Guide to Participatory Tools for Forest Communities

Kristen Evans
Wil de Jong
Peter Cronkleton
Douglas Sheil
Tim Lynam
Trikurnianti Kusumanto
Carol J. Pierce Colfer

Guide to Participatory Tools for Forest Communities

Kristen Evans
Wil de Jong
Peter Cronkleton
Douglas Sheil
Tim Lynam
Trikurnianti Kusumanto
Carol J. Pierce Colfer

National Library of Indonesia Cataloging-in-Publication Data

Evans, Kristen *et al*.
Guide to participatory tools for forest communities/by Kristen Evans, Wil de Jong,
Peter Cronkleton, Douglas Sheil, Tim Lynam, Trikurnianti Kusumanto, Carol J. Pierce Colfer.
Bogor, Indonesia: Center for International Forestry Research (CIFOR), 2006.

ISBN 979-24-4656-7
37p.

CABI thesaurus: 1. research 2. methodology 3. social participation 4. communities 5. community
forestry 6. community involvement 7. forest management 8. participatory rural appraisal 9. techniques
10. handbooks I. Title

Printed by Intiprima, Jakarta

Design and layout by Kristen Evans and Catur Wahyu
Photos by Kristen Evans

Published by
Center for International Forestry Research
Mailing address: P.O. Box 6596 JKPWB, Jakarta 10065, Indonesia
Office address: Jl. CIFOR, Situ Gede, Sindang Barang,
Bogor Barat 16680, Indonesia
Tel.: +62 (251) 622622; Fax: +62 (251) 622100
E-mail: cifor@cgiar.org
Web site: http://www.cifor.cgiar.org

Foreword

The future of tropical forests is increasingly linked to the people who live in or near forests and depend on them for their livelihoods. Likewise, the potential for improving the lives of forest dependent people will rely to a great degree to how well people will be able to manage their forests. In many countries tropical forest management still falls officially under the responsibility of forest agencies. However, the trend is changing, and increasingly local people are receiving custodianship and control of tropical forests. The direction that tropical forest management takes will be greatly influenced by how well local people and outside stakeholders can communicate and cooperate.

The *Guide to Participatory Tools for Forest Communities* hopes to provide people who work with forest communities with new options as they advance objectives of sustainable forest management and empowerment of forest dependent communities. The guide provides a brief overview of various tools, discussion of concepts, and guidance in the selection and use of participatory tools that people linked with the Center for International Forestry Research have adapted and developed for use with forest communities.

The Guide to Participatory Tools is primarily a product of the research project, "Stakeholders and Biodiversity in the Forest at the Local Level," which is a collaborative effort between the Swiss Agency for Development Cooperation (SDC) and CIFOR. The project is the second of two initiatives between SDC and CIFOR that have worked to improve people's livelihoods and contribute to sustainable forest management through action research. The contents of the Guide to Participatory Tools, however, are the result of many years of adapting, developing and testing participatory tools by CIFOR researchers and collaborators. In addition to acknowledging the financial contribution of SDC, we gratefully recognize the efforts of the many CIFOR staff and partners who contributed directly or indirectly to this document.

Markku Kanninen
Director, Environmental Services and Sustainable Use of Forests Programme
CIFOR

Forest communities are often remote and isolated.

Contents

Purpose of this Guide

Participatory methods have gained popularity in recent years as researchers, field practitioners and development professionals have sought more effective ways to involve local people in decision making and research. The Center for International Forestry Research (CIFOR) has developed various participatory tools specifically for use with forest communities and other natural resource dependent groups. Some of these tools are adaptations of existing methods; others were created specifically for work with forest dependent communities. The tools have diverse applications: stakeholder identification, decision making, planning, conflict management, information collection, and other uses.

CIFOR has applied and tested these methods in communities in many countries, including Indonesia, Vietnam, Nepal, Zimbabwe, Cameroon, Malawi, Brazil, and Bolivia among others. This collective experience has strengthened and enriched the tools, making them flexible and robust.

This guide is directed toward environment and development practitioners, researchers, and local government leaders. It provides information on several tools in order to help readers grasp the tools' basic capabilities, identify the most appropriate tool for their needs and find resources for additional information. The guide does not provide an exhaustive description of how to use each tool but rather an introduction and comparative overview. Much like a map, this guide sends readers in the right direction.

The guide is divided into three main sections. The first provides a brief discussion about forest communities, participation, participatory tools, pitfalls of participatory tools and related concepts. The second section provides a summary description of each tool, considerations when selecting a tool and a comparative matrix to make it easy to find the right tool. The final section provides more details about the tools in a table format. Each tool has a general description, strengths and limitations, practical considerations, an example and resources for more information. As more tools are developed, they will be added to the guide.

Readers who are new to participatory tools may find it valuable to start with the overview in "Concepts." Those who already have a clear idea of their objectives for using a tool may find it easiest to visit first the comparative matrix in "Guidelines for Selecting a Tool" to determine which tool meets their needs. Others may wish to flip straight to the "Toolbox" and browse.

Concepts

Forest Communities

The communities that live in tropical forest areas and rely on forest resources for food, housing, and work are often isolated, with small populations and little formal education. Many of these communities have recently emerged from paternalistic power structures such as patronage systems, dictatorships, or feudal economies. These legacies have left them with little power or experience when negotiating for the future of their communities and their forests. Government officials, private economic interests and other stakeholders often struggle to understand and value the perspectives of local people. As a result, community voices are less likely to be heard and their concerns are often left unanswered in the decision making and policy development that affect their forests and well-being. This is consistently an obstacle when trying to improve local livelihoods or manage natural resources sustainably.

> Participation means involving local people in the development of plans and activities designed to change their lives. In its most developed form, participation is a continuous process of negotiation and decision making that occurs at various levels and with all stakeholders (Jennings 2000).

The Importance and Urgency of Community Participation

Communities often have little say in what happens to them and their forests. However, community participation in decision making is important for several reasons. First, political and social forces such as land reform, decentralization policies, the advance of the agricultural frontier and the global market are transforming forest landscapes in the tropics. Forest dependent communities are extremely vulnerable to these changes. If their forests are threatened, communities might struggle, transform, or disappear completely. In many situations, without strengthening communities, the forests will be equally changed or endangered.

Another important argument for community participation is that local knowledge and perspectives are fundamental components of any research or assistance project with communities. Local people must be involved in decision making about their natural resources to guarantee sustainable use, encourage local buy-in, minimize conflict and distribute efficiently the benefits of the forest (Ostrom *et al*. 1999). In fact, community participation does not have to come at the expense of other stakeholders; rather, it can create a win-win outcome where everyone benefits (Colfer and Byron 2001).

There are also two important policy trends that make the participation of communities in decision making more urgent. The first is forest devolution, which is a process that puts control of tropical forests into the hands of local communities. This trend is part of a larger reform that has been prompted by diverse forces: grassroots land re-allocation and community empowerment movements, democratic decision making reforms encouraged by outside influencers such as donor nations, recognition of the economic consequences of unsustainable forest management by central government or private enterprise management, and growing confidence in the capacity of communities to maintain the biodiversity of forests.

Government decentralization is the second important trend that has made the need for participatory approaches more urgent in some developing countries. Decentralization reforms that affect the forestry sector have been adopted by approximately 60 countries in the tropics. Decentralization involves reversing centralized government planning so that planning starts at the local level, instead of being imposed from central authorities. The reform hinges on the belief that citizens can be "trusted to shape their own future" (Jennings 2000). This is a responsibility as well as a right, requiring that communities take a more active role in local government project planning and budgeting processes. Although participatory methods do not guarantee empowerment, they have the potential to generate downward accountability of the governance process and strengthen civil society (Chambers and Mayoux 2003).

Participatory Research

Participatory research is a collaborative learning process where local people and researchers are full partners in creating knowledge. This means that community members are involved in the formulation of the research question, methodology, data collection and analysis phases. Participatory research requires constant self-reflection on the relationship of the researcher to the community and on the impact of that relationship on the research (Thompson *et al*. 2005).

For a researcher, the information that participatory methods generate can be more useful and valid than other approaches: "When used well, participatory approaches and methods can generate both qualitative insights and usually more accurate quantitative data than more conventional approaches and methods" (Chambers and Mayoux 2003, page 3). Participatory tools can bring to light connections, identify cause-effect linkages and reveal nuanced distinctions. Participatory tools can create models and test them. Participatory methods can also be more cost-effective than conventional social science methods, or they can serve as an important first step to designing larger and more expensive conventional studies (Chambers and Mayoux 2003).

Pitfalls

Participatory tools, with all of their advantages, have limitations and problems as well. We point out a few of the pitfalls below with suggestions for dealing with them.

Many participatory methods use group workshops or meetings. Critics have pointed out that because of their public nature, workshops and

Community members of Palma Real in the northern Bolivian Amazon negotiate community access rights to the local Brazil nut forest in a Participatory Mapping activity.

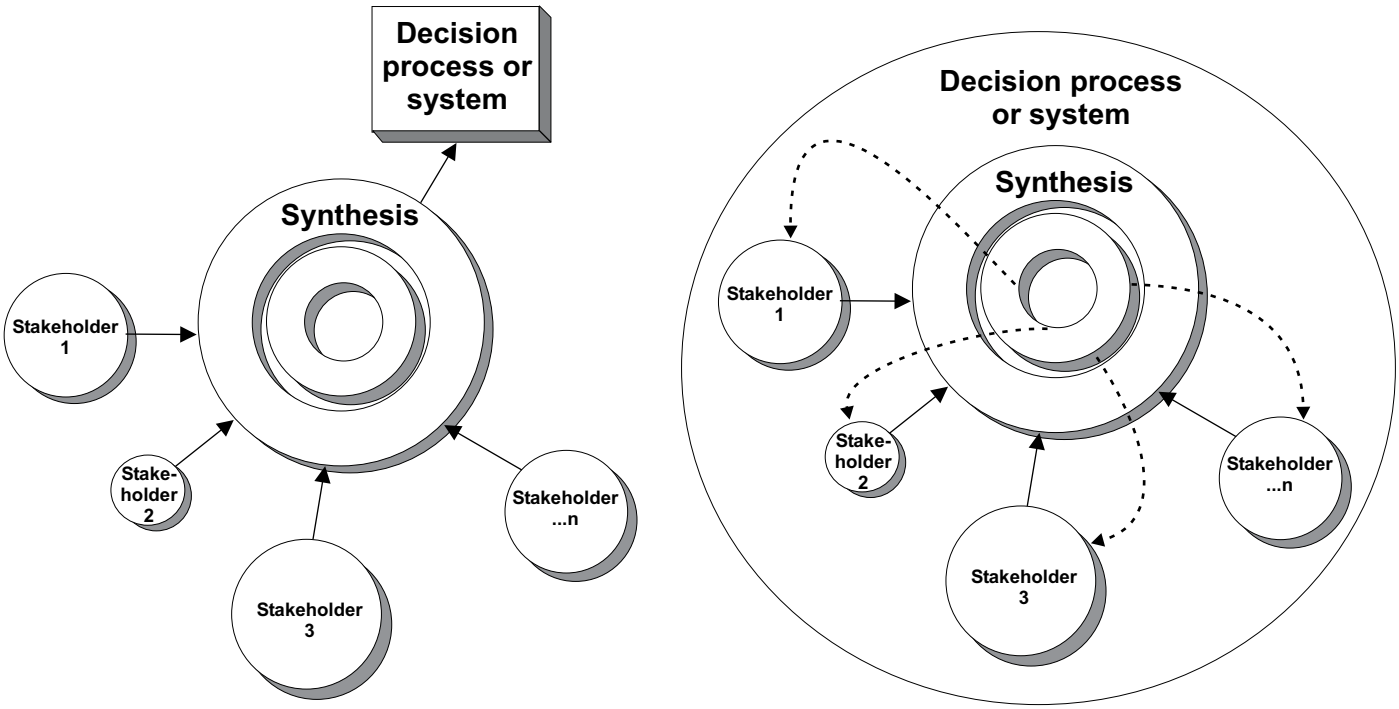
meetings tend to amplify the voices of those who already express them loudly, weighting more heavily the opinions of dominant individuals in the community (Mosse 2001). Women or other marginalized groups are less likely to participate and thus their opinions are not counted and heard. These problems are legitimate, but they can be ameliorated by adjusting the activities to make them less public and by diversifying the exercises to provide alternative ways of expressing opinions. Examples include anonymous voting, dividing into small groups, separating men and women, and providing non-verbal and non-written means of expression through drawing. Many creative solutions are available for providing communication channels for those who traditionally are more reticent.

Another limitation of participatory tools is that it is often impossible to pre-test a method. Conventional social science methods, such as questionnaires or semi-structured interviews, might be piloted with a small group and possible problems corrected before launching the full scale study. However, pre-testing a participatory tool may not be feasible because of the nature of the tool, additional cost or excessive demand on community members. Therefore, cross-checking procedures are necessary to verify and validate results. One cross-checking method involves implementing different approaches to elicit the same information. This is called triangulation. Another cross-checking technique is to repeat the exercise with a focus group that reflects the distribution of people or classes within the community. A practitioner who has not yet developed trust with a community may have to implement a careful triangulation strategy, while a practitioner with long-standing relationships with community partners and a significant level of trust is likely to have more reliable results.

A further criticism is that participatory methods produce a "peculiar local knowledge," transformed by the intervention of outsiders and the expectations of locals (Mosse 2001). While outsiders learn about the local reality, local people learn to adapt their knowledge to become compatible with outsider lingo and perceptions. Once local people understand the rules of the game, the participatory methods become tools of negotiation whereby local people gauge what benefits they can win from the outsider and communicate their needs in order to optimize returns. This results in distorted or contradictory data. The problem can be mitigated by cross-checking results by using a combination of participatory methods. However, the best approach is to invest time and effort to develop trust with the community so that communication is open and honest.

Critics also warn that participatory methods can be used to manipulate or placate. Institutions may wear the cloak of "warmly persuasive" participatory methods to continue to validate top-down planning when in reality there may be no authentic commitment to democratic governance or true participation. The methods become "well-honed tool[s] for engineering consent" (Hildyard *et al*. 2001). Communities may believe that they are impacting a process, but their decisions are not relevant because the existing power structures do not account for them. The activities serve as "pretty wall hangings and posters" (Mosse 2001). This pitfall was identified by Arnstein (1969) in her important critique of bad faith participatory methods. Instead of devolving power to communities, "participation" manifests itself as token measures with the appearance of community involvement, while the true decision making continues to take place elsewhere. Practitioners should carefully and critically reflect on how participatory methods are being used in their research and projects.

A practical problem with participatory tools is that they frequently produce visual products, such as diagrams, that are difficult for outsiders to understand or analyze without detailed documentation (Chambers and Mayoux 2003). Practitioners should carefully document the discussion by the participants surrounding the visual products in order to record results that are accurate and meaningful.



1a. Extractive knowledge capture

1b. Collaborative management

Figure 1. Modes of knowledge capture and use in the natural resources decision making context. The solid arrows represent the contribution of stakeholders to the process of synthesizing knowledge or understanding, which is represented as the outer cylinder. The final synthesized knowledge is represented as the inner cylinder. The dotted lines represent the uptake of this newly synthesized knowledge by the stakeholders (adapted from Lynam et al. 2006).

Several Approaches

Participation has been described as both a means and an end, a vehicle and a goal itself (Jennings 2000). Participatory tools reflect the dual nature of participation. A practitioner might use participatory activities purely to elicit local knowledge and perspectives. Local people's input is limited to providing information, while the information that the tool generates is used by decision makers elsewhere. We call this approach "extractive knowledge capture" (see Figure 1a). An example of extractive knowledge capture is the Uganda participatory poverty assessment, where policy makers at higher levels developed national programs using data collected by participatory methods from communities. Although the communities were asked for their opinions, they did not participate in decision making that used the information they provided (Narayan 2002).

On the other hand, involving local people in decision making might be the objective for using a participatory tool. This participatory approach is called "collaborative management" (see Figure 1b). Collaborative management actually brings the community into the decision making process, involving local people in discussion, negotiation and planning. There are several participatory tools that are particularly strong in collaborative management. For example, ***Visioning and Pathways*** have been adopted by a local government in the northern Bolivian Amazon as a method for community members to formulate and negotiate for projects in the annual budget cycle (Evans *et al*. 2006).

Whether an extractive or collaborative management approach is appropriate depends on the situation and objectives. Most tools can be used in either extractive or collaborative management ways.

Community members from San Roque, Bolivia, create a geo-referenced map of their landscape.

Guidelines for Selecting a Tool

Consider a hammer in a carpenter's toolbox. The carpenter relies on her hammer to do many things, but it performs some tasks, such as pounding nails, better than others, such as pounding screws. The hammer is useful in many contexts: building a home, fixing a table, or hanging pictures. However, the hammer is simply a device; it is neither an approach nor a methodology. How well the hammer is used and the quality of the construction depend almost entirely on the judgment, skill and planning of the carpenter wielding it.

When we selected the tools for this guide, we looked for the same qualities as a good hammer: tools that help a field practitioner or researcher perform some tasks very well, are not context-specific, are flexible in their application, and have proven themselves in the field. None of these tools is a methodology itself, but each can be integrated into an approach or methodology as needed. Success also depends entirely on the effort and judgment of the facilitator and participants. We tried to fill this toolbox with a diverse selection of tools so that the right tool is ready when needed.

Brief Descriptions

Below are short summaries of the tools in this guide. See "Toolbox" for more information on each tool with examples and resources.

Four Rs Framework assesses stakeholders' roles and influence in forest management. The tool was developed by the London based Institute for International Development (Dubois 1998, Tekwe and Percy 2000, Mayers 2005), and designed specifically for analyzing communities and natural resources. The tool evaluates "Four Rs": rights, responsibilities, revenues/returns and relationships. The tool can either be used by outsiders to understand the local situation or in group settings where stakeholders identify their roles in forest management and then analyze any imbalance between the four Rs.

Pebble Scoring is a flexible, simple diagnostic scoring procedure which clarifies both understandings and priorities of participants. The methods were developed as part of the participatory rural appraisal tool kit and are just as appropriate for forest communities. The scoring is not the end point; the respondents are always asked to explain the final rankings. There are many possible applications of this tool, for example examining the relative importance of different types of landscape elements versus types of uses e.g. food, medicinal products, etc.

Visioning and Pathways are group activities where participants think about a desired future and develop action plans and strategies to reach it. The tools are based on the Future Search methodology created in the 1980s which grew from a commitment to democratic ideals and a belief that local people should manage their own planning. The methods were adapted from business visioning and planning techniques developed in Trist and Emery's Search Conference (Holman and Devane 1999).

Scenarios help participants identify influences or factors that could affect their future and then formulate several plausible outcomes based on those influences. Scenarios frequently take the form of narratives but can also be quantitative models. The methods were originally developed by the Rand Institute for military war games (van der Heijden 1996), later adopted by Royal Dutch Shell for business strategy development (Wack 1995), and now are being applied in large scale environmental assessment such as the Millennium Ecosystem Assessment and in regional environmental impact prediction and planning (Peterson *et al*. 2003).

Participatory Mapping is a group technique for developing geospatial perceptions of landscapes. It was proposed and developed specifically for community forestry contexts in the 1990s (e.g. Jackson *et al*. 1994). Participants use pen and paper or GIS tools and computer mapping tools to capture geo-physical features and community relationships to natural resources. The information collected can be diverse and depends on the focus of the exercise e.g. delineating access rights to natural resources, identifying important areas or resources, describing forest activities or defining borders.

Spidergrams are visual representations of quantitative answers to a clearly articulated question. This tool has been used in many contexts and was adopted for use in participatory rural appraisal workshops in Africa in the 1990s. The results, shaped like a simplified spider web, are easy to understand and provide a starting point for discussion and making comparisons.

Many participatory tools do more than elicit information. For example, Visioning and Pathways not only help a community develop a vision for the future of the community, but they also create a forum for conflict resolution, build capacity in planning and encourage the participation of marginalized groups.

Venn Diagrams is a stakeholder analysis tool where participants visually represent relationships between stakeholders and their relative importance by arranging cut-out shapes. Venn Diagrams can be combined with a focused discussion among group participants. The concept originated with John Venn in the 19th century and has since been adopted in many fields including community forest settings.

Who Counts Matrix identifies the stakeholders whose well-being is closely linked to forest management. The tool, developed by CIFOR, suggests seven dimensions for assessing this link and provides a simple scoring technique for determining which stakeholders should be prioritized in forest management. The seven dimensions are: proximity to the forest, pre-existing rights, dependency on the forest, poverty, local knowledge, forest/culture integration and power deficits.

Bayesian Belief Networks (BBNs) are modeling tools, generally computer software packages, that help participants develop formal representations of a problem or situation. BBNs have been used widely in modern science when probability models are needed. Their use in community forestry settings is more recent. BBNs can describe influencing factors and how they relate to each other, for instance modeling how natural resource productivity affects communities. Most often the factors and relationships are cast in numerical terms, but BBNs may also deal with qualitative variables (Cain 2001). Once the model is developed, participants can test possible outcomes by changing variables.

Discourse-based Valuation is a way for citizens to discuss and evaluate decisions on environmental policy or natural resource management in a public setting. This tool evolved from debates about environmental service valuations; it was initially proposed as an alternative to non-participatory contingent valuation methods. The tool fosters deliberation about societal well-being rather than individual benefits. Discourse-based valuation is ideally suited to discussions about common-pool resources such as land, water and forests.

Considerations When Selecting a Tool

Which tool is the right one to use? Following are questions to consider.

What are the objectives?

There may be multiple objectives for using a participatory tool, including achieving impacts that are initially less obvious or tangible. See Table 1 for possible objectives. It is important that the practitioner have a clear understanding

of her objectives before selecting a participatory tool. Because participatory tools are currently in favor with development agencies, they are frequently a required component of projects. In many cases using a participatory tool has become an objective in and of itself. Unfortunately, in many communities this has led to overuse and participant fatigue. The negative impacts are two-fold: hardship on participants because of intrusions on their time and unreliable results because communities grow indifferent.

What information is needed and in what format?

Whether conducting research or planning a development project, the scientific questions or project design will generally determine what information needs to be collected. Information generated by participatory tools generally falls into one of two categories: knowledge or values. Knowledge is an assumed truth that is verifiable and commonly accepted as fact. Examples of knowledge are the average harvest volume of Brazil nut per family, the number of families with a water well or the number of tree species of commercial value in the forest. Knowledge can be elicited by ***Participatory Mapping*** or through the models developed in ***BBNs***.

Values are opinions, perceptions or preferences, such as the most important palm species in the forest, the best place to hunt, the worst-off family in the village, or how best to allocate the community development budget. Several tools in this guide draw out people's values about their community and natural resources. The information may be quantitative with numerical results, such as rankings of opinions or percentage of respondents in agreement. Those tools include ***Pebble Scoring***, ***Who Counts Matrix***, ***BBNs***, and ***Discourse-based Valuation***. The tools which provide qualitative information about values are ***Visioning and Pathways***, ***Scenarios***, ***Venn Diagrams***, ***Participatory Mapping*** and ***Spidergrams***.

Most of the tools require analytic thought, where participants break a situation down and try to understand constituent parts and relationships, including ***Discourse-based Valuation***, ***Four Rs***, ***Participatory Mapping***, ***Pebble Scoring***, ***Spidergrams***, ***Venn Diagrams***. Several methods are synthetic and creative; participants generate plans, strategies, or ideas. Creative tools are ***Visioning and Pathways***, and ***Scenarios***.

Outputs from participatory tools can come in the form of geo-referenced maps, sketch maps, ranked or numerical values, models, opinions, visions, plans, drawings, or narratives. The format of the results depends on the tool and how it is implemented. When selecting which format is most appropriate, keep in mind the target audiences that will be using the information. Choose the format that they will understand best.

A practitioner should inquire whether a community has already participated in an activity before engaging in it. It may be the case that the same information has already been collected and is available without repeating the effort or imposing on the community.

Comparative Matrix

Table 1 provides a quick reference to the tools in this guide. Although there are many factors that might be considered when selecting a participatory tool, we chose to include two: objectives and information elicited. The table first lists possible objectives of a practitioner and marks the tools that correspond to those objectives with a star. Next is a list of the type of information elicited by the tool, again noted with a star in the column corresponding to the appropriate tool.

Table 1. A quick reference guide to the tools.

	Four Rs Framework	Pebble Scoring	Visioning and Pathways	Scenarios	Participatory Mapping	Spidergrams	Venn Diagrams	Who Counts Matrix	Bayesian Belief Networks	Discourse-based Valuation
Objectives										
Identify stakeholders	★						★	★		
Elicit knowledge about landscapes and resources					★					
Elicit values about landscapes and resources	★	★				★	★			
Elicit values about social interactions	★	★	★			★	★	★		★
Encourage communication between stakeholders	★		★	★						★
Motivate long-term thinking			★	★						★
Build consensus			★							★
Develop plans			★	★						
Motivate participation			★	★	★					★
Manage conflict			★	★						
Explore uncertainty				★					★	
Explore complexity				★					★	
Identify cause and effect				★		★			★	
Identify potential issues or problems	★	★		★					★	
Information Elicited										
Stakeholder identification						★	★	★		
Stakeholder relationships	★						★	★	★	
Plans or strategies for the future	★		★							★
Models				★					★	
Maps			★	★	★					
Perceptions of landscapes	★	★			★					
Quantitative values		★		★	★	★		★	★	★
Qualitative values	★	★			★		★	★	★	★
Group vision	★		★							
Possible future outcomes				★					★	★
Plans or strategies			★	★						
Numerical projections				★					★	★

Visioning workshops for the children of Turi Carretera in Bolivia revealed their dreams for their forest and community.

Additional Considerations when Selecting a Tool

Who should participate?

Communities, no matter how large or small, are complex. Relationships, hierarchies, power and personal histories all affect the outcomes of participatory methods. Acknowledging and understanding this complexity is important when working with communities. Selecting the participants for an activity can be a very sensitive issue. It is important to take the time to consult with as many local people as possible, from both inside and outside the community, to understand the context.

The people who either influence or are affected by an issue or problem are called stakeholders. Stakeholders can be individuals, groups or institutions and can generally be divided into two categories. Internal stakeholders or "insiders" come from within the immediate physical setting of the community and are directly affected by the issue at hand. External stakeholders or "outsiders" come from outside the community, but either influence decision making or are themselves indirectly affected by decisions. These categories depend on the context. For instance, a local government official may be an outsider to a community problem, but an insider to a regional issue (Evans *et al*. 2006).

It might be helpful to do a stakeholder analysis first before engaging in participatory research or community development. Effective tools for identifying stakeholders and their relationships include ***Who Counts Matrix***, ***Venn Diagrams*** and ***Spidergrams***.

Who should be facilitating?

The selection of the facilitator for a participatory exercise is an important and sensitive decision. Ideally the facilitator is a trusted neutral party without an important interest in the outcome of the activity. A professional facilitator is not necessary; experience in explaining the activities and in leading discussions are the most important qualifications. Local school teachers can be excellent facilitators with rural communities because they understand the context and language. An external facilitator can be a wise choice when there is conflict or division among the participants (Evans *et al*. 2006). However, the facilitator should have experience and knowledge of the community or context. If that is not feasible, the facilitator should plan to spend several days in the community prior to the activity in order to understand better the situation and context.

Several of the tools require specialized or advanced facilitation skills. The success of ***Visioning and Pathways*** and ***Scenarios*** is particularly dependent on the ability of the facilitator to motivate participants, unleash their creativity, discuss difficult issues and build consensus. ***BBNs*** require a specialist to generate the models.

Encouraging Participation

Community members, particularly the most marginalized, may initially be hesitant to participate in an exercise. They may have little experience with participatory activities, or perhaps participatory methods have been used so frequently in a community that participants are fatigued and doubtful of the benefits. Working in small groups, using drawings, individual voting, and games that are active and physical will motivate people to participate. While someone may be quiet in the large group discussions, she might be the best at drawing in her small group, or a participant who does not know how to read or write might be the most effective speaker in group presentations. Gender divisions in forest communities are often strongly demarcated, and women frequently are reluctant to give their opinions in front of men. In order to encourage the participation of women, it can be helpful to divide groups by gender.

Ethical Considerations

Obtaining Permission. It is both an ethical responsibility and good sense to request proper permission to borrow a community's time and knowledge for a participatory activity. The field

practitioner should present a proposal to the community, explaining the objectives, activities and how the information will be used. The benefits to the community should be clear. Following the study or activity, the information, whether it is data, photographs, diagrams, discussions or interviews, continues to be the property of the community and should be used only with permission.

Time. Participatory methods ask people to give freely two valuable resources, their time and knowledge. Local people can be wonderfully generous to outsiders, donating many hours without requiring anything in return. This is a privilege that should not be abused. Try to limit the amount of time demanded of community members. Understand the daily routine and activities of the participants. Organize activities during periods when most can attend. For example, avoid market days or harvest time. Because of family commitments, it is often difficult for women to attend full-day workshops. Consider breaking the activities down into half-day segments (Evans *et al*. 2006). Some practitioners choose to pay participants for their time. This should be avoided when possible for several reasons. First, the participants who attend will be those most in need of money and will not provide a representative sample of information. They may also not be very motivated. Most importantly, if the benefits of the participatory activity are so unclear to participants that they require payment to attend, then the objectives of the research or program need to be revisited.

Returning Results. Information should always be returned to the participants and the community. The results should be presented in an understandable and useful format. Photographs, maps, drawings, theater and discussions are all creative ways of communicating the results and information effectively. Distribute as many copies of documents as possible (Thompson *et al*. 2005). Consider setting up meetings for participants to present their results to other communities and local government officials.

An effective way to return results to a community is to combine posters with photographs and present them at a community event. Here, community members in the village of Thuong Nyat in Vietnam review the results of a Scenarios workshop and share them with local government officials.

Toolbox

Four Rs Framework

Overview	
Brief Description	The Four Rs Framework is a way of analyzing stakeholder roles and power relations by breaking them down into four categories: rights, responsibilities, relationships, revenues/returns. The analysis has two steps. First is an assessment and scoring/ranking of three Rs (rights, responsibilities and revenues/returns) with regard to stakeholders. The second is an analysis of the status of the fourth R, relationships, between stakeholders by creating a relational matrix.
Purpose	The purpose is to understand the roles of stakeholders with respect to the Four Rs. The process reveals underlying power structures and incentives or disincentives for sustainable use or management of natural resources. The tool can be used as a normative scenario exercise, where participants describe the ideal roles of stakeholders and what must be changed to achieve those roles. The tool can be used to develop a benefit plan among stakeholders, or as a preliminary step for elaborating a cost-benefit analysis. The process can open up a dialogue for negotiation and positive change.
Outputs	There are two primary outputs. The first are charts with rankings of the rights, responsibilities and revenues/returns of stakeholders. The second describes the relationships of the stakeholders to each other, usually in the form of a matrix.
Complementary Tools	• Key informants • Focus group discussions • Future Scenarios • Pebble Scoring
Key Elements or Methods	• Background research on the context • Facilitated focus groups or individual interviews with participants to analyze the Four Rs • Facilitated dialogue to discuss issues revealed by the activity
Advantages and Limitations	
When to Use	• To analyze multi-stakeholder situations • To diagnose problems • To assess and compare policies • To negotiate roles among stakeholders • To encourage communication among stakeholders • To assess stakeholder roles at the beginning of a project cycle • To monitor change during a project cycle • To analyze roles in institutional decentralization

When Not to Use	• When existing social structures are too tenuous to discuss roles without leading to conflict • If there is no possibility that analysis of the Four Rs could lead to positive change or reform • If the facilitator leading the process is not adequately prepared about local power relations and stakeholder situations or if she is inexperienced in mediating conflicts
Strengths	• Is easy to understand • Makes it possible to clarify stakeholder roles and set targets for fulfilling responsibilities • Can motivate community participation in multi-stakeholder negotiation • Deals carefully with sensitive issues of power and makes it possible to discuss them openly in a safe forum • Can stimulate dialogue about existing, yet hidden, power relations • Can identify capacity gaps in roles and assistance needed to fill the gaps • Can be quantitative when scoring methods are used
Weaknesses	• Issues related to the Four Rs are often very sensitive and marginalized groups may not discuss them openly • Requires facilitators that are relatively experienced
Practical Considerations	
Participants	Participants can be from any group: community members, fieldworkers, local government leaders, institutional decision makers.
Facilitators	Because of the sensitive natural of the issues, facilitators should be neutral parties. They should be enthusiastic and experienced in gender and cultural awareness, consensus-building and conflict management.
Typical Duration	The activity can generally be completed within a three hour workshop or during individual interviews.
Budget and Materials	The time of the researcher and the participants plus standard workshop materials.
More Information	
Example	In Indonesia the Four Rs Framework was used to start an action-learning process at the beginning of a collaborative forest management project. The tool made explicit the imbalances in stakeholder roles and responsibilities. For example, the original inhabitants with the biggest stake in the forest had limited legal responsibilities related to forest management. The government had the responsibility to manage and protect the forest, but lacked the means to do so effectively. In principle, responsibilities and rights should be transferred to those who have a bigger stake in the forest (Kusumanto 2005).
Resources	• Dubois, O. 1998. Capacity to manage role changes in forestry: introducing the '4Rs' framework. IIED, London. • Mayers, J. 2005. The four Rs. *In* Power Tools. IIED, London. • Tekwe, C. and Percy, F. 2000. Rights, responsibilities, revenues and relationships with a focus on community forest benefit sharing: a case study of the 4Rs from Bimbia Bonadikombo, Mount Cameroon Project. Unpublished report, DFID, London.

Pebble Scoring

Overview	
Brief Description	Pebble Scoring is a quick, flexible and simple diagnostic scoring procedure which clarifies participants' understandings and priorities. It involves rating items such as resources, species, locations, or landscape units. The items are rated with respect to each other according to selected criteria, such as overall importance, value for food, value for building material. The method encourages discussion of the underlying reasons for these ratings.
Purpose	To investigate, overview, clarify and communicate people's choices and preferences.
Outputs	Numerical tables of comparable scored items along with explanations for these patterns. Can yield new insights and clarify or gauge priorities.
Complementary Tools	• Group discussions • Participatory Mapping • Focal interviews • Field visit and assessment
Key Elements or Methods	Preliminary discussions with the target group define and clarify the items to be scored and the criteria for scoring. Cards are created with a label or picture symbolizing the aspects to be scored. During facilitated group workshops, the facilitator demonstrates how the counters, such as pebbles, should be distributed according to the quantitative relationships or values of the group. The participants then distribute a fixed number of counters (usually 100 total) onto the cards. The scores are never viewed as an end point; the respondents are always asked for an explanation of the results.
Advantages and Limitations	
When to Use	• As an initial evaluation • When seeking an overview of a broad array of topics • To establish priorities • When categories and items are relatively simple to select and define • When trust is already established between the facilitators and the target group • When summary and comparison between groups is useful or necessary
When Not to Use	• When trust between the facilitators and the target group has not been built • When the basic understanding needed to define a shared list of items and assessment criteria has not yet been established • When topics to be discussed include sensitive issues that cannot be readily addressed by open discussion with the target groups
Strengths	• Rapid, flexible, simple • Facilitates communication of complex concepts and ideas between diverse groups • Can be replicated • Numerical data allows easy summary and comparisons • Some statistical evaluation possible • Can yield surprises and thus new insights • The format is appealing to the users

Weaknesses	• Takes a period of initial learning • Assumes some degree of numeracy • Definitions of items and criteria require effort to assure shared understanding • Numbers can be misinterpreted as implying a level of accuracy not actually achieved • Underlying biases and assumptions are not necessarily obvious • May overlook the significance of specialist knowledge within a community
Practical Considerations	
Participants	5-8 participants in a single exercise is ideal, and the tool can also be used with individuals. Separate exercises should be held with different stakeholder groups or individuals. Possible groups include community members, divided by age, by gender, by ethnic background, or principal activity. Though helpful, neither literacy nor numeracy is essential if drawings are used to help explain scoring cards.
Facilitators	The facilitator must be patient and able to keep the group engaged and motivated.
Typical Duration	It depends on the exercise, but it is best if an exercise does not exceed two hours at any one time.
Budget and Materials	Time of participants and facilitators. Cost of materials is low: requires cards, counters (grains, matches, pebbles) and colored pens.
More Information	
Example	Various Pebble Scoring exercises were developed as part of a broader effort to assess how local communities in East Kalimantan (Indonesian Borneo) perceived their environment. Results were sometimes surprising, but additional investigation generally explained the results and provided new insights. For instance, logged forests were viewed as much less valuable than unlogged forest for a whole range of reasons. This knowledge allowed a much more focused discussion of what could be done to address the concerns raised, such as revising timber harvesting practices.
Resources	• Sheil, D. and Liswanti, N. 2006. Scoring the importance of tropical forest landscapes with local people: patterns and insight. Environmental Management 38: 126-136. • Sheil, D., Puri, R., Wan, M., Basuki, I., van Heist, M., Liswanti, N., Rukmiyati, Rachmatika, I. and Samsoedin, I. 2006. Local people's priorities for biodiversity: examples from the forests of Indonesian Borneo. Ambio 35: 17-24. • Sheil, D. *et al*. 2004. Exploring biological diversity, environment and local people's perspectives in forest landscapes. CIFOR, Bogor, Indonesia.

Visioning and Pathways

Overview	
Brief Description	Visioning and Pathways are creative tools to develop a long-term group vision and strategies to reach that vision. During Visioning exercises, participants think about their ideal future, discuss the possibilities, and come to a consensus. During Pathways, participants develop specific strategies and action plans to reach a desired future.
Purpose	• To provide an opportunity for various stakeholders to develop a shared ideal future • To encourage thinking long-term • To promote collective action by providing a simple planning structure for developing strategies to make a desired future a reality
Outputs	Visioning creates a consensus vision of an ideal future, although breakout groups might create their own visions separately first. The vision might have various focuses: a community, a region, a natural resource, a protected area. The visions can be written narratives, drawings, maps, models or a combination. Pathways generates step by step written plans to reach a desired condition, specifying "How, Who and When" to implement each step.
Complementary Tools	• Participatory Mapping • Scenarios
Key Elements or Methods	• Facilitated group workshops
Advantages and Limitations	
When to Use	• For long term community development or natural resource use planning • To prepare proposals for projects • To decide how to distribute the benefits of a natural resource management plan • If a community is facing changes, uncertainties or problems • When there is little thinking or planning for the future
When Not to Use	• If there will not be good participation or sufficient time for preparation • If there is not interest or buy-in from important stakeholders • If there is no decision making structure that will use the results
Strengths	• Encourages thinking about and planning for the future • Motivates discussion of sustainability • Provides an easy-to-use process for developing specific strategies to reach goals • Encourages the participation of all members of the community
Weaknesses	• Requires an experienced, dynamic facilitator • Requires committed participation
Practical Considerations	
Participants	10-25 participants in a single workshop. Separate workshops can be held with different stakeholder groups, but a final combined group workshop is important. Possible participants include community members, community leaders, and other stakeholders. Dividing men and women into small groups can be very helpful. Participant literacy is not necessary if drawing is used.
Facilitators	The facilitators must be skilled and energetic motivators in group workshops. Requires one facilitator per breakout group.

Typical Duration	One to two workshops of one day each over a period of several weeks.
Budget and Materials	Facilitator time of one month for preparation and execution, participants' time, basic workshop materials, and meeting space for the workshops.
More Information	
Example	As a result of government decentralization in Bolivia, communities gained the right to request projects and services from the local government. However, communities in the northern Bolivian Amazon were having difficulty formulating and presenting legitimate and worthwhile proposals in the local government planning meetings. They were unprepared or not presenting demands that represented the needs of the entire community. Visioning provided a vehicle for the community members to meet, discuss, and decide upon a vision for the community. When the community leaders presented their visions at the local government planning sessions, they were successfully able to argue for and justify the projects that they were requesting.
Resources	• Evans, K., Velarde, S.J., Prieto, R.P., Rao, S.N., Sertzen, S., Davila, K., Cronkleton, P. and de Jong, W. 2006. Field guide to the future: Four ways for communities to think ahead. CIFOR, ASB, ICRAF, Nairobi. • Holman, P., and Devane, T. eds. 1999.The change handbook: group methods for shaping the future. Berrett-Koehler Publishers Inc., San Francisco. • Nemarundwe, N., de Jong, W., Cronkleton, P. 2003. Future scenarios as an instrument for forest management: manual for training facilitators of future scenarios. CIFOR, Bogor, Indonesia. • Wollenberg, E., Edmunds, D., Buck, L. 2000. Anticipating change: scenarios as a tool for adaptive forest management: a guide. CIFOR, Bogor, Indonesia.

Women in a community in the northern Bolivian Amazon draw their dreams for their community: clean water, healthy forest, kitchen gardens, health post, farm animals, and a Brazil nut shelling factory for work.

Scenarios

Overview	
Brief Description	Scenarios is a participatory planning and strategy tool for envisioning possible future outcomes. Participants identify key uncertainties and create several plausible narratives about the future. Scenarios are creative answers to the question "What if...?"
Purpose	Scenarios can be used to help a community identify uncertainties, to prepare for change, to stimulate creative thinking about the future, to develop strategies and plans, and to unify diverse stakeholder groups in a dynamic and participatory planning exercise.
Outputs	Several distinct (usually 3-5) narrative descriptions or stories of possible futures, usually long-term, 10-20 years in the future. Can be written narratives, drawings, maps, models or a combination.
Complementary Tools	• Participatory Mapping • Trend Analysis • Visioning • Force-field Analysis
Key Elements or Methods	• Facilitated group workshops
Advantages and Limitations	
When to Use	• A community is facing changes, uncertainties or problems • A community or stakeholders are in conflict about natural resource use • When there is little thinking about the future or sustainable planning
When Not to Use	• If there will not be good participation or sufficient time for preparation • If there is not buy-in from important stakeholders
Strengths	• Is a creative, mind-opening method to encourage thinking about and planning for the future • Articulates the uncertainties facing a community • Excellent participatory activity for diverse stakeholders
Weaknesses	• Requires an experienced, dynamic facilitator • Requires committed participation
Practical Considerations	
Participants	10-25 participants in a single workshop. Separate workshops can be held with different stakeholder groups, but a final combined-group workshop is important. Possible participants include community members, community leaders, and other stakeholders. Dividing men and women into breakout groups can be very helpful. External experts can contribute valuable information. Participant literacy is not necessary if drawing is used as a tool to develop the scenario narratives.
Facilitators	The facilitators must be skilled and energetic motivators in group workshops. Requires one facilitator per breakout group.
Typical Duration	Three to four workshops of one day each over a period of a month. Follow-up dissemination meetings to share results with a broader audience are recommended.
Budget and Materials	Facilitator time of one month for preparation and execution, participants' time, basic workshop materials, and meeting space for the workshops.

More Information	
Example	A community in the northern Bolivian Amazon had become increasingly dependent on income from a single non-timber forest product, Brazil nuts. In order to understand better the possible outcome of price fluctuations on their community, participants created Scenarios to predict the repercussions if the price of Brazil nut either increased or collapsed. The narratives discussed the long-term impacts on the community in both situations and how the community could better prepare for the future.
Resources	• Evans, K., Velarde, S.J., Prieto, R.P., Rao, S.N., Sertzen, S., Davila, K., Cronkleton, P. and de Jong, W. 2006. Field guide to the future: four ways for communities to think ahead. CIFOR, ASB, ICRAF, Nairobi. • Wollenberg, E., Edmunds, D., Buck, L. 2000. Anticipating change: scenarios as a tool for adaptive forest management: a guide. CIFOR, Bogor, Indonesia. • Maack, J.N. 2001. Scenario analysis: a tool for task managers. From social analysis: Selected tools and techniques. Social Development Papers Number 36. The World Bank, Washington DC. • Peterson, G.D., Beard Jr., T.D., Beisner, B.E., Bennett, E.M., Carpenter, S.R., Cumming, G.S., Dent, C.L., and Havlicek, T.D. 2003. Assessing future ecosystem services: a case study of the Northern Highlands Lake District, Wisconsin. Conservation Ecology 7(3): 1. • Scearce, D. and Fulton, K. 2004. What if? The art of scenario thinking for nonprofits. Global Business Network, Emeryville CA. http://www.gbn.com • van der Heijden, K. 1996. Scenarios: the art of strategic conversation. John Wiley & Sons, Chichester, England, New York. • Wack, P. 1985. Scenarios: uncharted waters ahead. Harvard Business Review 63(5).

Scenarios encourages communities to think about several possible future alternatives. Community members of Thuong Nyat in Vietnam discuss the possible outcomes of increasing the scale of their rubber plantations.

Participatory Mapping

Overview	
Brief Description	Participatory Mapping includes a range of methods from simple sketch maps to more complex cartographic techniques using GPS and GIS technology. A common thread through these methods is involving local people in the geographical identification, definition and description of resources and points of reference in their surroundings. In its simplest form, Participatory Mapping is a facilitation technique for discussing landscapes and their characteristics. However, it can also involve training local people in the use of mapping technologies such as GPS, GIS, etc. to develop highly detailed and accurate maps.
Purpose	• To understand local perceptions of landscapes and ecosystems • To understand customary property rights and boundaries • To assist local people in documenting traditional land use systems • To assist rural peoples in assessing and gaining familiarity with new territories received through agrarian reform • To empower rural people to defend traditional boundaries and negotiate with governments and other stakeholders
Outputs	Sketch maps or geo-referenced maps that incorporate various types of local knowledge and technical data: natural resources, borders, community features, perceptions, land use.
Complementary Tools	• Pebble Scoring
Key Elements or Methods	• Facilitated group workshops • Capacity building workshops • Guided fieldwork
Advantages and Limitations	
When to Use	• When communities need more detailed information to make decisions related to resource management or territorial definitions • To mediate conflicts related to resource use or property rights • When assistance agencies need to understand customary practices and perceptions before attempting to assist communities
When Not to Use	• If the activity will sow confusion or contradictions with no follow through and mediation by facilitation institution
Strengths	• Powerful methods that catch the attention of participants • Generates detailed information needed for good management decisions • Ideal for mediating disputes if multiple stakeholders are involved • Allows outsiders to assess rapidly resource use practices and local territorial perceptions
Weaknesses	• The resulting maps will only be as good or as valid as the knowledge base of participants. As a result, the methods are problematic for mapping large landscapes that are outside local use or for use with participants that have recently migrated and are unfamiliar with their surroundings. • If not facilitated properly, methods could raise expectations or generate conflict with neighboring stakeholders.

Practical Considerations	
Participants	Variable. In communal properties, it should involve representatives of all stakeholder groups. Ideally enough participants are involved to form two or three field teams of five people each.
Facilitators	Facilitators must be skilled in managing small workgroups, have strong skills in the use of GPS and cartography and be capable of training adults in the use of technology.
Typical Duration	A two day training workshop followed by several field excursions to gather data and plot it on the sketch map.
Budget and Materials	Facilitator time to prepare for the activities, run the workshops and follow up on mapping activities. Basic workshop materials such as markers, rulers, pens, pencils erasers, masking tape. One set of mapping equipment for each field team: GPS, compass, clinometer, and tape measure.
More Information	
Example	An extractivist community in Northern Bolivia concerned about property rights boundaries and theft of Brazil Nuts wanted to delineate internal boundaries in its communal property and formalize traditional land use. By generating a geo-referenced sketch map the participants were able to plot principal trails, reference points and forest base camps in relationship to the property boundaries assigned by the government. They noted problems where traditional forest areas were not included in their territory and were able to renegotiate the boundaries with the government. Taking the mapping a step further, the community was able to form brigades to conduct a census of Brazil nut stands and map these to document the customary resource use system of the community.
Resources	• Jackson, B., Nurse, M.C., Singh, H.B. 1994. Participatory mapping for community forestry. ODI, London. • Kumar, S. 2002. Methods for community participation: A complete guide for practitioners. ITDG Publishing, London. • Nygren, A. 2004. Competing claims on disputed lands: The complexity of resource tenure in the Nicaraguan interior. Latin American Research Review 39 (1): 123-153. • Open forum on participatory geographic information systems Web site: http://ppgis.iapad.org

Spidergrams

Overview	
Brief Description	Spidergrams represent visually the importance and influence of various factors or aspects of a situation. Participants rank the aspects on the axes according to criteria. Then the points on the axes are connected by a line. The resulting spider web shape represents the various component parts of a situation. This is a simple, rapid, visual participatory tool to analyze a situation by breaking it down into parts, rank the parts, and then understand and discuss the influence of the parts on the whole.
Purpose	• To provide a simple and adaptable tool for the identification and relative weighting of the factors contributing to the answer to a specific question or set of related questions • To understand the importance and influence of each part • To examine cause and effect
Outputs	The output is a visual graph of the components of the answer to a central question and the relative weights of each contributing component. The data can be converted into a table but the table format loses its utility for large and complex Spidergrams.
Complementary Tools	• Discourse-based Valuation • BBNs • Focus group discussions
Key Elements or Methods	Organize small focus group sessions or workshops of 5-8 people in each group. Identify a central question and draw it in the center of a flipchart. Have the participants answer the question by adding “spokes” radiating out from the central question. Ask the group to identify the least important component of the answer and score it with one point. Then score each other component relative to that least important one. Then connect all of the spokes and discuss the results. For the top scoring results, now complete a new Spidergram to understand their components. By focusing on the high importance answers, the analysis can rapidly move through complex questions.
Advantages and Limitations	
When to Use	• When a complex question or issue needs to be analyzed • In the assessment or monitoring phases of a project • As a comparative exercise between different groups to discuss differences or similarities in opinions • To understand cause and effect • For stakeholder identification and analysis • To develop group consensus about priorities
When Not to Use	• When feedbacks or dynamic relationships are important • When facilitators may not be able to manage conflict • When people are unable to relate to abstract representations of real world issues • When people are unable to contribute time

Strengths	• Exceptionally simple to use • Easy for most people to do • Very adaptable • Visual • Easily translatable into quantitative representations that participants understand (see BBNs)
Weaknesses	• May oversimplify situations • Does not deal with feedbacks, cross linkages or dynamics • Vulnerable to domination by powerful voices in a group; may need very careful facilitation and triangulation to verify results
Practical Considerations	
Participants	Small groups (5 to 8) are best. For larger groups it is often better to split into smaller groups and then bring everyone together to review results.
Facilitators	Must be good at managing power relationships. Must be able to think ahead during the scoring process to the next questions well before getting to that point.
Typical Duration	Variable. A few hours to multiple sessions of several days. For longer sessions, intersperse with other activities to prevent fatigue.
Budget and Materials	Facilitator and participant time. Can be drawn in the ground or on flipchart with markers.
More Information	
Example	In Zimbabwe, a collaborative research project was initiated to design management strategies for the common-pool vegetation resources in order to improve productivity in the supply of livestock feeds as well as other goods and services that households use (e.g., timber, wild fruits, thatching grass). During a focus group, participants identified the eight broad community objectives to be used as a guide for woodland resource management. Spidergrams were used to identify the three most important of the original set of eight objectives. These three objectives were then explored in greater detail, and the major sub-objectives were identified again using Spidergrams to enable people to identify components of an answer to a given question and to weight each component of the answer (Lynam 1999). Participants used the Spidergrams as an initial step to build BBNs (Lynam *et al*. 2002).
Resources	• Lynam, T., Bousquet, F., Le Page, C., d'Aquino, P., Barreteau, O., Chinembiri, F., and Mombeshora, B. 2002. Adapting science to adaptive managers: spidergrams, belief models, and multi-agent systems modeling. Conservation Ecology 5(2): 24. http://www.consecol.org/vol5/iss2/art24/ • Lynam, T. 1999. Adaptive analysis of locally complex systems in a globally complex world. Conservation Ecology 3(2): 13. http://www.consecol.org/vol3/iss2/art13

Venn Diagrams

Overview	
Brief Description	Venn Diagrams are a group activity to identify stakeholders, analyze their relative importance and present the results visually. Participants write stakeholders on cut-out shapes, the size of the shapes representing their relative importance. Participants then arrange and overlap the shapes to demonstrate relationships. This is a simple, rapid, visual participatory tool.
Purpose	The purpose is to aid outsiders to gain an understanding of the roles and relationships of stakeholders and also to provide a space for insiders to identify and discuss the influence of stakeholders groups. The tool can be used as a comparative exercise where different groups perform the analysis and then discuss the results. Venn Diagrams can also be used for institutional analysis and decision making analysis.
Outputs	The outputs are graphical representations, using labeled shapes, of the roles, influences and relationships of stakeholders. The accompanying discussion is a rich source of information.
Complementary Tools	• Key informants • Focus group discussions • BBNs
Key Elements or Methods	Facilitated small focus group sessions or workshops.
Advantages and Limitations	
When to Use	• When an outsider is trying to understand the local context • When a community is trying to analyze its own situation • When a conservation or development project wants to begin working in a new area • When a researcher wants to be sure to cover all relevant parties in his or her study
When Not to Use	• When trying to gain quantitative data on relative influence and relationships of stakeholders • When there is no one available with adequate in-depth knowledge of the local context
Strengths	• Quick • Interactive and visual • Easy for most people to do • Provides a forum for discussing the roles and relationships of stakeholders • Assists in the identification by stakeholders of existing power relations among themselves
Weaknesses	• The results are not quantitative • The results are difficult to communicate or document without showing them visually • The information may be difficult for outsiders to understand • The information may be difficult to analyze • Participants must truly be knowledgeable about the area • Requires triangulation to verify and validate the results

Practical Considerations	
Participants	Participants can be from any group: community members, fieldworkers, local government leaders, institutional decision-makers.
Facilitators	Facilitators require no special skills apart from motivating small groups, explaining the method, and leading group discussion. Facilitators should be able to deal with difficult situations in which the less powerful stakeholders are reluctant to participate.
Typical Duration	The activity can generally be completed within two hours.
Budget and Materials	The time of the researcher and the participants, cardstock, scissors, masking tape and markers.
More Information	
Example	A Venn Diagram was produced by a community in Sumatra, Indonesia during a site selection activity. First, community members listed the main stakeholders they knew of in the area. Then they cut out circles of paper, one circle representing each stakeholder. Finally, people arranged the circles to show relationships between stakeholders: the extent of contact between circles indicated the strength of links between stakeholders. The main conclusion was that while the logging company's operations negatively affected people's livelihoods, there was little or no interaction between the community and the company. Also, people thought that the district forestry agency should be more "service-oriented" towards the community, with more interaction/communication than exposed by the Venn Diagram, rather than only towards the logging company. People believed that it was the non-governmental organization that most helpful because it had connections with both the forestry agency and logging company. See Figure 2.
Resources	• Mayoux, Linda. 2005. Thinking it through: tool 5 Venn diagrams. Enterprise Development Impact Assessment Information Service. http://www.enterprise-impact.org.uk • Pretty, J. N., Guijt, I., Scones, I. and Thompson, J. 1995. A trainer's guide for participatory learning and action. IIED Participatory Methodology Series. IIED, London. • Rietbergen-McCracken, J. and Narayan, D. 1998. Participation and social assessment: tools and techniques. The World Bank, Washington DC.

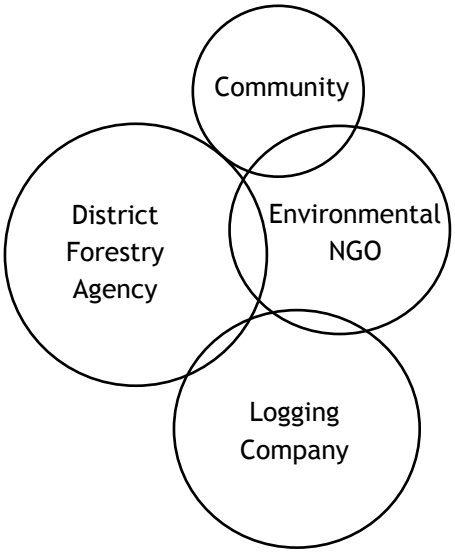


Figure 2. Example of a Venn Diagram.

Who Counts Matrix

Overview	
Brief Description	The Who Counts Matrix is a simple, preliminary way to identify quickly the stakeholders who are most important in the sustainable management of forests. "Forest actors"—important in forest management—are distinguished from other stakeholders.
Purpose	Its fundamental purpose is to aid outsiders, coming to a forest management area, to identify the relative importance of the groups with whom they should work to manage the forests sustainably. However, it can be used in any context where it is important to demonstrate the relevance of local communities.
Outputs	Simple matrices with estimates of the relative importance of the stakeholders (1-3), along seven dimensions: Proximity, pre-existing rights, dependency, poverty, local knowledge, culture/forest link, and power deficit. These can then be averaged to determine the relative rank of each stakeholder in relation to the others. The central forest actors can then be identified.
Complementary Tools	• PRA/RRA tools • Participatory action research • Surveys and interviews • Participant observation
Key Elements or Methods	• Observation • Discussion with people knowledgeable about the area, including local people • Sensitivity to human variation in roles, power, knowledge • Triangulation of information across sources and methods
Advantages and Limitations	
When to Use	• When a logging company is interested in being certified • When a community is trying to analyze its own situation • When a conservation or development project wants to begin working in a new area • When a researcher wants to be sure to cover all relevant parties in his/her interviews/survey/observations • When a qualitative social scientist wants to convey the local human variation to more quantitatively oriented parties
When Not to Use	• When trying to understand the variation within a community • When there is no one available with adequate in-depth knowledge of the local context • When the main concern is gender inequity • When working for/with someone with questionable moral scruples, with a lack of concern for the human beings involved
Strengths	• Quick • Easy for most people to do • Reasonable agreement about relevant stakeholders from a wide range of individuals

Weaknesses	• Only taps the surface of human variation in most forested areas • Could be misused if care is not taken to investigate conscientiously (just fill in the cells without care) • Need to be sure the people asked are truly knowledgeable about the area and its people
Practical Considerations	
Participants	Various and flexible. It has been completed: • With anthropologists' in-depth knowledge of an area • At workshops with non-governmental organizations, academics, project personnel, donors, government officials • With an interdisciplinary and international team, some of whom had been in the country all of their lives • With a group of villagers (focus group)
Facilitators	This method does not usually need facilitation; it is more often done as an extractive technique; though in cases of a community analyzing its own situation, facilitation is needed, ideally in small groups of 3-15 people. Brainstorming and group discussion of the ideas seems sufficient.
Typical Duration	A researcher well-acquainted with the area can do it in a couple of hours. When a new researcher comes to the area, it can be accomplished fairly quickly, in one session of a workshop. It can also be done by a series of interviews or focus group discussions, combined with other information gathering, over a period of days. It is not time-consuming.
Budget and Materials	The time of the researcher and the people interviewed, plus a few sheets of paper and pencil.
More Information	
Example	In Cote D'Ivoire, in the course of a test of criteria and indicators for sustainable forest management, the anthropologist on an interdisciplinary and international team of five people tentatively filled in the matrix, based on knowledge gained during three weeks in the field. She showed these tentative values in the matrix (with stakeholders across the top and the dimensions down the left side), to six knowledgeable colleagues, who commented and corrected her. With each successive attempt, there was increasing agreement with the matrix. In this case, the Agni (local ethnic group), forest workers, other Ivoireans, and foreigners in the communities were identified as the important forest actors (<2), with the contractors being at the margin (2). In descending order of relevance were forestry officials, national citizens, company officials, environmentalists, and consumers (2.5-3).
	• Wollenberg, E. Sampling stakeholders. 1999. *In* The grab bag, C&I Toolbox No.6. CIFOR, Bogor, Indonesia. • CATPAC. *In* The Grab Bag, (software created by Joe Woelfel) C&I Toolbox No.6. CIFOR, Bogor, Indonesia. • Higman, S., Bass, S., Judd, N., Mayers, J. and Nussbaum R. 1999. A sustainable forestry handbook: a practical guide for tropical forest managers on implementing new standards. Earthscan, London.

Bayesian Belief Networks

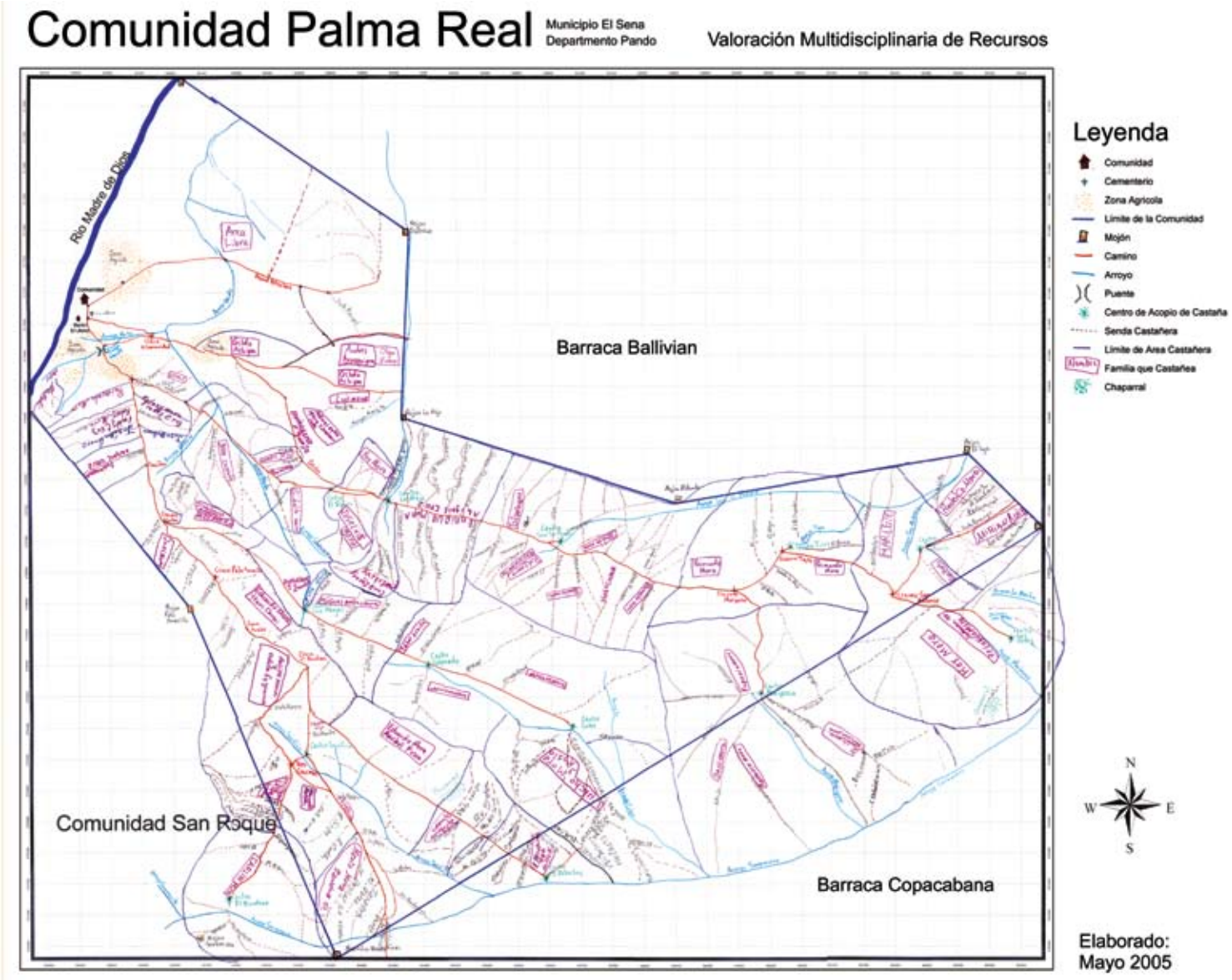
Overview	
Brief Description	Bayesian Belief Networks (BBNs) are probability-based modeling tools for understanding variables, knowledge or data and the relationships between them. They may be constructed to represent qualitative, quantitative, discrete or continuous relationships. They are important tools for incorporating uncertainty into knowledge structures and analyses. BBNs are frequently computer programs that can help to analyze and model complex systems and the interactions of all of the factors in the systems.
Purpose	• To show relationships among variables whose state depends on each other • To incorporate uncertainty into states of variables • To analyze and test current beliefs by entering information into the model • To forecast future outcomes by entering historical information
Outputs	BBNs produce directed graphs or network models that incorporate uncertainty and that can learn from data or expert opinion. The models are dynamic, meaning that variables can be changed to test the impact on other variables. The models can be very simple, describable on paper, or complex, created with computer programs.
Complementary Tools	• Spidergrams • System Dynamics Modeling • Discourse-based Valuation
Key Elements or Methods	Preliminary discussions with a target group define the factors that play a role in a system and the relationships between factors. Information on the factors is collected and included in the model. Participants use their knowledge and intuition about behaviors to test and tweak the model until it represents interrelationships and cause and effect realistically. Participants then use the model to forecast future outcomes by adjusting the variables in the nodes.
Advantages and Limitations	
When to Use	• When uncertainty is important • When relationships are clear and not overly complex • When participants are open to learning through abstract thought and modeling • In an adaptive management context, to provide a model to help decision makers anticipate impacts
When Not to Use	• When feedback relationships are important • When time trend relationships are important • When dynamic relationships are important • When there is little knowledge or intuitive experience in a context or system
Strengths	• Simple and transparent • Easy to use • Uses qualitative and quantitative relationships • Provides realistic forecasting of impacts • Motivates thinking about future outcomes of current actions • Encourages stakeholder discussion and interaction

Weaknesses	• Requires effort to understand initially • Assumes facility with abstract thought • Does not deal easily with feedbacks and circularity • Requires a trained facilitator or specialist • Complex systems may require a computer program
Practical Considerations	
Participants	Small groups (less than 10) of motivated and interested participants. Facility and comfort with concepts of probability and uncertainty are important. Participants should have knowledge and experience with the system being modeled in order to provide information and test the model.
Facilitators	Although the facilitator does not have to be a specialist, he or she must have training and experience in the methods, quantitative skills and knowledge of probability.
Typical Duration	Four sessions of two days each.
Budget and Materials	Facilitators' time, meeting space and basic workshop materials such as flip chart sheets and markers for developing initial conceptualizations. Computer as well as appropriate BBN software (e.g. NETICA from Norsys or HUGIN from HUGIN Expert). LCD projector for larger groups with screen.
More Information	
Example	In collaboration with two communities living within and on the edge of Gorongosa National Park (GNP), Mozambique, scientists hoped to understand the importance of the landscape to local people in terms of the benefits derived from the landscape and the costs of accessing or using those benefits. They developed BBNs based on the preferences of community members. They then converted that information into a map format so that local people and conservation groups could discuss the relative importance of specific areas that were of high concern to both groups. This led to the development of a management plan for the GNP (Lynam *et al*. 2004).
Resources	• Cain, J. 2001. Planning improvements in natural resources management. Guidelines for using Bayesian networks to manage development projects. Institute of Hydrology, Wallingford, UK. • Lynam, T., Cunliffe, R., and Mapaure, I. 2004. Assessing the importance of woodland landscape locations for both local communities and conservation in Gorongosa and Muanza Districts, Sofala Province, Mozambique. Ecology and Society 9(4):1. • Sayer, J. and Campbell, B. 2004. The science of sustainable development: local livelihoods and the global environment. Cambridge University Press, Cambridge.

Discourse-based Valuation

Overview	
Brief Description	Discourse-based Valuation is a public debate where small groups of citizens openly discuss economic and social values. The groups deliberate on an important issue of virtually any topic, ranging from number of people in a community, to crop yields to preferences for forest use. The process is public; therefore the discussion tends to revolve around maximizing the public good instead of benefiting individuals.
Purpose	• To deliberate in a structured manner about an important issue • To build consensus by citizen groups • To provide a fair and equitable forum for valuation of common-pool resources • To assign concrete valuations to facilitate decision making • For diverse individuals to share their information and beliefs about common-pool resources
Outputs	• Consensus valuations of economic and social resources based on perceived benefits to the public • Analysis of the tradeoffs between policy options
Complementary Tools	• Scenarios • Visioning and Pathways • Conventional valuation techniques
Key Elements or Methods	• A series of meetings by small groups in a public forum • Presentations of the results to policy makers, civil society leaders and experts
Advantages and Limitations	
When to Use	• When the use of public goods such as ecosystem goods and services is at issue • When conventional valuation techniques are emphasizing individual benefits over the common good to the detriment of sustainable use • When stakeholders groups are in conflict about the use of public goods and must arrive at a consensus • To facilitate deliberation and consensus-building between stakeholder groups
When Not to Use	• When there is no real possibility of influencing policy through public debate (Perkins 2004) • When a representative selection of stakeholder groups cannot participate • To facilitate negotiation instead of deliberation
Strengths	The deliberations are based on benefits to the greater society, not simply individual benefits. This is a more appropriate approach for common-pool resources such as ecosystem goods and services (Wilson and Howarth 2002). The public nature of the exercise fosters transparency and democratic processes (Perkins 2004). Because groups pool information, valuations are made using a richer knowledge base (Wilson and Howarth 2002).

Weaknesses	Individuals may not share all of their information in small groups (Wilson and Howarth 2002). Groups can be controlled by powerful individuals and are susceptible to their influence (Perkins 2004). The public meeting process can be costly and time-consuming (Perkins 2004).
Practical Considerations	
Participants	Small groups of motivated and interested citizens that represent various stakeholder groups.
Facilitators	Neutral third parties or expert facilitators.
Typical Duration	A series of public forums followed by presentations to decision makers is ideal. Single meetings are not recommended. If possible, establishing a permanent group of citizens to meet and deliberate these issues ensures long-term decision making towards sustainability (Perkins 2004).
Budget and Materials	Facilitator and participant time, meeting space and dissemination products.
More Information	
Resources	• Perkins, P. 2004. Public participation and ecological valuation. Paper presented at the conference of the International Society for Ecological Economics (ISEE), Montreal, Canada. • Wilson, M., and Howarth, R. 2002. Discourse-based valuation of ecosystem services: Establishing fair outcomes through group deliberation. Ecological Economics 41: 431-443.



Participatory Mapping can combine sketching with geo-referenced points, such as this map of the forest of the community of Palma Real in the northern Bolivian Amazon. Participants first used a GPS to geo-reference the locations of major features, such as roads, streams and borders. Then they penciled in the GPS points on a geo-referenced paper grid. Finally, they sketched in more detail, using the GPS points for reference. In one week, participants mapped 8000 hectares of forest.

References

Arnstein, S.R. 1969. Ladder of citizen participation. Journal of the American Planning Association, 35 (4): 216-224.

Cain, J. 2001. Planning improvements in natural resources management. Guidelines for using Bayesian networks to manage development projects. Institute of Hydrology, Wallingford, UK.

Chambers, R. and Mayoux, L. 2003. Reversing the paradigm: quantification and participatory methods. Submitted to the EDIAIS Conference: New Directions in Impact Assessment for Development: Methods and Practice. University of Manchester, UK 24-25 November, 2003.

Colfer, C.J.P. 1995. Who counts most in sustainable forest management? Working paper No.7. CIFOR, Bogor, Indonesia.

Colfer, C.J.P. and Byron, Y. 2001. People managing forests: the links between human well-being and sustainability. CIFOR, Bogor, Indonesia.

Dubois, O. 1998. Capacity to manage role changes in forestry: Introducing the '4Rs' framework. London: IIED.

Evans, K., Velarde, S.J., Prieto, R.P., Rao, S.N., Sertzen, S., Davila, K., Cronkleton, P. and de Jong, W. 2006. Field guide to the future: Four ways for communities to think ahead. CIFOR, ASB, ICRAF, Nairobi.

Higman, S., Bass, S., Judd, N., Mayers, J. and Nussbaum R. 1999. A sustainable forestry handbook: a practical guide for tropical forest managers on implementing new standards. Earthscan, London.

Hildyard, N., Hegde, P., Wolvekamp, P., and Reddy, S. 2001. Pluralism, participation and power: joint forest management in India. *In* Participation: the new tyranny? Cooke, Bill and Uma Kothari eds. Zed Books Ltd., London.

Holman, P. and Devane, T. eds. 1999. The change handbook: group methods for shaping the future. Berrett-Koehler Publishers Inc, San Francisco.

Jackson, B., Nurse, M.C., Singh, H.B. 1994. Participatory mapping for community forestry. ODI, London. http://www.odi.org.uk/.

Jennings, R. 2000. Participatory development as new paradigm: The transition of development professionalism. Prepared for the Community Based Reintegration and Rehabilitation in Post-Conflict Settings Conference. Washington, DC.

Kumar, S. 2002. Methods for community participation: a complete guide for practitioners. ITDG Publishing, London.

Kusumanto, T. 2005. Who's interests does it serve? ITTO Tropical Forest Update 15(2). International Tropical Timber Organization, Yokohama, Japan.

Lynam, T., Bousquet, F., Le Page, C., d'Aquino, P., Barreteau, O., Chinembiri, F. and Mombeshora, B. 2002. Adapting science to adaptive managers: spidergrams, belief models, and multi-agent systems modeling. Conservation Ecology 5(2): 24. http://www.consecol.org/vol5/iss2/art24/.

Lynam, T. 1999. Adaptive analysis of locally complex systems in a globally complex world. Conservation Ecology 3(2): 13. http://www.consecol.org/vol3/iss2/art13.

Lynam, T.J.P. 2001. Participatory systems analysis – an introductory guide. IES Special Report No. 22. Institute of Environmental Sciences, University of Zimbabwe, CIFOR, Harare.

Lynam, T., Cunliffe, R. and Mapaure, I. 2004. Assessing the importance of woodland landscape locations for both local communities and conservation in Gorongosa and Muanza districts, Sofala province, Mozambique. Ecology and Society 9(4): 1. http://www.ecologyandsociety.org/vol9/iss4/art1/.

Lynam, T., Sheil, D., de Jong, W., Kusumanto, T. and Evans, K. In press. A review of tools for incorporating community knowledge, preferences and values into decision making in natural resources management. CIFOR, Bogor, Indonesia.

Maack, J.N. 2001. Scenario analysis: a tool for task managers. *From* Social analysis: selected tools and techniques. Social Development Papers Number 36. The World Bank, Washington DC.

Mascarenhas, J. 1991. Participatory rural appraisal and participatory learning methods: recent experiences from Myrada and South India. RRA Notes, 13: 26-32.

Mayers, J. 2005. The four Rs. *From* Power tools. IIED, London.

Mayoux, L. 2005. Thinking it through: Tool 5 Venn diagrams. Enterprise Development Impact Assessment Information Service. http://www.enterprise-impact.org.uk/pdf/ThinkingitThrough-Tool5-VennDiagrams.pdf.

Mosse, D. 2001. People's knowledge, participation and patronage: operations and representations in rural development. *In* Participation: the new tyranny? Cooke, Bill and Uma Kothari eds. Zed Books Ltd., London.

Nygren, A. 2004. Competing claims on disputed lands: The complexity of resource tenure in the Nicaraguan interior. Latin American Research Review 39 (1): 123-153.

Narayan, D. ed. 2002. Tools and practices. *In* Empowerment and poverty reduction: a sourcebook. The World Bank, Washington DC.

Nemarundwe, N., de Jong, W., Cronkleton, P. 2003. Future scenarios as an instrument for forest management: manual for training facilitators of future scenarios. CIFOR, Bogor, Indonesia.

Ostrom, E., Burger, J., Field, C.B., Norgaard, R.B. and Policansky, D. 1999. Revisiting the commons: local lessons, global challenges. Science. 284: 278-282.

Peterson, G.D., Beard Jr., T.D., Beisner, B.E., Bennett, E.M., Carpenter, S.R., Cumming, G.S., Dent, C.L. and Havlicek, T.D. 2003. Assessing future ecosystem services: a case study of the Northern Highlands Lake District, Wisconsin. Conservation Ecology 7(3): 1.

Perkins, P. 2004. Public participation and ecological valuation. Paper presented at the conference of the International Society for Ecological Economics (ISEE) Montreal, Canada.

Pretty, J. N., Guijt, I., Scones, I. and Thompson, J. 1995. A trainer's guide for participatory learning and action. IIED Participatory Methodology Series. IIED, London.

Rietbergen-McCracken, J. and Narayan, D. 1998. Participation and social assessment: tools and techniques. The World Bank, Washington DC.

Sayer, J. and Campbell, B. 2004. The science of sustainable development: local livelihoods and the global environment. Cambridge University Press, Cambridge.

Scearce, D. and Fulton, K. 2004. What if? The art of scenario thinking for nonprofits. Global Business Network, Emeryville, California. http://www.gbn.com

Sheil, D. and Liswanti, N. 2006. Scoring the importance of tropical forest landscapes with local people: patterns and insight. Environmental Management 38: 126-136.

Sheil, D., Puri, R., Wan, M., Basuki, I., van Heist, M., Liswanti, N., Rukmiyati, Rachmatika, I. and Samsoedin, I. 2006. Local people's priorities for biodiversity: examples from the forests of Indonesian Borneo. Ambio 35: 17-24.

Sheil, D., Puri, R., Basuki, I., van Heist, M., Syaefuddin, Rukmiyati, Sardjono, M.A., Samsoedin, I., Sidiyasa, K., Chrisandini, Permana, E., Angi, E., Gatzweiler, F., Wijaya, A. 2004. Exploring biological diversity, environment and local people's perspectives in forest landscapes. 2nd Edition. CIFOR, Bogor, Indonesia.

Tekwe, C. and Percy F. 2000. Rights, responsibilities, revenues and relationships with a focus on community forest benefit sharing: a case study of the 4Rs from Bimbia Bonadikombo, Mount Cameroon Project. Unpublished report. DFID Mount Cameroon Project, London.

Thompson, J.R., Elemendorf, W.F., McDonough, M.H., and Burban, L.L. 2005. Participation and conflict: lessons learned from community forestry. Journal of Forestry 103 (4): 174-178.

van der Heijden, K. 1996. Scenarios: the art of strategic conversation. John Wiley & Sons, Chichester, England, New York.

Wack, P. 1985. Scenarios: uncharted waters ahead. Harvard Business Review 63 (5).

Wilson, M., and Howarth, R. (2002). Discourse-based valuation of ecosystem services: Establishing fair outcomes through group deliberation. Ecological Economics 41, 431-443.

Wollenberg, E. 1999. Sampling stakeholders. *In* The Grab Bag, C&I Toolbox No.6. CIFOR, Bogor, Indonesia.

Wollenberg, E., Edmunds, D., Buck, L. 2000. Anticipating change: scenarios as a tool for adaptive forest management: a guide. CIFOR, Bogor, Indonesia.

The Center for International Forestry Research (CIFOR) is a leading international forestry research organisation established in 1993 in response to global concerns about the social, environmental, and economic consequences of forest loss and degradation. CIFOR is dedicated to developing policies and technologies for sustainable use and management of forests, and for enhancing the well-being of people in developing countries who rely on tropical forests for their livelihoods. CIFOR is one of the 15 centres supported by the Consultative Group on International Agricultural Research (CGIAR). With headquarters in Bogor, Indonesia, CIFOR has regional offices in Brazil, Burkina Faso, Cameroon and Zimbabwe, and it works in over 30 other countries around the world.

Donors

CIFOR receives its major funding from governments, international development organizations, private foundations and regional organizations. In 2005, CIFOR received financial support from Australia, Asian Development Bank (ADB), Belgium, Brazil, Canada, China, Centre de coopération internationale en recherche agronomique pour le développement (CIRAD), Cordaid, Conservation International Foundation (CIF), European Commission, Finland, Food and Agriculture Organization of the United Nations (FAO), Ford Foundation, France, German Agency for Technical Cooperation (GTZ), German Federal Ministry for Economic Cooperation and Development (BMZ), Indonesia, International Development Research Centre (IDRC), International Fund for Agricultural Development (IFAD), International Tropical Timber Organization (ITTO), Israel, Italy, The World Conservation Union (IUCN), Japan, Korea, Netherlands, Norway, Netherlands Development Organization, Overseas Development Institute (ODI), Peruvian Secretariat for International Cooperation (RSCI), Philippines, Spain, Sweden, Swedish University of Agricultural Sciences (SLU), Switzerland, Swiss Agency for the Environment, Forests and Landscape, The Overbrook Foundation, The Nature Conservancy (TNC), Tropical Forest Foundation, Tropenbos International, United States, United Kingdom, United Nations Environment Programme (UNEP), World Bank, World Resources Institute (WRI) and World Wide Fund for Nature (WWF).

The Center for International Forestry Research has developed and adapted various participatory tools for use with forest communities and other natural resource dependent groups. The tools have diverse applications: stakeholder identification, decision making, planning, conflict management, information collection, landscape assessment and other uses. The Guide to Participatory Tools for Forest Communities is intended for environment and development practitioners, researchers and local government officials. It provides information on various tools to help readers grasp basic capabilities, identify the most appropriate tool for their needs and find resources for additional information. Much like a map, this guide sends readers in the right direction when selecting participatory tools.

ISBN 979-24-4656-7