Food and Agriculture Organization of the United Nations

LAND AND WATER DIVISION
WORKING PAPER
16b

Toolkit for the application of Green Negotiated Territorial Development (GreeNTD)

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Abbreviations and acronyms

CDA	Capacity Development Assessment
CLM	Conflict Layer Model
CLCOP	Producers Organisations of local consultation structures
CM	Collaboration Matrix
CMR	Conflict Map of Resources
CNCR	National Council for Rural Consultation and Cooperation
CORT	Collaborative Outcomes Reporting Technique
CRCOP	Regional Consultation Forums
CSOs	Civil Society Organizationsw
CTL	Conflict Time Line
DPSIR	Driving force, Pressure, State, Impact and Response
DRC	Democratic Republic of Congo
EEA	The European Environmental Agency
EC	Experience Capitalization
ES	Ecosystem Services
ESA	Environmentally Sensitive Area
FAO	Food and Agriculture Organization of the United Nations
FGD	Focus Group Discussion
FGD	Focus Group Discussion
GA	Governance Analysis
GRM&E	Gender Responsive Monitoring and Evaluation
GIS	Geographical Information System
GGreeNTD	Green Negotiated Territorial Development
INGOs	International Non-Governmental Organisations

IPCC	The Intergovernmental Panel on Climate Change
LADA	Land Degradation Assessment in Drylands
MaB	Man and the Biosphere Program
MEA	Millennium Ecosystem Assessment
M&E	Monitoring and Evaluation
MSC	Most Significant Change
NAP	Australian Government National Action Plan for Salinity and Water Quality
NGO	Non-Governmental Organisation
NHT	Australian Government Natural Heritage Trust
NNRR	Natural Resources
OECD	The Organization for Economic Co-operation and Development
OS	Open Space (Technology)
PGIS	Participatory Geographical Information System
POs	Producers Organizations
PSAOP	Agricultural Services and Producers Organisations Project
PT	Process Tracing
PNTD	Participatory and Negotiated Territorial Development
RAS	Rural Advisory Services
CRCOP	Regional Consultation Forums
RED-IFO	The Regionalization and Differentiation Methodology (RED) Information, Training and Organization (IFO) model
RU	Resource Unit
RVES	Rapid Valuation of Ecosystem Services
SES	Socio Ecological System
SETA	Socio-Ecological Territorial Agreement
SEU	Socio Ecological Units
SNA	Social Network Analysis

SOAWR	The Solidarity for African Women's Rights
STAREC	The Stabilization and Reconstruction Plan in Eastern DRC
TBR	Transboundary Biosphere Reserve
UN	United Nations
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNDP	United Nations Development Programme
UN-Habitat	United Nations Human Settlements Programme
USA	United States of America
WNBR	World Network of Biosphere Reserves

Executive summary

Human induced changes on natural environment are imposing major threats to many natural and modified ecosystems. In addition to that, the shrinking of natural resources and the increased competition over them is calling for a continuous renewal of the methodological approaches dealing with management decisions. Indeed, inadequate land-use planning and tenure contributes to increasing the vulnerability of communities exposed to hazards. Better land access and secure tenure enable food production and provide an incentive for landholders to invest in improving their land with soil protection measures, tree planting, improved pastures, water conservation technologies or sustainable crop production. To reduce risks, it is thus crucial to build the resilience of the natural resource base, and to promote sound environmental and natural resource management practices and the sustainable use of ecosystems.

Addressing the complexity of challenges facing rural stakeholders requires a diversity of tools, approaches, and policies which fall under the governance concept. Likewise it is critical that governance mechanisms be appropriate and accountable to the unique social, environmental, economic conditions at the local level in order to maximize the effectiveness and positive impacts of the governance approach.

The GreeNTD approach (see Land and Water Division Working Paper 16a) introduces the rationale for a socio-ecological approach and explores the synergies between ecosystem services to manage territories with a more sustainable perspective. The challenge related to power dynamics and asymmetries are then discussed, in order to highlight their critical importance for promoting a truly inclusive approach. The Toolkit presented here aims at supporting the concrete application of the GreeNTD approach in the context of natural resources management. It can be used by a variety of stakeholders and territorial development experts to promote a negotiated and agreed solution to a resource dispute, ranging from governments and companies to communities, dealers and nongovernmental organizations.

The proposed methods and tools are thought to facilitate the potential users in the implementation of the approach and to facilitate the application of the agreement. The toolkit is organized around the methodological steps of GreeNTD, starting from Phase 0: Agenda Setting, followed by Phase 1: Views – Understanding the stakeholders and the territory as a Socio-Ecological System; Phase 2: Horizons – Outlining coherent and feasible proposals for the development of the territory; Phase 3: Negotiation – Seeking consensus of a Socio-Ecological Territorial Agreement (SETA); Phase 4: Enforcement – Preparing the ground to guarantee the application of SETA and Phase 5: Monitoring and Evaluation – Capitalizing from Experience.

The toolkit does not provide narrow steps to be followed as a recipe, but rather a set of various methodological options and examples of tools that can support the process, related to its various key aspects.

Toolkit objectives

The Toolkit aims at supporting the application of the Green Negotiated Territorial Development (GreeNTD) approach for the management of natural resources (land, forest and fisheries) and provides guidance on intervention strategies. It can be used by a variety of stakeholders and territorial development experts to promote a negotiated and agreed solution to a resource dispute, ranging from governments and companies to communities, dealers and nongovernmental organizations.

The GreeNTD is based on a socio-ecological territorial development methodology that supports a wide stakeholder's engagement in seeking progressive territorial consensus through a holistic, bottom-up and negotiated vision. The final objective is to get an agreed, socially legitimate and sustainable use and management of natural resources whilst safeguarding the ecosystem, current and future.

The proposed methods and tools are thought to facilitate the potential users in the implementation of the approach and to facilitate the application of the agreement.

The toolkit presents a set of tools to be used in various steps of the territorial development interventions within the GreeNTD framework, providing practical examples to support their implementation. It is intended to facilitate the implementation of a "learning by doing" process, designed by a progressive adoption of the proposed tools, depending on the context, resources and the level of complexity to deal.

The toolkit does not intend to provide narrow steps to be followed as a recipe; it rather proposes a set of various methodological options and examples of tools that can support the process, related to its various key aspects.

Guiding principles

One of the basic objectives of the GreeNTD framework is to create the conditions to bring stakeholders to a negotiation table in order to discuss various options to foster the territorial development, by guaranteeing fundamental human rights, gender equality and safeguarding the most sustainable ecosystem's development.

For this reason, it is necessary to ensure the commitment of the largest number of stakeholders at earliest in the process, in order to capture their vision and benefit of their knowledge of the territory.

The GreeNTD framework is built on clear and well-tested methodological principles, namely:

Inclusive practice, based on mutual respect it encourages the maximum stakeholder's engagement, promoting broad participation, especially of the most vulnerable groups into the decision-making process. This contributes to establish bridges between different knowledge systems, supporting the knowledge sharing, and enhancing trust between stakeholders in order to facilitate a constructive dialogue.

Transdisciplinary focus on joint learning of all actors, linking technical and local knowledge. Therefore, it emphasizes relationships between the different dimensions (economy, cultural, politics, ecology, etc.), visions and perceptions of territory.

Negotiation, to actively involve stakeholders with different territorial development objectives, and increasingly engage them in the decision making process.

Gender focus, targeting vulnerable groups while empowering women to gain greater voice to overcome inequality.

Iterative, arriving at the decision/result by repeating rounds of analysis with the objective of bringing the decision/result closer to discovery with each repetition (iteration). The iterative process "cycles" through its phases, from gathering requirements and information on the initial problem/issue therefore expanding its boundaries gradually adding new elements to the analysis. It helps in delivering functionality and reaching a better result and is generally used when the decision is not easily revocable or where the consequences of revocation could be costly.

Scalable, since it starts from the local context, but can also be applied at the district, state, national and regional contexts, in accordance with the extent of the interests at stakes and different stakeholders' needs.

Framing the GreeNTD process

GreeNTD, "a people centered, process-oriented socio-ecological territorial development approach", implies a set of challenges:

Engagement of different stakeholders	---------->	*The most vulnerable and the most powerful*
Moving away from the rhetoric of participation	---------->	*Participate to empower*
Right to access to information	---------->	*Transparency and equity*
Balancing basic human rights	---------->	*Quality of life to all people*
Securing a healthy environment	---------->	*Defend and protect the environment and all forms of life*

Gendering contents and gaining equality in territorial development is crucial in order to make the intervention sustainable, through:

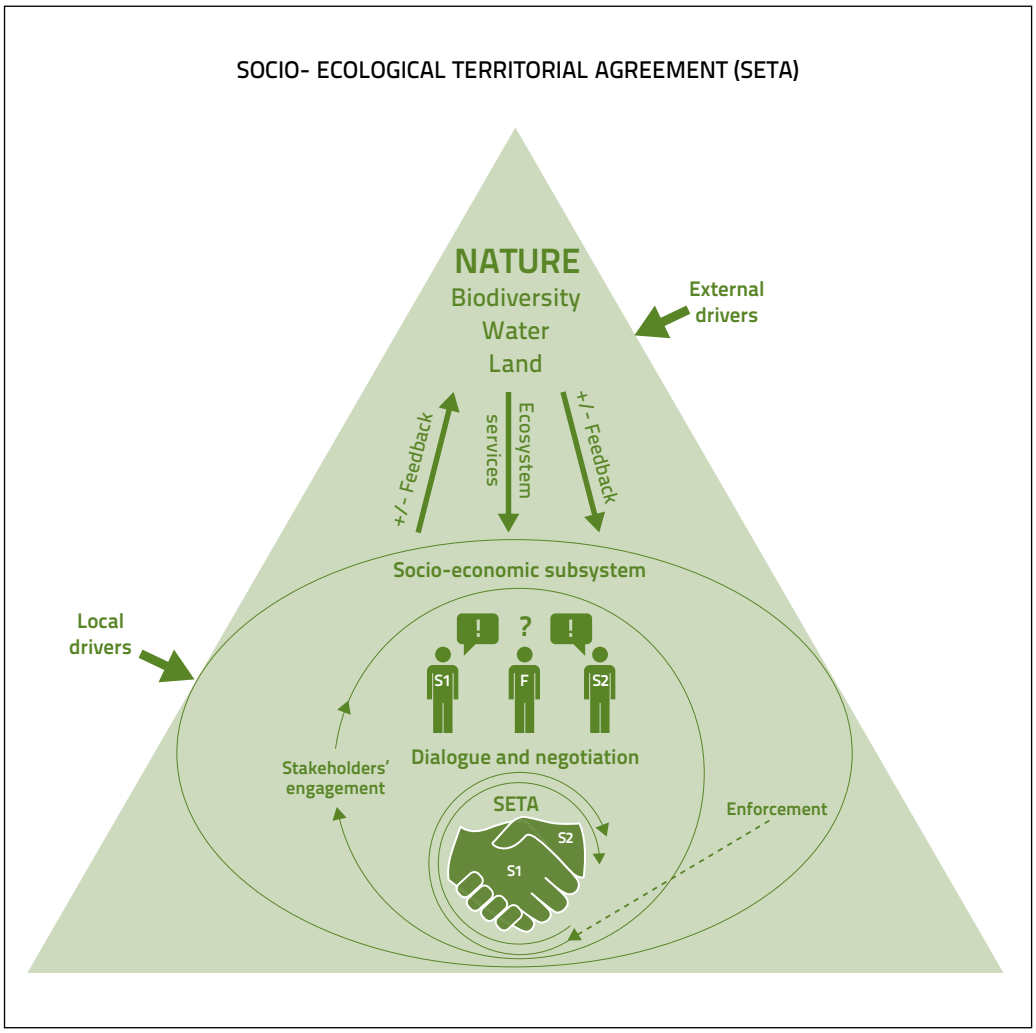
1) Awareness-raising; and collection of gender-sensitive data;
2) Acknowledging gender dimension and impact;
3) Introducing equality targets in decision-making bodies; enhancing women's visibility.

Focusing on understanding the different gender roles, responsibilities and relations, and how these are managed, the approach assists development actors to promote gender equality in access and manage land and natural resources.

Governance arrangements in the way that each one of the involved stakeholders can contribute to the sustainable development of the territory, where interests, power, stakeholders, and institutions interact and are managed to pursue common good for society. Responsive local governments and inclusive local governance are essential building blocks of improving social and ecological resilience through local arrangements that build legitimacy.

The approach promotes a parallel, complementary process of strengthening the weaker stakeholders – whoever they are -, and enabling them to actively participate in the decision-making processes. In particular, it deals with different/conflicting demands and interests posed by a variety of stakeholders, by using a combination of various approaches drawing from experiences of several FAO technical units and of other UN agencies experiences

The figure 1 shows a conceptual representation of the approach, with the common interactions between ecological and social system components. The ultimate objective is to minimize the human impact on the natural systems



Natural resources are at the basis of almost all the ecosystem services1[1], and provide a range of benefits to enhance socio-economic subsystems, which are the basis of the human livelihoods and well-being. On the other side, policy choices and human actions may result in either positive or negative impacts on the ecosystems' structures and functioning. Moreover, diverse stakeholders, with their own vision/interests, and differentiated power positions determine the use and management of ecosystem services and its impact on the ecosystem services flow (Felipe-Lucía *et al* 2015). Thus, the social system drives environmental management, establishing the management and use of ecosystem services and conditioning the ecosystem integrity. Finally, a broad range of factors (namely drivers[2]) lead directly and indirectly to changes in ecosystems, ecosystem services, and human well-being. The proposed approach is not exclusively

[1] Humankind benefits in a multitude of ways from ecosystems. Collectively, these benefits are becoming known as ecosystem services.

[2] A driver is any natural or human-induced factor that directly or indirectly causes a change in an ecosystem. A direct driver unequivocally influences ecosystem processes and can therefore be identified and measured to differing degrees of accuracy. An indirect driver operates more diffusely, often by altering one or more direct drivers, and its influence is established by understanding its effect on direct drivers (Leemans *et al.* 2003)

outcome-oriented; the focus is on the process of engaging relevant actors, opening the dialogue at various political/institutional levels, with the goal of finding a common ground to build consensus by confronting the stakeholders' different interests and guided them towards a negotiated socially legitimized agreement (SETA). Enforcement involves the presence and ability of state-backed institutions to both guarantee rights of different stakeholders and to ensure the application of the SETA.

The GreeNTD approach serves both the purpose of (a) understanding the territorial complexity and (b) designing the most suitable development territorial model. This approach is adaptable to different scales of interventions and to various categories of stakeholders, namely: policy-makers; managers; communities; entrepreneurs and non-governmental organizations (NGOs); and those who supply expertise and economic resources, including academics, government scientists, consultants, investors and donor agencies. It is designed to primarily respond to the demands arising from different local contexts in which it is applied.

The tools in detail

This section provides a step-by-step guide to support the implementation of the GreeNTD. Before starting the process, it is necessary to take the time to define the agenda of the process, namely, the phase 0 - Agenda setting.

Who will use the tools?

The tools presented are intended to be used by the GreeNTD multidisciplinary team. Capacity development is fundamentally about improving the team members' abilities to make informed decisions regarding the suitability and appropriateness to use or not a specific tool and, to implement the different techniques and methodologies described.

The phases of the process

The different phases are closely linked in the sense that they support and feed into one another as an iterative process. For each phase (a colour is associated to each phase) a brief explanation followed by useful tools and some examples is presented.

The first phase (Views) aims at exploring the territory as socio-ecological system (SES), to provide the basis for outlining coherent and feasible proposals for territorial development in the second phase (Horizons). This will be further discussed and developed in the third phase (Negotiation), to be reiterated until reaching an agreement that will be applied in the fourth phase (Enforcement).

The fifth phase (Experience capitalization), allows continuous learning from each phase and feeding back the process. On-going reflection on activities and emerging

FIGURE 1
The GreenNTD iterative process

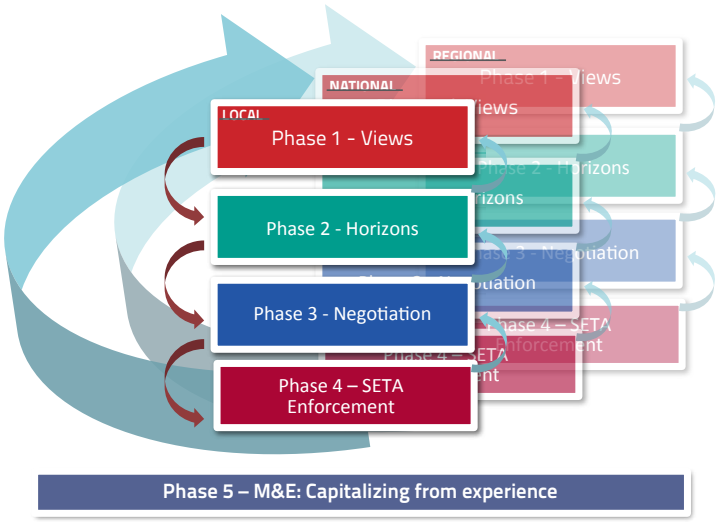
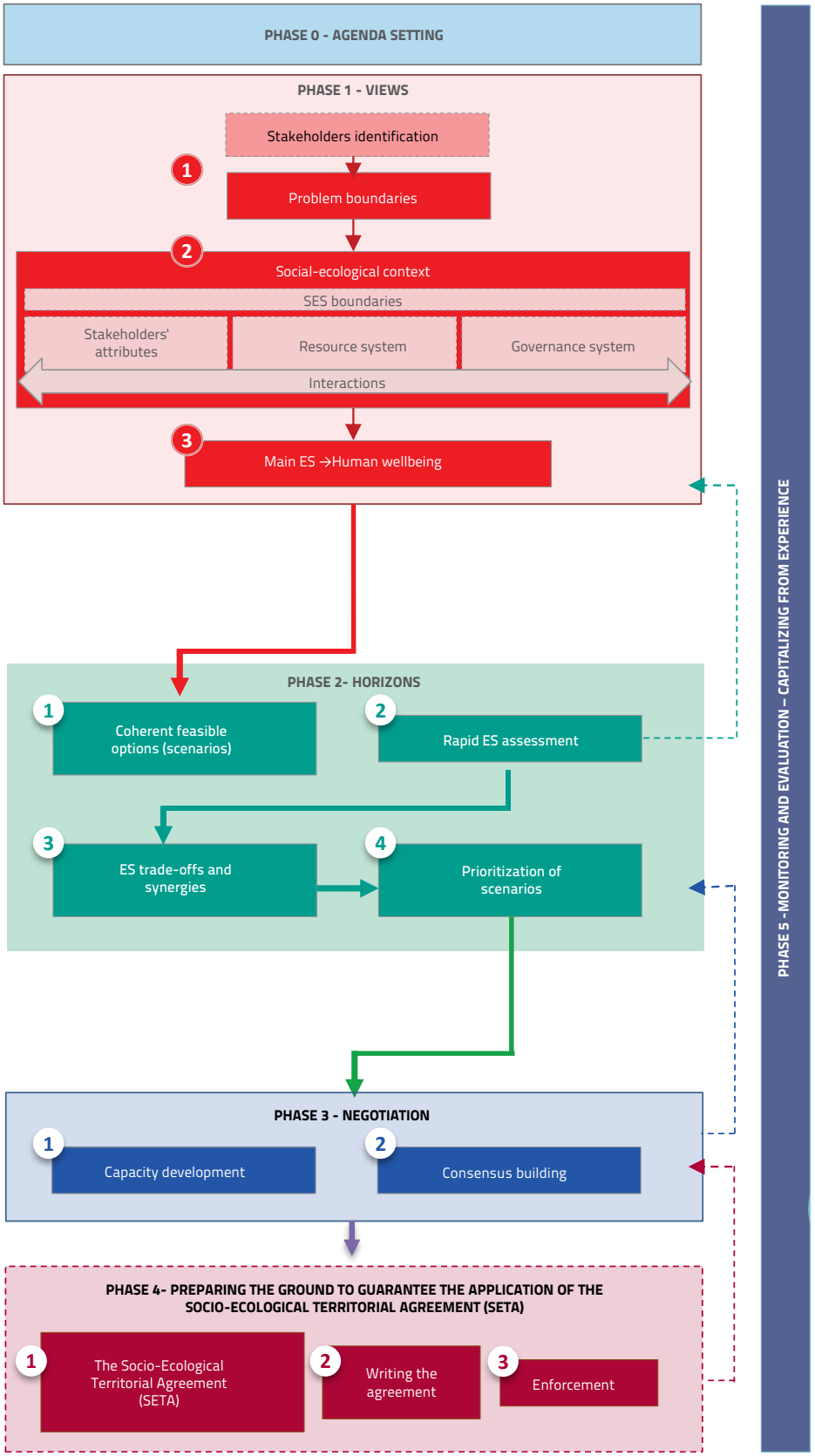


FIGURE 2
Flow chart illustrating the main steps of the overall process



Phase		Expected results	Tools
0	**The Agenda setting**	R.0.1 Set the agenda of the process	#1 Open Space Technology (OST)
1	**Views** Understanding the actors and the territory as a socio-ecological system	R.1.1 Stakeholders identification	#2 Focus Group; #3 Semi-structured interviews; #4 Snowball sampling
		R.1.2 Problem boundary definition	#5 Situational analysis; #6 Conflict Timeline; #7 Conflict map of Resources
		R.1.3 Socio Ecological System (SES) understanding	**Socio ecological boundaries:** #8 Socio Ecological Unit; **Stakeholder attributes:** #9 4R-matrix analysis; #10 power/interest matrix; #11 Social Network analysis **Resource system:** #12 Resource unit (RU); #13 Participatory Geographical Information System (PGIS) **Governance system:** #14 Governance analysis
		R.1.4 Acknowledging interactions between key SES components	#R15 Conceptual diagram
		R.1.5 Main ES and links with human wellbeing identification	#16 Rapid valuation of Ecosystem Services (ES) #17 Driver-Pressure-State-Impact-Response (DPSIR)
2	**Horizons** Outlining coherent and feasible proposals for the development of the territory	R.2.1 Coherent feasible options	#18 Scenario development #19 Trade-off and synergies of ES
		R.2.2 Scenario prioritization	#20 Alternative selection
3	**Negotiation** Seeking consensus for a Socio-Ecological Territorial Agreement (SETA)	R.3.1 Rule of the game and negotiation platform	#21 Capacity development assessment
		R.3.2 Consensus building	#22 The Conflict Layer Model (CLM) #23 Group decision making #24 Collaboration Matrix (CM)
4	**Enforcement** Preparing the ground for the application of the SETA	R.4.1 Establishment of the requirements for the implementation of the agreement	#25 Writing the agreement #26 The Regionalization and Differentiation Methodology – Information, Training and Organization (RED-IFO) model
5	**M&E** Capitalizing from experience	R.5.1 Assessment and reporting of outcomes	#27 Collaborative Outcomes Reporting Technique (CORT) #28 Process Tracing (PT) #31 The Most Significant Change (MSC)
		R.5.2 Capitalization and keeping track of the main achievements	#30 Experience capitalization (EC)

experiences is expected to produce a collection of lessons focusing on the different phases of the process, the tools and support needed, including considerations on how it can be adopted and institutionalized (Figure 1). Once the agreement has been reached and applied, back to the first step (blue arrow) the process will start again at a different scale by adding a degree of complexity related to the level of implementation (i.e. to the local, national or even regional level).

Next figure shows schematically the overall process with the main steps of each phase.

The table below shows for each phase the expected results and the proposed tools to be used depending on the context and the level of complexity of the problem addressed.

PHASE 0: AGENDA SETTING

The agenda setting is the stage in which problems are identified. It aims considering a social problem as a policy problem. Two questions should be kept in mind for the agenda setting:

- What factors might catalyse the process?
- Where to start from?

The first question helps in understanding which factors help to catalyze problem(s) in the policy agenda.

The second question refers to the difference between issues at stake (competing interests) and issues, which can be used to initiate a dialogue among the parties since are perceived as less conflictive and that can be solved in a shorter period of time. The latter represent a core component of the initial agenda since the dialogue starts with them. It is important to focus on an issue that can be solved in a short period of time and with limited resources in order to start promoting the confidence building process amongst concerned actors.

TOOL #1 OPEN SPACE TECHNOLOGY

Purpose

Open Space Technology (OST)[3] is a way to run meetings (Owen 1993) and it has revealed useful in situations that present a high degree of complexity, diversity, conflict and urgency. The goal of OST is to create time and space for people to engage deeply and creatively around issues of their concern, in a way that does not result imposed which allows them to participate in the discussion and share transformative experiences.

The OST does not require to provide with a fixed agenda in the invitation of participants. It rather suggests to include in the invitation a leading question or a brief description of the issue to be discussed. In this way invitees can decide if to participate or not. Also list of invitees is element that, according to the OS methodology can

[3] www.openspaceworld.org; see also: Nauheimer (2005)

help invitees in deciding whether to participate or not in the meeting. The GreeNTD Facilitation Team will therefore make sure that all invitees know the topic of discussion and who are the possible participants. Participants will then choose agenda items and divide into discussion groups, one for each topic if needed. This allows participants to create and manage their own agenda of parallel working sessions around a central theme of strategic importance. People then choose which session they are most drawn to, bringing enthusiasm and commitment for the conversation and future action.

Open Space Technology operates under four principles and one law which help to create a powerful process motivated by the personal responsibility of participants to follow their passion and interest. The principles are: 1) *Whoever comes is theright people,* which reminds people that it is not important the number or level of participants. The fundamental requirement is people who care to do something. And by showing up, that essential care is demonstrated. 2) *Whatever happens is the only thing that could have,* keeps people focused on the here and now, and eliminates all of the if, how could could-have-been, should-have-been or might-have-been. 3) *Whenever it starts is the right time* highlights that inspired performance and genuine creativity rarely pay attention to the clock. They happen (or not) when they happen. 4) *Lastly, When it's over it's over.* In a word, do not waste time, do what you have to do, and when it is done, move on to something more useful.

The law is the so called Law of Two Feet, which states simply, if at any time during our time together you find yourself in any situation where you are neither learning nor contributing – use your two feet, go someplace else. Such a place might be another group, or even outside into the sunshine. No matter what, do not sit there feeling miserable.

Although Open Space Technology event has no pre-determined agenda, it must have an overall structure or framework. This framework is not intended to tell people what to do and when. Rather, it creates a supportive environment in which the participants can solve those issues for themselves. Minimal elements of this framework include: Opening, Agenda Setting, Open Space, and Conclusion. These elements will suffice for events lasting up to a day. Longer events will require the addition of Morning Announcements, Evening News, and probably a Celebration (Owen 1993).

Application

Steps:

1. Prepare the room with chairs in a circle, pieces of paper and pens in the centre, numbers or letters around the room/space to indicate where conversation locations, a marketplace where participants will post their topics/agenda items indicating round number, time and location.

2. Group gathers in circle, and the facilitator welcomes participants, sets the context for the conversation, and reiterates the leading question/description of the topic of the meeting.

3. The facilitator supports a group check, the presentation of participants.

4. The facilitator provides an overview of the process and explains how it works.

5. The facilitator after having described the topic of the meeting/posed the leading question, invites participants (named "callers") with questions/ideas/ issues of concern to come into the circle write it on a piece of paper their point and announce it to the group. The facilitator declares the marketplace open, moving alongside the marketplace to allow people the time and space to make their call.

6. Callers post a question on the board of the marketplace and return to the circle

7. Once the group has raised all topics/questions/issues for discussion, if needed participants are divided into groups and the facilitator ensures that they are aware of the conversation locations and timing of rounds of conversations in the different groups.

8. The group moves into rounds of conversations using the marketplace to guide their participation. Callers will ensure a harvest of conversations occurs either by taking notes or asking for assistance.

9. Following the final round, participants return to circle and the facilitator invites people to share comments, insights and commitments arising from the process

10. Closing and checking-out.

Opportunities and constraints

Open Space Technology is an excellent meeting format for any situation in which there is a real issue of concern, diversity of stakeholders, complexity of elements, high potential or actual conflict, and a need for a quick decision.

Open Space Technology can be used in groups of 5 up to more than 100 – and probably larger. It is important to give enough time and space for several sessions to occur.

Tool #1 example: Participation of local communities in the formulation and the implementation of the management plan or policy of the Monviso Biosphere Reserve[A]

The Regional Park of the Po Cuneese (Italy) and the Parc Naturel Régional du Queyras (France) are connected by the French-Italian border and, mostly important, by historical cooperation and ecological connectivity. This link, therefore, and the territorial contiguity of the two areas, led the two Parks to start a process aiming at jointly proposing their site as "Transboundary Biosphere Reserve" (TBR).

The whole nomination process in 2012/2013 undertaken by the parks of the Po Cuneese and Queyras for the Monviso nomination to the World Network of Biosphere Reserves (WNBRs) has been developed at the same time both at national and transboundary scale On October 2012, the Po Cuneese park organized in Saluzzo (NO), at its premises, a meeting dedicated to the presentation of the activities carried on within the national nomination and to further promote the TBR proposal.

To achieve the TBR objectives, thematic working groups between technicians of the parks will meet. These groups will deal with conservation of natural areas; eco-tourism; environmental education and interpretation; TBR Communication; Scientific research and logistics. Other working groups will be implemented according to what deemed necessary. (see more: http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/SC/pdf/MAB_national_report_Italy_MABICC26_en.pdf)

Various types of meetings were organized and designed around the needs of the specific group of participants. A high attention was always posed to the information and communication initiatives used to properly and largely promote each event. The below activities were implemented, through the OS, in order to ensure the final results:

(a) Periodic large scale public meetings were organized to present the concept of the Biosphere Reserve, its role in the given territories and the importance of the concerted actions;
(b) Specific meetings were devoted to certain categories of institutional stakeholders (e.g. mayors, local administrators), to introduce and discuss the opportunities offered by the Biosphere Reserve functions;
(c) Thematic meetings were dedicated to the discussion of specific issues (e.g. sustainable tourism, energy, etc.) designed to address specific targets of stakeholders;
(d) Press conferences and meetings were set up to target the media in order to have them well informed and involved in the entire process.

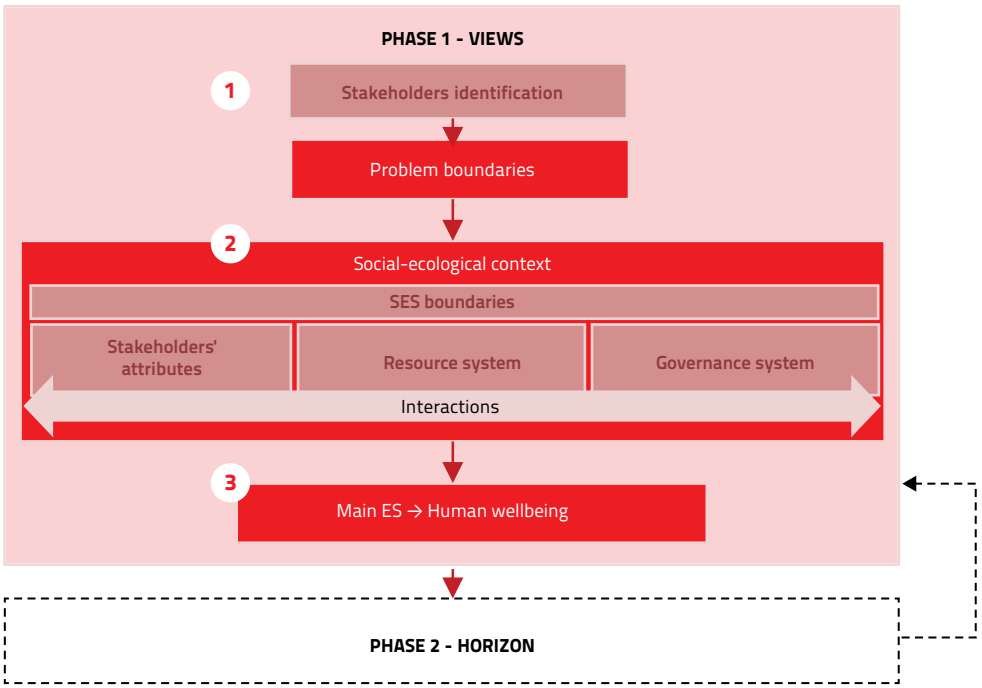
OST was the chosen methodology for each of the various types of meetings in order to optimize the time and the human resources available.
All the activities were widely promoted by properly using the media and the e-means of communication. Also at this purpose, a web site devoted to all the activities related to the UNESCO's Man and the Biosphere Programme (MAB) candidature has been activated and used for some specific on-line activities (surveys – http://www.surveymonkey.com/s/KDX665H)

[A] http://www.monviso.eu/accesso/immagini/gallery/allegati/05122012704ITdossierversioneWEB.pdf

PHASE 1: VIEWS - UNDERSTANDING THE STAKEHOLDERS AND THE TERRITORY AS A SOCIO-ECOLOGICAL SYSTEM

Figure 3 illustrates the core steps of the Views phase aimed at conducting an initial diagnostic of the territory as a Socio-Ecological System (SES).

FIGURE 3
Schematic representation of the core steps of the phase 1



Identifying stakeholders

The first step refers to the identification of the concerned stakeholders [4]- determining who they are, including their key groupings and sub-groupings.

Stakeholder's identification is the first step to assist in the definition of the problems/ issues of concern in a given area, and to understand their causes.

Tools such as focus groups, semi-structured interviews and snowball sampling, broadly capture methods of identifying stakeholders (Reed *et al* 2009)[5].

[4] Stakeholders are individuals and organizations that may be more or less likely to be involved in the process or whose interests may positively or negatively affect the process or be affected as a result of the execution or completion.

[5] http://sustainable-learning.org/wp-content/uploads/2012/01/Who%E2%80%99s-in-and-why-A-typology-of-stakeholder-analysis-methods-for-natural-resource-management.pdf.

TOOL #2 FOCUS GROUP DISCUSSION (FGD)

Purpose

A small group brainstorms about stakeholders, their interests, influence and other attributes that can help categorizing them.

Tool #2 example: stakeholder identification in Global Forest Survey[B]

The Global Forest Survey is a field based systematic forest inventory intended to collect relevant forest and forestry information on a country-by-country basis. The objective of the exercise was to provide information about the different forest user groups, to schedule interviews with. The project identified through a FGD, persons with particular knowledge about the forest, the people and the area as follows:

1. It gathered a group of local people (i.e. those who live close to the site, women, men, maybe some key-informants too), and explained the purpose of the interview. During this brainstorming session, the group was encouraged to work with paper flip charts, or similar.
2. List users or groups of people, institutions who have an interest in the forest, including external stakeholders (people not physically present, including logging companies, pharmaceutical companies etc.).
3. Ranked the individual groups, organizations and institutions.

The exercise consisted on representing the sampling site such as a box and drawn each type of stakeholder with a circle. The size of the circle represented the size of the interest to the forest.

[B] http://www.fao.org/docrep/006/ad675e/ad675e08.htm

Application

Focus groups consist of six to 12 diverse stakeholders. Participants are asked a series of carefully worded, open-ended questions on different issues of concern for community. This approach promotes self-release among participants.

The first few moments in FGD are critical: in a short amount of time the facilitator has to create a thoughtful and permissive atmosphere, provide with ground rules, and set the tone of the discussion. From the development of such open environment depends the success of the discussion.

It is important to keep cultural beliefs and community's structure in mind. Usually some stakeholders' groups, such as women, do not feel comfortable expressing their opinions in front of men from the community.

Opportunities and constraints

Rapid, cost-effective, adaptable, easy to reach group consensus over stakeholder categories, the FGD requires effective facilitation for good results.

TOOL #3 SEMI-STRUCTURED INTERVIEWS

Purpose

Semi-structured interviews consist of guided informal interview sessions, conducted with the use of checklists or a guide of questions. The interviews usually focus on individuals or on a couple of individuals at household level.

The interviewer works out a set of questions beforehand, to collect the same type of data/information during all interviews, while keeping the interview conversational. This means that the interviewer can change the order of the questions or the way they are worded as far as it will enable the collection of the required data/information.

Tool #3 example: semi-structured interviews

Key-informant and resource person interviews can provide specialized information on topics that are of overall interest to the community (e.g., information on the village or area's institutions, infrastructure, and marketing systems). They can help in categorizing the community into household categories or recommendation domains, which, being distinctly different from one another, must be explored separately in diagnosing constraints and opportunities. The key informants themselves may be chosen with the help of the village leader, development workers, or extension staff who are familiar with the area. During an interview with a farmer or other resource persons, the team may find that such person has a specific role (e.g., an office bearer of a farmers' cooperative or water-users' association or the head of a women's group) and the questioning can then focus on eliciting this individual's specialized knowledge.

The households' interviewees may either represent a complete cross-section of the community, special categories or a specific unusual type of household (e.g., those headed by women, those with irrigation in a predominantly rain-fed cropping community, or those producing market crops in a predominantly subsistence-farming area).

Application

The purpose of the interview is clarified at the beginning, to avoid misunderstandings or unfunded expectations about the study or as how the interviewees will benefit from the team's visit.

The interview is expected to begin by guiding questions like "what?", "when?", "where?", "who?", "why?" and "how?". It is conducted informally, with remarks and discussions combined with questions.

The members of the facilitation team need to be open-minded and patient and the interviewers (preferably two persons) have take notes about responses.

Consideration and constraints

Useful for in-depth insights to stakeholder relationships and to triangulate data collected in focus groups. Semi-structured interviews also allow informants the freedom to express their views in their own terms. Semi-structured interviews can provide reliable, comparable qualitative data.

However is time-consuming and hence costly; and it is difficult to reach consensus over stakeholder categories.

TOOL #4 SNOWBALL SAMPLING

Purpose:

Snowball sampling is a technique for locating information-rich key informants. It consists of individuals from initial stakeholder categories identifying new stakeholders and contacts, i.e. a few potential respondents are contacted and asked whether they know of anybody with the characteristics that you are looking for in your research.

Application

The tool helps to identify unknown stakeholders. This type of sampling tool works like chain referral. After observing the initial subject, the team members ask for assistance from the subject to help identifying people with a similar trait of interest.

The process of snowball sampling is much like asking your subjects to nominate another person with the same trait as your next subject. The facilitation team observes the nominated subjects and continues in the same way until the obtaining sufficient number of subjects

Analysis of space: opportunities and constraints

- Advantages: Snowball sampling is a type of convenience sample. Find one person who qualifies to participate, ask him or her to recommend several other people who have the knowledge/traits you are looking for, and participant list can grow from there. Furthermore, this technique helps discovering characteristics about a population unknown before. When carefully conducted, snowball sampling can provide comprehensive (though not generalizable) characterizations of unknown populations.

- Weaknesses: Sample may be biased by the social networks of the first individual in the snow-ball sample

Defining the boundaries of the problem

Once a set of initial issues have been identified, an analysis of the problem is necessary not only from a technical point of view but also from the perspectives of different stakeholders concerned.

In this step of the process, there are two important aspects to consider:

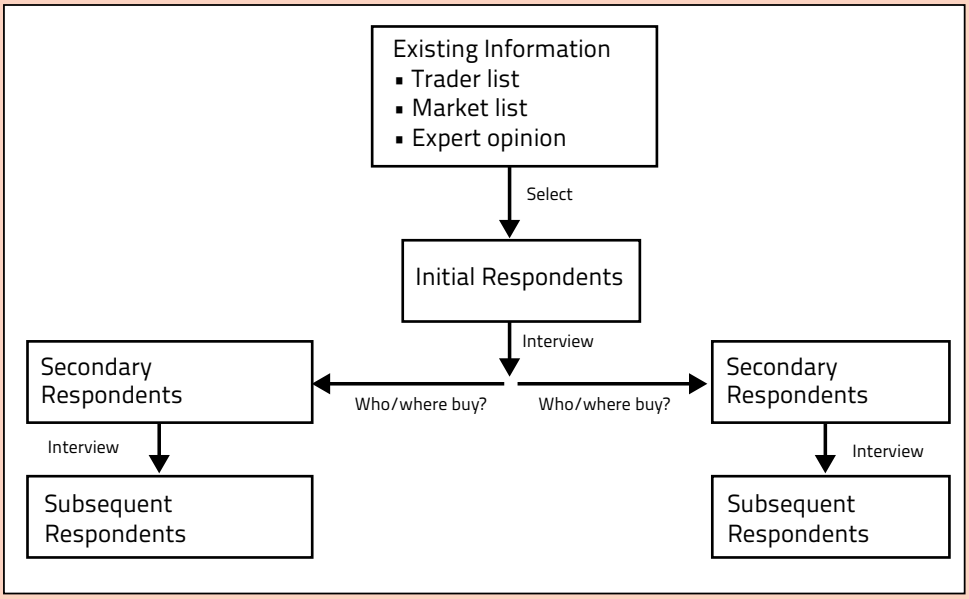
1. Becoming familiar with the issues at stake and get an understanding of the system, identifying problem(s)/main issues of concern.

2. Providing a description of the issues or problems to be addressed (an entry point), specifying the endogenous and exogenous drivers.

Tool #4 example: market chains and stakeholders involved in cross border trade of livestock (large ruminants and pigs) in the Greater Mekong Sub-Region [C]

The authors used a non-probability sampling method known as Snowball Sampling methodology to identify stakeholders and map the market chain of cross-border livestock movement

Procedure: In each of the study sites, key traders or other entry points (identified from available information from veterinary authority or previous studies) were selected as the 'initial respondent' and interviewed according to the method described under "participatory approach to data collection". The information gathered from this interview was then used to identify secondary respondents who were linked, through trade movements of livestock, to the initial respondents. This method is continued as far as possible in both 'upstream' and 'downstream' directions until the source and destination of livestock (as far as possible) where reached. Figure below outlines the process of snowball sampling as applied in this study.



A flowchart showing sample selection of the initial respondents and then how these initial respondents elect secondary respondents, and so on, using Snowball Sampling methodology

Source: Cocks *et. al.* 2009

C http://ulm.animalhealthresearch.asia/newsletters/FAO_ADB_OIE_Cross-Border%20movement%20study_Final%20Report.pdf

TOOL #5 SITUATIONAL ANALYSIS

Purpose

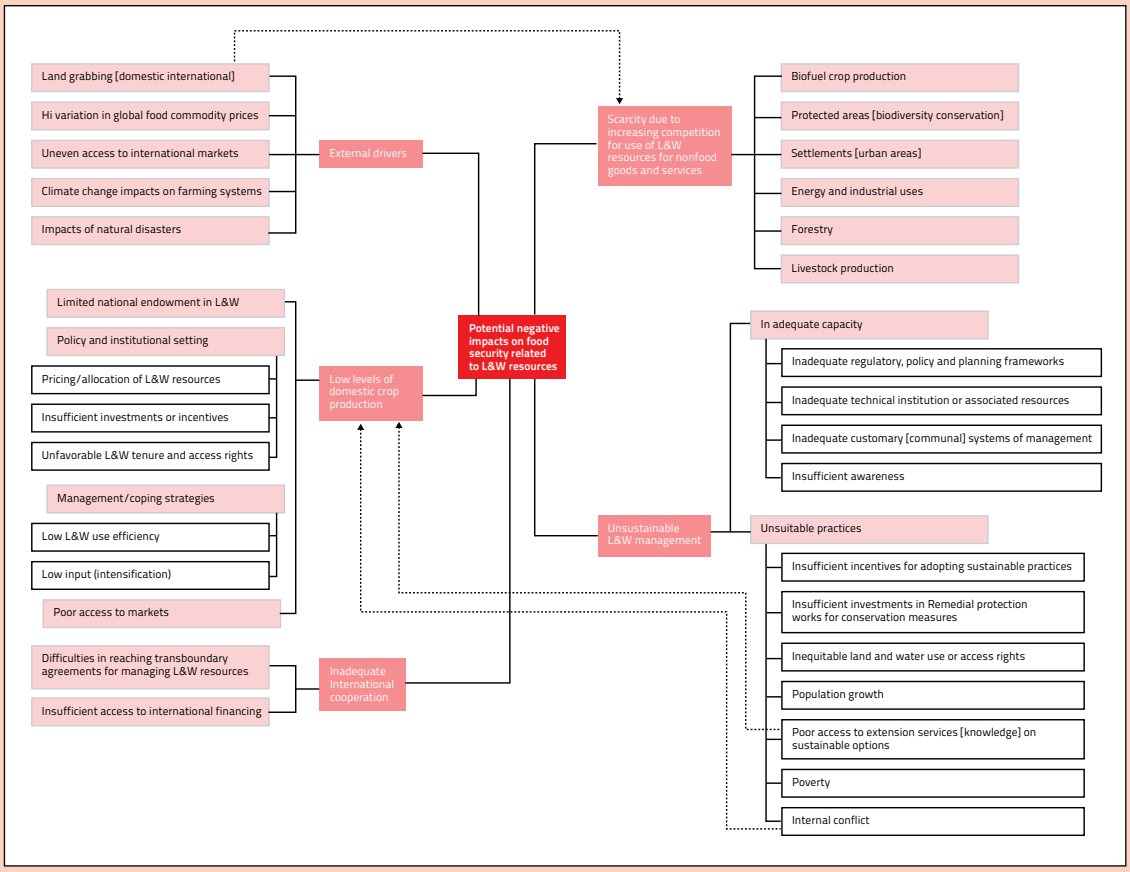
Situation analysis is an analytical and organizational tool, which can easily be used for analysing problems. It can facilitate a preliminary assessment of the situation, as perceived by the GreeNTD team, to provide a common framework for identifying and understanding the key problem(s) at stake.

Situational analysis, also called problem analysis, helps to find solutions by mapping out the anatomy of cause and effect around an issue in a similar way to a mind map, but with more structure

Tool #5 example: problem tree analysis

The problem tree shown in figure below highlights a variety of land and water problems that could hinder sustainable intensification and ultimately trigger negative impacts on food security[D]
At the highest hierarchical level, attention has been focused on the following five main contributory issues:

1. Scarcity resulting from increasing competition,
2. Unsustainable land and water management,
3. Low levels of domestic crop production,
4. Inadequate international cooperation,
5. External drivers



[D] http://www.fao.org/fileadmin/templates/solaw/files/thematic_reports/TR_15_web.pdf

For instance, the problem-tree analysis[6] systematically traces the relations of each constraint or problem to other problems in a hierarchy of cause-effect relationships, which can provide the basis for preliminary understand the general questions or problem to be addressed.

Application

This tool uses available information to analyse the major problems contributing to individual constraints (in other words, the existing situation). The main causal relationships among the problems are then visualized in a problem tree, which is a hierarchical diagram of cause-effect relationships, placing causes at lower levels of the diagram and effects at upper levels. Organizing problems into a logical sequence is expected to lead to logical conclusions and eventually to the identification of effective solutions.

A problem-tree analysis is conducted by the team members themselves together with the local stakeholders.

TOOL #6 CONFLICT TIME LINE

Purpose

This tool is used to assist stakeholders in examining the history of a conflict and to improve their understanding of the sequence of events that led to the conflict.

Application

The Conflict Time Line (CTL) is a useful tool for clarifying the dynamics of conflict in a given territory and for spelling out its key drivers/triggers. In particular, it may be useful as a warming up exercise to open space and involve stakeholders in the process of identifying and expressing interests and priorities, leading to dialogue and negotiation. Based on the CTL, it may then be possible to proceed to a root cause analysis.

The conflict time line helps to structure the narratives of the conflict and enumerate what each party has done, when and how. It shows that mediators take the stories of the stakeholder groups seriously, and helps structure the discussion and complex information flows.

The steps are the following:

1. The conflict time line can be utilized without prior explanation. When a stakeholder group narrates its story, it may be useful to structure the flow of information. The mediator can suggest writing down the sequence of events on a flip chart so that the stakeholders can verify whether the mediators have correctly understood their stories.

2. On a flip chart, write the name of the conflict. Under the conflict heading, create columns for dates and events. Ask the participants to think about specific events that led to such conflict, and when those events occurred.

3. Ask one participant to name one of the events – preferably one of the earlier events or actions in the history of the conflict. Record the date and event on the

[6] http://evaluationtoolbox.net.au/index.php?option=com_content&view=article&id=28&Itemid=134

flip chart. If some of the participants are illiterate, use symbols on the flip chart. However, precise points still need to be documented in writing.

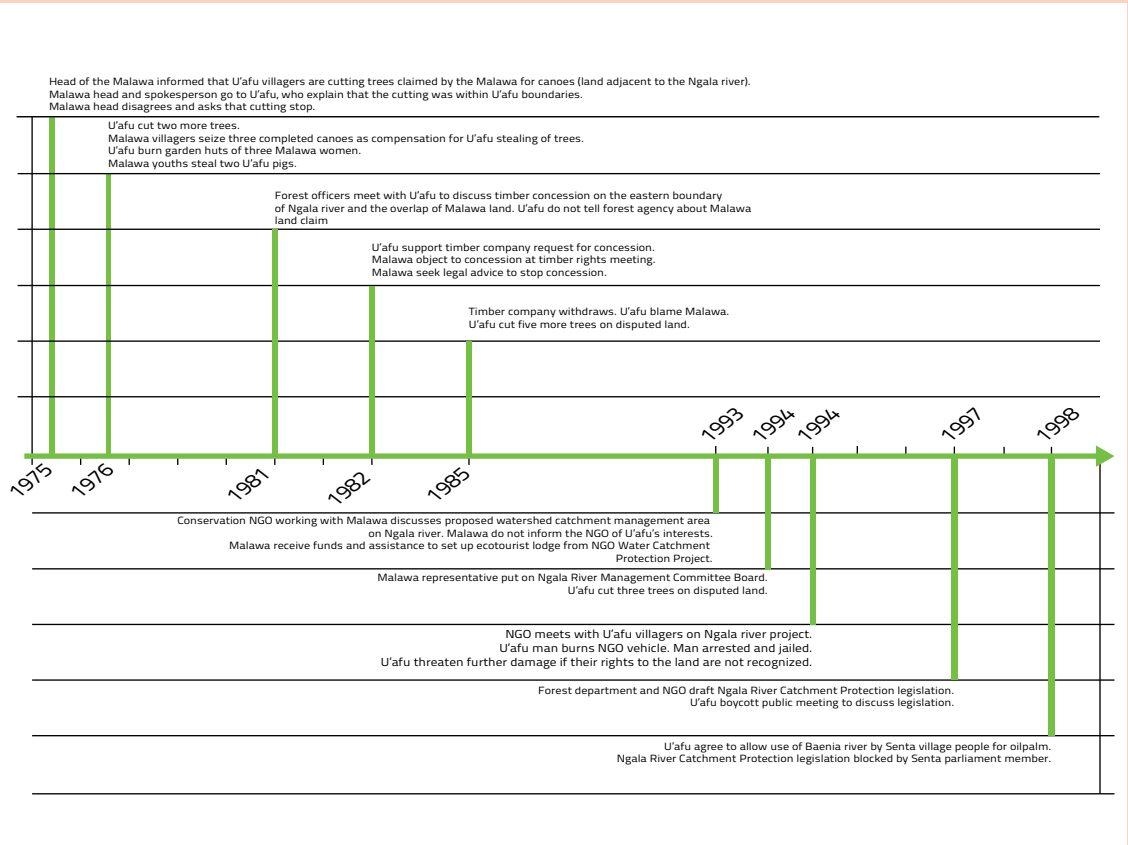
4. Ask participants for another event and record it. Continue to do so, explaining that they do not have to name the events in sequence. Check whether the participants can think of something that happened before the first events listed. The events will be recorded in the appropriate chronological order based on date. Allow each participant to contribute his/her ideas without being questioned.

5. Review and reach agreement on the events, checking the order and dates. When there is disagreement about the facts (either the date or the event), assess whether this is significant to the analysis. If the participants feel that they need to confirm the information, note this on a separate sheet as an "information need".

6. When participants appear to be satisfied with the time line record, ask them to take a moment and reflect on the history of the conflict. Start a discussion with the following questions:

   – What have you learned about the conflict from the time line?
   – What have been the most significant events in escalating or broadening the conflict? Why?

Tool #6: example: conflict Ngala river protected catchment area[E]



E http://www.fao.org/docrep/008/a0032e/a0032e0d.htm

- How have the events affected relationships among the parties?
- Why do you think the parties acted in the way they did? What were the underlying interests, fears or needs of the parties in these events?

Note on opportunities and constraints

The CTL helps conflict stakeholders to reflect on the different events that triggered the conflict and assists mediators in clarifying the chain of events. It also assists actors who are engaged in the GreeNTD process to recognize and consider areas and issues of potential or existing conflict within the socio-territorial unit, so that realistic GreeNTD proposals can be attained.

TOOL #7 CONFLICT MAP OF RESOURCES

Purpose

The Conflict Map of Resources (CMR) aims at showing where geographically land or resource use conflicts exist or may exist in the future and to determine the primary issues of conflict.

Application

Mapping is always useful for an understanding of the spatial dimension and geographic boundaries of resource conflicts. It is helpful to involve stakeholder groups in the process, structuring discussion about conflict issues and giving them a more active role in the analysis. The CMR is usefully applied during the stakeholder engagement phase. Mediators let the stakeholder group members to draw the map themselves and stimulate the process with questions.

Mapping can be carried out with one stakeholder group alone or, later in the conflict management process, with all primary stakeholders. In the latter case, drawing a conflict map may help to clarify the spatial boundaries of conflict among different stakeholders as a preparation for assessing options.

The steps are the following:

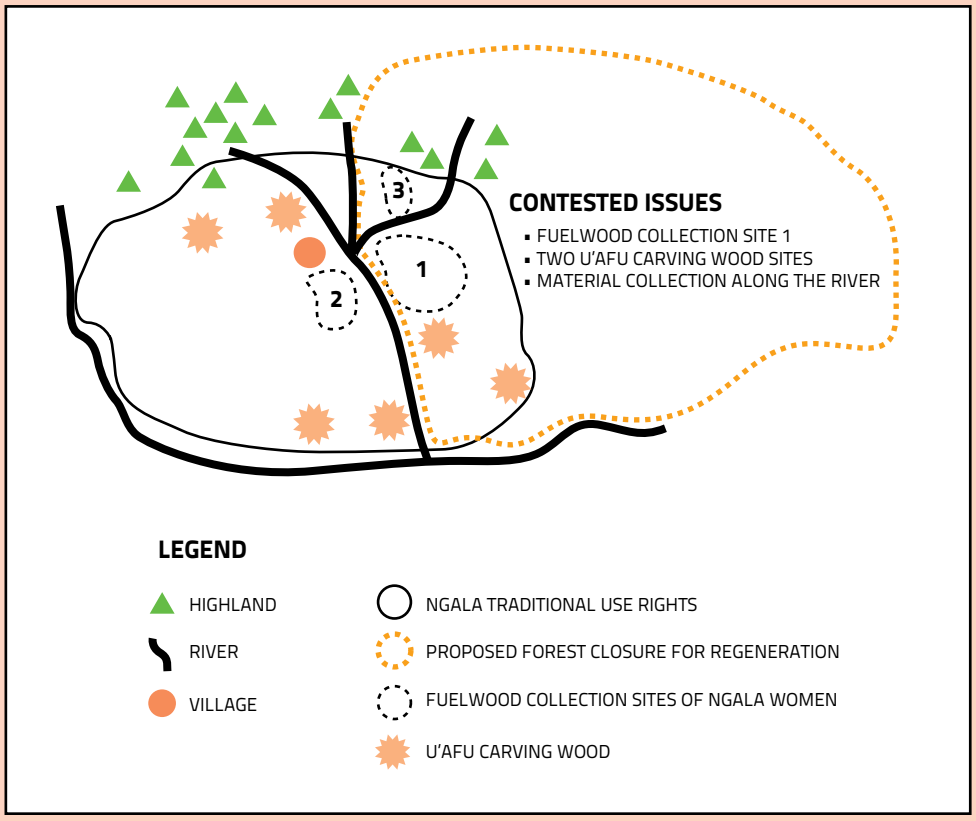
1. Explain the purpose of the activity to participants, emphasizing that mapping is a useful tool for exploring the resource uses and values of different stakeholders, and for identifying existing or latent conflicts.

2. Ask participants to begin by preparing a basic sketch map of the area on which the conflict is centred. This map is supposed to show the major landscape features and relevant boundaries of tenure.

3. Ask participants to mark out areas of existing or proposed resource uses for different stakeholders. Resource uses may include food or material collection, protected area boundaries, commercial timber harvest, religious or sacred cultural sites, nesting sites for endangered species and use boundary changes.

Tool #7 example: Sample conflict map[F]

The map below depicts conflicts in forest use. It identifies three areas of conflict between a forest regeneration area proposed by a watershed management committee and an area of traditional forest used by one local village community. Discussions among the local villagers identified their primary concerns as being lack of access to an important fuel wood collection site (site 1), the presence of two principal sites of carving wood within the proposed regeneration area, and the collection of housing material at an area upstream of the village along the riverbank. During preparation of the map, villagers decided that one of the fuel wood collection areas (site 3) was not crucial, and would not be disputed. In later meetings, the villagers agreed on regeneration of the upstream riverbank material site, as they came to understand that this could improve water quality at the village.



4. When participants are satisfied that all the relevant information has been marked on the map, ask them to identify areas where land or resource uses are in conflict. These may include conflicts among existing users on existing and proposed uses. Record the specific areas of conflict, either by highlighting them on the map or by making a list of specific points of dispute.

5. Review each of the areas of conflict. Initiate a discussion with the following questions:

   – What are the primary sites of conflict?

   – Which sites are of secondary importance?

- What would the consequences or impacts be to the different stakeholder groups if their existing or proposed uses are stopped or changed?

- What alternatives or possible solutions in land or resource use are suggested from the information on the map?

Notes on opportunities and constraints

Drawing maps with stakeholders can be essential in stimulating discussion and triggering new ideas about how best to solve the conflict. Maps can help clarify the conflict issues. However, mapping can also lead to tension when disagreement occurs, particularly when maps are drawn in the presence of all the stakeholders.[7]

Defining the socio-ecological boundaries

By considering a territorial unit as a socio-ecological system, being an interaction of ecological and social dynamics, this step helps in, delineating territorial boundaries containing natural resources that are differentially managed by stakeholders.

The boundaries of any given SES is determined by those with an interest in the system, thus immediately raises further questions about power relations and participation in the management of the system. For this reason, the team need to clarify the limits of the system taking account, if possible, the different stakeholder's perception.

[7] There are several possible approaches to preparing the map. It can be drawn directly on to flip chart paper with coloured markers. Alternatively, in some rural areas it is more effective to ask the participants to construct the map first on an area of bare ground, possibly in a village center, using rocks, leaves, seeds, twigs, etc. as symbols for natural and human features. When the map has been completed, a few participants transfer it on to flip chart paper. The advantage of this approach is that it allows many more people to be involved in creating the map and discussing the conflict.

TOOL #8 SOCIO ECOLOGICAL UNIT

Purpose:

The Multidisciplinary GreeNTD Team begins the process by bordering the territory, where the problem is located, as a Socio-Ecological System.

Application

- The following relevant steps are required to start:
- The analysis of the identified territory - defined as socio ecological units (SEU);
- The selection of a reference unit, by identifying a set of meaningful criteria, to determine an operational/working area for the purpose of planning and action;
- Clear definition of boundaries, characteristics and properties.

Analysis of space: opportunities and constraints

The following issues have to be taken into consideration:

1. A social system interacting with and depending on an ecological substrate and whose behaviour depends on its interrelations and feedbacks.

2. The common space relevant and meaningful to the local stakeholders.

3. The positive intercommunity relations constitute cohesive factors/ opportunities for analytical and planning activities and identification of effective planning units. Some opportunities are among others: proximity, uniform production system, mutual help in agriculture, belonging to the same administrative unit, utilization of same wealth centre, belonging to the same family or tribe, exchange of seeds, etc.

Analysing stakeholders' attributes

Once the problem has been clearly stated, and the socio-ecological boundaries defined, it is necessary to begin characterizing the involved stakeholders, in different positions of power and access to information, and engage them into the process.

The list of stakeholders can be analysed to determine "clusters" according to their attributes.

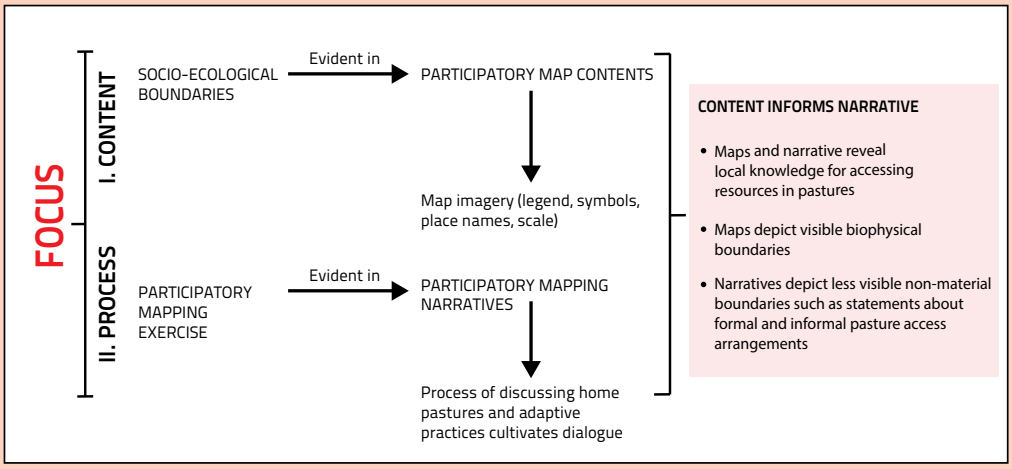
The important attributes for prioritization are power, influence, urgency (potential impact of their interests), legitimacy and proximity (Mitchell *et al* 1997, Reed *et al* 2009)[8].

[8] Although a broad range of methods have been developed or adapted for stakeholder analysis in different disciplines, there is little information regarding how, when and why they are effective. The debate includes many questions about stakeholder representation, legitimacy, participation, power, and knowledge – essentially "who's in, and why?' (Reed *et al* 2009)

Tool #8 example: social ecological unit (Participatory Mapping and Herders' Local Knowledge on Mongolia's Landscapes and Socio-ecological Boundaries)

To explore Mongolian herders' territorial perceptions, the authors developed a participatory mapping process. Socio-ecological boundaries delineate territory containing natural resources that are differentially accessed and managed by stakeholders. These boundaries may be human demarcated and biophysical serving as tangible and intangible features delineating socio ecological units. A qualitative Participatory Mapping focused on stakeholders' narratives as they draw and discuss their places of significance helping to refine the socio-ecological boundaries and reveal local knowledge. Narratives occur at two critical junctures in the participatory process:

1) while maps are drawn and
2) when maps are shared (see figure below) along the riverbank. During preparation of the map, villagers decided that one of the fuel wood collection areas (site 3) was not crucial, and would not be disputed. In later meetings, the villagers agreed on regeneration of the upstream riverbank material site, as they came to understand that this could improve water quality at the village



The authors revealed two kind of boundaries in herders' maps, 1) biophysical and 2) human demarcated boundaries: 1) tangible features such as economic, hydroclimatic,geomorphological, and ecological boundaries portrayed as springs, landforms, vegetation types, seasonal camps, wells, and roads; 2) non-physical intangible features such as governance arrangements, which served as human demarcated boundaries for accessing seasonal camps, markets, government assistance, and resources for herder migration. They concluded that relationships among herder mobility, governance boundaries, and biophysical pasture boundaries are coupled and dynamic, resulting in multi-dimensional outcomes of herder livelihoods, and highlighted the significance of participatory mapping narratives in revealing intangible human-demarcated boundaries vital to herders' livelihoods and pastures

Source: Allegretti *et al* 2015

TOOL #9 4R ANALYSIS[9] (Rights, Responsibilities, Returns and Relationships)

Purpose

The 4R analysis is a useful tool that can be used to clarify the roles played by different stakeholders.

It aims at operationalizing the concept of 'roles' by unpacking these into Rights, Responsibilities, Revenues (benefits) of stakeholders, and the Relationships among (or within) stakeholder groups and the nature of relationships between them.

Knowing the differences in stakeholders' rights, responsibilities and benefits related to a resource is often critical to understanding the problem. Inequities among stakeholders related to these four variables often underline power imbalances and shape the relationships among groups.

Application

The 4Rs analysis is a very sensitive tool and needs careful application. It is useful for a number of reasons, including:

- recognizing existing stakeholder networks that have an impact on the conflict;
- identifying potential new alliances;
- helping to identify and evaluate potential intermediaries;
- improving knowledge about the power base of stakeholders.

Notes on implementation: opportunities and constraints

Items needed: Flip chart, Coloured pens, and Copy Sample conflict background sheet. Prepared flip charts from Sample 4/3Rs matrix and Sample stakeholder relationships map are recommended.

When applied in rural communities, this tool may need careful explanation and guidance from the mediator, because it requires a sound understanding of specific conceptual categories. People may not always find such categorization easy.[10]

Steps to be taken in order to implement this tool are the following

1. Explain the purpose of the activity and the meaning of the 4Rs.

   - Rights: access and control over resources, as legally or informally defined;
   - Responsibilities: roles and power in relation to the management of resources;
   - Returns: the benefits and costs that a stakeholder derives from a resource, based on rights and responsibilities;
   - In addition, stakeholders have relationships among each other that are independent of the resource.

[9] http://www.policy-powertools.org/Tools/Understanding/docs/four_Rs_tool_english.pdf

[10] The relationship diagram (the fourth R) and stakeholder identification are partially overlapping in terms of what they analyze.

2. Ask participants to list all the stakeholders identified in the stakeholder analysis. Then, prepare a table with three additional columns for rights, responsibilities and returns. Invite the participants to fill in the table for each conflict stakeholder. If they are reluctant to do so, or do not understand the concept, use a simple example to illustrate what each R means in practical terms.

3. The participants then construct their own matrices:

   – They should first review the terms "rights", "responsibilities" and "returns", defining and clarifying what they mean by each term, and how the terms are used in relation to stakeholders and the forest resource. Important points of definition should be written down. Point out that it can be helpful to think of returns as being both the benefits gained and the cost or impact of a changed situation.
   – Encourage participants to go through and describe current and actual rights, responsibilities and returns for each stakeholder group. Ask them to score each on a scale of 0 to 5 (with 0 meaning none, and 5 meaning high/maximum). Mention that with responsibilities there may be a difference between what stakeholders are legally responsible for and the responsibility that they actually display. In such cases, the descriptions should reflect the policy/legal requirement, and the score for that column should reflect the reality.
   – Emphasize that the participants should complete all the columns for each stakeholder before going on to the next stakeholder.

4. Initiate a discussion around the following questions:

   • What did you learn about the conflict from completing the 3Rs matrix?
   • How different are the stakeholders in relation to their rights to, responsibilities for and returns from the resource? How do differences in these factors affect the stakeholders' levels of power or influence in the conflict?
   • How should these different factors be changed in order to reduce the conflict?

5. At the end of the discussion, introduce the second stage of the analysis, which focuses on analysing the relationships among stakeholders:

   – On a flip chart or on the ground, participants will draw circles to depict key stakeholder groups listed in the 3Rs matrix. (Building on previous stakeholder identification activities, participants can use different-sized circles to depict the different degrees of stakeholder interest or influence, if they wish.)
   – Encourage participants to discuss and qualify the relationships among the different stakeholder groups. For example, are relationships positive and cooperative or negative and conflicting? Are relationships among groups only occasional and intermittent?
   – Each stakeholder group should then be connected to the others by the appropriate line that indicates this relationship. Good relations will be indicated by a straight solid green line (the thicker the line, the stronger the relationship): where good relations are very strong, and an alliance can

Tool #9 example: 4R analysis

In this example, an overseas logging company approached the national forest agency for a seven year timber concession to harvest 50 000 ha of forest that had traditionally been occupied and used by local indigenous communities. This proposal resulted in a conflict among the local communities, the government and commercial interests.

A national training institution with experience in the management of forest conflict was asked to intervene and assist with meditation activities. In preparation for meetings among the groups, the mediator worked with each group to develop a matrix showing stakeholders' forest rights and management responsibilities. The mediator also recorded the perceived returns of each group from the proposed logging operation. As several of the groups felt that they would be adversely affected, they chose to record returns both as positive (gains) and negative (costs).

STAKEHOLDER	RIGHTS	RANK	RESPONSABILITIES	RANK	RETURNS	RANK
National forest agency	Supervision Management	4	Administer timber concession - Ensure annual national cut is achieved – Implement biodiversity strategy to meet international commitments	3	+ Royalties and logging income + New road into area Weakened biodiversity protection in forest site	4
National department of international affairs	None exclusive to forest area (but powerful government office)	1	National security Immigration control	3	+ Improved access to the border	4
Logging company	7-year exclusive lease on 50 000 ha of forest	5	Road construction	3	+ Expected timber sales and profit	5
Village A	Unrecognized customary forest use rights	1	Continued role in day-to-day management (fire management, controlling forest entry by migrants)	5	No further access to needed forest products	1
Village B	Unrecognized customary forest use rights	1	None	5	+ Increased revenue from sale of produce	1
Village C	Unrecognized customary forest use rights	1	None	0	No further access to needed forest products	3
Migrants	None	0	Inform government of biodiversity inventory – Assist forest agency with biodiversity management	0	No further access to needed forest products	1
National research institute	Research permit	3	Inform government of biodiversity inventory – Assist forest agency with biodiversity management	3	Inventory stopped, leaving gaps in national forest database; weakened biodiversity protection	0
Conservation NGO	Research permit	3	Inform government of biodiversity inventory – Assist forest agency with biodiversity management	3	Increased pressure on local livelihood support	0
Development NGO	None exclusive to forest site (but empowered under government health programme)	3	Improvement of local livelihoods	4		1

Sample stakeholder relationships:
Village A: alliances with research institute, conservation NGO and village B. Major conflict with logging company's interest to harvest forest area. Minor conflict with village C about supporting company's proposal. Past relationships with forest agency have been good.

Village B: alliances with research institute, conservation NGO and village A. Strong kinship ties with village C. Very little interaction with forest agency or logging company.

Village C: company says it will purchase produce from village C in exchange for support of logging proposal.

Research Institute/Conservation NGO: good relationship with forest agency through shared work on forest biodiversity strategy. Partners with all villages in undertaking forest inventory work. Some contact with logging company, but interaction so far has been poor.

POSSIBLE ACTIONS (to strengthen influence of villages A and B): use the alliance to lobby the forest agency and external stakeholders. Village B acts as intermediary between villages A and C to renew and strengthen ties. Research institute to present concerns of villages A and B to forest agency.

Source: see details in http://www.fao.org/docrep/008/a0032e/a0032e0d.htm

be formed to address the conflict, the green line is made bolder. Negative relationships are depicted with a wavy line (the more jagged the line, the greater the conflict between the two groups).
- Then initiate a discussion using the following entry points:
- What does this activity show about stakeholder relationships in the conflict? How do the 3Rs affect the relationships?
- If not mentioned, point out that interactions among stakeholders are much more complex than they may initially appear. Discuss the role of shared histories and how they affect relationships within the conflict. Also, remind the participants that relationships among stakeholders are dynamic, and change during the course of a conflict.
- Encourage participants to identify potential alliances that strengthen their own positions using the leading question below:
- Does the analysis indicate who may be able to play the role of a trusted party to help support a conflict management process?

TOOL #10 POWER/INTEREST MATRIX

Purpose:

The Power/Interest Matrix is a useful tool to analyse power and interests of stakeholder with respect to a specific land (and/or other natural resource)-related issues, and can be used to identify 'hidden/invisible stakeholders, who may have apparently little influence, but could cause major disruption during the process through unseen power and influential relations.

Application

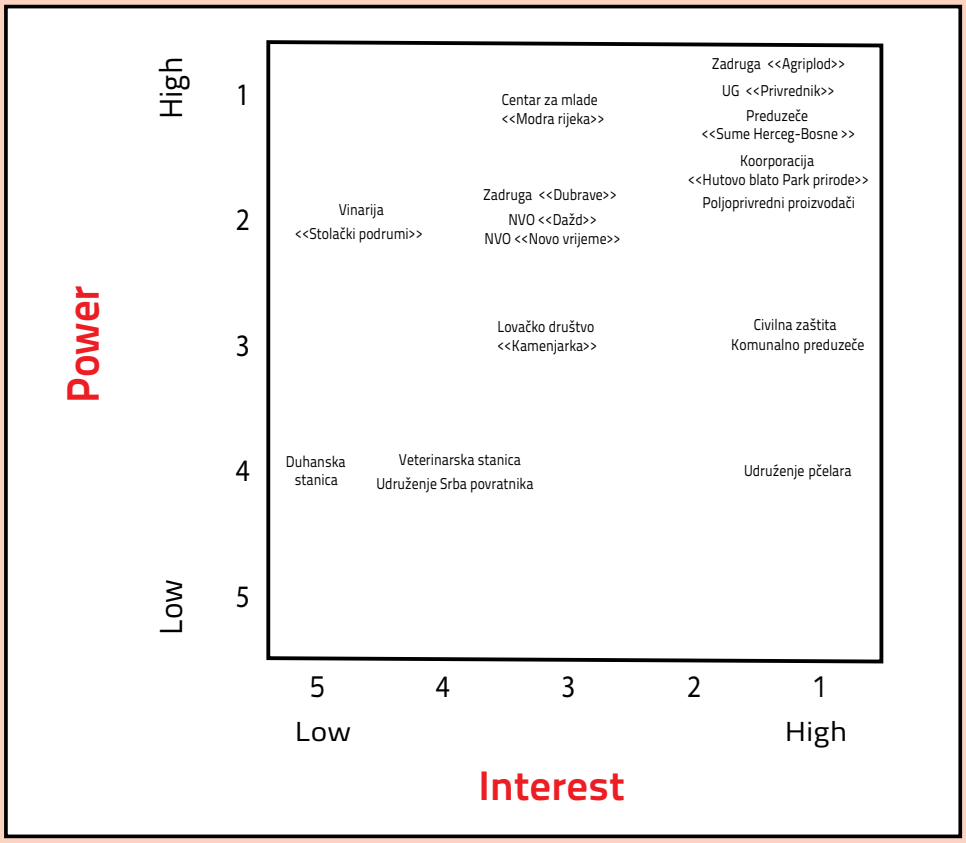
The following questions could be useful in assessing the power and interests of the stakeholders[11]:

- Who is dependent on whom?
- Which stakeholders are organized? How can that organization be influenced or built upon?
- Who has control over resources?

Tool #10 example: Power/Interest analysis

Case Study: Stakeholder Power/Interest Analysis of Stolac Municipality (FAO 2004)
Table below shows an example of this technique, where the first column lists the stakeholders and the second and third columns are their scores for power and interest, respectively.
These scores can then be plotted on a two dimensional graph to provide a consolidated view of the stakeholder power/interest relationships.

STAKEHOLDER POWER INTEREST		
STAKEHOLDER	POWER	INTEREST
Zadruga <<Agriplod>>	1	1
Zadruga <<Dubrave>>	2	3
UG <<Privrednik>>	1	1
Udruženje pčelara	4	1
Vinarija <<Stolački podrumi>>	2	5
Duhanska stanica	4	5
Preduzeče <<Sume Herceg-Bosne >>	1	1
Centar za mlade <<Modra rijeka>>	1	3
NVO <<Daždd>>	2	3
NVO <<Novo vrijeme>>	2	3
Koorporacija <<Hutovo blato Park prirode>>	1	1
Lovačko društvo <<Kamenjarka>>	3	3
Veterinarska stanica	4	4
Civilna zaštita	3	1
Komunalno preduzeče	3	1
Udruženje Srba povratnika	4	4
Poljoprivredni proizvodači	1	1



The power relations revealed in the plot of power/interest relationships can be represented in a matrix, where the information in the cells describes how each type of stakeholder relates to the process.

Power/Interest Tabulation

	Low Power	High Power
High Interest	Stakeholders in this segment may prove helpful if they can beempowered.	Natural allies of the process.
Low interest	stakeholders will have little impact on the process	Stakeholders may become dangerous to the process if allienated or very supportive of the process if they can be induced to participate.

Source: FAO 2004 http://www.fao.org/3abc-140epdf

- Who has control over information?
- Which problems, affecting which stakeholders, are the priorities to address or alleviate?
- Which stakeholders' needs, interests and expectations should be given priority attention with respect to the process?

Opportunities and constraints

The power/interest matrix results a subjective procedure and the use of numeric methods can complement the analysis.

TOOL #11 SOCIAL NETWORK ANALYSIS

Purpose:

Social Network Analysis (SNA) is the mapping and measuring of relationships and flows between people, groups and organisations.

The SNA focuses on the relationships between pairs of stakeholders in a network. Essentially, SNA aims at illuminating informal relationships: 'who knows whom' and 'who shares with whom'. This allows visualising and understanding the diverse relationships that either facilitate or impede knowledge sharing.[12]

Application

Social network analysis (SNA) enables relationships between people to be mapped in order to identify knowledge flows: who do people seek information and knowledge from? Who do they share their information and knowledge with?

The SNA process involves information collection by means of questionnaires and/or interviews. Data targeted are those regarding relationships within a defined group or network of people. The responses gathered are then mapped using a software tool (there are several tools and Software for SNA[13]).

The SNA process involves:

- Collecting information about relationships within a defined group or network of people.
- Mapping out the network visually: mapping responses.
- Generating a baseline through the analysis of data from the survey responses.
- Using this baseline for planning and prioritising changes and interventions to improve social connections and knowledge flows within the group or network.

To conduct a successful SNA, it is important to carefully design the survey and related questionnaire. Effective questions typically focus on a variety of factors, such as: – Who knows whom and how well? – How well do people know each other's' knowledge and skills? – Who or what gives people information about a specific theme/relationship/process? – What resources do people use to find information get feedback/ideas/advice about a specific theme/relationship/process?, – What resources do people use to share information about theme/relationship/process?.

12 http://www.fao.org/elearning/course/fk/en/pdf/trainerresources/pg_sna.pdf

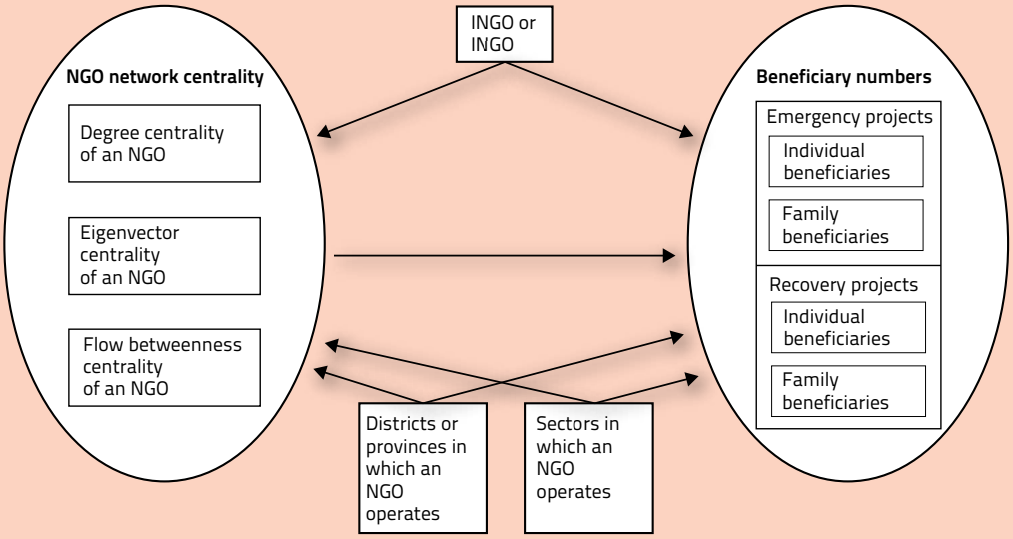
13 http://www.kstoolkit.org/Social+Network+Analysis

Tool #11 example: SNA in Mozambique humanitarian relief [G]

In February 2000, Mozambique suffered its worst flooding in almost 50 years: 699 people died and hundreds of thousands were displaced. Over 49 countries, 30 INGOs and 35 local organisations provided humanitarian assistance.

A team of researchers used SNA methods to examine the structure of inter-organisational relations among the 65 NGOs involved in the flood operations. The results showed a correlation between the central role of an NGO in the social network (i.e. the number and strength of connections with other organisations) and the numbers of beneficiaries served, specifically during the emergency period immediately following the flooding.

Exploratory model of the relationship between network centrality and beneficiary numbers (based on author's central hypothesis



This association was shown in turn to be affected by other factors, such as NGO type, sector of engagement and provincial presence. As an example, with the exception of the Mozambican Red Cross (which was the most central member of the network), local NGOs in general remained peripheral to the coordination processes. This suggests that local civil society capacity for responding to future disasters had not been developed over the course of the crisis, and that the response may have increased dependence on INGOs. Interestingly, the association between network position and beneficiary numbers did not hold during the post-emergency recovery period, a fact that was linked to the observed reduction of coordination levels during this phase.

By using social network analysis to determine how the network structure affects inter-organisational coordination and humanitarian aid outcomes, the study showed that the success of humanitarian aid operations ultimately depends on the ability of organisations to work together, and that working together was built on knowledge sharing, joint operations and projects, in an appropriate interorganisational network structure.

[G] Moore *et al* 2013 http://onelinelibrary.wiley.com/doi/10.1111j.0361-3666.2003.00235.x/eepdf

Opportunities and constraints

SNA helps in recognizing the structure of stakeholders' network and its boundaries, it also allows the identification of influential and peripheral stakeholders. However, it needs experts of the method, it is time-consuming and the questionnaire can result tedious for respondents.

Exploring the resource units

The GreeNTD Team, in collaboration with local stakeholders begins by exploring the territory (seen as a complex socio-ecological system), taken into account simultaneously both social and ecological components, and the recognition of the interactions between them to understand the system, and how ecosystems underpin human well-being through key provisioning, regulating, and cultural services.

TOOL #12 RESOURCE UNIT (RU)

Purpose:

The Resource Unit (RU) tool is used to obtain local perceptions on the context, use of land and natural resources and for exploring changes in the use of such resources. It involves drawing maps in the fields together with farmer groups, households and/or individuals.

Application

Land-use and resources maps may include all of the resources owned by the community or a given territory. The specific purpose of mapping should be made clear to the participants before the beginning of the exercise.

Suggested steps

1) Ask participants to select a suitable place and medium on which to draw the map. It can be the ground using stones, seeds, sticks and coloured powder; the floor using chalk; or a large sheet of paper, using pencils and pens. All means serve to the purpose, but make sure you will keep record of the map (e.g rake picture of the drawings)

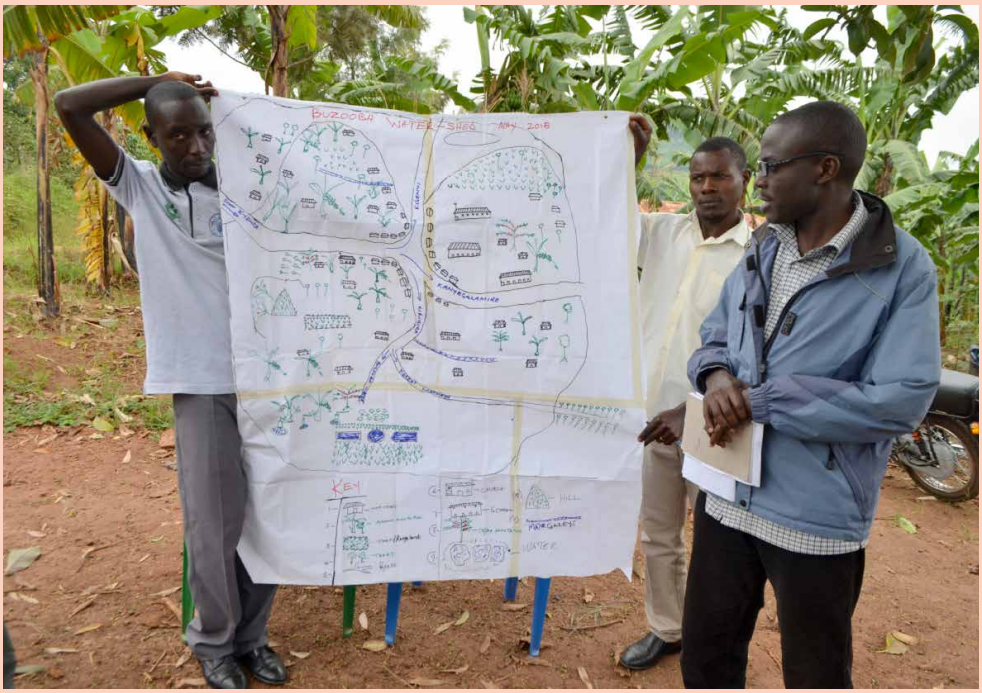
2) Agree with participants what area exactly the map will cover, e.g. a village, a watershed.

3) Explain that the quality of the drawing is not important and it does not matter if the map is not entirely accurate or to scale. It is important to use symbols and drawings, with a key to interpret the symbols used into the local language (and where necessary, the relevant language for other intended users of the information), this is even more relevant if any of the participants is illiterate, in order to give all the possibility to participate in the process.

4) Ask participants to start by preparing the outline or boundary of the map and proceed identifying a central point or an important landmark within the area (such as a mosque, school or market place).

Tool #12 example: a community resource units from Uganda

One example is provided from Uganda. The Figure below is a land-use and resource map reconstructed from original maps drawn by farmers from a village in Uganda.



5) Participants should develop the content of the map according to what they think is most important.

Notes on implementation

This tool is most suitable for a geographically limited area. For larger areas it may be appropriate to produce more than one map.

Participants should be encouraged to draw the map without interruption and to suggest any issue that should be recorded.

The team should help participants to begin the process and then leave them on their own without further interference. Team members may intervene only when their assistance is sought or when it feels that it is absolutely necessary. The team may observe how the process progresses, yet without rushing it. They can also leave the place for a while or concentrate on some other work.

TOOL #13 PARTICIPATORY GEOGRAPHIC INFORMATION SYSTEMS (PGIS)

Purpose:

Participatory Geographic Information Systems (PGIS) is a method of digital mapping that allows adding and subtracting information from the maps created by local people,

thereby enabling them to represent local spatial knowledge and visualize spatial information more clearly (in different layers), and to compare various factors while understanding relationships among them.

Application

The basic principle of the PGIS is that it is combining – in a structured, systematic, crosscutting and back-referenced manner – people's own local spatial knowledge with external 'technical' knowledge from expert(s) and satellite images, maps, etc.

Opportunities and constraints

The most direct benefits deriving from the application of this tool are:

- Participation, empowerment, inclusion of local spatial knowledge and interests, higher degree of "ownership" of the process.
- Skills development and capacity-development.
- Visual impact value of maps and pictures that can help in solving some issues related to the territory and in clarifying some doubts/unclear issues.
- Inclusion of geo-reference, necessary for many legal, planning and policy applications.
- Storage of information and communication.

At the same time PGIS presents a few constraints:

- It is time-consuming in determining which stakeholders should participate in the process.
- It may increase the number and scale of conflict (mainly at local level) if not handled with precision and sensitivity.
- It can be technologically confusing for some of the participants (e.g. elderly, illiterate).

Exploring the governance systems

Territorial governance regards the rules, the processes and the structures through which decisions are made about access to resources and their use, the modalities in which such decisions are implemented and enforced, the way that competing interests over resources are managed. It relates with the patterns of decision-making on issues affecting natural resources allocation, management and use. Governance arrangements focus on three dimensions (Lemos and Agrawal 2006):

- Mechanisms of representation of diverse groups in decision-making (which actors are represented in decision making and how);
- Distribution of power (how is formal and informal authority distributed with regard to decisions over resource access, management, enforcement, dispute resolution, and benefit sharing); and
- Mechanisms of accountability (how are power-holders held accountable for their decisions and to whom).

Tool #13 example: Participatory GIS

Some examples of using PGIS (Mc Call 2004[H]).

- The Dene Mapping Project in northern Canada used digital 1:250,000 maps to designate land use and occupancy, 1890-1975. Boundaries were designated and spatial conflicts reduced, not only with Federal and Provincial governments, but also with neighbouring indigenous peoples.
- In the Philippines, PGIS resulted in strengthening Ifugao community groups when preparing for negotiations with provincial and municipal authorities on the ancestral lands. Participatory three-dimensional (3-D) mapping has been used in the Philippines for conflict analysis and resolution between indigenous groups, which should reduce possibilities of inter-group warfare over land use and natural resources.
- In Indonesia, natural resources management claims and village boundary conflicts between prior resource rights and recent claims in Kalimantan, have been addressed through participatory mapping and GPS.
- In Cameroon, participatory mapping and PGIS has been applied to the regularisation of communities' customary entitlements to forest land.
- Some examples of community PGIS are as follows:
  - Brazilian Indians use Google Earth to monitor the appearance of new gold mines.
  - Maori communities in New Zealand have designed a GIS to preserve sacred knowledge for intergenerational transfer.
  - Village organisations in the Himalayas use GPS and hand-held computers to map biomass stocks to market carbon credits under the Kyoto Protocol.
  - Forest-dwellers in the Philippines use participatory 3-D modelling to manage conflicts between villages and Parks.
  - In Cambodia, local farmers work with NGOs to recognise and map landmine hazard areas.
  - Children in India map and investigate environmental hazards in their neighbourhoods.
  - The Coast Salish people, like many other First Nations in Canada and indigenous forest dwellers (in e.g. the Philippines and Kenya) use mapping technologies to claim rights for their traditional lands and resources.

These three dimensions characterize the governance context; understanding one without the others gives an incomplete picture and yields little insight into pathways for change (Ratner *et al* 2013 This includes the analysis of the State capacity and legitimacy, the rule of law, freedom of expression and political organization, and protection of human rights because of their importance in conflict-sensitive environments.). Such dimensions are mediated by statutory (formal) legal and political structures, as well as customary and informal institutions.

The quality of governance often determines whether resources are used efficiently, sustainably and equitably. Poor local governance has ripple effects and often reflects overall weakness in governance at highest levels.

TOOL #14 GOVERNANCE ANALYSIS

Purpose:

The Governance Analysis (GA) tool describes the characteristics and relationships of key stakeholders/institutions and to explore their power, interests and legitimacy in relation to the access/use to natural resources[14].

The tool[15] builds on the understanding that governance is both the context and the product of the interaction of a range of actors and stakeholders with diverse interests.

It provides means to view and analyse the institutions[16] and interactions within and outside the territories boundaries that together create conditions and possibilities for the governance of resources. It helps in understanding:

- Who has access to resources (Ecosystem Services, ES) and shares in their benefit flows;
- Who has what rights and duties related to resources (rights and responsibilities); and
- Who participates in key decisions about these issues and about transferring rights and duties to others (power asymmetries).

These institutions result from, and are played out through, the decisions and actions of diverse actors, stakeholders, organizations and agencies.

Application

The tool is practice-oriented and intended to be simple and adaptable in order to be used jointly with local stakeholders to analyse the governance context of a given socio-ecological system (SES) and the pathways to influencing change within this.

Three dimensions of governance analysis need to be explored (Ratner *et al* 2013):[17]

1. Stakeholder representation: who is involved in or influences the decision-making, and/or has significant bearing on the content of decisions and their equity. Which actors are represented in decision-making and how?

2. Distribution of authority: power is multifaceted, requiring attention to shifts in different aspects of decision-making authority among actors. How is formal and informal authority distributed with regard to decisions over resource access, management, enforcement, dispute resolution, and benefit sharing?

3. Mechanisms of accountability: The outcomes of such shifting relationships of power depend critically on mechanisms of accountability, both formal and informal.

14 http://toolkit.aigi.com.au/toolkit/1-0-understanding-governance

15 Adapted from: FAO (2011)

16 The term "institutions" refers to customs, behavioural patterns and rules

17 http://www.ecologyandsociety.org/vol18/iss4/art59/#analyzingthe5

How power-holders are held accountable for their decisions, and to whom?

Acknowledging interactions between the key components of SES

It is important to identify interactions between key components of the SES, which can be defined as the specific activities that mediate between such components (stakeholders, resource system and units and governance system), with particular focus on those activities involved with management and use of natural resources (e.g., land / water and resource use and access and land-use changes, production, consumption and disposal, etc.).

Following the identification of interactions, it is important to develop a perspective on what (drivers) motivates these activities. For conceptual convenience those drivers are divided into two categories: 1) ecological patterns and processes and 2) social patterns and processes.

Tool #14 example: understanding the Governance context [I]

The governance context refers to the domain in which people's authority to use, manage, or otherwise influence natural resources is exercised. This includes the formal legal and institutional framework as well as the informal sets of norms, social networks, and power relationships that guide and constrain stakeholders' interactions among themselves and with the natural environment.

The example is focused on a case study at a very local scale. The Stung Treng Ramsar site is a protected wetland along some 40 km of the Mekong River mainstream in northeastern Cambodia.

Recognized internationally for its unique biodiversity value, the area is also a source of livelihood for 20 villages, which depend on the floodplain and riverbanks to cultivate rice and other food crops. Subsistence fishing is the second major livelihood activity, and in the dry season attracts villagers from distant areas.

The initiative, known locally as Salaphoum, addresses a deficit in local stakeholders' representation in the decision making and downward accountability of local government.
The figure below shows key questions applied to orient analysis of each of these three dimensions of governance, and highlights issues of particular concern that often merit attention.

[I] See for more information UNDP (2009)

	Stakeholder representation	Distribution of authority	Accountability mechanisms
Key Question	Which actors are represented in decision-making and how?	How is formal and informal authority distributed in decisions over resource access, management, enforcement, dispute resolution and benefit sharing?	How are power-holders held accountable for their decisions and to whom?
Guidance for assessment	Includes decision-making regarding specific land, water or fisheries resources and also the broader context of policy and implementation that influence the livelihoods of resource users and the other local stakeholders	Includes authority regarding decisions over resource tenure rules, taxation and basin or coastal-zone planning, including transboundary arrangements Consider generic governance reform trends, such as decentralization, regional integration or market liberalization	Applies equally to the exercise of public and private authority Meas^{u}red in three directions: upward (toward higher-level authorities); horizontal (to stakeholders in other sectors or localities); downward (to resource users and other community members)
Issues of concern	Representation of politically, economically, or socially marginalized groups, which may include landless poor, women-headed households, internally displaced persons, ethnic minorities, etc. Gender disparities in representation often critical at multiple scales	Clarity in distribution of authority (overlaps can be a source of conflict) Appropriateness of distribution in equity and efficiency terms Capacity of institutions endowed with certainpowers to execute them effectively Adaptability of rights to changing conditions	Relative strengths of upward, horizontal and downward accountabilities Transaction costs involved in keeping decision makers accountable Integration of decision making across sectors or horizontal inequalities among regional, ethnic or user groups

Regarding the question of *which actors are represented in decision making and how* (**stakeholders representation**), both, formal mechanisms such as community representation in management committees, and local or regional bodies of government, were considered along with informal mechanisms stakeholders use to represent their interests, such as social networks or advocacy organizations.

In describing **distribution of authority**, the attention was put on both formal authorities, such as those granted to decentralized agencies of government, and informal institutions which represent power in practice. This is the case, for example, of fishery organizations that regularly play a role in mediating decisions on fisheries resources.

Regarding **mechanisms of accountability**, formal channels such as the courts were considered alongside informal mechanisms such as civil society movements and local rules. Moreover rather than look at written laws and regulations alone, analysts examined the extent to which these are enforced, and whether they are applied equally or with bias against certain social groups.

	Stakeholder representation	Distribution of authority	Accountability mechanisms
Formal mechanisms	Voting rights National & subnational parliamentary structures Political parties Public consultation & participation in environmental & social assessment Public consultation & participation in preparation and review of draft legislation	Area planning authority (e.g. village development committees, coastal/basin authorities) Resource management rights & responsibilities specified in national law or regulations Legal tenure/resource access rights International accords Intergovernmental bodies	Enforcement by state agencies Rights to legal recourse Judicial process Legal protections for freedoms of expression, organizing, etc. Enforcement and arbitration in international accords Ombudsman (or similar) for reporting abuse of power
Informal mechanisms	Social networks Civil society dialogue Mass organizations Trade associations Communication of local interests through bridging organizations Capacity building for underrepresented groups Participation action research	Resource users associations Customary resource management institutions Customary tenure Cultural legitimacy of religious or ethnic leaders	Civil society advocacy Community enforcement Social sanctions Nonbinding codes of conduct Voluntary certification standards Customary conflict resolution Media Social movements

Source: Ratner *et al* 2013

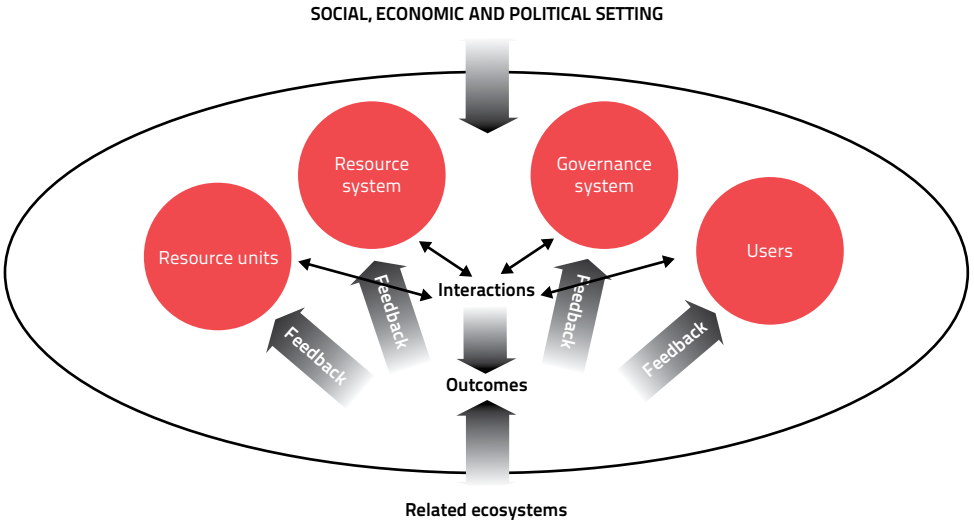
TOOL #15 CONCEPTUAL DIAGRAM

Purpose:

The conceptual diagram is built around the concept of a social-ecological system, where many different parts interact to form a more complex entity. Such holistic approach does not focus on a detailed understanding of parts, but on how key components contribute to the dynamics of the whole system. Parts of a SES respond to changes in other components, sometimes triggering feedbacks that can amplify changes in the whole system or can have stabilizing effects.

Ecological components interact with social components at multiple levels. Processes external to the system influence slow-changing components, which in turn influence faster-changing components that impact people more directly. People respond to

Conceptual framework of a socio ecological system (SES), as proposed by Ostrom (2009).



system changes through institutional mechanisms, creating feedback loops that affect nature (Resilience Alliance 2010)

Application

Interviews and survey data collected during the diagnostic of the SES are transcribed and analyzed using discourse analysis (Gee 1999), mainly looking at the emergent variables and relationships that described the functioning of the SES.

The findings, key factors and interrelationships that influence SES are organized into a table and translated into a conceptual diagram1 that helps to incorporate a diversity of knowledge and perceptions to reflect the multiscale causalities and feedbacks expressed in the transcripts.

To analyze historical forces and patterns of changes (drivers) affecting SES, the relevant periods are identified in the diagnostic (tool#6). This allows the recognition of relevant historical drivers while linking them with current trends.

Notes on implementation: opportunities and constraints

Conceptual models are useful to improve communication among stakeholders from different backgrounds (Abel *et al* 1998) and increase understanding of complex system dynamics (Ozesmi and Ozesmi 2004).

Recognizing the main ecosystem services

A socio-ecological system approach focuses on maintaining functioning ecological systems (ES) to secure the flow of a range of ecosystem services, important for

Tool #15 example: A conceptual model for understanding the SES of forage fish: the case of Pacific Herring.

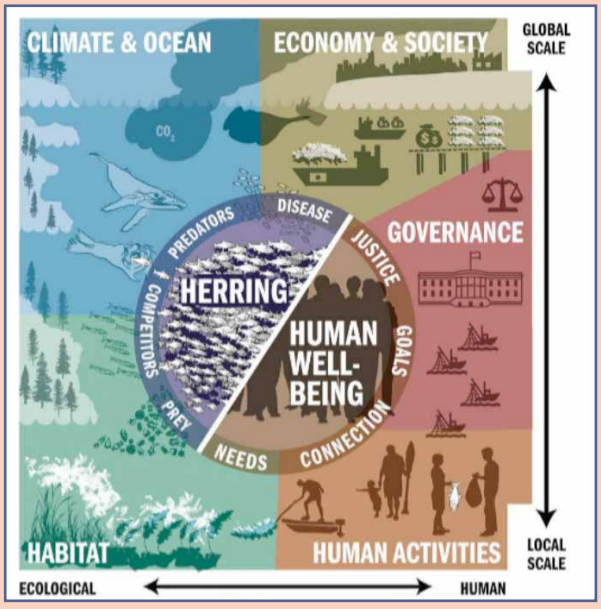
The authors organized a three-day workshop bringing together individuals having technical, regulatory, economic, extractive, and social connections to Pacific Herring. The aim was to create a conceptual model of the SES.

The first day comprised presentations and discussions about potential key components of the SES by representatives from British Columbia First Nations and USA tribes who described historical changes in herring populations and the impacts of those changes on their communities.

The second day included presentations on the role of Herring in the NE Pacific food web, oceanographic influences on Herring, Herring population structure, and cultural connections to Herring, both extant and historical.

The third day was dedicated to presentations on regional Herring fisheries assessment and management practices by different agencies, and opportunities for traditional knowledge to be incorporated into management practices.

The conceptual diagram was developed based on information collected during a series of four focus group discussion sessions conducted on the second and third day, which focused on both individual components of the SES and the SES as a whole.



The final Herring Conceptual model (see Figure below) focuses on Herring and human wellbeing as key endpoints in the SES, so Herring populations and human wellbeing encompasses the ecological, social and economic outcomes, influenced by system dynamics and, potentially management actions.

The conceptual model describes Herring and human wellbeing as impacted by several components of the SES: (1) global and regional climate and oceanographic conditions, (2) global economic and social drivers; (3) institutions and governance structure, which dictate resource management practices, resource allocation policy, and access to the decision and knowledge processes; (4) human activities, which include industrial, commercial, recreational, and subsistence fisheries, impacts on the landscape, pollution; (5) habitat structure and function, which impact on Herring and their food web at multiple life stages and it is itself also affected by the first three external drivers.

The conceptual model, helped individuals cross boundaries, organize diverse values and goals, and accommodate diverse type of information and knowledge.

Source: Levin *et al* 2016

human well-being. Ecosystem processes, far from being only natural, are part of social–ecological systems, where human interaction with the environment shapes both ecosystems and society.

TOOL #16 RAPID VALUATION OF ECOSYSTEM SERVICES

Purpose:

The rapid valuation of ES (RVES) is an integrated method, which encompasses the assessment different value domains of ecosystem services, such as ecological, social, aesthetic and cultural (e.g., heritage) values.

The tool consists of the creation of a matrix for the quantification of ecosystem services.

Application

Firstly, it is important to conduct a brief exploration of ES with key informants through semi-structured interviews. The drawn resource unit maps (tools #12 and #13) would facilitate the exploration.

Secondly, create a data matrix showing the identified ES organized by type (provisioning, regulating and cultural and their description.

Thirdly, organize a workshop where stakeholders are invited to perform an initial test scoring the preference of the ecosystem services.

Notes on implementation: opportunities and constraints

While it is difficult to determine causation, this tool allows eliciting the significance of certain factors in relation to others. One important advantage of this tool is that it can be used with respondents who are illiterate.

TOOL #17 THE DRIVER-PRESSURE-STATE-IMPACT-RESPONSE (DPSIR)[18]

Purpose:

The Driver-Pressure-State-Impact-Response (DPSIR) scheme is a flexible framework that can be used to assist GreeNTD team to analyse the connections between environmental change, ecosystem services, human well-being and the response of society to preserve the flow of key ES.

- **Drivers** (indirect): any human activity or economical process, which affect quality and/or quantity of the system. Driving forces can originate and act globally, regionally or locally. They respond to the question: « who has an effect on the ecosystem? »
- Drivers **function** through human activities, which may intentionally or unintentionally exert pressures on the environment. These pressures, which correspond to the direct drivers of change (e.g., land use change, resource consumption, release substances, physical damage through direct contact uses), depend on the kind and level of technology involved in source activities, and can vary across geographic regions and spatial scales. Indicators of pressure respond to the question: « How driving forces affect the system? »
- The pressures exerted by society may lead to unintentional or intentional changes

[18] DPSIR was initially developed by the Organization for Economic Cooperation and Development (OECD 1994) and has been used by The United Nations Environment Programme (UNEP 1994) and European Environmental Agency EEA 1999) to relate human activities to the state of the environment

Tool #16 examples: Ecosystem Services (ES) assessment

A. Social valuation of ES in the Homokhátság (Hungary)[L]

The Homokhátság Environmentally Sensitive Area (ESA) lies in Central Hungary between the river Danube and Tisza, and covers nearly 50,000 hectares from which 12% is protected by the Kiskunság National Park (KNP) and 19% belongs to Natura 2000 areas. In this area, nature conservation competes with agriculture (having long history in the area) and forestry (a recently emerging phenomenon) as the main local sources of income and the most dominant land uses.

ES type	Ecosystem Services
Provisioning	Agriculture, cattle farming, intensive vine production, intensive forestry, reed harvesting.
Cultural	Ecotourism and recreation, research activities, environmental education, marketing brands for local products, sense of place (local community meeting places).
Regulating	Water control, biodiversity, nesting places, erosion control, waste processing.

The study combined different participatory techniques in order to understand what local people thought to be the most important ESs for the well-being of their community and how they valued them.

1. **Interviews**: responses allowed to map services provided by the ecosystems that played a crucial role in the everyday life of local community members. The questions focused originally on four topics: personal background, natural values of the area, dynamic natural processes, and the dimensions of well-being at personal and community level.

2. **FGD**: Before the focus group the team identified the services around which misunderstandings or lack of knowledge emerged during the interviews. The design of the workshop was dominated by a visual exercise facilitated by experts.

    i. 19 photos representing the main ESs in the area were chosen (e.g. sand dunes, vineyard, nesting birds, tourists etc.) to be shown to participants and to generate discussions about the most important services for the community.

    ii. After a brief introductory part, the pictures were put onto the table (matrix) and participants were asked to choose those which they considered to be the most important for the future well-being of their community.

    iii. They were asked to discuss what pictures they choose and why, and by the end of this dialogue they had to reach consensus upon the five most important ESs represented by the pictures

3. **Workshop**: As the last stage of the research on the Homokhátság, a half-day stakeholder workshop was organized to share ideas and learn from each other.

[L] http://www.essrg.hu/ecoservice/dok/Kelemen-Gomez2010.pdf

B. UNESCO's Man and the Biosphere Programme (MAB)

The International Co-ordinating Council of UNESCO's Man and the Biosphere Programme (MAB) added 20 new sites to the World Network of Biosphere Reserves[M] The Ledro Alps and Judicaria biosphere reserve (Italy) is located in the Trento region in northern Italy. The site is representative of the southern slopes of the central-eastern Alps, comprising different non-polluted habitats (Alpine meadows, forest, grasslands, moorlands) as well as traditional crops. Its strategic location contributes to its rich biodiversity and provides several ecosystem services.

The area of the proposed Biosphere Reserve is characterised by an extraordinary wealth of natural environments and landscapes.

The ecosystem services assessment has been carried out making reference to the four main types of ecosystems present in the area: 1) inland water, 2) forest, 3) cultivated and 4) mountain[N]

The table below summarize the main ES of the inland water ecosystem, identifying for each category of service (provisioning, regulating and cultural), subcategories, its status and the local importance.

Service	Sub-category	Status	Local importance	Notes
Provisioning services				
Food	Crops		High	The irrigation of cultivated areas is becoming increasingly important
	Livestock	=		Intensive animal husbandry requires large quantities of water. At the moment the demand is constant, but the possible opening of new stables would increase the demand for water resources
	Aquaculture	=	Medium	There are some trout farms, which require clear, oxygenated waters. However, trout farms are less significant in the area of the reserve
	Wild plants and animal products	=	Low	Fishing in natural waters is linked to recreational rather than commercial activities and is regulated at provincial level
Power supply	Hydroelectric	=	High	Fundamental for the production of renewable energy, which is one of the main sources of energy in the area. In the reserve there are two hydroelectric plants (Rio Bianco – owned by CEIS and Nembia – owned by Hydro Dolomiti Enel)
Genetic resources		=		Aquatic systems and peat bogs are marked by high biodiversity, due to the good state of conservation

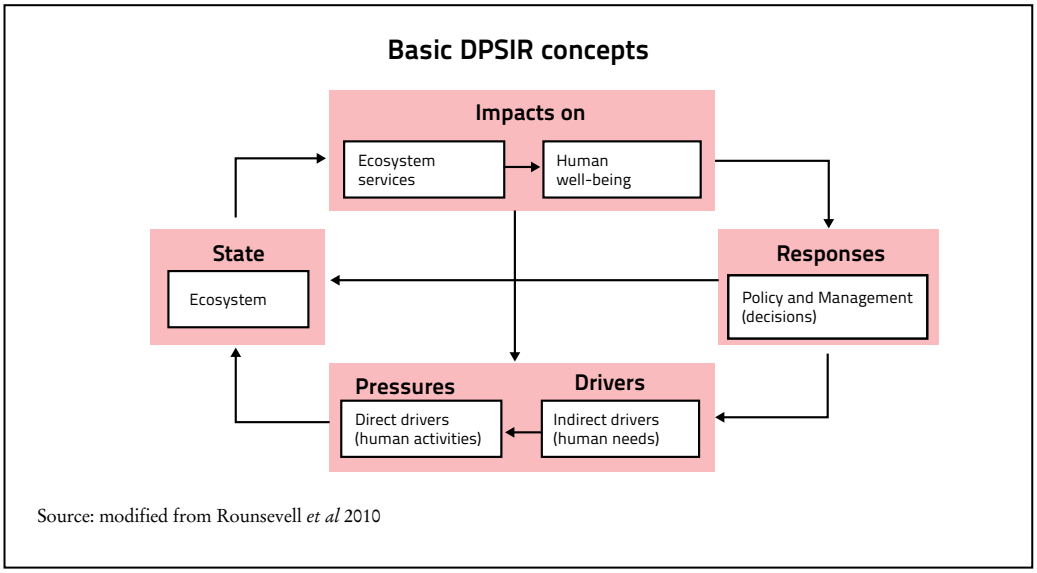
[M] Http://www.unesco.org/new/en/media-services/single-view/news/twenty_new_sites_added_to_unescos_world_network_of_biosphere_reserves/#.V435UvmLTIU

[N] http://www.areeprotette.provincia.tn.it/binary/pat_aree_protette/news/MAB_UNESCO_Dossier_Candidatura_settembre_2014_ENG.1413355753.pdf

Fresh water			High	Storage and retention of water for domestic, industrial, and agricultural use. The importance of the service is increasing, as is the efficiency of distribution networks, which are being progressively modernised and extended
Regulating services				
Climate regulation	Global	=	Low	The local contribution of bodies of water to regulating the climate at global level is not particularly significant
	Regional and local		High	The Mediterranean microclimate near Lake Garda is regulated by the presence of the large body of water
Water regulation		=	High	The presence of an extensive network of watercourses and some lakes guarantees groundwater recharge and discharge; storage of water for agriculture or industry
Water purification and waste treatment		=	High	Retention, recovery and removal of excess nutrients and pollutants; deposition of suspended solids. In the area of the reserve there are numerous stations monitoring the quality of the waters, showing a good problems (see cultivated ecosystems)
Disease regulation		=	High	The high average quality of the bodies of water guarantees the absence of health problems
Cultural services				
Tourism			High	Spas, swimming, fishing, bird-watching and panoramas are the main tourist attractions in the area
Educational values		=	Medium	Exploratory trails in the woods, sensory trails and environmental education are currently offered and are rapidly expanding activities
Sense of place		=	High	The local communities have always been linked to bodies of water: Lakes Tenno and Ledro, the River Sarca, peat bogs etc
Supporting				
Soil formation, photosynthesis, primary production, nutrient cycling, water cycling		=	High	Soil formation, photosynthesis, primary production, nutrient cycling, water cycling

in the **state** of the ecosystem. The State is the condition of the abiotic and biotic components of the **ecosystems** in a certain area in terms of physical, chemical and biological variables. These indicators describe a static situation.

– Changes in the quality and functioning of the ecosystem have an **impact** on the human well-being through the provision of ecosystem services (provisioning, regulating and cultural). Indicators of impacts describe: « How the state of system has changed as a result of pressures exerted? »
– Finally, humans make decisions in response to the impacts on ecosystem services or their perceived value. Responses are actions taken by groups or individuals in society and government to prevent, compensate, ameliorate or adapt to changes in



Source: modified from Rounsevell *et al* 2010

the state of the environment[19]

Application

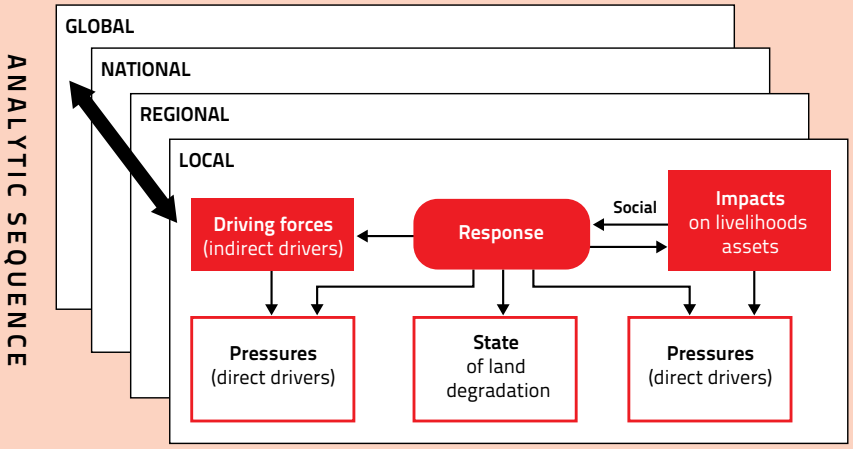
This tool is particularly focused on looking at potential opportunities for reducing poverty and promoting sustainable livelihoods. It starts by taking an inventory of existing resources and looking at trends in the recent past at the scale of interest (local, national, sub-regional or regional) and explaining why the observed trends have occurred.

Notes on implementation: opportunities and constraints

The DPSIRs strength lies in identifying and describing the causes and effects of human-induced changes to the environment.

Tool #17 example: DPSIR applied to the 1) LADA Project [O]; 2) Wetlands project[P]

Example 1: Figure below shows the DPSIR framework applied to the LADA Project. The key elements considered to understand how to apply DPSIR are summarized in the following figure:



Driving forces and Pressions [1 & 2]	Stages [3]	Impacts [4]	Responses [5]
What are the direct and indirect drivers and "explanation to change" identified as causes of changes in soil, water and vegetation stage. -Information is collected from community and Land.	What are the actual state of soil, water and vegetation. Trend & extent of changes, dynamics [plus/minus]. -Biophysical measures [transect] -Information from Land [interview]	What are the impacts of state changes on the ecosystem services and how they affect the sustainable livelihoods – Biophysical, - information from & community – Secondary information	Identify the responses [politics or others] in order to mitigate the impact and/or promote the impact. – From data and information analysed

Example 2. Wetlands provide numerous ecosystem services that contribute to human well-being, including habitat for wildlife, stock for fisheries, flood and storm surge protection, recreational opportunities, carbon sequestration, and improving water quality. Yet wetlands are subject to numerous stresses, including development, land-use changes, resource exploitation and hydrologic modifications, invasive species or pollution.

A DPSIR framework can be used to link stressors to their impacts on ecosystem services, and to highlight the causes of stresses and potential management actions.

Decision alternatives can be captured in a DPSIR framework, to aid in thinking about the problem and potential consequences of decisions within a systems framework. The generic DPSIR concept map or the list of keywords can be used to provide examples of factors. Concept mapping within the DPSIR framework is one tool for generating feedback from small groups of decision-makers or stakeholders.

[O] http://www.fao.org/nr/lada/
[P] https://archive.epa.gov/ged/tutorial/web/pdf/dpsir_module_3.pdf

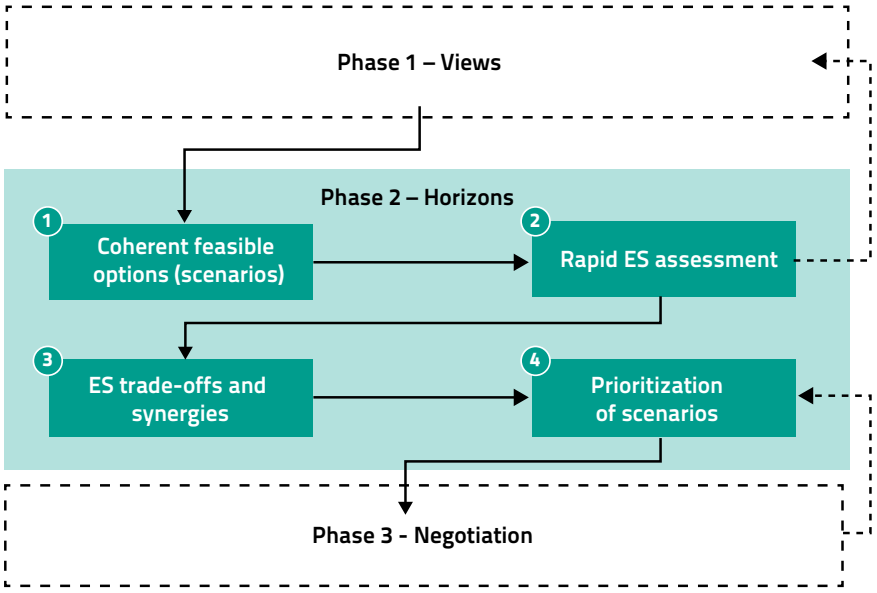
The DPSIR weakness lies in the definitional uncertainty, its lack of clear conceptual underpinning, and the need of possessing consistent data/information.

PHASE 2: HORIZONS – OUTLINING COHERENT AND FEASIBLE PROPOSALS FOR THE DEVELOPMENT OF THE TERRITORY

When an initial agenda of concrete issues has been agreed upon, an initial understanding of SES has been carried out and relationships between services and levels at which management works have been acknowledged (Phase 1), the GreeNTD Team can start outlining coherent and feasible proposals necessary to begin the negotiations (Phase 3).

This phase will focuses on exploring what causes the observed trade-offs and synergies between ecosystem services, crucial for outlining plausible scenarios (Figure 4). The

FIGURE 4.
Schematic representation of the core steps of the phase 2. The dotted line indicates the possibility to update respectively the previous phase



basic assumption is that any change in the use or management of land influences the overall properties and functioning of the system and can therefore alter supply, not only of a single ecosystem service, but of an entire suite of services (de Groot *et al.*, 2010).

A series of tools is proposed to explore sustainable opportunities for territorial development by delivering better outcomes for people, resulting in win-win opportunities.

TOOL #18 SCENARIO DEVELOPMENT

Purpose:

The Scenario Development analysis follows a systematic process to create set plausible and contrasting narratives that describe possible evolutions of key problem. Scenarios are plausible, but simplified descriptions of alternative hypothetical futures that reflect coherent and internally consistent set of assumptions of how the future may develop based on key driving forces and relationships.

There are different types of scenario that follow different goals (e.g., intervention, exploratory, visions, and future projection). Although the horizon phase aims at reaching a shared vision on the territory by determining how to get a desired future and resolve land /water and natural resources related disputes, the scenario exercise should focus on a normative vision of the future and asking whether there is a plausible path to it.

Vision scenarios describe explicitly desirable futures by reflecting the interests of each stakeholder or stakeholder group.

Application

The narratives, known as scenarios, examine the social, political, economic and technological forces that will assert territorial influence. A four steps process is proposed:

1. Refresh the focal issue. Scenarios are best suited to look at the future through the lens of a specific issue, identified as entry point during the phase 1.

2. Prioritizing driving forces. Driving forces are the social, economic, environmental, political, and technological factors that are most relevant to the focal issue. They should be prioritized by the GreeNTD team according to their relevance in affecting the desired outcome.

3. Writing scenario narratives. These are the stories about the stakeholder's scenario/vision that explain how driving forces interact and what effects they have on the operation or strategic direction being discussed.

4. Describe trends in key ecosystem services. Appropriate scenarios combine a reasonable understanding of relevant present trends focusing on ES supply/ demand, trade-offs and positive synergies.

5. Choose "leading indicators." These indicators should help GreeNTD team to monitor changes in SES.

Relevant	Do the scenarios align with the problems and questions of interest to stakeholders and decision makers?
Participatory	Are stakeholders meaningfully involved in the process of developing scenarios and assessing their ecosystem service impacts?
Legitimate	Does the scenario development process include diverse stakeholder views and beliefs?
Plausible	Do the scenarios tell coherent stories that could conceivably happen?
Understandable	Are the scenarios accessible to the target audience?
Contrasted	Are the scenarios sufficiently dissimilar to show contrasting ecosystem service impacts?
Credible	Are scenario storylines and maps sufficiently robust and credible?
Comprehensive	Do the scenarios consider all relevant drivers[Q]?
Interative[R]	Are scenarios revised and refined based on stakeholder input and emerging trends?

[Q] Exogenous global drivers—such as demographic transformation, climate change, and economic growth—are beyond the control of decision makers, but increasingly impact at regional and local scales. Consideration of these driving forces helps reflecting the uncontrollable, unpredictable and complex context in which decision making occurs (Biggs *et al.* 2007). Consider endogenous drivers that are within the decision makers' control is also important. Hybrid approaches to scenarios that combine these considerations often work best.

[R] The scenario set can be expanded or contracted, and the scenarios themselves updated over time. An iterative scenario development process can improve the quality of the final scenarios, as well as cultivate understanding, trust and more detailed discussions between stakeholders and the GreeNTD team. This can be useful as stakeholders learn more about the scenarios, and as knowledge, trends and issues emerge. The process of developing scenarios can help determine which outcomes need to be quantified, and which visualization methods are most appropriate.

Tool #18 example: Scenario development to find coherent and feasible proposals for territorial development in the DRC [S]

To address land issues in a sustainable manner and to facilitate people's access to land, a series of qualitative scenarios of possible alternative futures were developed and their effects tested on SES wit the view of improving local human wellbeing. Their story-oriented nature helped to enable a discussion between all stakeholders.

The scenario exercise was carried out during a three days FORUM, where stakeholders[T] divided into groups (dealers, small landowners, community people and women), developed qualitative scenarios/strategies of territorial development planning.

Proposed scenarios developed and discussed in the discussion groups were as follows:

- Agribusiness cooperatives
- Modernization of agriculture and livestock
- Integral and participatory development for natural resource conservation (theme proposed by women).

In each scenario the following issues were taken into account: i) the driving forces or elements that cause change in living conditions and the future of local populations and use of land (including natural resources) as a whole; ii) potential risks to its application.

Discussions on the scenarios were conducted by looking at the system as a whole, i.e., the interdependence between the social and ecological domains. In this regard, five dimensions were analysed (the social dimension, the economic dimension, the environmental dimension, the political and institutional dimension, the technological dimension) and the trends of ecosystem services and the links with human wellbeing were assessed.

S The case study was developed as part of the project in North Kivu implemented jointly by FAO, UNDP, and UN-Habitat, entitled "Rural Land Integrated Programme for Reintegration and Community Recovery in eastern DRC. (See more: Tarrasón D., Di Benedetto, M. and Groppo, P., forthcoming)

T Participants consist of private concessionaries, the traditional land owners, the landless people of community, and the provincial government representatives (Ministry / from: Plan, Justice, Land Tenure, Land Administration and Customary Affairs, Agriculture, Environment), and the representative of the Stabilization and Reconstruction Plan (STAREC) in eastern DRC

Notes on implementation:

The features that make scenarios effective vary depending on the context. When developing scenarios it can be useful to consider the following criteria:[20]

TOOL #19 TRADE-OFF AND SYNERGIES OF ECOSYSTEM SERVICES (ES)

Purpose:

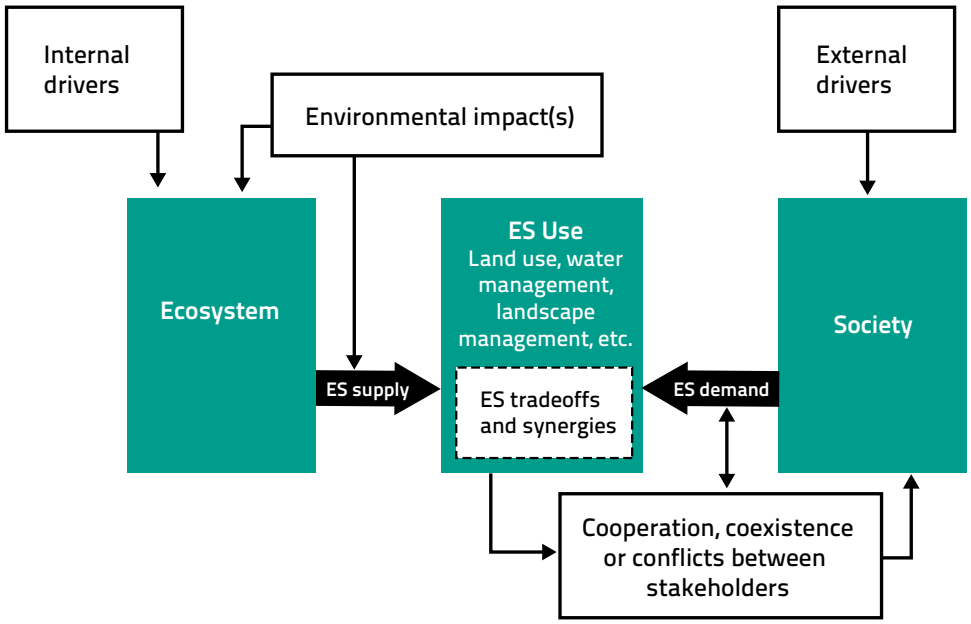
Managing trade-offs only occurs if ES interact with each other. In general, ES are not interdependent and the relationships between them are likely to be highly nonlinear and should be considered in terms of spatial scale (Are the effects of the trade-off felt locally, for example on-farm, or at a more distant location?), temporal scale (How quickly does the trade-off occur?) and reversibility (Are the effects reversible and if so, how quickly can they be reversed?) (Rodriguez *et al.* 2006)

A **trade-off** is a situation where the use of one ES directly decreases the benefits

20 http://www.naturalcapitalproject.org/pubs/ScenariosGuide.pdf

provided by another. A change of ES use could be triggered by the demand and/or the supply. For instance, fin the case of conventional agriculture, the problem is typically posed as a trade-off between provisioning services—i.e. production of agricultural goods such as food; fibre or bioenergy—and regulating services such as water purification, soil conservation or carbon sequestration (MEA 2005). Cultural services and biodiversity conservation are also often viewed as trade-offs with production (e.g. overharvesting of fish stock).

Visualisation of analytical links between related concepts and the trade-off mechanism



Source: Turkelboom *et al* 2015

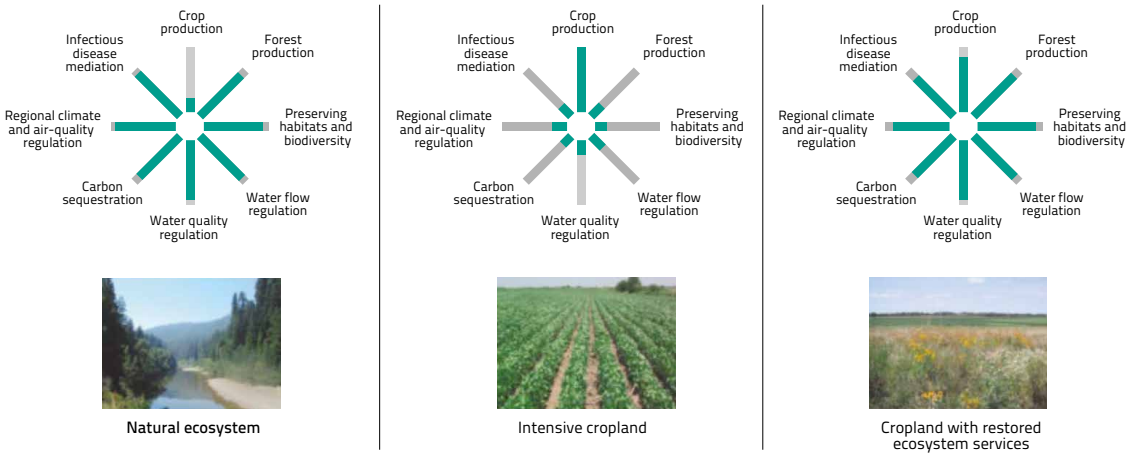
A **synergy** is 'a situation where the use of one ES directly increases the benefits provided by another service' (e.g. a synergy occurs between the regulating service pollination and the provisioning service crop production, so 75% of the world's major crops are dependent on, or benefit from pollination, Carvalheiro *et al.*, 2012); or between soil erosion control and crop production, so erosion can result in a loss of the more fertile soil, reducing yields. Good erosion control can therefore mean better supply of crops (Bennett, Peterson & Gordon, 2009)

Different functions and services of territory have to be considered at the same time:

- How much do we gain in goal A if we decrease goal B?
- Functional relationships between different goals?
- Functional relationships between goals and policy instruments?

The provisioning of multiple ecosystem services under different land-use regimes can be illustrated with these simple "flower" diagrams, in which the condition of each ecosystem service is indicated along each axis. (In this qualitative illustration, the axes are not labelled or normalized with common units.)

A Conceptual framework for comparing land use and trade-offs of ecosystem services.



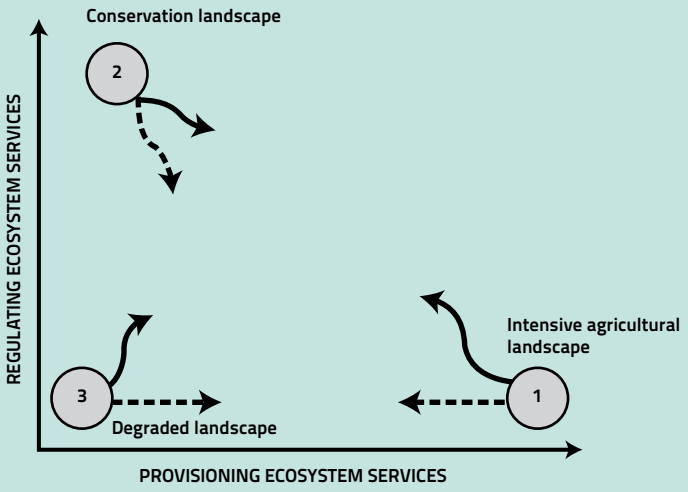
Source: Foley *et al* 2005

Tool #19 example: Trade-offs and synergies of Ecosystem Services (UNEP 2011)

The authors outline the possibility of moving towards "winning more and losing less" by developing a framework that could deepen our understanding of how losses of regulating services may be reduced under various scenarios of development of provisioning services.

A general framework is proposed for handling undesired trade-offs between provisioning and regulating services. The framework is based on a typology of landscapes, (1) intensive agricultural landscape, (2) conservation landscape and (3) degraded landscape, each with a distinct configuration of levels of provisioning and regulating services (Figure below).

Different trajectories of change for intensively used agricultural landscapes (1), conservation landscapes (2) and degrades landscapes (3). Future trends may include transitions where regulating services are lost or stay at a low level (type A-responses, hatched lines) or where they may increase or are maintained at a high level (type B or C response, solid lines).



1. ***Intensively used agricultural landscapes:*** Provisioning services are maintained at least temporarily at the expense of regulating services. However, in the future, increasing fossil fuel prices, climate change and water shortage may drive most of these areas to the left. For example, IPCC predicts that even slight global warming will substantially decrease agricultural productivity in many tropical and subtropical countries mainly due to water shortage for irrigation (IPCC 2007). Further, as stated earlier, nitrogen fertiliser is increasingly expensive and supplies are therefore not sustainable, we may already have passed a critical threshold. Sustainable agricultural systems will therefore increasingly have to rely on nitrogen fixation by organisms in the future. The transformation of intensive agriculture under this scenario may occur along at least two trajectories, one representing a monotonic decrease in productivity (type-A response), another representing a simultaneous increase in regulating services (type B or C-response) such as biological control, nitrogen fixing and climate regulation. We still lack financial.

2. ***Conservation landscapes:*** High levels of regulating services also means low generation of provisioning services. However, demographic and market pressures will in most parts of the world lead to intensification of land use and drive such areas down and right i.e. loosing regulating and cultural services while gaining provisioning services. For example, natural areas will continue to be converted to agricultural land and land currently under extensive (low-impact) forms of agriculture will be increasingly converted to intensive agricultural use with 7.5 million km2 expected to be converted by 2050. Also here two trajectories are possible, one leading to increase in provisioning services but a sharp decline in regulating services (type A-response), the other to maintaining higher levels of regulating services (type-B or C responses).What institutions and incentives should be put in place for the type-B or C trajectories? One important and yet unresolved question in this context is to what extent the net production of regulating and provisioning services is greater when a portion of the landscape is converted to very intensive agriculture and the rest turned to conservation, or when most of the landscape is under land uses that aim to balance agricultural production with biodiversity conservation.

3. ***Degraded landscapes:*** generate few services as a result of extremely low productivity and often absence of institutions to regulate boom and bust economic drivers. However, there are currently incentives building up to transform such areas in production of biomass energy. Global terrestrial annual plant growth is more than five times the 8 billion tons of carbon released to the atmosphere in fossil fuel combustion. In principle, diverting a small fraction of total plant growth into biomass energy could satisfy the majority of global energy needs. The large potential for producing biomass energy without negative effects on climate and food production lies in using degraded and abandoned agricultural lands.

The authors compare three hypothetical landscapes: a natural ecosystem (left), an intensively managed cropland (middle), and a cropland with restored ecosystem services (right). The natural ecosystems are able to support many ecosystem services at high levels, but not food production. The intensively managed cropland, however, is able to produce food in abundance (at least in the short run), at the cost of diminishing other ecosystem services. However, middle ground—a cropland that is explicitly managed to maintain other ecosystem services—may be able to support a broader portfolio of ecosystem services.

TOOL #20 ALTERNATIVE SELECTION

Purpose

This tool promotes consideration of views on the potential merits or difficulties associated with discussed scenarios according ecosystem services trends and positive synergies between them.

Application

The type of questions that need to be considered at this stage might include:

1. *What is the alternative (scenario) that is most likely to bring about the desired results enhancing ecosystem services with positive synergies, contributing to substantial net gains in human well-being? With impact most positively on addressing the needs of women and other vulnerable groups*
2. *How local ownership is best supported, including development of the capacity of local institutions?*
3. *What is the likely capital and recurrent costs implications of different alternatives and what can realistically be afforded?*
4. *How can potential damages on environment best be mitigated or avoided?*

This analytical stage is, in some respects, the most difficult and challenging, as it involves synthesizing a significant amount of information then making a complex judgment about the best implementation strategy (or strategies) to pursue the desired scenario. In practice a number of compromises often have to be made to balance different stakeholder interests, political demands, ethical considerations and practical/ legal constraints such as rules and resources availability.

Implementation: opportunities and constraints

The task is made easier if there is an agreed set of criteria against which to assess the merits of different alternative options. These criteria should represent key priorities/ values among stakeholders.

The choice of an appropriate scenario tool depends on the goals of the project and the context in which the intervention takes place. Below a number of key questions[21] that GreeNTD team should ask before undertaking a scenario analysis and on the basis of which develop a checklist for the selection of the most suitable scenario.

- *What are the plausible future changes in ecosystems and in the supply of and demand for ecosystem services and the consequent changes in the constituents of wellbeing?*
- *What are the costs, benefits, and risks of plausible future changes in ecosystems and how will these costs, benefits, and risks affect different sectors of society and different regions of the world?*
- *What are the inadvertent negative consequences associated with various futures?*
- *What response options can lessen the vulnerability of people/communities?*
- *Under what circumstances are thresholds, regime shifts, or irreversible changes likely to occur?*

[21] Useful core questions for scenarios are described by Bennett *et al* (2005)

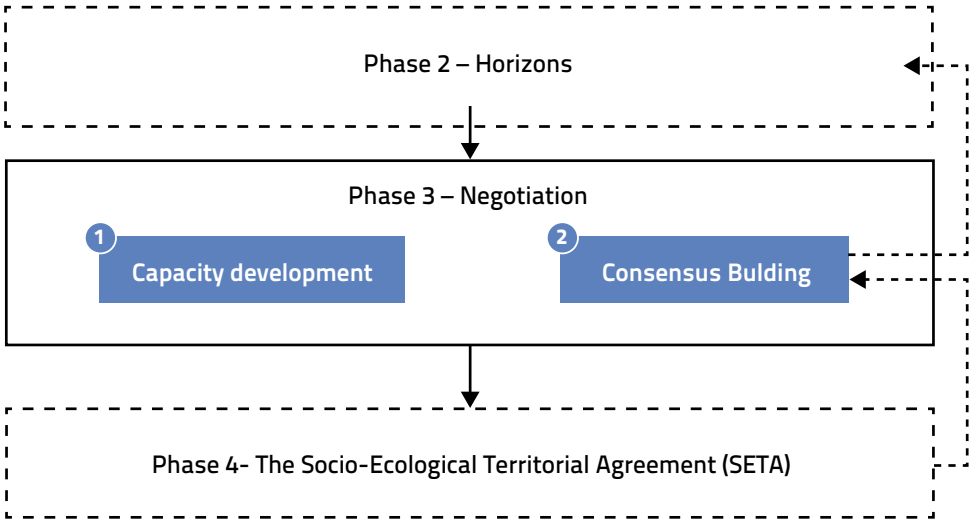
The scenarios address these core questions. They explore the potential futures of ecosystems and the services they provide, including the possible benefits and inadvertent consequences that could emerge in each future.

PHASE 3: NEGOTIATION – SEEKING CONSENSUS FOR A SOCIO-ECOLOGICAL TERRITORIAL AGREEMENT (SETA)

The negotiation phase is where the substance and terms of the future agreement are addressed.

A basic premise of negotiation techniques for territorial development interventions is the acknowledgement of the diversity of social/cultural characteristics; the different and sometimes interests among stakeholders; the existing power asymmetries in managing lands, forests, marine areas, coasts, river basins, etc., and their perception on good and services. Under such circumstances, new or existing conflicts are often unavoidable.

FIGURE 5
Schematic representation of the core steps of the phase 3. The dotted line indicates the possibility to update respectively the previous phase

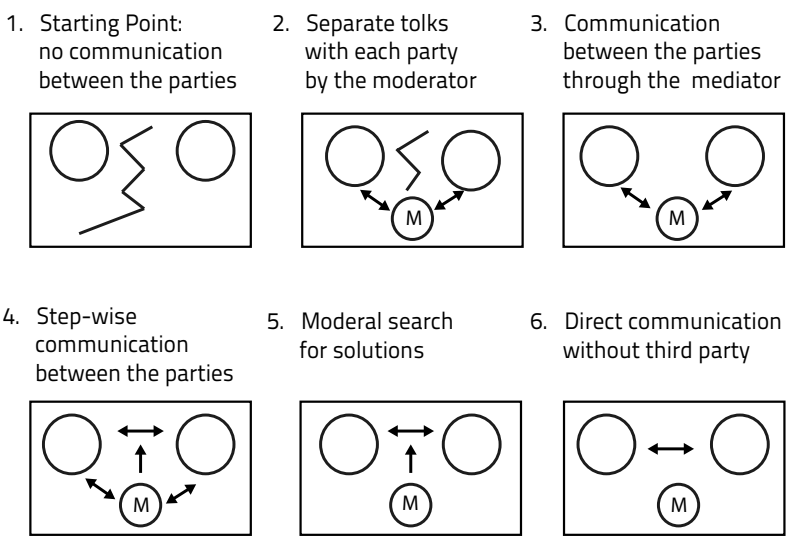


Support capacity-development activities that strength the ability of parties – and in particular of weaker and most vulnerable actors - to participate effectively in the process cannot be overlooked (Van Well and Kallhauge 2012). On the contrary, the involvement of such actors through developing their negotiation capacity contributes to enhance the legitimacy of the process and the reputation of the other parties involved, and it nurtures a sense of trust and willingness to recognize the legitimation to explore options of mutual interest.

Moreover, in negotiations, it is needed to read stakeholders' proposals between the lines for hidden intentions. In order to be prepared for this, it is important to consider the interests of the other parties, in order to dig behind the apparent positions to understand the real driving interests.

Generally – but not necessarily – approaches for facilitating consensus building require a professional third party. Procedures for guiding the dialogue and negotiations between the parties are highlighted below. It is important: to make sure that both sides listen to each other; to help the parties to structure the discussion assuring through active inquiry that all details – especially the interests, motivations and feelings of both sides – are presented without offending the other party (Source: based on FAO 2006)[22].

The role of a mediator



TOOL #21 CAPACITY DEVELOPMENT ASSESSEMENT

Purpose

The Capacity Development Assessment (CDA) tool [23]can be used by any community or group wanting to improve its capacity to work on a particular issue. The group can use the tool to consider how they can build their capacity and to see how their capacity is changing over time.

Capacity building tools are effective for building negotiation capacity.

Application

What is needed

- Big image of a ripple with a centre point and 5 circles or rings

[22] https://www.giz.de/fachexpertise/downloads/Fachexpertise/giz2008-en-land-conflicts.pdf

[23] http://www.menzies.edu.au/icms_docs/188567_Capacity_Building_Assessment_Tool.pdf

– Big cards for each of the 11 areas (such as Community Ownership), with questions on the back (see figure below)

Questions to facilitate discussion

Area 1. Community ownership How involved are community elders and other community people? How well the people support each other for the good of the community?	**Area 6. Opportunities for learning and skill development** How good is the group at giving members a chance or helping them to learn new skills?
Area 2. Building on strengths How good is the group of focusing on strengths more than problems? Well do action discussed by the group build on what is already working?	**Area 7. Way of working** How do people work to achieve group goals? **Learn**: How does the group decide on what the community needs? **Plan**: does the group set goals and plan well? **Do**: How strong is the groups commitment to taking action **Collect and learn**: How is the group checking to see if the actions are helping to make improvements Area eight. Getting together the things you need? How good is the group at getting the resort is he needs to get the things done?
Area 3. Strong leadership and voice How involved are the right people who can represent the community voice? How well do the other people, agencies and groups listen to this group?	**Area 9. Good strong communication** How strong is the communication in the group?
Area 4. Making decisions together How good is the group at making decisions together? How comfortable do people in the group feel to have their say?	**Area 10. Showing the true story** How well does the group share their discussions and actions with the community?
Area 5. Strong partnerships How well does the grill work together with other people, agencies and people and groups? How well the members of the group support each other and work together?	**Area 11. Continuing the process and passing on to the next generation** How will the group keep on going? What happens if one of the group members steps down? How good is the good food group at getting the next-generation involved?

How to use the tool

- Starting with Community Ownership, discuss each area of the tool with the group. Listen to and respect everyone's opinion.
- Ask people to describe how they see the group in relation to the GreeNTD process.
- Decide as a group where on the ripple to place each small card. If people agree their capacity is strong in one area, place the small card towards the outside ring. If they feel the group's capacity is not strong yet, place the small card closer to the center.
- Write on a sticky note the reasons for placing the small card where it is. Stick the note next to the card.
- Discuss all the other areas in the same way. You should have 11 small cards and 11 sticky notes on the ripple image. The first time you use the tool, it will show the group's baseline "what the group's capacity looked like when it just started" (take a photo of the image so you can compare the results next time you use the tool). You will be able to see how the capacity of the group changes.

Tool #21 example: capacity development of multisector groups in remote Australian Indigenous communities[U]

Food insecurity, which relates to food availability, access and use of land, contributes to the disadvantage experienced by Indigenous Australians.

To facilitate a community collaborative effort to tackle community food security and achieve improved nutrition the authors encouraged the formation of multi-sector groups with representation of relevant community agencies and interests.

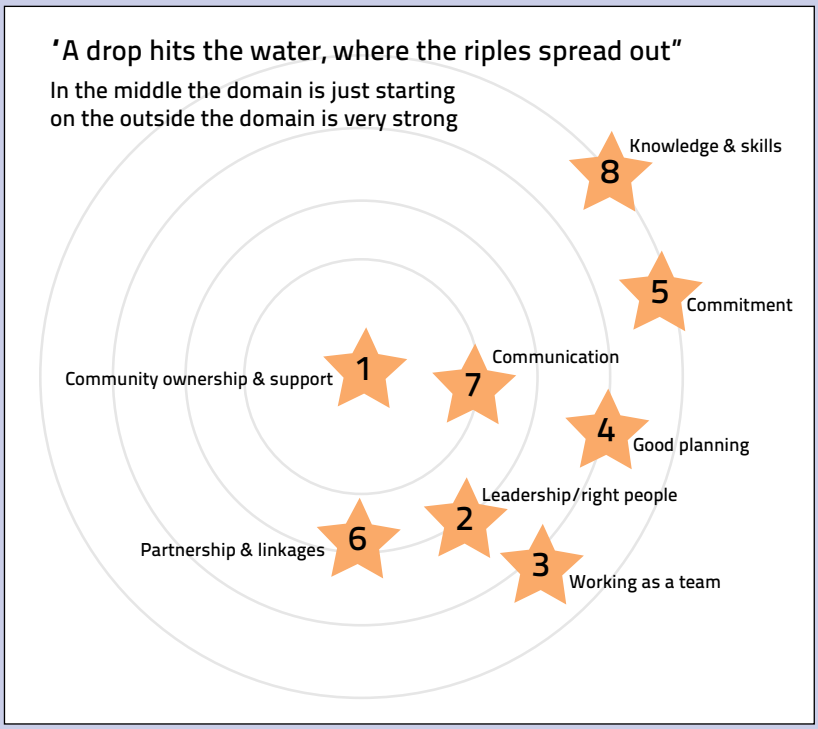
Method

To appraise the community capacity, project communities participated in an urban-based workshop some of whom Aboriginal.

The community capacity constructs and "ripple tool", allowed participants to discuss and mark on the ripple circle where they viewed the development of each area. Discussion points and reasons given by the group for the scoring of each construct were recorded.

Results

Participants demonstrated an understanding of each construct and were able to relate them to their community context. Most participants engaged in the discussion and different views were expressed and taken into consideration by the group in reaching consensus on the construct score. Food-interest group members scored the constructs "knowledge and skills" and "commitment to action" as very strong/fully developed, and "community ownership and support", and "communication" as just developing and in need of strengthening.



The group perceived the process of planning to be well developed, but were concerned that prioritised actions were not being implemented due to the already heavy workload of participants. Overall, participants identified that more investment was needed in gaining greater support from the wider community and encouraging participation from sectors and community groups not represented.

U Brimblecombe *et al* 2014.

TOOL #22 THE CONFLICT LAYER MODEL

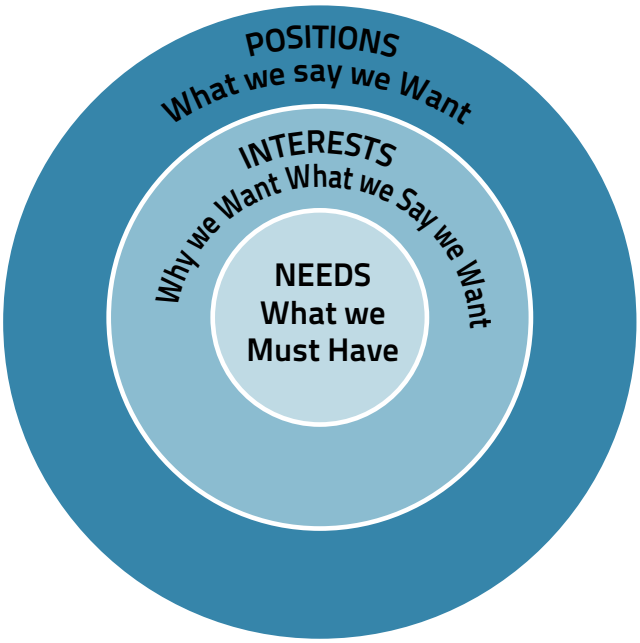
Purpose

The Conflict Layer Model (CLM) (or "conflict onion") helps to examine the stakeholders' positions, interests and needs, and to gain a better understanding regarding interests and needs of all sides of the negotiation[24]

Application

The CLM consists of concentric circles showing the needs, interests and objectives or positions of the various stakeholders, broken down into different categories – positions, interests and needs.

The outer layer of the onion can be thought of as the public positions of the various opposing groups – what they say and do. The second layer represents their interests – what they want to achieve from a particular situation. At the core are the most underlying motivations – the needs, they want to meet. While interests can often be negotiated, basic needs, such as recognition, are usually non-negotiable.



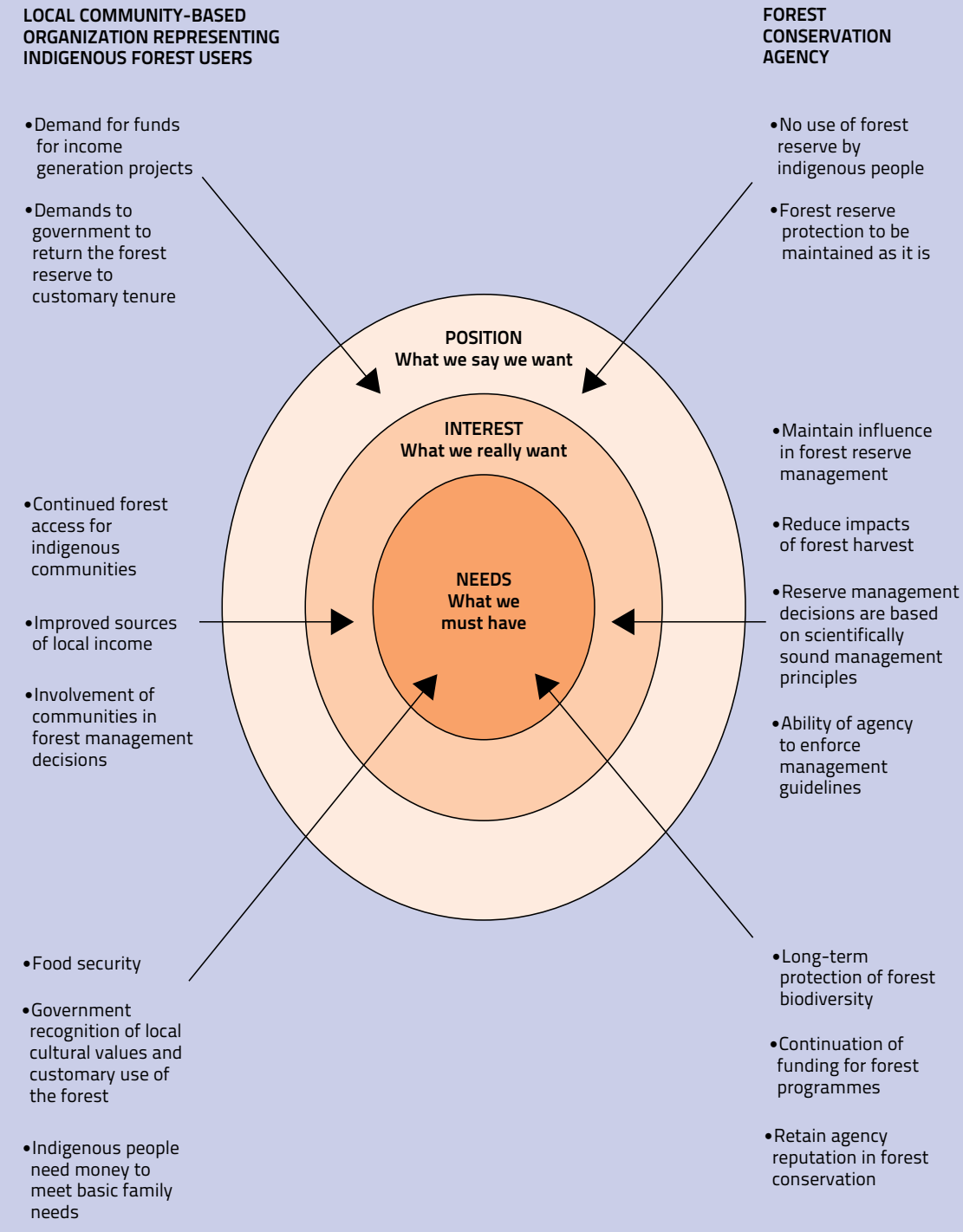
Implementation: opportunities and constraints

Interest-based negotiation involves exploring and satisfying interests rather than arguing and competing over positions. GreeNTD team needs thus to help stakeholders to become aware of the distinction between positions (what people say they want in a conflict) and interests (what people really want, and what motivates them).

[24] http://www.fao.org/docrep/008/a0032e/a0032e09.htm

Tool #22 example: Conflict onion distinguishing interests and positions

The positions taken by the indigenous forest users and the forest conservation union in the "conflict onion" seem quite incompatible; there does not seem to be much room for negotiation. The demand to return the forest reserve to customary tenure is counterbalanced by a demand to prohibit indigenous people's use of the reserve. However, when the situation is considered from the viewpoint of interests it looks different. Reduce impact logging or the desire to base management on scientifically sound principles could be compatible with involving communities in management decisions and improving sources of local income.

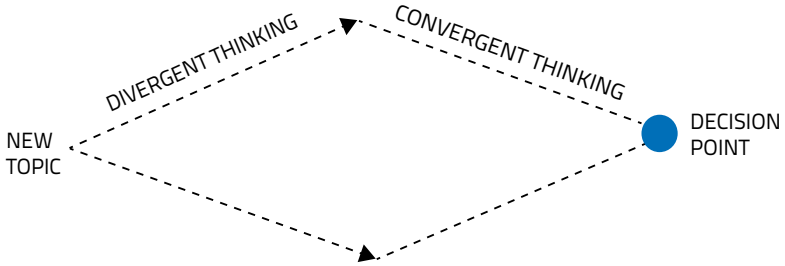


Source: Adapted from Fisher *et al.* (2000)

TOOL #23 GROUP DECISION MAKING FROM DIVERGENCE TO CONVERGENCE

Purpose

Experience showed that, in a creative process, it is recommendable to start with divergent thinking to produce as many ideas or solutions as possible and thereafter to switch to convergent thinking while selecting a few most promising ideas. This is usually illustrated in the form of a diamond as shown in figure below



Group Decision Making from Divergence to Convergence tool [25]is useful to GreeNTD team to review and discuss scenarios toward building convergence in perspectives among local actors.

An effective model of group decision making takes into account the requests or rights, positions or needs of individuals to share their differences and have their standpoints respected. Dealing with divergences include the ability to structure the discussion and ask questions that enable people to clarify the different positions in their minds, as well as the ability to mirror the ideas of one participant so that everyone understands them, empathising with the other people to grasp what they mean.

Other key points of consideration for mediating toward convergence/consensus:

Tool #23 differences between the two thinking processes

Divergent thinking	-->	**Convergent thinking**
Generating alternatives	-->	Evaluating alternatives
Free-for-all open discussions	-->	Summarizing key points
Gathering diverse points of view	-->	Sorting ideas into categories
Unpacking the logic of a problem	-->	Arriving at general conclusion (agreement)

TOOL # 24 COLLABORATION MATRIX

Purpose

The Collaboration Matrix (CM) aims at facilitating the exchange of information among stakeholders' groups, to gain mutual understanding of the strengths, interests, mandates and goals of each group, including the nodes of cooperation. It can also help to get a clearer picture of possible collaboration activities between groups of stakeholders.

25 More information in http://www.fao.org/fileadmin/user_upload/knowledge/docs/Facilitating_Decision_Making_Online.pdf

Application

When decisions need to be made about establishing a major cooperative relationship through formal collaboration, a collaboration matrix should be drawn up to help in identifying relevant criteria.

- Steps to design a Collaboration Matrix (CM):
- Defining the type of collaboration intended;
- Describe the binding and unbinding factors for each organisational aspect (environment, objectives, inputs, outputs, internal organization)
- Establish the impact of the (un)binding factors
- Identify collaboration opportunities and threats

The tool can be applied in multiple ways: a wide participatory approach where as many relevant actors and partners engage in the exercise jointly, or through a sectorial approach, where actors only of a similar category/type conduct the exercise.

Tool #24 example: Assessment of the cooperation

Stakeholders cooperate to become more effective and efficient or to increase their chances to improve (sustainability/continuity).

Table below provides an overview of the factors that favour cooperation and those that do not, in relation to various organisational elements.

Organisational aspects	Factors favoring cooperation	Unfavorable factors
Environment	External pressure for cooperation Dependency on others [Procedural/technical] A common "enemy "	External pressure for independence Lack of legitimacy/acceptance
Objectives	Common goals/visions	Conflicting goals/visions
Output	Enemies of scale Cost-sharing Mutual benefits	Lack of resources to contribute imbalance between benefits and contributions
Inputs	Complementary services to equal target groups Similar services two different segments of target group	Equal services to equal segments of target
Internal Organizzation	Compatible strategies and approaches Compatible systems and procedures Compatible Leadership styles Common language Respect/trust	Conflicting strategies/approaches Incompatible systems and procedures Different leadership styles Misunderstanding Disrespect/mistrust

When decisions need to be made about establishing a major cooperative relationship through formal collaboration, a CM helps in identifying relevant criteria. Table below provides an overview of the factors that favour cooperation and those that do not, in relation to various organisational elements.

Organisational aspects	Factor favoruring cooperation	Assessment of strength factor <-- -->	Unfavourable factors
Environment		-->	Bad pubblic imagee of extetion agency
Objectives	Common goals (development and small older farmes)	<--	
Output	Complementary services (information and extention)	<--	
inputs	Ability to complement tecnical skills and being °close° to targhet group	<-- -->	Lack of found for oxtetion agenc
Internal Organizzation	Similar professional background (agriculture)	<-- --> -->	Geographical distancice. Differences in produres and approch

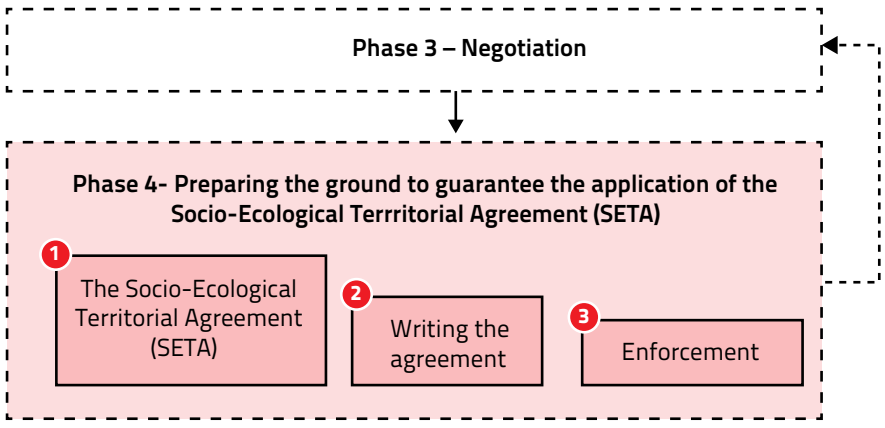
The matrix indicates that there are major difficulties regarding: image, funds, geographical distance, and differences in procedures and approach. Such unfavourable factors would have to be discussed and addressed before collaboration could be proposed and agreed.

PHASE 4: ENFORCEMENT - PREPARING THE GROUND TO GUARANTEE THE APPLICATION OF THE SETA

Once the negotiation process has allowed reaching consensus, stakeholders draft the basis for a.

The Socio-Ecological Territorial Agreement (SETA) does not necessarily guarantee success on the ground per se and therefore enforcement becomes essential. Enforcement involves the presence and ability of state-backed institutions to both guarantee rights of different stakeholders and to ensure the application of the agreement.

FIGURE 6
Schematic representation of the core steps of the phase 4. The dotted line indicates the possibility to update respectively the previous phase



TOOL # 25 WRITING THE AGREEMENT[26]

Purpose

This tool aims at assisting stakeholders in drafting the final agreement.

Application

It is important to be prepared with the knowledge and skills necessary to help the negotiating parties. The voluntary participation of all key stakeholders is fundamental in a collaborative approach to manage the different perspectives. One group's decision to negotiate is only effective if the other parties also feel that it is in their best interest to do so. There can be many reasons why people are reluctant to negotiate, even when they are generally willing to find a joint solution. Examples include outstanding fears, major difficulties in communication, and fixed perceptions about opposing parties.

Moreover, noteworthy that pursuing negotiation does not necessarily imply that a party sincerely wants to reach negotiated solutions. Parties often engage in superficial negotiations for their own hidden purposes, such as leading other parties to believe that something is happening, when actually it is not, or holding out for time.

The agreement usually consists of four parts:

1. An introduction and background that describes the stakeholder groups and the central issues that have been negotiated.
2. An outline of the resolutions that the groups created for each of the issue.
3. Project proposals.
4. An implementation, monitoring and assessment plan.

The agreement should be checked for honesty, acceptability and workability according to the following guidelines.

Characteristics of a good agreement

Is it honest?

- Based on best available and jointly developed information
- Built on realistic considerations of capacity and costs
- Having the assurance of all stakeholders that they will implement their parts
- Developed with the full involvement of all key stakeholders and developed through consensus

Is it acceptable?

- Responding to needs and priorities and resolving any grievances that might gave rise to disputes
- Acknowledging past problems, failed attempts, and addressing them
- Meeting the underlying interests and needs of primary stakeholders
- Arrived at by a process that was perceived as fair by and to all

[26] http://www.fao.org/docrep/015/i2604e/i2604e00.pdf

Is it workable?

- Providing benefits (incentives) for all implementing parties
- Not disadvantaging an excluded party
- Recognizing possible problems or changes in the future, and including mechanisms to deal with these, or acknowledging the need for renegotiation
- Building working relationships among parties through its implementation

Strong versus weak agreements

The strength of an agreement is being shown when it is put into practice although it needs to be backed by a clear and well-structured document. At the same time a partial agreement (reached only on a partial issue and not on the entire topic of discussion) that is met in practice may be stronger than a complete settlement that is never implemented.

It is also important to reconfirm the acceptability of the agreement with their broader constituencies, to reach broad support and social legitimacy. The support and commitment of all stakeholders, without exception is therefore needed. If subgroups that remain apart from the main group have emerged, the document needs to clarify who they are, and who is not party to the agreement.

The table below shows the points to determine strengths and weaknesses of an agreement

Strong agreements are:	Weak agreements are:
Substantive: They define specific exchanges that everyone can touch or see (money, services, labour, etc.) as resulting from negotiations.	Procedural: They define the way or process by which a decision is to be made.
Comprehensive: They include the resolution of all the issues including dispute.	Partial: They do not include the resolution of all the issues.
Balanced: permanent yet iterative: They resolve the priority needs and issues at hand including dispute, with recognition that GreeNTD is a process.	Provisional: They may involve temporary or trial decisions that are subject to change in future.
Final: They include all the details in their final form. In principle: They include general agreements, but the details remain to be worked out.	In principle. They include general agreements, but the details remain to be worked out.
Non-conditional: There are no conditions or requirements for future performance.	Contingent: They state that the conclusion of the agreement depends on additional information or the future performance of one or more parties
Binding: They are 'formalized" contracts that fix parties to certain actions (people often stick to the terms of a settlement if they understand the consequences of not doing so)	Non-binding: They make recommendations or requests only; the parties are not bound to comply

A final point of discussion in negotiations is the extent to which stakeholders want to make their agreement public. Depending on its nature, the final agreement may be enacted through a formal signing in front of witnesses or may require government approval. Alternatively, if the agreement affects many people, they may consider

holding a more public forum. Some groups enter their agreements into the legal system in order to bind their decisions formally. Others choose to announce their agreements to the public at local council meetings or through the media.

Tool #25 example: Socio-Ecological Territorial Agreement in the NE of DRC[v]

Table below shows the main elements discussed for the establishment of the Socio-Ecological Territorial Agreement signed by all stakeholders involved in the GreeNTD process.

Elements	Dealers and land owners	Population
Duties	▪ Make available a portion of land cultivable for the benefit of the population ▪ To fight against wandering of animals and compensation measures ▪ Undertake zoning ▪ Qualify land through agroforestry ▪ Rewarding farmer's labour in the coffee harvest	▪ Land preparation. ▪ Crop management ▪ To harvest coffee for wage and prevent the destruction of intercropping ▪ Apply soil conservations practices (e.g., crop rotation) ▪ Prohibition to sublease land
Rights	100% of the coffee harvest	100% of the coffee harvest
Cooperation clauses	▪ Sign the contract or memorandum of understanding between the dealers and local people. ▪ i. Time of land cession ▪ ii. The area of land ▪ iii. Payment system Note of discrimination Mutual without discrimination Conflict resolution around a table (prevention & resolution mechanism)	
Cession of land	Roughly 1 hectare depending on capacity	
Work conditions	To provide agricultural tools Remuneration fees / calculation basis according to market developments	
Assets	Harmonisation of cooperation and cohabitation Willingness of facilitators	
Risks to be avoided	Dislodgment without justification Straying cows Land appropriation	
The termination clauses	Breach of contract terms	
Strengthening women's rights	Involve women in the entire process	

[v] http://www.fao.org/docrep/010/a0876e/a0876e00.htm

TOOL # 26 The Regionalization and Differentiation Methodology (RED) Information, Training and Organization (IFO) model (RED-IFO model)

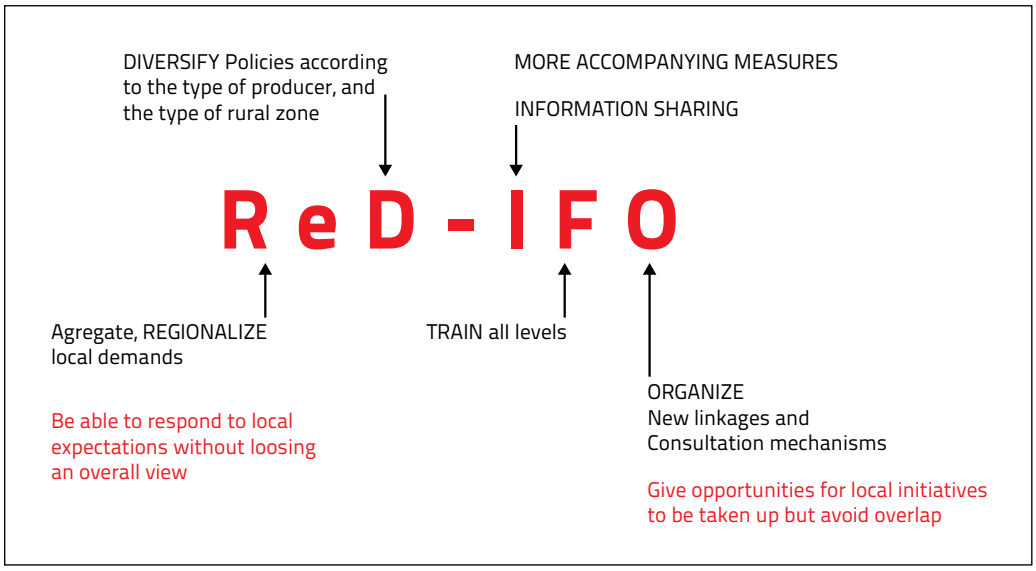
Purpose

GreeNTD is a field-tested approach, which operationalizes the processes of decentralization in local contexts. Decentralization is the key foundation in promoting the enabling environment in which the agreement (SETA) can be successfully implemented.

The Regionalization and Differentiation Methodology (RED) Information, Training and Organization (IFO) model on decentralization identifies, both the risks associated with decentralization and the methodology and support policies for managing such risks and making decentralization a tool for rural development. The model helps in designing a more adequate decentralization policy and in the evaluation of on-going processes.

Application

The RED-IFO model consists of regionalization with a view to meeting the needs of rural populations and ensuring policy differentiation (RED) (Risk 1); then three support policies dealing with information (I) (Risk 2); training/formation (F) (Risk 3); organization (O) (Risk 4); and finally full consultations on the modalities of the most appropriate schedule for the implementation of decentralization (Risk 5).



Regionalization and Differentiation Methodology (RED)

To overcome the first problem of decentralization (Risk 1), policy makers must create a *forum for interaction* between people in development who have an overall view and policy responsibility and actors who have knowledge of local circumstances and specific project or programme support proposals. This forum is the place for the formulation of a strategy for decentralized rural development promoting local actor cooperation through building on *strengths* of all actors; transparency; and appropriate outcomes. This aims at formulating a policy that is not too general, and allows for differentiation where the particular problems of each region, product and type of producers can be taken in to account and the most appropriate support can be provided

to local development actors. At the same time, to avoid narrow requests by local stakeholders and to ensure cohesive interventions, preferences of rural populations have to be regionalized to broaden their scope and give them an appropriate level of coordination and coherence. The combination of regionalization and differentiation facilitates the transition from centralized policies to policies more reflective of local reality, thus maintaining sufficient coordination and coherence for development. This enables the State to direct its action through suitable policies and programmes in the agricultural and rural sector, creating employment and diversification and targeting the poorest segments of the population.

Support Policies: Information, Training and Organization (IFO)

According to the RED-IFO model, for the expected impacts of decentralization to materialize, three support policies for regionalization and differentiation are necessary to facilitate access to information, training and organizational support.

The Role of Access to Information

To mitigate risks of asymmetry and promote a "levelling playing field" among actors in policy decision-making, access to information is vital. Policy measures are required to ensure access to information, including the production of relevant information necessary for the formulation of a rural development strategy, and the flow of information (of similar quantity and quality) to all actors. Access to information is critical for dialogue between the state and other actors, without which there cannot be a participatory and decentralized development strategy.

Training to avoid Institutional Voids

The technical capacity of all actors must be strengthened to avoid that decentralization corresponds to a diminishing in support services. The necessity for training is due to a shift in the approach since decentralization is driven by demands of local populations and not by decision taken at central level. Without a significant training policy, decentralization might favour the richest and best organized local governments and organizations to the detriment of those that have the most need for support but do not have the capacity to formulate their demands in terms of development projects and programmes. To avoid common risks of elite capture or inequities, training should be directed to municipal/district levels of government and civil society organizations based/working in rural areas

Support to the Organization and Structures of Mediation

Although the availability of information and training can mitigate risks, this may not be sufficient if there is no strong organizational base to give actors in development the possibility to participate in the design, implementation and monitoring of policies. The third support policy recommended by the RED-IFO model is support for Civil Society Organizations (CSOs), recognizing them as full interlocutors with the state.

CSOs can guarantee wide participation of rural populations in the formulation of the modalities for decentralization, ensuring that they are not formulated solely by the central government. The objectives, modalities and pace of decentralization can thus be discussed with local actors. CSOs facilitate institutional innovations that allow actors in development to actively participate in policy differentiation and in the regionalization of demands for support. It is through such organizations that different social groups

can become actors in their own development because they reinforce their ability to reclaim functions previously centralized. Finally, CSOs function as local structures of mediation and consultation, which transform social pressure into development projects and programs. With decentralization, dialogue, mediation mechanisms, and social pressure are vehicles for constructively structuring demands and synthesizing them into a rural development strategy.

Opportunities and constraints

Decentralization requires variation of the pace of decentralization, taking into account the specific capacity of each region, each town or municipality, and each social group, to take on and develop the functions assigned to them. Overall, the RED-IFO model proposes decentralization as a gradual process to transfer functions, resources and decision-making powers at the rate and pace suggested by institutional capacity. New institutions must not be seen as instruments bringing information, training and organization to rural populations, but rather the creation of rural populations themselves, who would thus be providing the means to engage in dialogue with all their partners including the state. That is why the strategic direction of the RED-IFO model is the creation, reorganization and reinforcement of institutions. Decentralization centred on institution development will strengthen the state, improving its alignment to local realities without losing the national perspective in rural development actions. The cornerstone is the creation of institutional conditions conducive to the participation of citizens in the choice and implementation of actions affecting their future.

The model implicitly recognizes that the prospects of decentralization can only be realized if it is closely tied in with the building of democracy. The transition from supply-driven intervention to demand-driven intervention can be made through: a) ensuring the impetus of local actors in development, b) ensuring decentralization does not produce power vacuums and c) formulating a coherent, participatory. The model proposes the creation of a new alliance and development approach to sustainable and participatory rural development. GreeNTD is a valuable mechanism for facilitating this process.

Tool #26 example: RED-IFO^{W} in Senegal

This example shows strengths and stumbling blocks that can hinder the process of decentralization and effect the implementation of the enforcement phase.

a) The regionalization of local demands

The implementation of decentralization raises the problem of state withdrawal and the consideration of the needs of grassroots populations. The risk involved here is that the Global supply-driven management approach is completely taken over by a fragmented and dispersed demand-driven management approach.

In Senegal, the entry into force of the new legislation meant that the Region (the new Decentralized Local Government) became in charge of development planning. In this perspective, it takes into account the concerns of the rural populations when drawing up Integrated Regional Development Plans.

The collective regional entity is a diligent framework for decentralized rural development policy in particular and local development in general. To reiterate the objective of grassroots democracy, the transfer of decision-making power creates administrative autonomy of local affairs and new financial autonomy introduces transparent management of local funds by elected members with the implication of civil society actor.

In this context, the Producers Organizations (POs) Regional Consultation Forums (CRCOP) foreseen by the Agricultural Services and Producers Organisations Project (PSAOP), constitute frameworks for coordination and harmonization of actions and perspectives of the POs with regard to development projects and training. The POs (CRCOP) Regional Consultation Forum at Regional Level is made up of representatives from all the POs local consultation structures (CLCOP).

b) The differentiation of local policies

Since proximity justifies relevance, all decentralization models must agree that the satisfaction of daily needs of the population is a task for local level institutions. The objective of the CLCOP reflects this logic because it aims to ensure that POs participate in consultation mechanisms involving all concerned stakeholders.
Nevertheless, a wise balance between regionalization of needs and the specification strategy is needed in order to have simultaneously a coordination unity for the satisfaction of needs and a consideration of the different types of needs. A set of three pronged measures (information, training and organization) is needed to support the decentralization process in rural development.

c) Information and Information Sharing

Decentralized rural development is based on a relevant, precise and available information system between grassroots actors and the state. A deficient communication system slows down participatory process in relation to the content of the rural development strategy and hinders its role in capacity development of local populations. A communication plan forms an important part of the decentralization action plan produced by the Minister of the Interior. This plan has the following main objectives:

- facilitate understanding of the content of the texts on decentralization;
- reach common ownership of the final project, and;
- develop a infosystem appropriate for rural environment.

d) Training

Training is needed in order to achieve autonomy of action for rural actors. It is very important that these, generally illiterate, actors be in possession of the precise definition of their role in the new context of decentralized rural development. The themes that will be of interest to them will be:

- functional literacy both for the elected local members and POs leaders;
- production improvement techniques (e.g. on increased yields, loss minimization, etc.);
- group communication exercises, and;
- management of the productive unit(technique and style).

e) Actor organization

With the installation of structures to facilitate the decentralization process, the Local Governments are in charge of managing economic development activities and must work in close partnership with the organizations of rural producers (e.g. cooperatives, women promotion groups, Economic interest grup).
The Local Governments involved in rural development have the responsibility over their own competencies defined in the local government code and by virtue of proximity. On the other hand, rural producer organizations are structured from local to national level in each of the following sectors: animal rearing, agriculture artisan fishing, forestry, and rural women's organizations. At federal level of POs, commercial activities are related to supply management, processing, and financial organization and training. At national level, the The National Council for Rural Consultation and Cooperation (CNCR) works on the exchange of ideas on rural development in the interests of the defense of the rural world in governmental programs and finally, on the synergizing of the potential of different actors in rural development. With this structure in place, the functionality of such organizations is needed in order to guarantee their dynamic and efficient intervention. For this reason, the rural councils need strategic planning strategies for their activities, an operational budget management system and mechanisms to control the execution of their tasks.

To summarize, the RED-IFO filter applied to the decentralization process in Senegal tells us the following:

- the decentralization policy, in place since 1990, suffers from a lot of information gaps and lack of capacity development of rural actors;
- the competencies that have been transferred do not always cover all key sectors of the rural world such as agriculture, animal rearing and fishing.

[w-] http://www.fao.org/docrep/010/a0876e/a0876e00.htm

PHASE 5: MONITORING AND EVALUATION - CAPITALIZING FROM EXPERIENCE

This Phase allows to evaluate the entire process (i.e., how evolves, how challenges/ constraints are addressed), in order to contribute to the description of institutional, social and ecological changes, to evaluate causal claims and draw, when possible, lessons learned. The tools presented concern the methods of M&E and continuous learning aimed at capitalizing from the experience,[27] to capture, value and document successes and failures during the development of the different phases of the GreeNTD process. Its focus may be on strategic orientation, basic concepts, or operational activities.

The challenge is to design effective learning processes that can underpin management behavior and strategies to enhance territorial development-based livelihoods[28], rather than simply delivering predetermined outputs.

TOOL #27 COLLABORATIVE OUTCOMES REPORTING TECHNIQUE

Purpose

Collaborative Outcomes Reporting Technique (CORT)[29]is a participatory method to impact evaluation based around a performance story that presents evidences, reviewed by both technical experts and program stakeholders including community members, on how a program has contributed to outcomes and impacts.

CORT uses a participatory approach whereby information is generated and analyzed through five phases that culminate in a report. The aim is to tell the 'story' of the programme's performance using multiple-lines of evidence.

Application

CORT involves participation of key stakeholders, generally in six steps. Participation can occur at all stages of this process.[30] The steps are highlighted below:

1. Scoping. An inception/planning workshop is held with the purpose to clarify the programme logic identify existing data and develop evaluation questions.

2. Data trawl. Can include both primary and secondary data sources. Generally, a data trawl of existing evidence is undertaken. Programme staff may be enlisted to help with data-gathering.

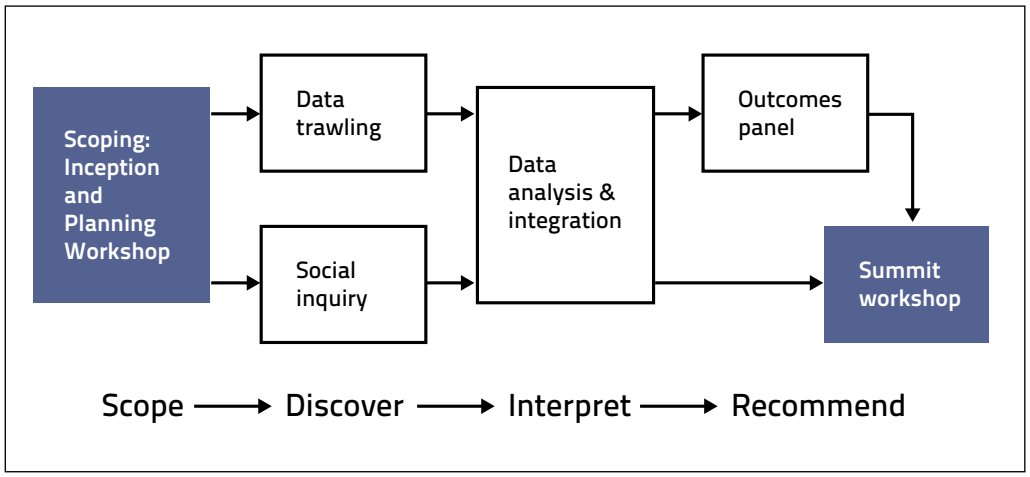
3. Social inquiry. Can include any form of data gathering - qualitative or quantitative. If qualitative, trained volunteers in interviewing and an interview guide can conduct

[27] Capitalize is to transform the experience into shareable knowledge" (Pierre de Zutter, Des histoires, des savoirs, des hommes : l'expérience est un capital, FPH, Paris, 1994, p. 36)

[28] In rural areas, access to and use of land is often a crucial element in the livelihoods strategies of poor households. Inadequate land access, including weak tenure systems with risks of abuses and violation of land rights of smallholders, is a key reason why people do not have enough home-grown food or income, and thus an important systemic cause of vulnerability and exposure to risks and shocks (FAO 2016) http://www.fao.org/3/a-i5574e.pdf

[29] http://betterevaluation.org/plan/approach/cort

[30] http://www.aes.asn.au/images/stories/files/regions/VIC/2010/COR%20AES%202010.pdf



interviews. This is a very effective way to involve staff in the data gathering where there is sufficient enthusiasm around the process. Otherwise consultants or the evaluation managers conduct all or a proportion of the interviews. In many CORT examples, the Most Significant Change (MSC) technique is used at some point in the social inquiry process as a way of capturing stories of change, both expected and unexpected.

4. Data analysis and integration. Quantitative and qualitative data can be analyzed together according to the outcomes in the program logic. A "results chart" is often used to integrate different sets and types of data.

5. Outcomes panel. People with relevant scientific, technical, or sectorial knowledge are brought together and presented with a range of evidence compiled in step 4. They are then asked to assess the contribution of the intervention towards goals given the available knowledge and to explore rival hypotheses that could explain the data. It can be substituted with a citizen's jury.

6. Summit workshop. At a large workshop key findings and recommendations are synthesized, and examples of changes are identified and added (using material from MSC if available, and MSC processes to select the most significant stories). The summit should involve broad participation of key stakeholders such as programme staff and community members.

Collaborative Outcomes Report structure: the report aims to explore and report the extent to which a programme has contributed to outcomes. Under CORT, reports are short and generally structured in terms of the following sections:

1. A narrative section explaining the programme context and rationale.

2. A 'results chart' summarizing the achievements of a programme against a programme logic model.

3. A narrative section describing the implications of the results e.g. the achievements (expected and unexpected), the issues and the recommendations.

4. A section which provides a number of 'vignettes' that provide instances of significant change, usually first person narratives.

5. An index providing more detail on the sources of evidence.

Opportunities and constraints

CORT can be applied across multiple sectors or scales of evaluation. The approach can be particularly useful when the evaluation does not have well defined outcomes at inception, or if outcomes are emergent, complicated or complex. The majority of work done has occurred in the Natural Resource Management Sector.

CORT should not be seen as the only reporting tool. The idea is that it should complement other reporting processes or be extended to encompass more.

Tool #27 example: CORT used for a Natural Resource Management programme in South Australia[w]

Evaluation of the extent to which Australian Government Natural Heritage Trust (NHT) and National Action Plan for Salinity and Water Quality (NAP) investment contributed to biodiversity outcomes on the Fleurieu Peninsula, South Australia.
The activities directed towards reducing, mitigating and managing threats and risks to the survival of the species and ecological community, were as follows: i) research and monitoring, advocacy, contributing to natural resource management and planning processes, ii) awareness raising and education, engaging land managers and other stakeholders, on ground works and population management of the Emu-wren.
Protection and rehabilitation of Swamps and dry-heath vegetation through stock exclusion or grazing management, weed and pest control and revegetation are the key on-ground activities of the program.
The process provides a structured mechanism of outcomes evaluation and consists of a five part participatory steps, and a six part report structure. The process steps used to develop this report are as follows: step 1: Planning workshop; step 2: Data Trawl; step 3: Social inquiry process; step 4: Outcomes panel; step 5: Evaluation summit workshop /step 6: report structure
During the planning workshop, stakeholders created a programme logic model, which diagrammatically represents the hierarchy of the Recovery Programme's activities, outputs and outcomes and the links between them. The programme logic model created formed the basis from which the evaluation questions were developed and the framework on which evidence is presented (Results chart).

TOOL #28 PROCESS TRACING

Purpose

Process tracing (PT)[31] is a fundamental tool for qualitative analysis. It is defined as the systematic examination of diagnostic evidence selected and analyzed in light of suitable questions and hypotheses posed by the evaluator.

The method aims at accomplishing three tasks: a) shortlist one or more evidenced

[31] Process tracing, to reiterate, is an analytic tool for drawing descriptive and causal inferences from diagnostic pieces of evidence— often understood as part of a temporal sequence of events or phenomena. See more: http://betterevaluation.org/evaluation-options/processtracing

explanations for the outcome in question (which may or may not include the intervention); b) rule out alternative, competing explanations incompatible with the evidence; and c) if more than one explanation is supported by the evidence, estimate the level of influence each had on bringing about the change in question.

Application

The tool is not intended to be a mechanical sequence of how the evaluation exercise should proceed; significant iteration between many activities of the processes is expected and, indeed, desired. However, together, such activities form the core of the evaluation exercise's protocol[32].

1. Undertake a process of (re)constructing the intervention's theory of change, in order to evaluate what is trying to change (outcomes), how it is working to effect these changes (strategies/streams of actions/activities), and what assumptions is it making about how it will contribute to these changes (key assumptions)

2. Work with key informants to identify up to three intermediate and/or final outcomes considered by them to be the most significant for the evaluation (central intervention's theory of change, and useful learning).

3. Systematically assess and document what was done under the intervention to achieve the selected targeted outcomes.

4. Identify and evidence the extent to which the selected outcomes have actually materialized, as well as any relevant unintended outcomes.

5. Undertake "process induction" to identify salient plausible causal explanations for the evidenced outcomes.

6. Gather required data and use "process verification" to assess the extent to which each of the explanations identified in Step 5 are supported or not by the available evidence

7. Write a narrative analytical report to document the above research processes and findings

8. Summarize aspects of the above narrative analysis by allocating project/campaign "contribution scores" for each of the targeted and/ or associated outcomes as in the table below.

[32] http://opendocs.ids.ac.uk/opendocs/bitstream/handle/123456789/5997/CDIPracticePaper_10_Annex.pdf?sequence=2

Outcome	Rating	Short commentary (including reference to other evidence explanations as appropriate)

Tool #28 example: Promoting Women's Rights across Africa[X]

'Raising Her Voice' (RHV) is a global programme of Oxfam GB to promote poor women's rights and capacity to participate effectively in governance at every level through, increasing their influence, and crafting decision-making institutions more accountable to women.
Policy and Citizen Voice interventions seek to achieve specific intermediary and final outcomes. As such, the first task as evaluators was to help identify the scope of the intervention, including the outcomes or changes it is seeking to achieve, and the activities undertaken that were intended to bring these about.
The purpose of the review was not to identify a single explanation for an observed outcome-level change, but to take a more nuanced approach to identify the causes of change.
Relevant stakeholders identified one intermediate and one final outcome considered to be particularly significant and appropriate for the review focus (i.e. both central to the intervention's theory of change and logistically possible). Then, process tracing allowed identifying and soughing evidence of the extent to which these outcomes have materialized and the plausible causal explanations of that. These two outcomes were
Outcome 1: Achieve continent-wide ratification of the AU Protocol on the Rights of Women, preferably without harmful reservations.
Outcome 2: Increase the lobbying capabilities of the Solidarity for African Women's Rights (SOAWR) Coalition members to promote the Protocol and hold member states to account.

For the full process tracing protocol, please see http://policy-practice.oxfam.org.uk/our-work/methods-approaches/project-effectiveness-reviews

X http://oxfamilibrary.openrepository.com/oxfam/bitstream/10546/306351/1/er-promoting-women%27s-rights-pan-africa-effectiveness-review-061213-en.pdf

TOOL #29 MOST SIGNIFICANT CHANGE (MSC)

Purpose

The Most Significant Change (MSC) technique is a method of participatory monitoring and evaluation which asks stakeholders to reflect upon past experiences and describe the impact and changes that people had as a result of the good practice.

The tool aims to promote on-going dialogue, learning by sharing experiences and discuss how these experiences can be improved. It also helps program staff and

stakeholders to explore the unexpected or negative changes that may have happened as a result of the project/program.

Most Significant Change is a method suitable for complex interventions with divergent outcomes and where there is a focus on social change. This method works best if it is repeated regularly over the lifetime of an intervention or experience.

Application

After explaining the method to participants the first step is to select 3-5 'domains of change' such as: change in the quality of people's lives, changes in the nature of people's participation in activities, changes in the sustainability of organizations and activities.

The method aims at collecting significant change (SC) stories; this includes who did what, when and why and the reasons why the event was important. Stories are then selected by using open questions such as:

- *Looking back over the last month, what do you think was the most significant change in the quality of people's lives in this community?*
- *What was the situation x years ago? What is it like now?*
- *What has changed in your life?*

Selected stories can be useful inputs for the experience capitalization process and they can be verified by going to the sites described. A publication is another powerful method to provide an input for powerful communication and promote the adoption, adaptation and scaling up of the practices.

The MSC process can happen throughout the program cycle and provides monitoring information that can help staff to improve the program. It also contributes to evaluation by providing information about the impacts and outcomes of a program that can be used to assess how well the program as a whole is working.

The ten steps to implementing MSC are:

Step 1: Raising interest
Step 2: Deciding on domains of change
Step 3: Deciding on the reporting period
Step 4: Collecting social change stories
Step 5: Selecting the most significant stories
Step 6: Feeding back results to key people
Step 7: Verification of stories
Step 8: Quantification of stories
Step 9: Secondary analysis and monitoring
Step 10: Evaluating and revising

Opportunities

MSC is not meant to be used as a stand-alone methodology. However, MSC combines well with other evaluation methods such as short surveys and focus group discussions[33].

[33] http://betterevaluation.org/sites/default/files/EA_PM%26E_toolkit_MSC_manual_for_publication.pdf

Tool #29 example: MSC in Bangladesh

Assessment of the impact of an aid project on 16,500 people in the Rajshahi zone of western of Bangladesh. The idea of getting everyone to agree on a set of indicators was quickly dismissed, as there was just too much diversity and too many conflicting views. Instead, was proposed an evaluation method, which relied on people retelling their stories of significant change they had witnessed as a result of the project. Furthermore, the storytellers explained why they thought their story was significant.

To engage the stakeholders, primarily the region's decision makers and the ultimate project funders, in a process that would help them see (and maybe even feel) the change, the proposal was to get groups of people at different levels of the project's hierarchy to select the stories they thought were most significant and explain why they made that selection.

Each of the four project offices collected a number of stories and was asked to submit one story for each of the four areas of interest to the head office in Dhaka. The Dhaka head office staff then selected one story from the 16 submitted. The selected stories and reasons for selection were communicated back to the level below and the original storytellers. Over time, the stakeholders began to understand the impact they were having and the project's beneficiaries began to understand what the stakeholders believed was important. People were learning from each other. The approach, MSC, systematically developed an intuitive understanding of the project's impact that could be communicated in conjunction with the hard facts.

This method was highly successful: participation in the project increased; the assumptions and world views surfaced, in one case helping resolve an intra-family conflict over contraceptive use; the stories were used extensively in publications, educational material and videos; and the positive changes where identified and reinforced.

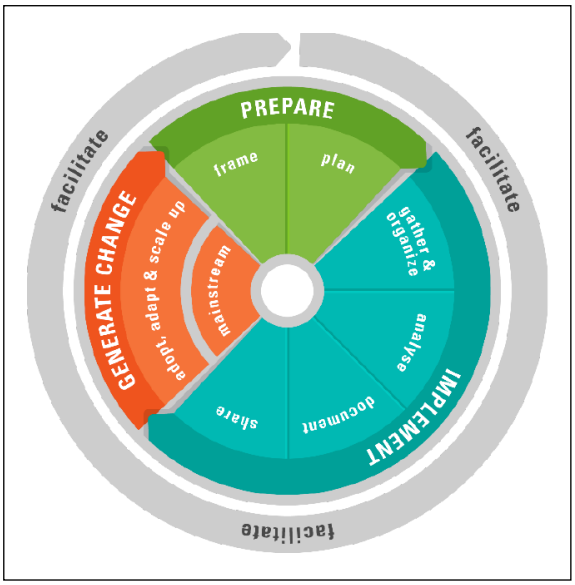
TOOL #30 EXPERIENCE CAPITALIZATION

Purpose

Experience capitalization is a systematic, iterative and participatory process through which an experience is identified, analysed and documented, leading to creation of knowledge (for example good practices or lessons learned), which can be shared and used to generate change.

Experience capitalization, also called systematization, leads to new knowledge, specific lessons, innovations and good practices. Such knowledge can and should be used to improve the work of organizations and institutions to promote the adoption, adaptation and scaling up of experiences and practices.

Experience capitalization is complementary to other processes such as monitoring and evaluation, programme planning and project management, research, capacity development and communication.



Application

Experience capitalization follows a clear, structured methodology; it follows a series of phases and steps.

Prepare

The experience is defined and framed and the process is planned

Frame – Define the purpose and expected results, the audience and its needs, the experience to be capitalized, the participants. Set a timeframe for the process.

Plan – Precise the approach, prepare for information by gathering and reviewing the available resources of information, schedule each step of the process, develop a budget and identify resources. Then prepare a simple M&E plan to measure the process results.

Implement

The information is gathered and analysed, the experience is documented and shared.

- Gather and Organize – Identify the types and sources of information (primary and secondary information), select the most useful collection methods, organize and store information.
- Analyse – Understand how and why the experience was successful in some cases and not in others, identify the lessons learned and practical knowledge from the experience.
- Document – Document in writing the experience and its consequent analysis, prepare a final product specifying its purpose, the target audience and the type of product.
- Share – Define the communication objectives, select products (written, visual, audio, video or web), share final products with different stakeholders through different channels.

Generate change

Experience capitalization's central objective is to ensure that new knowledge (based on people's experiences, successes and failures) is adapted and regularly used in organizations and institutions.

- Adopt, adapt and scale up – Assess the replicability and the likelihood of adoption of the experience, understand what adaptations are necessary for its successful scaling up, identify who can generate change and advocate for it.
- Mainstreaming – Make a diagnosis of the experience capitalization status within your organization, identify the steps that need to be taken to ensure that it becomes a regular feature within your organization.

Tool #30 example: Capitalization of Experiences in Supporting Pastoral Development

The Swiss Agency for Development and Cooperation has undertaken an experience capitalization exercise in the Horn of Africa to support Pastoral Development. The aim was to establish an internal learning process focusing on experience and knowledge on 'how to strengthen pastoral livelihoods and pastoral livestock economy'. The scope was to gain knowledge about what is effective and successful in programmes supporting sustainable pastoral livelihoods, have an overview of existing programmes and projects, understand what type of activities can be implemented and with what kind of partnership.

Experience capitalization was used to answer specific open strategic and operational questions of programs in the Sahel and in the Horn of Africa focusing on pastoral livestock economy and livelihoods referring to the idea of 'learning now for the future'.

In March 2014, Programme Officers of the Swiss Agency for Development and Cooperation offices in Barnako, Ouagadougou, Niambey, N'Djamena, Cotonou, Nairobi and Addis Ababa launched the experience capitalization in Biltine and Chad.

During a period of 12 months, answers to strategic questions were provided by seeking responses/contributions from colleagues, partners and experts and by mobilizing formal or informal networks. Answers could be through short stories or short descriptions of what went well/what failed.

During this exercise Programme Officers consulted documented knowledge and interacted with partners and experts to capture their relevant past experiences. This was done individually and during two workshops in Bamajo and Cotonou that brought together local partners and experts.

A process facilitator and coach for the Programme Officer took part to assist in the process. Subsequently, in November 2015, the group met again in Isiolo, Kenya to validate the work accomplished which was then presented in the form of briefs. The briefs were intended for the Swiss Agency for Development and Cooperation staff and partners at country and regional level.

The process served as good practice for other cross-country and cross-regional experience capitalization processes. External process facilitation and thematic coaching proved to be extremely useful. Face-to-face meetings and workshops for capturing experiences, peer assistance at the validation workshop at the end of the work and the digital video storytelling have been key for a successful methodology. (available at https://www.shareweb.ch/site/Agriculture-and-Food-Security/aboutus/Documents/pastoralism/pastoralism_brief_one_pager_e.pdf)

See also other experiences:
Ababu Lemma Belay, 2016. CapEx in supporting pastoral development: Alternative livelihoods for former pastoralists in rural settings. (available at https://www.shareweb.ch/site/Agriculture-and-Food-Security/aboutus/Documents/pastoralism/pastoralism_brief_alternative_livelihoods_e.pdf)
Block M. 2016. Addressing Vulnerabilities of Pastoralist Societies in Sub-Sahara Africa (available at https://www.shareweb.ch/site/Agriculture-and-Food-Security/aboutus/Documents/pastoralism/pastoralism_brief_advisory_e.pdf)

Ernst Bolliger, Manuel Flury, Ann Waters-Bayer, 2016. CapEx in Supporting Pastoral Development – Addressing Vulnerabilities of Pastoralist Societies in Sub-Saharan Africa Report on CapEx Pastoralism (available at https://www.shareweb.ch/site/Agriculture-and-Food-Security/aboutus/Documents/pastoralism/pastoralism_report_e.pdf)
FAO E-learning Centre http://www.fao.org/elearning/#/elc/en/courses/IMARK
FAO/IFAD 2016. FAO's and IFAD's Engagement in Pastoral Development – Joint Evaluation Synthesis (available at http://www.fao.org/3/a-bd909e.pdf)
Shelling E, Weibel D, Bonfoh B, 2008. Learning from the Delivery of social services to pastoralists: Elements of good practices. (available at https://cmsdata.iucn.org/downloads/social_services_to_pastoralists__english__2.pdf)

Tool #30 example: Learning from the delivery of social services to Pastoralists: Elements of good practice

In the past century, pastoral zones have frequently been neglected by governments for consideration in economic development programs and establishment of public services. Government often use the difficulties of providing services to mobile pastoralists as a reason to promote settlement. Despite this, various methods for delivering social services such as health and education to pastoralists have been used. The United Nations states in its report 'Social Services for all' that agencies must exchange experiences, communicate and learn from good practices about what is successful, under which circumstances and in what context in order to be able to positively influence policy makers.

Good practices are used therefore as a guiding principle to enable institutions working with pastoralists, to plan more effective interventions. This implies participation at the earliest stages of problem setting and throughout the project cycle. Community participation in planning health and education provision empowers community members to voice their needs and later on allows them to pursue their own initiatives to improve access to the services needed. For example, in several countries in Eastern Africa, of Southern Africa and Nigeria, there have been numerous small-scale initiatives to support community schools (fixed or mobile), which have been successful because pastoralists were involved in the design of education and did not fear cultural alienation for their children. An example is the Tent School System used in south and south-west of Iran among Qashqa'I tribes which has now been operating for over 50 years and has successfully educated several generations of nomadic children.

In 1950, a Teacher Training School was established by a local man Mohammed Bahmanbaigi in Iran for Qashqa'i tribes, with the support of the United Nations. The Teacher Training School used a standard curriculum but with conviction that nomadic pastoralists are the cultural resources to be preserved and supported. Teachers from a nomadic pastoral background were trained, equipped with a white tent and schooling material, and joined a group of pastoralist households. After 5 years of elementary education, graduates were admitted to the boarding school of nomadic children. Some students entered the Teacher Training boarding school which was considered as the core of the literacy programme among Qashqa'i people.

The introduction of formal education and social mobility through education, led to socio-political and economic changes: educators stood between tribes, people and government officials, scholars were exposed to civil laws and procedures and learned the national language they needed to communicate with Iranians. Thanks to the learning, they understood better their culture and other identities.

The tent schools have facilitated Qashqa'i youth into the culture and values of their own tribal nomadic societies. Movement is common in southwest Asia and Central Africa and there is good potential of successful replication of Iranian model.

In countries with little mistrust towards pastoralist communities such as Iran and Mongolia, elementary schooling for mobile pastoralists has been successful comparing to countries with little interest and understanding of pastoralism. The Iranian tent school may also prepare children for entry to more formal schooling in African communities.

Source: available at https://cmsdata.iucn.org/downloads/social_services_to_pastoralists__english__2.pdf

Opportunities and constraints

In practical terms, the method is reasonably simple. It should be envisaged as a group activity in which the GreeNTD team and other protagonists participate. The duration of the process depends on the institution or project and the experience being analysed.

Tool #30 example: Capitalising on 20 years of engagement in Rural Advisory Services

How can Rural Advisory Services (RAS) reach millions of smallholders farmers?"

To respond this question the SDC's Agriculture and Food-Security Network coordinated a one-year-learning journey. The learning process consisted in the elaboration and analysis of seven capitalization studies related to RAS experiences in seven countries as follows:

- Public Service for Agriculture and Rural Development Programme, Vietnam 2007-2015;
- Sustainable Soil Management Programme, Nepal 1999-2014;
- Samriddhi Local Service Provision, Bangladesh 2010-2015;
- Laos Extension for Agriculture Programme, Laos 2001-2014;
- Kyrgyz-Swiss Agricultural Project, Kyrgyzstan 1995-2010;
- Analysis of country RAS systems in China
- Analysis of country RAS systems in India;

The studies helped in understanding how RAS systems reach out to large numbers of farmers in a poverty oriented, ecological and sustainable way. Results showed that with a growing focus on food and nutritional security, RAS are back on the agenda, and have reached out to large numbers of farmers in a poverty oriented, ecological and sustainable way. Today's RAS go beyond technical assistance and involve all activities that support agricultural producers to develop skills as to improve their livelihoods and well-being.

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Toolkit for the application of Green Negotiated Territorial Development (GreeNTD)

The **GreeNTD** approach (see Land and Water Division Working Paper 16a) introduces the rationale for a socio-ecological approach and explores the synergies between ecosystem services to manage territories with a more sustainable perspective. The Toolkit presented here aims at supporting the concrete application of the GreeNTD approach in the context of natural resources management. It can be used by a variety of stakeholders and territorial development experts to promote a negotiated and agreed solution to a resource dispute, ranging from governments and companies to communities, dealers and nongovernmental organizations.

The toolkit is organized around the methodological steps of GreeNTD, starting from Phase 0: Agenda Setting, followed by Phase 1: Views – Understanding the stakeholders and the territory as a Socio-Ecological System; Phase 2: Horizons – Outlining coherent and feasible proposals for the development of the territory; Phase 3: Negotiation – Seeking consensus of a Socio-Ecological Territorial Agreement (SETA); Phase 4: Enforcement – Preparing the ground to guarantee the application of SETA and Phase 5: Monitoring and Evaluation – Capitalizing from Experience.

The toolkit does not provide narrow steps to be followed as a recipe, but rather a set of various methodological options and examples of tools that can support the process, related to its various key aspects.

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