



UNIVERSITY OF
CAMBRIDGE

Department of Land Economy

Land Economy Departmental Seminar Series:
Michaelmas Term 2013

Wednesday, 16th October 2013 4pm, Mill Lane Lecture Room 7

Integrating Economics and System Dynamics Approaches for Modelling an Ecological-Economic System

Abstract:

This talk describes collaboration between system dynamicists and economists to model a multi-sector, ecological-economic model of population and resource dynamics that is firmly based on economic theory and leverages the strengths of both fields. This model illuminates how an SD approach allows model complexity to be extended in order to effectively model interactions between an economic system and an ecological system. Specifically, the simulation exercise demonstrates how SD model analysis can help explain counterintuitive model behaviours resulting from increases in natural resource carrying capacity or regeneration rate. The simulation results also reveal that allowing for out-of-equilibrium states (adaptation) significantly affects the dynamics of ecological economic systems, a point often neglected in the economics literature. These findings, while familiar to system dynamicists, highlight the potential for SD to contribute to other disciplines, including economics.

Speaker:

Dr Yoko Nagase, Oxford Brookes University

Biography:

Dr Yoko Nagase is currently Programme Lead for Economics at Oxford Brookes University. After the completion of her Ph.D. in Economics at the University of Oregon, in Eugene, Oregon, she worked for various universities in the US before moving to the UK four years ago. Her research area is Environmental and Natural Resource Economics, and recent research topics include municipal waste management, discounting and application of system dynamics to economic modelling.