



Experimental Economics for Effective Management and Sustainable Use of Natural Resources

Proposal of Veronika Chobotová, M.D.

Background

During the last seven years I have been interested in the issues of sustainable development and environmental protection. I finished my PhD at the Science & Technology Policy Research Institute of the University of Sussex. In my PhD research I focused on sustainable development in Central and Eastern Europe and analyzed the effects of tourism on biodiversity governance and nature protection.

Currently I am based at the Institute of Forecasting at the Slovak Academy of Sciences (IF-SAS), the Centre for Trans-disciplinary Study of Institutions, Evolutions and Policies (CETIP) in Bratislava, Slovakia. My research interest is in the field of ecological and institutional economics, emphasizing environmental governance with the focus on market-based instruments for biodiversity protection, multi-criteria evaluation and experimental methods.

As a senior researcher within GoverNat Project (Multilevel Governance of Natural Resources) I investigate the governance of biodiversity and novel tools and processes for innovative environmental governance in Europe. In particular I am interested in market-based instruments and their role in environmental governance, and behavioral experiments as tools to study collective actions for the governance of common pool resources (such as forests).

American Partners

The behavioral experiments to study governance of common pool resources were originally developed by researchers from the Center for the Study of Institutional Diversity, Arizona State University, USA; Indiana University, USA; University de Los Andes, Colombia; and CIRAD, France. In particular, they were developed by Dr Marco Janssen, recent Nobel Prize winner in economics (common-pool resource theory), Professor Elinor Ostrom, Dr Juan-Camilo Cardenas and Dr Francois Bousquet.

The issue of governance of common pool resources has been the focus of my attention and the attention of the members of CETIP (led by Dr. Kluvánková-Oravská), for several years. The cooperation of CETIP with Arizona State University and Indiana University started due to our interest in the issue of common pool resources and rules for governing the commons. In 2007 Professor Elinor Ostrom from Indiana University accepted the invitation of CETIP and attended THEMES summer school's 'Institutional Analysis of Sustainability Problems' in Stara Lesna, Slovakia (www.umb.no/research/themes). In 2008 CETIP started a cooperation with the ASU Center for the Study of Institutional Diversity due to our increased interest in experimental economics.

Objectives

The objective of my proposed program is to enhance the existing cooperation between the Center for the Study of Institutional Diversity, ASU and CETIP by joining the project 'Dynamics of Rules in Commons Dilemmas' (at ASU, led by Dr Marco Janssen); to learn from the experiences of ASU experimenting with real decision-making subjects in the field; and increase my knowledge in the field of experimental economics (by attending courses on agent-based modeling and Experimental Social Science).

Detailed Description

The ASU project 'Dynamics of Rules in Commons Dilemmas' studies how humans are able to change the rules in commons dilemmas, what causes individuals to invest in rule development, and which cognitive processes explain the ability of humans to craft new rules in the areas of management and sustainable use of natural resources. The project is based on experimental methods (laboratory experiments, experiments in the field, and agent-based models), to test the creation of new rules, decision-making strategies and cooperation in management and sustainable use of natural resources.

CETIP is already using these experimental methods both in the field with forest users and owners and in laboratory conditions with university students, across three new EU Member States: Cyprus, the Czech Republic, and Slovakia. The simulation of novel tools and processes for new environmental governance is particularly important due to changing governance conditions in the enlarged EU. The ongoing processes of European integration have shifted authority from national states up to the European level and down to sub-national levels, and rely on networks of interconnected actors rather than on a hierarchy dominated and defined by the state, with an increasing role for non-state actors. In most new member states, the critical factors influencing such 'multilevel' governance are a weak history of participatory governance (including an absence of a collective choice mechanism), conflict resolution and a lack of responsibility for the coordination of resources. Experimental methods with real decision-making subjects in the field offer the possibility of testing a replicated decision-making situation, the effect of institutional innovations on the behavior in a controlled situation and an exploration of how rules, communication and trust can improve cooperation for sustainable use of natural resources within multilevel governance conditions.

Research stay at ASU, and face-to-face cooperation with Dr Marco Janssen enables me to compare and discuss our results from ongoing experiments aiming to contribute to the discourses on innovative tools for improving environmental governance in the EU. Moreover, the personal communication will help me to explore the novel and challenging element of field experiments and other experimental methods and continue with experiments in Slovakia with forest owners within the area of high-value biodiversity represented by national parks or other types of protected natural areas.

The aim of the study part of the proposed program is to attend two courses (September-November 2010): Agent-Based Modeling (AML 591) and Experimental Social Science (ESS 591), led by Dr. Marco A. Janssen. The goal of these courses is to learn the basic principles of social simulation and apply these to questions of the emergence of cooperation and innovation diffusion in the field of sustainable use of natural resources. Agent-based modeling is a method of studying the macro-level consequences of micro-level interactions of agents in social phenomena like cooperation, diffusion, and complex societies. In this course I will learn the basics of agent-based modeling and how this method is used to study social systems. In the course of Experimental Social Science, a brief introduction to relevant social science theories and an overview of the use of experimental methods in social sciences is given.

Organization and Time Schedule

The overall duration of the stay is three months, to be able to attend training at ASU (in Fall 2010) and develop further cooperation with Dr Marco Janssen and the Center for the Study of Institutional Diversity.

Program Cost

The full costs of my program are summarized in the following table:

Item	Cost in US\$
Executive training seminars	-
Internship	-
Administrative fees (visa, registration fees, etc.)	600 US\$
International travel	1,350 US\$
Local transportation	500 US\$
Medical insurance	522 US\$
Monthly maintenance	1,800 x 3 months = 5,400 US\$
Contingency	1,000 US\$
Total	9,372 US\$

Program Benefits

The ASU program provides a great opportunity to improve my knowledge and experiences on environmental protection and experimental economics acquired during my studies and research. In particular, this involves experiences from decision-making processes and participatory meetings of various local and international stakeholders and interest groups for solving conflicts between environmental protection and economic development.

It is also important to me to learn more about how to substantially contribute to environmental policy-making, to design effective natural resource management strategies, to develop participatory mechanisms at the European, national and local levels and to learn how the particular experimental approach may have a broad impact on environmental governance.

I would like to learn from ASU's teaching experience in experimental economy and its application within the field of environmental protection. I am interested in better understanding the role of communication in improving the overall effectiveness of environmental governance. Among my goals are advancing in research (regarding experimental modeling), teaching, and communication skills.