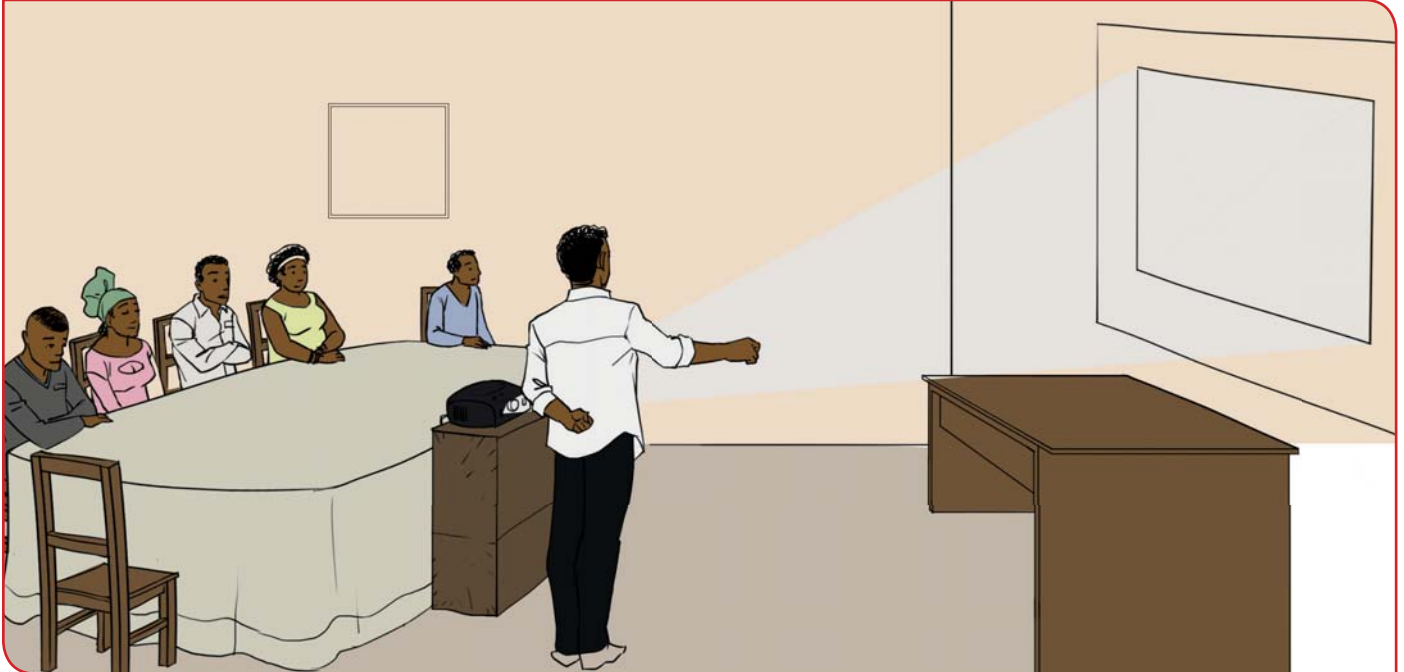# Synthetic and practical guide of the unified methodology of participatory mapping in Cameroon

# Selection of the project site and team building



## Objectives and work to be done

1. Select a project site

2. Understand and analyze the spatial problem to be solved

3. Make an initial planning of material and human resources

## Approach and conduct

### 1. Select a project site

When selecting the project site, three major scenarios can arise:

- A community or some active members of the community seek support from external actors, an organization or a project on its own initiative. In this first case, the community's consent to move on with the activities is easier to obtain. However, strengthening the community's objectivity can be important to channel its possible tendency to exaggerate facts and stories during the process.

- • An organization or project is voluntarily seeking a community to provide support. In this second case, consent is of greater importance because the pro-

ject team may want to provide support for its own interests at any cost and finally focus the entire work on proving a fact they consider major at the expense of others, ending up skewing the results.

- The community and an organization or project meet and stealthily and opportunistically choose each other, or because they have known each other for a long time. This third scenario seems to be the most balanced and the most neutral as for the future and progressive management of influences and perceptions of the community and the project team.

### 2. Understand and analyze the spatial problem to be solved

Identifying the spatial problem to be solves constitutes another element involved in selecting the project site. The problem to be solved represents a major criterion that allows a community or a team project to fully commit themselves to provide solutions. Conflict areas with high stakes in terms of land and natural resource management quickly become priorities. Nevertheless, neutral zones or areas with no open conflicts also have a significant interest as for preventing conflicts and optimizing natural resource management over time to sustainably develop these territories.

### 3. Make an initial planning of material and human resources

First contacts between the community and project team when they do not know each other allows the latter to better circumscribe the problem to be solved and then progressively prepare its budget for the future deployment of its activities on the field. Budget and staff must be balanced to achieve better results.

A budget that is too large can become a constraint because of a surplus or an excessive amount of material that can detract actors of the project from their original objectives by creating tensions between them to appropriate the said material. On the other hand, a budget that is too low can force actors to voluntarily leave aside certain activities yet essential to the process. The budget should cover material expenses, travel and staff remuneration necessary to properly conduct the project.

Too many staff can encumber communication between actors and their responsiveness to urgent situations. On the other hand, not enough staff can be embarrassing because of a lack of skills necessary to carry out envisaged works. Essential criteria and skills of a staff include: mapping and GIS skills; skills in the subject area (industries, extractives, sustainable agriculture, forestry, etc.); skills in community animation, facilitation, and communication; mastery of the local language (if need be). The gender approach within the team is also valued especially when some communities' tradition requires their presence to more easily approach their sisters.

## Expected results

- A clearly identified site
- A spatial problem and its apprehended ramifications
- A first draft of the budget (material, staff).

# Gathering information and collecting basic data about the project site



## Objectives and work to be done :

1. Identify existing documentation on the project area
2. Identify stakeholders of the project area
3. Perform a first reconnaissance mission
4. Plan field activities

## Approach and conduct

### 1. Identify existing documentation on the project area

The inventory concerns the following data :

- Spatial information media: topographic and thematic maps, satellite images, aerial photos, GPS surveys, shapefiles, etc.

- Concrete geographic information on features of the land, climate, vegetation, geology, habitat, communication routes, accessibility, neighborhood, meshes and networks between villages of the area.

- Legal and / or political information media: decrees, laws concerning the project area.

Historical, economic and social information materials: project reports, study reports or memoranda mentioning the project area. The inventory requires to sort information useful for the targeted problem. Data for the documentary research are obtained mainly from the government, private or public projects and structures and on the Internet.

### 2. Identify stakeholders in the project area

Identifying stakeholders includes listing actors with activities in the project area (actors or representative structures of the State, private or parapublic companies, NGOs, associations, individual economic agents, etc.) for an unbiased meeting with them at this stage of the process as this may result in them being closed and reluctant to any future discussion.

### 3. Carry out a first reconnaissance mission

This reconnaissance mission allows :

- To visualize the first topographical elements of the project, its geographic location, and the demographic and cultural components of local populations.

- To identify and meet on the field certain actors and information holders of whom the project team did not necessarily think at the beginning (possibly to

invite them to take part to the next participatory mapping exercise).

- To make a first inventory of economic and social infrastructures and to get a first measure of the level of access to education, health, drinking water and energy within the project area.

- To inform local administrative authorities of the project and solicit their support during its execution phases.

- To evaluate field constraints such as blocked or temporarily inaccessible roads in the rainy season, seasonal agro-forestry activities in the village or deep forest, transhumance periods for animals etc., so as to better prepare the activity schedule and adjust budgets and operation dates depending on these.

### *4. Plan field activities*

The analysis and use of pre-collected documentation and data during the field reconnaissance mission make it possible to plan field activities more accurately. Planning is a sketch of the work to be done, not a final, fixed and definitive picture. It can be adjusted at any time in future stages after working sessions with the community.

It is necessary to prepare

- The first project's information materials, communication materials, brochures, press messages.

- Qualitative and quantitative socio-economic methodological tools (interview guides, survey grid, questionnaires, etc.).

- Field equipment and related costs, namely:

  - Camping equipment (tents, batteries, boots, cold packs, pharmacy box, machetes, files, raincoats, document protectors, torches, lifejackets, etc.)

  o Geographical data collection equipment (GPS, tablets, smartphones,)

  o Energy sources (generator, solar plate,)

  o Transport equipment (cars, motorcycles, bicycles, canoe, ...)

  o Computer / office equipment (portable computers, portable printers, ream of paper, GIS mapping software, conference paper, tape, markers, pencils, colored pencils, markers, pens, video projector)

## Expected results

- A documentary database on the project area is available

- An inventory of the stakeholders is made

- A report of the reconnaissance mission is available

- A budget of field activities is refined

# Information sharing between project stakeholders and initial community consent



The analysis and use of pre-collected documentation and data from the field reconnaissance mission makes it possible to plan field activities more accurately. Planning is a sketch of the work to be done, not a final, fixed and definitive picture. It can be adjusted at any time in the coming stages after working sessions with the community.

## Objectives and work to be done

1. Inform the community and stakeholders about the process
2. Learn about local habits from communities and stakeholders
3. Obtain initial consent
4. Start collecting basic socio-economic data

## Approach and conduct

### 1. Inform the community and stakeholders about the process

The project team first informs the community of the following main elements: description and context of the project, deadlines and activities in the short, medium and long term, source of financing and possible partners of the project, material and human resource, reports to be drafted, maps to be produced, stakes and challenges, possible constraints of the project, the situation of other experiences in participatory mapping in the region or at the national level, background of project team's and partners' community work, final advocacy.

Several information meetings may be necessary, exchanges with the community are done in a language they understand, an interpreter is necessary when the language of the project is different from the language used by the community. The project team also informs other stakeholders about possible opportunities in the study area with communities as well as administrative authorities on the abovementioned topics.

### 2. Learn about local habits from communities and stakeholders

As feedback of the information previously transmitted by the project team, the community, stakeholders (authorities, companies, associations, etc.) express their opinions, expectations and concerns on the project. Then, they inform the project team, advise it, propose improvements or readjustments, warn it, reassure or warn it, encourage it or even discourage it depending on the interests to be preserved.

The community informs the project team about most of the following aspects: its experience and history, its customs, traditions and lifestyles, its availability (place of meetings, appropriate periods), its daily activities, specificities related to terroirs and the use of lands, its expectations and concerns. The other stakeholders inform the project team about the characteristics of their activities in the area, difficulties encountered, daily relationships with other actors and especially with local communities in the project area.

### 3. Obtain the community's initial consent

The project team and community can meet several times to share information about the current project. At the end of these information meetings, the community must be able to agree with the beginning of practical activities of the project and formalize it.

This step is important even if the project initiative stems from the community. The project team first observes certain core social characteristics during community meetings that would help formalizing initial consent such as influential members of the community and their scope, means and time used by the community to consult each other, their way of making final decisions, general atmosphere of meetings, the commitment of members during meetings, their representativeness, their legitimacy, skeptical and protesting members.

Some communities have some particular traditions that can influence the program of meetings and community consent. For example, when it comes to meeting and making decisions, women, youth and children can be marginalized. It may also happen that the Chief or elders, older and wiser, are the only ones who can make a decision even if other members of the community do not agree. It is not up to the project team to go against local traditions for fear of disrupting community cohesion and bringing more problems than solutions, but to better understand the impact of this kind of situation on project activities and clearly document processes used by the community to issue consent.

During information and facilitation meetings, the project team must adopt some positive attitudes; it must be able to have a maximum of protagonists speaking during meetings to gather the opinion of various actors; collect divergent opinions to understand their arguments and provide answers for objections; avoid communication gaps by raising expectations that will not be satisfied because participatory mapping does not answer to all arising problems.

In the end, consent is materialized in most cases verbally. However, a contract, minutes or commitment letter may be signed with community, mentioning all relevant aspects that were raised during previous discussions and meetings. Community consent can also be materialized using other techniques such as audio or video recording, the adoption of a common work schedule, joint validation of a report of meetings or activities accompanied by an attendance sheet, etc.

### 4. Start collecting basic socio-economic data

It can begin after formalizing the initial consent obtained and continue throughout the different stages until the restitution and validation of data collected. Its duration depends mainly on the community size, the larger it is, the longer will be the time of individual collection of information especially those concerning households. The project team can rely during this collection on several tools and techniques allowing them to understand the community's history, its social, economic and cultural characteristics etc. Some of these are useful to perform a participatory diagnosis such as problem tree, solution wheel, seasonal calendar, Venn diagram.

The socio-economic data collected make it possible, at the end of the participatory mapping process, to better understand certain issues and demands illustrated by participatory maps. For example, a community's demographic evolution may explain its desire to protect its lands from certain pressures and even to extend them for future generations. In the end, socio-economic data place final maps in a specific context experienced by the community. The data collection sheet, accompanying the unified methodology in appendix, identifies key information to be collected during this parallel activity which accompanies participatory mapping.

## Expected results

- The community and stakeholders are informed
- The project team is also informed in return
- Initial consent is obtained, collection of basic socio-economic data started.

# Production of a mental and manual mapping of the project site



## Objectives and tasks

1. Start drawing the manual and mental map
2. Materialize physical elements of the map base
3. Materialize main activities of the community.

## Approach and conduct

### 1. Start drawing the manual and mental map

Mental and manual mapping can be done on different media. The choice of support is essential to the community, which decides how it wishes to express and represent its cartographic knowledge of the area. It can make a map on the ground using natural tools available on the site such as sand, pebbles, stones, stems, twigs, branches, leaves, water, palm, wild mangoes and other non-timber forest products that can be used for the purpose. It may decide to make a representative drawing on white paper often made by the project team for that purpose. In this case, it can attach several sheets of conference paper of an A2 or A1 format for example between them so as to obtain a support paper large enough to have more space to better represent the desired elements. Suitable material for this choice is mostly provided by the project team, it is made of confe-

rence paper, markers, felts, colored pencils, pencil, eraser, pencil sharpener, tape, glue, etc.

### 2. Materialize physical elements of the map base

During the exercise, the project team orients the community on main objects to represent to materialize a first map base. Community members locate elements themselves on the map on the ground or on paper. These elements of the map base are most of the time known to all participants in the exercise and sometimes even the project team itself. They include among others:

Regarding communication channels and villages

- Central roads leading to the village, roads accessible with a vehicle (to distinguish from other tracks)
- Different ways of main roads
- Road material and other characteristics related to their nature (pavement, condition, seasonality, traffic etc.)
- Intersections with other roads or tracks
- The number of road lanes (the layout of some roads may be improved depending on the gauge and frequency)
- Access roads to access neighboring villages with a chieftaincy (to be distinguished from camps, transit huts and other forms of temporary or precarious habitats)

- The hierarchy of chiefdoms (1st / 2nd / 3rd degree, etc.)
- The average number of inhabitants in villages (the figurative used to represent these villages can be reinforced according to this demographic variable)
- The village's history (date of creation, displacements, migrations, etc.)

Regarding hydrography

- Intersections between roads and rivers
- Places where rivers start (sources), where they flow (sea, ocean, lakes, rivers)
- The hierarchy of rivers according to the debit, thickness, the fact that they are easily or not accessible (the layout of some rivers can be reinforced depending on their flowing significance, their possible perennial, seasonal or intermittent nature)
- Areas of confluence and intersection between several rivers
- Falls, fast, current
- Pollution of rivers.

Concerning other physical geography elements of the site (relief, climate, geology, vegetation).

- Plains, plates, hills, mountains and all other types of unevenness (cliffs, rocks, etc.)
- The main vegetation (forests, savannas, mangroves, swamps etc.)
- Soil geomorphology (rock types)
- Possible climatic zones or sectors

All these elements of physical geography are most of the time identifiable on a topographical map, a satellite image or aerial photography. These elements described by the community can be easily cut and repositioned on a digital map background.

### 3. Materialize main activities of the community

The project team guides the exercise in a second phase towards the representation of specific elements of soil and space usage by communities. They include among other:

- Concerning activities of communities in the area
- Agriculture and agricultural areas (cocoa, oil palm, food crop, ...)

- Livestock and grazing areas
- Vaccination parks for livestock
- Fishing and fish farming activities
- Picking areas
- Hunting areas
- Operation areas of agricultural, mining and forestry companies
- Sacred trees or sites
- Meditation areas
- Layons and landmark areas
- Water infrastructures (dams, boreholes, wells, wells, etc.)
- Educational infrastructures (schools, colleges, high schools, etc.)
- Energy infrastructures (power lines, power plants, gas plants, etc.)
- Other social infrastructures (place of worship, meeting places, etc.)
- Artisanal and industrial mining sites (in exploita¬tion or not)
- Stake areas (land conflict zones, etc.)
- Common activity zones shared between several communities
- Prohibited areas
- Polluted and degraded areas deserted by men and / or animals
- Enclosed areas
- Arid zones, not very fertile
- Reconversion zones and fallows
- Etc.

When mental and manual mapping is done first on the ground, it can be reproduced by the community on a paper format. Even if the community has started drawing a map directly on paper, it can be reproduced one or more times on other paper formats to obtain a final version that includes all corrections it deems useful (e.g: objects that were poorly drawn or located on the map, etc.).

## Expected result

- A manual and mental map drawn by the community is available.

# STEP

## V

# Collection of geographical coordinates of space objects previously identified on the mental and manual community mapping

## Objectives and Tasks

1. Define itineraries and evaluate travel times / days
2. Create collection teams
3. Train collection teams
4. Collect GPS data

## Approach and conduct

### 1. Define itineraries and evaluate travel times / days

Defining collection itineraries allows to highlight all tracks that cross the project area. Each track taken by field teams using a GPS device for data collection can be transcribed when producing the first digital map draft. Here, it is also about taking geographical coordinates of other elements located close to the track all along the course.

For each route, the project team seeks to know with the help of the community the travel time and days for data collection. Most of the time distances on the ground map do not respect a precise scale ratio, so they can be misinterpreted especially by the project team which do not master the study area in detail. It is up to the community to assess how much time each team can take to move from point A to point B taking into account real constraints on the field and keeping in mind that it must move while collecting GPS points.

### 2. 2.    Create collection teams

Defining itineraries is done in interaction with the decision to create a number of collection teams called «local cartographers». The number of local mappers varies according to specific needs of the study area, but we recommend at least two people who can meet different mandatory requirements of the task to be performed, namely :

- Have skills or prerequisites recognized by the entire community or to be able to use the device to collect GPS data (GPS, smartphone, touch pad, etc.);
- To know how to read and write, in order to report geographical coordinates and to document in more detail characteristics of key points on a notebook or a data sheet;
- Good mastery of the areas to be covered, so as to avoid wasting time looking for directions and omitting important information to collect.

Other less important or optional requirements include having a good health, good morals, a desire to do what is right for the community. If using the territory generates conflicts between two socio-professional groups (farmer / breeder) for example, it is recommended to form teams each having at least one representative from each socio-professional category. This criterion of representativeness may be valid for minority groups, ethnic groups or individuals of different classes and ages. This can also affect more than 2, 3 or 4 groups in conflict with each other.

It is up to the community to concert to choose their local mappers, and the project team should check later on that each team comply with the requirements of the task at hand.

### 3. Train collection teams

Training collection teams includes two specific aspects, preparing the material and its use by local cartographers. Preparing equipment consists in gathering a set of tools that must be used on the field but especially to set them before their use by local mappers. Equipment mostly include the following:

- GPS-type devices (It is necessary for each of them to check the reception of satellites, projection system, units, availability of the 'Tracking' or 'Trace' function);
- - Spare batteries or cells;
- - Collection notebooks or cards to report identifiers and numbers of collected points considered strategic, their geographical coordinates X and Y respectively representing the latitude and longitude, and a precise description of the collected point.

It is not advisable to record all points collected on the data sheet because it would take too much time but to record points considered essential or strategic that will make it possible to better understand the dynamics of the space and to document the general problem faced by the community.

Regarding equipment use, the project team defines a working schedule with local mappers based on local resources. Training time is flexible and depends mainly on the ability of local cartographers to master the use of collection equipment. Patience and pedagogy are qualities of trainers. In case of great difficulties related to this use, teams of local cartographers can be reviewed according to the circumstance. Other members can be added to the teams, and they will be primarily in charge of adequately using the equipment and they could be associated with people mastering the space and itineraries.

At the end of the training on the use of collection equipment provided by the project team, local cartographers must be able to carry out the following main tasks:

- Switch on and off the collection device;
- Change batteries of the device;
- Register collection points;
- Navigate through main pages of the display;
- Go back to the first page (home page) in case of wrong handling.
- Fill out additional collection cards or booklet, i.e. read geographical coordinates on the collection device and copy its information in appropriate columns, then accurately describe the nature of points collected.

### 4. Collect GPS data

For each route to be followed, it is recommended that local mapping teams record points every 25 metres so that the itinerary taken is retrieved even if the Tracking or Trace function of the collecting device is deactivated. Each 25 metres, collection teams can record intermediate points without writing on the card or collection notebook the details of its points which are just intermediate reference points. These points can be compared to seeds left every 25m by an individual who makes a journey in the forest and who wishes to find his way, some forest people as well are used to cut small stems and branches on their passage to allow a third person finding their way.

In parallel with this activity of collecting GPS points, the project team is also pursuing within the community its work of collecting basic socio-economic data. The time used by local cartographers to collect data in the forest or on the field is often used by the project team to complete and refine other socio-economic data.

## Expected results

- Itineraries are identified
- Collection teams (local cartographers) are built and then trained to collect data
- Field data are collected by local mappers
- Collection of basic socio-economic data is intensified.

# Production of a first digital map draft based on manual mapping and field surveys



## Objectives and tasks

1. Prepare the digital map base for the reception of spatial field data collected

2. Project spatial field data on the digital map base

3. Format and page spatial field data and the digital map base

## Approach and conduct

### 1. Prepare the digital map base to receive collected spatial field data

The map base is mainly made of physical elements of the study area such as relief, hydrography, vegetation, geology to which communication channels are grafted. Digital information layers can be in vector or raster format.

- In vector format, the map base can be expanded by the following layers: (administrative boundaries, localities and population, possibly forest, agricultural, mining data, or data on socio-economic and energy infrastructures).

- In raster format, the map base can be enriched by extracting data from satellite images, aerial photographs, topographic maps or other thematic maps covering the same study area even on the same theme.

### 2. Project the spatial field data on the digital map background

The projection of GPS field data on the map base prepared for the circumstance allows the GIS manager to perform the following technical operations:

- Adjust the map scale so as to visualize the spatial extent of points collected;

- Sort the points to display according to their degree of importance so that all figures used on the map are legible and that there is no zone where information are poorly represented.

Secondly, projecting GPS data helps concretely identifying routes made by teams of local cartographers; to visualize the points considered as strategic on the manual map; to appreciate distances traveled and those between different geographical objects that make up the space studied; to identify errors of course and possible technical difficulties related to handling other collection device.

### 3. Format and page the spatial field data and digital map base

After the GIS technician retrieved information, data are formatted and laid out in accordance with rules of graphic semiotics in cartography and more particularly according to the standards proposed by the graphic charter of the participatory mapping. 1 See «Graphical Chart of Participatory Mapping». The formatting of data mostly concerns the way of representing figures symbolizing geographical objects on the map. They can be punctual, linear and surface. The GIS specialist must methodically use the seven visual variables namely shape, size, color, value, structure texture, grain or grease and orientation to produce a clear cartographic message respecting international conventions. The layout of data concerns mandatory elements necessary to draw the card. We can mention among others: the title and or a subtitle, the legend, the scale, the orientation, the source and the toponymy which concerns all writings present on the main drawing. Some elements are considered as optional or strongly recommended according to specificities of the study, the map and the final message that someone wishes to value and popularize. We can mention among others: the grid and projection system, the data date that differs most often from the date of completion of the card, the signature or logo.

In the end, the production of a first map draft or a first draft must serve as the main support for carrying out a session of restitution and validation of elements present on the map to the community. In addition to this cartographic work, a preliminary draft compilation of basic socio-economic data is also produced by the Manager of the said study so as to present results to the community thereafter.

## Expected results

- A first draft of the digital map is available

- First results of compilation of socio-economic data are available.

## Restitution of the first digital map draft and possible adjustments for the final validation



## Objectives and tasks

1. Carry out the pre-restitution with local cartographers then restitution in plenary with the community

2. Identify and analyze data present on the manual and mental map but absent on the digital map draft

3. Identify and analyze missing data on the manual and mental map but present on the digital map draft

4. Identify and analyze the data present on the manual and mental map and present on the digital map draft

5. Validate the final map and results from the compilation of basic socio-economic data.

## Approach and conduct

### 1. Carry out pre-restitution with local cartographers then the restitution in plenary with the community

Restitution must be done in two stages. The project team can start with a first restitution with local carto-

graphers that collected data on the field. This practice allows to check with them routes taken and strategic points collected, it also allows to understand difficulties encountered and to prepare the restitution in plenary.

The restitution in plenary is carried out in accordance with the general principles of facilitation of participative meeting. As such, the project team must print a copy of the digital map draft on a paper size large enough to be visible by all community members present at the meeting. Each course is scrutinized to understand how the data was collected.

### 2. Identify and analyze the data present on the manual and mental map but absent on the digital map draft

The project team must be able to determine whether this data was voluntarily or not left aside during the collection. If they have been inadvertently forgotten, their relevance must be assessed in relation to the documentation of the problem that the mapping exercise wishes to highlight.

Some data forgotten inadvertently can be permanently set aside voluntarily because of their lower value. On

the other hand, if the data inadvertently forgotten are of considerable interest, they must be the subject of a new complementary field collection work.

If data present on the map on the ground but absent on the draft are left aside voluntarily, it would be interesting for the project team to identify the reasons for this. It may be due to a general consensus in plenary, or to an arrangement between local cartographers without the knowledge of the project team. This arrangement may be due either to fatigue or to the desire to conceal information that the Community considers unfavorable to document some of its claims. After discussions, they can also be the subject of an additional field collection work.

### 3. Identify and analyze missing data on the manual and mental map but present on the digital map draft

Most of the time missing data on the manual and mental map but present on the digital map draft concern data forgotten inadvertently during the participatory exercise of production of the mental and manual mapping. Local cartographers note while passing all relevant information in accordance with the manual and mental map, it may happen that some information they took are missing on the latter. Data can nevertheless be voluntarily forgotten on the manual and mental map because of the complexity of representation of these or their importance considered by the community to be minimal. The project team that does not master the space studied as the community does, only realizes these omissions once the card draft is made.

### 4. Identify and analyze data present on the manual and mental map and on the digital map draft

The third scenario which is the most common during the restitution exercise is the one where data on the manual and mental map are also present on the draft. This is the ideal situation. Those data are subject to a verification and final validation process which is carried out on the basis of precise criteria.

The first criterion is purely geographical, it is about verifying the exact position of the one-off information col-

lected.

The second validation criterion concerns the linear layouts and limits of influence of the surface areas. The line plots on the map manual do not always correspond entirely to the tracks on the draft.

It is appropriate for the project team to identify these lines and limits on the draft and to validate with the community influence zones of certain activities.

The third validation criterion is the endorsement of toponymy. Names of various geographical objects represented (such as rivers, encampments, resource areas, etc.) must be confirmed on the draft. The validation session is often a new opportunity to agree on names for the community.

### 5. Validate the final map and results from the compilation of basic socio-economic data

When the positioning of one-off elements, drawing of the linear, limits of influence zones, and toponymy are validated by the community, and after providing possible further field data, the project team and more precisely the GIS Manager draws the final card which integrates all elements validated, rectified and if necessary added. The final map validated by the community is ultimately the main support for reflection for various actors in the study area and especially for the community itself which materialized with the help of the project team its resource spaces. It is on the basis of this map that the community can claim a better consideration of its interests by other stakeholders.

As regards the validation of basic socio-economic data, it is carried out directly in plenary. The person in charge of this study within the project team presents a compilation of collected data and asks for a confirmation of figures in front of the whole community. It may adjust some data in case of absolute need of rectification by members of the community.

## Expected results

- The digital map is validated by the community
- Socio-economic data are validated by the community

# Use of digital mapping by the community



## Objectives and tasks

1. Clarify with the community provisions relating to the card ownership
2. Train the community to read and understand the map
3. Train the community in advocacy techniques
4. Realize restitution with stakeholders

## Approach and conduct

### 1. . Clarify with the community provisions relating to the card ownership

The final digital map is the property of the community. The community and the project team must have at the end a copy of each of the completed maps. The first version of the manual and mental map is the property of the community, the project team can digitize this map to keep a version or reproduce a manual code. Copies of maps produced must be handed over to local administrative authorities. Other actors and stakeholders who wish to obtain a copy can contact communities, the project team or the National Institute of Cartography which ensures the storage and provision of participatory maps according to the unified methodology for the public.

### 2. Train the community to read and understand the map

Before organizing meetings with other stakeholders, the project team works with the community and more specifically some influential members to refine their reading and understanding of the final map. These key members are asked to understand and explain all figures that have been used in the map's legend. They must be able, with the help of the project team, to read and appreciate distances on the map by having a good command of the scale used; identify strategic elements that allow to document the main problem behind this participatory mapping work. Finally, the final map analysis should allow us to project ourselves into the future by anticipating a favorable zoning of future activities of various actors present on the ground.

### 3. Train the community in advocacy techniques

After working with the community and key members on understanding the map and identifying areas of high stakes, the project team seeks to build their capacity on

strategies to better re-allocate their rights on socio-economic and political-legal plans. The first question is whether the current experience of the community is the first one ever in the country, or whether other communities have been in such a situation before. The final map documenting the specific case of the community is to be analyzed among other similar cases. The project team can list similar cases at the national level and look for the results obtained, the follow-up and prospects envisaged in the short, medium and long term. From a specific case study, it is possible to draw general syntheses at the national level. It is also interesting for the project team to see how useful it is to start from this specific case to be able to propose changes, and improvements in the current laws that do not include in their content this type of case. Another interesting point of reference for the project team and the community is to list and then contact local, regional, national and international actors who can be concrete support for a better consideration of the community's interests, while also respecting those of other stakeholders.

### 4. Realize restitution with stakeholders

The community actively participated in almost all steps of the mapping process, which allows them to feel ownership over the project and to more easily appropriate the final result which is the final map representing how it covers and uses its living space and activity area. This feeling is all the more reinforced when community itself initiated the project. On the basis of results obtained, it undertakes, with the support of the project team, the final step of restitution and opening of dialogue and negotiations with other stakeholders. Exchanges aim at collecting perceptions of other stakeholders with respect to the mapped space and especially to find a common ground for the planning and future management of this one.

### Expected results

- The community has a final version of the digital map

- The community is trained on the map use and advocacy techniques

- All stakeholders have been approached to obtain a management consensus based on the participatory mapping work done.