have been developed and applied at SLU). This secures a continuous access by researchers and stakeholders, also after the ending of the COMPLEX project. The web portal has recently been transferred to a new SLU web environment, which has been opened in spring 2016, but is still under development. The link to the web portal with WP4 activities, including models and simulation results is currently (but will soon be changed):

http://www.slu.se/en/departments/energy-technology/collaboration/

The hope is that this web portal will remain a living and well visited site, where the models developed and applied in the COMPLEX project can continue to serve as a source of inspiration and discussion for decision support, as well as with policy relevance.

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