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Introduction

Maps can work magic (see Box 1). They communicate information immediately. They convey a sense of authority. As a consequence, community-based maps empower grassroots efforts to hold government accountable. This mapping is not 'action research'; it is political action.

Over the past decade, I have watched and supported mapping practitioners' progress in different situations around the world. Whenever they come together, they

excitedly exchange ideas and share their problems. In this article, I share some practical insights with the hope that these will be valuable for isolated practitioners who want to try mapping but would like to learn from others' experiences.

Maps allow participation in arenas dominated by the maps of governments and corporations. Where democratic processes are weak, maps are good tools for challenging development projects that hurt communities. Using maps, community members can evaluate the impacts of an

Figure 1 Section of Tagbanwa map from the Philippines showing the island of Coron with a chain of large lakes in the central mountains¹



Legend

- Ancient Burial Grounds (off-limits to non-Tagbanwa)
- Caves with edible Swiftlet nests (protected area)
- Sacred Coral Reef and Ritual site of Shamans (*Panyaan*-home of mythical giant Octopus and *Kugtung* or Grouper)
- Communal Coconut groves
- Mangroves (protected)
- Fish Sanctuary (protected area)
- Village
- Burial Grounds (off-limits to non-Tagbanwa)
- Significant peaks
- Communal Bamboo groves
- Rattan area

Note:

3 major coral reefs are included in the domain claim namely 1) *Talong Gesye* 2) *Talong Dakulo* and 3) *Natakakan*;

5 minor reefs are also included, these are: 1) *Talong Nga Taluan* 2) *Tristris* 3) *Talo ni Maning* 4) *Burundakan* and 5) *Coron Bahura*

¹ Symbols mark sacred reefs, fish sanctuaries, protected swift zones and protected mangroves under Tagbanwa customary law. The darkest line is the edge of their Ancestral Waters (Source: PAFID). The map convinced an international oil company to change its plans to put a pipeline through their reefs and led to inclusion of Ancestral Waters in the Indigenous Rights Act.

Box 1 Why map?

Maps can:

- reveal areas where rights and responsibilities are cloudy;
- serve as evidence in courts of law;
- build consensus and mass support for policy reforms;
- renew local commitment to governing resources;
- promote community cohesion and self-actualisation;
- develop new links with administrative agencies;
- clarify rights over natural resources;
- promote cross-generational communication;
- renew cultural heritage; and,
- help control development.

imposed concession, for example, and weigh the costs and benefits of taking action to stop it. Armed with maps, they can demand accountability for the imposition of development (see Figure 1).

What are the keys to mapping's magic?

The key guiding principle is that the mapping facilitator turns authority and decision-making over to the community so they can direct the map-making pencil's trace and the map's use.

Communities cannot afford to waste their energies on mapping that is not strategically planned. For the full power of maps to be realised, 'mappers' need to build a consensus-based goal and strategy for using the maps.

There are eight steps involved (see Box 2) and key questions that should be answered at each these stages.

At every step, the basic key questions are: WHO? HOW? WHAT? WHEN? WHERE? and WHY? – the usual questions for any communication strategy. Because maps are political documents, the pre-eminent question is WHO? Who defines the map? Is it local consensus, decisions made by a local leader or an institution, or are decisions made by outsider NGOs, researchers, or government? Who takes the final decisions at each of the eight steps? While plans are important, everyone must remain flexible to adapt to new political circumstances and nurture spin-offs not envisioned at the start.

Box 2 The eight steps in mapping

- Step 1. Initiation
- Step 2. Data needs identification
- Step 3. Training
- Step 4. Data collection
- Step 5. Data review
- Step 6. Final data compilation
- Step 7. Map production
- Step 8. Map use

Step 1. Initiation and strategic planning

What are the political costs and benefits of mapping and a map? Step 8 – map use – must be considered at the earliest point. What purpose is imagined for the map or maps? What is needed to legitimise the map? Will bringing in a university, an NGO or a donor project give greater legitimacy? Which stakeholders must be involved directly or through consultation in planning the mapping? For example, if the purpose is to influence government, it might be useful to consult with the relevant government agencies early on about their technical assistance. In other situations, the government might make it illegal for communities to make their own maps, if they were informed early on and the strategic choice is to wait until the map is in hand to approach government.

Who is the initiator, what is their primary goal, and how might that affect the project? Communities should have the opportunity to evaluate a clear strategy for map use and a clear plan of map development, before agreeing to participate. This protects them from being bullied by an evolving process that they cannot control. If outsiders are initiating the mapping, it should be designed to give local communities the skills and knowledge to understand the process so they can control the decision-making at key steps. Local people know political pitfalls that outsiders can't know and they will have to suffer the consequences if the mapping stirs up opposition.

Who will provide the technical assistance? Is it best to allow outsiders/NGOs to carry out the process as a service? In cases where government has authorised NGOs to map claims in an established legal process, it may be best to allow mapping NGOs to perform this service. On the other hand, if what is needed is community organising for a prolonged effort to gain rights, or an intra-community dialogue about environmental issues, then one needs maximum involvement of community members.

What is the social and political context for advocacy? The mapping facilitators need to create links with other groups advocating for policy reform. Such groups have analysed the political openings and can provide information about those to local communities.

How will use of the map be controlled? New unimagined uses may arise later and even maps made with strong local guidance can end up being used without local knowledge or control – hence the need for prior consent from the community before use.

How will the process be funded? What entity will control the funds, how will it be held accountable, and how will it hold others accountable for completing their obligations to the project? What in-kind contributions will community members make?

Step 2. Data needs identification and choice of technologies

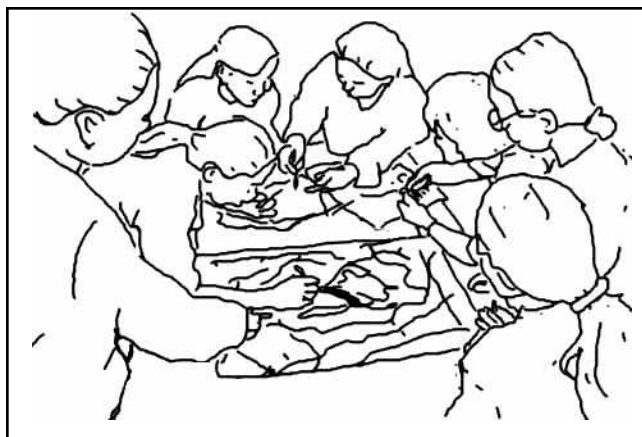
Different mapping technologies have been effective where people have used their cultural values in deciding what should be included on the map and in evaluating the consequences of trends identified by the map. The challenge is to select data sets that:

- reflect the values of the community; and,
- are relevant to the target audience.

Data needs and technology depend on the strategy and purpose of the mapping. The more complex and centralised the technology, the more likely that outsiders will control the process and the use of the product (Abbot et al. 1998). It is best to select the appropriate technology after deciding the goals and strategy and to be careful that enthusiasm for the technology does not alter the chosen strategy.

Figure 2 Women mapping

Drawing by Skye Alcorn



Regardless of the chosen technology, it is important to stimulate large group involvement (see Figure 2) so people can think together, share important knowledge and memories and debate relevant issues that, if left unresolved, will undermine the legitimacy of the map. Sketch mapping done with vines and leaves or with strings encourages group involvement.

Borders need to be confirmed through discussions with neighbouring communities or conflict may undermine the map's legitimacy. Families may want the borders of their private agricultural lands shown on the maps, but an alternative is to map only community borders and claim group rights.

Neighbouring communities may share access to forests, rivers or swamps for gathering, hunting and fishing. If so, maps with borders around larger regions that encompass a number of communities and their shared resources may be a good choice.

Box 3 Options for mapping technologies

Sketch maps most often reflect the vision of local people. Many different sketch maps are usually drawn by community members during the initial stages in order to ensure consensus. Women, men, old and young — all need to participate. The maps communicate which types of data are viewed as important by community members. Where a mining company's map of an area would emphasise the locations of gold deposits and navigable rivers, the local map of the same area may show communities' sacred places, hunting zones, habitats of medicinal species, burial grounds, forests and agricultural lands, for example.

Three-dimensional maps are made by tracing lines from topographic sheets onto cardboard, cutting out the cardboard pieces and gluing them together. This type of map emphasises the landscape-level aspects of conflicting problems faced by a range of stakeholders.

Global Positioning Systems (GPS) based computerised maps fix positions according to global standards. Sketch mapping is used as an initial step. GPS units are used to mark locational points which are entered into a Geographic Information System (GIS) or other software programmes to produce professional-looking maps (cf. Eghenter 2000). GIS layers of plantation, mining and logging concessions overlain on lands of communities provide a powerful communication tool for advocacy. CorelDraw software is easier to use and can present information in less restricted ways than complex GIS software.

Maps drawn by cartographers capture community-based information in standard cartographic forms for production by government agencies or printing presses (cf Chapin & Threlkeld 2000). They rely on existing topographic maps to fix their positions.

Step 3. Training

Training is essential so that data is comparable and legitimate. The community should be involved in designing the training because they can use the opportunity to determine whether the methods will meet their needs. The training itself should take at least two weeks to develop team trust.

Data collectors should use a set of key guiding questions to be sure that similar information is collected from each site. However, they need to feel confident that they can collect additional information that community members feel is important.

Step 4. Data collection

If data collection is too fast, it can undermine the value of the map. It is important to ensure that the different perspectives and knowledge of different sectors of the community are included. Mappers must find ways to consider weaker user groups' points on equal footing with the communities' elites.

Step 5. Data review

Data review provides an opportunity for mid-course corrections and promotes transparency of, and confidence

in, the process. It also enables the technicians to work with community members to verify the quality of the data. Midway sessions can include discussions about revising traditional rules, fines and enforcement mechanisms. Rituals and other culturally appropriate expressions of these values may be integrated into the data review step.

Step 6. Final data compilation

How will final data compilation be managed? Who will review and approve the near-final product? It is important not to rush past this step.

Step 7. Map production

Map production usually takes longer than anticipated. It will help if decisions about layout, acknowledgements and relevant text are made early on. These decisions should be reviewed near the end in light of community awareness raised during the process and in view of any political changes during the mapping process that might alter strategies and goals for using the map.

Whose names will be listed on the map and how should credit be given to donors and technical assistance? Political legitimacy is strengthened if the maps include the signatures of community members, as well as a place for officials to sign indicating their acknowledgement of the map.

What statement will be included on the map to prevent misuse of the map and to ensure that the community's intellectual property is respected? Many communities include a printed or rubber-stamped statement that the map can only be used with prior consent by some designated authority, such as the village headman, special committee or a trusted NGO. This statement will discourage people from using the map for purposes that were not anticipated by the community. Because users must seek approval prior to using the map, this gives the community an opportunity to prevent use of the map in situations where they do not want to be represented by that particular map. As community members quickly grasp when they start mapping, there are different maps for different purposes.

Step 8. Map use

Strategies for using the map need to be reviewed whenever there is a new political opening. Who will use the map and who authorises its use? How will 'prior consent' be enforced? A clear process for revalidating the map and for authorising use of the map should be put in place.

Academic researchers can keep and use maps they helped to produce, as can donor agencies. When they use it, will the map still be accurate or will it misrepresent the community which has changed since the mapping?

Cautionary note

New information flows are unleashed by mapping processes. This magic can be good and bad. NGOs, researchers and government agencies can provide critical information so that community-level decisions are informed choices. Yet the community-based mapping movement is prone to co-option by consultants and NGOs using the maps for their own ends, such as for project reports or proposals. This can have unforeseen political consequences to communities and short-circuit emerging civil society processes.

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Recommended Reading

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