Resource Mapping

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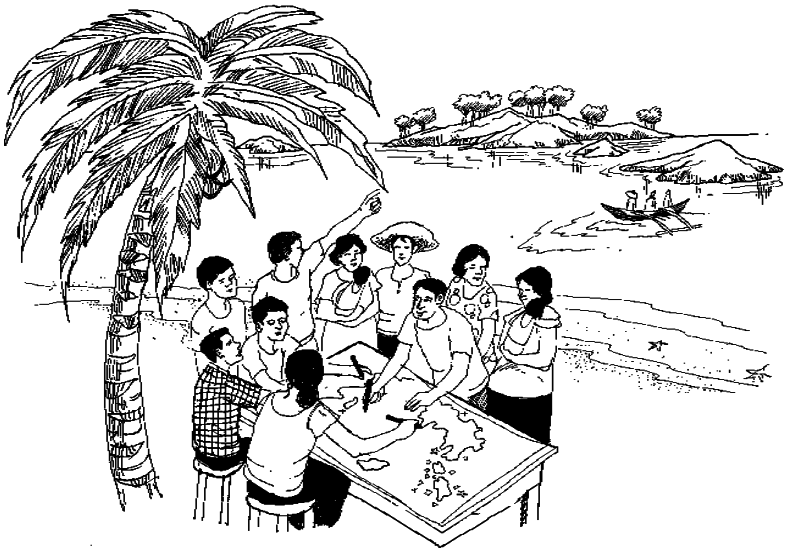
Resource mapping

Definition

A method for collating and plotting information on the occurrence, distribution, access and use of resources within the economic and cultural domain of a specific community. Variations are introduced in selecting particular participant groups (e.g., gender) or in adding a further stage to generate a topographic map – related information through a two-stage resource mapping process.



Resource mapping is ideally preceded by a resource historical transect, which provides for a preliminary checklist of resource-related issues relevant to the community. The resource map provides useful information to help orient the transect walk, which generally follows. Information generated during the conduct of the latter further complements the outputs of the resource mapping exercise.

Resource maps

- may be used by the community itself (with or without facilitators) for internal discussions or to relate to outsiders;
- are essential inputs both for insiders and outsiders for planning and monitoring purposes; and
- support researchers in the conduct of in-depth assessments of particular resources.

Purpose

- To allow community members identify, locate and classify past and present resource occurrence, distribution, use, tenure and access, and to reveal the significance the participants attach to them. Critical locations such as areas known for illegal fishing, pollution, siltation, etc. can be identified and mapped.
- To allow the establishment of relations between information sets and their spatial location (e.g., establishing visual relations between resources and/or issues).

Important

Resource mapping is best associated with other tools and in particular with the inland and coastal transects, which contribute to a more critical analysis of the individual resource. Resource mapping should be conducted at the onset of a CBCRM activity, but only after rapport has been established with the community.

Knowledge of the social structure of the target community is a prerequisite for the facilitator. This is because resource distribution, use and access may be considered as sensitive issues by the community. At given intervals, similar exercises can be repeated for monitoring and evaluation purposes. Follow-up in-depth resource mapping (i.e., of a particular coral reef, fishing ground or mangrove area) can be done at any time of the project cycle, possibly generating qualitative and quantitative information.

Resource mapping can apply to all ecosystems known to the community and the scale of the maps can be set/adjusted depending on the required level of detail.

Requirements

Human resources

- ✓ facilitator (preferably skilled in CBCRM or related disciplines)
- ✓ co-facilitator
- ✓ documentor

Materials

- ✓ craft or manila paper (at least 1 x 2 m)
- ✓ pencils and chalk assorted colors
- ✓ fixative spray (e.g., hair spray)
- ✓ markers
- ✓ masking tape

Optional

- ✓ compass and ruler
- ✓ topographic map and or nautical chart (original, colored)
- ✓ topographic map blow-up (1:25.000), 2 to 3 copies
- ✓ camera

Any surface can be used. The map can be drawn with chalk on a concrete floor, or on the ground with a stick. Resources and features may be pictured by the use of local materials like stones, leaves, sticks, shells or other. But these kind of maps need to be transferred to a more durable and mobile base (paper) to preserve the generated information over time.

Suggested approach

1. Identify the participant group.
2. Describe purpose and scope of the mapping exercise.
3. Invite the group to select key informants knowledgeable about the resources to be described (i.e., fishers should predominate in coastal, while farmers or forest dwellers in terrestrial resource mapping). Should access and use of resources be culturally or socially related, and should this be critical for CBCRM, then participants may further be stratified according to ethnicity, gender or age.

4. Collate checklist of resources or features to be mapped. Consider that only a limited number of topics can be mapped.

5. Position the paper in a place which has a good view of the area to be mapped.

6. Facilitate the preparation of a base map on craft paper. Make sure that participants have a common understanding of the orientation. The size of the map (1 m x 2 m) should allow several people to contribute at the same time. Ask the participants to draw landmarks, reference points or reference lines.

   The sequencing is important. Start with coastline, followed by watercourses, islets, mountain peaks, paths, roads, human settlements, etc. Agree on the local name for each feature.

Examples of topics that can be mapped

- habitats, e.g., mangroves, mudflats, seagrass beds, coral reefs, nipa swamps, etc.
- breeding grounds
- migration routes
- fishing grounds
- specific species' areas
- gendered resource and uses
- usage
- access limitations
- rights and tenure
- areas of conflict

7. Ask participants to locate on the map the listed resources and features. Allow for additions the participants (and you) think are important in relation to

Make sure that the process is properly recorded by the documentor and that issues debated among participants are noted down.

the resources' occurrence, distribution, use or access. Use symbols and colors to represent various sets of information and generate a corresponding legend.

8. Allow for validation of the information by a wider forum.
9. Once the output is agreed upon, fix chalk and pencil by use of the fixative spray.
10. Draw copies of the maps. Leave the original with the community and, if necessary, copies with other concerned parties.

Output

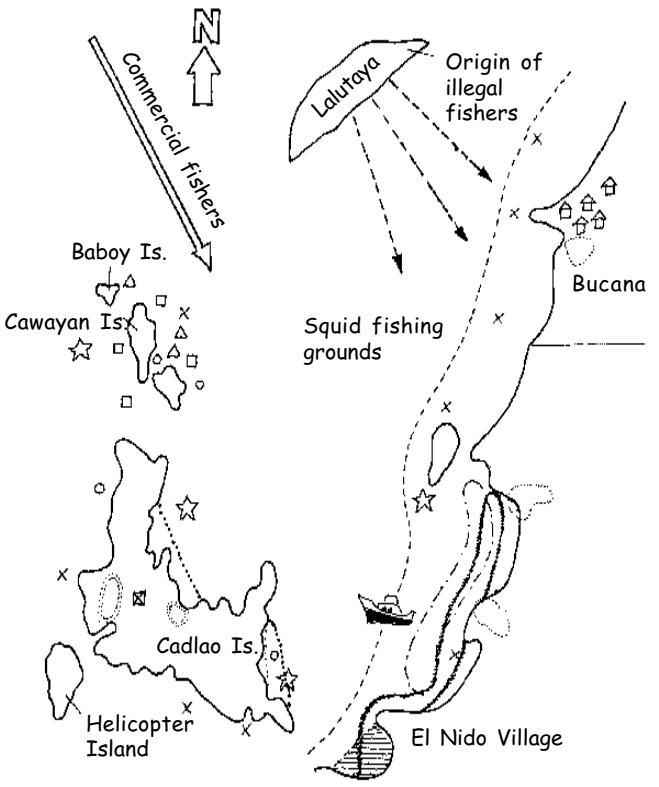
- A map and a written report of the process. However, this could differ according to the specific purpose of the exercise and the characteristics of the participants.
- The composition of the map reflects the perception and vision of the participants about the resources and features they have been portraying and provides an insight into the intimate relation between the participating group and the resources.

  For example, issues on resources important to the participants might appear exaggerated in size or color versus minor issues which might be pictured small.

  The most important resources or features will appear first in the map. Documenting this process is an essential part of the output.

Example of a resource map

Resource map modified from the originals drawn by the fishers of Barangay Bucana, El Nido, Palawan, Philippines



Legend

- ○ - Turtle nesting areas
- △ - Destroyed fish breeding areas
- □ - Octopus breeding areas
- ☆ - Fish breeding areas
- X - Squid breeding areas
- ⊠ - Swiftlets nesting areas
- ▤ - Restricted fishing area
- ---- Ferry boat route
- —•— - Dugong siting areas
- - Nesting area (Tabon birds)
- - Seagrass areas
- - Coral reef areas
- - Mangrove areas

Strengths

- Provides visual representation of resources and their uses.
- Represents a good starting point for participatory problem analysis and planning.
- Is easily understood and implemented.

Limitations

- Difficult to use as supporting documentation in formal or legal contexts.
- May contain a limited number of information sets (less than 10).

Variations

Variation 1: Stratified resource mapping

Stratified resource mapping involves dividing participants into groups according to gender, age, ethnic origin or other categories. This is extremely useful in identifying relationships of social groups and resources. This knowledge is essential for planning purposes, specially when selected strata of the community have exclusive or limited access to given resources.

This approach generates stratified information of valuable use in identifying customary rights in resource use, access and tenure and in the allocation of resource management responsibilities.

The steps in conducting stratified resource mapping are similar to the steps described before. But the facilitator needs to conduct a preliminary assessment of the community to get a deeper insight into its social structure, to identify appropriate venue and timing for gathering the selected group of participants.

Output

- Stratified resource maps based on gender, ethnicity or age-related resource maps. The outline of the resources strongly reflects the domains of interest of the participating groups.

Variation 2: Gendered mapping

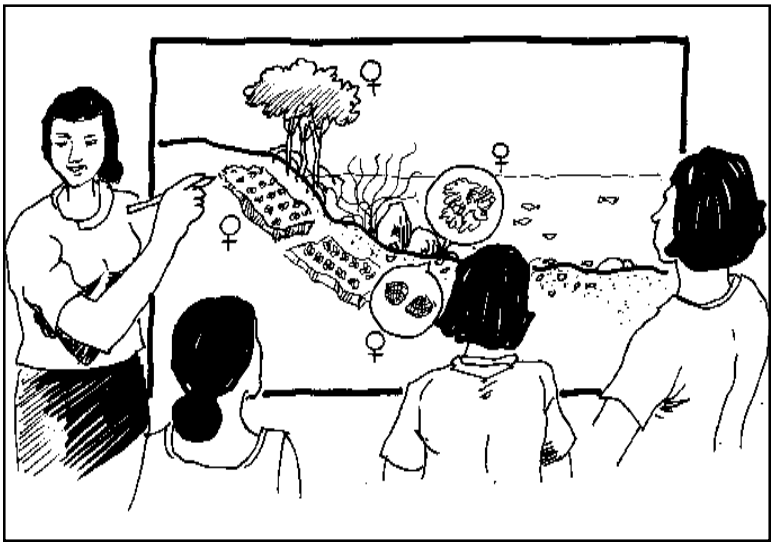
This is the variation that highlights men's and women's access to, control over and perceptions regarding the importance of certain resources. There are women's and men's spaces in the coastal zone, as well as fishery resources and practices that are associated with men and women.

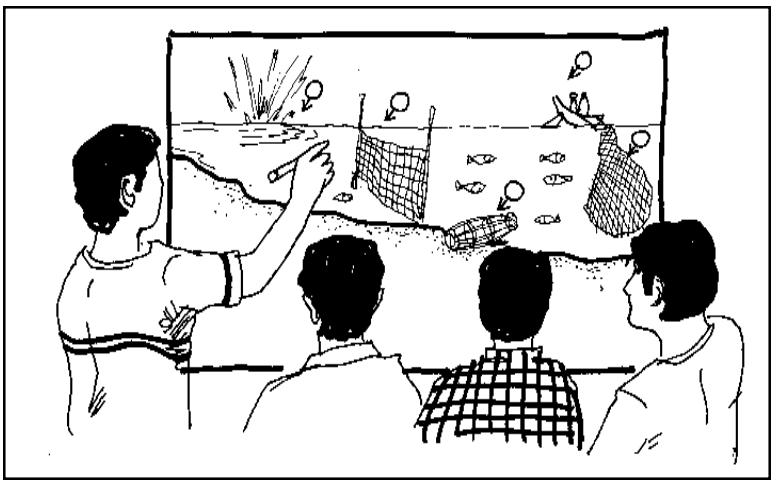
For example, mangroves and inshore flats are usually associated with the shell- and seaweed-gathering activities of women whereas fishing on coral reefs and deeper waters are usually the domain of men. Gendered mapping is usually conducted among separate groups of men and women. Remarkably, different outputs might be achieved if the filter is applied.

The following are additional steps to be considered by the facilitator:

1. Ask the participants to identify symbols to represent men and women. For example, ♂ for men and ♀ for women.

2. For each of the resources or features in the sketch map, ask the group to determine whether it is predominantly associated with men, women or both and apply symbols accordingly. If time permits, further clarify who has access and who has control over the resources.





Uses

Gendered maps may be used for:

- raising and discussing issues and concerns;
- identifying existing and potential resource use conflicts and forming the basis for appropriate action; and
- identifying livelihood opportunities for men and women.

Variation 3: Two-stage resource mapping

This variation involves transposing the information from the sketch map to a conventional topographic map. Two-stage resource mapping may be used by the community in dealing with formal institutions on particular issues related to tenure, usage rights, right of way, etc.

The outputs obtained from this variation can be transferred with minimal distortion to more sophisticated information storage systems (i.e., Geographic Information System) and be used for planning and monitoring purposes on broader geographical areas. To maintain momentum among participants, the process of data transfer occurs before the completion of the sketch map.

The following are some additional steps to be considered by the facilitator:

1. Expose the topographic map (in a suitable scale) close to the developing sketch map, aligning the two maps according to the compass points. Allow for some time for the participants to familiarize themselves with the topographical map, eventually assist them in interpreting illustrations, like contour lines.

2. Ask some participants to start transposing the information spotted on the sketch map on to the topographic map. Use symbols and colors uniformly in representing individual sets of information. Should one topographic map be crowded a second one can be used. Name landmarks, islets, rivers, mountain peaks and settlements. Make sure that a legend appears on each map.

3. Make sure that both maps are being completed then ask participants to list their names at the bottom of the maps.
4. Allow for validation of the generated information sets by a wider forum.
5. Fix chalk and pencil by use of a fixative spray.
6. Draw copies of the maps. Leave originals with the community.

Outputs

Two-stage resource mapping generates two outputs: the resource sketch map (stage 1) and the elaborated topographic map (stage 2). The first is richer in people's perceptions. The second adds precision in the location of the information, allowing for a larger number of information sets to be mapped because of spontaneous drawing closer to scale by the participants.

Strengths

Facilitates the communication between insiders and outsiders, because the media is understood and valued by both sides.

Translating information from a resource sketch map onto a topo-map allows:

- information to be defined in terms of occurrence and most significant in terms of extent;
- the collection of local names not necessarily available from centralized information sources;
- the generation of an output readily linkable to secondary information;
- the use of the map within an evaluation process, because the topographic base map remains the same over time; and
- the transfer of the information into a computerized format, providing a valuable contribution in addressing forthcoming scientific research or comprehensive resource management planning.

Limitations

Limitations apply to the second stage of the process in cases where topographical maps are not available or inaccurate, or when the physiography of the area is constantly changing like in estuarine areas.

General considerations and recommendations to mapping:

- The process explored in the first half of the paper may be applied to generate other types of maps like social maps, economic maps, health maps, etc., or providing useful information on resource tenure and rights.
- The conduct of mapping may take one day. An additional half day may be necessary to produce copies of the outputs and to consolidate the notes taken by the documentor. The validation may occur on the same day and generally takes about one hour.
- The cost of conducting mapping includes the acquisition of supplies, travel expenses and food allowances for the facilitating team and participants.
- Unlike inland communities, the economic domain of coastal communities may stretch over several kilometers of coastline and coastal waters. Prepare your supplies accordingly. In the case of topographical maps, make sure that they contain a reference scale in the form of a line of a given length and that the coastline is clearly identified.
- Consider the opportunity of complementing or cross-checking the generated information.

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