

PRACTITIONERS' GUIDE

**Mapping Guidelines for
Participatory Rangeland Management
in Pastoral and Agro-Pastoral Areas**

Compiled by

Ben Irwin, Adrian Cullis and Fiona Flintan

PRACTITIONERS' GUIDE

Mapping Guidelines for Participatory Rangeland Management in Pastoral and Agro-Pastoral Areas

Compiled by

Ben Irwin, Adrian Cullis and Fiona Flintan



USAID
FROM THE AMERICAN PEOPLE



 **MercyCorps**

Disclaimer: The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

© Ben Irwin, Adrian Cullis and Fiona Flintan, 2015
ISBN 978-99944-960-3-7

Editor: Helen deJode
Photography and design: Kelley Lynch

Published by CARE with funding USAID through the PRIME (Pastoralist Areas Resilience Improvement through Market Expansion) project

PRIME's approach to mapping

PRIME uses a participatory approach to natural resource management, actively engaging local communities and stakeholders throughout the processes of NRM activities including the identification of key natural resources, mapping their locations and distribution, analyzing community access to those resources, identifying community development priorities, and supporting the implementation of those priorities. During this process, PRIME uses participatory resource mapping exercises as a key tool for understanding natural resource conditions and in facilitating community NRM management planning processes. The mapping exercises help local communities to visualize and understand their surroundings and resource conditions such as resource distribution, and strategize their resource management and utilization practices. It also helps communities and stakeholders to visualize the geographic integration of different project activities which fall under non-NRM project activities in PRIME. Participatory mapping has taken place in all three regions of PRIME intervention: Oromia, Afar and Somali.

Acknowledgements

These Mapping Guidelines were developed following a series of rangeland mapping exercises carried out in southern Oromia region and southwest Somali region of Ethiopia, as well as in neighboring countries in the Horn of Africa. The rangeland mapping exercises were funded by a number of donors, including the EU, ECHO, USAID and CORDAID, with the support of the Pastoral Areas Development Commissions in the Oromia and Somali Regional Bureau of Agriculture. CARE, SOS Sahel Ethiopia, Farm Africa, Save the Children US, Mercy Corps and the Pastoral Livelihoods Initiative (PLI) partners have all carried out participatory rangeland mapping in the rangelands of Ethiopia. PLI was a USAID funded pastoral program implemented by a number of international NGOs including Save the Children US / CARE / Mercy Corps. PLI I was funded from 2006, and PLI II from 2010. The PRIME Project is a USAID funded pastoral program (2012 through 2017) that is also making extensive use of rangeland mapping exercises. Partners involved in the mapping process include CARE, SOS Sahel and Mercy Corps.

The information presented in the guidelines is informed by our engagement with many different agencies and pastoralist communities. In particular, we wish to thank Borana and Garri pastoralist communities and their leaders. Any inaccuracies or misrepresentation made in these guidelines is solely our responsibility. We also thank Helen de Jode for editing the final text and Kelley Lynch who took photographs, collected testimonies from communities in Afar, Borana and Somali regions and prepared the document for publication. These guidelines have been published with the assistance of CARE. They do not necessarily reflect the views of any of the donors involved.

CONTENTS

05	INTRODUCTION
07	STAGE ONE: PREPARATION
08	Step 1 - Establish the mapping team
10	Step 2 - Agree terms with the community
12	Step 3 - Visit the area and finalize logistics
15	STAGE TWO: FACILITATION
16	Step 1 - Produce a rangeland resource map
18	Step 2 - Add more details to the map
20	Step 3 - Complete the mapping exercise
23	STAGE THREE: VALIDATION
24	Step 1 - Present the map to the community for validation
26	Step 2 - Write the rangeland mapping report
28	Step 3 - Disseminate the validated map and the report
32	ABOUT THE AUTHORS



INTRODUCTION

Why participatory resource mapping is important

This Practitioners' Guide has been specifically designed to complement the **2015** publication *Mapping for Participatory Rangeland Management in Pastoral and Agro-Pastoral Areas*. In this shortened version the text has been condensed to cover the specific needs of the mapping team, and the design adjusted for use in the field. This Practitioners' Guide provides the step-by-step instructions and checklists that will guide a mapping team through a mapping exercise. The mapping process is broken down into its three main stages, each with three steps.

Mapping is a participatory research technique that helps communities to reveal and analyze issues collectively, and leads to community-led solutions. The participation process and the extensive dialogue that happens through the development of a resource map provides all community members (men, women and youth, as well as people of different wealth groups) with an opportunity to work together to develop a visual picture of their landscape, natural resources, settlement and land use systems.

Done well, resource mapping can deepen community understanding of different user groups and promote commitments to better manage natural resources. It can also provide development and extension workers, who work with the community representatives to produce a map, with a much better understanding of the communities they are involved with.

Participatory resource mapping is central to Participatory Rangeland Management (PRM), which begins with rangeland users mapping the rangeland resources during an initial 'investigation' stage. This is followed by the 'negotiation' and an 'implementation' stages, wherein the maps become the key tools for identifying and addressing key rangeland management issues and learning, making decisions, and developing agreements for the practical management of those resources. Resource mapping can also serve as a baseline for resource management, and for planning and preparedness more broadly; it can also help to facilitate climate change adaptation.

your notes



STAGE ONE: PREPARATION

STEP ONE: Establish the mapping team

STEP TWO: Agree terms with the community

STEP THREE: Visit the area and finalize logistics

STEP ONE

Establish the mapping team

Tasks for this step: Choose a mapping team with the necessary skills and ensure that the objectives for the planned mapping exercise are clear.

The mapping team

To produce a high quality map it is important that teams of trained and experienced personnel carry out mapping exercises. In pastoral areas at least one team member should have a good knowledge of pastoral production systems. A facilitator who is an experienced field worker and who has conducted mapping previously should be selected to lead the team. In some cases team members may be from different agencies or have not worked together before. In this case it is critical that they come together ahead of the exercise to discuss and agree the main purpose of the mapping exercise. This will enable them to work effectively with community representatives and present consistent messages. The mapping team should:

- ❑ include two to three people who perform the roles of facilitator, note taker and map copier
- ❑ include a woman so that the team can better integrate female participants' perceptions
- ❑ be from the area and have a good rapport with the community
- ❑ understand natural resource management opportunities and threats
- ❑ understand the social, political and environmental context and history, including the interests of the different groups.

The facilitator

Throughout the mapping exercise the facilitator will help the community to identify and present the key information they want represented in the map and to fulfill the objectives of the mapping exercise. The facilitator must be able to:

- ❑ encourage participants to feel motivated, valued and able to participate
- ❑ ask questions and offer suggestions, but do it in such a way that participants feel they jointly own and control the process i.e. that it is not controlled by the facilitator
- ❑ keep participants focused on the task at hand and the planned scope of the mapping exercise, while not losing opportunities to explore unexpected but relevant subjects
- ❑ show sensitivity to the views/needs of all participants while adapting the mapping exercise to accommodate individual needs
- ❑ manage power imbalances and ensure everyone has the opportunity to take part
- ❑ encourage dialogue and debate between the participants and interest groups
- ❑ energize the group or slow it down as needed
- ❑ ensure the mapping exercise starts and finishes within the agreed timeframe, without participants feeling rushed.

The note taker

The facilitator is supported by a note taker whose role is to document all of the community dialogue during the mapping exercise. Accurately documented conversation can be very useful during the map verification process, and for other activities that will take place later, including the drafting of rangeland resource management plans. The note taker must be able to:

- ❑ listen and take accurate, unbiased notes, even when several people speak at once
- ❑ record both the main direction of the discussions and any interesting quotations/comments
- ❑ track the specific participation of the different groups—men and women, and different interest groups—and support the facilitator to ensure inclusivity and avoid bias
- ❑ watch participants' body language to note underlying tensions and disagreements
- ❑ support the facilitator in identifying information gaps and resolving misunderstandings
- ❑ be able to produce a detailed and accurate report on the mapping process.

The map copier

The map copier is responsible for accurately copying all of the information from the ground-based mapping exercise onto paper. All of the symbols used by the community (stones, twigs, flowers, leaves, etc.) to illustrate the features (water points, roads, etc.) must be included on the paper map in a clearly presented legend. The map copier needs to have:

- ❑ the drawing skills to represent the map accurately and to scale on a smaller piece of paper
- ❑ the ability to collaborate with a GIS expert/others if the information is to be digitized later.

Mapping objectives

Mapping exercises can be used for a variety of purposes. It is essential that the mapping team is clear about the specific objectives of each particular exercise. These may include:

- ❑ identifying and categorizing key natural resources in a rangeland area
- ❑ understanding 'rangeland productivity hotspots' and their role in rangeland production and productivity
- ❑ understanding patterns of mobility (livestock and people) both within and outside a rangeland area
- ❑ understanding the condition of the resources and which areas of the rangeland might need some specific protection or management
- ❑ understanding different land uses and user groups in the rangeland management area, and areas where these may be in conflict
- ❑ undertaking the mapping as part of a PRM process or another process e.g. planning public works.

STEP TWO

Agree terms with the community

Tasks for this step: The mapping team meets with the target community, including the woreda administration and customary leaders, and all stakeholder groups; to gather information on the community, identify key informants and stakeholders, and to agree on the mapping process, objectives and logistics of the proposed exercise.

Meeting with community members

Before undertaking a mapping exercise, the team needs to meet with the participating community several times. It is important that the team's initial contact with the community builds the trust and confidence of all stakeholder groups. Preparing for the mapping process alongside the community is essential to ensure objectives and logistical issues are identified and agreed upon. These meetings also provide the mapping team with valuable background information and help in identifying key informants who can liaise between the community and the team. Done well, mapping can help build bridges and reconcile different interest groups; whereas mapping that is done poorly and excludes certain interest groups can exacerbate tensions and result in conflict between different stakeholder groups. In step two the mapping team should organize an initial community meeting, being sure to include government and customary leaders and all stakeholder groups. In the meeting the team should:

- ❑ introduce themselves
- ❑ present their views on the purposes of the planned mapping exercise
- ❑ meet community members
- ❑ present an overview of the planned mapping exercise and place it in the wider context of Participatory Rangeland Management
- ❑ develop a comprehensive list of stakeholders by asking about the ethnic, livelihood and wealth groups that live in, make use of, or make decisions about rangeland resources
- ❑ agree on the stakeholder groups that will take part in the mapping exercise
- ❑ explore with the community how best to engage both men and women (and other frequently marginalized groups) in the mapping exercise
- ❑ decide how many representatives from each of the different stakeholder groups will be invited to participate in the exercise
- ❑ discuss and agree upon the role of woreda administration in the mapping exercise
- ❑ address any questions or concerns the community may have about the planned exercise
- ❑ do follow up preparatory work as needed with different stakeholders and/or competing interest groups, to allow the various ethnic/clan/interest groups to share their perceptions before bringing people together for a joint mapping process.

Mapping tips

Ensuring a broad diversity of stakeholders is included

Keep in mind that, in identifying and agreeing on stakeholder participants, it may be necessary to include pastoralists who live in neighboring rangelands but enjoy reciprocal grazing rights, as well as residents living in nearby settlements who collect firewood and make charcoal in the rangelands. This will ensure that their interests are also recorded.

Mapping with men and women: together or separately?

Some mapping teams prefer to involve men and women in a joint mapping exercise, while others prefer to work with men and women separately. There is no right way to do this. However, if it is clear that women are not able to participate fully, or that the participation of women will compromise the engagement of senior elders, it may be necessary to organize separate mappings. This gives everyone the opportunity to share their views, which can provide the team with rich insights into different gender perspectives on essential natural resources.

Number of participants

While it is important that mapping groups are not too small — resulting in a limited breadth of views being exchanged — too large a group can overwhelm the capacity of the mapping team to facilitate the

exercise. An experienced mapping team can generally facilitate a high quality mapping exercise that includes 20 to 25 stakeholders. If the team is less experienced, it is best to limit the number of participants to 12-15.

Role for the woreda administration

During the first meeting with the community it is important to discuss and agree upon the role for local government. Experience suggests that some of the best maps are produced where representatives of the woreda attend as observers or where they can be consulted, but are not directly involved in the mapping exercise. When these representatives are present the team must be aware that sensitive issues such as illegal tree cutting are likely to be under-reported. It will also be important to clarify to participants that they are acting as representatives of a stakeholder group, so the government representatives present cannot hold them personally accountable for any reported illegal resource use.



STEP THREE

Visit the area and finalize logistics

Tasks for this step: Drive and walk through the area that will be mapped to get an idea of the issues; agree with the community on a date, time and venue for the mapping; prepare for the mapping exercise by developing a checklist of questions; collect any materials needed for the mapping; and make arrangements for transportation and refreshments for the participants.

A final visit to the area

A visit to the area that will be mapped allows the mapping team to see the issues likely to be raised by the community first-hand, including the condition of the rangelands and their livestock, evidence of rangeland fragmentation, settlement patterns, and examples of kebele-level service provision, including schools, health centers, veterinary posts and private veterinary pharmacies. During such visits it can be helpful to travel with customary leaders who can brief the team on trends and changes in recent years, and the historical context.

If the longer-term aim of the mapping is to assist local institutions to introduce Participatory Rangeland Management (PRM), the visit offers an opportunity for the team to provide community members with an overview of the approach and lessons learned in other pastoral communities. It may be possible to either invite a pastoral leader from a community that has adopted all or part of the PRM approach to visit the new target community, or to facilitate a visit from community members to one that is already practicing the approach. Taking time to ensure that community members understand the potential value of PRM is a valuable investment, even if it takes several weeks to accomplish. During this visit the team should:

- ❑ drive and walk through the area to be mapped
- ❑ work with participants to identify a site for the mapping exercise and visit that site to ensure that it is appropriate: the site should be clear and flat and have sufficient natural materials for the exercise (i.e. rocks, flowers, grass, sticks, ash from a fire, etc). If it does not, participants should be asked to bring them on the day



- ❑ work with participants to select a date and time for the exercise
- ❑ extend an invitation to the selected participants.

Preparing for the mapping exercise

After this visit and before the mapping exercise the team should:

- ❑ prepare a checklist of questions for the community based on their visits to the area
- ❑ arrange for transportation, if necessary, for participants coming from far away
- ❑ arrange for water and/or other refreshments to be provided for participants
- ❑ prepare materials for recording the mapping exercise, including:
 - ✓ notebook (for the note taker)
 - ✓ pens/pencils (for the note taker)
 - ✓ camera (to take a photograph of the completed map)
 - ✓ markers in a variety of colors (for the map copier)
 - ✓ A3 paper (on which to copy the completed map).

Mapping tips

Setting a date and time

Getting the date right is important. In the dry season community members are likely to be dispersed or simply too busy to attend. One or two months after a good rainy season can be a good time for mapping as the demands of livestock herding and collecting water are at their lowest, and milk production is typically at its peak.

Irrespective of the season, it is important that the mapping is well organized and that the exercise is time-bound. It will be necessary to ensure that the preferred time for the exercise does not clash with women's household commitments and that women are able to participate fully.

Selecting a mapping site

An appropriate location, selected by community members, may be a shade tree where community discussions and meetings typically take place, or they may select another location. Understanding the reasons behind the choice of location is important, and may shed light on the perceived value given to the mapping exercise.

Note that participants are likely to be less distracted where the site is some distance from homesteads and livestock water points. It is useful to visit the planned site where the mapping exercise will be carried out so the team can confirm that the site is quiet, free from intrusion and shaded.



STAGE TWO: FACILITATION

STEP ONE: Produce a rangeland resource map

STEP TWO: Add more details to the map

STEP THREE: Complete the mapping exercise

STEP ONE

Produce the basic rangeland resource map

Tasks for this step: Work with the community to create the map using local materials. Start by marking out key reference features in the landscape and move on to key resources while noting the flow of the dialogue. Monitor participation levels and adjust tasks and approaches to ensure group energy remains high.

Things to know before starting the exercise

Roles of the mapping team

Throughout the mapping exercise, while the facilitator is working with participants to create the map, the note taker should follow all the discussions, noting comments of interest and recording the flow of the dialogue. It is especially important to note when there is disagreement and to record the different points of view about the map, including which group of users has which set of views. Meanwhile, the map copier should copy the details of the maps onto paper, keeping in mind that its accuracy and detail will determine its future usability.

Knowing when to break and stop

It is essential for the team to monitor participation levels, and for the facilitator to respond to a reduced level of interaction by adopting more inclusive questioning or by organizing a break for refreshments. If participants are tired and disconnected and additional important information is still needed, it may be best to stop and agree a future date to complete the exercise.

The mapping exercise

Opening the exercise

In a pastoralist context an elder will often open the meeting with a traditional blessing. The mapping team should then confirm the primary purpose of the mapping with the community.

Gathering local materials

The mapping team will ask participants to bring with them and/or gather locally available materials from the surrounding area. This may include ash, leaves, sticks, animal dung, stones, flowers, wet and dry grass, charcoal, etc. Initially community members may need encouragement to use these materials to represent rangeland resources, however, experience shows that they will quickly take control of the mapping and be inventive with them.

Mapping key reference features

The facilitator might initiate the map making by asking the participants to mark out key landscape features in the area using the gathered materials. For example, a line drawn in the soil may represent a road or a line of rocks may represent the course of a river. One way to start

is to ask participants to identify a key central landmark (i.e. the village near which the mapping exercise is taking place) and to then map other key features relative to this. This will help them to orient themselves and to scale-down landscape features. Key reference features may include:

- rivers
- mountains
- roads
- settlements
- forests.

Mapping key resources

Next the facilitator can ask the participants to map other key resources, including those that different pastoral groups use on a daily, monthly and/or seasonal basis. To ensure accuracy, it may be helpful for the facilitator to ask each of the resource user groups to map the resources they use in turn. For example, the facilitator may prompt pastoral women to identify dry season resource usage, or ask where pastoralists with large camel herds move their animals in the wet season. Such questions provide important information about how pastoralists view and value different rangeland resources, which groups use which resources, the seasonality of resource use, etc. Key resources on the map should include:

- wet and dry season grazing areas
- cropping areas
- communal and/or private enclosures
- other livelihood resources in line with the stated objectives of the mapping exercise.

Mapping tips

Taking care with boundaries

The mapping team must be sensitive to participants' concerns about boundaries. Experience suggests that the participants should be discouraged from starting the mapping with an administrative boundary, such as that of a woreda or kebele, as the stakeholders will almost always have seasonal/reciprocal rights to rangeland resources over

a wide area and it is most likely that part of these resources will lie outside the boundary set down. Participants should map the full scope of resources that they regularly access and use. Questions about where various boundaries may lie can be asked at the end of the mapping process. Note: A discussion should be carried out at a later date with neighboring communities to agree on boundaries.

STEP TWO

Add more details to the map

Tasks for this step: Add more details to the resource map in keeping with the objectives of the mapping exercise.

What to add?

Depending upon the agreed objectives of the mapping exercise, it may be helpful to add additional details to the resource map. If the first resource map is likely to become too cluttered with this additional information, it is better to make a second or even a third map to capture it.

Features that may be useful include:

- water points
- veterinary posts
- livestock drinking ponds
- mineral licks
- areas of conflict
- areas of tick or other insect infestations
- rangeland productivity 'hot spots'
- key patches of valuable dry season grassland
- drought grazing areas/reserves
- markets
- health posts
- schools.

Adding to these features with additional questions and notes

Taking additional notes to accompany the additional mapped features is important. Examples of questions that may be useful in seeking more detailed information include:

- What are the changes you have seen to the grazing areas over the last 20 years and what is the cause of these changes?
- Are the good grazing areas in times of drought suitable for all livestock types?
- Which grazing areas are absolutely essential to your livestock production system and which pastoralists are allowed/able to use them?
- In which grazing areas is your community most likely to lose livestock to livestock theft?
- Which grazing areas would you like to see safeguarded for grazing in future generations?

Mapping mobility

Another key feature of a pastoralist community's resource map will be mobility routes: showing where people and livestock travel. These features can be drawn for single or multiple ethnic

groups, for certain groups of households, or at the single household level. Within a household, mobility can also be mapped for different family members and for different livestock types. After completing the basic resource map the facilitator can ask participants to use ash, different colored soil, stick-drawn lines or rope to show the desired mobility features, including:

- seasonal livestock movements
- seasonal use of rangeland resources
- preferred trekking routes
- dates, seasons and frequency of travel
- route, distance and destinations
- primary and secondary purposes
- gender disaggregated movements.

Useful questions for seeking additional information on mobility

Again, it is critical to take comprehensive notes on the mobility features as they are mapped and in the discussions that follow. Examples of questions that may be useful in seeking further information on mobility include:

- Where do you travel, and with which livestock for grazing or browse in different seasons?
- When you trek your animals to different sites, who is it that travels with which animals?
- What resources are you using and for what purpose? Where else do you travel to collect or use other natural resources?
- Do other people from outside your community also trek livestock to these same areas? When they do is there negotiation or conflict?
- Do other people also collect or use other natural resources in the areas where you go to or use the same resources?
- How has your mobility changed over time and for what reasons?

Mapping tips

Standardizing symbols

Participants should be encouraged to standardize their use of materials as symbols. For example, if participants use sticks or twigs to represent woodlands, then as far as possible sticks or twigs of different trees should be

used to represent different types of trees and woodland resources. Not only does this make copying the map onto paper easier, it has been shown to encourage the participants to add more detailed information throughout the mapping exercise.

STEP THREE

Complete the mapping exercise

Tasks for this step: Thank the community and prepare them for the next steps; check that all information is complete and clear in the notes and on the paper map or maps; take clear photographs of the community's completed ground-based map or maps.

Final steps

After the mapping team and the participants agree that the primary resource map and any other maps are complete, it is important, before closing, for the team to do the following:

Facilitator

The facilitator should:

- thank the participants for their time and for the information they have provided
- offer participants a final opportunity to ask any outstanding questions
- outline the next steps
- set a date within the next few days for a meeting at which the participants can present their maps to their wider community.

Note taker

The note taker should:

- Check that the notes are complete and clear
- If necessary spend time with individual participants filling in information gaps
- Clarify place names and other details
- Record additional details, including description of the location, start and finish time and names of all participants.

Map copier

The map copier should:

- take photographs of the map or maps (Note: it works well to take a photo from above by standing on top of a vehicle parked nearby, if possible)
- produce a sketch of each map on a piece of paper of at least A3 size. Each map must include:
 - ✓ a legend
 - ✓ date the map was created
 - ✓ location of the mapping exercise
 - ✓ compass north (Note: though north must be labelled on the map, the orientation of the map need not be changed i.e. north does not have to be at the top)
 - ✓ names of the mapping team
 - ✓ names of all community members involved in the mapping exercise.





STAGE THREE: VALIDATION

STEP ONE: Present the map to the community for validation

STEP TWO: Write the rangeland mapping report

STEP THREE: Disseminate the validated map and report

STEP ONE

Present the map to the community to validate it

Tasks for this step: Meet with the community several days after the original mapping exercise to present the paper version of the primary resource map (plus additional maps) and offer participants the opportunity to comment and/or make changes. The community will then, with the mapping team working as observers and note-takers, present the map or maps at meetings of the wider community, asking for their comments and/or changes. When the process is complete, the original participants should re-group to produce a final, validated hand drawn map.

Before the map can be disseminated and used, the mapping participants need to present a paper version of the map to their wider community for verification. This process should begin several days after the mapping process and may take up to a month to complete.

Meeting with the mapping participants

The original mapping group should be presented with the paper version of the resource map of at least A3 size. The map copier should lead the process with the facilitator playing an active supporting role. The note taker should make note of all adjustments to the map, issues that arise during discussion, and comments made. Participants may not have seen their maps as they were transferred onto paper. The maps may also have been re-drawn or adjusted with reference to the photos. Thus, the mapping team should start by:

- ❑ explaining the features on the map so participants know what they are looking at
- ❑ offering participants the opportunity to comment on the maps and make changes.

The community feedback process

After this initial meeting of the mapping group, a series of follow up meetings should take place, starting with with members of the community in the immediate area. These should be followed by meetings in which members of the mapping team—attending only as observers and note-takers—travel with participants as they take the map out to the wider community. The whole validation process could take a month or more. In this process participants are tasked with:

- ❑ organizing and leading community meetings to present the rangeland map to the wider community and to other stakeholders, including members of the woreda administration
- ❑ sharing the map with men-only, women-only, marginalized and special interest groups
- ❑ sharing the map with people outside the mapped area who have may rights to natural resource management within it
- ❑ encouraging comment and discussion on the content of the map, with feedback resulting in adjustment and refinement to the map.

Meeting again with the mapping participants

After the map has been presented to all of the stakeholders in the wider community, the original participants should come together again. In this meeting they should:

- ❑ discuss the comments received from all of the different groupings and communities
- ❑ work with the mapping team to produce a final adjusted and validated hand-drawn map that the group agrees can be photocopied and laminated for distribution.

Mapping tips

Creating a scaled down copy of the map

During the mapping process the map copier will have drawn a paper version of the map while it was being produced by the community on the ground. This will be a scaled down version so that it can fit on an A3 piece of paper. The mapping team's walk/drive through the area will have been useful for locating where key features are so that the map can be drawn approximately to scale.

What to do if there is disagreement

In the unlikely event that major inaccuracies are uncovered, it is recommended that a sub-group meet to reconcile any outstanding issues. It is recommended these meetings be held at the specific rangeland location under dispute. When such site visits are made, opinions and points of view of disagreeing parties should be well documented, in order that the information can be shared later.

Who owns the information in the map?

During the mapping process an agreement will have been reached with the community on the specific future uses of the maps by the mapping team and other development colleagues. It is important that agencies involved in mapping recognize that the information presented in the map has been gathered with the communities' permission and that any and all uses of the maps should also be with their agreement. This includes planned future uses for information, coordination and advocacy purposes, all of which will need to be discussed and agreed upon with the community. Note that particular care should be taken when agreeing planned use of maps for advocacy purposes. If necessary the mapping team should organize follow-up meetings with community members to seek their support and approval for any alternative uses.

STEP TWO

Write the rangeland mapping report

Tasks for this step: Write up the report, being sure to include photos, notes on the discussion and other material collected over the course of the mapping process.

The rangeland resource map can be used as a community approved stand-alone reference document, but its value in subsequent negotiations and resource-based agreements will be enhanced by a written report.

Format for the rangeland mapping report

The note taker should produce the rangeland mapping report as soon as possible after the mapping exercise and the community feedback process are complete. The report should be written using the following format:

1 Title page

- date of report
- author
- contact details.

2 Acknowledgements

- This should include a statement that clarifies that this report was written on behalf of the [named] community, and the key individuals who made this report possible.

3 Introduction

- This should include details of why the participatory mapping exercise was undertaken, why the community was selected, which organizations were involved, etc.

4 Field site details

- date of the mapping exercise
- name of community where it took place
- location of the community (zone, region, woreda, kebele)
- main type of livelihood system
- names of all participants and their gender
- names of the mapping team and their associated roles and responsibilities.

5 The primary and any secondary purpose of the mapping exercise

Where the mapping has more than one purpose, it is important this information is presented accordingly. For example, this information may be presented as follows:

- primary purpose: To identify and categorize key rangeland resources for improved production*
- secondary purpose: To map key productivity hotspots and associated seasonal livestock movements into and out of those key hotspots.*

6 Copy of the Map

- Be sure to include a scale (A4) copy of the map and a photograph of the original ground-based map that was made by the participants.

7 Notes of the discussions that accompanied the mapping

This information may be presented as follows:

- During the mapping exercise the participants made the following comments... (be sure to note the point in the mapping exercise at which the comments were made so that the relevant context is provided)
- It is suggested that this section of the report is structured according to theme so that it is not just a collection of comments. Themes could be specific resource constraints/issues that the community identified.

8 Notes on Disputes

This section of the report should document:

- any disputes or disagreements that arose from the mapping exercise
- how they were resolved.

9 Notes on levels of participation

This should be a short reflective section that notes:

- the selection process of the participants (i.e. the stakeholder process that identified all the relevant communities and other participants)
- levels of participation i.e. whether the mapping team regarded the process as successful.

10 Conclusions and next steps

- the conclusions—a section detailing the outcomes revealed by the mapping process, perhaps key issues that the community decided they wanted to address in some way
- proposed next steps (such as engagement with government support or interaction needed with neighboring communities) with an associated time-line.

STEP THREE

Disseminate the validated map and the report

Tasks for this step: Provide copies of the map and the mapping report to the communities covered by the map and then, with their approval, to other stakeholders.

Making the map available

For the map to be useful, copies need to be made widely available. Senior community leaders or leaders of rangeland management institutions in the community that undertook the mapping process should receive:

- ❑ three or more laminated scale copies of the final rangeland resource map
- ❑ copies of the mapping report, ideally in the local language.

Who else should receive copies of the map?

Following agreement from the mapping participants and local community leaders, additional copies of the map and report can then be made available to:

- ❑ each of the participants in the mapping exercise
- ❑ each major community covered by the map
- ❑ the relevant local government offices at the kebele and woreda level
- ❑ local and regional government offices responsible for land use planning, natural resource management, and pastoral development
- ❑ civil society and community based organizations operating in the area
- ❑ NGOs and other development organizations that work in the area covered by the map
- ❑ local and national dryland research institutes, etc.

Mapping tips

Ground truthing the map

While mapping confirms the identification of key features, and reveals a lot of relevant information on important resources, it is not a 'systematic' process. Mapped features may not reflect exact locations and maps may need further work for their use in planning and management activities.

With experience, mapping teams can 'ground truth' participatory maps, using them alongside topographic maps or with

GPS or GIS imagery, to cross check their accuracy.

To digitize or not to digitize?

After the final laminated, hand drawn, validated version of the map has been produced and disseminated, a decision can be made with the community on whether or not the map should be digitized. The mapping team should explain that a digitized map is more easily compared to



other maps, such as topographic maps. A digitized map may also be understood and recognized as a more formal dataset by the senior government staff that the community may wish to inform and influence.

If the map is to be digitized then a draft should be shared with the mapping group to agree the interpretation and accuracy. It is important that the printed digitized map is presented on a wall or table so that the whole of the mapping group are able to make adjustments or corrections. The final

digitized map can then be shared with the wider community stakeholders.

The group may find digitized maps more difficult to understand than hand drawn paper maps. The two map types can be displayed next to each other to make comparisons easier. Care should be taken to ensure that the digitized map does not end up replacing the hand drawn paper-copied map, as this can take the ownership of the map information away from the community.

ABOUT THE AUTHORS

Ben Irwin's first experience of working with pastoralists was with the Fulani in the grasslands of north-west Cameroon in 1994-96. Ben has worked in Ethiopia since 1997 and continues to date. Working with SOS Sahel and FARM Africa leading a number of innovative participatory natural resource management projects. These projects included work in rangelands with Borana, Afar, Somali and Bale pastoralist groups. Each project employed participatory learning and action tools, such as resource mapping, to enable formally trained rangeland managers to work with customary rangeland managers — the key to successful rangeland management. Currently Ben works for KPMG-East Africa–International Development Advisory Service, managing the Strategic Climate Institutions Programme 2012 - 16.

Adrian Cullis has lived and worked with pastoral communities in Turkana District, Kenya and Karamoja, Uganda. His work included the pioneering of participatory approaches to livestock development including participatory natural resource management. In 2005 Adrian moved to Ethiopia to join Save the Children US to lead the USAID-funded Pastoral Livelihoods Initiative (PLI1). Adrian subsequently joined the Food and Agriculture Organisation, Ethiopia in 2010 before joining Tufts University in 2014, where he leads the USAID funded Agriculture Knowledge Learning Documentation and Policy (AKLDP) project www.agri-learning-ethiopia.org. The AKLDP supports improved agriculture sector practice and policy to USAID's Feed the Future implementing partners, the Ministry of Agriculture and other stakeholders through analyses, reviews and evaluations and technical support.

Fiona Flintan is a Senior Scientist at the International Livestock Research Institute (ILRI) working in drylands, NRM, and land issues. She provides coordination and technical support to the International Land Coalition's (ILC) Global Rangelands Initiative, of which ILRI is a member. Working with national and local governments, development and land-focused partners in East and Horn of Africa (and more recently in Cameroon) the Initiative supports processes and activities that seek to make rangelands more secure for local rangeland users. Fiona also works as a technical advisor for PRIME, employed by CARE to provide technical support on rangeland management to the Pastoral Directorate, State Ministry of Livestock Resources Development Sector, MOA.

