Proposal for Sustainable Tourism Development through the Analysis of Natural Resources in Canoas, State of Colima, Mexico

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Abstract

Canoas is a rural community, located in the municipality of Manzanillo, state of Colima, Mexico. The life of the inhabitants revolves around the agricultural activities that today the day has not yielded good result due to the lack of government support and as a result the people are migrating to other places to look for a better opportunity for life. The geographical condition of the community, Canoas has potential for tourism development. To begin these activities, it is necessary to make a study to know the geographical situation and the existing natural resources in order to plan an appropriate tourist activity for the place. As a result, canoes have a lot of potential for the development of tourist activities in the natural area such as hiking, picnic by the river, visit the coffee plantations, etc. But it is necessary to carry out the activities under the advice of the experts in order to carry it out in the sustainable way.

Key Words: Local development, Tourism sustainable, MESMIS, Manzanillo

JEL Classification : Q01, Q51, Q56
1. Introduction

As an ejido (land belonging to an operative), Canoas occupies a territorial extension of 4,799 hectares is located in the upper area of the municipality of Manzanillo in Colima State.

Agriculture is considered as the main economic activity, where different products are cultivated such as coffee, corn and beans and in smaller quantity the common vegetables. The cultivation of coffee in this area is the most important activity of Canoas and the one that generates more income for its inhabitants. The coffee harvest comprises a period between the months of December-January to April and it employs the labor of the five communities that surround the ejido and benefit with work to about 150 families. During the year, many of the families in this region depend 80 percent of the income that the coffee plantation provides them.

Nowadays the field has stopped having support and subsidy, since currently these are focused only on those activities that are susceptible to export, leaving aside those that are of basic cultivation and of lower production.

For the last twenty years, the government has reduced the credit and technical assistance programs for agricultural production, and the few that exist are monopolized by capitalists who, due to having some relationship or being an important producer, monopolize this type of resources that the government allocates to the countryside.

Due to the situation of the countryside, the population chooses to move to the cities to obtain income for a fixed salary and stop harvesting their land, besides not having the resources to be able to make them produce.

Poverty is evident in rural communities, this situation is exploited by capitalists who, due to the conditions of the people, buy their land at lower prices than they are worth.

Faced with this situation, there is a need to look for alternative forms of development for communities that have seen how resources are running out and for which support is less and less daily.

Tourism emerges as an alternative to complement and develop communities in certain areas with tourism potential.

Rural tourism and agritourism make up a tourist modality, through which a range of recreational activities, accommodations and related services are offered, located in the rural environment and aimed at people who seek to enjoy the tranquility of the countryside, to be in contact with nature and with the local community. With this, it is sought that rural communities participate in the economic spillover caused by tourism and recreational displacements. In some cases, private companies come to this type of tourism development which may mean that the living conditions of the populations are modified and this in turn leads to the eviction of their lands, damage to the ecosystem and natural resources, migration to other regions,
among others, it is for this reason the importance of the evaluation of the management system in the natural resources of any community or zone with tourism-rural development potential. Sustainability plays an important role in these cases because it is the basic and priority objective for a tourism development, in addition to be a profitable business, it must improve the resident's quality of life.

The community of Canoas has great wealth of natural resources such as its endemic flora and fauna, in addition to its climate that characterizes it. It has managed to attract the attention of external people and the number of visitors has been increasing. Currently, the great possibilities of applying tourism activity in its rural branch and activities in the natural area have been recognized. The population is willing to participate in activities that can make their locality a place of development to improve their economy.

2. Literature Review

2.1 Sustainable Tourism Development

Today, tourism is presented as a complex system related to a process of steady transformation, either of its user’s activities, tourists, as suppliers of services, which rose less than half a century of real nature as a scenic goal essential the virtual nature or technologically achieved. Tourism is an option to boost development in countries, regions and underdeveloped communities through sustainable programs that drive today governmental and non-governmental organizations worldwide. That is, it is thought that developing countries can develop a relatively stable, thanks to the tourism economy.

The situation is entirely faced in countries of low development, as tourism has been incorporated into rural regions pretending improve their economies by boosting alternative development models, with no positive results for communities who are looted and exclusion the advantages of tourism as shown by the work of Daltabuit. In countries in way of development and rural communities they are managing tourism as a strategy to develop their economies and improve the quality of life for residents.

According to the 1987 Brundtland report, sustainable development policy is limited. At the UN Conference on Environment and Development, known more as the "Earth Summit" and credited in Rio de Janiero in 1992, it was further agreed to the concept of sustainable development and explained in Agenda 21 adopted by the conference. Since then, national governments have adopted sustainability as a fundamental development policy. The World Tourism Organization (WTO) has adopted the sustainable approach to tourism and defined sustainable development as "sustainable development meets the needs of present tourists and host regions while protecting and promoting opportunities for the future. It is conceived as a way to manage all resources so that they can meet the economic, social and aesthetic needs
while respecting cultural integrity, essential ecological processes, biological diversity and the systems that sustain life” (OMT; 1999: 22)

According Masri de Achar et al. (1997: 17) define sustainable tourism development as “Sustainable tourism can be seen as meeting the needs of tourists and host regions today, while protecting and enhancing opportunities for the future” that is sustainable tourism development. It determined by properly manage all resources and ecosystems to meet the socio-economic needs for the long term.

The principles of sustainable tourism for Masri de Achar et al. (1997: 17) are:

- To provide experiences of the highest quality to tourists, as the current needs of visitors are increasingly demanding and require personalized treatment optimal attraction highly qualified services in an environment they can combine and.

- To promote the development of natural and cultural richness of each region and the attractions caring and identity, so that they can contribute to the national heritage, and at the same time remain a tourist enclave.

- To disseminate the advantages and opportunities that tourism brings to the economy and the environment, and that with good management of this, one can see significant revenue, which would be of great help to maintain and improve the prosperity of the country, applying them also the conservation of natural resources.

- Improving the standard of living of host communities, creating jobs and growth opportunities to the population and contributing to the development of parallel services that they can combine to provide better service to tourists.

This allows both urban and rural communities realize all the benefits they receive, and allows cultural interaction between tourists and natives of the place, maintains the preservation of the environment and the proper use of natural resources.

3. Methodology

3.1 Research Questions

In this research it was considered that sustainable development is the alternative means to maintain natural resources for Canoas. Faced with this situation, the following questions arise: is the community and natural resources ready for an application of tourism? What are the possible effects to which they are exposed? Is the potential tourist or visitor aware of the importance of this place and its preservation? What is the current situation of Canoas? To what extent are the commoners willing to participate? And, which areas are suitable for the realization of tourist activities? Based on these questions, the objective is to evaluate the management system of natural resources in the Canoas ejido for sustainable tourism development.
In order to comply with the work objective, the use, use and participation of the community in relation to its resources and possible activities developed in the locality were taken into account.

This research aims to verify the following hypothesis: "the community has adequate resources to develop tourism with a sustainable management system."

The research was developed based on the methodological proposal of the MESMIS (Framework for the evaluation of Natural Resource Management Systems), which allows the use of socio-environmental indicators. Based on this it was possible to know the degree of conservation of natural resources and their use, as well as the contamination or degradation of soil and water of the beaches and coastal zone, the capacity of organization of the population, their participation and quality of life.

3.2 Modeling Volatility

For the correct verification of the proposed hypothesis, the methodology was Framework for the Evaluation of Natural Resources Management Systems Integrating Sustainability Indicators (MESMIS acronym in Spanish).

The way in which information is obtained is of great importance for research. The analysis instruments used in the research are by obtaining information through surveys, interviews, bibliographical consultations and field studies, as well as the monitoring of the aquifer area by means of measuring instruments for water quality.

The measurement scale was defined from the productive zone (coffee plantations and crops) to the region where the population is concentrated and the recreation area (Hilario puddle), which is where the study problem is concentrated. Surveys were conducted on 30 houses, taking into account that the approximate population is 347 inhabitants.

4. Results and Discussion

Delimitation of the indicators for the evaluation. Indicators were set that allow a better channel of research towards specific objectives. The resources to be taken into account are the following: edaphological, hydrological, vegetation and social organization.

The factors that affect the evaluation of the management system are: edaphological, hydrological, vegetation and social. Since these are the ones that can facilitate or hinder the productivity, stability, resilience, reliability, equity, adaptability and self-management of the system because these attributes define sustainability.

The critical points of study that are part of the natural aspect (hydrology, edaphology and vegetation) are also responsible for the economic aspect, since its pedology; for example, it is mainly focused on the harvest and production of coffee. The study of these points allows to know the situation in which the resources are and the use that is given to them.
Knowing the type of population, how much organization exists and the characteristics of society allows understanding the functioning and the current situation, as well as considering a possible future based on their social background, behavior and trends that have led to these days. Society is responsible for the natural aspect, since they are the main consumer of these resources. The evaluation that is carried out requires good reasoning in the face of these behaviors.

The diagnostic criteria and the strategic indicators were determined based on the general indicators that are:

Edaphology: land use and soil quality, are the strategic indicators that lead to a more direct result to determine everything related to the soil.

Hydrology: water use and water quality, this group of strategic indicators are of vital importance since health factors could be determined.

Of the vegetation: vegetation management and reforestation norms, with these indicators the attributes of sustainability of the vegetation that the locality has can be evaluated.

Social: social situation and economic situation, these determinants are fundamental to define the collective capacity and community organization with which the community has to create any type of activity.

4.1 Edaphological situation

In this place, its soils have a mountainous topography in the low part of little agricultural use, an important quantity of big stones, many of them, dragged by natural phenomena (cyclone of 1959); they come from slates, crystalline acid rocks and crystalline basic rocks, which originate clay, muddy and sandy crumbs.

The ejido has different types of resources according to its use:

- Farming lands: These are intended for planting and should be based on the cultivation or cultivable land and the number of trained farmers of the nucleus or group concerned.
- Grazing land or mountain: all ejido must have their lands of forest, pasture or pasture to carry out extractive activities, collection and grazing of livestock.
- Other ejido resources: forests, mines or tourist attractions. Here, although they are property of the ejido, the law allows the commoner to associate or concede the resources to private investors.

The community of Canoas has a high potential for the production of coffee, however the system used is polyculture (refers to the cultivation of different species of vegetation) in which the producer is guided by empirical criteria for the coffee plantation. The technology used is low level, characterized by the extensive cultivation conditions with a rustic production system using as shade the natural vegetation, traditional production techniques and as a result low yields.
The harvest begins in mid-December and ends in April, an activity that demands a large amount of labor; cuts are usually 2 to 4 cuts.

The ejido of Canoas is characterized by having highly fertile lands for the production of corn and wheat. The community grows them, however the production is small so that these products can be commercialized, since it only supplies the domestic needs of the community. This does not mean that it is not important.

Previously they sowed other grains, as they are; rice, sesame and beans. Due to the costs generated by this production, the community was forced to reduce it, until it became obsolete.

Climate is a major factor influencing the production of corn and wheat, but production costs do not rise to such a degree as these grains. The fact that a constant crop activity is maintained prevents soil erosion.

The weather of rains or also known as temporary, are conditioning factors to know which fruit, grain or vegetable will be grown and at what moment. The sowing of vegetables is important for the population since they are a primordial part of the food consumed.

Some time ago the government delivered a batch of coffee plants destined for the increase of production and as support to the Canoas coffee growers, but since this batch came to the community they perceived that the coffee plant was with some particular stains that caused distrust in the peasants, later in some plantations the presence of a plague was detected (bit) which ends with the product (grape), this plague is volatile and the main concern of the producers is that the plague spreads to all the plantations, and the only solution to eliminate the plague is to cut the plant, this situation is of great concern because it takes approximately three years to grow and bear fruit.

It is indisputable that the impact of this situation could be reflected in the economy of the population because this production is the highest income of the comuneros perceived throughout the year and of which they subsist at least half of the year.

With this situation it can be said that the measures to be taken is undoubtedly the search for alternative activities to find other income entries towards the homes of this community such as ecotourism and agritourism. Well, if government aid is taken into account, it is important that it be done in a more constant and careful way so that instead of producing negative effects, as in this situation, there are positive effects that improve the agricultural life of the population of Canoas.

4.1.1 Soil quality

Canoas has a variety in its type of soil; This physically allows a different ecosystem to develop according to the area. The fauna and flora of the place depends a lot on its edaphological characteristics. Below are the types of soil and their characteristics.

4.1.2 Types of soil

The community of Canoas has three types of clayey, muddy and sandy soil.
• The first is characterized by being moderately fertile with clay enrichment, generally of a light red color and its surface rich in organic matter (Tierra topuri).
• The Barroso by accumulation of clay in the subsoil, with low base saturation, is reddish brown and yellow with reddish spots (muddy earth).
• The sandy soil formed mainly by sand that does not retain water and causes it to sink to deeper layers due to the poverty in organic matter and nitrogen. It has a high concentration of salts, deficient in iron, manganese, copper, zinc, boron and other minerals.

The quality of Canoas soil is thanks to its abundant vegetation and this allows a moisture that achieves a fertile soil from which the products take their properties, so it makes good harvests.

In Canoas an outcrop of marble has been found, without any manifestation of current exploitation. However, some national companies have already begun studies for a possible exploitation of the hill owned by the ejido and with deposits of this precious white rock.

Around Canoas, mineral deposits have been located: from iron in hill "El Ocote" with probable reserves of 300 thousand tons and the Arrayanal with possibilities of having copper deposits.

4.2 Hydrological situation

Canoas is characterized by having two streams: Las Peñas that pass through the northern part and Canoas that crosses from east to west, both join in the south to the Cacao river, which is a tributary of the Marabasco river.

Water is a fundamental element for health, nutrition and healthy and hygienic conditions. Its existence and nonexistence, its scarcity or its quality levels are important in the development of a place.

The annual average rainfall of Canoas of 918.2mm. The rainy season includes the months of June to October, in which 89.7% of water falls.

It starts with isolated rains in the second half of May and September is the month of greatest precipitation, which ranges between 390 and 400mm. It registers regular rains in the months of June, July, August and October and presents drought in the months of March to May.

4.2.1 The use of water

The stream Canoas, benefits the irrigation to about 200 hectares and is part of the Rh15 hydrological region (Chacala river sub-basin), in addition, the community crosses several small streams, including: El Ajuatoso, Las Peñas, El Tablón, El Bajio, of Zamaora, El Huizcolotito, Tescalama, Agua Zarca and Arroyito de la Cruz.

As already mentioned, water is used to irrigate crops, through a network of channels that connect the plots. These channels created by the farmers themselves.

The water of the stream as a second use is domestic by means of a water tank, which is supplied from the Canoas stream, from there it is distributed to household outlets through hoses.
using a system called "water by gravity" or "water rolled" that does not have any filter or other purification treatment. For their use some people boil water and others ingest it directly.

For better use, the population has organized into sectors, establishing responsible and liquid distribution schedules.

Another use that is given to the water is recreational, as the inhabitants and visitors bathe in the puddles created by the riverbed along its route. In the Canoas stream, there is an area that locals call “El Charco de Hilario”, and it is the most visited mainly on weekends.

Another attraction of the most visited, is “the waterfall of the cat” since over time the current of water has formed certain modifications in the rocks which formed a small waterfall. This is in the upper part of the community, and in the lower area there are small pools formed naturally, as well as small stone dams formed by the inhabitants.

4.2.2 Water quality

The results are supported by the Federal Law of Rights Applicable Provisions in Matters of National Waters from which we take the specifications to approve the use of water as domestic and the protection of aquatic life.

The second environmental health norm used NOM-127-SSA1-1994 (Modified 2000), establishes the permissible limits of quality and water purification treatments for human use and consumption.

The third norm used was the CE-CCA-001/89 that allows to evaluate recreational water as adequate or not adequate.

The quality of water in the Canoas community is adequate and of good quality, based on an analysis carried out.

4.3 Current situation of the vegetation

Interesting facts emerged in the research as the use of the great plant diversity of Canoas, since in this community it is still important. However, for them it is not a direct economic source, it works as an indirect agent in the production of this coffee. Unlike other places where vegetation (mainly wood) is commercialized.

4.3.1 Vegetation management

The management that applies the most direct society of its wood, is in the home, used as firewood for the cooking of food, as well as construction of simple structures.

It is of great importance to mention, that it happens with little frequency and very low amounts, reason why the area of vegetal resources is not affected by predators of wood.

In this use it is worth mentioning that even when they use wood in home activities, they remain on the margin and with a degree of respect for their resource, since the wood they implement is old pieces that they already find on the ground and the tree is already dry.

As is to be expected, rural or local communities have a limited but stable standard of living with sufficient or sufficient food. So, the soil for its subsistence is of vital importance. This
means that in Canoas, it is still planted and harvested for daily use, and that what is being harvested, is rarely sold in large quantities or marketed as a characteristic product or productive activity. However, it allows the community to use foods of greater reliability, since they are products that they plant for their use.

Owning effective remedies against diseases has been one of the greatest aspirations of man to the serious existential problem (the disease), in time and space, has responded to a variety of strategies to preserve and restore health or tranquility.

As part of the needs of man, looking for those herbs or plants has been an arduous job that does not know for sure who, or where he started it, what is known, are the positive effects that many have had to achieve the goal of cure or keep human health in good condition.

These healing procedures, remedies or plasters have been transmitted orally, from generation to generation. There are so many that accumulate them all, it could be part of a special recipe book.

Although many of these properties of the healing plants have not been scientifically proven, the neighbors maintain that tradition, trust it and put it within the reach of those who at a certain moment need it. Plants, herbs, fruits, roots, leaves and flowers that are used to cure some diseases and pains.

4.3.2 Reforestation

The community society knows the risks but above all the advantages of maintaining their forests, plantation areas and their afforestation in general in good condition. The state of Colima does not have a preservation law or that I declared the Canoas ejido as NPA (Natural Protected Area) nor with legal and institutional reforestation norms. Even so, the ejidal society has established reforestation guidelines that mention the following: "the person who cuts a tree in Canoas has the commitment to plant at least one to two trees regardless of the species. This in order to maintain the ecosystem and that the benefits of this are not exhausted.

According to the interview conducted in the field research (2010) to the commissar of the population, Canoas does not belong so far to any assistance program for reforestation or agriculture. Although it is true, the population has received sporadic support from institutions such as SAGARPA, which has supported the population with coffee plants and technical assistance for the implementation of fertilizers, which, although it is given, is an option for the farmer or commoners to use it. Although most farmers do not use fertilizers, they handle their coffee like organic coffee.

Even though in Canoas there is no high tourist influx or tourism as such, it is intended to keep resources above all of vegetation and flora for conservation as a tourist attraction in the future and if the commoner decide so.
4.4 Socioeconomic situation

The socioeconomic aspect of a place is determined by different factors such as: the resources are necessary for their survival, their customs and traditions, the necessities, the productive activities and the collective capacity of the community.

Canoas is a community that is aware of the socio-economic changes, as well as the decadence and limitations that are suffered in these times that undoubtedly affects rural communities and even entire countries. Therefore, the current situation of the community is peaceful as it has always been, that is, the community has managed to adapt a lifestyle that allows it to be self-sufficient.

On the other hand, the organization of the community at present influences to a great extent since its associative capacity can have the effective control of its economic and social activities with the objective of improving its situation.

It is then that the economy and society are the most important factor for an evaluation that determines the good management of natural and cultural resources and a sustainable preservation.

4.4.1 Social situation

The political organization of this type of community is directed or represented by a municipal commissioner, who is in charge of publicizing information for the community, in the same way is a manager to the needs of the population.

The common land’s commissioner is in charge of the agrarian questions; he and his assembly distribute and regulate the resources assigned to the field as well as a policy or regulation of the lands. That person, as a representative, is responsible for managing support and field assistance programs for the benefit of the commoners of the community.

The customs and traditions of the locality have been maintained thanks to the fact that they preserve transmitting them from generation to generation, and being so deeply rooted in them has allowed them to preserve their customs without having to transform them.

Economic situation

This ejido has allowed a productive community to develop. The population has been identified by its strength and conservation of agronomic customs and the high quality of its coffee.

Within this productivity and functionality, there are also important aspects that hinder an alternative development, it is clear about tourism.

This region has been awarded this development option mainly for its natural attractions, however, society, even when it agrees to this activity, is not fully prepared for this change since one of the situations that most affects this item, is the lack of young entrepreneurs and interested in the community, not precisely to agriculture, but to that tourism focus.
The community receives an income in greater quantity of an annual form, this means that what is harvested and managed to be commercialized in the coffee cooperative that takes place once in the year and that goes from the middle of the month of December to the month of April, is the largest income in your economy throughout the year.

As a second income the community has its small productions of vegetables, corn, sugarcane and fruit trees, which integrate them into their diet to survive and in some cases sell them in small quantities or as an exchange for other goods for their sustenance.

Another entrance to their income is the sporadic support they receive from their children who work in urban areas or abroad.

5. Conclusions and Recommendations

Canoas has the essential potential to make it a place with possibilities for sustainable development in the tourist and agricultural fields.

Based on the objective of this research that is to evaluate the management system of natural resources in the ejido of Canoas for sustainable development, it is determined that the state in which the resources of the community are currently located is the propitious to implement alternative activities that allow agricultural and tourism development to improve the quality of life of the population.

Through the attributes of the methodology that was determined to carry out the research, the necessary guidelines for evaluating sustainability were followed, which have been mostly applicable to issue a judgment and provide suggestions that allow an improvement, raise strategies and recommendations that give rise to a new cycle in the management system.

According to the analysis that was carried out, the participation of the government, the private sector and the community must be considered for when a project is intended to be carried out, no matter how small, since this way there will be greater control, they intend to do, they can be more involved and they can demand the results that have been programmed according to the objectives.

The community of Canoas has adequate resources to develop tourism with a sustainable management system.

Finally, based on what has been raised, a series of more viable recommendations emerge that are described below:

Ecotourism and agritourism as an alternative to local development. This activity must be managed through a regulatory committee that is in charge of the use, use and preservation for a tourist purpose with benefit to the community. The cooperation on the part of the municipal and state authorities. Manage with them the integration to municipal and state programs that commit them to give constant support and encourage the development and promotion of this area. Determine the load capacity. Determine and order the space where tourism activity will
be developed to avoid the deterioration of natural resources. Health measures for coffee plantations. This in order not to put the crop at risk for some kind of contaminant that visitors may bring in their footwear or clothing. Preservation of aquatic life. Determine a protection zone and hatchery for different species that serve as food supply for the community.

Tourist zoning Identify and group areas with tourism potential in terms of quality and quantity to justify the development of the activity. Exploit medicinal vegetation. Through botanical gardens that allow visitors to know the characteristics and benefits of this type of vegetation.

Training. Seek the advice of experts and official agencies to give good management of resources and create marketing strategies. Determine the services and activities that will be offered. For example, implement ecological workshops, interpretative hiking, rent of bicycles, rent of horses, rent of cabins, zipline, temascales (Mexican traditional sauna), etc.

References

Rivera Sánchez, Liliana.: El discurso de la participación en las propuestas de desarrollo social en Sociedad Civil Vol. 7. Mexico DF.


