SOCLE^3
Sustainability, Local policy, Economy, Environment, Energy

The SOCLE^3 interdisciplinary group and project has two major aims:

- Analyzing and modelling the environmental, economic and social interactions at the urban to regional (sub-national) level, and their coupled trajectories under given global and local macroeconomic trends, and climate change constraints.
- Providing decision-makers with policy analysis and evaluation tools, and other researchers with methodological tools, based in particular (but not exclusively) on simulations under relevant global/local scenarios, to identify and characterize possible sustainability transition pathways at the local and regional scales.

A particular emphasis is placed on urban issues, as urban areas are directly or indirectly responsible of most of the environmental impacts of human activity; on the analysis and assessment of the potential of activity relocalization in terms of resources and pollution absorption capacity of the environment; and on the evaluation of the social (un)acceptability of the various political lines of action. A major challenge here is to accommodate long term scientific concerns with the necessities of short-term political action, and to make the scientific results easily accessible and usable by the various stakeholders.

The type of questions we will investigate bears, for example, on relevant choices of urban development and transportation policies at the local/regional scales with respect to GHG emissions abatement, impact on biodiversity and social (un)acceptability; water management and water demand arbitration between urban, industrial and agricultural uses; land use patterns/allocation and arbitration between socio-economic demands and pressure on ecosystems; interactions between urban, peri-urban, agricultural and natural areas and their impacts on ecosystem services… The focus is on the issue of sustainability transition, and on the evaluation and design-help of sustainability policies at the considered spatial scales and decision levels. The larger issue here is not so much to identify a relevant set of sustainability criteria characterizing the *states* of the social-ecological system, as to set a framework and methodology for the analysis of the *pathways* to the transition, including possible required changes in social and political structures and values.

The project focuses on the Alps, and more precisely on the Rhône-Alpes region. Depending on the considered issue, spatial scales ranging from urban areas to the regional (not necessarily administrative) one are of direct interest in this project, with some emphasis on the Grenoble and Lyon employment catchments. The project is fundamental in its methodology and objectives, but has a short/mid-term preoccupation in its intended focus on the production of decision-help tools and analyses. The project has an exploratory character, but builds on strong disciplinary knowledge and expertise. A particular emphasis is placed on developing coherent and integrated methodologies between different scientific fields, and producing generic, modular, and adaptable tools.

The SOCLE^3 project draws on a strong and wide disciplinary expertise (climatology, hydrology, ecosystem science for the environmental aspects: economy, energy prospective, urban planning, sociology an political sciences for the social sciences; modelling and

simulation for applied mathematics). The project steering committee is composed of 7 persons, while the whole project involves twenty or so researchers.

The following individuals belong to the steering committee:

Pierre-Yves Longaretti (LAOG/OSUG, CNRS and UJF), project coordinator

Elise Arnaud (UJF and INRIA-Grenoble): modelling and simulation
Patrick Criqui (LEPII, CNRS and UPMF): economy, energy prospective
Hubert Gallée (LGGE, CNRS and UJF): climatology
Sandra Lavorel (LECA, CNRS and UJF): biology, ecosystems
François Mancebo (PACTE, UJF): sustainability science and urban planning
Emmanuel Prados (INRIA Grenoble): modelling and simulation