

# The Relevance of Environmental Studies for the Development of Investment Projects in the Valley

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**Abstract:** *The environmental policy in Mexico is of great impact for the Mexican territory which allows the opportunity to improve the social environment of each of the natural protected areas (NPA), in addition to this, the inadequate use of natural resources has led to their degradation and wear, generating problems in the environment and human health. To mitigate these impacts, strategies have been implemented such as the elaboration of ecological ordinances, among others, but there are still challenges in the conservation and preservation of natural resources. The Ecological Ordinance aims to address the environmental impact, new human settlements, communication routes and decrees that constitute Natural Protected Areas, which allows reorienting the conservation of resources within a perspective of social benefit. The LGEEPA defines four modalities of ecological management: General, Marine, Regional and Local, considering the competence of the three levels of government and the territorial area of application. In the case of the Teotihuacán Valley, the lack of environmental studies has led to the overexploitation of the mountainous relief, affecting the natural and social environment of its surroundings.*

**Keywords:** Natural Protected Area, Ecological Management, Natural Resources, Conservation, Teotihuacan Valley, Environmental Impact

## 1. Objective

In the case of the present research, the objective is to analyze the relevance of the elaboration of environmental studies for the creation of investment projects in the Teotihuacan Valley.

This region, located in the northeast of the State of Mexico and approximately 50 km. from the capital of the country, is known for having within its territory the Archaeological Monuments Zone of Teotihuacan, an important pre-Hispanic city that had its peak during the classic Mesoamerican period and is currently the most visited archaeological destination in Mexico, with a little more than four million people arriving annually.

Due to its proximity to Mexico City and the feasibility of transportation through the highway infrastructure, the Valley of Teotihuacan has the advantage of attracting investment from businessmen coming from the country's capital and its metropolitan area, as well as from the city of Pachuca in the state of Hidalgo, located just over an hour away from the region.

Regarding the environmental issue in the Valley, it is worth mentioning that as a result of the project for the New International Airport of Mexico City, managed by the past administration of the then President Enrique Peña Nieto, to fill the area formerly occupied by Lake Texcoco in order to build the runways of the airport infrastructure, it was decided to level the unstable terrain with stone material extracted from hills and hills near the project, especially tezontle stone, basalt and tepetate.

However, in order to make the terrain suitable for an airport engineering project, the mountainous terrain of the surrounding municipalities has been overexploited, thus also covering the municipalities belonging to the Teotihuacán

Valley, with San Martín de las Pirámides, Teotihuacán and Acolman being some of the most affected.



**Figure 1:** Teotihuacan Valley Zone

Photography: Jesús Cabrera

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In this sense, environmental studies have not always been carried out in the study area when it comes to implementing a project, thus violating the natural and social environment of the communities, mostly rural, which are affected in their daily way of life due to the omission of functions on the part of the corresponding authorities in the regulations in this area.

## 2. Introduction

The inadequate use of natural resources caused the degradation and natural wear of these resources, through the contamination of surface and subway water tables, loss of ecosystems, flora and fauna, decrease in air quality, urban growth, this series of situations generated not only an alteration in the environment but also problems in human health, mortality of endemic species, global warming; among others. These became public problems, negatively affecting social welfare, the environment and the harmony of the community, resulting in the creation of international

treaties or agreements to mitigate the impacts on ecosystems.

However, in the case of Mexico, the conservation of natural resources was not at the forefront of the national debate despite its influence on economic, social, natural and political matters. It was not until the seventies of the 20th century that the continuous environmental deterioration (understood as that which affects man and nature), made it necessary to consider it a public problem, which is characterized by affecting a considerable group of people, Due to the complexity and scarcity of resources to be solved, it demanded the establishment of policies if not to solve it, at least to mitigate it (Esquivel, 2014), however it was until the 80's that a series of strategies focused on mitigating the environmental impact on natural resources were implemented, in the framework of this series of strategies were created: Laws and regulations such as the General Law of Ecological Equilibrium and Environmental Protection (LEGEEPA) and the Mexican Official Environmental Standards (NOMAS).

Another measure for conservation and compliance with these laws was the emergence of public agencies such as SEMARNAT, with the fundamental purpose of constituting a State policy for environmental protection, which reverses the trends of ecological deterioration and lays the foundations for sustainable development in the country, and its decentralized body the National Commission of Natural Protected Areas (CONANP) whose main function is to conserve Mexico's natural heritage through Natural Protected Areas and Regional Sustainable Development Programs (CONABIO, 2013).

The efforts made to establish strategies that limit the environmental impact on natural resources; The efforts made to establish strategies to limit the environmental impact on natural resources were materialized with the creation of Natural Protected Areas (NPAs), which are territorial spaces destined mainly for the maintenance and conservation of biodiversity and other natural resources, as the main axis must safeguard species of wild flora and fauna, especially those of restricted or threatened distribution, as well as to avoid the loss of genetic diversity, maintain samples of the different types of natural communities, landscapes and physiographic forms, especially those that represent the unique and distinctive diversity of the country, maintain and manage wild flora resources, so as to ensure a stable and sustainable production (AMBIENTAL, 2008).

#### **Creation of projects in Natural Protected Areas**

It is important to note that each NPA must have a Management Plan, which establishes the productive or recreational activities that can be carried out and how they are to be carried out, these are prepared by technicians (biologists, anthropologists, geographers, etc.) and local inhabitants. These areas are open to the public to visit, but they must have a Management Plan. Each plan must comply with certain characteristics: It must have a presentation where the problem is stated, a brief introduction, background of the area and its objectives, as well as a description of the Protected Area, it must also have a diagnosis and it must mention the current environmental problems of the area, in

addition to mentioning the national and sectoral subprograms that are used to solve the problem of the area, it also mentions the ecological management as well as the zoning of the area where the activities that can be carried out and those that are not allowed are mentioned, and describes the administrative rules of the ANP where the general provisions are mentioned, schedules for the realization of the activities that require it, in accordance with the characteristics of the same, activities and permitted uses, as well as its limits and guidelines, likewise it must contain an Annual Operational Program where it mentions the objectives and goals annually, in addition to having the evaluation of the effectiveness of management, as last sections it must contain a bibliography as well as annexes (CONANP, 2018).

Currently, Mexico has 182 PNAs, covering an area of 90,839,521.55 hectares, which cover 15.91 percent of the national territory and 22.29 percent of the country's marine surface; these areas have been divided into categories that allow highlighting not only their importance in the conservation of natural resources, but define the type of use appropriate for each resource that seeks to protect, in this sense National Parks, Sanctuaries, Biosphere Reserves, Natural Protected Areas, Natural Monuments; among others are created (CONANP, 2016).

It should be noted that of the 182 Natural Protected Areas registered in Mexico pursue different conservation objectives so the rules of operation established in its decree, as well as in its management plan and annual operating plan are different according to the category; In the case of flora and fauna protection areas, only 117 Natural Protected Areas in Mexico currently have a Management Plan, of which 39 are Biosphere Reserves, 34 are Flora and Fauna Natural Protected Areas, 5 are Natural Monuments, 2 are Sanctuaries and 37 are Natural Parks.

As part of the strategies to mitigate natural impacts, not only in NPAs but also in the environment in general, is the elaboration of ecological ordinances, the basis of which is described in article 19 of the LGEEPA, which establishes the criteria to be considered for their formulation.

It is important to emphasize that Ecological Management is an environmental policy instrument that is conceived as a planning process whose objective is to find a land use pattern that maximizes consensus and minimizes conflict between the different social sectors and the authorities in a region. During this process, environmental policy is generated, implemented, evaluated and, if necessary, modified in order to achieve a better balance between productive activities and the protection of natural resources through the link between the three levels of government, the active participation of society and transparency in environmental management.

It must have as its objective the ecological guidelines and strategies for the preservation, restoration, protection and sustainable use of natural resources, the ecological regionalization of the national territory and of the zones over which the nation exercises sovereignty and jurisdiction, that

productive activities generate demand and availability and location of productive activities and human settlements.

The environmental impact, the new human settlements, the communication routes and the Decrees that are constituted in ANP are objectives of the Ecological Ordinance.

The LGEEPA defines four modalities of ecological management, considering the competence of the three levels of government, as well as the scope according to the territorial area of application.

### General

The formulation, issuance, execution and evaluation of this program is the responsibility of the Federal Government and its objective is to link the actions and programs of the agencies and entities of the Federal Public Administration, whose activities affect the pattern of occupation of the national territory. It is mandatory throughout the national territory.

It defines an ecological regionalization in which priority attention areas, areas of sectorial aptitude and ecological guidelines and strategies applied to such areas are identified.

### Marine

The formulation, application, issuance, execution and evaluation of this program is the responsibility of the Federal Government. Its purpose is to establish guidelines and provisions for the sustainable use of natural resources, the maintenance of environmental goods and services, and the conservation of ecosystems and biodiversity in Mexican marine areas and their adjacent federal zones.

### Regional

Its formulation, issuance, execution and evaluation is the responsibility of the State Government, when the region includes part or all of the territory of a state. When the region to be ordered includes the territory of two or more federal entities, the federal government coordinates with the state and municipal governments, as the case may be, within the scope of their respective competencies, by signing coordination agreements.

### Local

Its formulation, issuance, execution and evaluation is the responsibility of the Municipal Government when the area includes part or all of a municipality.

When the area to be managed includes a Natural Protected Area under the jurisdiction of the Federation, the latter must participate in the formulation and approval of the ecological management program.

### Public policy: research instrument in the Teotihuacán Valley.

The creation of an environmental policy and/or strategies involves the participation of diverse public, private and social actors that intervene from its design to its implementation and evaluation. The public actors involved are: Government in its three dimensions -federal, state and municipal-, private actors -foreign and national private

companies, service providers- as well as social actors - unions, civil society-.

Therefore, public policies are government instruments to solve challenges and counter-varieties of a public nature, i.e. they are an organized response to a set of common problems and in a particular way provide concrete attention to precise problems. To carry out a policy, it is necessary to carry out a series of phases ranging from design, implementation and evaluation.

The first phase that makes up a public policy is the gestation phase, at this stage the problem or social demand that directly affects society is identified, which may become a matter of public interest and must be addressed by the government, If it is accepted as a conflict, it will be promoted to seek a solution, and it must also be addressed by the government agenda. At this point, the issue reaches the hands of the government representative, who presents it as a project and seeks to resolve it during his or her term of office.

The next phase is the design of the policy within this, public servants or consultants seek to solve the identified problem and investigate various viable alternatives, the most important task is to provide a recommendation for an intelligent public policy, budgetary and economically viable, legally permissible, administratively and politically possible.

Once the design of the policy has been completed, the next step is the implementation of the policy within the society and the affected area, where the budgeting process, the legal creation of the program, the training of the team that will carry it out and the communication within the implementing agency, as well as with the citizens are carried out. The last phase is the evaluation, which assesses the effects of the results obtained from the policy since its design and implementation; in this way it is possible to determine its success, i.e. to what extent the public problems that afflict it were solved or mitigated; likewise, during this phase it is possible to determine the positive and/or negative effects caused not only in the area of application of the policy but also in surrounding areas.

In the case of this research, only three phases will be considered for the structuring of public policy: design, implementation and evaluation.

There are various types of actors that participate in the policy, including public, private and social actors. Public actors are made up of the government, which is responsible for articulating and deciding on the most relevant issues facing society and deciding on the basis of democratic criteria. Political parties are key actors in democracies, since they are the articulators and aggregators of interests towards the government; they use political resources to serve as interlocutors between the executive and legislative branches to negotiate common interests in the processing of public policies; the government itself as a whole is a public actor in itself.

### 3. Conclusions

The NPAs are areas of opportunities for different sectors whether social, environmental, cultural among others; this allows to increase the quality of life of the local population and develop new investments in the social development of the communities that are around, it is necessary to highlight that the Valley of Teotihuacan is a place with strengthening economic income and cultural values; It is important to highlight that the Teotihuacán Valley is a place with a strong economic income and cultural values, which means that the lack of regulation for the creation of these projects creates a depletion of the existing natural resources in the Teotihuacán Valley, which is why it is important to highlight the management plans that each PNA has, in order to have a diagnosis and to know the problems of the current PNA, For this purpose, the three levels of government, private actors, service providers, unions, civil societies, and other participants try to face the problems and bring them to a new design, implementation, and evaluation of the public policy in the Teotihuacan Valley.

Finally, each project that exists in the VT has an important elaboration of environmental studies that persevere the important cultural, environmental and social context of this, making Teotihuacan grow effectively without harming the environment.

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