



Sector-Specific  
**PACA**  
Tools

# ENVIRONMENT



MAY 2018 EDITION



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# ABOUT THIS BOOKLET

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This ENV-specific PACA Booklet serves as a supplement to—not a replacement of—the PACA Field Guide for Volunteers. In this booklet, there are several ENV-specific tools that will enable you to adopt a more participatory approach with your work. However, remember that [nearly all tools in the PACA Field Guide can be used or adapted](#) in order to support successful ENV projects.

## Adapting PACA Field Guide tools for your ENV projects

For example, take the [People and Connections Map](#) tool in the Discover phase. In addition to visualizing the connections between the people involved in a specific ENV project, this Tool can be modified to include visualizations of the connections people have to key local natural resources. In each layer of the People and Connections Map template, identify local natural resources that are important to or utilized by project stakeholders. Then, cluster people on the map based on their connection to the natural resources you've identified. The finalized map can be a useful starting point for discussion about a proposed project's biophysical, economic, and social impacts to both the local environment and project stakeholders.

## Key PACA considerations for ENV Volunteers

As you work with your community members and use the tools in the PACA Field Guide, think of some key considerations for you as an environment volunteer, such as:

- What are the environmental issues confronting your community?
- How do these issues impact the health, prosperity, and well-being, both now and in the future, of community residents?
- Which environmental issues most concern people in the community? How do these concerns vary according to different groups, e.g. women, farmers, youth, community leaders, local merchants and business owners,
- What do people need to do to effectively address these issues?
- Why is it in people's interests to change their behavior so that these issues are addressed?
- What are the barriers preventing people from adopting new behaviors (e.g. educational, cultural, logistical, and financial)?
- What facilities, organizations, and service providers exist in your community that can provide necessary technical, logistical, educational, and/or financial support for your environmental efforts?
- Who has access to the resources and services these entities provide?
- Are there any professional or trained individuals in the community that you can work with?
- How do different groups of people in your community receive information?
- Who do different groups of people in your community trust and look to for leadership and guidance and to set an example (e.g. Village chiefs or elders, political party functionaries, successful farmers and business owners, extension agents, teachers and educational administrators)
- Within households, how are responsibilities divided up? Who makes decisions?



## Watershed Diagram

Diagramming a local watershed brings to light the extent of environmental issues confronting the community. Using a community map as a guide, participants draw the community's drainage patterns and note the environmental conditions along the flowing water's path. Water transports eroded soil and all manner of contaminants, so mapping where water starts flowing and where it goes can reveal the true impact of such problems as deforestation, soil erosion, pollution, and overgrazing.

**Time:** 2-3 hours, plus time for a community map

**Difficulty:** difficult

**Materials:** Flip chart, markers

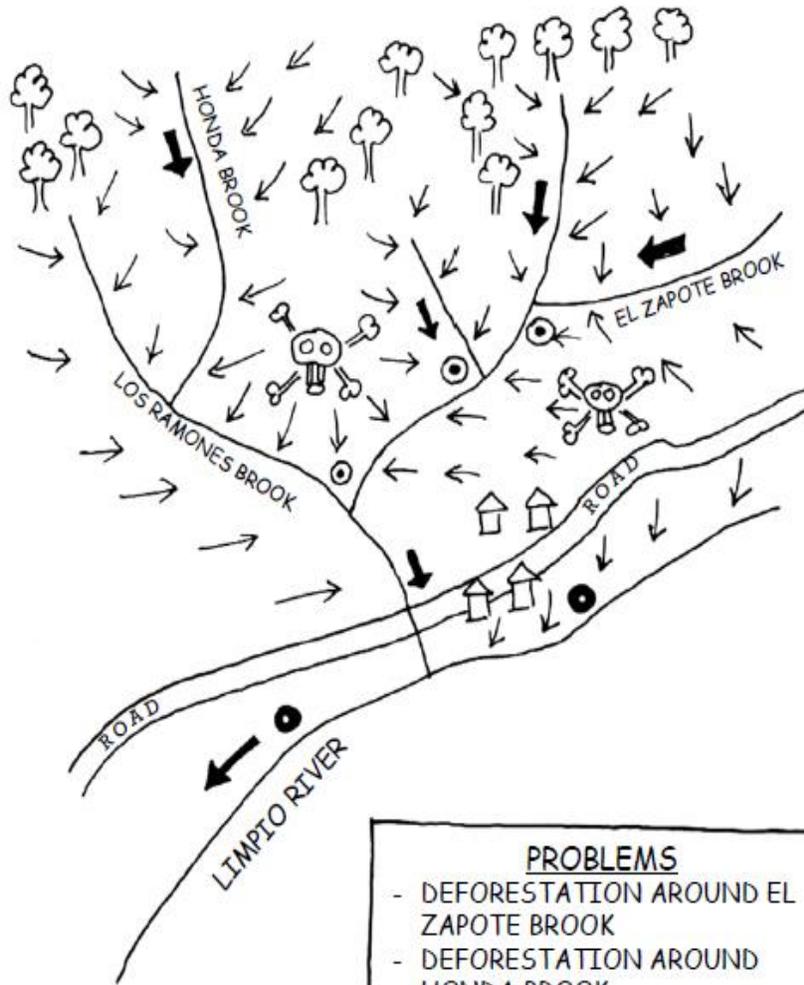
**Communicative language tasks:** Ask follow-up or clarifying questions; Ask questions; Summarize/analyze others' responses

### Steps:

1. If you haven't done so already, create a community map showing important features, such as rivers, topography, important buildings, and significant landmarks. You will use this map to mark out the community watershed.
2. Work with the participants to revise and complete the map of rivers, brooks, and streams in the community, using arrows to indicate the direction of drainage flows. Also finish mapping water sources.
3. Use smaller arrows or arrows of a different color to indicate the direction of rain water flows towards streams and rivers. This will provide a rough sketch of the area's micro-watersheds.
4. Agree on a symbol to indicate the quantity and quality of the water supply obtained from each river and spring (e.g., use different colors to distinguish permanent sources from those which disappear during the dry season).
5. Begin the analysis by comparing the drainage map with other features on the community map. Try to identify relationships between current problems and potential ones (e.g., deforestation and overgrazing in a micro-watershed and the water supply, use of agrochemicals and pollution of water sources, etc.).
6. Use the results obtained to begin planning actions.

**Source:** Geilfus, Frans. 2008. 80 Tools for Participatory Development. San Jose, Costa Rica: IICA.

# WATERSHED DIAGRAM



**PROBLEMS**

- DEFORESTATION AROUND EL ZAPOTE BROOK
- DEFORESTATION AROUND HONDA BROOK
- USE OF PESTICIDE UPSTREAM FROM STANDPIPES

- STANDPIPE (SUMMER)
- ◉ STANDPIPE (WINTER)
- ☠ AREA FUMIGATED WITH PESTICIDE
- 🌳 FOREST



## Commons Use Map

Volunteers and community residents can employ this tool to map who uses commonly-exploited resources (e.g. grazing lands, forest resources, and fish). It can show who is impacting, and is impacted by, the condition of the resources and who therefore should be included in projects designed to improve how the resources are exploited. The map example illustrates the tool's use in foraging resources.

**Time:** 2 hours

**Difficulty:** moderate

**Materials:** Flip chart, markers

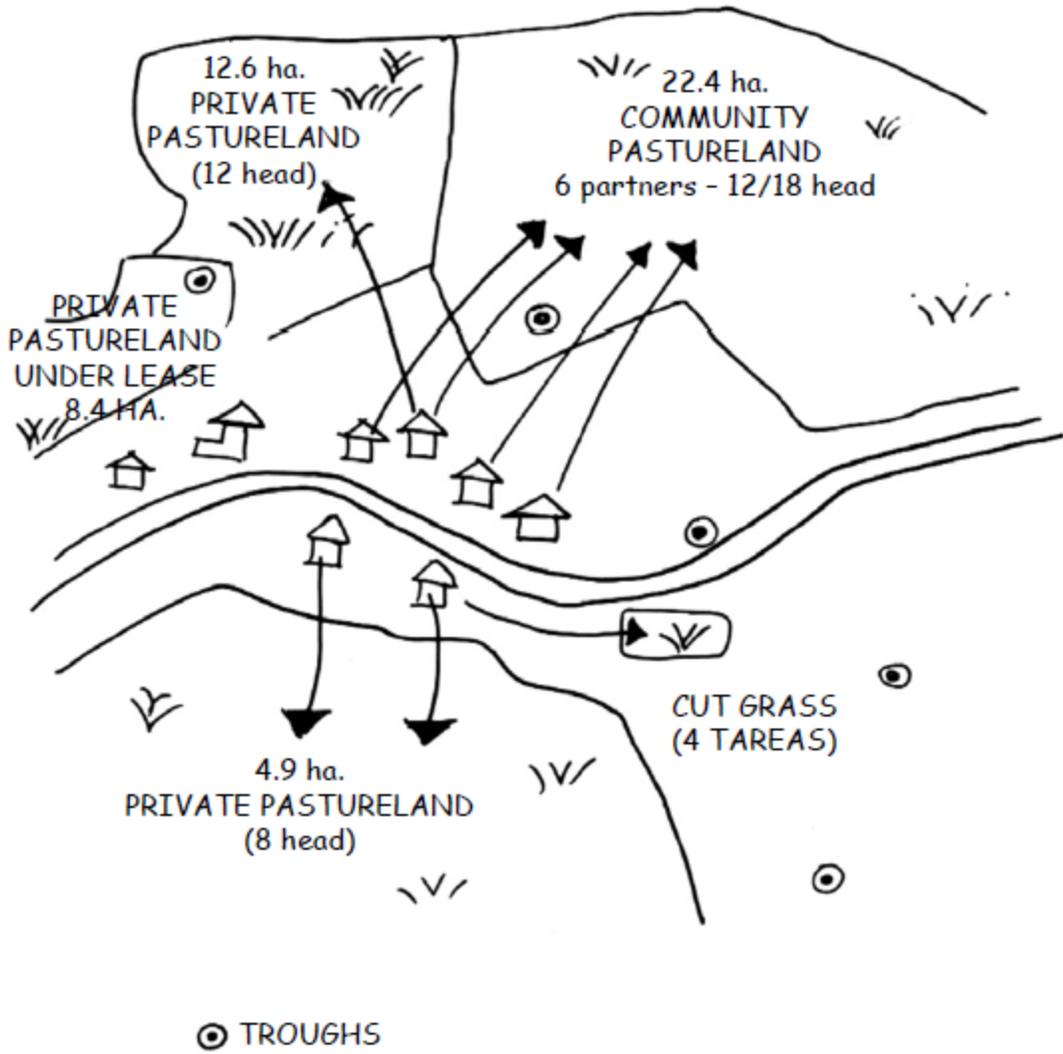
**Communicative language tasks:** Ask follow-up or clarifying questions; Ask questions; Solicit ideas/responses; Summarize/analyze others' responses

### Steps:

1. Gather a group of respondents and explain the objective of the exercise.
2. Ask the participants to identify the main commons areas on a basic map of the community and the resources they contain. Determine whether each area is private or communally owned.
3. Show the households that use the common areas.

**Source:** Geilfus, Frans. 2008. 80 Tools for Participatory Development. San Jose, Costa Rica: IICA.

# FORAGE MAP





## Map of Exchanges

This tool enables participants to visualize how selected groups in the community exchange information and materials. It can illustrate commercial exchanges and both formal and informal channels of communication, revealing to Volunteers how they can best communicate with the individuals they are trying to serve. The illustration below is an example of the tool being applied to a group of farmers.

**Time:** 1-2 hours

**Difficulty:** moderate

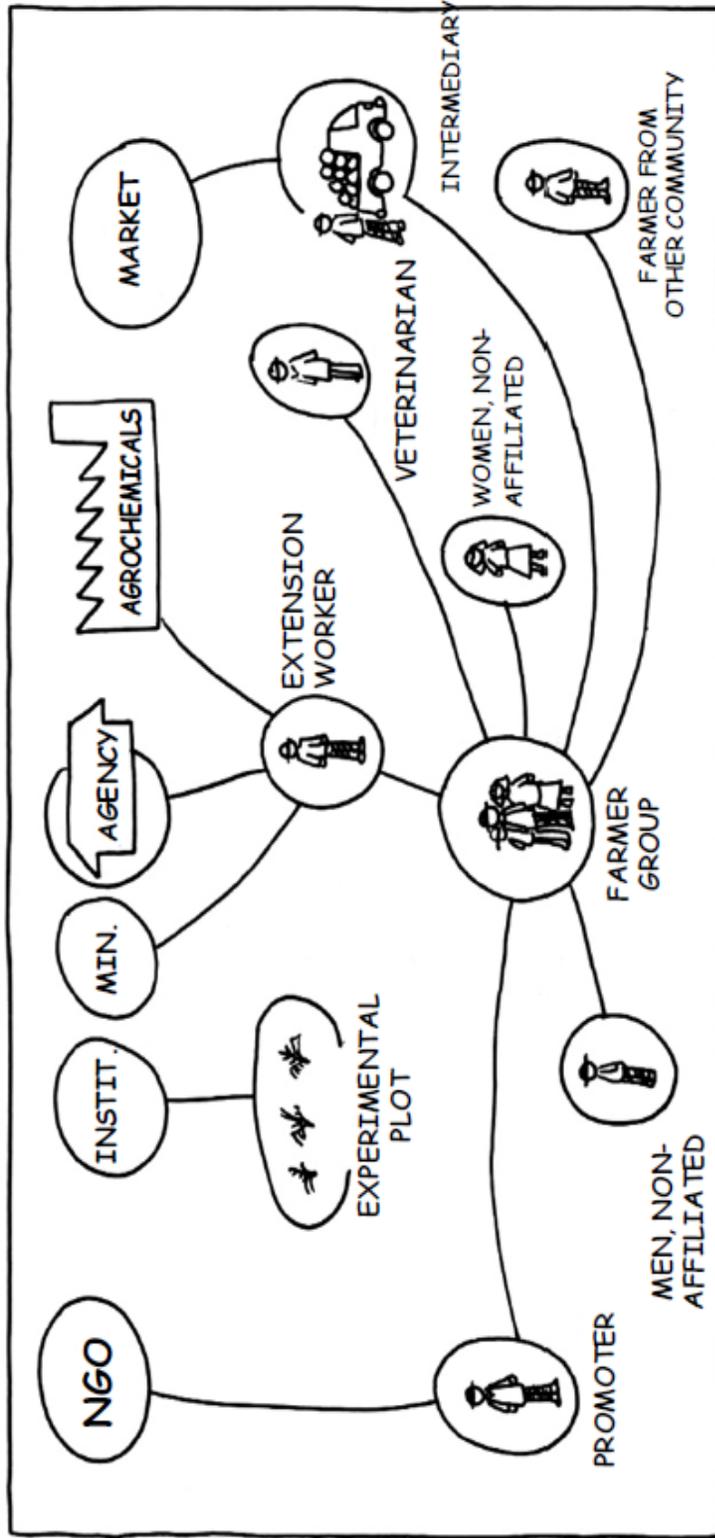
**Materials:** Flip chart, markers

**Communicative language tasks:** Ask follow-up or clarifying questions; Ask questions; Solicit ideas/responses; Summarize/analyze others' responses

### Steps:

1. Gather a group of experienced respondents, representing the groups with whom you intend to work. Explain the objective of the exercise.
2. Ask the participants to identify all the actors with whom they exchange technical information, market information, etc. (e.g. extension workers from different institutions, other farmers, promoters, and agrochemical sales agents).
3. List the actors they mention on the blackboard. Use arrows to draw the flows of exchange, specifying beside each arrow what is exchanged.
4. The exercise can be extended to a different area (for example, commercial exchanges), following the same methodology.
5. Determine how to put this information to use.

**Source:** Geilfus, Frans. 2008. 80 Tools for Participatory Development. San Jose, Costa Rica: IICA.



## MAP OF EXCHANGES

According to FAO, 1995



## Community History Chart

To visually portray the changes that have affected community life over the past few years, in terms of social organization, health, production, natural resources, etc. This exercise may supplement others, such as the timeline and trend line.

**Time:** 1-3 hours

**Difficulty:** moderate

**Materials:** Flip chart, markers

**Communicative language tasks:** Ask follow-up or clarifying questions; Ask questions; Facilitate a group discussion; Solicit ideas/responses; Summarize/analyze others' responses

### Steps:

This is a group exercise intended for both focus groups and larger gatherings, as well as for families (farm histories). Its chronological scope is relatively limited (10 years, at most) – especially if participants are expected to recall quantitative data.

1. Agree with the participants on the issues to be addressed. This will depend both on the focus of the study and the participants' priorities. Create a matrix headed by those issues, with as many columns as there are years in the exercise. Agree on a symbol to represent each issue.
2. For each issue, ask the participants if they remember an exceptional year (e.g., exceptionally good or bad harvests). That year will serve as a reference point; if there is no reliable information, try to fill out the matrix with approximate data, using symbols (see example).
3. The process of completing the matrix may lead to considerable discussions, which may in turn produce a great deal of information on annual variations and the way they are perceived by different members of the community.
4. Once the table has been completed, the facilitator may encourage discussion – e.g., to explain the most obvious fluctuations and changes recorded. The explanations offered should be transcribed, since they often turn out to be important. The table should also be analyzed in terms of problems and opportunities.

**Source:** Geilfus, Frans. 2008. 80 Tools for Participatory Development. San Jose, Costa Rica: IICA.

TEOSINTE CANTON  
HISTORY CHART

PARTICIPANTS:  
Arnulfo Alas    Mauricio Orellana  
Rafael Guardado

ISSUE \ YEAR	1988	1989	1990	1991	1992	1993	1994
PRODUCTION	—						
FARMLAND	—	20	20	36	36	35	20
FOREST							
LIVESTOCK	—						
WATER							



## Planning Self-Assessment and Field Analysis of Local Solutions

To identify in the field the solutions that have been implemented locally, in order to respond to the different problems encountered. It should be conducted in a group format; it allows participants including technical facilitators, to become aware of their own potential for adaptation and innovation, so that they are able to evaluate it, improve it, and organize it systematically.

**Time:** Preparation (1-2 hours), Fieldwork (A few hours-several days), Analysis (2-3 hours)

**Difficulty:** difficult

**Materials:** Flip chart, markers, notebooks

**Communicative language tasks:** Ask follow-up or clarifying questions; Ask questions; Solicit ideas/responses; Summarize/analyze others' responses

### Steps:

1. Preparation Phase. This depends on the exercise of identifying local solutions, in which the group will have identified what field research is needed. Depending on the needs, the group will decide what course to take. Decisions must be taken on the following basic points:

- What are we looking for? (Exercise objective: what type of solutions do we want to identify and analyze? What information do we still need?)
- Where are we going to look for it? (In what part of the community, from whom, in what part of the production system, etc.?).
- What tools are we going to use? (Among those mentioned in this book: semi-structures dialogue, field observation, community workshops, etc.).
- Define and prepare tools.
- Who is going to conduct the assessment? (Responsibilities).

The best approach is to entrust the research to a focus group. By replying to the questions mentioned, the group can agree on the "terms of reference" for the field work. They can agree, in advance, on a list of outputs expected.

2. Implementation Phase. It is important that the group assume major responsibility to conduct the research so they can develop their capacity to evaluate and modify community projects.
3. Analysis Phase. Once the field work has been completed, the group should convene to present and analyze its findings and map out subsequent actions.

**Source:** Geilfus, Frans. 2008. 80 Tools for Participatory Development. San Jose, Costa Rica: IICA.

## PLANNING SELF-ASSESSMENT AND FIELD ANALYSIS OF LOCAL SOLUTIONS

Problems →	Shortage of fuelwood	Shortage of wood
What are we looking for?	1) Trees that people use for fuelwood 2) What do people think of these species? 3) What species they plant and where	1) Trees that people use for lumber 2) What do people think of these species? 3) Why don't people plant more?
Where are we going to look for it?	<ul style="list-style-type: none"> <li>- Men and women: What is being done now?</li> <li>- Older people: What did they use to do?</li> </ul>	<ul style="list-style-type: none"> <li>- Men and women: What is being done now?</li> <li>- Older people: What did they use to do?</li> <li>- Forestry service</li> </ul>
How will we do it?	<ul style="list-style-type: none"> <li>- 3 workshops (men, women, older people)</li> <li>- walk around the farms</li> <li>- evaluation matrix</li> </ul>	<ul style="list-style-type: none"> <li>- The same (fuelwood and lumber)</li> <li>- Interview with forest rangers</li> </ul>
Who does it?	The Ecology Committee (in charge: María)	The Ecology Committee (in charge: Andrés)
What will we present?	We will make a presentation with the entire community to analyze the results. Invitees: technicians and the forest ranger	



## Objective Matrix

This tool shows, in a table, the objectives and results expected from the project, organized in a logical chain. It enables people to see how focused and logical their project plan is. Participants can observe the likelihood that the activities they propose will lead to the results they hope for and whether these results will address the problems they are trying to solve.

**Time:** 2-3 hours

**Difficulty:** difficult

**Materials:** Flip chart, markers

**Communicative language tasks:** Ask questions

### Steps:

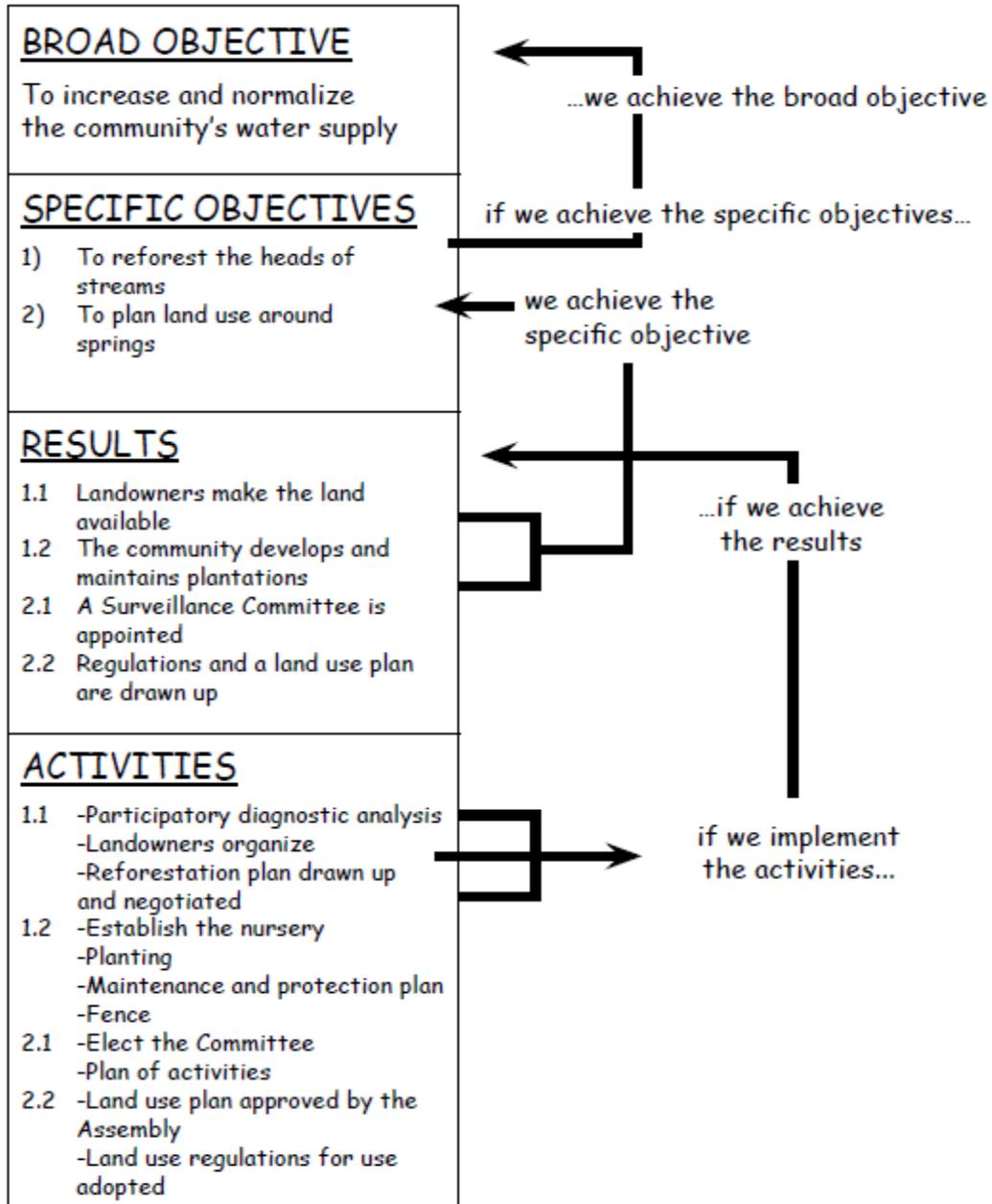
1. Identify the problem upon which the project will focus.
2. Determine the objectives which, when met, should solve the problem.
3. Identify the achievements that will lead to the attainment of the objectives.
4. Determine the activities that will result in the achievements.

The basis for the logical framework is consistency. It is essential to ensure that there are no breaks in logic; that is, that achieving the objectives listed at one level will guarantee that the next level up will also be achieved. The illustration provides an example.

**Source:** Geilfus, Frans. 2008. 80 Tools for Participatory Development. San Jose, Costa Rica: IICA.

# LOGICAL FRAMEWORK

(Incomplete example)



## RELATED RESOURCES & CONTENT

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### More participatory tools!

The tools in this Sector Booklet are borrowed from the following source, which contains dozens of additional participatory tools that can be used as part of sector-specific PACA.

### 80 Tools for Participatory Development

Geilfus, Frans. 2008. 80 Tools for Participatory Development: Appraisal, Planning, Follow-up and Evaluation. San Jose, C.R.: IICA.