

IMPLEMENTATION OF *EUROSITE* PLANNING METHODOLOGY FOR NATURAL PROTECTED AREAS MANAGEMENT TO A MEXICAN STUDY CASE

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ABSTRACT

The strategic management approach for natural protected areas (NPA) has been evolving over time mainly in the last decades in which management has acquired a more integral and inclusive character. NPA management is a process whereby management planning is the principal strategy in which ideally the main actions are defined; it also facilitates the systematization of guidelines and procedures for the accomplishment of conservation and development objectives. Nowadays NPAs are not only confined to their traditional role of protecting symbolic natural elements; they have gradually evolved towards the mainstreaming of territories with representative samples of the biodiversity or presence of significant socio-environment systems. In this way biodiversity is a central element for conservation but it is not the only component that should be considered in conservation. Such condition has given a new dimension to natural heritage protection but in particular to the NPA function and its management effectiveness. Therefore due to the urgency to articulate nature science to social science (Morin 2001), and in an effort to highlight the importance of establishing a balance between the action of the driving biophysical and socio-economic forces (Boada and Sauri 2003), we presume the need to address the study of environmental issues, including conservation science, from an integral, multidisciplinary and multicriteria perspective. Thus a more systematic approach for designing and planning nature reserves must be made compatible with biodiversity conservation and with fulfilling the local population demand for natural resources and territory. In México, decrees, management and administration of NPAs have revealed over time, different dimensions and potentialities that reinforce their capacity as instruments of environmental policy. In one hand natural areas can generate a territorial matrix for conservation and sustainable development initiatives whereby it can be possible to harmonize development schemes with conservation policies. On the other

hand, management and administration of NPAs is carried on by different social sectors at the local and regional level, providing an opportunity to strengthen and build new forms of participation and responsibility. However NPA management as a nature conservation strategy in México faces to institutional divergences, social conflicts for land tenure and land use change and disarticulation in management and administration interests. Such deficits restrain the accomplishment of the main conservation and management objectives. We assume that an adequate management planning design is a key instrument to counteract environmental regional conflicts, and that NPA implementation can be a cornerstone over which regional development processes can be built.

Every region needs specific management responses according to its biophysical, economic and social variables. Consequently in this work we applied the *Eurosité* methodology (2000) to a Mexican study case for the definition of a planning scheme that could be implemented in the new *Tierra Caliente-Infiernillo* regional conservation area in Michoacan state, Mexico. *Eurosité* is an organization of managers and planners of the NPA network of the European Union whose main objective is to monitor and to evaluate European NPAs. Hence it has developed a specific methodology to design management plans. Through this methodology we can determine what should be the main priorities of the management plan with respect to what would be ideal targets in the specific area. In this paper we offer an overview of the context in which the study area and the valuation of the natural heritage of the area. We make an emphasis on the procedure for defining the main conservation and management objectives which comprise the feasibility of the proposed management plan considering the social reality. The study area characterization, which integrates several types of information, corresponds to the descriptive and objective base over which planning process was settled.

The study area is located in the physiographic province *Depresión del Balsas Tepalcatepec*, in the South-East of Michoacan state. It includes the *Infiernillo* dam and comprises the municipalities of Churumuco, La Huacana and Arteaga. Nowadays this region is considered an important area of Centre-West Mexico because it includes key areas for flora diversification and comprises habitats of restricted species distribution (Rzedowski 1991). The principal habitats of the study area include dry tropical forest, sub-deciduous dry tropical forest and thorn forest. The region that we consider in here comprises 11% (6.483,06 km²) of the surface of Michoacan state. However the municipalities support only 1,9% (72.398 inhabitants) of the total population of the state. In average 73% of the total population is settled in small towns ranging from 1 to 99 inhabitants, primarily organized in *ejidos* (the *ejido* is an organizational system whereby the government promotes the use of communal land shared by the people of the community). From an environmental perspective land use change is the most important regional problem, stemming from a deficient territorial management.

We designed a matrix that crossed objectives with other factors that could have a positive or negative influence on them. Thus we could learn about restrictions or limiting factors that can affect the accomplishment of ideal objectives. Ideal objectives are those that could establish a proper regulation over NPA uses and productive activities, they do not have to be practically feasible or economically viable, but they are indicators of the potential to which NPA could aspire. In reality, the management goals may not all be achieved because of a number of limiting or modifier factors, or because they are not viable in praxis. In this

case the definition of ideal objectives was made based on the quantity and extension of the distinctive and potential features of the NPA. From the matrix interactions we made a detailed description of the relations between objectives and limiting or modifier factors, and the strengths that offset these limitations.

The absence of strong territorial planning policies is one of the most noteworthy limiting factors in this territory. Such situation can be associated to land degradation and habitat fragmentation. Moreover the national agrarian policy is oriented to transform primary forest to grasslands for cattle production, thus accomplishment of conservation objectives becomes more difficult. On the other hand local participation in the *ejidos* has demonstrated to be a determinant factor to facilitate social and institutional conciliation. The participation of the local population through concrete projects in the *ejidos* of the region can facilitate actions for tropical ecosystem conservation and increase the value of regional development strategies. In this way it can counteract some of the limitations faced by the planning process.

Undoubtedly NPA management is a complex task, which is surrounded and influenced by diverse conflicts and problems, making it necessary to emphasize the development of real and applicable proposals with a clear social dimension. The application of the *Eurosite* methodology in the construction of an NPA management proposal in Mexico is an important contribution, given that it offers a systematic scheme for management planning from a flexible frame, adaptable to each particular situation. Moreover, this scheme allows the updating of the management plan according to the context. The adaptation of this methodology to a Mexican case study allows us to affirm that the format application can be applicable to distinct ecosystems, protection categories and management programs. It may also be valuable for management effectiveness evaluation in territories managed by different entities (NGOs, academic and governmental institutions, etc.).

Nowadays the planning of NPAs should be approached from a regional perspective, in which the protected space can be completely integrated in the territorial matrix and in the land use planning priorities. In this sense, the work in the study area should go beyond the NPA project to classify the territory in accordance to its characteristics and potential uses. Such environmental management instruments can facilitate in the long term the decision making process and the projection of actions over the territory, promoting the conservation of the natural and cultural heritage, from a perspective that helps the local population improve its self-esteem and quality of life.

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