

## **Applied Methods Related to Regime Shifts in Social-Ecological Systems**

**A short course held in conjunction with WCERE 2014**

**June 27-28, 2014, Istanbul Technical University (ITU), Istanbul, Turkey**

**APPLICATION DEADLINE: FEBRUARY 1, 2014**

### ***Description***

Many ecosystems have nonlinear features that can cause them to shift abruptly from one state to another. Human action is typically the trigger for such regime shifts, which can be difficult to reverse and can cause the loss of valuable ecosystem services. Regime shifts have been documented for example in coral reefs, savannahs, and lakes. More details and examples can be found in the Regime Shifts database ([www.regimeshifts.org](http://www.regimeshifts.org)). Economists have become increasingly interested in understanding how regime shifts affect environmental management and policy decisions.

**The course is a standalone follow up to the one held two years ago in Prague which was mostly on theory. This time we will focus on two methodological approaches for conducting applied research on environmental regime shifts: statistical methods for identifying thresholds and tipping points in empirical data sets, and experimental methods to assess behavioral responses of people to regime shifts. In addition to lectures, the course will include lab sessions in which participants will gain experience applying these approaches. Following the lectures and lab sessions, there will also be discussion sessions during which participants will work with the instructors to identify promising topics for applied research on environmental regime shifts in their countries and determine the key informational requirements for studies on those topics. The intention is to give participants a head start on preparing research proposals to be submitted to funding sources in their countries or regions. The course will be different from the previous one and a good complement for the students who took it last time, however people who didn't have the opportunity to take the course two years ago are much welcome to apply as well on equal premisses.**

The course will be held at the Istanbul Technical University (ITU), Istanbul, immediately before the 2014 World Congress of Environmental and Resource Economists ([www.wcere2014.org/en/](http://www.wcere2014.org/en/)). Its target audience is researchers from developing and transition countries. It is organized by the Beijer Institute of Ecological Economics (Royal Swedish Academy of Sciences, Stockholm, Sweden; [www.beijer.kva.se](http://www.beijer.kva.se)) and funded by the Beijer Institute, the Canadian International Development Research Centre (IDRC), and the European Association of Environmental and Resource Economists (EAERE).

### ***Topics***

*Introduction to regime shifts*—Theory and evidence on regime shifts in ecosystems, multiple equilibria, hysteresis, irreversibility, thresholds, slow and fast variables.

*Statistical methods* for identifying thresholds and tipping points in data sets

*Experimental methods* to assess behavioral responses of people to regime shifts

*Overview of other methods to study regime shifts and their consequences*

### ***Instructors***

*Dr. Anne-Sophie Crépin* (The Beijer Institute of Ecological Economics, Stockholm, Sweden)

*Dr. Therese Lindahl* (The Beijer Institute of Ecological Economics, Stockholm, Sweden)

*Dr. Saskia Otto* (The Stockholm Resilience Centre, Sweden)

*Prof. Jeffrey Vincent* (Duke University, North Carolina, USA)

*Prof. Aart de Zeeuw* (Tilburg University, The Netherlands)

### *Cost and scholarships*

There is no fee for the course. The Beijer Institute will provide lunch on both days of the course and dinner on the first day for all participants. In addition, the Institute is offering a limited number of scholarships, which will cover roundtrip airfare, lodging during the course and the Congress, and a reduced registration fee for the Congress. Participants will be responsible for any remaining costs. Scholarships will be allocated preferentially to researchers from the regional environmental economics networks CEEPA, EEPSEA, LACEEP, and SANDEE who have a paper accepted for presentation at the Congress.

### *Application*

The application deadline is February 1, 2014. An application consists of a single document that contains the following information:

1. Brief statement (up to 200 words) of your research interests and why you would like to take the course
2. Title of paper submitted to WCERE 2014
3. Description of prior involvement (if any) with CEEPA, EEPSEA, LACEEP, or SANDEE
4. List of any statistical software (for example, Stata, R) that you have used including a short statement of your level of experience
5. Statement of whether you are requesting a travel scholarship
6. Current CV

Applications should be e-mailed to:

Christina Leijonhufvud (course administrator)  
The Beijer Institute of Ecological Economics  
[chris@beijer.kva.se](mailto:chris@beijer.kva.se)

The number of participants will be limited to 25. All applicants who are accepted into the course will be required to register for WCERE 2014 by April 30, 2014.