

**Socio-economic Outlook Municipality of Calakmul**

FAJARDO-Edith†, CRUZ-Andrea, PÉREZ-Luis, BARRERA-Francisco & MEDINA-Fernando

*Universidad Autónoma de Campeche.*

Received July 4, 2014; Accepted December 4, 2014

---

**Abstract**

This paper aims to provide elements to determine the socioeconomic impact of the Municipality of Calakmul, through the design of public policies, infrastructure and road connectivity and sustainable tourism management, according to your needs today because of his recent appointment as Joint Heritage Site awarded by United Nations Educational, Scientific and Cultural Organization and the three government levels displayed as a trigger for the development of this region.

**Regional development, public policy, tourism management, infrastructure and connectivity.**

---

**Citation:** FAJARDO-Edith, CRUZ-Andrea, PÉREZ-Luis, BARRERA-Francisco & MEDINA-Fernando., Socio-economic Outlook Municipality of Calakmul. ECORFAN Journal-Spain 2014,1-1:38-57

---

---

† Researcher contributing first author.

## Introduction

A proper diagnosis, followed by a thorough analysis of the aspects that generate development in a region can provide information to support decisions made by the different actors involved in this process.

The paper presents an analysis in order to present the evidence to determine the impact generated by the appointment by the Organization of the United Nations Educational, Scientific and Cultural Organization (UNESCO) to Calakmul and Mixed Heritage, from design approaches public policy, infrastructure and road connectivity and sustainable tourism management.

At the heart of the political system it is the making of public policy: those positive choices that lead forward and make it mandatory compliance with the wishes of those who influence the political system. But the making of government policy is not only the center of political functioning same: it is also the most flexible and useful point you can choose to examine the political system as a whole.

In formulating policy channeling see all influences within the political system. Ultimately, the efforts of individuals and groups aim to influence the making of public policy. Certainly, we could define influence as the ability to choose those who have to decide, or to direct its action. The mobilization of voters by the parties; politicians, lobbyists and proselytism of interest groups, the activities of individuals and powerful elites: all these movements converge in charge of deciding, when engaged in shaping public policy.

Or, viewed from another perspective, we say that the act through these people responsible for deciding the political system as a whole must choose between demands and conflicting interests that weigh into it.

The various parties, interest groups and individuals want the political mechanism agrees to meet their standards, each recommended; that are a public benefit programs, or give preference to their interests. The choice between these competing interests and collide, is performed by determining public policy.

The dynamic growth of world tourism with the passage of time has made changes that require an offer adapted to the needs, demands and tastes of consumers. This series of changes implies that public and private organizations responsible tourism management reformulate strategies for developing tourism products with greater feasibility and socio-economic profitability. To produce these changes, it is required that these organizations are under a holistic approach to development of tourist destinations, involving social, economic, cultural and sustainability aspects.

According to the above, the objective of the prospect of Tourism Management is to determine the most relevant aspects of the tourism product of the Municipality of Calakmul, which can subsequently generate a municipal tourism management model with which to promote economic activity, which in once the quality of life of its citizens is transferred.

The transportation infrastructure in Mexico presents margins maneuver requiring urgent carry out a great deal of public investment to continue construction, modernization and reconstruction of the road network throughout the country.

Roads, highways and bridges are the basis of the transport infrastructure in Mexico, which has contributed to the economic, social and cultural integration of the nation, to promote trade between the main centers of production and consumption, strengthen coordination production chains and industrial corridors, as well as industrial activity and competitiveness of the economy as a whole.

In this sense, infrastructure is eminently social character and can be considered as elements of paramount importance, since through them is possible: the permanent communication between population centers with regional development centers, centers of consumption and production in rural areas; access to large groups of rural population to health services, tourism and education and better opportunities for employment and development in general.

### Background of the Municipality of Calakmul

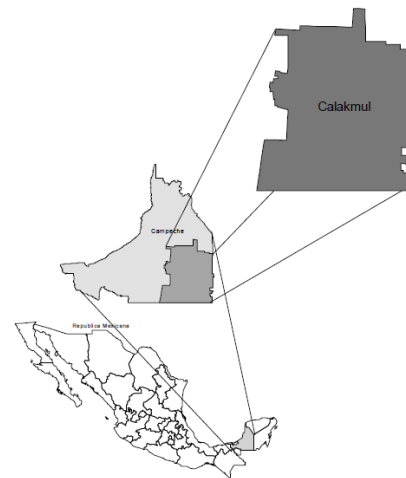
#### Creation

In 1981 the Congress of State decree number 91, issued a new Organic Law of Municipalities of the State of Campeche, where the municipal section of Xpujil, in the municipality of Hopelchén is created. This Act shall be published in the official newspaper of December 7, 1981 and entered into force the following day.

Subsequently, by decree No. 244 of the Fourth Legislature of the State Congress, published in the official newspaper of December 31, 1996, the municipality free Calakmul is created.

#### Municipal Geographic Location

The City of Calakmul (in Maya, City of adjacent mounds), has an area of 14,681 km<sup>2</sup>, representing 25.8% of the territory of the state of Campeche (POET, 2002). It is located between latitudes 19 ° 12' 17" and 17 ° 48' 39" north latitude; and in the meridians 89 ° 09' 04" east longitude and 90 ° 29' 05" west longitude (Figure 1).



**Figure 1** Location of the Municipality of Calakmul, Campeche, Mexico.

The municipality of Calakmul in its northern borders with the municipalities of Champotón and Hopelchén, south to the Republic of Guatemala; on the east by the state of Quintana Roo and the country of Belize; and west by the municipalities of Escárcega, Candelaria and Carmen. (PDM Calakmul, 2012)

On August 4, 2014, the Organization of the United Nations Educational, Scientific and Cultural Organization (UNESCO) officially handed to President Enrique Peña Nieto, the certificate that recognizes Calakmul as Well Mixed in List Real Heritage, by cultural and natural features of this ancient Mayan city.

The area of Calakmul has more than one million hectares of forest and it is assumed that there are more than 6000 structures, but only 5% has been discovered. It is one of the five capitals of the Mayan world and live in it 1,569 kinds of flora, 48 species of fish, 19 types of amphibians, 84 reptiles, 489 birds and 107 species of mammals.

However, with all the tremendous splendor of this archaeological site and biosphere reserve in 2013 only 23,400 people visited him, placing it 47th out of 187 archaeological sites monitored by the National Institute of Anthropology and History (INAH).

In Campeche are 17 of this type of archaeological, several with a monumental historical significance sites, but the tourist infrastructure is so limited that few travelers choose to visit. Within the project works of the Federal Government, strengthening the tourist corridor that runs from the town of Conhuás and Xpujil Constitution where there are communities with great potential and archaeological at roadside areas are expected. Part of the strategy lies in putting up long term that includes the municipal tourism plan in a range of 30-40 years, a visionary plan.

## **Development**

### **Public Policy**

Undoubtedly municipal governments in the current scenario play a fundamental role and it is expected that each day play an even more important role. Federalism is adjusted and reconfigured from the new role that local governments acquire. The result of this scenario is that municipal governments expand their vision and action space, and thus expand and deepen their policy agenda.

In Mexico local governments are also gradually transformed. While the centralist tradition of this country is rooted in the depths of culture and government practice, it is nevertheless clear that things change. However, apparently they are the same pressures of citizenship, the growing political pluralism, new styles of government leadership, and greater professionalization of local officials, which is pushing more force to transform municipal governments.

The model policy analysis emerges as a field of study and reflection from the work of Lasswell (1951 and 1971), since the understanding government and social action as an action resulting from an institutional framework and a set of actors with different interests involved in addressing public problems, has been a rich way of interpretation. The literature on public policy is wide, much of it focuses on the analysis of the four stages of public policy are: problem definition, policy formulation, implementation, and evaluation (Lasswell, 1951).

The analysis of public policies defined within the public as a place of convergence between public servants and society, which promotes a plurality of public action (Cabrero, 2007). So the construction of a policy agenda is itself a difficult process through which a host of public issues that must be addressed by public servants leading to the prosecution accepted.

Therefore, the definition of problems is the first step for all involved to define their positions and influences to locate the public issue between conflict, negotiation and will take place on the agenda. Later in the formulation phase and policy with rational and technical experts in the field arguments are proposed and reconcile interests and preferences of various social groups.

However, implementation of policies generates negotiation and conflict between the major players again; diversity of participants conducive adjustments between actors and building arrangements between them. It is clear that the evaluation of policies above is repeated even expands and intensifies. The City of Calakmul, is no exception in its Public Policy Workmanship, direct contact with claimants locally becomes the natural space of the dispute for federal resources, projects, associations and nongovernmental organizations (NGOs s), to name a few.

Looking at the National Development Plan Campeche (PED, 2009), regarding the Municipal Development Plan Calakmul (PMD, 2012), where the first mark the guidelines of public policies in the state, where there is no consistency from vision, mission, principles and values to the process of accountability (Table 1).

Campeche State Development Plan 2009-20015	Content	Municipal Development Plan Calakmul 2012-2015	Content
<b>Presentation Vision, Mission, Values and Principles.</b>	State progressive, modern with quality and safety of life. Strategy for growth and development.	<b>Presentation</b> Introduction and Legal Framework.	Prosperous town, tidy able to generate progress and prosperity for its people.
<b>Strategic Axes:</b> <b>Axis 1: Education for Progress.</b>	Make education the most valuable promoter and promoter of the progress and quality of life of Campeche	Municipality of Calakmul, Campeche.	Current conditions in which lies the town of Calakmul, historical origin, geographic location.
<b>Axis 2: Economic Growth.</b>	To promote a more dynamic economy, which translates into better opportunities for all regions of the state.	<b>Mission, Vision and Values</b>	Public entity responsible for managing and strategically manage economic, natural and human resources.
<b>Axis 3: Social Development and Welfare.</b>	Generate development conditions for better welfare population Campeche, in solidarity with the people and families in situations of marginalization and vulnerability.	Citizen demands and proposals	Municipal competencies, improve water service and maintenance of existing infrastructure, create sports infrastructure and manage sports unit.
<b>Axis 4: Responsible and Modern Government.</b>	Ensuring government leadership and coordination capacity to generate comprehensive security conditions and respond with results hearty confidence.	<b>Objectives, Strategic Guidelines and Actions</b>	Territorial integration of public policies, efficient and transparent public security administration, justice and civil protection, access to services and infrastructure, social and human.
<b>Evaluation and Monitoring Plan.</b>	Democratic planning requires periodic evaluation of the implementation of strategies and action lines considered in this tool to reorient the way when necessary.	<b>Monitoring Evaluation and Monitoring</b>	The committees established based on the guidelines of COPLADEMUN, meet at least once every six months to assess and correct if achievements.
<b>Attachments</b>	Map: Strategy and Organizational Chart COPLADECAM connectivity.		

Table 1 Comparison of Development Plans

The complexity of Calakmul when developing their public policies and strong heterogeneity, required to build and improve mechanisms that support the development of its various activities (forestry, tourism, agriculture, etc.). Couple that concern the forms of action of the Municipality in the State, for their constant dynamic strain owing to the precise location of the "moments" and "places" materialization of the shares underlying policies. The challenge then is to separately analyze each type of public policy, limiting its own sphere of municipal institutional action and establishing a focus to identify the study and reflection in terms of change, inertia and stagnation (Table 2).

	Formulation and design	Implementation	Evaluation
<b>Often responds to urgent demands</b>	Little time for deliberation	Immediate link between decision and action	Shortly maturation for policy evaluation
<b>Defining the problem</b>	Imitation in designing solutions	Little formal regulation effective	Feedback from the degree of citizen satisfaction
<b>Restricted Time horizon</b>	Innovative design solutions	Very effective social regulation Proximity control	Weak impact assessment of policies

Table 2 Characteristics of process makings of municipal public policies.

Public policy occurs spontaneously linking government with citizens, necessitating generating schemes that motivate the organization, participation and civic responsibility. Therefore, strengthening communication channels and clear and timely information to citizens about public policy within the municipality, information is critical to create a scenario of trust, respect and collaboration between the municipality and responsible citizenship premise.

### Infrastructure and Connectivity

This corresponds to the area of economic infrastructure, under which is the modernization of a road whose main objective is providing permanent access and contribute to the development of a region by improving traffic conditions diverse communities within the municipality in southeastern state of Campeche.

The roads are considered may have a greater impact and relevance to the process of development in the municipality are:

- Campeche-Hopelchén-Dzibalchén-Ukum-Xpujil
- Edzná-Kikab-Centenary

Both routes have an ongoing development of 5.0 meter wide carriageway and are classified as a lined country road, "D" (SCT, 2012), the problem is given by the presence of faults in the stability of road cuts, water concentrations in various sections, causing subsequent erosion, landslides due to the slopes of the result slopes on the terrain hilly with that account, leading to this low speeds and high travel times experienced by users circulating current path. This causes them to incur high generalized travel costs and increase the likelihood of accidents.

In addition to traffic conditions described above, the problems in the difficulty of transporting goods, food and people from the surrounding towns are short, and access to goods and services (health, tourism, education, etc.)

It is worth mentioning that there is no alternative solution to the problem of inaccessibility communities Castamay, San Antonio Cayal, Cruise San Luis, Konchén, Pakchén, Chunchintok, Ukum, Bel-Ha, El Refugio, Zoh-Laguna (for the Hopelchén side) and Archeological Edzná area, Melchor Ocampo, Kikab, the poison and Centenario (on the side of Edzná), as currently these are the only lines of communication between these communities, which simultaneously allows communication directly with the municipality of Calakmul.

The general objective to modernize the network of roads that arises, is to help promote the development of regions with greater backlog in road infrastructure, under which investments are aimed at carrying out works to address those areas and localities more remote, and therefore the most vulnerable and most marginalized, in order to fulfill its purpose of making more safe and efficient movement of goods and people moving through them, and to achieve higher speeds scroll different areas, contributing greatly to the reduction in vehicle operating costs and travel times, achieving greater integration and competitiveness in the economy of the region. Spotlight: For both situations, the values reported by the Mexican Institute of Transport (IMT, 2008), on techniques for vehicles operating in Mexico features as well as representative roadway characteristics for different types of land were considered, hilly and mountainous.

Current operating characteristic of the path is determined by the state of the road surface, which despite being coated, has bumps, perms and significant deformations; allowing an average vehicle speed of 21 Km. / h.

So the route covered by roads: Campeche-Hopelchén-Dzibalchén-Ukum-Xpujil; and Edzná-Kikab-Centennial, both with ongoing development of 5.0 m. road width, are held in each in a running time of more than 4 hours. According to World Bank studies, in the case of unpaved roads with a general profile with frequent depressions and / or bumps (eg 40-80 mm / 1.5m) and occasional deep depressions (eg > 80 mm. / 0.6-2m), the right speed for a comfortable ride is 20-30 Km / h. The higher speeds (40-50 km. / H.) Cause extreme discomfort and possible damage to the vehicle.

Roads: Campeche-Hopelchén-Dzibalchén-Ukum-Xpujil, and Edzná-Kikab-Centennial, both with ongoing development of 5.0 m. wide roadway, are classified as rural which way according to their geometrical features is classified as a type "D" road coating level in very poor condition, with a crown width of 5.0 m., a maximum slope 8% and a maximum degree of curvature of 17 °, features coupled with the road is located in a hilly area and there is a conjunction of humid climate with summer rains, currently there are flaws in the stability of road cuts, water concentration with subsequent erosion, landslides due to the hilly terrain type with which account, leading to this low speeds and high travel times. This implies that the costs of maintenance and repairs, forcing season storm highest rainfall the need for equipment, personnel and equipment is taken to keep the road traffic conditions rise.

This project is located in the Southeast region of the State of Campeche whose length includes the municipalities of Campeche, Escárcega, Hopelchén and Calakmul (Table 3). The following table shows the current situation:

concept	Situation without project
Path: Campeche-Hopelchén-Dzibalchén-Ukum-Xpujil	
fitness	bad
Lane number	February
Carriageway width (m)	5.0
berms	almost zero
Operating speed (km / hr)	21.0
Travel Time (min.)	4 hours 40 min. Approx.
TDPA	350
Type of land	Lomerío

**Table 3** Current status of the road infrastructure.

The risks associated with the social demand for additional work at the time of construction, delivery delays due to technical problems and inflationary phenomena, which could increase the cost and execution time. Likewise, if the modernization of roads is not realized: Campeche-Hopelchén-Dzibalchén-Ukum-Xpujil; and Edzná-Kikab-Centennial, both with ongoing development of 5.0 m. width of road, would have to be continuous maintenance to the coating layer, having to perform each time the rainy season comes, this with a minimum of four times a year, it is necessary to improve the vertical and horizontal alignment, which is not feasible because it represents a very high cost of resources and personnel would be required to act upon the maintenance of road infrastructure making it completely unaffordable.

### Tourism Management

The tourism management has become a strategy of government and business that enables result in economic activity in a region, country or city. The dynamics in this sector makes it dominant updating and adaptation of models of development, planning and tourism management.



This transition is that the Fordist model or mass, still deployed and acceptable, requires adaptation for best performance in meeting the needs of tourism consumption, ie strategies also focus to the motivational, temporal and territorial aspects (Ávila and Barrado, 2005). These needs should be considered and understood to be adequate to deal with aspects such as quality, consumer products, environment and territory (Figure 2).

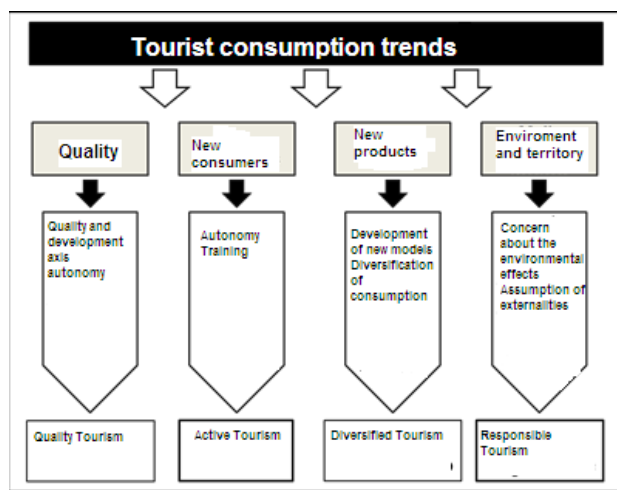


Figure 2 Needs requalification of Fordist tourism model

The global tourism has an impact on various sectors, which causes flow of people and thus an economic flow, which can be channeled to promote socioeconomic development in the target region, because it is one of the economic activities where market consumption is performed in situ and intensify their economic benefit to other areas of the economy. This growth is contributed through the creation of jobs, businesses and infrastructure. In addition, tourism continues to diversify across destinations and activities.

Part of the expansion in this sector can be visualized by the results of their statistics, the most representative that produces 9% of world GDP, which generates one of every eleven jobs, provides 1.4 billion dollars in exports, contributes 6% of international trade has grown from 25 million international tourists in 1950 to 1,087,000 in 2013 and 2030 will increase to 1,800 million tourists (WTO, 2014).

Tourism product planning should be based on the development of a holistic experience that allows leave in the past that the tourism product is only obtained through natural or historic resources, but to promote tourism product design where the tourist is part of the experience. Dredge (1999) mentions that it is essential that tourism is integrated into the public agenda to achieve a local or regional planning destination.

The City of Calakmul has the necessary conditions for having an attractive tourism product, following the appointment of Joint Heritage officially delivered by UNESCO on August 4, 2014 (SRE, 2014). It is noteworthy that Mexico has 32 properties inscribed to this organization, of which 26 are cultural, 5 natural assets and only mixed well (INAH, 2014). Therefore, the importance of this appointment to Calakmul, which strategies and projects to do what a destination for world tourism will be derived.

Based on the jurisprudence of the tourism sector, the General Tourism Law (LGT) states that the tourist matter comprises the processes arising from the activities carried out by people during their time traveling to and staying in places other than their usual environment places, with for leisure and other reasons (LGT, 2009).



This Act broadly aims to establish bases for coordination, planning, programming, maintenance and utilization of national resources and tourist attractions, emphasizing the natural, cultural heritage and promoting ecological balance through the regulations that have resulted in a national tourism system.

A fundamental part of managing the municipality of Calakmul in relation to tourism, lies face what stipulates Chapter VIII, Article 32 also which states that States and Municipalities should develop, conduct and evaluate tourism policy, aligned to the National Plan Development and Tourism Sector Program.

Based on the provisions of the LGT, Article III, Section XXI, defines Sustainable Tourism Development Areas, as those parts of the country that have natural or cultural features that constitute a tourist attraction. Another challenge is dealing municipality which states Chapter VIII of that Act, Article 32, which states that protected areas may not be part of the Sustainable Tourism Development Zones. Clearly the solution is to propose to the Ministry of Tourism (SECTUR), the draft declaration of Sustainable Tourism Development Zone to the Calakmul Biosphere Reserve. But part of the problem centers on there yet Regulation with defined procedures and requirements for requesting the declaration, nor the Regulations for the establishment of tourism land use planning, which is essential to trigger sustainable tourism.

To design a new tourist product, it is important to define a strategic framework for action, which are considered quality issues, new products, sustainability, collaboration networks, local and regional development (Ávila and Barrado, 2005).

From this latter concept is important to consider the synergy, mainstreaming and integration between the different productive sectors to achieve an integrated territorial development. Having Calakmul a product with the potential for sustainable tourism development, it is appropriate to create a mechanism to prevent deterioration, promote the maintenance and conservation of natural and cultural resources, but especially the identity of the destination, which serve to differentiate the competition tourist destinations worldwide. Frangialli (1999) mentions that sustainable tourism goes beyond environmental conservation and cultural, as it must become an element that give visitors a high quality experience.

A fundamental part of the determination of the tourism product is constructed through the argument of sustainable tourism development. To understand the concept of sustainability, we must start from the definition within the Brundtland Report, which describes it as: meeting the needs of the present without compromising the ability of future generations to meet their own needs (World Commission on Environment and Development, 1998).

You identify the potential for heritage tourism product becomes a fundamental tool for a planning according to market requirements and the ability of the territory to generate the necessary elements to manage tourism. This heritage interpretation is based on the implementation of a set of methods and techniques of strategic communication used to externalize the meaning of a place which is visited by the public, and understanding how performance as the adoption of an attitude of respect, appreciation and contribution to the conservation of the place you decide to go (Morales, War and Serantes, 2009).

Another definition is that proposed by Aldridge (1975), which concludes as heritage interpretation, as the art of explaining man's place in their own environment, in order to increase visitor awareness regarding the importance of their interaction with the target, and promote interest in contributing to the conservation of the environment in every way.

Tilden (1957) made a number of interpretive criteria which are based on the following principles: spark interest and curiosity; interpretive activity related experience; reveal through a comprehensive topic interpret the main message; an interpretative equation based on knowledge of the recipient (CD), knowledge of the resource (CR) and using appropriate techniques (TA) that produce interpretive opportunities (OI).

$$(CD + CR) TA = OI$$

The origin of the interpretive process is necessary because communication is required between units of information. The interpretation should preferably be performed in situ, because the contributions of the different participants enrich the experience. It is therefore important to determine the profile of visitors through their individual characteristics and group, some of the aspects that make up the profile are: age, disability, foreknowledge, place of origin, point of departure, number of people, expectations, duration of visits, distribution of visits (Figure 3). This, confronted with the human resources available in the destination as the local or floating population will be actively involved in providing the related services and unrelated to tourism.

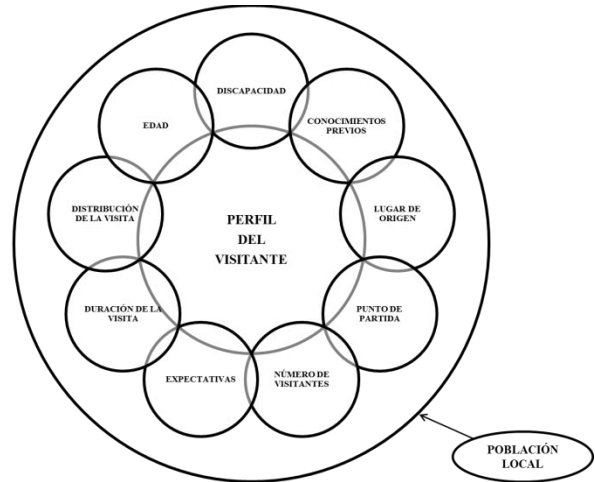


Figure 3 Determination of the visitor profile.

The importance of the success or failure of tourism management in planning fall through the local population, which contributes positively or negatively on tourism product through the implementation of strategies and policies. The bodies responsible for the interpretation of the tourism product, which in turn are decision-makers in the area that will be influenced are: public administration; associations and groups involved in benefit of the resource object of interpretation, representatives of the communities involved; experts and professionals in tourist interpretation; employees, employers, managers and landowners (Figure 4).

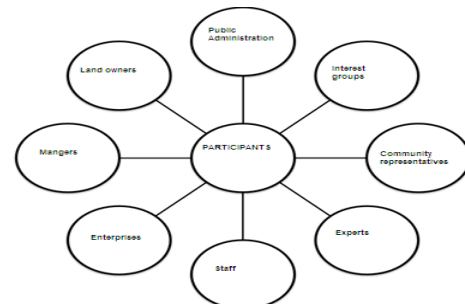
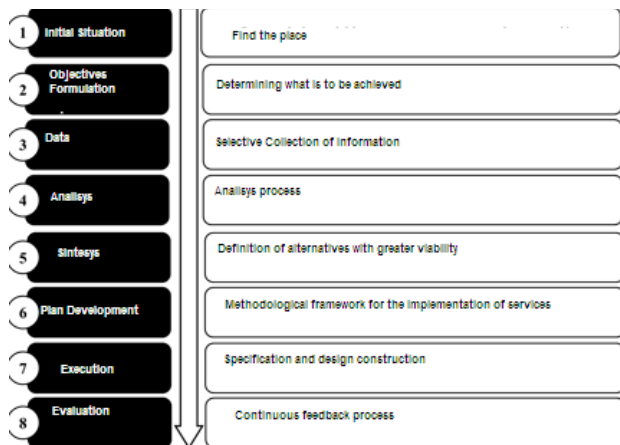


Figure 4 Participants in interpretive planning in the identification of heritage.

Interpretive planning is a tool that can support the development of tourism management model. As Howie (1975) and Peart and Woods (1976) points out, it becomes a guide to the guidelines to be followed to determine the plan of tourist interpretation. The recommendations proposed by Sharpe (1982) and Bradley (1982), are based on developing the planning stages, that will address the problem or opportunity area (Figure 5). The steps proposed are:

1. Initial situation.
2. Formulation of planning objectives.
3. Gather Information.
4. Analysis.
5. Synthesis.
6. Development Plan.
7. Implementation.
8. Evaluation and monitoring.

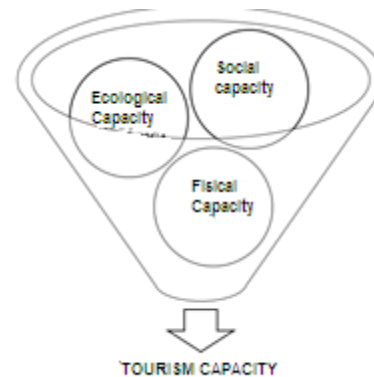


**Figure 5** Process, development and implementation of Interpretation Plan Tourism Product.

It is noteworthy that the process has a logic, however, in reality does not necessarily have to develop in this way.

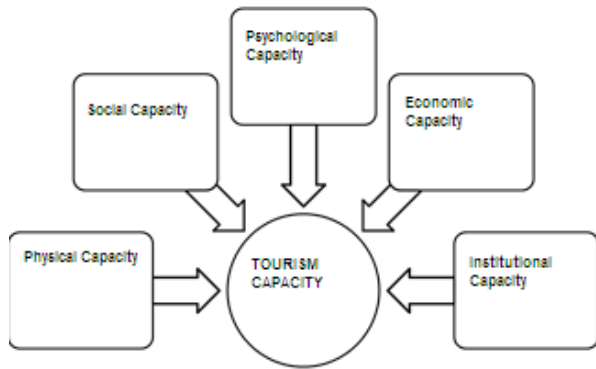
Similarly, it is important to make a diagnosis of the current situation on the ability of tourism infrastructure.

Pedersen (2005) notes that there are three types of capabilities host: host physical ability, related to the facilities available; host ecological capacity, which refers to the limitation that has the ecosystem to tolerate human interference to maintain a sustainable operation; and the ability of social acceptance, which refers to the limit related to the number of people in a given space that can impair recreational experience and user satisfaction (Figure 6).



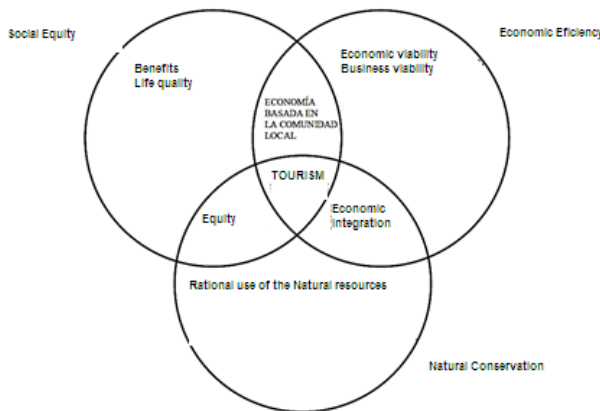
**Figure 6** Capacity of tourist facilities.

This same concept is developed Vera (2001), calling capacity, by integrating meanings: physical carrying capacity, which refers to the threshold beyond which appear environmental problems; capacity for psychological or perceptual load, which refers to the limit beyond which tourists seek alternative destinations; social carrying capacity, determined by the limit to where locals tolerated tourism; capacity economic burden, defined as the limit to which you can integrate tourism without showing displaced other activities. For his Butler (1997) part, incorporates another meaning called institutional capacity load, which refers to public administration to regulate and control tourism growth (Figure 7).



**Figure 7** The concept of carrying capacity for tourism.

Due to the appointment of Joint Heritage, Calakmul requires developing tourism development schemes based on sustainability. Vera (2001) states that sustainable tourism model must consider three approaches: economic efficiency, social equity and environmental conservation (Figure 8).



**Figure 8**

The World Tourism Organization (1995), determined indicators related to sustainable tourism planning for determining the capacity of the destination to be a sustainable concept (Table 4).

INDICATOR	SPECIFIC MEASURES
<b>Site protection</b>	
Pressure on the site	Site Protection category according to the index of the International Union for Conservation of Nature and Natural Resources.
Intensity of use	Number of tourists visiting the site.
Social impact	Intensity of use in high season (person / hectare).
Development control	Ratio between tourists and residents
Waste Management	Existence of environmental review procedures or formal controls the development of the site and densities of Use.
Planning process	Percentage receptor wastewater treatment site.
Critical ecosystems	Existence of organized tourist region regional plan.
Tourist satisfaction	Number of rare or endangered species.
Satisfaction of the local population	Level of visitor satisfaction.
Contribution of tourism to the local economy	Satisfaction level of residents.
COMPOSITE INDEX	Proportion of local economic activity generated by tourism only
<b>SPECIFIC MEASURES</b>	
tourism capacity	Composite measure of early warning of key factors affecting the site's ability to support different types of tourism.
Pressure on the site	Composite measure of impact levels site.

**Table 4** Key Indicators of sustainable tourism.

The City of Calakmul, has cultural and natural heritage, the first focused mostly Mayan culture and the second consists of the Calakmul Biosphere Reserve, thus the importance of defining both types of heritage is generated. According to the Convention on the Protection of the World Cultural heritage and natural UNESCO (1972), Article 1 is defined as "cultural heritage":

- Monuments: architectural works, works of monumental sculpture and painting, elements or structures of an archaeological nature, inscriptions, cave dwellings and combinations of features, which are of outstanding universal value from the point of view of history, art or science ,

- Sets: groups of buildings, isolated or combined, their architecture, and integration into the landscape, are of outstanding universal value from the point of view of history, art or science,

- Sites: works of man or the combined works of man and nature and areas including archaeological sites which are of outstanding universal value from the point of historical, aesthetic, ethnological or anthropological.

Article 2 of the same document, defines "natural heritage" as:

- Natural features consisting of physical and biological or groups of such formations, which are of outstanding universal value from the point of view of science or conservation formations,

- Geological and physiographical formations and precisely delineated areas which constitute the habitat of species of animals and plants, threatened, which are of outstanding universal value from the aesthetic or scientific point of view,

- Natural sites or precisely delineated natural areas of outstanding universal value from the point of view of science, conservation or natural beauty.

Natural areas are also likely to be integrated as part of tourism. However, in protected natural areas obstacles to economic development are presented. According to Garcia (1998), protected natural areas are usually configured as nuclei of economic impoverishment of its inhabitants, where the State or other public authorities, trying to preserve biodiversity, slow economic processes to not have a detrimental environmental impact.

It is therefore important that the Municipality of Calakmul design and implement appropriate planning of tourism development aligned to the National Development Plan, the National Development Plan and the Tourism Sector Program. Moreover, you are involved in decision-making, through the generation of proposals coming from the strategic analysis of the municipality to provide ideas adapted to their reality. A significant drawback lies with the change in the State Public Administration, as this plan assumes adjustments or renovations (Table 5).

PND 2013-2018	PED 2009-2015	PMD 2012-2015
<b>Axes and tourism strategies</b>	Axis of economic growth	
	Objective 2. To promote a more dynamic economy, which translates into better opportunities for all regions of the State, organized and shared responsibility of government, the private sector and the social sectors.	Goal 7. inclusive economic growth.
<b>Axis México Prospero</b>	Strategy 2.1 Promotion of productive sectors.	Alternative Tourism Strategic line 7.2.
<b>Objective 4.11. Harnessing the tourism potential of Mexico to generate greater economic benefit in the country.</b>	2.2 Growth Strategy of the tourism sector.	actions
<b>4.11.1 Strategy Boosting system and the transformation of the tourism sector.</b>	Strategy 2.3 Consolidation of small businesses as engines of development.	
<b>4.11.2 Driving innovation strategy of supply and raise the competitiveness of the tourism sector.</b>	Strategy 2.4 Promotion of productivity and competitiveness. Strategy 2.5 Strengthening institutions and funds from state credit. 2.6 Infrastructure Strategy to grow. 2.7 Strategy Study of new energy technologies. Strategy 2.8 Sustainable use.	

**Table 5** Comparative from a tourist approach Plans National, State and Municipal Development in force.

## Recommendation

### Policy Proposal for Public Policy

The proposed public policies for the City of Calakmul, focus on two aspects:

Develop municipal public policies long term, subject to implementation and periodic assessment that transcend municipal trienios, auditing objectives and goals outlined plans to give continuity to successful strategic lines or eliminate those dysfunctional.

Furthermore, it is necessary to expand cooperation agreements between municipalities and higher education institutions (HEIs) and research centers for the training of the main actors in the process of the making of public policy and thus address problem statement, discussion, proposal, implementation, evaluation and monitoring of municipal public policies.

Proposal for infrastructure and connectivity

The initiative is the modernization of roads: Campeche-Hopelchén-Dzibalchén-Ukum-Xpujil, and Edzná-Kikab-Centennial, both with current development of 5.0 m. roadway width, extending them to a section of road with 9.0 m. roadway width to accommodate two lanes of 4.5 meters wide each.

Traffic volume of 350 vehicles per day is considered appropriate because under recommended by the Mexican Institute of Transport in its Technical Publication 147.

This states that “a country road with more than 100 vehicles daily traffic, criteria should be considered to be modernized, as traffic volumes for which such proposed modernization between 100 and 550 vehicles “with a composition of 25.0% vehicular cars, 4.0% buses and 71% trucks??

In addition, the modernization of this section helps to fulfill the strategy defined in the National Infrastructure Program 2014- 2018 of Communications and Transport of "developing interregional axes to improve communication and connectivity of the road network Sector and improve the state physical road infrastructure and reduce the accident rate. "So, the alternative proposal is considered the most desirable because it offers the greatest benefits, has adequate capacity to efficiently meet demand and stroke is technically feasible. The modernization of roads: Campeche-Hopelchén-Dzibalchén-Ukum-Xpujil, and Edzná-Kikab-Centennial, both with ongoing development of 5.0 m. roadway width is justified because it fulfills its purpose of making more safe, comfortable and efficient movement of goods and people moving through this way. Benefits for users at higher travel speeds achieved will be taken, contributing to reduced travel times and vehicle operating costs, which translates into increased competitiveness of transport in the Southeast region of the state of Campeche.

In addition to traffic conditions described above profit will allow vehicular traffic generating development activities in this area such as agriculture, livestock, forestry, tourism and trade adds. Notably, according to indexes of marginalization of CONAPO, the municipality of Calakmul is classified as highly marginalized micro region so that correspond to the priority number 2.

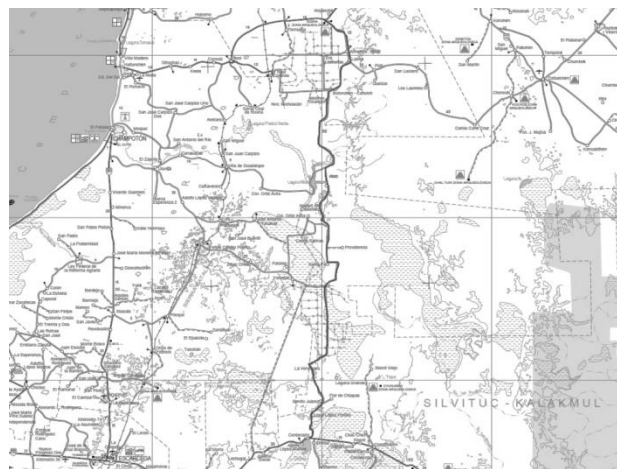


And whereas the current situation of the road does not allow a better link to the capital of the State of Campeche, which is located at a distance of 260 Km. and has more infrastructure in health, education, etc., the project socially justified.

It is considered that the option of upgrading roads: Campeche-Hopelchén-Dzibalchén-Ukum-Xpujil (Figure?), And Edzná-Kikab-Centenario (Figure 11), both with ongoing development of 5.0 m. width of carriageway, is the only alternative for solving communication communities Castamay, San Antonio Cayal, Cruise San Luis, Konchén, Pakchén, Chunchintok, Ukum, Bel-Ha, El Refugio, Zoh-Laguna (by the Hopelchén side) and Archeological Edzná area, Melchor Ocampo, Kikab, the poison and Centenario (Edzná-side) as shown in the sketch of location (Figure 10):



**Figure 9** Proposed Campeche-Hopelchén-Dzibalchén-Ukum-Xpujil, with a total length of 259.53 km.



**Figure 10** Proposed Edzná-Kikab-Centenario, with a total length of 125.0 km.

The existing road to 9.0 meters wide roadway will be widened to accommodate two lanes of 4.5 meters wide each, maximum slope of 8% and a maximum degree of curvature of  $17^\circ$  (Table 8). The pavement will be by hydraulic base of 20 cm. thick, a layer of subgrade with a thickness of 30 cm. and asphalt 5 cm. (Table 9).

concept	Path: Campeche-Hopelchén-Dzibalchén-Ukum-Xpujil
length	259.53 Km.
fitness	Okay
Lane number	February
Carriageway width (m)	9.0
berms	Yes
Operating Speed (Km. / Hr)	70.0 *
Travel Time (min.)	225 min
TDPA	350
Type of land	Lomerio

**Table 6** Road: Campeche-Hopelchén-Dzibalchén-Ukum-Xpujil



concept	Path: Edzná-Kikab-Centenary
length	125 Km.
fitness	Okay
Lane number	February
Carriageway width (m)	9.0
berms	Yes
Operating Speed (Km. / Hr)	70.0 *
Travel Time (min.)	105 min
TDPA	350
Type of land	Lomerío

**Table 7** Path: Edzná-Kikab-Centenario

With the modernization of rural road that is intended to benefit a population of approximately 30,000 inhabitants of the region and improve local traffic circulation and long journey, and to achieve the following benefits: Increase operating speeds.

Reduce travel times.

Reduce operating costs of different types of vehicles.

Provide comfort and safety for users.

Reduce the possibility of accidents at level crossings decreased.

Improve service levels.

Reduce environmental pollution by gases and noise.

The life and skyline evaluation of the proposal is for a period of 30 years, however, life can be prolonged depending on the application of proper maintenance. According to the information presented above and based on the indicators obtained in the present study, the realization of this project is recommended.

With the modernization of roads: Campeche-Hopelchén-Dzibalchén-Ukum-Xpujil, and Edzná-Kikab-Centennial, both with a proposed development of 9.0 m. wide roadway will benefit approximately 30,000 inhabitants of the Southeast region of the State of Campeche, located in the municipality of Calakmul and their areas of influence (Campeche, Escárcega and Hopelchén), fostering the social and economic development within a region considered highly marginalized. . In addition to this, with the modernization of 384.53 Km of this work the following benefits occur:

Permanent access directly provide it to approximately 30,000 residents, impacting directly to several communities belonging to the municipality Calakmul. Alternatively, will benefit from permanent access to the target population to basic services: health, education, water, electricity, drainage, major savings in vehicle operating costs and significantly increase the safety of users.

As a result of increased trade, it is expected that productive activities in the region will increase, mainly in agricultural, livestock, forestry, tourism and trade with the rest of the state, as it will allow the population to reduce operating costs and travel time savings for higher profits on selling their products.

### Proposed Tourism Management

The initiative is based on finding a space in the competitive tourism industry and added to the complexity of the changes in the profiles of tourists, which means that you have to make decisions based on the characteristics of the destination for efficient management resources.

Similarly, it is required to determine which segments of current and potential market profiles determining their detailed specifications. In addition, it is required to determine the potential impact of tourism on the different aspects of the community.

It should take into account the local population before making decisions, determining their vulnerability and what residents are willing to do to contribute to development through tourism. Is leading the creation of a Committee on Tourism Management and Public Participation Program that transparent decision making.

It is important to conduct and manage the Draft Declaration of Calakmul and Sustainable Tourism Development Zone, even though the law does not favor the application of this declaration of protected natural areas.

The planning of the tourism product should be long term, integrating concepts of conservation, improvement and transfer of assets. Is transcendental, that when designing tourism planning policies and analyzing existing objectives, and that is also aligned to existing development plans.

It is elementary that information management should be systematic, through the use of databases, statistics and feedback on visitors, that can generate indicators of tourism management and regulation. This information must be supported by an inventory of infrastructure and tourism products that can diagnose the problems and areas of opportunity. You should consider the design and implementation of a Tourism Regulation, granting legitimacy to the tourism context of the municipality.

Another key aspect is to consider the preparation of the local population, through training and awareness of the tourism product to be developed that allow give quality in different activities.

Promotion and development of business strategies of the tourism product, as promotional campaigns, developing guidebooks, establishing relationships with tour operators and the use of specialized tourism means for communication of the tourism product is required.

It is essential to determine the assessment tools tourism management through the implementation of evaluation methods, questionnaires and indicators necessary to monitor the strategies implemented.

It is essential to determine the carrying capacity, actual and potential, realistically. Similarly, analyzing the capacity increase physical host, also called host of facilities by the WTO, ecological capacity and the ability to host social host.

## References

A Guide to the Project Management Body of Knowledge (PMBOK® Guide), Publicación del Project Management Institute. 2013.

AGUILAR VILLANUEVA, LUIS F. El estudio de las Políticas Públicas (estudio introductorio y edición). GRUPO EDITORIAL MIGUEL ÁNGEL PORRÚA.1996.

AGUILAR VILLANUEVA, LUIS F. La hechura de las políticas (estudio introductorio y edición).GRUPO EDITORIAL. MIGUEL ANGEL PORRUA.1996.

**REGIONAL DEVELOPMENT**

December 2014 Vol.1 No.1 38-57

ALDRIDGE, D. 1975. Guide to Countryside Interpretation. HMSO for Countryside Commission and Countryside Commission for Scotland.

ALONSO GARCÍA, E. (1998). "Turismo sostenible y espacios naturales protegidos: el caso de los parques nacionales". I Jornadas sobre Ecoturismo en castilla y León. Eugenio García Zarza Ed. Salamanca.

ARCHONDO CALLAO, Rodrigo S. Unpaved Roads Roughness Estimation by Subjective Evaluation, Infrastructure Notes, October 1999. The World Bank

ARCHONDO CALLAO, Rodrigo S., Unpaved Roads Roughness Estimation by Subjective Evaluation, Infrastructure Notes, October 1999, The World Bank.

ARROYO OSORNO et al, José Antonio, Costos de operación Base de los Vehículos Representativos del Transporte Interurbano, IMT Publicación Técnica 316, 2008.

ÁVILA BERCIAL, R. y BARRADO TIMÓN, D. Nuevas tendencias en el desarrollo de destinos turísticos: marcos conceptuales y operativos para su planificación y gestión. Cuadernos de turismo 2005, 15; pp. 27-43 ISSN: 1139-7861

BARDACH, EUGENE. Los ocho pasos para el análisis de políticas públicas. Un manual para la práctica. CIDE. Edit. Miguel Ángel Porrúa. 2008.

BRADLEY, GORDON A. 1982. The Interpretive Plan. En: G. Sharpe (ed.), Interpreting the Environment, Wiley & Sons, Inc., London.

BUTLER, R. W. (1980): "The concept of a tourist area cycle of evolution: implications for management of resources", en Canadian Geographer, Núm. 24; págs. 5-12.

CABRERO MENDOZA, ENRIQUE. Coordinador. Políticas Públicas Municipales. Una Agenda en Construcción. CIDE. Edit. Miguel Ángel Porrúa. 2007.

Calakmul, Patrimonio Mundial Mixto de la UNESCO. Secretaría de Relaciones Exteriores. Dirección General de Comunicación Social. Recuperado en: <http://consulmex.sre.gob.mx/presidio/images/stories/2014/hoja.pdf>

Censo 2010. Instituto Nacional de Estadística y Geografía. Recuperado en: <http://www3.inegi.org.mx/sistemas/movil/mexicocifras/mexicoCifras.aspx?em=04010&i=e>

Convención sobre la protección del patrimonio mundial, cultural y natural. UNESCO. 1972 recuperado en: <http://whc.unesco.org/archive/convention-es.pdf>

Criterios que Intervienen en la Metodología de Evaluación Económica de Rehabilitación de Caminos Rurales.; IMT Publicación Técnica no. 147, Sanfandila, Qro., 2000

Criterios que Intervienen en la Metodología de Evaluación Económica de Rehabilitación de Caminos Rurales.; IMT Publicación Técnica no. 147, Sanfandila, Qro., 2000

DREDGE, D. (1999). Destination place planning and design, Annals of Tourism Research, Vol. 26, no. 4, pp. 772-791.

FRANGIALLI, F. (1999). Sustainable Tourism, WTO (OMT), Madrid.

**REGIONAL DEVELOPMENT**

December 2014 Vol.1 No.1 38-57

GARCÍA PÉREZ, J. IGNACIO (coordinador). Metodología y Diseño de estudios para la evaluación de políticas públicas. Edit. Antoni Bosch.2009.

GARZA – ALDAPE, E. Políticas públicas en democracia. Edit. Impresora y Encuadernadora Progreso, S.A C.V. (IEPSA).2006.

Comunicado de prensa No. 206 (2014). Instituto Nacional de Antropología e Historia. Recuperado en <http://www.inah.gob.mx/boletin/249-monumentos-historicos/7235-unesco-extiende-la-inscripcion-de-calakmul-a-bien-mixto-en-la-lista-del-patrimonio-mundial>

Ley de vías generales de comunicación, SCT Campeche recuperado en: [www.sct.gob.mx/informacion-general/centros-sct/campeche](http://www.sct.gob.mx/informacion-general/centros-sct/campeche)

Ley General de Turismo. Nueva Ley publicada en el Diario Oficial de la Federación el 17 de junio de 2009. Recuperado en: [http://secturbcs.gob.mx/wp-content/uploads/2014/07/LEY\\_GENERAL\\_DE\\_TURISMO.pdf](http://secturbcs.gob.mx/wp-content/uploads/2014/07/LEY_GENERAL_DE_TURISMO.pdf)

MASSÉ NARVÁEZ, Carlos E., SANDOVAL FORERO, Eduardo Andrés (coordinadores). Políticas Públicas y Desarrollo Municipal. Problemas teórico-prácticos de la gestión pública y municipal. Edit. López Máñez, S.A. 1995.

MORALES, J. (2001). La planificación interpretativa asegura la excelencia en interpretación. Recuperado en: <http://www.interpretaciondelpatrimonio.com/docs/pdf/Planificacioninterpretativa.pdf>

MORALES, J., GUERRA, F., Y SERANTES A. (2009), Bases para la definición de competencias en interpretación del patrimonio. España: Seminario Permanente de Interpretación del Patrimonio, Centro Nacional de Educación Ambiental, CENEAM.

MULLER, P., JOLLY, J., SALAZAR VARGAS, C. Traductores. Las políticas públicas. Editado por el Departamento de Publicaciones de la Universidad Externado de Colombia.2002.

Panorama OMT del turismo internacional. Edición 2014 recuperado en: [http://dtxqtq4w60xqpw.cloudfront.net/sites/all/files/pdf/unwto\\_highlights14\\_sp\\_hr.pdf](http://dtxqtq4w60xqpw.cloudfront.net/sites/all/files/pdf/unwto_highlights14_sp_hr.pdf)

PEDERSEN, A. Gestión del turismo para administradores de sitios del Patrimonio Mundial. Manual Práctico para administradores de sitios del Patrimonio Mundial. Centro del Patrimonio Mundial de la UNESCO. 2005

Plan Estatal de Desarrollo 2009 – 2015, del Estado de Campeche. Diagnóstico del entorno actual y los retos que enfrenta Campeche.

Plan Municipal de Desarrollo de Calakmul 2012-2015.

Plan Nacional de Desarrollo 2013-2018. Gobierno de la República. Estados Unidos Mexicanos.

Principales resultados del Censo de Población y Vivienda 2010 Campeche, Instituto Nacional de Estadística y Geografía.- México: INEGI, c2011. 81p.

Programa de Ordenamiento Ecológico del Territorio del Estado de Campeche. Secretaria de Obras Públicas del Estado de Campeche – ECOSUR. 2002. Edit. SEOPCE. México.

Programa Nacional de Infraestructura 2014-2018.

Project- Agronatur. (2005). Associação de Desenvolvimento da Região do Alto Tâmega [http://project-agronatur.com/pages/page16/es\\_modulo1.pdf](http://project-agronatur.com/pages/page16/es_modulo1.pdf)

QUADRI DE LA TORRE, G. Políticas Públicas. Sustentabilidad y Medio Ambiente. Edit. MIGUEL ÁNGEL PORRÚA.2012.

Secretaria de Comunicaciones y Transportes. 2012 recuperado en: <http://www.sct.gob.mx/fileadmin/DireccionesGerales/CentrosSCT/campeche/centro-sct-campeche-infraestructura.pdf>

STEIN, E., TOMMASI, M., ECHEBERRÍA, KOLDO, LORA, E, PAYNE, M. Coordinadores. La Política delas políticas públicas. Progreso Económico y social en América Latina. Informe 2006. Edit. Litográfica Ingramex, S.A. de C.V. 2006.

VELASCO, M. (2004): «El Patrimonio Cultural y el turismo en la agenda de Gobierno». Areté Documenta, nº 18, pp. 87-96.  
VELASCO, M. (2004): La política turística. Gobierno y Administración Turística en España (1952-2003). Valencia, Tirant Lo Blanch.

VELASCO, M. Gestión turística del patrimonio cultural: enfoques para un desarrollo sostenible del turismo cultural. Cuadernos de Turismo, no. 23, (2009); pp. 237-253. Universidad de Murcia. ISSN: 1139-7861

VERA REBOLLEDO, J. (2001). Planificación y gestión del desarrollo turístico sostenible: propuestas para la creación de un sistema de indicadores. Planificación y gestión sostenible del turismo, 1, 1-75. Noviembre 2014, ISSN: 1578-679-X