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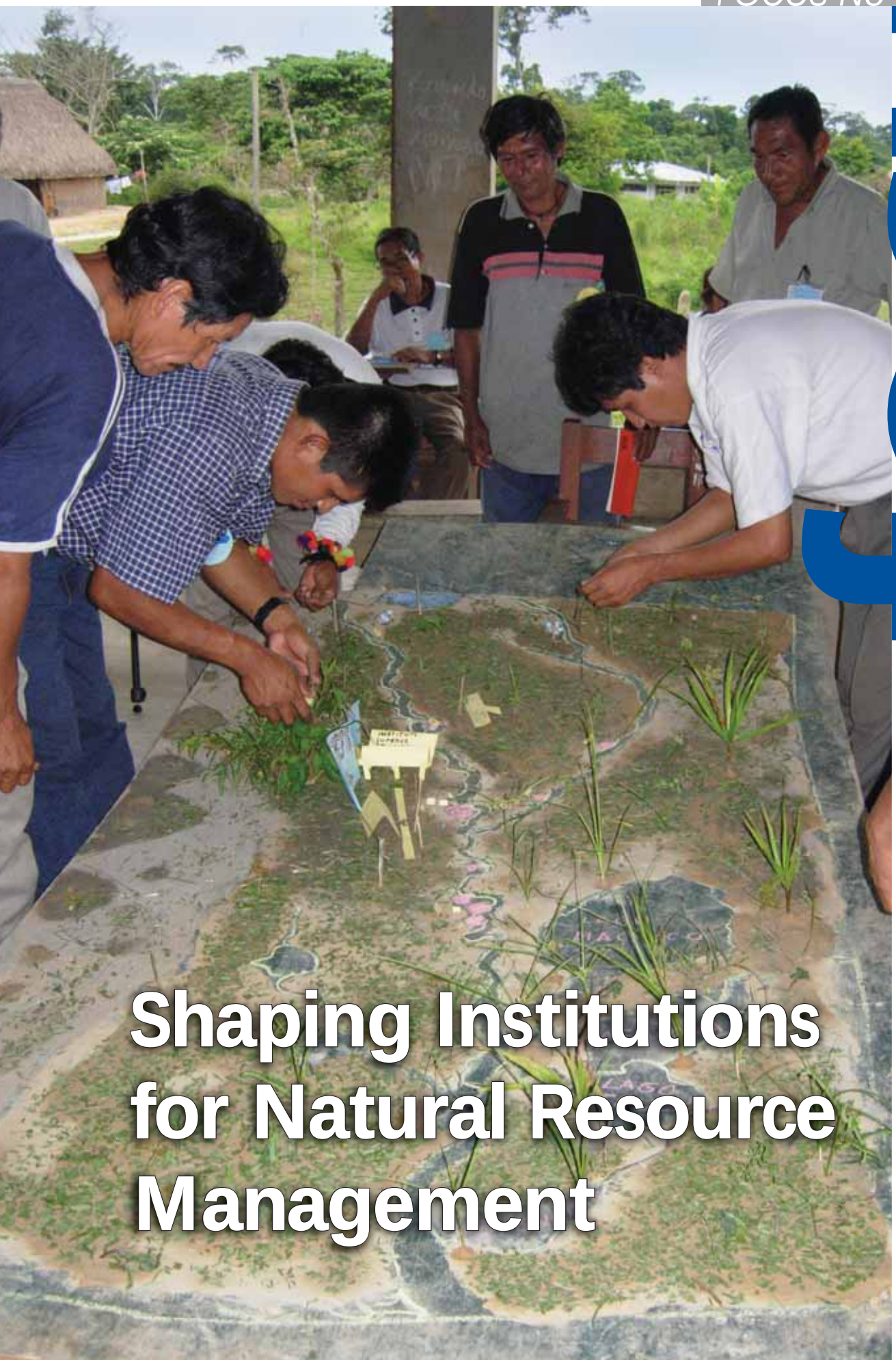

Shaping Institutions for Natural Resource Management

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Social learning processes are critical for adaptive institutions. In a workshop on "Learning for Sustainability" in Peru local stakeholders share their knowledge with external actors. (Photo: Sarah-Lan Mathez-Stiefel, CDE)

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Institutions guide human actions

People in the Rufiji Floodplain, Tanzania, depend to a great extent on fish, wildlife and other common pool resources. In earlier days, these resources were managed collectively by local groups. Membership in fishing, hunting, agricultural and gathering groups defined the resource areas and access to these resources. Local leaders established rules for the use of the common pool resources, and religious leaders coordinated and monitored the collective use and, when necessary, sanctioned misdemeanours.

Setting the framework

Human institutions – regulating frameworks that govern human actions – are crucial for how people manage natural resources. Institutions arise and develop from people's values, actions and interactions and are therefore constantly evolving. They can be informal or formal and take different forms: ranging from values, traditions, norms, conventions, rules and regulations to laws and constitutions – but organizations and their bylaws, operational plans and procedures are also regarded as institutions. Institutions can include mechanisms for accountability, conflict resolution and sanctions. They develop their effect through incentives. The objectives of institutions are to reduce the arbitrariness of actions by individuals, to increase predictability, and to reduce conflicts. While institutions set the "frame of the game" governance refers to the way institutions are shaped by the society and how power and decision-making are exercised within existing institutional settings.

The example of the Rufiji Floodplain illustrates how in the past traditional institutions regulated access to natural resources for local livelihoods, how responsibilities for conserving ecosystems were assigned, and how benefits were shared.

Current institutional failures

Independence and democratization in Tanzania opened up access to the common pool resources in the Rufiji Floodplain. Traditional institutions were disrupted: All Tanzanian citizens can now claim access to and use natural resources. Improved roads ease access to the plain, and new regional and global markets are expanding uncontrolled. Today, pressure on natural resources has dramatically increased. New institutions, such as formal state rules, do not succeed in establishing a framework for sustainable use of natural resources. Rules and regulations can no longer be enforced due to a lack of financial means and human capacity. Additionally, the complex dynamics of the floodplain ecosystem has not been taken into account when designing institutions. Thus the vulnerability of local people in the Rufiji Floodplain has greatly increased.

A short historical analysis of the institutional changes in the Ruiji Floodplain and their implications can be found in:

Ujamaa Policy and Open Access in Tanzania
www.indiana.edu/~iascp/E-CPR/cpr74.pdf

Institutions: a definition
"By institutions we mean the humanly devised constraints that shape human interaction and the way societies evolve through time (North 1990). Institutions are made up of formal constraints (rules, laws, constitutions), informal constraints (norms of behavior, conventions and self-imposed codes of conduct), and their enforcement characteristics; thus they shape incentives in human exchange, whether political, social or economic."

The Problem of Fit between Ecosystems and Institutions
www.ecologyandsociety.org/vol12/iss1/art30

The Swiss Agency for Development and Cooperation has developed guidelines for mainstreaming governance in its policies and activities.

Governance as a Transversal Theme
www.deza.admin.ch/ressources/resource_en_156840.pdf

See again:

Ujamaa Policy and Open Access in Tanzania
www.indiana.edu/~iascp/E-CPR/cpr74.pdf

Documents mentioned in the margin are annotated in the list of references.

Difficulties in coping with dynamics

Today global and local dynamic forces greatly affect rural livelihoods. Liberalization, economic interdependence, democratization, climate change, population growth and migration evoke rapid changes in production and consumption patterns, in socio-cultural values and in ethics, leading to shifts in power relations. External actors such as government authorities, private investors and newcomers to an area gain influence. Traditional local norms are overruled and weakened, losing their legitimacy. The fabric of informal and formal institutions that has evolved over a long time can no longer cope with highly dynamic economic, political and environmental forces, and pressure on natural resources increases. The issue of biodiversity impressively illustrates this process. For centuries biodiversity was mainly an asset for local livelihoods. Now, climate change, overuse by local populations, and increased commercial interest on the part of the private sector have caused a decline in biodiversity. The Millennium Ecosystem Assessment and other international reports ascribe much of the ongoing degradation and increasing scarcity of natural resources to institutional failures.

Lack of inclusiveness and equity

Institutions have distributional functions; they determine how resource-related benefits and responsibilities are shared. Powerful stakeholders, such as state authorities, rent-seeking investors, and local leaders might try to shape institutions in their favour. Hence, institutions are shaped by power relations and politics. The question of whose views and interests are articulated in institutional regimes becomes crucial if equity and poverty reduction is at stake. Current formal institutions are often defined in top-down processes and do not take account of social structures and of existing traditional institutions in a specific context. They fail to include marginalized, less powerful stakeholders in an equitable way. Although rights and rules exist that govern the use of natural resources, they are not credible in the eyes of local people and ignore stakeholders. Therefore, these groups are not committed to compliance and conflicts are likely to emerge.

The framework for sustainable development

Key international assessments – such as the Millennium Ecosystem Assessment and the International Assessment of Agriculture Knowledge, Science and Technology (IAASTD) 2008 – jointly stress the need for institutional change.

Millennium Ecosystem Assessment
www.millenniumassessment.org/documents/document.356.aspx.pdf
IAASTD
www.agassessment.org/docs/SR_Exec_Sum_280508_English.pdf

There is a growing consensus that the great majority of today's institutional regimes no longer succeed in supporting equitable use and sustainable management of natural resources, especially if the multiple functions of ecosystem services are to be maintained and poverty reduced. Deliberate negotiations that take account of all stakeholders are needed in order to move institutions towards sustainable development and hence towards sustainable natural resource management (NRM). What must also be taken into account is that institutions are shaped through social processes. Institutional change is as much about formal institutions as about human behaviour and learning.

This *InfoResources Focus* tries to clarify challenges people face when shaping institutions for sustainable NRM and discusses key elements for implementing processes of institutional change. Emphasis is put on local institutions embedded in national, regional and global institutional schemes.

Shaping institutions: A complex task

Institutions facilitating sustainable management of natural resources must fit with the characteristics and dynamics of human-ecosystem interactions and meet socio-cultural and economic objectives. Hence, stakeholders and actors are particularly challenged when shaping institutions for NRM.

Uncertainties of human – nature interactions: It is hardly possible to fully understand how human activities and the complex functioning of ecosystems interact. There always remains some uncertainty with regard to what causes ecological problems and how management strategies affect the resilience of ecosystems. The reactions of ecosystems, which have important consequences for human well-being, can be abrupt, with degradation accelerating, and can be potentially irreversible.

Multifunctionality of ecosystems: Ecosystems provide multiple services and functions. Narrowing the rules and norms on specific services of ecosystems, e.g. for wealth creation, neglects the linkages of these functions and will lead in the long-run to degradation of the ecosystems.

Cross-scale character of natural resource management: Natural resource management is a task encompassing temporal, spatial, and jurisdictional scales as well as local to global organisational levels. Climate change, for example, has local impacts but is the result of worldwide causes. The management of transboundary water illustrates well the cross-scale nature of NRM: water availability varies over time, depending on rainfall patterns (temporal scale). It links upstream or downstream communities (spatial scale). Rivers cross different informal and administrative boundaries: community, district and even national boundaries, challenging various administrative bodies (jurisdictional scale) to govern resources and work together.

Diverse social structures and values: Changing institutions means social change: Intrinsic norms, values and ethics alter; power and power relationships are re-shuffled. A comprehensive understanding of values, norms and the social structure of stakeholders and actors at play, and historical dynamics and trends, is crucial to assess the implication of institutional change and orient it towards sustainable development.

Difficulties in complying and enforcing: Compliance and enforcement not only depend on the institutional design itself, but on a number of other factors. In many cases, even though comprehensive regimes linking formal and informal institutions exist, enforcement is hampered by the lack of capacity, information, finances or political commitment. Very often, filling the void left by traditional institutions is a costly task that requires a lot of resources – far exceeding the human and financial capacities of developing countries.

The manifold challenges are discussed in more detail in:

The Problem of Fit between Ecosystems and Institutions
www.ecologyandsociety.org/vol12/iss1/art30

Scale and Cross-Scale Dynamics: Governance and Information in a Multilevel World
www.ecologyandsociety.org/vol11/iss2/art8

In the Kafue Flats Fisheries in Zambia, the Department of Fisheries lacks adequate financial means to control fishing and fisheries. Less money for wildlife protection due to the privatization of the Wildlife Department leads to fewer possibilities for monitoring. Salaries are not paid regularly and scouts are said to be corrupt. Local stakeholders would like to re-establish old rules or new regulations but outsiders consider that they are allowed to get access under formal laws. Yet the State is absent when it comes to the enforcement of these laws.

"We are Zambians – don't tell us how to fish!"
www.springerlink.com/content/11411um38q05035r/?p=dc87cc0f769642bb83550d7baf59a79c&

Considering guiding principles

Institutional changes can be either policy-driven or result from social practices. They are always embedded in specific cultural worldviews and social rule systems. In view of complexity and uncertainty, stakeholders have to be aware that there is no such thing as a perfect institutional regime. However, it has been demonstrated that institutions based on some guiding principles are more successful in addressing the complex challenges.

The precautionary principle: Dealing with uncertainties

Prior to the enactment of the National Integrated Protected Areas System, forestlands of Peñablanca (Philippines) were degraded by logging, mining, grazing and slash-and-burn farming. The livelihoods of local people were seriously at risk. The Act made it possible to limit the use of natural resources: From totally protected zones to limited use, with allowances for local people in the context of the Community-based Management Program. Although, none of the protection policies, laws and programmes explicitly refers to the principle of precaution, they implicitly apply the principle. Protective rules and regulations were established even though comprehensive scientific data was lacking.

Uncertainty and inadequate or incomplete 'scientific' information has been, and is, frequently used as a reason not to take action to protect the environment. This is particularly the case where powerful actors have strong economic interests that may harm the environment.

To overcome this risk an ethical principle known as the precautionary principle has been developed. The principle implies that actions to avoid or diminish harm to the environment shall be taken if harms are scientifically plausible but uncertain. Thereby, the choice of action should be the result of a participatory process. The principle provides an important policy basis to anticipate, prevent and mitigate threats to the environment.

More case studies on how the Precautionary Principle is applied in the context of biodiversity conservation can be found in:

Biodiversity and the Precautionary Principle
www.earthscan.co.uk/default.aspx?tabid=926

Guidelines for Applying the Precautionary Principle to Biodiversity Conservation and Natural Resource Management
www.pprinciple.net/PP_guidelines_brochure.pdf

Nested institutions: Matching scale and level

The reform of the water sector in Kenya has created an autonomous institutional framework. The Water Act 2002 defines the common policy and regulations but separates water resource management from service delivery and decentralises decision-making to the most appropriate level. Accordingly, different institutional structures have been developed for the different levels: Water User Associations at the local level, Catchment Advisory Committees for the regional level, and the Water Resources Management Authority at the national level.

How can local resource management be coupled with institutions at a larger scale without losing its local "fit" to the resource base? And how can states and national governments be coupled to resource users in non-disruptive ways?

The interview with the former Permanent Secretary describes the new Water Policy of Kenya.

Water sector reform in Kenya
www.inforesources.ch/pdf/maalim_interview.pdf

And the following paper explains how the Water User Associations in Kenia work.

New institutions for managing scarce water resources
To get a copy of the paper please contact: susanne.wymann@cde.unibe.ch

The principle that institutions are nested in a polycentric system provides an answer. At each level – from small to medium and large scale – entities govern the complex and dynamic ecosystems based on the most relevant information and with respect to the specific socio-cultural and ecological context. At the smallest scale rules and regulations are applied in an adaptive way, local people and authorities obtain rapid feedback on their own strategies and policies and can adapt them accordingly. Several such entities can be viewed as parallel adaptive systems that are nested within ever-larger units that are themselves parallel adaptive systems. For example, in Kenya the different local Water User Associations can be understood as such entities. They are linked to the next higher level to the Catchment Advisory Committees. Hence, institutional reform of the Kenyan water sector can serve to a certain extent as an example applying the principle of nested institutions. Decision-making and enforcement is devolved to the most appropriate level and scale. The appropriate scales for governance will be those where the most relevant information is available, that can respond quickly and efficiently, and that are able to integrate across scale boundaries.

E. Ostrom describes in her textbook how institutions nested in a polycentric system facilitate the management of common pool resources.

Understanding Institutional Diversity

But the concept of nested institutions cannot be applied without effective decentralization. Almost all developing countries are currently undertaking decentralization reforms and at least 60 countries are decentralizing some aspects of NRM. However, decentralization is incomplete as the transfer of power and the reforms are not adequate to the new tasks ascribed to the local level.

Democratic Decentralization of Natural Resources: Institutionalizing Popular Participation
http://pdf.wri.org/ddnr_full_revised.pdf

Social inclusion: Involving stakeholders

Relocated residents at the border of the Waza National Park in Northern Cameroon did not refrain from illegally using the resources within the park. To mitigate the emerging conflict, the project initiated a process to include the different stakeholders in the management structure of the park. After several months of negotiation, a Consultative/Management Board was legalized, including representatives of the provincial and national authorities, 5 women and 5 men from the settled communities in the park's periphery, 2 representatives of nomads, and 2 representatives of the youth.

The case study is presented in the comprehensive publication on co-management:

Sharing Power
http://cms.iucn.org/about/union/commissions/ceesp/ceesp_publications/sharing_power.cfm#sp_contents

Natural resources are managed either individually or collectively by a variety of actors. They can be powerful or marginalized, poor or rich, literate or illiterate. Markets and policies, likewise determined by a variety of actors, establish the framework for NRM. Consequently, only institutions which strive for full stakeholder awareness and inclusion contribute to credible, accepted rules that identify and assign the corresponding responsibilities appropriately. Capacity development and political empowerment can be essential to enable all stakeholders – and especially socially and economically weak people – to actively participate in developing new social institutions. This means that changing institutions implies a social change.

Towards new institutions

Farmers in Villa Serrano, Bolivia, realized that natural resources in their communities were degrading to the point that measures became necessary. In participatory processes 46 communities elaborated their own local rules and regulations for the management of natural resources. The processes involved the following steps: Identification of the problem, resuming traditional rules and regulations, developing new rules. In a second phase the local rules were brought together at the municipal level and were integrated in the official by-law of the Municipal Forest Unit.

The example of Bolivia is just one of three case studies in Latin America investigating the process of developing new local rules and regulations with regard to NRM.

Normatividad local en la gestión de los recursos naturales: Casos de estudio en: Ecuador, Perú y Bolivia
www.bosquesandinos.info/biblioteca/ECOBONA_0172.pdf

Bearing in mind the challenges in shaping institutions for NRM it becomes clear that institutional regimes that are tailored specifically to the context will be more likely to succeed. They can better tackle degradation of natural resources, foresee and prevent social conflicts, and detect barriers and potentials to enhance livelihood. There is no such thing as a blue-print to design them. Quite the contrary: development of institutions should be perceived as a comprehensive and inclusive process that takes into consideration the complexity of ecosystems and the characteristics and values of user groups and actor groups.

Learning to improve and adapt institutions

An overview of the concept, theories and methods of adaptive management can be found in:

Adaptive Management of Natural Resources
www.fs.fed.us/pnw/pubs/pnw_gtr654.pdf

Many decisions regarding interventions and changing institutions have to be taken on the basis of incomplete information due to the complexity of human-ecosystem dynamics. This means it is often not possible to predict accurately the outcomes of institutional changes and interventions and therefore management of natural resources is always to some degree experimental. But if local stakeholders and external actors acknowledge this reality right from the beginning, the outcome of institutional change can be perceived as the result of a purposeful experiment. This again provides the basis on which local stakeholders and external actors can learn how to improve and adapt the design of institutions to the specific context. Hence, processes of change moving towards sustainable NRM are to be adaptive and require meaningful assessment of the current situation, monitoring, and feedback mechanisms. Dialogues involving scientists, resource users and authorities of different levels bringing together scientific information and indigenous knowledge allow a comprehensive understanding of human-environment interactions to be gained and build social capital. Such social learning processes are therefore critical for adaptive institutions.

The following article describes the significance of social learning processes for NRM based on case studies in India, Bolivia and Mali.

Moving from sustainable management to sustainable governance of natural resource
http://dx.doi.org/10.1016/j.jrurstud.2006.02.006

Understanding the current situation

The beginning of an effort to change institutions is usually marked by the awareness of local communities or other actors that the management of natural resources is not sustainable and conflicts are emerging. But awareness alone is not sufficient to proceed in the process. Rather, a thorough assessment of the current situation involving key stakeholders and actors from the local, regional and/or national levels as well as scientists is needed. Thereby, three questions can guide the assessment:

A manual of GTZ provides a comprehensive concept for analysing the governance and institutional framework of natural resources use.

Natural Resources and Governance: Incentives for Sustainable Resource Use
www.gtz.de/de/dokumente/en-governance-nat-resources.pdf

What is at stake? Assessing ecosystem goods and services and how they are affected by overexploitation and to which extent they are degraded is a first step in identifying the problem. But it is also important to evaluate the potential of regeneration with regard to seeking mitigation measures for degradation. Assessing ecosystem goods and services rather than natural resources as a whole allows taking into account the specific roles they play in people's livelihoods. In the framework of this assessment, it will also become clear where knowledge is sufficient and where major knowledge gaps and uncertainty still prevail, and where uncertainties on how ecosystems react have to be especially considered.

Who is involved? Identifying all local and external users and being aware of their social, historical, economic and cultural characteristics, including power relations, helps comprehend what their respective interests are. This analysis will also shed light on the extent of their willingness to collaborate in managing natural resources sustainably. In addition to direct users, all actors, such as formal or informal authorities at different levels, NGOs, and development projects involved in the management of ecosystems must be considered in the analysis.

Questions to identify the main characteristics of actors:
Historical factors: *What is the origin of the group members? Was the place populated by members of different groups, lineages, or clans? When was that? Did conflicts arise? And how have they been resolved?*
Social factors: *What are the ethnicities, languages, family structures, gender relations and caste and other social divisions?*
Economic factors: *What livelihood strategies are in place and how is wealth distributed?*
Cultural factors: *What religious and moral beliefs do people have?*

What rules are in play? It is crucial to understand the existing informal and formal rules and how they are embedded at different levels: regional, national or even global. Thereby, a historical perspective on how natural resources were governed earlier deepens insight into the dynamic character of current institutions. It can also be useful to clearly differentiate between the different types of rules: Operational rules defining technical aspects of resource management; decision-making rules defining who has the right to determine, modify or revoke operational rules. And rules at the constitutional level. Finally, it is important to assess whether these rules are enforced or not and if they make any sense from the actors' point of view.

The assessment provides a comprehensive picture of the current situation and helps to understand the incentives that stimulate sustainable NRM or foster overexploitation and degradation of goods and services.

Designing institutions

How institutions elude design: river basin management and sustainable livelihoods
www.brad.ac.uk/acad/bcid/research/papers/ResearchPaper12CleaverFranks.pdf

Defining the direction of change: At the beginning of the "design phase" local stakeholders and external actors are challenged to negotiate the direction of change. The direction can either be proposed by authorities at different levels or by local communities. But it is essential that when defining social goals of institutional change, implications for all groups of stakeholders, especially less powerful and marginalized groups, are considered, and a consensus is reached by all stakeholders on the direction.

Guiding questions for designing institutions
by E. Ostrom (in an abridged version)

- *How can we better define boundaries in order to make clear who is authorized to use resources and where?*
- *How can we clarify the benefits and the costs of sustaining the system?*
- *How can participation of those involved in decision-making be enhanced?*
- *Who is monitoring the system and are there appropriate incentives?*
- *What are the sanctions?*
- *What are the mechanisms to resolve conflicts with regard to NR?*
- *Are there efforts to craft effective stewardship mechanisms that should be recognized?*
- *How do we create a nested system of institutions that can be dynamic and adaptive over time?*

Asking the right questions: Although in literature concepts were developed on how to "get institutions right" by applying "design principles", experience and recent research has shown that institutional formation is much more dynamic, context-specific, multilevel and complex. Rather than applying "design principles," for example – those that have been identified as crucial for the management of local common pool resources – it can be more useful to ask appropriate questions guiding reflections and decisions in the context of a collective design effort. Thereby, it has often proven meaningful to refer to existing institutions and to take them as starting points. Changes in existing institutions and connecting them with new forms of formal institutions are easier to accept.

Understanding Institutional Diversity

Setting incentives right: Incentives guide the behaviour of resource users. Accordingly, setting incentives in a way that encourages resource users and other actors to change their behaviour in order to achieve agreed social goals is a crucial step in designing institutions. Are incentives lacking or are there incentives which have to be removed? Whose behaviour has to be influenced by new or modified incentives? These questions can help change incentives in the right directions.
Thereby, different categories of incentives influencing natural resource management have to be taken into account: market-oriented incentives, incentives with regulative characteristics, those encouraging cooperation, and incentives aimed at improving information and information sharing.

For more information on co-management approaches see

Sharing power
http://cms.iucn.org/about/union/commissions/ceesp/ceesp_publications/sharing_power.cfm#sp_contents

Institutions enabling co-management processes have been proven successful in addressing the cross-scale challenges of NRM. Co-management integrates the three principles outlined in the chapter "Approach", and is adaptive. This decentralized approach to decision-making involves resource user groups and authorities as partners. The partners have clear roles and responsibilities. This creates strong incentives for collaboration, provided that users have enough information to understand the actual benefits and costs of particular management techniques. Clearly, such cooperation mechanisms motivate people to change their resource use patterns.

Monitoring

A meaningful system to monitor the outcome of institutional change is a prerequisite for adaptive institutions. Meaningful in the sense that it is based on sound scientific information in combination with indigenous knowledge, fits the scale of environmental events and decisions, and is cost-effective. Not only factual information is needed here; information on uncertainties is also important for environmental decision-making. Monitoring cannot be a one-time event; on the contrary, it is essential that the system is formalised in a way that ensures social learning in the long-term.

The role of development cooperation

Preserving the multifunctional forest ecosystem is a primary concern of the government of Viet Nam. Decision-makers agree that this can only be achieved through decentralized multi-stakeholder forest management that involves the local population. As a novelty, the civil law of 2005 includes the concept of common ownership by the community. Mandated by the Vietnamese government and the Swiss Agency for Development and Cooperation, a Swiss NGO has supported the reform of the forestry sector through extension and training. Provincial and district authorities were familiarized with concepts of Community Forest Management. In pilot areas 5-year forest management plans were developed and implementation processes started. Experience gained in the process of pilot implementation is fed into the national policy dialogue.

For more information on this case study see

Safeguarding Multifunctional Forest Ecosystems in Viet Nam
www.bioone.org/archive/0276-4741/27/3/pdf/i0276-4741-27-3-196.pdf

The shaping of institutions for natural resource management as described in the previous chapters has to be perceived as a social process which requires time, links different scales and levels, is based on the best available indigenous as well as empirical and scientific information, and requires high levels of competence among all stakeholders. Fostering enabling factors is one entry point for development cooperation in order to promote the development of adaptive and sustainable institutions. The following list is not comprehensive; it suggests only a few possible entry points:

- Enhancing the capacity of civil society and of authorities at different levels to be able to engage effectively in negotiating processes.
- Facilitating platforms to foster dialogue between civil society, research, and administration in order to support social learning processes across scales.
- Capitalizing on experiences from local projects for policy dialogue at the regional and national but also the international level.
- Fostering research and education as well as initiatives that aim to enhance capacities and knowledge in order to reduce uncertainties with regard to NRM and to address pro-poor issues.
- Developing methodological tools to support the shaping of institutions.

Institutional change is a long-term process and requires long-term commitment from development cooperation in order to build up trust and accountability.

Recommended reading

The following list features a documented and targeted selection of print documents and Internet sites of relevance to "Shaping Institutions for Natural Resource Management". For easier reading they have been allocated to four rubrics: ***Overview, Policy, Instruments, Case studies.*** *The documents are listed by title in alphabetical order. Most of them are available online (accessed on 5 November 2008).*

George H. Stankey, Roger N. Clark and Bernard T. Bormann. 2005

Overview

Adaptive Management of Natural Resources: Theory, Concepts, and Management Institutions

Portland. 73 p. www.fs.fed.us/pnw/pubs/pnw_gtr654.pdf

Adaptive management is considered the most appropriate method for dealing with the uncertainties and risks of resource management. It is conceived as a tool to be used in complex biophysical and socio-political settings, and gives combining different types of knowledge and learning from experience a central role.
Based on an extensive review of literature, the report analyses the concept of adaptive management and presents the current state of discussions about it and the various steps in its implementation.

Rosie Cooney and Barney Dickson (eds). 2005

Case studies
Instruments

Biodiversity and the Precautionary Principle: Risk and Uncertainty in Conservation and Sustainable Use

Earthscan. 314 p. www.earthscan.co.uk/default.aspx?tabid=926

Full certainty regarding environmental harm should not be a requirement for taking action to prevent it. This is what the precautionary principle advocates. Operationalizing this principle requires, inter alia, the right balance of interests, clarification of the roles and rights of the various stakeholders, broad participation, and transparency. This book offers a comprehensive analysis of the precautionary principle in the environmental context, focusing on its practical role and considering issues of equity, livelihoods, science and politics. Furthermore, it presents cases of national experiences and provides guidelines for effective application.

Jesse C. Ribot. 2002

Overview
Policy

Democratic Decentralization of Natural Resources: Institutionalizing Popular Participation

World Resource Institute (WRI). 30 p. http://pdf.wri.org/ddnr_full_revised.pdf

Moving from participatory to decentralized natural resource management means moving towards more sustainability. This process can only be effective when combined with the accountability of local decision makers to the people and a guarantee of their powers. Furthermore, it must be complemented with other measures such as environmental standards, civic education, etc. WRI's report finds that current decentralization efforts, even if producing some positive effects, are mostly incomplete, and notes a backsliding trend, towards more centralized processes. It then makes key recommendations and underlines the necessity of more time for democratic decentralization to settle and yield results.

Oran Young. 2007

Overview
Instruments

Designing Environmental Governance Systems: The Diagnostic Method

IHDP Update 2007(1):9–11. www.ihdp.unu.edu/file/IHDP+Updates/IHDP_Update_2007_1?menu=60

Despite other drivers that threaten sustainability, the importance of institutions in facing today's environmental challenges remains very high. Design principles for reshaping institutions have therefore been developed. The author contests the ability of these principles to work successfully, as they are not flexible enough to fit the multitude of contexts the institutions have to regulate. He proposes the diagnostic method, which aims to form tailor-made institutions through analysis of the problem, the players, the practices and the politics for each specific setting.

Millennium Ecosystem Assessment. 2005

Overview
Policy

Ecosystems and Human Well-being: Synthesis

Washington DC: Island Press. 137 p. www.millenniumassessment.org/documents/document.356.aspx.pdf

The Millennium Ecosystem Assessment examines how ecosystems and their services have changed, and establishes the scientific basis for further action aimed at reversing their degradation. The present synthesis clearly states the need for institutional change in the field of ecosystem management. It explains that today's institutional arrangements, when designed, had not specifically taken into account the two main challenges they face today: the need for greater cooperation among sectors and the need for coordinated responses at multiple levels.

Swiss Agency for Development and Cooperation (SDC). 2007

Policy
Instruments

Governance as a Transversal Theme: An Implementation Guide

Bern. 32 p. ww.deza.admin.ch/ressources/resource_en_156840.pdf

What makes governance a transversal issue? It is the integration of governance into all sectors and activities of a development cooperation agency, with the aim to boost sustainability and the effectiveness of sectoral support. The shift in power relations between the different actors, which occurs in the process, calls for special care.
SDC's approach to transversal governance relies on the principles of participation, accountability, transparency, non-discrimination and efficiency.

The Precautionary Principle Project. 2005

Instruments

Guidelines for Appliying the Precautionary Principle to Biodiverstiy Conservation and Natural Resource Management

Cambridge. 12 p. www.pprinciple.net/PP_guidelines_brochure.pdf

The precautionary principle prevents the absence of full scientific certainty from being used as a reason to postpone measures to avoid or minimize a potential environmental threat. Its general nature makes it difficult to put into practice, even if it is embedded in several agreements and in national laws. These Guidelines are one of the few publications that can provide concrete assistance to policymakers, legislators and development practitioners. In a short and succinct manner, they specify the four stages and twelve steps needed to turn the principle into specific policy and management provisions.

Frances Cleaver and Tom Franks. 2005

Case studies

How institutions elude design: river basin management and sustainable livelihoods

BCID Research Paper No 12. Bradford. 21 p.
www.brad.ac.uk/acad/bcid/research/papers/ResearchPaper12CleaverFranks.pdf

According to E. Ostrom (see Ostrom 2005) and others, it is possible to shape robust and sustainable institutions for common property resource management following a set of principles and rules. The study examines these design principles with the help of a river basin management case study in Tanzania, complemented by a comprehensive literature review. It concludes that institutional design is far more complex than presumed and that Ostrom's design rules tend to over-simplify the dynamics of social processes.

Nienke Beintema et al. 2008

Overview
Policy

International Assessment of Agricultural Knowledge, Science and Technology (IAASTD)

Global Summary for Decision Makers. 41 p. www.agassessment.org/docs/Global_SDM_060608_English.pdf

The International Assessment of Agricultural Knowledge, Science and Technology for Development was convoked to analyse the main challenges in and present options for sustainable agricultural development.
The present synthesis explicitly mentions the importance for innovative institutional arrangements, such as regional networks and public-private consortia, among other things, to ensure secure access to resources, credit and markets for all stakeholders. They must be combined with political commitment and sufficient resources to support the costs of interaction between partners.

Stephan Rist, Mani Chidambaranathan, Cesar Escobar, Urs Wiesmann and Anne Zimmermann. 2007

Case studies

Moving from sustainable management to sustainable governance of natural resources

The role of social learning processes in rural India, Bolivia and Mali. In: Journal of Rural Studies 23(1):23–37.
http://dx.doi.org/10.1016/j.jrurstud.2006.02.006

The concept of sustainable governance of natural resources is a further development of sustainable resource management, one that takes into account the interaction between scientific and non-scientific stakeholders and their different values and norms. The inclusion of this dimension, achieved through social learning processes, enhances sustainability.
Beyond introducing the approach, the paper presents three case studies where sustainable resource governance was put into practice. The results are promising in all three cases, while the greater demands on time and financial resources are counted among the most important constraints.

Anke Fischer, Lorenz Petersen and Walter Huppert. 2004

Instruments
Overview

Natural Resources and Governance: Incentives for Sustainable Resource Use: Manual

Deutsche Gesellschaft für Technische Zusammenarbeit GTZ. Eschborn. 64 p.
www.gtz.de/de/dokumente/en-governance-nat-resources.pdf

The overexploitation of natural resources is often due to governance failures and wrong incentives. And, even if the experiences in this domain come from various sectors and settings, the underlying problems are often alike. This manual offers concrete help in identifying governance problems at the root of natural resource management in development cooperation. It presents a conceptual framework that is applicable to most different contexts, defining the right use of incentives as a vital element in better governance.

Graham R. Marshall. 2008

Overview

Nesting, subsidiarity, and community-based environmental governance beyond the local level

International Journal of the Commons 2(1):75–97. www.thecommonsjournal.org/index.php/ijc/article/viewFile/50/19

There is a growing trend to extend the community-based natural resource management approach beyond the local level and to apply it in regional or national settings. But how can this be done successfully?
The author provides a theoretical basis by placing the terms "nesting," "subsidiarity," and "community-based governance" in the relevant context. He summarizes the main challenges and difficulties occurring during implementation and proposes ways to overcome them, illustrating these with case studies from Australia. Particular emphasis is given to the capacities required for each stakeholder group and to the time needed for developing these capacities.

Boniface P. Kiteme and Urs Wiesmann. 2008

Case studies

New institutions for managing scarce water resources – the case of Mount Kenya

Unpublished paper; for more information please contact Susanne.wymann@cde.unibe.ch

Water resources in the Mount Kenya region have been in decline for various reasons. A new policy tries to avoid the continuation of this crisis by separating the water sector into policy, management and services, and by linking the local level to the national through the creation of Water User Associations and other nested institutions. The paper examines the effectiveness of this new policy in the case of the Ewaso Ngiro Catchment. Focusing on the institutional arrangement, it highlights positive results and provides the reader with lessons learned.

Marylaure Crettaz. 2006

Case studies

Normatividad local en la gestión de los recursos naturales: Casos de estudio en: Ecuador, Perú y Bolivia

Intercooperation Andes. La Paz, Bolivia. 66p. www.bosquesandinos.info/biblioteca/ECOBONA_0172.pdf

In the Andean Region, the management of natural resources is rooted in traditional practices and values and regulated by norms developed by the local communities. In the course of the decentralization process, these norms must be linked to other decision-making levels and integrated into national policies. How can this be achieved? This study analyses three case studies in Bolivia, Ecuador and Peru. The recognition of common characteristics between the cases allows the authors to identify key success factors and promising practices from an environmental, social, political and legal point of view.

Marc Galvin and Tobias Haller (eds). 2008

Overview
Case studies

People, Protected Areas and Global Change: Participatory Conservation in Latin America, Africa, Asia and Europe

Perspectives of the Swiss National Centre of Competence in Research (NCCR) North-South. Vol. 3. Geographica Helvetica. University of Bern. 560 p.
www.nccr-north-south.unibe.ch/publications/Infosystem/On-line%20Dokumente/Upload/Galvin_Haller_NCCR_People_Protected_Areas_2008.pdf

Participation has been promoted as a promising approach for the management of most protected areas around the world, deeply affecting their institutional settings. But the expected results do not correspond to the expectations: Hardly any economic gains and insufficient political empowerment for the local populations, and when there is environmental success at all, it is combined with high costs. This study analyses and compares 13 cases from around the world, focusing on the development of the participatory approach in terms of institutional change. In its conclusions it identifies the creation of common institutional ground as a key element in success.

Nguyen Ngoc Thang, Patrick Rossier, Hans Schaltenbrand and Patrick Sieber. 2008

Case studies

Safeguarding Multifunctional Forest Ecosystems in Viet Nam: Introducing Village-level Community Forest Management (CFM)

Mountain Research and Development 28(2):196–201.

www.bioone.org/archive/0276-4741/27/3/pdf/i0276-4741-27-3-196.pdf

Along with the political and socioeconomic changes that took place in Viet Nam in the 1990s, the new land law and the forest protection and development law made it possible to increase local community involvement in forest management. The association of local level institutions with national policy was further enhanced by subsequent laws and arrangements. The article describes the contribution of development cooperation to this process: a project led by the Swiss NGO Helvetas introduces key stakeholders from different villages to the concept and the implementation of community forest management and extension. The experience gained in the course of action contributes to the generation of appropriate long-term policies which, in their turn, support local initiatives.

David W. Cash, W. Neil Adger, Fikret Berkes, Po Garden, Louis Lebel, Per Olsson, Lowell Pritchard and Oran Young. 2006

Overview

Scale and Cross-Scale Dynamics: Governance and Information in a Multilevel World

Ecology and Society 11(2). www.ecologyandsociety.org/vol11/iss2/art8/

Understanding of the complex interactions between and within scales and levels is an essential element in successfully facing the challenges posed to humanity by environmental change. After defining the terms “level” and “scale,” the synthesis paper introduces the reader to these complex dynamics. It identifies three main challenges, namely ignoring the dynamics, connecting inappropriate scales and/or levels, and assuming that one single set of solutions is enough to address the problems. It then presents and comments on social and institutional responses already identified: institutional interplay, co-management through power- and responsibility-sharing between governments and local communities, and organizations intended to facilitate the co-production of knowledge between different levels and scales.

Grazia Borrini-Feyerabend, Michel Pimbert, M. Taghi Farvar, Ashish Kothari and Yves Renard. 2004

Instruments

Overview

Sharing Power: Learning-by-doing in Co-Management of Natural Resources Throughout the World

Cenesta, Tehran. IIED and IUCN/ CEESP/ CMWG.

http://cms.iucn.org/about/union/commissions/ceesp/ceesp_publications/sharing_power.cfm#sp_contents

In the course of history, the management of natural resources has passed from the hands of traditional societies to those of centrally powered systems, causing the disempowerment of local communities and more damage than good to natural resources. Co-management has then emerged as a way to combine traditional and modern expertise in a fair partnership between various stakeholders with different values and concerns.

The present publication provides a comprehensive presentation of the concepts, the phases and the most important instruments in the implementation of a co-management system, illustrated with a wealth of case studies from North and South.

Carl Folke, Lowell Pritchard, Fikret Berkes, Johan Colding and Uno Svedin. 2007

Overview

The Problem of Fit between Ecosystems and Institutions: Ten Years Later

Ecology and Society 12(1):38 www.ecologyandsociety.org/vol12/iss1/art30/

The interaction between ecological and socioeconomic systems crosses temporal and spatial scales and transgresses institutional and organizational structures. To deal with this complexity, the authors propose the “adaptive management” approach, which is characterized by the use of nested institutions and flexible learning processes. Furthermore, they recommend options for future research. The article is a revisited version of a background paper written by the same authors about ten years ago.

Gimbage Mbeyale and Patrick Meroka. 2005

Case studies

Ujamaa Policy and Open Access in Pangani River Basin and Rufiji Floodplain, Tanzania

and Tobias Haller. 2005

Institutions for the Management of Common Pool Resources in African Floodplains: The AFWeP Research Project

The Common Property Resource Digest(74):21. www.indiana.edu/~iascp/E-CPR/cpr74.pdf

Floodplains in Africa are rich in natural resources. These have been managed mainly as common pool resources,

based on various institutional settings of mostly local and traditional character. Changes in political regimes and, as a consequence, changes in natural resource management, have created great pressure on the resources, resulting in conflicts and degradation.
Case studies, like the present one from Tanzania, portray institutional settings of floodplain management in various constellations.

Elinor Ostrom. 2005

Overview

Understanding Institutional Diversity

Princeton University Press. 376 p. The book is not available online, except for a few chapters which can be viewed at: http://books.google.com/books/princeton?hl=en&q=&vid=ISBN0691122385&btnG.x=7&btnG.y=13

Human behaviour is as diverse as the situations of contemporary life and depends on a multitude of factors such as values, context, etc. Accordingly diverse are the institutions humans build, and the ways these bodies function. Based on extensive research, E. Ostrom's textbook presents the Institutional Analysis and Development Framework, a method for understanding institutions for common pool goods. From the three clusters defined by the framework, namely rules, the biophysical world and the community structure, the book focuses on the rules. It analyses and classifies them, and offers advice on using them for designing or improving existing institutions.

Susanne Wymann von Dach. 2007

Case studies

Water sector reform in Kenya: First experiences are positive

Interview with M. Maalim, Permanent Secretary of the Kenyan Ministry of Water and Irrigation. InfoResources. 5 p. www.inforesources.ch/pdf/maalim_interview.pdf

The process to reform the Kenyan Water Sector required several years. The new Water Act 2002 defines common policy and regulations but separates water resource management from service delivery and decentralises decision-making to the most appropriate level. In this interview, the former Permanent Secretary of the Kenyan Ministry of Water and Irrigation describes the process and the outcomes.

Tobias Haller and Sonja Merten. 2008

Case studies

"We are Zambians – don't tell us how to fish!"
Institutional Change, Power Relations and Conflicts in the Kafue Flats Fisheries in Zambia

Human Ecology, Vol. 36, No. 5. 699–715.
www.springerlink.com/content/11411um38q05035r/?p=dc87cc0f769642bb83550d7baf59a79c&

The evolution of common property regimes, which have been subsequently overruled by statal arrangements before ending up in open-access situations and conflicts, is illustrated in this case study from Zambia. The authors pay particular attention to the historical context, the power relations and the ideologies used by the stakeholders as crucial elements in the outcome of institutional changes. They highlight the contradiction consisting of the presence of the state in the form of rules and regulations, on the one hand, and its simultaneous absence, when these rules have to be enforced, on the other.

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