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How Incentives Matter – a Conceptual Framework for Natural Resource Governance in German Development Cooperation

Anke Fischer* and Lorenz Petersen[‡]

Abstract

Many problems of unsustainable management of natural resources worldwide are due to a limited number of basic governance shortcomings such as open access, lack of property rights definitions or insufficient enforcement of existing rules. Often however, researchers and to an even greater extent practitioners in development cooperation focus on one single natural resource and ignore the analogy of problems in related fields. As a consequence, many insights gained in one field, e. g., with regard to irrigation, are not shared with experts from related areas or discussed within a wider scope.

In this paper, a conceptual framework for analysing the governance problems behind unsustainable management of natural resources is proposed. The core of our approach draws on the Institutional Analysis and Development framework (IAD; e. g., Ostrom 1990, Thomson 1992). Consequently, it focuses on an identification of incentives that motivate the way environmental goods and services are used. In addition, it provides an elaborated instrument to analyse and categorise related cooperation measures. Overarching objectives of development cooperation such as poverty alleviation are also included. The framework serves as a common theoretical background on which to analyse management problems, their causes, and possible interventions. Thus, a basis is provided to compare actual case studies and to draw conclusions on explicit and implicit goals of development policy and its shortcomings.

Key words: Development co-operation, governance, natural resources management, incentives, institutions

1 Introduction

In international development contexts, natural resource management (NRM) is often seen from the (scientific) perspective of the individual expert in charge of the undertaking. In addition, researchers and to an even greater extent practitioners in development cooperation often focus on one single natural resource such as water, or even more specific, irrigation or the provision of drinking water. This phenomenon is mirrored in the sectoral structure of NGOs such as WWF or federal enterprises, e. g.,

* Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) - German Development Cooperation
Dag-Hammarskjöld-Weg 1-5; 65726 Eschborn; Germany; afische6@gwdg.de

[‡] Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) - German Development Cooperation
Dag-Hammarskjöld-Weg 1-5; 65726 Eschborn; Germany; Lorenz.Petersen@gtz.de

German Development Cooperation GTZ, that separate between resources based on their physical appearance. Administrative borders between projects add to this process of separation; each sectoral concept uses its own language and its own perspective. As a consequence, insights are seldom communicated between experts of different sectors and different backgrounds.

However, many problems of unsustainable management of natural resources are due to a limited number of basic governance shortcomings such as open access, lack of property rights definitions or an insufficient enforcement of existing rules. This holds for all natural resources, regardless whether water, forests, land, the atmosphere, or biodiversity are considered. Hence, experience could be shared and is, in principle, transferable between sectors. Yet, no common framework, theoretical basis or terminology seems to be easily available that facilitates an exchange of insights and expertise *between* resource sectors (see also Ostrom 1999). On a common theoretical background, management problems, their causes and possible interventions might be easier to analyse and to compare.¹

This paper proposes a conceptual framework to analyse the governance problems behind unsustainable management of natural resources. In this paper *governance* is understood as the body of rules, enforcement mechanisms and corresponding interactive processes that coordinate and bring into line the activities of the involved persons with regard to a concerted outcome (see Huppert, Svendsen & Vermillion 2003 p. 8).²

The proposed framework takes an institutionalist perspective. It focuses on the goods and services provided by natural resources rather than on the resource itself. It is thus applicable to all sorts of natural resources, regardless of their physical quality. The framework is open and comprehensive enough to allow for the peculiarities of the natural resources and, at the same time, facilitates an integrated view on NRM problems.

2 A common framework

2.1. Overview

The analytical framework is adapted from the Institutional Analysis and Development (IAD) model and draws heavily on Thomson (1992), Thomson & Schoonmaker Freudenberg (1997) and Ostrom (1990). Rather casually, the authors suggest ways to modify institutional incentives for more effective resource governance. This aspect gains considerably in importance in development cooperation practice where the implementation of incentive changes is crucial. In this context, the IAD framework hence needs a more elaborated second part that serves to describe actual cooperation activities.

Consequently, the IAD framework core is complemented by several components to account for the particularities of development cooperation. It consists of two main parts (see Fig. 1):

- (i) the first part which provides an instrument to analyse the motives of the actual resource users' behaviour ('situation analysis')
- (ii) the second part which serves as a tool to design and to describe matching cooperation activities ('analysis of cooperation activities').

¹ The IFRI research program (e. g., Poteete & Ostrom 2003) is definitely an initiative with a very similar objective. However, it addresses only forestry resources, whereas the approach proposed here is meant to be applicable to all governance issues with regard to natural resource management.

² Other authors provide similar definitions: Governance is described as the body of "traditions and institutions by which authority in a country is exercised" (Kaufmann, Kraay & Mastruzzi 2003 p. 3), or, as the UNDP puts it: "Governance refers to the exercise of political, economic, and administrative authority in the management of a country's affairs at all levels".

The framework can be used *ex post* to evaluate projects already undertaken, as an approach to the respective lessons learned, and to compare different projects. It also may be applied *ex ante* to plan and design adequate cooperation activities.

GTZ projects do not necessarily feature community resource management. In many cases, several goods and services and a multitude of actors are involved at a time. In an attempt to account for these often complex circumstances, an approach to examine institutional arrangements between actors involved in NRM (Huppert & Urban 1998; Huppert, Svendsen & Vermillion 2001) is added to the first part of the framework.

The second part of the framework comprises

- (a) a description of the goals of development cooperation
- (b) a typology of incentives (see e. g., OECD 1999) appropriate to change the behaviour of resource users, thus to perform governance
- (c) a typology of different advisory services on different levels.

Figure 1 illustrates the extended framework. The epistemological foundations such as methodological individualism, and general assumptions mentioned in Thomson (1992, p. 7 ff.), namely the bounded rationality of individual actions, apply also to the framework presented here.

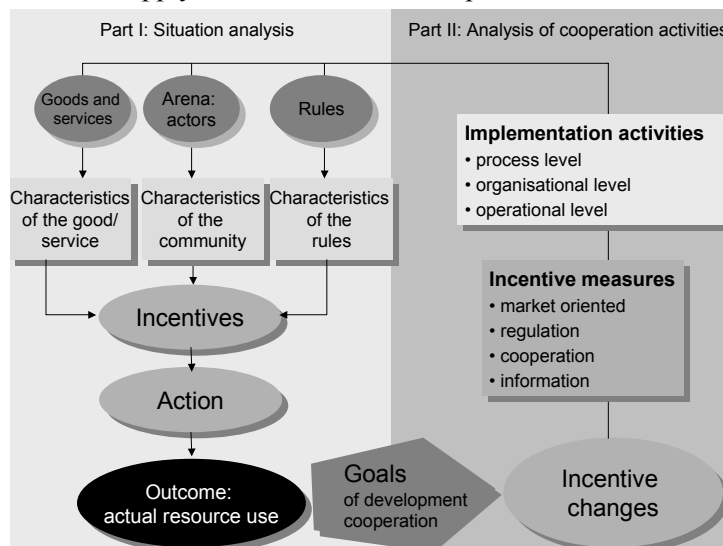


Fig. 1: A framework for analysing governance problems in natural resource management
Source: adapted from Thomson 1992; own considerations

2.2 The analytical process

2.2.1 Part I: Situation analysis

Analysing actual problems of resource management and governance is a *process* which may be guided by the framework presented here. This process will be resumed in the following sections.

The process of analysing resource management problems requires first of all an identification of the actual *situation* in question (for a comprehensive description see Thomson & Schoonmaker Freudenberger 1997). Why is the actual situation considered problematic? GTZ projects often address the management of a variety of goods and services that belong to one sector, e. g. agriculture or agro-forestry, but differ considerably with regard to their characteristics. Consequently, as a preliminary step these different goods and services should be identified and examined separately for their attributes.

In a second step, reasons, i. e., motives for the ongoing management problems have to be identified. These motives can be considered *incentives* and can take many forms (see Fig. 1). Classifying them from a

formal, economic perspective, they might be regulative, market-based or relate to cooperation or information (see e. g., OECD 1999, see also 2.2.2). For pragmatical reasons and to understand the actual situation, Thomson & Schoonmaker Freudenberger (1997) suggest to distinguish between three kinds of incentives including

- (i) incentives related to the characteristics of the goods and services in question
- (ii) incentives related to the characteristics of the community
- (iii) incentives related to the characteristics of the actual rules in the respective community.

Thomson & Schoonmaker Freudenberger (1997) mention several characteristics of communities such as social cohesion and the homogeneity with regard to common goals. However, as mentioned above, GTZ case studies as well as examples in Thomson (1992) and Thomson & Schoonmaker Freudenberger (1997) show that it is often not only the local community of resource users who is involved in resource management problems. In many cases, other stakeholders also cause (and are affected by) the unsustainable use of natural resources.

However, the IAD model focuses exclusively on the local community and does not capture the different roles of multiple actors, their interactions and relationships. Hence it might be helpful to add a component which allows for multiple stakeholder interaction. Huppert (Huppert & Urban 1998; Huppert, Svendsen & Vermillion 2001) suggests an approach that makes use of cybernetic metaphors to describe exchange relationships between resource users. Huppert uses flow diagrams (see also e. g., Herder-Dorneich 1986) to depict networks and the respective governance modes and coordination mechanisms.

Integrated into the conceptual framework, this component seems particularly valuable to detect incomplete feedback loops. These are relationships that are not based on reciprocity, where an actor providing a service receives nothing in return, or where accountability and mandates are unclear. Open feedback loops might act as incentives to overexploit resources due to the lack of accountability and sanctioning. Correspondingly, closed loops and clearly defined coordination mechanisms, i.e., working rules between actors are incentives to collaborate and to respect the rules.

2.2.1 Part II: Analysis of cooperation activities

Having examined the actual incentives that guide NRM, development cooperation activities, if required, may now be planned or analysed, respectively (see Fig. 1). In which way incentives have to be changed in order to motivate “adequate” behaviour?

This question implies a normative aspect, namely the definition of **goals** governance aims at. The normative dimension of governance is subject of a heated debate (e. g., Messner & Nuscheler 2003; Ribot 2002; Tetzlaff 2003; Thierfelder & Walk 2003). However, GTZ as the implementing organisation for technical co-operation of the German government is accountable to the corresponding federal ministry BMZ. Consequently, BMZ sets the objectives in agreement with the partner countries. Sustainable development with its social, ecological, ecological and political dimensions has been declared the overarching goal of German development activities³ (see also e. g., OECD 1999 p. 68).

As the proposed framework is meant to be applicable both *ex-post* and *ex-ante*, one may now ask for (i) the institutional changes that have been undertaken in a particular development cooperation project in the past or (ii) the institutional changes that should be undertaken in the future in order to reach the goals mentioned above.

³ <http://www.bmz.de/en/topics/motive/Ansaeetze/index.html>

A classification scheme might help to describe and compare *incentive measures*. Suitable classifications are provided e. g., by the OECD (1999). In this framework, a classification seems appropriate that differentiates between

- (i) market-based incentives
- (ii) regulation
- (iii) information
- (iv) cooperation (see Fig. 1).

The first category includes measures such as the creation of markets, the assignment of property rights, subsidies that internalise externalities and compensation payments, user fees, and the internal enforcement of contracts through revenue sharing (see OECD 1999; Swallow & Bromley 1995; Petersen & Sandhövel 2001). The second category refers to access restrictions and legal regulations of resource management. Informational incentives might consist in an evaluation of non-market goods and the publication and communication of valuation results as well as in capacity building with regard to sustainable management techniques and external effects. Cooperation as an incentive is closely related to informational measures and refers to participatory methods that ensure public acceptance, equity and feasibility of institutional changes.

As a matter of course, “it is often difficult to design a single policy that will successfully provide the right incentives for the sustainable use (...) of the resources (...)” (OECD 1999 p. 12). Consequently, OECD recommends “to employ a range of incentive measures in order to address all the pressures and actors” (ibid. p. 12).

Why, though, should it be useful to categorise incentive measures to be implemented in cooperation projects? First of all, prior analysis of incentives that take effect on resource users’ behaviour should consequently feed into the design of matching institutional arrangements. A detailed description of probable impacts and attributes of incentives helps to check if measures are deduced in a sensible manner from the status-quo analysis. In addition, a classification of incentive measures implemented by GTZ (or other agencies and donors) is an important precondition for an overview of these measures and thus the basis for a comparison of policy goals and actual activities. Hence, this framework component is essential to get a grip on the impacts of development policy: Does cooperation practice correspond to the objectives of the donor?

Incentives that foster sustainable resource management need to be implemented to take effect. The expertise and the portfolio of GTZ, originally restricted to technical assistance, have shifted during the last 15 years or so towards consulting and advisory services. Nowadays, by far the most of its activities belong to this category. To evaluate GTZ *cooperation activities* a promising approach is to specify the type of consulting services. Does cooperation focus on policy issues, management and organisation or rather on technical advice? Who is the addressee of consulting activities – is it the local population or e. g., some public authority? Does the service type correspond to the actual situation, the prevailing and the planned incentives?

GTZ activities can be classified as follows (compare to Hamacher et al. 2001):

- (i) technical and/or financial assistance
- (ii) technical advisory services to resource users
- (iii) technical advisory services to organisations
- (iv) advisory services on regulatory policy
- (v) advisory services on management and organisational issues
- (vi) public relations, mainstreaming, networking
- (vii) advisory services on policy processes.

The first category comprises traditional technical and financial support such as the construction of cisterns, irrigation systems and other types of infrastructure. Technical advice is still an important category of GTZ services. It might be interesting to distinguish between advice that directly addresses resource users at a local level, and advice directed to organisations, which are likely to be located at the district or even national level. The former is a type of cooperation applied e. g., in community forestry projects (e. g., Thomson 1992; Kosmus, Birner & Uebelhör unpubl.). Many projects, in contrast, seem to address organisations, particularly public authorities, rather than the local population. It seems relevant to check whether this approach is in line with the GTZ concept of intermediaries and their influence on the target group.

These activities can be assigned to three levels;

- the operational level (i-iii)
- the organisational level (iv-vi)
- the process level (vii).

These categories correspond to the concepts of policy (operational level), polity (organisational) and politics (process level) that are well-established in political science.

A classification of actual activities might help to see the role of GTZ as an actor in development cooperation more clearly, and to evaluate this role taking into consideration the respective objectives and principles.

As indicated in Fig.1, the implementation of these changes *feed back* to the operative incentives, and might or might not change the actual motivation for the population's behaviour with regard to NRM. It seems to be essential to check whether the implemented incentive measures actually took effect on either the characteristics of (i) the good, (ii) the community or (iii) the rules. If incentives have actually changed, does that have an impact on the users' behaviour and, eventually, on the outcome? Which incentives have an adverse impact, and which ones are still lacking?

Conclusions

This paper sketches a conceptual framework that allows an integrated view on governance problems with regard to natural resource management. It offers a common theoretical background to analyse these problems regardless of the nature of the resource and thus fosters an exchange of insights, knowledge and experience between experts in the respective fields.

The proposed framework could serve as a reference point to compare development projects with each other, on an international level, and with regard to their objectives. Comparability is achieved e. g., by classifications of goods and services and of incentive measures which have proved suitable to reduce the complexity of the case studies, and which are compatible to the categories used on an international level. The proposed framework thus can help generating valuable insights on the actual practice of governance and resource management, and contribute to an improved design of cooperation activities.

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