

## **Participatory Approach to Long-Term Socio-Economic Scenarios as Building Block of a Local Vulnerability and Risk Assessment Tool - The Case Study Lienz (East-Tyrol)**

Ina Meyer (1), Brigitte Eder (2), Michiko Hama (2), and Markus Leitner (3)

(1) Austrian Institute of Economic Research - WIFO, Vienna, Austria (ina.meyer@wifo.ac.at), (2) alpS GmbH, Innsbruck, Austria (eder@alps-gmbh.com, hama@alps-gmbh.com), (3) Umweltbundesamt (Austrian Environment Agency), Vienna, Austria (markus.leitner@umweltbundesamt.at)

Risks associated with climate change are mostly still understood and analyzed in a sector- or hazard-specific and rarely in a systemic, dynamic and scenario-based manner. In addition, socio-economic trends are often neglected in local vulnerability and risk assessments although they represent potential key determinants of risk and vulnerability. The project ARISE (Adaptation and Decision Support via Risk Management Through Local Burning Embers) aims at filling this gap by applying a participatory approach to socio-economic scenario building as building block of a local vulnerability assessment and risk management tool. Overall, ARISE aims at developing a decision support system for climate-sensitive iterative risk management as a key adaptation tool for the local level using Lienz in the East-Tyrol as a test-site City.

One central building block is participatory socio-economic scenario building that - together with regionalized climate change scenarios - form a centrepiece in the process-oriented assessment of climate change risks and vulnerability. Major vulnerabilities and risks may stem from the economic performance, the socio-economic or socio-demographic developments or changes in asset exposition and not from climate change impacts themselves. The IPCC 5th assessment report underlines this and states that for most economic sectors, the impact of climate change may be small relative to the impacts of other driving forces such as changes in population growth, age, income, technology, relative prices, lifestyle, regulation, governance and many other factors in the socio-economy (Arent et al., 2014).

The paper presents the methodology, process and results with respect to the building of long-term local socio-economic scenarios for the City of Lienz and the surrounding countryside. Scenarios were developed in a participatory approach using a scenario workshop that involved major stakeholders from the region. Participatory approaches are increasingly recognized as an important element in management and decision-making as problems in today's world are complex and require knowledge from many different domains and disciplines. Participation is also said to be a process of collective learning that changes the way people think and act which is a relevant point in forming appropriate region-specific climate adaptation strategies.

The scenarios are based on an analysis of data on recent states and trends in major local sector developments concerning absolute and relative employment and value creation as well as on distinct socio-demographic developments in the region. Categories discussed in the scenario workshop cover inter alia institutions and governance, demographics, production and demand, markets, value-chains and trade, scientific and technological innovations, education and health.

The derived stakeholder-based socio-economic scenarios were, in a second step, matched with the Shared Socio-economic reference Pathways (SSPs) in order to frame the locally produced scenarios with global narratives. Both strains were, in a third step, combined and backed-up by scientific literature in order to build the local socio-economic scenarios that served as background information in the analysis of risks, vulnerability and appropriate adaptation measures in the case-study region.