

Participatory resource mapping

Better
Evidence
in Action

In brief

Participatory resource mapping enables communities to articulate their knowledge of their surrounding physical environment. Using this method, they can map out in detail the resources they depend on, the qualities they attribute to these resources, who uses them, who depends on them and how they manage them. Communities can use participatory mapping with equal effect in rural and urban environments.

Through participatory resource mapping, external actors — such as government planners, NGO staff or researchers — can facilitate a process where individuals or groups within a community articulate their knowledge, which is often invisible to outsiders. This enables collaborative discussion within and across groups about solutions to problems that are felt locally but often driven externally.

This approach has multiple stages that allow participants to build trust through dialogue over time. The first stage involves developing a perception map with a large group of men and women from a target area that identifies the nature and locations of the resources they perceive as important to their community.

In Stage 2, facilitators digitise the map with the community, using GIS software to deepen the knowledge collected in Stage 1. Over three to five days, they work with representatives from particular groups of resource users or sections of the community — for example, men, women, elders, farmers, pastoralists, clans or young people — to identify more resources, gathering information on their quality and how the communities manage them. They also discuss any institutional and policy issues that arise from identifying the multiple actors that seek to access, use and manage the same resources.

Stage 3 involves several validation meetings, where the same or different participants can add or modify details of the map. Facilitators return several times to ensure they have collected all the details. People often remember new details over time, or are willing to share more information once they have built up trust after several meetings.

Throughout the process, multiple stakeholders are involved in the dialogue, learn from each other and develop their understanding of the resources they discuss. The final product can be a resource atlas or thematic maps based on community knowledge. All the information compiled in this process is open access, making it free to use and edit.

Monitoring, evaluation and learning; dryland and pastoralism

Keywords:

Resilience, development planning, empowerment, pastoralism, local government, Longido, Monduli, Ngorongoro

When can we use it?

We can use resource mapping to answer questions about natural and other resources or public services (such as sewage or drainage systems) that are important to communities, how they use them and how they manage them. This method can also identify changing trends in the makeup and use of a resource base, public service or land holdings, and tell us why such changes take place.

Crucially, for both community- and government-led planning, participatory resource mapping allows those who participate to identify links and relationships between multiple groups. It also provides a tool for discussing any social and political issues that emerge from the shared use of common property resources and relationships with private resources — for example, agricultural or urban land. So mapping can support processes or plans for consensual management of shared resources.

Strengths for gathering better evidence

Various aspects of this method enable participants to triangulate information. A key strength is its ability to compare and contrast information on resources and resource use from the differing perspectives of multiple groups within a community. Participants can use objective satellite data and existing government measurements to fix locations and add more detail to some resources. The open access nature of the maps allows crowd mapping, with a wide range of contributors.

By focusing on the resources a community uses in practice, the maps transcend formal national or local administrative boundaries that are often artificial in terms of the way land users consider the land. This has informative value at the global and national level; it can also help national and local governments plan more effectively.

The approach brings different stakeholder groups — for example, government technical staff and community representatives — together in informed dialogue and decision making, helping them find practical solutions to local-level shared resource use issues.

Using a map with key landmarks that are recognisable to the community as a tool in this process ensures that the final product is accessible to all stakeholders. The resulting resource atlas or thematic maps are directly relevant for planning land use, deciding on the delivery of



Community elder pointing out location of dry season shallow wells along Ewaso Nyiro river in Isiolo County, Kenya

Credit: Tom Rowley

public services or conflict reduction strategies. And because the maps are open access, a range of people can contribute to and use them without financial barriers.

Participatory resource mapping generates evidence and produces printed maps and atlases, through dialogue and consensual decision making. Encouraging multiple stakeholders to work together to manage resources and resolve perceived challenges enables positive change. The method is particularly effective in environments where government planners have a limited understanding of the nuances that drive livelihood strategies and systems.

By allowing multiple groups to co-produce the narrative of resource use and management, this method forces all groups to consider each other's views. Producing the knowledge together and having joint ownership of the final product helps challenge perceived wisdom and drives positive change.

Aspects to keep in mind

Formalising resources into two-dimensional maps or atlases poses certain challenges. Once locations, boundaries and resource attributes are fixed on a map that is not regularly reviewed, policymakers or government technical staff, who are tied to regular planning and budgeting cycles, can lose track of the dynamic and changing nature of resource or public service use.

Communities may also be unwilling to share certain aspects of their knowledge with outsiders, or they may believe the governments will misuse the information they share. So building trust over time between participants and facilitators, through workshops and validation meetings, is key.

In cases where boundaries or resources are contested or fluid, it is important to involve representatives from the different community groups in the process. They should have a good understanding of the relevant actors and how they are each benefiting. Without this, the process risks being hijacked by one group trying to shape the maps from their perspective at the expense of other stakeholders.

Although the open access nature of the maps has many positive effects, it also introduces an element of uncertainty as contributors could alter information or submit false data, either accidentally or on purpose. Community editors can police this to some extent, recording changes to the map for transparency.

The method requires strong facilitation skills and technical know-how, as facilitators need to fluently manipulate GIS software in response to dialogue at the mapping workshop in Stage 2. They will also need to provide training (probably through external agents) to ensure stakeholders can correctly classify and edit the maps.

Considering power, inequality and gender

Because the method relies on the co-generation of knowledge across groups, it directly addresses power imbalances within and across these groups. Identifying and incorporating the knowledge of marginalised groups enables in-depth understanding from a perspective that normally remains unheard. The method can be used separately with women and men or with different ethnic groups, before bringing them together to share maps and information on the nature of the resources they use and the way in which they use them. The end product is a visual tool that explores issues of access and control of the surrounding environment, and its assets and resources.

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Knowledge
Products

Toolkit

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Participatory resource mapping in action

IIED used this method in Isiolo County, northern Kenya, to mainstream climate change into drylands planning, as part of the decentralised climate finance programme from 2013.

We found participatory resource mapping was an effective tool for positive change. It addressed power dimensions by enabling pastoral communities to demarcate areas to be reserved for wet and dry season pastures and as drought reserves. The pastoral community members also identified their rules and regulations for managing these areas, which have since been legitimised in the Isiolo County Customary Natural Resource Management Bill (2016). The combination of resource mapping and county legislation has strengthened local pastoralists' capacity to enforce rules governing resource access. This applies to pastoralists from Isiolo and the neighbouring counties of Wajir, Garissa and Marsabit, contributing to more peaceful co-existence between Boran and Somali pastoral communities.

The mapping process has challenged perceived wisdoms in Isiolo County. For example, it has demonstrated that the rangelands are not empty spaces without 'owners'; rather, they are carefully managed landscapes with different uses depending on the season, which communities regulate with detailed management rules. It also shows that communities have a detailed botanical knowledge of plant species and their beneficial uses.

We found that having communities and government working together to produce the maps sparked dialogue, built trust and helped both sides fill information gaps. For example, county government planners discovered the Boran pastoralists' customary rangeland management practices in response to seasonal change and periodic drought, and gained knowledge on the number and attributes of customary water points. This contributed to more informed and consensual decision making, as county planners integrated the acquired knowledge into Isiolo's County Integrated Development Plan. The database on water sources produced through the mapping process has become their main decision tool when considering new water development.

The iterative process has built trust through regular, engaging meetings, which allowed facilitators to build personal relationships with participants and to clearly communicate how the maps will be used to support the participants. Building trust over time allowed community members to censor what they consider to be sensitive information — for example, on the location of sacred sites — until they were ready to share it. This ensured they control the way in which information is shared and ultimately used.

This document is part of the 'Better Evidence in Action' toolkit.

Further reading

Hill, C *et al.* (2015) Harnessing pastoral knowledge for climate change adaptation in the drylands. <http://tinyurl.com/j552kog>

Isiolo County Government, Government of Kenya (2015) Resource atlas of Isiolo County, Kenya: community-based mapping of pastoralist resources and their attributes. <http://pubs.iied.org/G03984>

For information on how IIED has used participatory resource mapping to mainstream climate change planning in northern Tanzania, and to map water and sanitation facilities in informal settlements in Dar Es Salaam, see www.iied.org/community-maps-reveal-rich-resources-land-policymakers-think-empty and www.iied.org/urban-water-sanitation