

# Adapting PRA to protected area management in Central Africa

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## Introduction

Tropical rainforests are among the most biologically diversified ecosystems on the planet and many local communities are dependent on their resources. Despite this biological wealth, these ecosystems are vulnerable to human pressure. The Gamba Protected Areas Complex (GPAC) in Gabon is an Integrated Conservation and Development Project designed to conserve ecosystems in the Guinea-Congo Basin and promote sustainable natural resource use.

The capacity of Central African tropical forests to support people is limited and the protected areas must be carefully managed. In order to do this, managers of protected areas need to work closely with local populations and understand how they use the protected areas. Participatory Rural Appraisal (PRA) methods can provide a better understanding of how local people relate to their environment, as well as enabling them to enhance their knowledge and take more control of their lives.

## Project background

The GPAC is located in southwest Gabon and is made up of eight protected areas covering 11,320 km<sup>2</sup>. This area covers many different ecosystems and is home to unusual species, including forest elephant, hippopotamus, gorilla, chimpanzee, and manatee. There are 35 villages in the area, and

The Gamba Protected Areas Complex is home to many unusual species, including forest elephant  
Credit: Peter Walsh



one town, Gamba. The inhabitants earn a living through slash and burn agriculture, hunting/trapping, fishing, and gathering.

In the 1950s and 1960s, when the protected areas of the complex were created, most of the current villages were already present. Even though settlements and subsistence activities inside protected areas are illegal, they have been tolerated but there has been conflict between villagers and agents of the Ministry of Waters and Forests (MWF).

In the 1990s, the MWF requested help from the World

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Wildlife Fund (WWF) in achieving the conservation goal of the GPAC. Representatives from the MWF and WWF started a consultative process with local communities within and around the protected areas. During this process, it became clear that the current zoning and legislation of the protected areas needed to be reviewed.

The MWF and WWF decided to delimit *terroirs villageois*, or buffer zones, within which sustainable use of natural resources would be permitted. The *terroirs villageois* are areas traditionally used by a community of people linked by solidarity (or clan relationships) and common interests. For this exercise to be effective in the long term, villagers had to be part of the decision-making process leading to the delimitation of the areas and shapes of these zones.

### PRA in the Gamba Complex

Between 1996 and 1997, the MWF and the WWF began an extensive PRA training programme in the GPAC. Members of local communities were actively involved in all training sessions along with MWF agents and representatives of local environmental NGOs. Local community members who were the most motivated and available were asked to form a team that would be in charge of conducting a socioeconomic survey using PRA techniques. A consultant was hired to support the team.

The main objectives of the socioeconomic survey were to:

- gather quantitative and qualitative information on the way of life and traditional activities of the rural communities living in or on the periphery of the GPAC;
- determine the boundaries of *terroirs villageois* for each village while providing for possible future expansion; and,
- foster the rapport needed for participatory management.

Before each visit, a message describing the survey objectives and giving the names of people on the project team and the dates of the visit was sent to the village chief. When the team arrived in each village, the goals of the GPAC

**Table 1: Some PRA tools used in the survey**

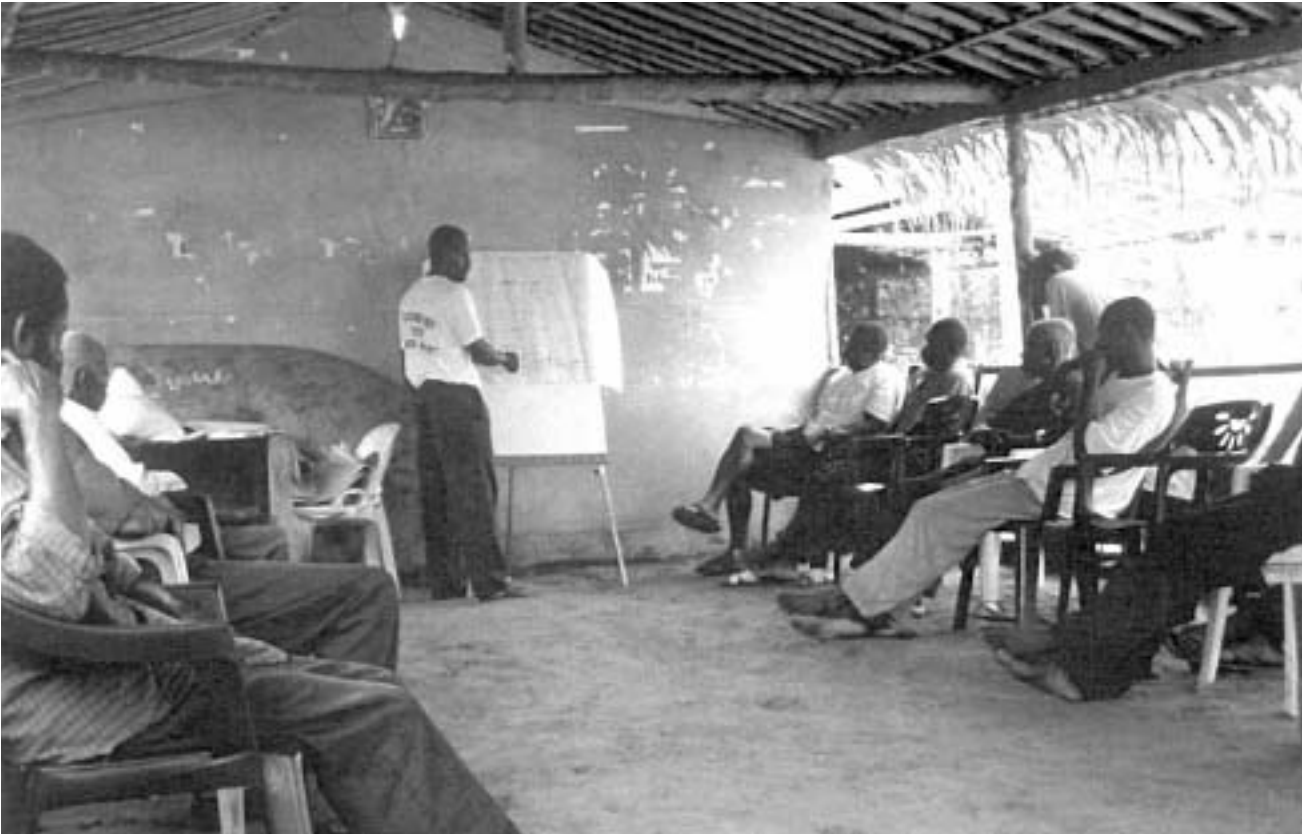
PRA tools	Types of knowledge shared
Participatory sketch mapping of villages and <i>terroirs villageois</i> , key informants, transect walks	Demography, dwellings, vegetation on the village periphery, access roads and trails, activities carried out; location of all sites used for agriculture, hunting, fishing, gathering; sacred sites, cemeteries, water supply points, latrines, kitchens, camps, and former village sites; boundaries of <i>terroirs villageois</i> .
Focus groups, key informants, transect walks	History of the village: meaning of the village name, origin of its inhabitants, population movements, identity of clans, succession of chiefs, clan ownership rights, important events, location of historic and sacred sites, dates when major facilities were built.
Venn diagrams and polarisation patterns, key informants	Relations between stakeholders with an interest in village property management regimes or its natural resources; important individuals and institutions in the community, and their relationships.
Gender-based activity schedules	Drawn up with small groups of natural resource users to identify activities carried out by men and women. Income was estimated by type of activity. Gave villagers' availability – essential information for involving individuals in managing the protected area.
Seasonal calendars, transect walks Georeferenced mapping of <i>terroirs villageois</i> using a Global Positioning System (GPS)	Prepared with women, indicating all types of products available during the year. Localisation of activity sites.
Matrix scoring and ranking	Identifying and ranking the problems associated with village life.
Semi-structured interviews; key informants	Natural resource use at activity sites; triangulation with other findings.
Direct observations	Relations between community members; points of conflict.

project and the survey were again explained, making an effort not to create expectations. After a question period, the work started with the consent of the village chief. The team members had prepared a checklist of the themes to be covered, which gave a direction to discussions while allowing flexibility.

Table 1 shows some of the PRA tools used and the kinds of knowledge shared. Secondary sources were also reviewed.

After the completion of the PRA, results were presented to each community for comments and additions. A final detailed report, accompanied by sketch and georeferenced

**Gender-based activity schedules were drawn up with groups of men and women**  
Credit: Sonia Blaney



maps of village lands, was distributed to the village chiefs and to authorities. This was essential to establishing a relationship of trust with the communities given that, during the survey, they devoted a great deal of time and energy to accompanying the team and sharing their knowledge.

### **Time and rapport as a prerequisite to PRA**

Many authors have emphasised the importance of allowing time to build up trust and rapport with communities. In protected area management, this issue is even more critical. How can a villager be willing to show his hunting grounds to a consultant or to another villager knowing that this person is working for the same agency that restricts access to the resource?

The personal behaviour and attitudes of the survey team members are very important, but even if these are right villagers need time to really judge the team's trustworthiness. This means that a period of probation is required before undertaking PRA work. In Gamba, the probation period lasted about a year during which PRA training programmes were carried out and rapport was slowly being built with communities. As a nutritionist, the consultant in

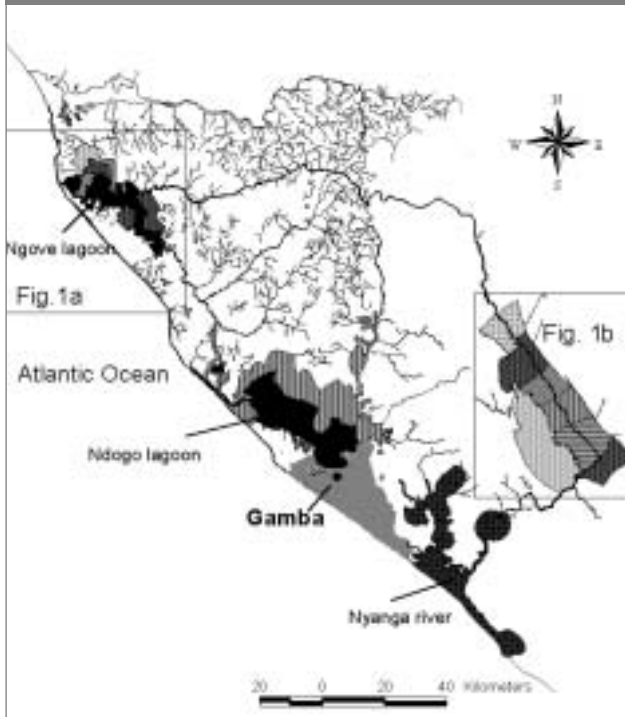
charged of the PRA started to assess the nutritional status of children with the help of the PRA team members. Because these visits were addressing people's welfare, the project rapidly won the villagers' favour and the PRA could be started in a constructive climate for discussing sensitive issues. The whole process including the probation period, from training to the completion of the socioeconomic survey in all 35 villages, took a total of 24 months.

### **Measuring and positioning in PRA**

PRA originally emerged as a qualitative approach, emphasising the value of comparing instead of measuring (Chambers, 1998). However, quantitative data is valuable for recognising trends, comparing communities, estimating prevalences and distributions, triangulating qualitative data, etc. Studies using numbers are also likely to have a greater impact at the policy level (Chambers, 2001). The importance of quantitative as well as qualitative information in the Gamba Complex is illustrated in the two examples below.

**Geographic positioning and delimiting *terroirs villageois***  
During the PRA, sketch maps of the villages and their

**Figure 1: Terroirs villageois in the Gamba Protected Areas Complex**



**Table 2: Terroirs villageois in the Gamba Protected Areas Complex**

Sector	Population	Terroir villageois area (km <sup>2</sup> )	Average area per inhabitant (km <sup>2</sup> /inhabitant)
Ngove lagoon	227	144.5	0.6
Continental sector	999	1,139.7	4.3
Nyanga river	458	560.3	1.2
Ndogo lagoon	396	527.5	1.3
Gamba town	7,226	548.5	0.1
<b>Total</b>	<b>9,306</b>	<b>2,920.5</b>	

surroundings were drawn. After the mapping, the survey team went to all activity sites and recorded geographic coordinates. The advantage of this kind of data is that it is very precise and so is helpful in long-term monitoring. Georeferenced data can be easily integrated into a geographic information system (GIS), making it easier to measure changes in the *terroirs villageois*.

Quantitative information on the *terroirs villageois* is shown in Table 2 and their geographic locations in Figure 1. Villages located on the coast near the Ngove lagoon showed the smallest *terroirs villageois* per inhabitant mainly because of their reliance on fishing for food security (Figure 1a). Villages located in the continental sector had the largest *terroirs villageois* because of their reliance on hunting activities (Figure 1b).

A wide variation in the area of *terroirs villageois* within each sector was observed, which validated the value of measurement of *terroirs* and revealed the flaws of generalisation.

#### Measuring damage caused by elephants

In the communities visited, a frequently cited problem was damage to food crops by elephants. Some villagers said that elephants destroyed 50 to 100% of all crops, and human-

elephant conflict ranked equally with problems related to primary health care, drinking water, and transportation during PRA. After the interviews the PRA team, accompanied by villagers, visited sites where damage had occurred and recorded its geographic coordinates. Surface areas of crops and damages caused by animals were also measured.

Although villagers testified to a high rate of crop loss, the extent of measured damages in the different districts of the GPAC ranged from only 0.02% to 6.2% of the total plantation area. The perceptions of local communities of dramatic elephant damage may be explained by the side effects of living close to elephants such as restriction of movements and need to guard plantations and property, or the hope for compensation. Finding the actual extent of the damage through measurement opened up this area for further discussion and action.

#### Discussion

Our experience in the Gamba Protected Areas Complex showed that without building rapport and understanding with local communities, reliability of data on sensitive issues is questionable. In Gamba, it took about two years for training, building sufficient rapport with local communities, and implementing a socioeconomic survey in all villages. The trust established helped to resolve potential conflict. For example, when delimiting *terroir villageois* boundaries, some villagers wanted to have access to very remote sites located within the protected area. After discussion, it became apparent that these sites had not been used for the last 10 years. The community members then agreed not to consider those sites as parts of their *terroir*.

Although PRA has originally emerged as a qualitative approach, the value of quantitative data is essential in order to adequately understand the local context. In Gamba, the case of elephant damage showed that community perceptions of a problem and the facts can be conflicting, and

interviews should be complemented by direct measurement.

In the case of delimiting *terroirs villageois*, the use of semi-structured interviews, community sketch mapping, and a global positioning system allowed determination of the area where natural resource exploitation was taking place. Without precise measurements of *terroirs villageois*, differences between continental and coastal village zones would not have been captured.

#### Follow-up

Participation of local community members in the management of the Gamba Protected Areas Complex did not end with the socio-economic survey. In 1999, a villager involved in wildlife surveys in Gamba founded a local NGO to promote conservation of natural resources through environmental education. In 2000, he participated in a training programme in environmental education facilitated by IUCN (World Conservation Union) in Waza Logon, Cameroon. In 2002, the MWF and WWF crafted the final draft of the Gamba Protected Areas Complex management plan which integrated *terroirs villageois* as defined by the different communities through PRA. The management plan proposes delegating decision making relating to subsistence hunting to committees composed of local community members. The GPAC steering committee would include representatives of all stakeholders affected by the protected areas, including

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members of local communities, so local communities are considered a key stakeholder in the management process of the protected area. In addition, the new National Forest and Waters Act adopted by the Gabonese government in 2001 allows customary use rights within protected areas under certain conditions.

In the future, ecological and socioeconomic monitoring programmes have to be carried out in order to assess changes through time and landscapes. Institutional capacities have to be strengthened and participation of stakeholders at different levels must be enhanced. Above all, rapport must be maintained with all stakeholders involved.

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