



Triangulation in participation: Dynamic approaches for science-practice interaction in land-use decision making in rural China



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ABSTRACT

Land use decision making requires knowledge integration from a wide range of stakeholders across science and practice. Many participatory methods and instruments aiming at such science-practice interaction have been developed during the last decades. However, there are methodological challenges, and little evidence neither about the methodological applicability and practicability under diverse socio-political conditions nor about their dynamics. The objective of this paper is to offer some insights on the design and implementation of reasonable science-practice interaction. The Chinese-German project SURUMER (Sustainable rubber cultivation in the Mekong region) served as a case study with the aim of developing sustainable land use strategies for rubber cultivation in southwest China. A triangulation of methods tailor-made for every specific stakeholder group allows the gradual deepening and broadening of participation in problem definition, knowledge generation, development of applicable solutions and implementation. The composition of methods should be reflected on and adjusted to the communication demands of specific stakeholder groups during project phases. It is important to invest in trust-building and allow time and space for the adaptation of approaches, especially in communities where participation is not a tradition.

1. Introduction

Ecosystem degradation, over-exploitation of natural resources, climate change and human conflicts are challenging sustainable development worldwide (Brandt et al., 2013). Demand is increasing for approaches that are both “scientifically robust” and “socially relevant” (Romero-Lankao et al., 2013), involving different scientific disciplines as well as practitioners and societal groups in problem-solving and knowledge generation (Harris and Lyon, 2013). Such approaches are particularly crucial in the field of land-use planning, where solutions to complex land-use problems often involve multiple disciplines, scales and actors. By integrating different local and scientific knowledge sources, it may be possible to develop a more rigorous understanding of the future (Johnson et al., 2004), and thus increase the possibility of application of the research results into decision making. However, there is often a gap in these approaches. Researchers value scientific rigidity and precision of academic research and are often less concerned about the practice and application, while practitioners are interested in addressing the existing practical needs rather than theoretical reasoning (Belli, 2010). This might lead to situations in which scientists are frustrated when their information is not used, and practitioners claim that

they did not receive the information they need (Vogel et al., 2007). The challenge hereby is to facilitate interaction among various stakeholders, to build reliable institutions and to reconcile local interests across distinct scales (Stringer and Reed, 2007).

It is claimed that stakeholder participation could cope with these challenges and enhance the quality of research projects (Luyet et al., 2012). Scientific information is likely to have a high chance of application when it is perceived by relevant practitioners to be credible, salient and legitimate (Cash et al., 2003). In addition, it often creates ownership or “buy-in” to the process and thus to the outcomes of the project or policy (Yee, 2010). Many studies show that intensive stakeholder participation results in higher-quality decisions (Beierle, 2002). Over the last decades, various participatory methods and instruments have been developed, resulting in successful experiences such as in Europe (e.g. Dougill et al., 2006; Reed et al., 2013) and Latin America (e.g. Brandão, 2005). However, there are some critiques. For instance, Luyet et al. (2012) argue that, in practice, it is still an expert-driven paradigm with project leaders often defining the degree of stakeholder involvement. Although many projects claimed to adopt participatory approaches, practitioners’ views were not taken into account during the planning process, project implementation or even the evaluation. Non-

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academic stakeholders may be asked about their opinions using questionnaires with pre-defined answers instead of helping to develop their own solutions. Such behaviour may lead to disillusionment (Tippett et al., 2007). The choice of participation methods and the quality of their application become highly important.

Therefore, the objective of this paper is to offer some insights on how to design and implement reasonable science-practice interaction. We designed a triangulated participatory approach for science-practice interaction in the Sino-German research project SURUMER (Sustainable rubber cultivation in the Mekong region) SURMUR (2011), with tailor-made methods for each stakeholder group during the five-year project phase. By discussing the application process and reflecting the effects of our approach to stakeholder participation from an ex-post view, we hope to contribute to the current methodological discussion, considering the Chinese context where participation is not a tradition. Particular emphasis is placed on the question of ownership, i.e., whether stakeholders are empowered, their ideas are taken into account and developed solutions are implemented.

The research question is how science-practice interaction may be facilitated for better land-use decision making, with a specific focus on good practice in method triangulation and under difficult socio-political conditions. The hierarchical institutional arrangements in China strongly support centralised top-down decision making and leave limited space for participation, thus adding further challenges to the applicability and practicability of such methods.

In the following sections of this paper, after an initial definition of participation in a transdisciplinary project environment, we present our triangulation approach on participation, reflect its effects, strengths, challenges and ways to master them, and finally, provide suggestions for future application.

2. Participation and participatory methods

2.1. Stakeholder participation in research projects

Stakeholders are individuals, groups or organisations that can affect or are (positively or negatively) affected by a decision or action (Freeman, 1984; Grimble et al., 1995; Bryson et al., 2011). For an organisation, such as a research consortium, stakeholders include both scientific stakeholders from the research project and non-academic stakeholders. Persons at the local level are usually those most affected by the issue at stake and are often the greatest experts on many aspects of their situation (Patel et al., 2007). For a general understanding of stakeholder participation, we follow Reed (2008: 2418) who defines participation as "... a process where individuals, groups and organisations choose to take an active role in making decisions that affect them". Stakeholder participation is now inevitable in many research projects to generate better solutions and create ownership of the outcomes of the project. In our case, this specifically refers to situations in which stakeholders actively participate in decision making within the framework of a research project, in defining problems and objectives, generating knowledge and information and promoting solutions with possibly higher acceptance amongst those who implement land use changes.

To understand the theories and principles behind different participation approaches and which methods are most appropriate for stakeholder participation in a given context, we must first look at the different typologies. Stakeholder participation can be classified into four categories according to its theoretical basis, its nature, its objectives and the degree of participation (Reed, 2008). The theoretical basis of participation simply defines whether it is a means of justice and democratic decision making processes or whether it is a tool to achieve a higher-quality decision (Renn et al., 1995; Webler, 1999; Beierle, 2002). Participation demands a two-way information flow between participants and exercise organisers. Information is exchanged through dialogues or negotiations (Rowe and Frewer, 2000). In contrast, one-

way information flow is information dissemination or gathering. Research-driven participation is prone to producing scientific results. In such cases, participation is mainly a way of collecting information for the researchers. This is distinguished from development-driven participation, in which the capacity-building and self-organisation of participants seem to be at the core (Okali et al., 1994). Several levels of participation are usually identified, ranging from passive to active forms. In her influential work, Arnstein (1969) used the metaphor of a ladder to categorise participation in seven levels from non-participation to tokenism, and to true participation at the highest level. Later, Pretty (1995) developed a typology for agriculture development projects that includes seven levels, ranging from passive and manipulative participation to active initiation independent from external bodies.

Depending on the objectives and the degree of participation, there are many methods and techniques available. Warburton (1997) lists more than 100 participation techniques in his review of participation. Single methods might be efficient for one target group at a specific time point with a certain objective for participation. While a project often lasts several years with various groups involved in the ongoing project phases, the participation patterns are often different and mutative, considering the objectives, contexts and conditions. In the context of a project, the question here is: which methods should be chosen for a specific participation process? This depends on various factors, including the degree of participation (Rowe and Frewer, 2000; Yee, 2010; Luyet et al., 2012), stakeholder categories (Beierle, 2002; Reed, 2008; Yee, 2010), local conditions (Luyet et al., 2012) and available resources (Rowe and Frewer, 2000). Thus, triangulation of methods is necessary to meet the multiple demands in projects that involve a variety of stakeholders during different phases. Triangulation, the "... attempt to map out, or explain more fully, the richness and complexity of human behaviour by studying it from more than one standpoint" (Cohen et al., 2000: 254) is seen rather broadly. According to Denzin (1978), triangulation of sources, methods, researchers, theories, data types (text, numbers) exist and increase "...the concurrent validity of findings and decisions through the convergence of different perspectives" (Yeasmin and Rahman, 2012). Nowadays method triangulation (or mixed methods) is common in many fields of research with a rich body of literature, particularly in participatory rural appraisals (Mayoux and Chambers, 2005) or for example when combining qualitative information with quantitative modelling in participatory scenario development (Kok et al., 2015). Usually, these approaches are quite static. We enrich the discussion with a process-oriented focus, assuming that in a transdisciplinary setting the choice of methods must be flexible and reflect the need of a specific situation and actors involved. Such meta-research on the dynamics of triangulation is rare if non-existent.

2.2. Stakeholder participation under Chinese conditions

In China, the introduction of methods, such as PRA (Participatory Rural Appraisal) and RRA (Rapid Rural Appraisal), dates back to the 1950s and 1960s (Li, 2003). In the beginning, participatory approaches were mostly limited to NGOs (non-governmental organisations) and academic groups; little had been done directly with the government (ITAD and PRCDDP, 2005). In recent decades, participatory approaches have been attempted in a growing number of projects, such as poverty alleviation projects (Han, 2002). Nationwide there were more than 140,000 key villages established under a poverty reduction plan with a simplified participatory approach (Piazza, 2011). Robert Chambers introduced participatory approaches to Yunnan Province in 1993, on an autodidactic basis at first. After several years of internationally supported projects, some locally initiated projects have begun (Wilkes, 2011). With continuous reflection, the understanding of PRA has been deepened from a set of survey tools to a process of supporting development activities. However, there are fundamental differences between the situation in China and the countries where participation theory and approaches were initiated and developed. In China, political decisions

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