
Sustainable Human Resources in a Protected Area in Southwestern Gabon

MARC THIBAUT* AND SONIA BLANEY

World Wildlife Fund, Central Africa Regional Program Office, P.O. Box 9144, Libreville, Gabon

Abstract: *In central Africa, where governments and funding agencies cover only a fraction of the recurrent expenditures needed to effectively manage the protected-areas network, it is essential to invest in the people who will be called on to participate in conservation efforts over the long term. In the Gamba Protected Areas Complex in southwestern Gabon, we analyzed the perseverance of all those who participated in training sessions, held since 1996, in ecological survey techniques and in participatory rural appraisal (socioeconomic studies). Of government agents who attended the respective training sessions, 7.7% continued ecological surveys and 0% continued participatory rural appraisal 2 years after training. However, 76.2% and 60.0% of the members of local communities who received training were still active in ecological surveys and participatory rural appraisal respectively after 2 years. Definitive conclusions regarding the participation of nongovernmental organization members cannot be drawn because of the low number of initial participants in the training programs. Based on our results, village collaborators seem to be a more "sustainable" human resource than government agents or of nongovernmental organizations members. Even though local communities cannot be solely responsible for managing protected areas, today's conservation professionals must acknowledge the strengths and limitations of village collaborators. Implementing a process involving the participation and the emulation of community members is a demanding task because protected-area managers must be based in the field to identify key individuals and to organize intensive training sessions. Also, constant support must be provided during the first years, and then the most capable and motivated collaborators will be able to pursue further training and work their way up through the ranks of the protected area's organizational structure.*

Recursos Humanos Sostenibles en una Rea Protegida en el Suroeste de Gabón

Resumen: *En Africa central, donde los gobiernos y agencias financiadoras cubren solo una fracción de los recursos necesarios para el manejo de la red de áreas protegidas, es esencial invertir para que la gente participe en los esfuerzos de conservación a largo plazo. En el Complejo de reas Protegidas Gamba en el suroeste de Gabón, analizamos la perseverancia de todos los participantes en las sesiones de entrenamiento de técnicas de muestreo ecológico y de evaluación rural participativa que se han desarrollado desde 1996. Dos años después del entrenamiento, 7.7 % de los agentes gubernamentales realizaban muestreos ecológicos y 0 % desarrollaban ERP. Sin embargo, 76.2 % y 60 % de los miembros de comunidades locales que recibieron entrenamiento estaban activos en el muestreo ecológico y evaluación rural participativa respectivamente. No se puede llegar a conclusiones definitivas en relación con la participación de miembros de organizaciones no gubernamentales debido al bajo número inicial de participantes en los programas de entrenamiento. Con base en nuestros resultados, los colaboradores locales parecen ser un recurso humanomás "sostenible" que los agentes gubernamentales o los miembros de organizaciones no gubernamentales. Aunque las comunidades locales no pueden responsabilizarse totalmente del manejo de áreas protegidas, los profesionales de la conservación deben reconocer las fortalezas y limitaciones de los colaboradores locales. La instrumentación de un proceso que involucre la participación y emulación de miembros de la comunidad es una tarea demandante porque los administradores de áreas protegidas deben estar en el campo para identificar individuos clave y para organizar sesiones intensivas de entrenamiento. Adicionalmente, debe proporcionarse apoyo constante durante los primeros años, para que los colaboradores más capacitados y motivados puedan capacitarse aún más y ascender en los niveles de la estructura organizativa del área protegida.*

*Address for correspondence: 1131 Rousseau, St.-Pierre, QC, Canada, G0A 4E0, email thibaultmjt@botmail.com
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Introduction

The aim of integrated conservation and development projects (ICDPs) is to conserve biodiversity and foster the socioeconomic development of local populations by proposing sustainable alternatives to the abusive use of natural resources. The ICDP proponents stress that local communities must participate in environmental conservation (Brown & Wyckoff-Baird 1992). Participation is the act of taking part, sharing, and working together. Participation of local people can ensure the continuity of conservation initiatives, because local communities are more stable temporally and spatially than national governments (Borrini-Feyerabend 1997).

Rural communities have a direct interest in natural resources but are often marginalized politically and economically (Byers 1996). Nevertheless, Margoluis and Salafsky (1998) believe that actors based in the field and local stakeholders are best equipped to plan, manage, and monitor ICDPs. Moreover, members of rural communities are more familiar with local conditions than outside players are. Unfortunately, in many protected-area projects, local populations are observers of conservation measures rather than active participants, a situation that tends to create conflicts that can lead to the failure of ICDPs.

Because governments and funding agencies cover only a fraction of the recurrent expenditures needed to effectively manage the protected-areas network in central Africa (Wilkie & Carpenter 1999), it is essential to invest in bolstering the capacities of people who will be called upon to participate in conservation efforts over the long term. In the Gamba Protected Areas Complex, local community members not only play an active role in field activities but also constitute a "sustainable" resource. Our goal was to present the concept of sustainable human resources and explain how essential they are to ensuring the success of ICDPs in the Congo Basin and especially in rentier states such as Gabon.

Gabon and the Gamba Protected Areas Complex

Gabon has an unarticulated rentier economy. The term *rentier* refers to "countries that receive on a regular basis substantial amounts of external economic rent" (Mahdavy 1970). The rentier is not actively contributing to the production process and yet still shares in the fruits of the product (Yates 1996).

In the case of Gabon, most of the rent comes in the form of royalties and taxes derived from oil production. According to Yates (1996), "the rentier mentality creates a break in the work-reward linkage, making wealth seem like an isolated fact, rather than the result of a long hard

process of sacrifice and effort." Because government is the primary recipient of the rent, civil servants are especially influenced by this mode of thought and consider their main duty to be their presence during office hours (Yates 1996). The productivity of Gabon is also hindered by a shortage of qualified workers. Gabon has a low population density, and there is lack of enthusiasm and opportunities for higher education. Moreover, oil-rent spending is concentrated in the capital city, which has made people reluctant to work in rural areas and hence reluctant to work on field projects. In this context, finding adequate personnel to effectively manage protected areas can be a major hindrance to protection efforts.

The Gamba Protected Areas Complex (lat 1°50–3°10 S; long 9°15–10°50 E) comprises eight protected areas covering 11,320 km². Located in the Congolian coastal forests ecoregion, Africa's richest moist forests (Olson & Dinerstein 1998), the Gamba complex has a long, sandy littoral zone that borders the Atlantic Ocean. Major habitat types are tropical rainforests, inundated forests, swamps, savannas, lagoons, and mangroves. The complex encompasses the Doudou Mountains, which rise to over 700 m and represent one of the three Pleistocene forest reserves in Gabon renowned for their endemic character. In addition to a variety of ecosystems, the Gamba Protected Areas Complex is home to a wide range of species, including the forest elephant (*Loxodonta africana*), forest buffalo (*Syncerus caffer*), hippopotamus (*Hippopotamus amphibius*), gorilla (*Gorilla gorilla*), chimpanzee (*Pan troglodytes*), and manatee (*Trichechus senegalensis*). It is also inhabited by the three species of African crocodile, at least four species of marine turtle, and numerous species of endemic flora and fauna.

The complex contains 0.8 inhabitants/km² distributed among 35 villages and the town of Gamba (Blaney et al. 1997, 1998, 1999). Its rural communities consist of migratory populations that settled in this area one after the other between the fourteenth and late nineteenth centuries (Ministère de l'Éducation Nationale and Institut Pédagogique Nationale 1983).

Gamba Protected Areas Complex Project

From 1995 to 2000, we implemented the Gamba Protected Areas Complex project on the basis of a master plan that defined its long-term goal as the conservation of representative ecosystems in the Guinea-Congo Basin in keeping with sustainable natural resource use. The plan also proposed specific objectives to be achieved over 5 years: define a zoning plan for the Gamba Protected Areas Complex, formulate internal bylaws, implement effective systems for protecting and managing natural resources, initiate management-oriented research, increase public awareness of the need to conserve natu-

ral resources, and foster development that contributes to the conservation and sustainable use of natural resources.

To meet these objectives, it was necessary to acquire basic knowledge on the area's biodiversity and to set up monitoring programs to assess changes through time and landscapes. It was decided that the first phase of the surveys would focus on taxa that were most likely to be subject to pressure from potential users. Because it was also essential to acquire extensive knowledge about natural-resource users and their effects on biodiversity, plans were made to conduct a socioeconomic survey.

Selection of Participants

In Gabon the management of protected areas is under the jurisdiction of the Ministry of Waters and Forests. The Gamba Protected Areas Complex is one of the ministry's projects that receives support from the World Wildlife Fund (WWF). In theory, ministry employees assigned to the three wildlife brigades in the complex should perform the various tasks involved in managing and protecting the territory's biodiversity. Owing to the limited number of employees available (<10 agents for the entire complex) and to the inadequacy of their skills in ecological and socioeconomic surveys, training sessions were undertaken and other stakeholders were approached to take part both in the training and in subsequent activities. *Stakeholder* refers to individuals or groups with an interest in the use and the management of an area (Brown & Wyckoff-Baird 1992). Because many groups of people in the Gamba complex fall under this category all stakeholders could not play a concrete role during the knowledge-acquisition phase. We decided to emphasize the involvement of local people, because they are the most affected by the presence of the protected area. Moreover, based on results of other ICDP projects, the fundamental importance of involving local people was acknowledged from the onset of this project.

Nongovernmental organization (NGOs) members and government agents from the Ministry of Waters and Forests, the National Herbarium, and the National School of Waters and Forests were also chosen to take part in the training sessions. Selection prerequisites were basic

reading and writing skills, motivation, and availability. With the assistance of local and central administrations, we selected the participants and made it clear to them that they should be available after the training for active involvement in the surveys. There were sufficient funds to pay them, and good wages were offered to people not already being paid. Training sessions were not meant for high-ranking managers posted in Libreville, and postulants based in the capital were required to participate in field activities.

In 1996 and 1997, we offered four types of training sessions that focused respectively on large mammal survey techniques, fish survey techniques, marine turtle survey techniques, and participatory rural appraisal. Among the trainees, seven government agents and four villagers were already working in the Gamba complex and were being paid by the state. Two villagers were directly paid by the WWF project.

Perseverance of Trained Participants

Following the training sessions, we initiated numerous data collection activities. Large-mammal surveys began in November 1998. A system for monitoring bush meat trade was set up in urban communities located in or on the periphery of the complex. The rate of beach use by marine turtles was monitored and a fish-landings monitoring system was implemented. Finally, a socioeconomic survey was conducted between March 1997 and November 1998 and a socioeconomic monitoring program was set up.

We analyzed the perseverance of all those who participated in the training sessions organized since 1996 by comparing the number of people trained with the number still using the skills either on the project or anywhere else 2 years after the training (Table 1). Government agents did not persevere when it came to pursuing the ecological surveys (7.7%) or participatory rural appraisal (0%), even though they attended the related training sessions. None who were already working in the Gamba complex participated in the surveys thereafter. The only one who stayed was a graduate from the National School of Waters and Forests, who had to be offered substantial perks to remain in the field. Those who withdrew went back to their original duties and did not

Table 1. Participants involved in training in the Gamba Protected Areas Complex.*

Origin	No. trained in 1996-1997		No. using the skills in 1998-1999		Perseverance (%)	
	ecological survey	socioeconomic study	ecological survey	socioeconomic study	ecological survey	socioeconomic study
Gabonese government	13	7	1	0	7.7	0
Environmental NGOs	3	2	2	0	66.7	0
Villages	21	5	16	3	76.2	60.0

*Ecological survey is training in techniques of ecological survey, and socioeconomic study refers to participatory rural appraisal.

use the skills they learned at any other site. Lack of motivation seemed to be the main cause of withdrawal; none had to move because of the ministry's policy to rotate protected-areas staff so that they do not build strong alliances locally.

It is hard to draw definite conclusions about environmental NGO members because of the limited number involved in the training sessions. We can say that they were motivated but not readily available to work in outlying regions for long periods. Of the five NGO members, three returned to their former employers in Libreville without using any of the skills. The two who worked in the Gamba complex were from the capital and found it difficult to stay on the project site for more than 2 months without returning to Libreville.

Based on the results, village collaborators were a more "sustainable" human resource than government agents or members of environmental NGOs: 76.2% of the villagers who attended the training sessions on ecological survey techniques and 60.0% of those who received training in PRA were still working in these fields 2 years later. The others were dismissed mainly for incompetence and returned to their villages. Villagers were often eager to take part in the training because of related job opportunities. Village collaborators hired by the project were available and motivated because they worked near their place of residence. Their presence was an asset to the project because they often had extensive knowledge of the local flora and fauna and were familiar with the social context. Knowledge of the local language and the social environment is extremely helpful in conducting socioeconomic surveys: a relationship of trust can be established more rapidly with communities, which facilitates contacts and exchange of information.

Access to positions of responsibility should not be reserved for those with standard technical diplomas or university degrees. It is important to have a new view of the conservation professional in which villagers do not act merely as informants or trackers. In Gamba, involvement of villagers in project activities ranges from trackers to team leaders. Trained village collaborators collect basic data in the field, and some use computers to compile the data.

Even though we have identified village collaborators as a "sustainable" human resource, it is important to be aware that villagers should have an evolving rather than static relationship with the project. They must not be confined to the role of laborer, and key individuals must be allowed to realize their full potential and see their actions as being directly responsible for the project's success. For example, a village collaborator trained in participatory rural appraisal who seemed motivated and demonstrated a number of aptitudes, has been sent for further training in Burkina Faso and Cameroon. When he returns, he will be in charge of managing the socioeconomic component of the project.

Conclusions

Our experience shows that village collaborators are more stable ICDP participants over time than other stakeholders. Village collaborators can be given responsibilities within the project and can be part of the managing team if adequate training and followup are provided. The traditional concept of the conservation professional must be altered because it does not ensure the continuity of fieldwork. Pimbert and Pretty (1995) propose that "the devolution, implementation, management, monitoring and evaluation of protected areas to villagers and low-income groups is a frontier that needs to be explored by modern conservation organizations." According to this view of conservation, local communities should play a key role in managing protected areas. This is not a new concept, and the involvement of local people in the management of protected areas and wildlife resources can be traced back to the 1950s.

In Gabon, conservation projects inevitably feel the effects of the rentier economy, as shown by our results regarding the participation of government agents in the activities of the Gamba complex. To ensure the profitability and continuity of efforts and financial means, it is essential to train and involve people who are likely to persevere. In the case of the Gamba Protected Areas Complex, village collaborators are the most "sustainable" human resource. They are probably less affected by the problems of oil rent and, over the long term, can play an essential role in their community as agents of a sustainable development and of natural resource conservation.

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