



Tool 3-2

Inter-community stock route and rangeland resource mapping

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Objective

To assist rangeland management institutions from two or more rangeland units as well as other stakeholders in a shared landscape to map stock routes and key rangeland resources in order to lay the groundwork for inter-community landscape level planning.

Anticipated output

Detailed maps of stock routes, shared grazing areas, other key resources and conflict hotspots.h.

Participants in this activity

- Representatives of community rangeland management institutions
- Other community representatives
- Knowledgeable local experts including elders and personnel from government and non-governmental organisations

When to use this tool

Ideally, if the facilitating organization is implementing a PRM program in several rangeland units within a landscape, this mapping exercise would be done as part of Step 3 in the PRM process, which relates to defining the rangeland management unit and preparing the rangeland resource assessment (see Tool G-2 for a description of the overall PRM steps). The mapping exercise will help to gather information about the location of stock routes, how communities share pastures and other resources, and conflict. It can also help local people to decide what pastures, settlements and other places should be included in each rangeland unit. Step 3 of the PRM process might start with the large landscape mapping described in this tool and then be followed by more detailed mapping exercises within each rangeland unit.



Introduction

For communities to strengthen the Third Leg of participatory rangeland management, they and the facilitating organization supporting them need to have a good understanding of where livestock move and how resources are shared among different communities and rangeland units within a landscape. Landscape level participatory mapping of things such as livestock migration corridors (stock routes), pasture areas frequently used by herders from different locations and areas that are prone to conflict can generate information that will be useful in a few different ways. It can help communities:

- decide on the rangeland management units (which involves deciding which pasture areas should be grouped together under a community rangeland management institution);
- prepare for joint rangeland planning together with neighbouring rangeland units in the same landscape; and
- pre-empt conflict by agreeing on the location of migration corridors and how pastures will be shared among communities.

The approach is to gather a group of local experts—people who are knowledgeable about the rangeland resources, migration routes and other features in the landscape—and have them map the features. This can be done at various scales. For example, at the smallest scale it could involve just two or three neighbouring rangeland units. Or at the other end of the scale, it can be done for a very large landscape that encompasses several counties. Regardless, what is important is to recruit local experts from all parts of the landscape in question.

When feasible, it can be effective to do this kind of mapping at two different levels. For example, first stock routes and rangeland resource can be mapped for an entire county, and then those maps are used in creating the base maps for mapping exercises at sub-county level.

Steps

Step 1: Pre-workshop – Preparing base maps

Base maps need to be prepared for use in the workshop. Topographical maps can be useful for this, with additional features overlaid for easy orientation. These might include towns and settlements, known water points, livestock markets and administrative boundaries. Where the location of stock routes and other rangeland features is already known, these should be included. The base maps should be prepared such that the whole landscape is depicted across several (at least eight) A0 map sheets. Ideally, facilitators should come to the workshop with two copies of each map sheet.

Step 2: Defining map attributes and legend for participatory mapping

The following are suggested for the kinds of features to be mapped and symbols to be used.



Stock routes

Stock routes will be identified in a participatory manner and will be categorized as major and minor routes. In terms of use, each route can be identified as either functional or non-functional. The seasonality of use of routes can also be noted. When mapping, each of these classes will be given a colour symbol. The description of the class and symbol are given in the table below.

Stock routes	Symbol	Colour
Major functional	continuous line	Red
Major functional seasonal	dashed line	Red
Major non-functional	continuous line	Black
Minor functional	continuous line	Blue
Minor non-functional	continuous line	Green

'Shared' pastures

Some pasture areas are frequently accessed by herders from across community, sub-county and county boundaries, with or without the agreement of local residents. These 'shared' pastures will be marked with green cross-hatching.

Markets

Livestock markets will be identified as Major, Minor or Border. The markets will be marked by small squares of different colours as shown in the table below.

Markets	Codes
Major	Red square
Minor	Black square
Border	Green square
Non functional	Blue square

Photo 1: Mapping team discussing the codes and searching for stock routes on the maps



Infrastructure

The following types of infrastructure might be identified and mapped: night camps, check points, holding grounds, quarantine facilities, water points, loading and off-loading facilities, slaughterhouses and dip tanks. The facilities will be colour-coded black and each different type of infrastructure marked with the codes as given in table below.

Infrastructure	Code
Night camp	1
Check point	2
Holding ground	3
Quarantine facility	4
Watering point	5
Loading and off-loading facility	6
Slaughter house	7
Dip tank	8

Conflict hotspots

Knowing sites where conflicts are frequent can also be useful in planning processes. Conflict hotspots can be identified on the map with red cross-hatching.

Step 3: Mapping

Workshop participants will be divided into mapping teams for different parts of the landscape with participants breaking into teams according to which parts of the landscape they know best. Each team is given the map sheets corresponding to the portion of the landscape that it will be mapping.

The first task for each team will be to locate the main stock routes, shared pasture areas, markets, infrastructure and conflict hotspots, and then classify them. At this stage, the exercise will be done using pencil. The participants will use stickers to locate markets, water points and other features on the base map. Each team will also have to write detailed notes about the stock routes and other features mapped.

Photo 2: Teams also use phones to consult colleagues on stock routes



Step 4: Feedback and consultation

Part of the process of the mapping exercise is also to have feedback from colleagues and ensure harmonization of the coding and descriptions of features. Each mapping team can present its work to the others in order to get feedback, identify errors and receive suggestions.

Photo 3: Feedback of from the different mapping teams – each team presents to the rest of participants



Photo 4: Participants from two teams edge matching their maps

Step 5: Finalization of mapping

After receiving the comments, each team will incorporate these in the maps and make any corrections. Also, people from the other teams who have expertise can contribute in the updates and filling in the information gaps. Features that have been marked in pencil should now be marked in coloured marker pen according to the legend (see Step 2 above).

Then, the edges of each team's maps are matched and joined on the floor in order to create one large map of the entire landscape. The teams should ensure that, where the different team's map sheets meet, the stock routes and other features along the edges of the map sheet meet correctly. After the workshop, the GIS team will have a task of making sure the edges of the maps match and there is continuity from one map to another. It is important here to ensure that stock routes and other features that span two different map sheets are shown in the correct location.



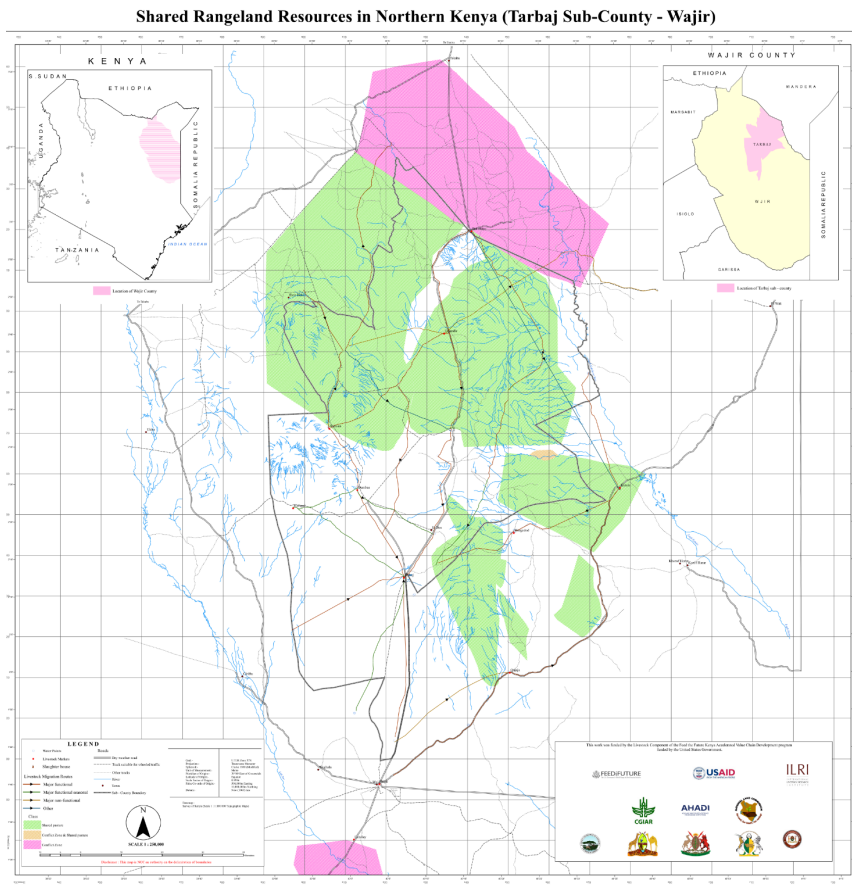
Photo 5: Finalized landscape map with colour legend and notes



Step 6: Post-Workshop – Digitization and production of maps

GIS technicians from the facilitating organization or another partner organization convert the information mapped at the workshop into digital form for use in new maps.

Example of map of stock routes and other rangeland resources after digitization



Example of map of stock routes and other rangeland resources after digitization



Uses of inter-community rangeland maps

- As a preliminary step to help in identifying rangeland units within a large landscape
- As a basis for landscape level and intercommunity grazing planning
- To provide information to guide county spatial planning
- To help in planning the location of services (e.g. along stock routes)
- As a tool to assist in conflict prevention



This document is part of the Participatory rangeland management toolkit for Kenya, an initiative led by the International Livestock Research Institute (ILRI). This tool was developed by ILRI, with financial assistance from the United States Agency for International Development Feed the Future Kenya Accelerated Value Chain Development (AVCD) program.

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