

Understanding the people inside the park: Social and cultural dynamics of biodiversity conservation in the Sierra de Manantlán Biosphere Reserve in West-Mexico

Peter R.W. Gerritsen

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petergerritsen@cucsur.udg.mx

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Project Outline

The general theme that underlies this research project is the relation between household strategies and biodiversity conservation. The objectives are:

- 1) To contribute to research and discussion on the social and cultural dynamics of biodiversity conservation in protected areas.
- 2) To develop an analysis of regional agrarian systems in protected areas, using the labour process perspective to investigate the social and cultural dynamics of biodiversity conservation.

The central research questions are:

- a) How do household strategies relate to biodiversity conservation?
- b) How can the research findings contribute to a better understanding of the social and cultural dynamics of biodiversity conservation in protected areas?
- b) The research aims at understanding the influence of social and cultural processes on household strategies vis-à-vis biodiversity conservation. Furthermore, the consequences of the outcome of the research for the management of protected areas will be analysed. The applied methodology will be the farmer style concept in order to understand the specific situation of the research area: the Indian communities of Cuzalapa and Ayotitlán in the southern part of the Sierra de Manantlán biosphere reserve in West-Mexico.

THE SIERRA DE MANANTLÁN BIOSPHERE RESERVE: INTRODUCTION

The Sierra de Manantlán biosphere reserve (SMBR), part of a mountain range located in the south-western part of Jalisco and the northern part of Colima in West-Mexico comprises an area of around 140,000 hectares, ranging in altitude from 400 to 2,860 m above sea level. The Reserve is one of North America's protected areas with the highest biodiversity. It has over 2700 species of plants (40% endemic to Mexico) and 560 species of vertebrates (including 26% of all

the mammals and 33% of all the bird species in Mexico) (Jardel et al. 1995). Furthermore, it has a wide diversity of vegetation types (Jardel 1992; Santana et al. 1987). Finally, it has a great genetic potential for medicinal and nutritional purposes (Benz forthcoming).

The number of inhabitants in the SMBR is approximately 7,000, but a much larger number of people live adjacent to the Reserve, and are partially dependent on its resources (especially water). Of all the land inside the SMBR, 1% is owned by the government, 39% is private property, while the rest belongs to comunidades indígenas (Indian communities) and ejidos (agrarian community). There are 31 agrarian and Indian communities and some 80 private landowners, and the population is dispersed in some 79 localities in the Reserve (Rosales and Graf 1995).

The communities in the SMBR are considered to be among the most marginalized in Mexico, although differences exist between and within them (Rosales et al. forthcoming). Forestry and extensive cattle-raising activities have been the main processes which accentuated this social differentiation. Small parts of the rural communities accumulated wealth by usurpating the communal lands and by increasing their herds, and by not sharing the benefits of forest exploitation with the other community members (Gerritsen 1995; Jardel et al. 1995).

In general, the communities are characterised by geographic isolation, high school absenteeism and illiteracy, high levels of mortality, inferior consumption patterns, inadequate medical attention, and inhospitable domestic conditions. They suffer numerous (interrelated) social problems as well: lack of employment opportunities (and consequently high migration rates to urban areas and the United States), violation of human rights, lack of organisation, alcoholism, caciquismo, internal division, and violence between family and between community members (Gerritsen 1995; Rosales and Graf 1995; Jardel 1992).

Land tenure problems have been the main cause of conflicts within and between these communities for generations. There are also many individuals who do not reside in these communities, but have vested interests in its land (Jardel et al. 1995; Rojas et al. 1995; Gerritsen 1995). As the creation of the Reserve did not involve changes in the land tenure situation, it was basically a huge zoning regulation that establishes land-use restrictions (Jardel et al. 1995).

The residents in the research area, the communities of Cuzalapa and Ayotitlán on the southern slopes, are descendants of Nahuatl-speaking people. A very small part of the population still speaks the Nahuatl language, and they are likely to be the descendants of the very first human inhabitants of the SMBR (Santana et al. 1987). As many other communities, Cuzalapa and Ayotitlán have

been attracted by many outsiders (mainly timber and mining companies) for their biological richness. Subsequent exploitation of the communities natural resources have led to the displacement of many Indian practices, leaving them in a severe cultural, ecological, political and socio-economic crisis. Although cultural displacement processes have been similar for Cuzalapa and Ayotitlán, reactions have been very different to them. Part is due to the biophysical differences, but these reactions are caused mainly by social and political factors (Gerritsen forthcoming; Rojas et al. 1995).

PEOPLE AND PARKS: Difficulties in understanding one and another

From the foregoing (and very generally speaking), it becomes clear that the Sierra de Manantlán biosphere reserve can be characterised by, at the one hand, a very high biological diversity, and, at the other hand, rural communities living in critical socio-economic conditions. The Sierra de Manantlán was declared a biosphere reserve in 1987 with three basic and interrelated functions:

1. The conservation of the biological diversity, the natural resources and the ecological processes.
2. The promotion of a sustainable social development based on a rational use of the natural resources.
3. Scientific investigation and monitoring of the environment (Jardel 1992).
The Reserve's creation was due to two main reasons:
 - a) The discovery of a wild corn, *Zea diploperennis*, which has a potential use for genetic improvement of the second important cereal in the world (Jardel, 1992). As such, *Zea diploperennis* was the most striking example of the region's biodiversity and the importance of its conservation for mankind.
 - b) The struggle between rural communities with private logging (and in lesser degree mining) companies for the control of land and forest resources. The proposal of the University of Guadalajara to create a biosphere reserve was perceived by certain sectors of the rural communities as a way to defend their land and forest resources (Jardel et al. 1995; see also Gerritsen 1995).

During the last 8 years the Sierra de Manantlán conservation project has evolved from a one-species approach into an ecosystem level approach, where the whole mountain range and its watersheds are considered as one integral conservation unit (Jardel et al. 1995; Graf et al. 1995). A social component has emerged, as it became clear that involvement of the rural population, apart from their historic and cultural rights, was crucial for the project in order to be successful (Jardel et al. 1995, Nigh and Rodríguez 1995; Kamstra 1994). Notwithstanding, participation of the Reserve's

inhabitants in the SMBR-conservation project has still not been realised in a satisfactory manner (Graf et al. 1995; cf. Nigh and Rodríguez 1995; Kamstra 1994). To a certain degree, this due to a lacking insight in and understanding of the social dynamics in the Reserve's communities in relation to the natural resources: perceptions, interests, as well as utilisation and management practices of the different actors with regard to the biological diversity are insufficiently known. It is in this context that the very importance of understanding the different household strategies has emerged (cf. Wiersum 1995; Arnold 1991). Therefore, this research project aims to address the social dynamics of biodiversity conservation. It is believed that its outcome contributes to a better understanding of rural development issues in relation to the SMBR's conservation objectives. As mentioned, the research takes place in the Indian community of Cuzalapa and Ayotitlán, where forest exploitation and cultural displacement have had their impact on current land-use (Gerritsen forthcoming; 1995). Therefore, in order to understand household strategies and biodiversity conservation in this region, one has to look not only at social, but also at cultural features, and placed in an historical perspective.

Understanding the people inside the parks

Since 1995 a research is being carried out by the author that aims at:

- 1) Contributing to the research and discussion on the relation between household strategies and biodiversity conservation.
- 2) Developing an analysis of regional agrarian systems in protected areas, using the labour perspective to investigate the relation between household strategies and biodiversity conservation.

The main theoretical approach to be used is the farming style approach as developed by the Dutch sociologists Hofstee (1985) and van der Ploeg (1994), which carefully analyses the underlying patterns of farming as an organised flow of activities through time. Hofstee (1985:227) originally defined a style of farming as "the complex, but integrated set of notions, knowledge elements, experiences etc., held by a group of farmers in a specific region, that describes the way in which farming praxis ought to be realised".

Due to processes of technological and economic development, many farming styles have lost (part of) their regional nature (Roep et al. 1991; de Bruin et al. 1991). Consequently, farming styles have become the (intra-regional) responses to the new and changed situations of farmers (van der Ploeg 1994). A style of farming then becomes: "a socially created form of farm organisation and farm development, which from a comparative point of view distinguishes itself from other styles by specific contours, specific dynamics, specific relations with markets and external institutions, as well as the specific set of technical-

productive outcomes and interrelations. A style of farming corresponds with a specific set of social valid objectives on which farming is directed, with specific means, as well as a specific rationality which combines objectives and means" (van der Ploeg 1991:44).

For being an "actor-oriented approach", the concept of farming styles parts, amongst others, from the idea that actors possess "agency" to realise the fulfillment of their objectives. Therefore, natural resources are conceived as social constructions, i.e. the importance attributed to them by actors depends on the use and exchange values attributed by these same actors (van der Ploeg 1990; cf. Gerritsen 1995). Furthermore, use and management of natural resources is perceived as an outcome of a social struggle between actors with different interests in them. In the case of the research area, the southern part of the Sierra de Manantlán, for being a region inhabited by Nahuatl-indians, one has to add a cultural element in order to fully understand heterogeneity (cf. Rendón 1995). Amongst others, the social organisation of the communities in the research area is of substantial influence (Rendón 1995; Gerritsen 1995; Rojas et al. 1995). The community provides the conditions for, and limitations to family production. It expresses itself in ideological and cultural organisation, but above all manifests itself in the economic sphere and in the organisation of power (Rendón 1995; Gianotten and de Wit 1982).

From the foregoing, it thus becomes clear that the farming style concept tries to grasp both cultural and biological diversity in farming practice. Moreover, it parts from the idea that a farming style influences biological diversity. Natural resources are being utilised or transformed by farmers in order to provide desired products or services (Gerritsen 1995), and thus "not the environment as a totality is relevant, but only those parts culturally conceived as resources" (Umans 1993: 6). In other words, farmers can actively "create" or "destroy" biological diversity in order to obtain certain goods (both material and non-material) (cf. Toledo 1990). The nature of this transformation is partly dependent of the incorporation level of the farmer into the different markets (van der Ploeg, 1991; cf. Gerritsen 1995).

Basically, in this research a comparison will be made between the Indian communities of Cuicatlan and Ayotitlán. Socio-political and cultural displacement processes have led to an internal differentiation and different ecological, socio-economic, political and cultural problems (Gerritsen forthcoming). As may be clear, this has also changed the ways in which farmers are managing biological diversity (cf. Gerritsen 1995). It will be attempted to generalise research findings in order to contribute in a more substantive way to the discussion on social and cultural aspects of biodiversity conservation. Nevertheless, it is recognised here that every situation knows its own specific characteristics. Therefore, during the research process, common indicators will be identified which allow to generalisation.

DESCRIPTION OF THE RESEARCH AREA

The Indian communities of Cuzalapa and Ayotitlán comprise an area of about 77,000 ha. Part of their territories is located within the limits of the Sierra de Manantlán biosphere reserve; 75% of the territory of Cuzalapa and 45% of Ayotitlán (Gerritsen forthcoming).

The Indian community of Cuzalapa comprises approximately 24,000 ha and has a population of 1,500 inhabitants. The majority of the inhabitants are Nahuas, although a growing part of the current population is Mestizo, whose roots lie outside the Reserve. Nevertheless, Mestizo-culture seems to be dominant in this community. Agricultural activities are irrigation, rainfed and shifting cultivation of maize (and beans). Besides, extensive cattle-raising activities take place. Cuzalapa characterises itself by a very pronounced social differentiation: few have many, and many have few production factors (Gerritsen 1995).

The Indian community of Ayotitlán comprises around 53,000 ha with around 3,800 people living within its boundaries. All its inhabitants are Nahuas, and contrary to Cuzalapa no Mestizos reside in the community. Therefore, there is still a strong Nahua-culture. Agricultural activities consist mainly of shifting cultivation of maize, although irrigated maize cultivation also is practised in the community. Social differentiation is not that articulated as in Cuzalapa, notwithstanding differences do exist (Gerritsen forthcoming; Rojas et al. 1995). In both communities, forestry activities are directed at fulfilling domestic needs, and currently no commercial exploitation takes place. Both communities have a long history of forest exploitation by timber companies, however, benefits never reached its population. This lead to severe conflicts and amongst others, cultural displacement of many Indian traditions. Currently, both communities are confronted with severe (but different) cultural, socio-economic, ecological and political problems (Gerritsen forthcoming, 1995; Rojas et al. 1995).

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Notes to readers

The author may be reached at:

Instituto Manantlán de Ecología y Conservación de la Biodiversidad
Centro Universitario de la Costa Sur
Apartado Postal 64, 48900 Autlán
Jalisco- Mexico.
Tel: 338-11165
Fax: 338-11425