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Implementation-oriented and transformative research—Lessons from a project on conservation and sustainable use of forest resources in Ethiopia

Peter Moll [a,*], *Dipl.-Ing. Ute Zander* [b]

[a] *Science Development, Hagenauer Str. 30, 42107 Wuppertal, Germany*
[b] *Learning Processes for Sustainable Development, Grafenstr. 3, 42277 Wuppertal, Germany*

ARTICLE INFO

Article history:
Received 13 January 2012
Received in revised form
23 July 2012
Accepted 12 November 2012
Published on line 28 December 2012

Keywords:
Implementation-oriented and transformative research
Communication/transfer of R&D results to stakeholders
Making research results sustainable

ABSTRACT

This article draws lessons from a seven-year project on conservation and use of remaining coffee forests in the highlands of South-west Ethiopia. The project investigated the genetic diversity of *Coffea arabica* in its place of origin as well as economic perspectives of quality coffee marketing. With initially broad multidisciplinary natural and social sciences research a basis was laid for a second phase of praxis and implementation-oriented research in the same region.

As a key innovative approach an NGO was established to take over all project management and implementation-oriented work in Ethiopia at the beginning of the second phase. This initiative helped decisively to solve the kind of problems identified in RESCUE (2012): ownership of results developed within R&D, the often missing mandate for science to actively contribute to solutions 'on the ground', and problems of cultural and social unsuitability and misunderstanding, which often are at the core of the problem when solutions from scientists are expected.

The NGO operated as an intermediary between the involved scientists and other stakeholders from the coffee industry as well as from public administration and the Ethiopian polity. Its overall target was to contribute toward establishment of a biosphere reserve following the UNESCO MAB scheme and to use this scheme for the conservation and use of the remaining Ethiopian coffee forests. This target was achieved: the biosphere reserve has been accepted and accredited by UNESCO and is in operation. In addition, quality coffee from the development zones of the biosphere reserve is being sold on local markets in Yayu, SW Ethiopia.

There are important lessons for the future of transdisciplinary and transformative sustainability science that can be drawn from this experience. These lessons concern concrete challenges and chances of research and development geared toward sustainable development:

- Working with implementation-targets as project organizing elements,
- communication and transfer of responsibility to involved stakeholders,
- challenges for praxis-oriented syntheses from research results,
- practical challenges of management and coordination for transdisciplinary projects, as well as.
- chances for long-term sustainability and use of research and implementation work.

* *Corresponding author.*
E-mail address: moll@science-development.de (P. Moll).
1462-9011/$ – see front matter
http://dx.doi.org/10.1016/j.envsci.2012.11.007

These lessons are described in this article with the overall intention to draw conclusions and to make them more widely available for scientists and project coordinators working in transdisciplinary projects that aim to contribute toward (more) sustainable development.

1. Introduction: implementation-oriented research

Implementation-oriented work in global change research is a young field. It needs a lot of experimentation, new research designs and learning. This article is based on the experience of one project (CoCE 2)[1] in the German Federal Ministry of Education and Research (BMBF) funded programme BIOTEAM (''Biosphere Research – Integrated and Application-oriented Model Projects 2001–2009). This programme called for projects that could make substantial contributions to the implementation of the UNCBD (UN Convention on Biological Diversity). This was a central requirement and applicants were asked to experiment with different methodological approaches and project designs to achieve substantial contributions/possible solutions to the challenges expressed in the CBD.

This general orientation and corresponding programme design goes back to the general focus of the funding agency on 'praxis and policy relevance' and respective methodology. The latter must be seen in the context of programmes on sustainable development and global change. Here, the 'policy character' is of a particular nature: internationally agreed Conventions like UNFCCC, UNCBD and UNCCD, together with some 20+ other globally accepted conventions and declarations on Global Change and Sustainable Development form this policy background, not national governments or private enterprise and their specific interests. For such projects new approaches need to be designed. Results need to be societally relevant and stakeholder involvement and dialogical communication with other target groups than scientists play an important role.

The overall intention of this article is to draw conclusions and to make lessons learned available for projects with similar objectives. It is strictly based on a very praxis-oriented case study. Unusual for an article appearing in a scientific journal, here evidence for what is being described itself mainly is in praxis, not in theory building or by providing references from literature. In the case of the CoCE, results are evidenced by the successful establishment of a Biosphere Reserve in the montane rainforest of Ethiopia and the implementation of activities to achieve the target of improvement of the market chances of coffee from this area is evidenced by the existence of a trade mark ('Darara Buna Coffee') and successful direct marketing in the study area.

This follows a logic expressed in new literature on '*transformative research*' which is described by the German Advisory Council on Global Change as

> ''...<*supporting*> *transformation processes in practical terms through the development of solutions and technical and social innovations, including diffusion processes in economy and society, and opportunities for their acceleration, and demands, at least in part, systemic perspectives and inter- as well as transdisciplinary procedure methods, including stakeholder participation*'' (WGBU, 2011, pp. 351–352).

This case study on the CoCE experience illustrates challenges and chances of orienting a project in terms of transformative research and possible practical implementation of its results. These challenges exist in particular for traditionally trained disciplinary scientists, such as the group of scientists involved in the project.

Also, many of the described approaches and lessons learned (see Section 6) have been experienced and tested in other areas before, in particular, in development research and some of its pioneering institutions like ODI – Overseas Development Institute (and there in particular the RAPID programme – www.odi.org.uk/work/programmes/rapid/default.asp), IDRC (see especially their tools site at www.idrc.ca/EN/Resources/Tools_and_Training/Pages/default.aspx), IISD (http://www.iied.org), CIRAD (www.cirad.fr/en/home-page) or the international network of expert institutions CGIAR (www.cgiar.org). What was innovative in the case of CoCE was the application of such approaches and methods to (multi-)disciplinary, university-based research, funded by a classical research funding institution (the BMBF).

Implementation orientation (see list of implementation-oriented tasks for the project below) was seen as an underlying theme for the project. But the general task of being implementation-oriented for CoCE meant a lot more than communication and facilitation. It started with strategic and conceptual questions about how to organize and structure the project and how to manage the joint work process with eight scientific disciplines and many different stakeholders in the country of possible implementation. This was a complex task that needed a lot of trial and error. It required getting used to inter- and transdisciplinary work and time to learn and work with tools and approaches quite different from what the mainly disciplinarily educated scientists were used to. CoCE took a few steps in this learning process and experienced success and failure while taking them. Those steps are described here.

Last not least, the case study should be seen in the context of on-going methodological and structural reform in the systems of science with efforts in transdisciplinary and transformative research and, particularly, sustainability science (see for example Kates et al., 2001; ICSU, 2005; Becker, 2006; Pohl and Hirsch-Hadorn, 2007; Wiek, 2007; Lang et al., 2012). This article, however, focuses on the experience of this particular case only and draws conclusions from it that concern this growing body of research and development.

[1] CoCE: Conservation and Use of *Coffea arabica* in the Montane Rainforests of Ethiopia: www.coffee.uni-bonn.de/.