

USING VIABLE SYSTEMS MODEL AS A DIAGNOSTIC TOOL OF THE SUSTAINABLE TOURISM

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ABSTRACT

The sustainable search has generated new ways to integrate resources and reduce the negative impacts of the production of goods and services. This topic has been well received in the tourism sector due to the current trends in generation of services, which start from programming low-impact activities. However, the changes that communities must make to use sustainable livelihoods are defined in the way of obtaining resources, developing their distribution and to promote reuse, on the other hand the *weltanschauung* of the community is used to interpret the media and reconsider the role of the enterprises, government and those interested in tourism to define an adapted concept from a common purpose to allow the operation of a viable system. In the current scenario there are few contributions aimed at sustainable management with diagnostic tools able to integrate the complexity of tourism relationships. Therefore, the following study deals with the generation of a proposal to define sustainable tourism diagnosis using Beer's Viable System Model.

Keywords: *weltanschauung*, sustainable tourism, Viable System Model.

INTRODUCTION

Sustainability comes from the environmental problems of global concern and extends the search for solutions to conserve resources without compromising future needs (WCED, 1987). The ideas and assumptions that form the core of the concept are based on the topics discussed in the Brundtland Commission Our Common Future (Hedren, and Linner, 2019) and its entity is in charge of exposing the media, processes and purposes of human actions by exploring integral solutions regarding the alteration of the economic, cultural and environmental areas. Therefore the study refers to the presented systemic connections to harmonically develop a fruitful activity of a complex base whose relations denote the disposition of the actions as sustainable.

The planning and programming of tourism activities has transformed due to the change experienced by the demand in recent years. Alternative tourism is understood as a process that seeks mutual understanding, solidarity and equality among participants (Stephen and Neil, 1999). The conversion of tourism with a sustainable purpose is the cornerstone of the new forms of tourism, consisting of: rural tourism that promotes a useful means to address the social and economic challenges faced by rural areas with traditional land decreased (Baoren, 2011); ecotourism, which develops environmental awareness and respect for local culture (Reimer and Walter, 2012); the ethno-tourism gestated by travel related to

Using VSM as a Diagnostic Tool of the Sustainable Tourism

indigenous settlements in order to learn their culture and traditions (Morales, 2008); and adventure tourism that integrates physical activity, interaction with nature and cultural learning (SECTUR, 2009), among others.

Sustainable tourism essentially provides destinations with the opportunity to capture economic exchange while maintaining long-term economic and environmental viability of the area (Sandoval, 2006), contributing to the formation of mutual benefit relationships aimed to improve the quality of life and preserve the environments where it has its origin. The principle of sustainability and tourism are referred to establish a long-range dimensional balance (OMT 2004) this is to say, to generate a form of tourism that contributes to equality and economic and social welfare for the local community (Aronsson, 1994). In this context, decision-making and planning are essential given the fact that communities and organizations, by means of agreement, must establish economic, social and environmental demands of sustainable development (Bahaire, & White 1999), adapting spatial planning criteria in the process of regional development (Borrayo, 2002), establishing a balanced production with special care in tourism attractions, rescue of cultural and biodiversity protection, facing the dilemma of structuring an essentially economic activity. In words of Scoones, (1998) a means of life consists of material and social resources and is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets without undermining the natural resource base.

Sustainable tourism requires of the joint effort with state intervention, community participation and action of those involved to keep the good planning of tourist goods and services (Gartner, 1996; Inskeep, 1991; Gunn, 1988, Johnson et al 1994). The state must develop policies that should flow from the local and tourist perceptions to catalog the physical impacts (Puczko and Ratz, 2000), and express a holistic view considering all facets of this activity, its formulation has to be a process of interchange of opinions, agreements and commitments involving the different actors (Acerenza, 2006). In tourism planning, public participation is essential to direct the actions, which sets the ideological development through politics as a means to determine appropriate strategies for tourism (Connell, Page, Bentley, 2009), these policies should create an atmosphere in which all can increase their capacity and the opportunities can be expanded for present and future generations (PND, 2007).

The communities in turn, should encourage new forms of organization and sustainable management, in consequence, we must recognize the areas in which they operate and the environments they depend on and alter, to create their own mechanisms of governance and to create closer links with the involved.

For their part, companies have developed the big set of activities with mass production models. However, by incorporating elements of sustainable cut in corporate governance has been an interesting twist to the productions. This requirement for market competition to reduce costs and environmental quality legislative aspects (Burgos *et al*, 2002). However, in this context has a certain vagueness of sustainability, especially for companies that focus on potential customers which highlights the promotional value as a publicity stunt (Cohen, 2002). However, the guidelines for sustainable development and management practices are

applicable to all forms of tourism (WTO, 2005). Therefore it is convenient to define the scope in the implementation of sustainable means to recognize the depth of the shares and the convergence of the planning.

Some observations have served to have a sustainable approach as the NETWORK approach that focuses on cooperative efforts between governments and other interested companies. (Fadeeva, et al 2000) however, this approach does not work with the integrity of visions. On the other hand, solidarity tourism involving the host community in each phase of the project on the individual issues cultural and natural environment, to ensure proper distribution of resources generated (WTO 2007). These antagonistic approaches, has defined tourism as an activity essentially commercial and essentially social simultaneously. However, the social and productive urgency generated from the same source, ie, of the community need to determine a system that can meet the common goals efficiently, this suggests coordinate regulatory policy, business regulations, the efforts of communities and customer preferences in a common purpose, for it must be a clear understanding of the interests and attitudes of interest you (Byrd, *et all* 2009).

"Sustainable tourism" is a human activity system to establish a relationship free from prejudice and mutual cultural understanding (cultural empathy). However under a separatist optical analysis suggests consideration of isolated problems and solutions and future considerations different. Sustainability in the positivist approach is understandable from the perspective of a relationship of conservatism, aimed at controlling emissions of hazardous waste, and recycling in this approach the relationship of the social system with environmental becomes a logical consequence of actions preservationist utility. These considerations have had greater impact in controlled environments such as parks or protected natural areas, where the planning and programming efforts can be developed from politics, but in complex environments must take into account the factors that influence and affect the sustainability and tourism sustainability.

SYSTEMIC CONSIDERATIONS IN SUSTAINABLE TOURISM

The holistic view has contributed to the dialectical synthesis of touristic epistemology with input from Raven (1967), Leiper in Acerenza, (1984), Boullon (1985), Liu (1994), Molina (1996), Mill and Morisson (1998), Beni (2000), Jimenez (2004) and Brown (2009). In this context science offers an alternative system to analyze and understand the phenomenon of tourism (McDonald, 2009). However, sustainable tourism has been little studied from this perspective because their study requires the simultaneous consideration of parallel areas with robust analytical tools such as VSM them to see the phenomenon and model it by building a integral solution of the complex thought.

Tourism has multiple activities connected recursively in which the system receives inputs of sustainable nature, which are processed in a phase transformation occurring in actions perceived and measurable outputs environments of concern, which in turn generate internal level changes in the feedback phase constitute new factors that maintain the sustainability of actions.

Using VSM as a Diagnostic Tool of the Sustainable Tourism

The transformation consists of the combination of policies, resources, information and energy to preserve the environment of interest, that meet certain function within the system and maintain a certain impact for the actions of other settings, in this sense the system inputs are reference to the outputs since the former are sustainable provision and the latter must reflect this provision, for Pere (1998), tourism imposes the need to develop systematic strategies, supported by tourism planning to offer through new tourism models, new alternatives while demand-driven fit within the framework of a sustainable tourism development.

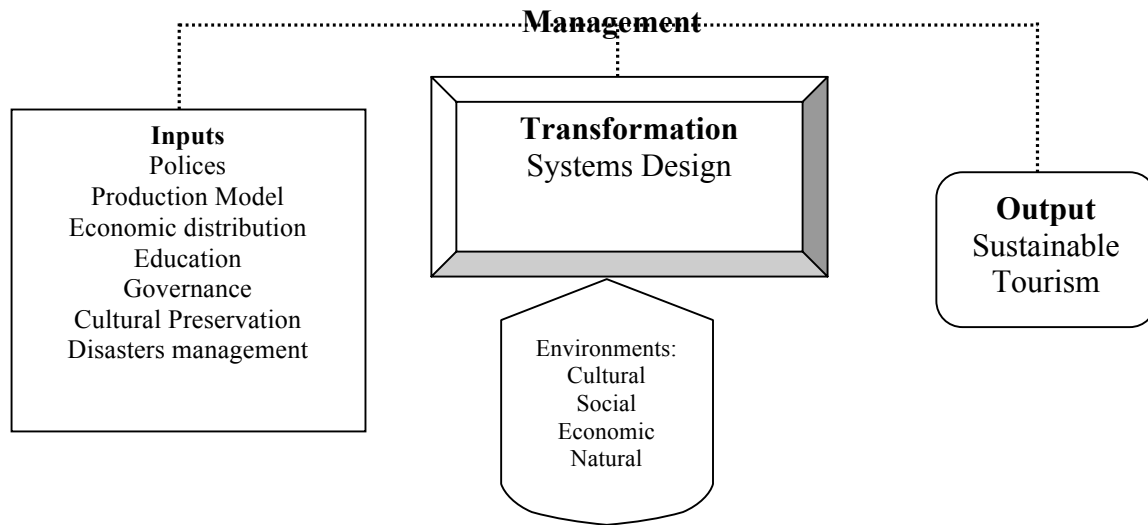


Figure 1. Transformation of sustainable tourism system

The variety of sustainable tourism system is understood as the presentation on which multiple sets of regulations, ie the economic goals set towards the social, cultural and environmental, with reconstitution of each subsystem (development of local traditions to social conservation and generate adaptive ways of minimal impact to nature). The concept of sustainability can be redesigned based on homeostatic relationships between the parties about Buckley (2012) argues, to forecast the future of sustainable tourism, the key consideration is that both tourism and sustainability are changing faster than the industry tourism to adopt improvements to sustainability. Therefore, it should raise a social system sustainable basis, this system can be structured with defined purposes and that the concept is social domain, so the gesture system to be rebuilt concerning actions to maintain a concept adopted, ie , form a worldview with sustainable approach. In this regard see Mark Freeman (2001) point out, integrated approaches do not guarantee a win-win situation for all stakeholders, but, as suggested by the theory involved, the strategies and benefits distributed damage in a way that ensures the long-term support of all stakeholders.

The construction of the adapted concept can be developed using the theory of systemic construction of knowledge based on the ideas of Nukumori, Wierzbicki and Zhu (2011), in defining the basis of sustainable purpose. Through the intervention phases (what remains to

be known?) Intelligence (indicators) involvement (community interest) and integrate the acquired knowledge assimilated into action, using the physical recomposition of space tourism, the realignment of activities appropriate; Reconstitution sustainable system from the standpoint of those involved, and the reformulation of the proposal for balanced development. For this phase is necessary to take into account the level of participation of stakeholders as this varies between communities according to the interests and empowerment of stakeholders (Panyik, Costa & Ratz, 2011).

The evolution of the social system, meets the individual purposes in a mutual overcoming the limits determined by the system itself, ie the social improvement emanates within known, understood as the common agreement that must meet the system requirements social. To Berque, (1995) is always even-handed nature of ecological and symbolic order, this dual nature can be called a symbolic echo. There is, therefore, a dialectical relationship between the organization and interpretation that companies make their means, so only achieved when communities understand themselves and their skills in their own words can begin to evaluate the decisions concerning the nature external and tourism (Tao & Wall, 2009).

In this context, human action is abstract and systemic structure responds to different interests. It is therefore necessary to identify human groups and essence of purpose to assess the consistency of structured activities at sustainable. (See Table 1).

Table 1. Touristic Purposes

Characteristics	Touristic Industry	Touristic Supra Structure	Touristic Community
Purposes	Maximum efficiency	Economic and social welfare activity	Social preservation Cultural empathy
Approach	The human being as productive instrument	The human being as a agent of change and permanency	The human being as a creator of social environment
Interaction with their environment	Commercialisation	Social management	International and national lining

BRIEF DESCRIPTION AND DIAGNOSING THE SUSTAINABLE TOURISM SYSTEM

System 1

Sustainable Tourism Activities

Beer (1985), developed three levels of complexity in the basic axiom of the viable systems model, and identified three levels of complexity with requirements of regulatory mechanisms between them (see Figure 2).

Using VSM as a Diagnostic Tool of the Sustainable Tourism

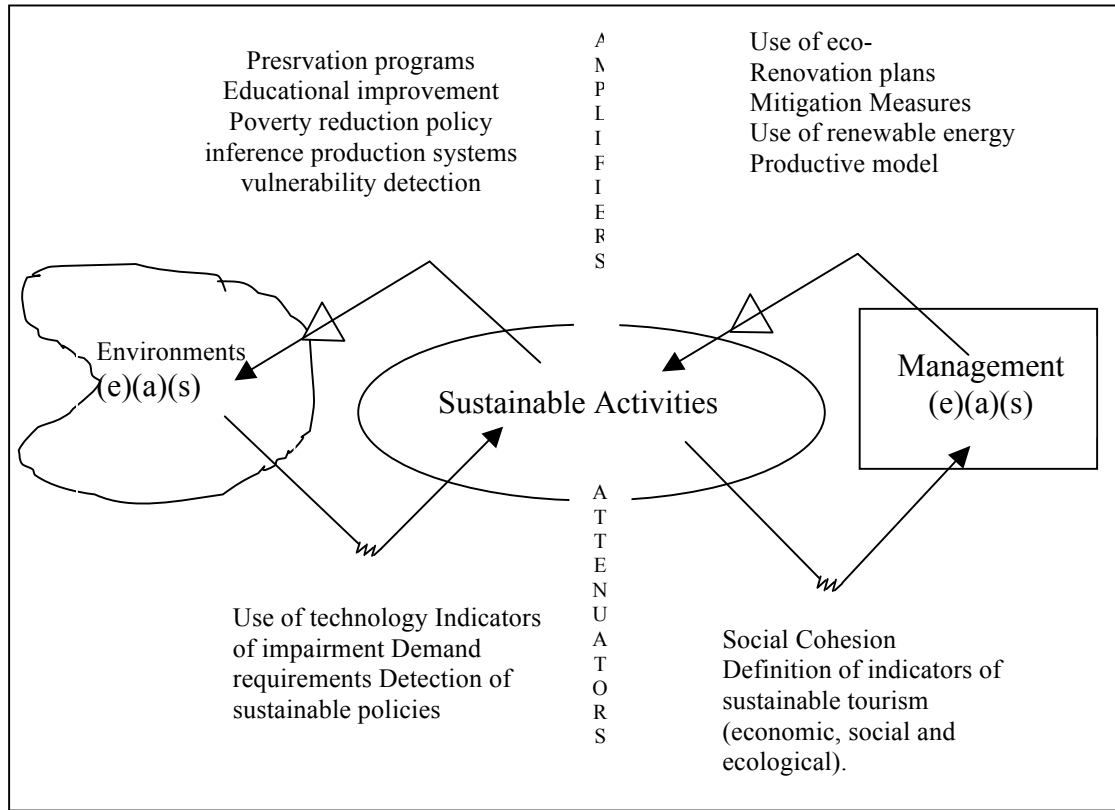


Figure 2. Law of requisite variety for sustainable tourism system

Sustainability, thus depends on a number of external and internal factors that give the free components to act within their own conservation margins built into the overall environment. Therefore, we must raise the macro system to form part of the sustainable approach. In their capacities, priorities, social, environmental and cultural outlining appropriate control mechanisms for each case.

The system must recognize the schemes submission of the application and its actual availability for activities at the end. Tourists generate the main force to develop the activity with specific qualities, ie define the layout of activities, services and appropriate facilities for one or more niche markets environmental and cultural tourism.

System 2.

System 2, is a regulator center and consists of the anti-oscillators maintaining the functionality of the system 1 to coordinate the activities sustainable. The solution of coordination and balance must be designed taking into account the activities and their

connection to the systems 3-5, which have comprehensively the mechanisms of action that allow the viability of the system 1, so as to cause the lower costs and damage to people and environment (see table 2).

Table 2. System 2

Infrastructure and basic plant and tourism	Work Distribution
Programming paid and unpaid activities	Resource sharing
Economic distribution	Generation and application of new Investments and resources
Operating mechanisms	Continuous improvement

System 3 and 3*

System 3 Formed by the system control means 1 and whose function is established to ensure harmony and the correct operation for system 2, provides status information relevant indicators incorporating sustainable challenges for compliance and establishing a relational schema for measurement. For this it is necessary to resort to the creation of mechanisms that reflect the measurement of environments and relational inference according to Ivanovic, et al (2009), not only there is a clear need for regular monitoring of the status of each indicator individually, but also the need to observe the relationship between them as a whole, special attention should be given intensive monitoring of the indicators of economic and ecological subsystem in the case of sustainable tourism are indicative basis.

Table 3. Sustainability indicators

1.- Poverty level	5.- Pollution
2.- Education	6.- Insecurity
3.- Loss of cultural values	7.-Descrimination
4.- Loss of environmental resources	8.- Health

System 4

The system 4, is intended for the organization to collect all possible information of the total environment to remain a viable system. integrates the needs of resource conservation, environmental and social costs of the system and relationships with other stakeholders especially the government. These functions should identify relevant information and communicate to focus system, to adapt the system 1 and the reconstruction of 2-5 systems to the changing environment.

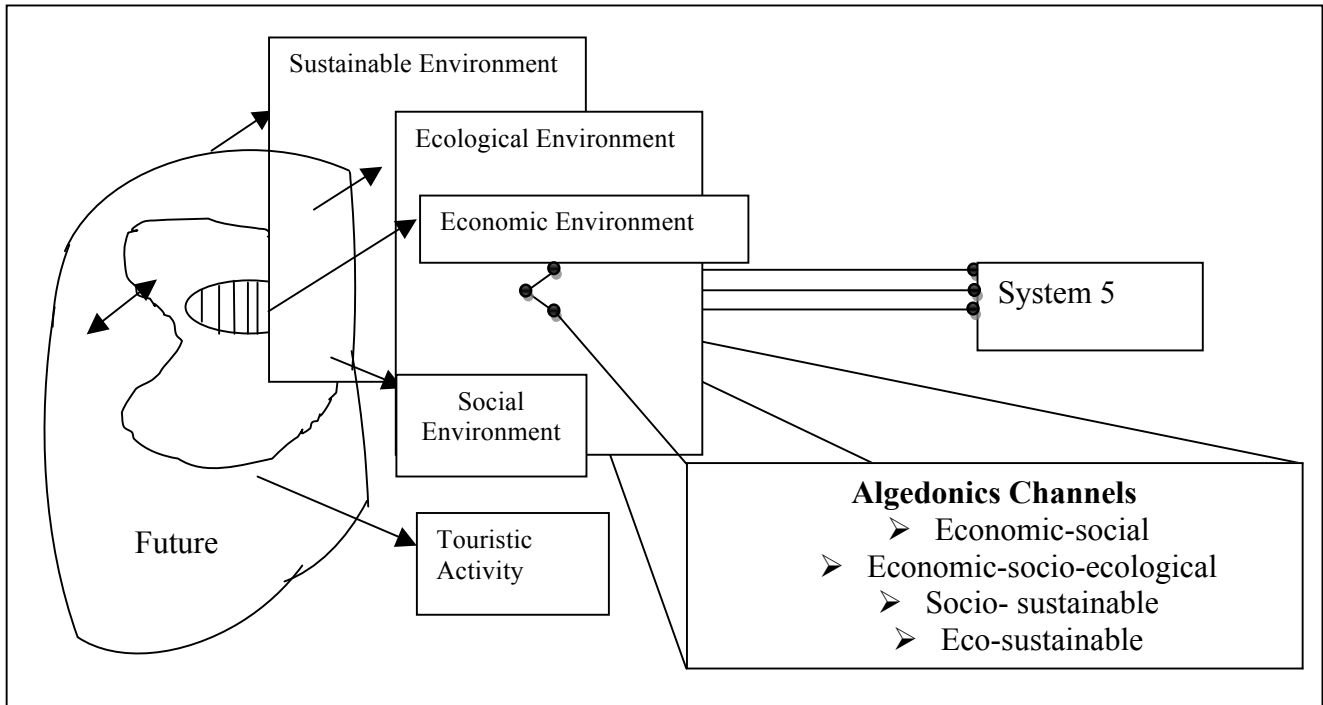


Figure 3. Environments of System 4

System design 4, through algedonic channels responsible for transmitting relevant information, which have a vital impact on the organization viable and that their proper functioning alert system 5 on the appearance of real threats to the survival of the system (Perez, 2012 .) Algedonics channels correspond to the defined concept (worldview), and can point to different relationships. However, should pronounce the integration of environment and provide the information necessary and sufficient structure to correspond to changes in multi-emergence from the organization of the system itself, the consequences of keeping the system and subsystem of the conjecture with the larger system. Therefore, the system 4 becomes a recursive mechanism to disclose known system disturbances and disturbances 1 unknown areas sustainable.

The channels may contain links algedonics criteria among which may be noted:

Using VSM as a Diagnostic Tool of the Sustainable Tourism

Economic Social. - Economic activity deed as a conservation activity, economic goods from the natural environment and should be preserved for future productions. The society uses resources so ordered to serve the common good to preserve the environment of natural and cultural life.

Socio-economic and ecological. - Companies are distinguished by regulating the ecological and economic links, based on the means at its disposal and the generation of new means for the stay. Sustainable Socio-The social system is brewing sustainable purposes, the relationship between social systems and environments have consistency of affinity. The social system seeks to reverse the negative impacts of the environment and their own social system.

Economic Social. The community seeks the common good and try to reduce the social gap. Eco-sustainable (economic sustainable). The production of goods according to the equilibrium exploits natural resources, social economic, productive means using renewable energy.

System 5

The system 5, is satisfied by the delivery system in this case are the decision makers in the tourism industry to develop, the purpose of the organization revolves around the definition of sustainable (consensual) which means that the system 1 - 4 depend on this identification. The system 5, is responsible for the highest decision through the definition of identity and purpose of the organization therefore the scope of sustainable purpose of the system and the adjustment means coordination and control of the subsystems 2 and 3, designed with this relevance.

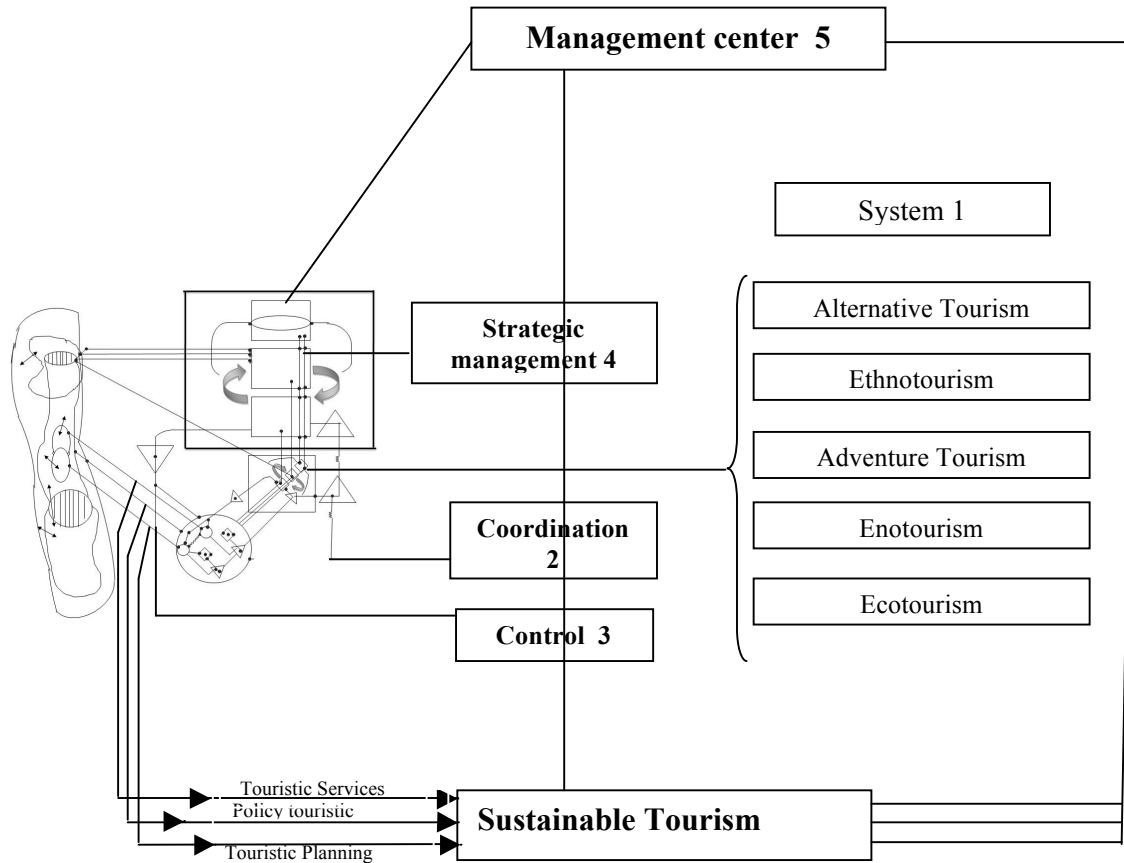


Figure 3. Conceptualization of Sustainable Tourism System

CONCLUSIONS

1. The above model is an effort to understand the complexity of establishing sustainable activities in tourism.
2. The Viable System distinguishes five integrated subsystems within its environments to foster conditions in the care of social and environmental resources as well as sustainable tourism.
3. It is convenient to rethink the relational schema of the host community and its link with stakeholders (government, business organizations etc.) in order to obtain a sustainable touristic system which reflects on the position of each component to recognize the resources available.

4. Objectives and scope of actions stem from the systems 2,3 and 3* which are mechanisms for the maintenance and improvement of the system. To do this, it must be associated each part of the system 3* to one or more indicators of system 3.
5. The sustainable structure expressed in the information channel that runs from system 1 to system 5 recognizes a priori the emergency needs of the system 1.
6. On the other hand, the assumption of social roles generates a logic of consistency between the actions defined and definitions raised. This allows the system 5 rename the concept of sustainable tourism adopting and reconfiguring the internal mechanisms of the viable tourism system.

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