



EVENT 3: METHODS AND TOOLS FOR ENVIRONMENTAL APPRAISAL AND POLICY FORMULATION

SESSIONS

The 3rd THEMES Summer School is organized as a combination of theoretical lectures and hands-on exercises and debates. It is organized in close cooperation with the Knowledge Assessment Methodologies Sector, European Commission Joint Research Centre (Ispra) and the Department of Economics at the Universidad de La Laguna (Tenerife, Spain).

The summer school is based on the observation that environmental policy-making is bounded by the complexity and multiple dimensions of environmental problems, which calls for the development of integrated, transdisciplinary and participatory methods and tools. In dealing with the complexity of environmental phenomena, new research streams have arisen focusing on participatory approaches whereby conflicts are ameliorated and the multiple perspectives and values of the implicated actors are integrated in the co-production of knowledge supportive of environmental appraisal and policy formulation processes.

Topics to be addressed in the school focus on:

- a) Preferences, values and beliefs;
- b) Principles and concepts for participation and deliberation;
- c) Tools for public and stakeholder participation in environmental decision making;
- d) Multicriteria evaluation – integrating different points of view, uncertainty, complexity;
- e) Appraisal methods as value articulating institutions;
- f) Science – society interfaces in policy formulation.

Sessions outline

0. Setting the stage

Lecture 1. *Putting 'environmental appraisal and policy formulation' into the Themes series*

Arild Vatn

Norwegian University of Life Sciences

The aim of this lecture is to 'position' the third Themes summer school – Methods and tools for environmental appraisal and policy formulation – within the topics of the whole series. I will hence discuss what the understanding the environment as complex systems implies for environmental appraisal. I will also introduce the role of institutions in forming individual preferences and values and how the appraisal methods themselves capture this fact. Finally I will make a link between the issue of appraisal and the issue of human action and behavior.

Compulsory Readings

Pritchard, L., C. Folke and L. Gunderson, 2000. Valuation of Ecosystem Services in Institutional Context. *Ecosystems*, 3:36-40.

Vatn, A., 2005. Rationality, Institutions and Environmental Policy. *Ecological Economics*, 55(2):203-217

Optional Readings

Aslaksen, I. and A.I. Myhr, 2007. "The worth of a wildflower": Precautionary perspectives on the environmental risk of GMOs. *Ecological Economics*, 60(3):489-497

Holling, C.S., 2001. Understanding the Complexity of Ecological, Economic and Social Systems. *Ecosystems* 4:390-405

Wittmer, H., F. Rauchmayer and B. Klauer, 2007. How to select instruments for the resolution of environmental conflicts? *Land Use Policy*, 23:1-9.

Lecture 2: *Models of Science & Policy: From expert demonstration to extended participation*

Silvio Funtowicz

KAM – Knowledge Assessment Methodologies Sector, European Commission Joint Research Centre (Ispra)

The focus of the presentation will be the changing role of science in the development and implementation of policy. The need for a fundamental re-thinking of the relationship between science and policy (and indeed politics) will be discussed, and

several conceptual models describing this relationship will be introduced.

Compulsory Readings

Funtowicz, S. and Strand, R. (2007) Models of science and policy (Chapter 16). In: *Biosafety First: Holistic Approaches to Risk and Uncertainty in Genetic Engineering and Genetically Modified Organisms*; Traavik, T. and Lim, L.C. (eds.); Tapir Academic Press, Trondheim, 2007

1. Preferences, values and beliefs

Lecture 3: *Is it worth investing on environmental values?*

Sofia Vaz

CENSE – Centre for Environmental and Sustainability Research, Ecological Economics and Environmental Management Group, New University of Lisbon.

The importance of personal responsibility, non-selfish concerns and moral concerns has been identified as increasingly relevant towards a more environmental friendly behaviour. Nevertheless this is not always the case and there is often a gap between people's environmental values and people's environmentally friendly actions – called value-action gap.

Environmental values are an enduring belief, stable over time and central to one's relation with the environment. The lecture will focus on what are the philosophical and political conditions for investing on environmental values and how important and relevant that might be for our journey towards sustainability. How to overcome the value-action gap becomes central in that endeavour.

Optional Readings

Milfont, T.L., Duckitt, J., Cameron, L. (2006). A Cross-Cultural Study Of Environmental Motive Concerns And Their Implications For Proenvironmental Behavior
Environment And Behavior **38**: 745-767

Karp, D.G. (1996). Values and their Effect on Pro-Environmental Behavior,
Environment and Behavior 1996; **28**: 111-133

Poortinga, W., Steg, L., Vlek, C. (2004). Values, Environmental Concern, and Environmental Behavior: A Study into Household Energy Use, *Environment and Behavior*, **36**; 70-93

Lecture 4: *Values, preferences, and beliefs in environmental policy processes*

Bruna De Marchi

ISIG - Institute of International Sociology Gorizia - Italy

The lecture will deal with the theoretical reasons and the practical tools for extended democratic consultation and participation in environmental policies formulation and

implementation. The main focus will be on the importance of defining outcomes first and only subsequently selecting appropriate strategies and tools, in order to design a process of coherent and well integrated steps. Some techniques will be illustrated which are used to investigate preferences, values and beliefs of different actors, as well as some methods to foster dialogue and encourage participation. Some practical examples, drawn from both research and policy, will be presented and discussed with the participants.

Compulsory Readings

Arnstein S.R. (1969/2007) "A Ladder of Citizen Participation" (originally published in *JAIP* 35, 4 1969 : 216-224. Re-printed in Le Gates, R., Stout F. (eds.; fourth edition), *The City Reader*, Routledge: New York, 2007, pp. 233-245. Freely available at: <http://lithgow-schmidt.dk/sherry-arnstein/ladder-of-citizen-participation.html>

Kahn, D., Slovic, P., Braman, D., Gastil, J., Cohen, G., Kysar, D. 2008. *Biased Assimilation, Polarization, and Cultural Credibility: An Experimental Study of Nanotechnology Risk Perceptions*. Woodrow Wilson International Center for Scholars. Project on Emerging Nanotechnologies.

Optional Readings

Rosenberg S.W. (2007) "Introduction: Theoretical Perspectives and Empirical Research on Deliberative Democracy", in S.W. Rosenberg (ed) Deliberation, Participation and Democracy: Can the People Govern? Palgrave Macmillan.

E. Darier, Gough, C., B. De Marchi, S. Funtowicz, R. Grove-White, Kitchener, D., Â. Guimarães Pereira, S. Shackley, B. Wynne, (1999) "Between Democracy and Expertise? Citizens' Participation and Environmental Integrated Assessment in Venice (Italy) and St. Helens (UK). *Journal of Environmental Policy and Planning*, 1:103-120

De Marchi, B. (2003) "Public participation and risk governance", *Science and Public Policy* 30, 3, June 2003: 171-176.

Debate 1: Models of science, values, preferences and beliefs

Arild Vatn (moderator)

Silvio Funtowicz

Bruna De Marchi

Sofia Vaz

2. Tools for public and stakeholder participation in environmental decision making

Lecture 5: Principles and concepts for participation and deliberation

Paula Antunes

CENSE – Centre for Environmental and Sustainability Research, Ecological Economics and Environmental Management Group, New University of Lisbon.

The objective of this lecture is to give an initial overview of the main concepts related to citizen and stakeholder participation and deliberation in environmental appraisal and policy formulation. A general overview of the types of problems where participation and deliberation tools can be applied is presented, relating them to the different approaches that will be discussed in the following lectures. The main principles, such as legitimacy, representativeness, transparency, inclusivity, accountability, will be discussed.

Compulsory Readings

Arnstein S.R. (1969). A Ladder of Citizen Participation. *Journal of the American Planning Association*, **35** (4): 216-224

Renn, O. (2006). Participatory Processes for Designing Environmental Policies. *Land Use Policy*, **23**:34-43

Optional Readings

Videira, N., Antunes, P., Santos, R., Lobo, G. (2006). Public and Stakeholder Participation in European Water Policy: a Critical Review of Project Evaluation Processes. *European Environment*, **16**:19-31.

Lecture 6: Analysis and evaluation of participatory processes – the GoverNat frame

Felix Raushmayer

Helmholtz-Centre for Environmental Research, UFZ

GoverNat is a research and training network composed of a number of European research organizations and praxis affiliates dealing with multi-level management of natural resources. This lecture will describe and discuss the methodological framework that has been developed in the scope of GoverNat to analyse cases of water and biodiversity governance, to propose appropriate analytical tools and participatory processes that can improve governance and to evaluate policy experiments.

Compulsory Readings

Rauschmayer, F. 2008. Analysis and evaluation of participatory processes – the GoverNat frame.

Optional Readings

Rauschmayer F, Wittmer H, Berghöfer A, 2008, "Institutional challenges for resolving conflicts between fisheries and endangered species conservation", *Marine Policy*, 32 178-188.

Rauschmayer F, Wittmer H, 2006, "Evaluating deliberative and analytical methods for the resolution of environmental conflicts", *Land Use Policy*, 23/1 108-122.

Wittmer H, Rauschmayer F, Klauer B, 2006, "How to Select Instruments for the Resolution of Environmental Conflicts?" *Land Use Policy*, 23/1 1-9.

Lecture 7: Public Participation Methods

Ângela Guimarães Pereira

KAM – Knowledge Assessment Methodologies Sector, European Commission Joint Research Centre (Ispra)

More accountable and inclusive governance styles reject the concept of a single, omnipotent decision maker and replace it with a deliberative process regarding specific policy issues. Ideas of greater transparency and inclusion have been incorporated into legislation. EC Legislation encourages or mandates participation of wider sectors of the society throughout specific legislation (examples are directives (Seveso; EIA; WFD; etc), Environmental Action Programme and EC white paper on governance. We have assisted to an extension of rights: from the right to be informed to the right to participate.

The main objective of Public Participation is to allow the structuring of participants knowledge, values, etc. into relevant input to the research/evaluation/decision process. The involvement of relevant actors (stakeholders, interest groups, community concerned, the *getroffenen*) into a reflexive process of exchange of knowledge and information may help:

- Enhance the quality of a process by incorporation of different types of knowledge enriching the policy/decision debate;
- To tackle issues characterized by conflict and uncertainty that cannot depend on formal scientific enquiry alone;
- Uncover information and knowledge or ascertain positions of participants;
- Empowerment and sharing responsibility to respond to change - creation of partnerships;
- Attain a shared ground for concerted action, including deliberation (e.g. attaining consensus) - overcoming jargons, scales, etc. for common understanding;
- To improve the robustness and legitimacy of policies.

This lecture will review main normative and regulatory justifications (in Europe) for carrying out public participation in policy making processes. Main categories of participatory techniques will be presented, together with some guidelines to organize and conduct a participatory process.

Optional Readings

Interfaces Between Science & Society. Eds. Ângela Guimarães Pereira, Sofia Guedes Vaz & Sylvia Tognetti. 2006. Sheffield: Greenleaf Publishers.

Hands-on 1: *b-involved, participation 4 all, everywhere*

Angela Guimarães Pereira

KAM – Knowledge Assessment Methodologies Sector, European Commission Joint Research Centre (Ispra)

Gonçalo Lobo

CENSE – Centre for Environmental and Sustainability Research, Ecological Economics and Environmental Management Group, New University of Lisbon

b-involved is an e-participation tool developed at the JRC to support EC policies on involvement of citizenry in policy making. A hands-on exercise with the platform <http://b-involved.jrc.it> aimed at electronic public participation. A role-play exercise will be organized for several groups using the platform. Hence, at least 9 computers are required with multi-media devices (microphone and camera).

Lecture 8: *Modelling for learning in and about complex problems - The science behind the art of participatory modelling*

Nuno Videira

CENSE – Centre for Environmental and Sustainability Research, Ecological Economics and Environmental Management Group, New University of Lisbon

Many environmental decisions are based on flawed mental models of the complex structure underlying the interrelationships between ecological, economic and social systems. Alternatively, the use of formal modelling tools is defended for enhancing the ability to tackle complexity and misperceptions of feedback.

This lecture introduces the fundamentals of system dynamics modelling in a participatory context. In the broadest sense, participatory modelling designates any form of technique whereby a team of participants collaborates in a model-building process. On one hand, the rationale for participatory modelling taps into the recent policy calls for participatory environmental decision-making. On the other hand, it has become evident that environmental modelling is intrinsically a multidisciplinary and collaborative process, since it requires input from a broad range of actors and appropriate group modelling designs for building consensus and mutual understanding about the way the systems work. Participatory modelling methods such as Group Model-Building and Mediated Modelling, which are particularly well suited to elicit knowledge from participants and help in thinking, visualising, sharing and communicating about the behaviour of dynamic and complex issues will be described.

Compulsory Readings

Stave, K. (2002). Using system dynamics to improve public participation in environmental decisions. *System Dynamics Review*, 18 (2): 139-167.

Optional Readings

Antunes, P., Santos, R., Videira, N., (2006), "Participatory Decision Making for Sustainable Development – The Use of Mediated Modeling Techniques", *Land Use Policy*, 23, pp. 44-52.

van den Belt, M., Deutsch, L., Jansson, A. (1998). *A consensus-based simulation model for management in the Patagonia coastal zone. Ecological Modelling*, **110**: 79-103.

Vennix, J. (1999). Group model-building: tackling messy problems. *System Dynamics Review*, **15** (4): 379-401.

Videira, N., Antunes, P., Santos, R., Gamito, S. (2003) "Participatory Modelling in Environmental Decision-Making: The Ria Formosa Natural Park Case Study", *Journal of Environmental Policy and Management*, 5(3), pp.421-447.

Videira, N., Antunes, P., Santos, R. (forthcoming), "Participatory Modeling for Sustainability: Lessons from Two Collaborative Experiences in Portugal". 32 pp.

Hands-on 2: Participatory modelling in action: Conceptualizing sustainability

Nuno Videira

CENSE – Centre for Environmental and Sustainability Research, Ecological Economics and Environmental Management Group, New University of Lisbon

Participatory modelling techniques involve teams in the development of qualitative models (e.g. causal loop diagrams) and/or quantitative models (e.g. simulation, computer-based) to facilitate team learning while dealing with complex problems. This workshop will provide a practical and stepwise guide to design and implement participatory modelling projects. In a role-playing fashion, participants will simulate a mediated modelling workshop aimed at the conceptualization of the feedback structure underlying sustainability issues, in the context of elaboration of a sustainable development strategy.

3. Multicriteria decision making – integrating different points of view, uncertainty, complexity

Lecture 9: Social Multi-Criteria Evaluation (SMCE)

Giuseppe Munda

European Commission Joint Research Centre (Ispra) and UAB - Universidad Autónoma de Barcelona

In order to address contemporary issues economics and decision sciences need to expand their empirical relevance by introducing more and more realistic (thus more complex) assumptions in their models. One of the most interesting research directions in the field of public economics is the attempt to introduce political constraints, interest groups and collusion effects explicitly. The main argument developed here is the proposal of the concept of "Social Multi-Criteria Evaluation" (SMCE) as a possible useful framework for the application of social choice to the difficult policy problems of our Millennium, where, as stated by Funtowicz and Ravetz, "facts are uncertain, values in dispute, stakes high and decisions urgent".

Compulsory Readings

Munda, G. 2004. Social Multi-criteria evaluation: Methodological foundations and operational consequences. *European Journal of Operational Research*, **158** (2004): 662-667.

Munda, G. 2005. Measuring sustainability: A Multi-criterion Framework. *Environment, Development and Sustainability*, **7**:117-134

Optional Readings

Munda, G. 2008. *Social Multi-Criteria Evaluation for a Sustainable Economy*. Springer.

Lecture 10: Applications of SMCE in water resources governance. The cases of the Costa del sol (Malaga, Spain) and the Caia River basin (Elvas, Portugal)

Serafin Corral Quintana

Department of Economics, Universidad de La Laguna (Tenerife)

Vanja Karazic

CENSE – Centre for Environmental and Sustainability Research, Ecological Economics and Environmental Management Group, New University of Lisbon

Compulsory Readings

Guimarães Pereira, A., Corral Quintana, S. (2002). From Technocratic to Participatory Decision Support Systems: responding to new governance initiatives. *Journal of Geographic Information and Decision Analysis*, 6(2)

Optional Readings

De Marchi B., Funtowicz S.O., Lo Cascio S. and Munda G., 2000 »Combining participative and institutional approaches with multicriteria evaluation an empirical study for water issues in Troina, Sicily», *Ecological Economics***34** () (2), pp. 267–282

Munda G., 2004 »Social multi-criteria evaluation: methodological foundations and operational consequences», *European Journal of Operational research* **158**: 662-677

Antunes P., Santos R., Videira N., 2006 »Participatory decision making for sustainable development – the use of mediated modeling techniques», *Land Use Policy* **23**, pp: 44-52

Paneque Salgado P., Corral Quintana S., Guimarães Pereira A., del Moral Ituarte L., Pedregal Mateos B., 2006 »Participative multi-criteria analysis for the evaluation of water governance alternatives. A case in the Costa del Sol (Málaga) » *Ecological Economics* **XX**

Riesgo L., Gómez-Limón A., 2006 »Multi-criteria policy scenario analysis for public regulation of irrigated agriculture», *Agricultural Systems* **91**: 1-28

Hajkowicz S., Collins K., 2007 » A Review of Multiple Criteria Analysis for Water Resource Planning and Management », *Water Resource Manage* **21**:1553 – 1566

Hands-on 3 – Social Multicriteria Evaluation

Giuseppe Munda

European Commission Joint Research Centre (Ispra) and UAB - Universidad Aut3noma de Barcelona

Serafin Corral Quintana

Department of Economics, Universidad de La Laguna (Tenerife)

4. Appraisal methods as value articulating institutions

Lecture 11: Economics, Environmental Values and Human Motivation

Clive L. Spash

CSIRO - Commonwealth Scientific and Industrial Research Organisation, Australia

I will build a picture of how welfare economics has developed into a specific philosophical framing of public choice problems affecting the environment. This starts with some basic background on welfare economics and how choices are described. Reflection upon the ethical meaning of the economic position will be undertaken. This leads into consumer theory and the conceptualisation of values as a surplus over expenditure which can, in theory, be empirically measured. Limitations of this approach will be outlined in terms of lexicographic preferences and the refusal to trade environmental entities for monetary compensation.

In the second part of my lecture I will go into more detail with respect to the development of cost-benefit analysis and how this approach has been applied to environmental valuation. The importance of underlying motivations will be explained and explored. In particular such topics as attitudes, social norms and ethical beliefs will be raised with examples from my own research. The lecture will conclude with an example of how economists might develop a much richer model of human motivation and behaviour.

Readings

Spash, C. L. (2000) Ecosystems, contingent valuation and ethics: The case of wetlands re-creation. *Ecological Economics* 34(2): 195-215.

Spash, C. L. (2006) Non-economic motivation for contingent values: Rights and attitudinal beliefs in the willingness to pay for environmental improvements. *Land Economics* 82(4): 602-622.

Spash, C. L. and N. Hanley (1995) Preferences, information and biodiversity preservation. *Ecological Economics* 12(3): 191-208.

Lecture 12: What about needs? Legitimate decision criteria in a pluralistic world

Felix Rauschmayer

Helmholtz-Centre for Environmental Research, UFZ

Ines Omann

Sustainable Europe Research Institute, SERI

CENSE - Ecological Economics and Environmental Management Group

Faculty of Sciences and Technology, New University of Lisbon

May 26 – June 6, 2008

This lecture is organised in three sections: The first section describes the current use of multi-criteria decision aid, especially for environmental issues. It focuses on the selection of decision criteria, and here on the object-relatedness of the criteria. Usually, criteria are deduced from a description of the object of decision, or from the expected changes in the characteristics of this object due to the decision to be taken. The second section explores the possibilities of using criteria, which are clearly related to the subject of the decision, i.e. the needs of the decision-makers. These criteria enable to clarify and to explicitly address values as the main basis for decision making. In the final section, we discuss whether subject-related decision criteria could be useful for addressing the difficulties of current object-related multi-criteria decision aid.

This lecture remains at the individual level whereas lecture 17 (Bridging sustainability and quality of life) shifts these concepts on a societal level.

Compulsory Readings

Rauschmayer, F., 2005. Linking emotions to needs. A comment to Fred Wenstøp's article "Mindsets, rationality and emotion in multi-criteria decision analysis". *Journal of Multi-Criteria Decision Analysis* 13, 187-190.

Alkire, S., 2002. Dimensions of Human Development. *World Development* 30(2), 181-205.

Jackson, T., Jager, W., Stagl, S., 2004. Beyond Insatiability: Needs Theory, Consumption and Sustainability, Working Paper Series: No. 2004/2. Surrey, Centre for Environmental Strategy, University of Surrey

Optional Readings

Cummins, R.A., 1996. Domains of life satisfaction: an attempt to order chaos. *Social Indicators Research* 38(3), 303-328.

ED DIENER and EUNKOOK SUH (1997). MEASURING QUALITY OF LIFE: ECONOMIC, SOCIAL, AND SUBJECTIVE INDICATORS. *Social Indicators Research* 40: 189–216.

Doods, S. (1997). Towards a 'science of sustainability': Improving the way ecological economics understands human well-being. *Ecological Economics*, 23. 95-111.

Finnis, J., 1980. *Natural law and natural rights*. Oxford, Clarendon Press. Book, not attached

Layard, R. (2005): *Happiness. Lessons from a New Science*. Penguin. Book, not attached

Max-Neef, M., 1993. *Human scale development: Conception, application, and further reflections*. London, Apex Press. Book, not attached

Nussbaum, M.C., 2000. *Women and human development: The capabilities approach*. Cambridge, Cambridge University Press. Book, not attached

ODI (20019: *Economic Theory, Freedom and Human Rights: The Work of Amartya Sen*. Briefing Paper.

Rosenberg, M., 2001. *Nonviolent Communication: A Language of Life*. Encinitas, CA, Puddle Dancer Press. Book, not attached

Wenstøp, F., 2005. Mindsets, rationality and emotion in multi-criteria decision analysis. *Journal of Multi-Criteria Decision Analysis* 13, 161-172

Lecture 13: Environmental appraisal methods as value articulating institutions

Arild Vatn

Norwegian University of Life Sciences

The prime aim of this lecture is to define and evaluate the concept of value articulating institutions (VAIs). This concept is based on two observations. First, it acknowledges that people may act according to different rationalities – e.g., as consumers or as citizens – and that the way the appraisal method is formulated influences which roles people take on and which type of preferences they emphasize. Second, it acknowledges that the procedure – as defined by the method – emphasizes different data as relevant – e.g., price bids vs. arguments – and hence also different ways of reaching a conclusion – e.g., aggregation vs. argumentation. As the choice of VAI will influence the outcome, the aim is to show how this happens. Three other issues will also be covered:

- I will characterize the most important appraisal methods as a VAI – i.e., Cost benefit analysis/contingent valuation; multi criteria analysis and various deliberative methods
- I will develop a normative framework for choosing among VAIs
- Finally, I will discuss what the above insight implies for the role of the researcher or the consultant in supporting appraisal processes

Compulsory Readings

O'Neill, J, 2001. Representing people, representing nature, representing the world. *Environment and Planning C: Government and Policy* , 19:483-500.

Vatn, A., (forthcoming). *An Institutional Perspective on the Valuation of Biodiversity*. 20 pp.

Optional Readings

Jacobs, M., 1997. Environmental Valuation, Deliberative Democracy and Public Decision-making. In J. Foster (ed.): *Valuing Nature? Economics, Ethics and Environment*. London: Routledge, pp. 211-231.

Stagl, S., Multicriteria evaluation and public participation: the case of UK energy policy. *Land Use Policy*, 23:53-62.

Vatn, A., 2005. Comparing value articulating institutions. In Vatn, A.: *Institutions and the Environment*, Edward Elgar, pp 331-365.

Debate 2: Values in environmental appraisal methods

Ângela Guimarães-Pereira (moderator)

Arild Vatn

Felix Rauschmayer

Clive Spash

5. Science – society interfaces in policy formulation

Lecture 14: Stakeholder participation in policy formulation

Rui Santos, Paula Antunes

CENSE – Centre for Environmental and Sustainability Research, Ecological Economics and Environmental Management Group, New University of Lisbon.

In this lecture we analyse the evolution in the literature and practical application of environmental policy instruments and discuss the implications that the adoption of new modes of governance have for the formulation of policy instruments. In this context, the development of environmental policies is nowadays particularly challenging, requiring the combination of large amounts of data and scientific knowledge about the functioning of Nature, with the uncertainties and plurality of legitimate perspectives, which characterize the environmental policy arena. Experiences dealing with the participatory formulation of policy instruments will be used to illustrate the arguments.

Compulsory Readings

Santos, R., Antunes, P., Baptista, G., Mateus, P., Madruga, L. (2006). Stakeholder participation in the design of environmental policy mixes. *Ecological Economics*, 60:100-110.

Lecture 15: Scenarios workshops as a tool for sustainable resources governance.

Giorgos Kallis

Universidad Autònoma de Barcelona

This lecture will focus on the application of scenarios workshops as a tool for the participatory formulation of action plans for resources governance with an application to water resources management in the Greek island of Naxos. The lecture will emphasize the major issues related with water resources governance and participation and will describe in detail the methodological issues related with scenarios workshops. Reflections on the suitability of scenarios workshops as a policy formulation tool will be discussed.

Compulsory Readings

Street P, 1997, "Scenario workshops: a participatory approach to sustainable urban living?" *Futures* 29 (2) 139-158

Kallis G., Hatzilacou D., Mexa A., Coccossis H., and Svoronou E., *Beyond the manual: practicing deliberative Visioning in a Greek island*, Ecological Economics, in press.

Optional Readings

Andersen, I.E. and Jaeger, B., 1999. Scenario workshops and consensus conferences: towards more democratic decision-making. *Science and Public Policy* <<http://www.scipol.demon.co.uk/spp.htm>> , 26: 331-340

Shipley, R., 2002. Visioning in planning: is the practice based on sound theory? *Environment and Planning A*, 34: 7-22

Lecture 16: *The role of Quality Assurance Processes in Policy-making contexts*, Serafin Corral Quintana
Department of Economics, Universidad de La Laguna (Tenerife)

The exploration of the quality of policy-making procedures should be considered an essential element of the policy process itself. When the information used as input to policy making is complex there is a need for an agreed and credible set of procedures or guidelines by which the reliability of information can be explored. A framework to assist the quality assurance of planning procedures will be discussed. It is intended to be a contribution to design and to assess the quality of knowledges and tools usually used in decision-making processes where science is relevant and participatory processes are desirable.

Compulsory Readings

Jeroen P. van der Sluijs, James S. Risbey, Penny Kloprogge, Jerome R. Ravetz, Silvio O. Funtowicz, Serafin Corral Quintana, Angela Guimarães Pereira, Bruna De Marchi, Arthur C. Petersen, Peter H. M. Janssen, Rob Hoppe, Simone W. F. Huijs. (2003). *RIVM/MNP Guidance for Uncertainty Assessment and Communication: Detailed Guidance*. (RIVM/MNP Guidance for Uncertainty Assessment and Communication Series, Volume 3). Utrecht University, Utrecht.

Corral Quintana, S. A Quality Assurance Framework for Policy-making: Proposing a Quality Assurance Assistant Tool (QAAT). Oxford University Press (In press)

Lecture 17: Bridging sustainability and quality of life

Felix Rauschmayer

Helmholtz-Centre for Environmental Research, UFZ

Ines Omann,

Sustainable Europe Research Institute, SERI

This lecture takes the ideas of lecture 12 (What about needs?) further. We will lift them on the societal level and combine them with Sustainable Development. Sustainable Development is a concept which acts on the level of the society, but is defined by meeting the needs of the current and the future generation, which is clearly related to individuals. We will address in this lecture how the concept of needs has been addressed in sustainability concepts so far and how it can be linked to the societal level. Second we will relate sustainable development to the notion of quality of life, happiness or well-being and explain first ideas of how a form of science might look like that bridges sustainability and quality of life by taking needs and emotions into account.

Be prepared to be confronted with questions rather than answers in this somehow exploratory session.

Compulsory Readings

Rauschmayer, F., 2005. Linking emotions to needs. A comment to Fred Wenstøp's article "Mindsets, rationality and emotion in multi-criteria decision analysis". *Journal of Multi-Criteria Decision Analysis* 13, 187-190.

Alkire, S., 2002. Dimensions of Human Development. *World Development* 30(2), 181-205.

Jackson, T., Jager, W., Stagl, S., 2004. Beyond Insatiability: Needs Theory, Consumption and Sustainability, Working Paper Series: No. 2004/2. Surrey, Centre for Environmental Strategy, University of Surrey

Optional Readings

Cummins, R.A., 1996. Domains of life satisfaction: an attempt to order chaos. *Social Indicators Research* 38(3), 303-328.

ED DIENER and EUNKOOK SUH (1997). MEASURING QUALITY OF LIFE: ECONOMIC, SOCIAL, AND SUBJECTIVE INDICATORS. *Social Indicators Research* 40: 189–216.

Doods, S. (1997). Towards a 'science of sustainability': Improving the way ecological economics understands human well-being. *Ecological Economics*, 23. 95-111.

Finnis, J., 1980. *Natural law and natural rights*. Oxford, Clarendon Press. Book, not attached

Layard, R. (2005): Happiness. Lessons from a New Science. Penguin. Book, not attached

Max-Neef, M., 1993. Human scale development: Conception, application, and further reflections. London, Apex Press. Book, not attached

Nussbaum, M.C., 2000. Women and human development: The capabilities approach. Cambridge, Cambridge University Press. Book, not attached

ODI (2001): Economic Theory, Freedom and Human Rights: The Work of Amartya Sen. Briefing Paper.

Rosenberg, M., 2001. Nonviolent Communication: A Language of Life. Encinitas, CA, Puddle Dancer Press. Book, not attached

Wenstøp, F., 2005. Mindsets, rationality and emotion in multi-criteria decision analysis. Journal of Multi-Criteria Decision Analysis 13, 161-172

Lecture 18: *Science and policy. A View from both sides*