Sustainable Management of Water, Land and Ecosystems for Resilient Communities

Community Workshop Modules

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Front cover photograph: Likie Nigussie

Contents

Agenda 2

Introduction 3

Module 1: Describing livelihoods and their dependencies on sustainably managing resources and the services they provide 5

Module 2: Mapping land use, water sources and landscape components critical to the supply of ecosystem services 7

Module 3: Creating a timeline of major events and their effects on ecosystem services 8

Module 4: Describing coping/adaptive strategies for sustaining water quality and ecosystem services 11

Module 5: Understanding social/institutional organization in relation to natural resource management and mapping the influence networks 12

Module 6: Developing a watershed action plan 13

Appendix A 15

Appendix B 16

AGENDA

DAY 1	
	Time allocation
Introduction to workshop objectives	30-45 minutes
Module 1: Describing livelihoods and their dependencies on sustainably managing resources and the services they provide	90 minutes
Module 2: Mapping land use, water sources and landscape components critical to the supply of ecosystem services	90 minutes
LUNCH	**1 hour**
Module 3: Creating a timeline of major events and their effects on ecosystem services	90 minutes
Reflections on the day	20 minutes
DAY 2	
Introduction to the day's activities	30 minutes
Module 4: Describing coping/adaptive strategies for sustaining water quality and ecosystem services	90 minutes
Module 5: Understanding social/institutional organization in relation to natural resource management and mapping the influence networks	75 minutes
LUNCH	**1 hour**
Module 6: Developing a watershed action plan	2 hours
Reflections on the workshop and closing ceremony	45 minutes

Sustainable Management of Water, Land and Ecosystems for Resilient Communities

Community Workshop Modules

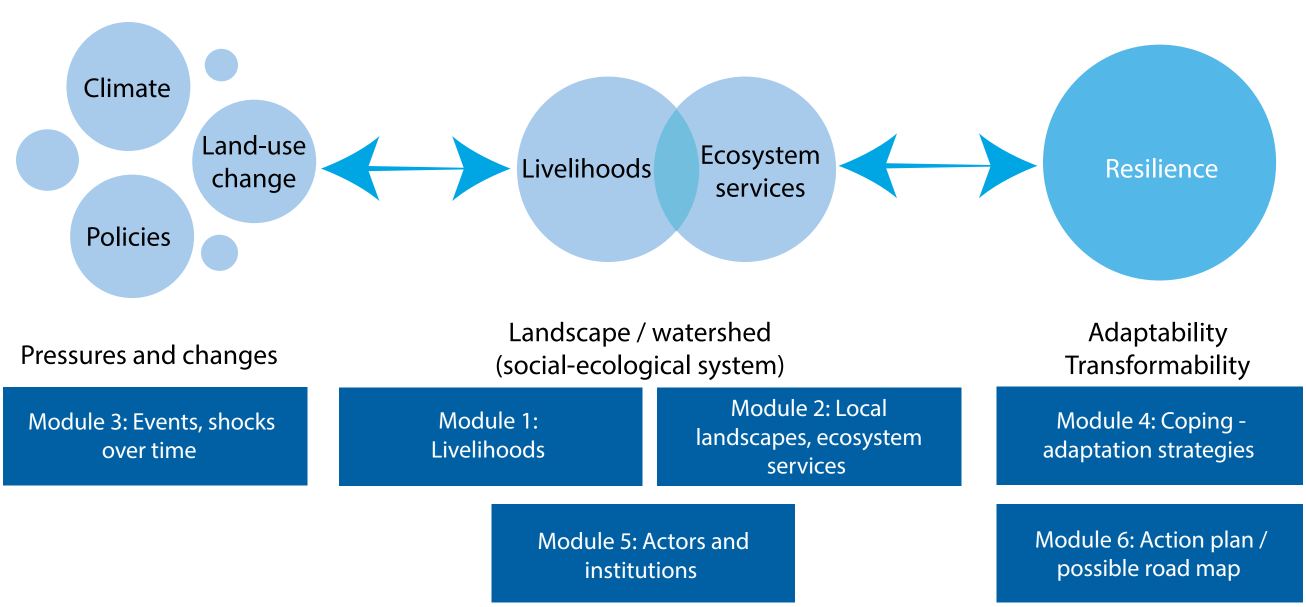
Introduction

These workshop modules comprise a practical, participatory tool for creating community watershed action plans aimed at increasing climate resilience through the sustainable management of water, land and ecosystems. The tool is intended to support the capacity of communities to learn, cope, adapt and transform in the face of social, economic and environmental pressures. It is also intended to allow communities and others to systematically assess past, present and future changes, challenges and opportunities in the management of local landscapes or watersheds.

The modules are adaptable for use in different settings and across different communities of practice (e.g., research, implementation of development action, and policy interpretation) and can be completed within two days, although some data collection is recommended prior to the workshop.

In the following pages, we describe how to apply the modules in a workshop setting together with a description of the format and participatory methodologies.

Building resilience



In preparation for the workshop

- Collect appropriate datasets (qualitative and quantitative) prior to convening the workshop. For example, information on historical and current water and land resources can be used to supplement the recollections and insights of workshop participants.

- Arrange for a facilitator who knows the local dialect, in order to encourage women's participation, and uses gender-sensitive language. The aim should be equitable participation by all, including women, youth and elders. Equal numbers of women and men should be invited at a time that does not interfere with their household and farm responsibilities. If possible, child care should be offered to facilitate participation of women with young children.

- Share a project brief with local government administrators and community leaders in a meeting held a few weeks prior to the workshop. This meeting can be used to answer queries and familiarize officials with anticipated workshop outputs.

Photo: Likie Nigussie

Day 1

Introduction to workshop objectives *(30-45 minutes)*

Facilitator, organizers, government officials and other participants

Key message

The purpose of the workshop is to create watershed action plans for sustainably managing natural resources and the services they provide (ecosystem services), such as food, fuel, fodder and water quality. Sustainable management is key to community resilience in the face of disturbances or shocks (e.g., climate or market perturbations). For example, preventing soil erosion protects water quality and fish health – two ecosystem services.

Plenary

- Workshop opens with a brief welcome from the organizer and relevant local government officials.
- The facilitator explains the purpose of the workshop and the general schedule for the next two days, as well as a more specific schedule and objectives for each day.
- The facilitator walks the participants through the workshop consent form for their subsequent review and signature (copies to be collected and maintained by hosts).
- Housekeeping issues: turning off mobile devices, food, per diem, etc.
- Participant/facilitator/note-taker introductions.
- Feedback - Participants relate what was understood and what they expect from the workshop. The facilitator should obtain feedback representing the range of participants. Participants should be encouraged to raise questions or concerns they may have about the workshop.

Module 1: Describing livelihoods and their dependencies on sustainably managing resources and the services they provide (*90 minutes*)[1]

Facilitator and note-takers

Learning objective

Participants are able to describe the diversity of livelihoods in the community, and how the ecosystem services support livelihoods.

Plenary

- The facilitator explains the purpose of the exercise and provides some examples of the information to be collected.

[1] *Note:* Depending on the size of the community groups and time available, modules 1 and 2 could be carried out in parallel by dividing each of the community groups in half to complete the basic information for each module (~1 hour). The communities then come back together to rank/weight the livelihood activities (Module 1), and prioritize the negative dependencies and livelihood features on the watershed map (Module 2) (~1 hour).

- The facilitator describes the role of services in rainfed/irrigated farming; livestock rearing; collection of wood, wild fruits or plants; market activities; casual labor; and paid work outside the village. The facilitator should include spatial and temporal aspects of relationships among health, livelihoods, natural resource management and ecosystem services.

- The facilitator mentions the importance of mitigating risks to service provision.

Group work

- Within groups, the participants:
    - ✓ Identify livelihoods, the dependence on/links to resources/ecosystem services (positive and negative)[2].
    - ✓ Prioritize three to five top livelihood activities: noting those most important for income, food security and well-being.
    - ✓ Discuss and list the risks to service provision from different sources and ways to mitigate risks.
    - ✓ Highlight key livelihood activities and negative dependencies/linkages.

A note-taker sits with each group to answer questions and help with writing.

Plenary

- Group representatives present and discuss their tables with others.

Materials

One pre-designed flipchart per group; post-it notes (3 colors/sizes).

Outputs

A table of livelihoods and their relationships to ecosystem services.

Example of pre-designed flipchart

Livelihood	Relevant services	Positive dependencies (+)	Neutral (0)	Negative (-)

[2] Ensure there is a common understanding of the positive/negative dependencies. For example, positive meaning the benefits communities receive (provisioning, regulating, habitat or supporting, and cultural services, etc.) from the natural environment; and negative meaning risks to the natural resource base and the services they provide (from human action, climate variability/change, etc.). The central focus is livelihoods and how they are positively or negatively affected by the natural resources and services in the watershed.

Module 2: Mapping land use, water sources and landscape components critical to the supply of ecosystem services *(90 minutes)*[3]

Facilitator and note-takers

Learning objective

Participants are able to identify and map components of the landscape in their watershed that are important for community well-being and ecosystem services.

Plenary

- The facilitator explains the purpose of the exercise.
- The facilitator demonstrates the mapping process using pre-designed maps with legends on the wall.

Group work

- Participants divide into groups according to their geographical location in watershed.
- Participants personalize a blank map with features in their landscape, depicting land use and landscape components that affect (positively or negatively) water quantity and quality, and other ecosystem services. The maps include significant features and resources. Facilitators observe and answer questions. Emphasis is on mapping components that illustrate land use, water sources and points of use, and activities that affect ecosystem services. Infrastructural elements such as churches, roads, schools, etc., should be included.
- Participants identify key features in the landscape to provide some perspective/ weighting on the values placed on the various features.

Plenary

- Group representatives present and discuss their maps with others.
- The facilitator leads discussion about resource flows and interrelationships among the communities in the watershed. Markers are used to draw arrows, demonstrating the resource flows across the landscape. This discussion should not be limited to communities attending the workshop, but include possible effects on neighboring communities.
- The facilitator asks for feedback on what participants have learned during the activity.

Materials

Pre-designed maps of the area divided into parts representing the different locations in the watershed, pre-designed legends on flipcharts, water-based and alcohol-based markers, push pins and pre-designed icons.

[3] *Note:* Depending on the size of the community groups and time available, Modules 1 and 2 could be carried out in parallel by dividing each of the community groups in half to complete the basic information for each module (~1 hour). The communities then come back together to rank/weight the livelihood activities (Module 1), and prioritize the negative dependencies and livelihood features on the watershed map (Module 2) (~1 hour).

Outputs

Maps that illustrate land use, water sources, and components and processes in the landscape (upstream, midstream and downstream) that are important to the supply and delivery of ecosystem services.

An example of a map created by workshop participants in Embahasti, Ethiopia

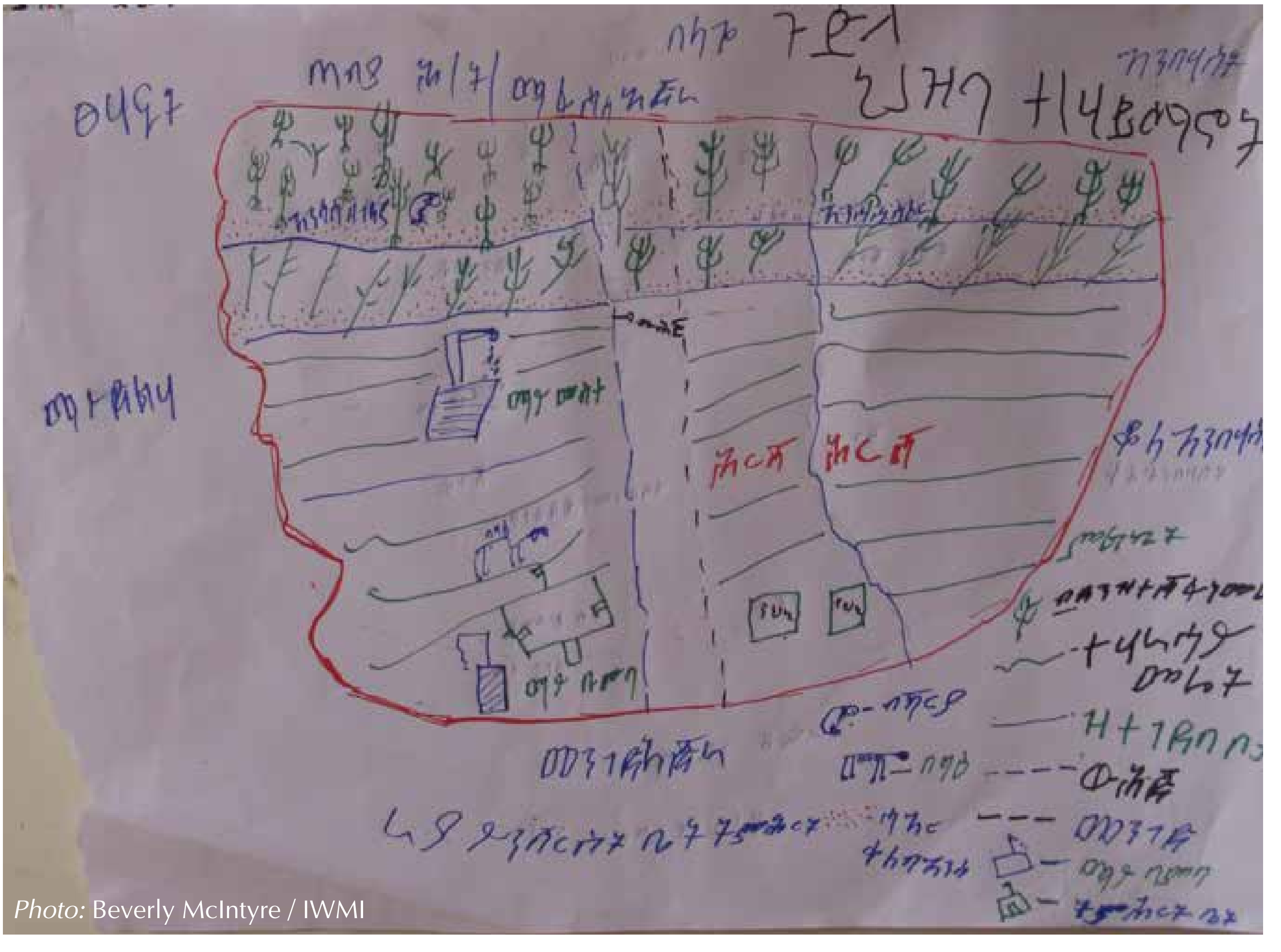


Photo: Beverly McIntyre / IWMI

Lunch – 1 hour

Module 3: Creating a timeline of major events and their effects on ecosystem services *(90 minutes)*

Facilitator and note-takers

Learning objective

Participants understand how significant events (e.g., flooding, infrastructure development, famine, land-use change) have/may affect availability/quality of natural resources and ecosystem services.

Plenary

- The facilitator describes the purpose of the activity and demonstrates the process of creating a matrix of events, effects and timeline.

- Participants are requested to focus on key events in the past 25-35 years.

Group work

- Within groups, participants identify, through the creation of a table, significant life-changing events (positive and negative) such as floods, droughts, crop diseases/pests/harvests, births/deaths, natural disasters, etc. In the table, participants note the impacts of each of the events on livelihoods, water quality, landscapes and ecosystems services, and their responses, if any, to each event.
- From these events, the groups select four to six major events (challenges) for further analysis in the subsequent modules.

Plenary

- Groups present their tables of events and effects on ecosystem services.
- The facilitator will lead a discussion on the importance of the event on the community as a whole, as well as on youth and women. The facilitator underlines major events with a red marker. Participants will describe individual/community/official responses to events. Note-takers should record all details, whereas only brief comments will be written on the flipchart matrix.
- The facilitator records events on a timeline drawn on a pre-prepared flipchart.

Materials

Pre-designed flipcharts (for group and plenary work), markers.

Outputs

(a) Tables of major/life-changing events in the community over past 25-35 years with positive and negative effects on ecosystem services.
(b) Timeline of events.
(c) Stakeholder responses.

Example of a pre-designed flipchart

Event	Date	Positive (+) effect on water quality/landscape/ ecosystem services	Negative (-) effect on water quality/ landscape/ ecosystem services	Responses	By whom

Reflections on the Day *(20 minutes)*

Facilitator

Learning objective
Organizers gain an understanding of how participants perceive the day's exercises and where improvements can be made.

Plenary

- The facilitator recaps the day's activities.
- Using a flipchart, the facilitator records what participants think went well and what could be better.

Materials
Flip chart with a line down the middle (positive/negative), markers.

Outputs
Monitoring and evaluation (M&E) input for final report.

Photo: Likie Nigussie

Day 2

Introduction to the day's activities *(30 minutes)*

Plenary

- The facilitator recaps the previous day, introduces the schedule for day 2, and asks for feedback from participants.

Module 4: Describing coping/adaptive strategies for sustaining water quality and ecosystem services *(90 minutes)*

Facilitator and note-takers

Learning objective

Participants can identify adaptive strategies to the key challenges (shocks/major events) identified in Module 3.

Plenary

- The facilitator describes the purpose of the activity and explains what is meant by adaptive strategies, giving some examples.
- The participants will also be asked to recall those challenges and these will be listed on the flipchart.

Group work

- Within groups, participants discuss the adaptive strategies for responding to the challenges on a pre-designed flipchart matrix.

Materials

Pre-designed flipcharts and markers (see Appendix A for a detailed description of this module).

Outputs

Matrix of challenges, adaptive strategies and roles different actors play.

Example of pre-designed matrix for the flipchart

Challenges (identified in Module 3)	Drivers (causes of challenges)	Adaptive strategies

Module 5: Understanding social/institutional organization in relation to natural resource management and mapping the influence networks *(75 minutes)*

Plenary

Participants create a mind map/organogram identifying the key actors involved in the coping strategies for each of the key challenges identified in Module 4. The network map should show the relationships that shape and affect natural resource management in formal and informal settings. This map should lead to an understanding of the different roles and responsibilities of various actors that influence/affect the adaptation strategies identified in the previous module.

Group work

- Participants split into three groups for a three-step exercise:
    - Assemble all the actors relevant for each challenge and related adaptation strategy on the map.
    - Define the different links and draw networks that highlight the roles of the actors within the network (e.g., flow of information, funding).
    - Define 'influence/power' and put actors on influence stones.

Note: Note-takers to encourage the community participants to consider the range of actors (official/non-official, public/private, nongovernmental organizations (NGOs) - traditional/informal/community-based organizations) involved. However, the facilitator has to be careful not to probe and push the participant to add actors that he or she has not mentioned.

Plenary

- Each group presents their work.

Materials

Flipcharts, post-it notes, small stones, markers of different colors.

Outputs

An organogram and a map of relationships (see Appendix B for more details on this session).

Lunch – 1 hour

Module 6: Developing a watershed action plan *(2 hours)*

Facilitator

Learning objective

Participants identify actions, with a focus on community actions, necessary to sustain ecosystem services within the watershed and strengthen community resilience.

Plenary

- The facilitator explains the purpose of the exercise and describes how to create a watershed action plan.
- The facilitator reminds participants of the matrix of challenges to sustaining ecosystem services that they created in order to help them focus on the issues relevant to creating an action plan.

Group work

- Using the key challenges (identified in Module 3) as a guide, participants list key actions needed to address the challenges – dividing them into short term (1-3 months), mid term (6-12 months) and long term (more than a year). For each action, they list the requirements in terms of human and material resources, and indicate if these resources are available in the community.

Plenary

- Groups present their action plans. The facilitator groups similar plans.
- The participants are guided towards a consensus on six important actions (three short term and three mid term).
- Participants discuss the roles that can be played, and responsibilities, as individuals or their 'office' or the community in completing the work. Discuss activities that require large material inputs and identify potential sources for these inputs.
- Plenary reaches an agreement on an action plan.
- Workshop organizers agree to produce a report on the action plans in a language agreed by participants. This report will be shared within four weeks with local government administrators or other appropriate bodies. The administrators commit to sharing this report with all the stakeholders.

Materials

Flipchart (possibly pre-designed, markers).

Outputs

A watershed action plan containing actors linked to specific actions (actions, roles and responsibilities).

Reflections on the workshop and closing ceremony *(45 minutes)*

Facilitators, organizers, government officials

Plenary

- The facilitator recaps the activities completed during the workshop, and asks participants to reflect on what was achieved. Using a flipchart, record what participants thought went well on one side, and what could have been better on the other side.
- Organizers and observers thank the community for their active participation and encourage them to continue with their resilience-building activities.
- Award individual attendance certificates to participants.

Materials

Flipchart with a line down the middle (positive/negative), markers, certificates.

Outputs

M&E that feeds into a final report.

Photo: Likie Nigussie

Appendix A

Describing coping/adaptive strategies for sustaining water quality and ecosystem services (Module 4)

Purpose
The purpose of this exercise is to understand the challenges and coping strategies a community has in relation to livelihoods, and sustainable management of water, land and ecosystems. The participants will create a table of existing challenges/issues, and then list the coping strategies that are in place for dealing with these challenges.

Challenges (identified in Module 3)	Drivers (causes of challenges)	Adaptive strategies

Materials
Large sheet of paper and marker.

Steps

1. **List key challenges identified in Module 3 in relation, for example, to health and livelihoods, and sustainable management of water, land and ecosystems in the first quadrant**

   Fill the first quadrant with the key challenges identified in Module 3.

2. **Assemble causes of the challenges mentioned in the first quadrant**

   Ask participants what caused the challenges noted in the first quadrant. You may discuss the issues one by one. For example, if one of the challenges mentioned by the community is soil erosion, ask “what caused the erosion?”

3. **List coping strategies of the different stakeholders**

   To address the challenges mentioned in the first quadrant, different stakeholders (individuals, households, community, government institutions, NGOs and others) use different coping strategies. Discuss coping strategies used by the different stakeholders to mitigate the challenges.

Appendix B

Understanding social/institutional organization in relation to natural resource management and mapping the influence networks (Module 5)

Purpose
The purpose of this exercise is to explore relationships that shape and affect natural resource management in formal and informal hierarchies. This exercise helps participants to understand the different actors (formal and informal) that can/do influence the implementation of the adaptive strategies identified in Module 4.

Materials
Large sheet of paper; small actor cards (post-it notes) to write down the names of the actors, grouping small stones to show the level of power (influence) each actor has, and markers of different colors to draw the links between actors.

Steps
1. Assemble all stakeholders on the map

- For each of the challenges identified (in Module 3), think of all the individuals, groups or organizations that affect the implementation of the related adaptation strategies (Module 4). The actors can be local as well as national, regional and international, and they do not necessarily have to be formally linked to the challenge or adaptation strategy identified. Every individual, group or organization capable of having an influence/impact should be included. Write the names on the post-it notes or small pieces of paper fixed with masking tape and distribute them on the sheet of paper. While the distance between the different actors on the map is not used in the analysis, it makes sense to place the actors so that those with many expected links are placed close to each other, which will help to ensure that the final influence network map is not too disorganized or messy.

- Adding actors and links whenever they come to mind is encouraged to allow people with different approaches to complex questions to express themselves at their own pace. However, while encouraging the participant to add more actors, the facilitator has to be careful not to probe and push the participant to add actors that he or she has not thought of. With participants who start out slowly, it helps to have the facilitator read out loud the actors already mentioned to give the participant time and space to think about further actors.

2. Define different links and draw network

- Links can be defined in terms of flow of funds, formal line of command/reporting/formal hierarchy, support, advice direction and flow of information.

- Collect data about how these actors are linked, and illustrate these links by drawing arrows of different colors between the actor cards. The colors represent different kinds of links. A network legend is written in a corner of the map, which spells out which color represents what kind of link. For example, black arrows represent the formal lines of command; red, the flow of funds; green, informal support, advice or guidance; blue, the flow of information; and yellow, links to be established or strengthened in the future.

- The facilitator explains that the next step is to connect the actors with arrows colored according to their links. The arrows indicate that something (such as information or funds) is flowing from one actor to the other. If there is a mutual exchange, the arrow has two heads. It is advisable to start with those kinds of links that are rather rare and only add the very common ones (such as flow of information) toward the end, so the picture does not become cluttered early on. If actors are linked by more than one flow, arrowheads of different colors can be added to existing arrows.

- In complex setups, in particular, the facilitator can guide the participant through the process by making sure that they go step-by-step, instead of jumping from one color to the next and back. If participants identify few or no links, the facilitator can ask whether that is an oversight or a purposeful statement. However, it is important that the participant does not feel pressured to add links. The links to be established in the future are not visualized at this point of the interview, but only at the end as an outlook toward strategic influence network planning. Therefore, the facilitator should clearly state that "We are talking about the existing links now, not about those that should or will exist in the future."

3. Define 'influence/power' and put actors on influence stones

- The definition used in the case study is based on Max Weber's definition of power—the ability to reach one's goals in a social setting (Schiffer and Waale 2008[4]). In communicating the definition to participants, the facilitators must stress that the sources of influence/power can be diverse, ranging from legitimate decision-making capacity through to giving advice or providing incentives to bending or breaking the rules.

- It is important that participants understand that they are not being asked about formal hierarchies but about the ability of the actor to influence a specific issue. The question is how much influence this actor has in this specific field/activity/organization— not in a more general sense. Once this understanding of influence is established, the participants are asked to assess who has how much influence on a given governance field. In the case study, the question was "How strongly can these actors influence the sustainability of ecosystem services?" The actors are represented by a number of small stones that are put on top of the actors. Rules for this exercise must be explained:

    - ✓ The more influence an actor has the larger the number of stones.
    - ✓ The number of stones can be as large as participants want.
    - ✓ Two actors can have the same number of stones.
    - ✓ If an actor has no influence at all, the figure is put on the ground level without an influence tower.

[4] Schiffer, E.; Waale, D. 2008. *Tracing power and influence in networks: Net-Map as a tool for research and strategic network planning*. IFPRI Discussion Paper 00772. Washington, DC, USA: International Food Policy Research Institute (IFPRI).

- After the participant sets up the influence stones, the facilitator verbalizes what he or she sees, starting with the largest number of stones, and encourages the participant to make adjustments if he or she has second thoughts. This is especially necessary where influence networks are complex. Once the participant is content with the whole setup, the facilitator writes down the number of stones next to the actors' names on the network map.

Start with the most influential (the one with greater number of stones) and ask about the source and effects of influence. Some of the questions that can be asked include the following:

- ✓ I see you have put this one on the large number of stones. Why? Where does his/her influence come from? How would an outsider like me see that?
- ✓ You say that these two actors have the same level of influence. What happens if they disagree? Is their influence based on the same grounds? Does it have the same range?
- ✓ I have heard there is a conflict about …. among these three actors. Could you explain to me what it is about? You have linked this actor to many others, but you say he/she does not have much influence. Why is that so?

All photos: Likie Nigussie

The International Water Management Institute (IWMI) is a non-profit, scientific research organization focusing on the sustainable use of water and land resources in developing countries. IWMI works in partnership with governments, civil society and the private sector to develop scalable agricultural water management solutions that have a real impact on poverty reduction, food security and ecosystem health. Headquartered in Colombo, Sri Lanka, with regional offices across Asia and Africa, IWMI is a CGIAR Research Center and leads the CGIAR Research Program on Water, Land and Ecosystems (WLE).

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