



Workshop 1.5: **Transdisciplinarity as a framework for integrating science and stakeholders' perspectives into development processes – Knowledge integration**

Convenors: **Bernhard Freyer, Katharina Gössinger and Sebastian Helgenberger**

Bringing together diverging system perspectives: The utility of transdisciplinary scenario analysis

Claudia R. Binder, Regina Schoell,
and Jaime Diaz

Institute for Systems Science, Innovation and
Sustainability Research, University of Graz,
Austria

This paper studies the issue of transition processes in human-environment systems (HES). It adapts the method of scenario analysis to obtain a common system view between experts and farmers in Vereda la Hoya, Colombia. Within the transdisciplinary approach taken, we address the following questions: how can stakeholders with different system perspectives be brought together (i) to create a common system understanding and vision of the future and (ii) to identify transition paths towards the desired future? The results suggest that a transition can only occur if interventions are aimed at short term effects and induce changes in social structure.

Transitioning towards a sustainable bio-based economy: a few systemic roadblocks to overcome

Leen Gorissen, Stella Vanassche,
Erwin Cornelis, Luc Pelkmans,
and Frank Nevens

Flemish Institute for Technological Research
(VITO), Belgium

The process of phasing out fossil resources and replacing them by renewable resources itself does not guarantee sustainability. Key will be to learn from the mistakes of the past, avoid bottlenecks and lock-in effects and develop new ways and systems that promote genuine sustainability. Transitioning away from unsustainable structures and practises thus requires a systems level redesign of our socio-ecological regime and economic system in a way that it sustains instead of reduces the life support mechanism of earth. New interdisciplinary approaches based on the principles of nature such as biomimicry and cradle-to-cradle may be especially promising in this regard.

'Co-operative research': an integrated approach through transdisciplinarity

Sandra Karner,
and Nicoleta Elena Chioncel

Inter-University Research Centre on
Technology, Work and Culture, Austria

We reflect the concept and practice of knowledge integration in a co-operative research revealing the experiences in a project, which involved researchers from academic institutions and practitioners from civil society organizations in research on alternative agro-food networks. The transdisciplinary process has been designed in altering phases of differentiation and integration steps in order to make different interests, viewpoints and knowledge explicit, and to integrate these differences in joint efforts. We focus on the integration steps, and illustrate their implementation. We illustrate that implementation of transdisciplinarity demands for a high commitment from all actors for participating in such a "social experiment".

How to link poultry industry and territory for a sustainable development? An interesting question to learn and practise transdisciplinarity

Philippe Lescoat, Thierry Bonaudo,
Luis Mior, Pierre Bommel,
Jean Lossouarn, and
René Pocard-Chapuis

UR Avicoles, INRA, France

Poultry production chain is an integrated sector seen as "off land". However this chain is strongly interacting with territories leading to various impacts. Therefore to deal with sustainability requires transdisciplinarity. The first step is to define the studied dynamic system, here the "poultry production chain * county" aggregate. The second is to share between disciplines a common knowledge on this system through a unique representation. The third is to accept the approaches proposed by other disciplines even though time and space scales are consequently evolving. Due to the approach complexity, fruitful but time-consuming transactions between researchers are observed.



Workshop 1.5: Transdisciplinarity as a framework for integrating science and stakeholders' perspectives into development processes – Organisation and communication

Convenors: **Bernhard Freyer, Katharina Gössinger and Sebastian Helgenberger**

A communication model of transdisciplinary consortium research

Thomas Aenis

Humboldt-Universität zu Berlin, Germany

This paper is discussing a model of so-called transdisciplinary research in large teams/consortia from a communication perspective. Inner-consortium research communication can be understood as a system of process-, organisational and team-communication. The concrete form of group research co-operation and communication must be consciously decided on; this is a question of problem reduction and the intended scope of problem solving. Disciplinary research will tend to produce concrete solutions, interdisciplinary research will be more integrative, transdisciplinary research will always involve implementation. Thus, disciplinary, interdisciplinary and transdisciplinary research groups can – and usually will – exist within the framework of a “transdisciplinary” consortium.

The role of research in conflict over natural resources. Experiences from the ‘Competing Claims’ programme in Mozambique

Cees Leeuwis and Jessica Milgroom

Communication and Innovation Studies Group,
Wageningen University, The Netherlands

In complex problem solving situations outcomes are shaped eventually by negotiation processes among stakeholders. Implicit to ideas such as ‘post normal science’ and ‘mode 2 science’ is the assumption that scientists have something to offer that may improve the quality of societal negotiations in conflict situations. This presentation will identify a number of reasons to be sceptical about such expectations, but also point to opportunities and ways in which positive impacts may indeed be realised. These issues will be discussed against the background of the recently started interdisciplinary action research programme ‘Competing Claims for Natural Resources’ in Southern Africa.

Transdisciplinary research in Sub-Saharan Africa: Experiences and challenges in Kenya

Kibet Ngetich, Bernhard Freyer
and Jim Bingen

Egerton University, Kenya

This paper seeks to analyse and deepen our understanding of the application of transdisciplinarity to agricultural research in sub-Sahara. First we discuss transdisciplinarity based on a set of themes, with a focus on the general and specific research issues in developing countries. Then we analyse how these themes were addressed in our research project “Organic Agriculture with Trees”, in the MAU catchment in Kenya from 2005-2009. Finally we explore if the concept of transdisciplinarity is able to bridge the different perspectives and which consequences this might have for the research process and the results of stakeholder-oriented research projects.



Workshop 1.5: **Transdisciplinarity as a framework for integrating science and stakeholders' perspectives into development processes – Potentials and limitations**

Convenors: **Bernhard Freyer, Katharina Gössinger and Sebastian Helgenberger**

Multiperspectival science and stakeholder involvement: Beyond transdisciplinarity and consensus

Hugo F. Alrøe and Egon Noe

Aarhus University, Denmark

Science is perspectival and crossdisciplinary cooperation cannot, in general, rely on integration – second order perspectives are needed. On this background we focus on stakeholder involvement in multiperspectival science, with biomass for energy as a case. Our thesis is that scientific intervention in complex problems should not strive for consensus on problems and goals. The heterogeneity of stakeholder perspectives and their relation to different scientific perspectives should be exposed through second order observation and polyocular communication, which can maintain a dynamic, multidimensional space of understanding and cooperation throughout the intervention process. The first problem is not problem solving but problem forming.

Tracking the traces of transdisciplinarity – Establishing the societal impact perspective in the discussion of the added value of transdisciplinary research cooperations

Sebastian Helgenberger

University of Natural Resources and Applied Life Sciences, Austria

This paper reflects four theses which emanate from an assessment of the transdisciplinary research cooperation on sustainable rural development in Switzerland ('ETH-UNS Case Study Appenzell-Ausserrhoden'). Thesis 1: The societal impacts of transdisciplinary research cooperations need to be taken into account when the added value of this research mode is to be understood. Thesis 2: Societal impacts can be expected on a problem-related level and an interpersonal level. Thesis 3: The interplay of both societal impacts levels facilitate a real-world application of the research findings. Thesis 4: Societal impacts emerge continuously in the course of the research process.

Development of climate change adaptation strategies within the transdisciplinary network INKA BB

Andrea Knierim, Sonja Siart,
Verena Toussaint, Klaus Müller,
and Hubert Wiggering

Institute of Socio-Economics, Leibniz Centre for Agricultural Landscape Research (ZALF), Germany

INKA BB aims to ensure the sustainable use of land and water resources in cooperation of science and practice partners, who through their participation increase their capacities to adapt to climate change. The methodology in this large scale research and development project is transdisciplinary and action research. Theses of the network management board: (1) Strategic adaptation to climate change requires a transdisciplinary approach; (2) The transdisciplinary approach has to be organised as a network; (3) Networks cannot be steered or directed but only fostered and supported; (4) Knowledge is the medium of network coordination, trust is a prerequisite