



Ecosystem Services in the Alps and the Carpathians

Grêt-Regamey, A., Fink, U.

ETH Zürich, Institut für Raum- und Landschaftsentwicklung IRL PLUS

On June 9th, 2009 a Proposal Development Workshop on „Sustainable Provision of Ecosystem Services in the Alps and the Carpathians“ was held in Bratislava, Slovakia. Scientists from Germany, Austria, Switzerland, Denmark, Sweden, France, Italy, Czech Republic, Slovakia, Hungary, Poland and the Ukraine met in order to present research results and to identify urgent research questions. Following presentations and discussions, the participants sketched out joint proposals answering three international calls for papers about changes in land use management, integrated resource management and biodiversity.

While human activities have strongly modified the Alps for many centuries and mitigation and adaptation mechanisms to climate change and socio-economic change have a long history, the Carpathians are only recently facing severe threats, which put mountain ecosystems under pressure. Transition to a market economy, structural changes, and an increasing role of the civil society are now underway in the Carpathian countries and affect the relation between Carpathian inhabitants and their environment. The largest connected forest ecosystems in the moderate zones are therefore endangered.

Recent studies on land use and land management, which were presented at the workshop, do not focus on the conservation of untouched natural areas but on securing the provision of ecosystem services (ESS). ESS are defined as services of the ecosystem relevant to human wellbeing (e.g. production of food, fibre and wood, or water filtration). The global Millennium Ecosystem Assessment of the UNO, carried out 2001-2005, classified the ESS into the following categories: supporting ESS (e.g. nutrient cycle), regulating ESS (e.g. water purification), provisioning ESS (e.g. food), and cultural ESS (e.g. recreation).

Even though single ESS can be identified, they are all interconnected within and in between ecosystems. While humans depend on the proper functioning of these systems, they also directly or indirectly threaten them through their actions. Main pressures include land use change, climate change, exploitation of resources, pollution and population growth. Among these, land use can most quickly be changed in order to secure the production of ESS.

Studies on this topic presented at the workshop often investigated stakeholders' attitudes towards their dependency on ESS¹.

Other studies deal with the consequences of climate change and socio-economic alterations on ESS in the Alps, such as the MOUNTLAND project on sustainable land use in three alpine regions in Switzerland. Its goal is to sustainably secure the provision of ESS through the development of adaptation mechanisms. An important characteristic of the research in this field is its high degree of interdisciplinarity and the necessity of an intensive dialogue between science and various stakeholders. Missing understanding between these groups often impedes successful collaboration. New inter- as well as transdisciplinary methods of research and new ways of communication - mainly between scientists

¹ For Example the ATEAM study, presented by Dagmar Schröter (Federal Environment Office, Vienna, Austria).



and politicians - need to be found. Methods of pricing ESS have been investigated in order to facilitate the connection between ecology and economy². They compare the ecological service (e.g. water filtration by the soil) with the equivalent technical service (e.g. waste water treatment plant), or people's willingness to pay for an intact environment (e.g. in tourism). However, methods linking politics and the valuation of public goods are still rare.

Sustainable forest management is a priority in the Carpathians, especially in the Ukraine. In scientific „ateliers“ with participants from various disciplines³, ESS are identified and evaluated through a problem-based approach in the region of interest. Patterns of land use change and laws of ownership are identified with the local community. This approach demonstrates that participation of the public and collaboration with the government, local stakeholders and economists are crucial for successful adaptation mechanisms.

Another issue especially discussed in the Ukrainian community is the corrupt government accepting foreign financial support for the creation of new protected areas but forgetting the management of already existing nature reserves. The WWF project "Protection and sustainable use of natural resources in the Ukraine Carpathians"⁴ supports inhabitants of conservation areas in the Ukraine, whose daily existence is strongly compromised by constraints related to biodiversity maintenance. A database on biodiversity would improve the proper distribution of the finances.

Studies mentioning ESS are increasing. Their focus is however often on ecosystems and ignores the required investigation on the demand for these services. As the services provided by ecosystems can only be entitled ESS if they have a direct value to human wellbeing, this must be key in studying ESS. Such research involves collaboration among researchers in the field of socio-economy, ecology, and politics in case studies with the active participation of the public.

This is where the development of the proposals in the afternoon of the workshop came in. Three calls for proposals were presented by one or two participants of the workshop in the setting of a World Café. Ideas were gathered and assembled to concrete proposals. A new scientific network stretching from the Alps to the Carpathians was created, knowledge was exchanged and new synergies were found. Yet, the real success of the workshop will only become evident in the accomplishment of future collaborative work.

² See presentations of Marek Degorsky (Dept. of Geoecology and Climatology, Institute of Geography and Spatial Organization, Polish Academy of Sciences, Warsaw, Poland), Ihor Soloviy (Institute of Ecological Economics, Lviv, Ukraine) and Ybele Hoogeveen (European Environment Agency, Copenhagen, Denmark) and the EURECA project.

³ See presentation of Ihor Soloviy.

⁴ Presented by Bohdan Prots (National Academy of Science of Ukraine, Lviv, Ukraine).