Ecotourism as a path to sustainable development in an isolated Magic Town

The case study of La Trampa, Mexico

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Abstract

Purpose – This study aims to reveal the potential for ecotourism of a locality with high marginalisation index in the municipality of Tlalpujahua, a Magic Town in the State of Michoacán, Mexico.

Design/methodology/approach – This case study was based on several methodologies. First, socioeconomic, environmental, sustainability, geographic and institutional variables were used in the evaluation of 62 localities of the municipality. Geographic information systems identified study areas and determined their potential for ecotourism. Second, participatory diagnosis was used to collect specific information about the locality regarding their organisational aspects, development strategies, current socioeconomic problems, land use and resources availability and interest in developing projects related to ecotourism. Finally, the authors adapted the FAS Model (factors, attractors and support systems) to include environmental and organisational variables contributing to a theoretical approach to ecotourism. To identify attractors, they applied a questionnaire to determine the profile of tourists visiting Magic Towns and their potential interest in ecotourism.

Findings – The authors conclude that ecotourism is a possible alternative to highly marginalised localities within Magic Town municipalities and would be able to expand the benefits engendered by the program. Ecotourism can therefore represent a new option for tourists visiting marginalised communities in Mexico.

Originality/value – A diverse methodology applied key elements to identify localities suitable for ecotourism, characteristics of marginalisation and endowment of natural heritage. The authors conclude that the benefits to localities included in the Magic Towns Program can be expanded to surrounding spaces through strategies such as ecotourism.

Keywords Sustainability, Ecotourism, Development, Magic towns

Paper type Case study

1. Introduction

Since its origins, tourism has been seen as an option to promote economic development. However, tourism also has undesirable effects on the environment, besides not being equally accessible to households (Cerón, 2016). A series of international agreements presented at the Earth Summit in Rio de Janeiro in 1992 were consolidated into the "Project or Agenda 21". The Earth Summit aimed at identifying strategies to reverse environmental degradation through sustainable development (ONU, 1993). Since then, tourism has been redefined as an economic activity able to fight poverty, improve environmental management and encourage changes in consumption patterns.

The steering of tourism policies towards sustainable development, especially in developing countries, aimed to take advantage of their natural and historical heritage and to include indigenous peoples, local communities, low-income urban residents and the rural poor in the execution of sustainable development strategies. Those new policies aim to promote:

> [...] environmentally sound and culturally sensitive tourism programmes as a strategy for sustainable development of urban and rural settlements and as a way of decentralising urban development and reducing discrepancies among regions (ONU, 1993, p.73).

In this context, the Magic Towns Program (MTP) was created in Mexico in 2001 with the purpose of promoting the sustainable development of localities through tourism, expected to raise levels of welfare, maintain and increase employment and promote investment (SECTUR, 2014). The concept of "Magic Town" was created by the Ministry of Tourism to denote a locality preserving its historical and cultural heritage through time and despite modernity. By 2015, the number of Magic Towns amounted to 111 (SECTUR, 2016). Most localities named as Magic Towns are found in municipalities with high percentages of vegetation and farmland (INEGI, 2009). Vegetation covers 62.4 per cent of those municipalities (split into 24.5 per cent woodland, 13.5 per cent forest, 12.7 per cent scrubland, 9.7 per cent pasture and 2.1 per cent other types), followed by agriculture (31 per cent) and finally by urban areas, which are very small (between 5 and 16 per cent in 14 towns and under 5 per cent in 94 towns) except in Orizaba, Metepec and San Pedro Cholula (where urbanisation reaches over 60 per cent of the territory).

Most localities included in the MTP exhibit a high degree of marginalisation. A dichotomous pattern can be identified where, on the one hand, localities nominated as Magic Towns are mostly capitals of their municipalities (92 per cent) and show medium, low and very low degree of marginalisation (89 per cent); and on the other hand, the remaining localities mostly exhibit of very high and high marginalisation (78.2 per cent).

From the MTP inception, various problems have prevented tourism from becoming an efficient trigger of development (CESTUR, 2013). Living conditions of locals have not significantly improved (Rodríguez and Pulido, 2010; Hoyos and Hernández 2008), economic benefits have been mostly absent (Covarrubias and Conde, 2009; Guillén, Valenzuela and Jaime, 2013; Hernández, 2012), and target localities have often served tourism without reciprocation (Royuela and Ramírez de la, 2015), among other issues.

Although heterogeneity in culture and biodiversity is notorious among Magic Towns, their socioeconomic context is mostly similar. The diversity of natural resources, agricultural activity and low urbanisation suggests opportunities for alternative tourism projects such as ecotourism, whose mechanisms of natural heritage management are compatible with local forms of organisation. Ecotourism can both diversify the offer of attractions and distribute the benefits of tourism to neighbouring localities and foster sustainable perspectives. This study aims at investigating the potential for ecotourism of a

highly marginalised locality in the municipality of Tlalpujahua, a Magic Town in the State of Michoacán, Mexico. Our case study relied on various methodologies to analyse 62 localities in the municipality and their potential, using the FAS model (factors, attractors and support systems), and based on questionnaires, to determine the willingness of local populations to engage with ecotourism.

2. Ecotourism and local sustainable development

Ecotourism is an alternative tourism model that respects host communities and their sociocultural and natural environment and has balanced development as its target (Jafari, 2005). Alternative tourism recognises and incorporates local populations as necessary social actors, besides promoting more flexible and diversified travel structures through natural spaces including from protected natural areas to artificial urban and rural areas (Osorio, 2010).

Ecotourism offers attractions based on natural settings and on the preservation or protection of natural areas (Hall and Boyd, 2005). Ecotourism is currently defined as:

> [...] purposeful travel to natural areas to understand the culture and natural history of the environment, taking care not to alter the integrity of the ecosystem, while producing economic opportunities that make the conservation of natural resources beneficial to local people (OMT, 2014, p. 15).

In their analysis of the concept, Donohoe and Needham (2006) identified six principles underlying ecotourism: reliance on nature, conservation purposes, environmental education, sustainability, equitable distribution of benefits, ethical responsibility for both local population and tourists.

Ecotourism is usually carried out in peripheral areas away from urban centres, and must be seen within the broader natural, sociocultural, political and economic systems that determine their development (Hall and Boyd, 2005). Ecotourism depends on small and medium-sized operators, and generates direct benefits and income to rural, indigenous and poor communities (Garraway, 2009). It is also unique by its commitment to conservation objectives, improvement of living standards of local populations, in addition to intangible dimensions such as the re-evaluation of cultural traditions and beliefs, improvement of community organisation and leadership, increase in community's self-esteem and pride, and expansion of contact networks involving local people and service providers, international tourists, tour operator companies, private foundations and non-governmental organisations (Stronza, 2008).

Ecotourism generates local benefits and also affects the way tourists perceive, experience and learn about nature, its landscape, flora, fauna and habitats, as well as cultural relics (Kiper, 2013). Therefore, ecotourism has the potential to increase environmental awareness of both the local population and tourists. Hence, it is highly recommended that visitors are educated and prepared in advance to interact with the host community (Dubin and Durham, 2008).

Ecotourism is a model of tourism that envisages an alternative way of development that conserves natural areas and promotes social welfare and economic diversification within a framework of sustainability in economically marginalised communities (poor, indigenous, rural) (Garraway, 2009). The destinations are located in marginalised areas characterised by lack of monetary resources, local skills and mechanisms to ensure fair distribution of benefits, in addition to poor commercial links and experience in planning, finance and product development (Coria and Calfucura, 2012). Government intervention to overcome economic difficulties has been absent, resulting in migratory flows towards the central

regions, weak domestic economic relations and a lack of effective policies and economic control over decisions that affect local welfare (Hall and Boyd, 2005). Although empowerment is necessary for development, sustainability and preservation of natural resources, the ability of localities to receive large numbers of tourists must be considered so as to avoid a risk of benefits not reaching the community.

3. Methodology

We applied the method of exploratory case study (Yin, 2011), as well as qualitative and quantitative tools, to investigate the potential for ecotourism of a marginalised locality near the Magic Town of Tlalpujahua.

Selection. We assessed 62 localities in the municipality of Tlalpujahua through socioeconomic, environmental, sustainability, geographic and institutional variables (Vázquez-Barquero, 2007; Fayos-Solà *et al*., 2011; Alburquerque, 2003). Socioeconomic variables were total population, marginalisation, poverty, social backwardness, size, indigenous population, main economic activities, employment, socioeconomic problems of the rural localities, economically active population and population occupied by sector. Environmental and sustainability variables were property regime in municipality, prioritised biodiversity sites and regions, protected natural areas, important conservation areas, relevant forest landscape sites, endangered and prioritised species and current environmental problems in municipality. Geographic variables were location, landscape, climate, land and vegetation use and accessibility and mobility within the municipality. Finally, the institutional variable was the local governance measured trough the association between endogenous and exogenous actors to carry out tourism development projects.

To supplement the analysis above, we applied a geographic information system to map several relevant variables. In total, 62 localities of the municipality were spatially mapped to represent their population, indigenous-language speaking population, degree of marginalisation, degree of social backwardness, socioeconomic problems, priority conservation sites and areas, natural continuity, transport infrastructure, terrain, farming centres and land tenure system (common or private). Following the characterisation of Tlalpujahua, the marginalised locality of La Trampa was selected for our case study.

3.1 Participatory diagnosis

Semi-structured interviews were used to explore views of agents on ecotourism. Three endogenous agents were considered:

(1) local entrepreneurs holding property rights and able to carry out local development projects;

(2) professionals, workers and residents; and

(3) local (municipality) institutions and authorities.

As exogenous agents, we included current and potential customers in the locality, competing destinations, and supra-local institutions (Fayos-Solà *et al*., 2011).

Next, we applied the semi-structured participatory tools proposed by Geilfus (2002) to key agents. As a result of the participatory diagnosis, we obtained maps of natural resources and land use and information on communal representatives. Previous technical and land use studies were obtained as supplementary information.

Application of FAS model to La Trampa. Finally, we adapted the FAS model, a method for planning tourist activity and designing project implementation strategies (Fayos-Solà *et al*., 2011). The FAS model explains a local system as the complex interaction of three

structured subsystems: productive factors (natural factors, human factors and financial capital); attractors, or motivations for tourist travel (natural, cultural and human-made attractions); and support systems, or services to residents, tourists and clients (infrastructure capacity, hospitality, transport, security, signage, among others) (Figure 1).

The FAS model allows a systematic representation of these three structures of a destination, facilitating the allocation of values and classifying the location according to indicators of comparative advantages and competitive potential. These indicators are selected based on the location or strategic vision of the destination. In the case of La Trampa, we adopted the perspective of ecotourism.
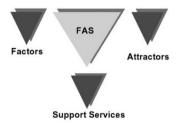
The assigned values were classified and organised into matrices according to the structured subsystems, namely, factors, attractors and support systems. The analysis is carried out by means of evaluation matrices of each of its elements, with their respective indicators of state (IS) and indicators of importance (II), where state is the quality and existence of the indicators, importance is their relevance to ecotourism, and quadrant matrices are divided by IS and II medians. Application of the model produced graphical representations of matrices with four quadrants, providing a structural vision of La Trampa, its comparative advantages and initial endowment of factors relevant to the design of strategies promoting ecotourism.

The attractors index was obtained through a survey to 70 tourists with level of significance of 90 per cent and an error of 10 per cent. Questionnaires presented Likert scales from 1 to 5, where "1" indicated no interest in ecotourism activities involving the attractor and "5" indicated high interest. This questionnaire also revealed the profile of tourists visiting Magic Towns. Familiarisation with La Trampa attractions was based on a tour around its edges guided by a forestry community leader providing information on identified attractions. Indices representing support systems, and factors were derived from conversation with local community leaders and direct observation of current infrastructure.

4. Results

Characterisation of Tlalpujahua. The municipality of Tlalpujahua is located northwest of the Michoacán state (19°48' N, 00°10' W, 2,580m asm). It borders Maravatío and Contepec to the north; Contepec and the state of Mexico to the east; the state of Mexico and Senguio to the south; and Senguio and Maravatío to the west. Its surface area is 190.86 km^2 or 0.32 per cent of the state Michoacán (Figure 2).

According to the 2010 Mexican census, Tlalpujahua has a population of 27,587 residents across 62 localities, of which only the capital is classified as urban, with a population of only 2,500 residents. The remaining localities are even smaller (between 66 and 999 residents) and classified as rural by the INEGI. In 2010, 58.8 per cent of its population was living in
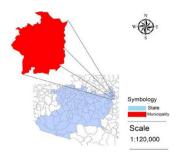

Source: Fayos-Solà *et al.*(2014)

Figure 2.
Location of
Tlalpujahua

Source: Own creation based on
carto graphy from INEGI (2010)

poverty (13.3 per cent in extreme poverty, and 45.5 per cent in moderate poverty). Although not poor, 36.7 per cent of the population is vulnerable and partially deprived, 1 per cent is vulnerable because of income and 3.5 per cent is neither poor nor vulnerable. This results in that 59.8 per cent of the total population has income below the welfare line, and 20.8 per cent below the minimum welfare line. In addition, 95.5 per cent exhibit at least one aspect of social deprivation, while 44.3 per cent exhibit three or more (CONEVAL, 2014).

In Tlalpujahua, as a whole, marginalisation was reduced from high to intermediate grade between 2005 and 2010, but nonetheless marginalisation increased in 11 localities and only dropped in three and did not change in the 48 remaining localities including the capital. Thus, most of its localities (52 out of 62, covering 75 per cent of the population) are still highly marginalised. Of the remaining 10 localities, 7 (11 per cent of the population) show medium marginalisation and only 3 (14 per cent) of the population are classified as showing a low degree of marginalisation, including the capital.

The use of land is primarily agricultural (44.9 per cent of the territory), including annual irrigation and temporary farming. Regarding the vegetation, 42.94 per cent is cedar, oyamel and pine-oak forest, including their secondary shrubs, 10.53 per cent is induced pasture and 1.59 per cent is occupied by the urban area. Agriculture is the main activity in 60 per cent of the localities, consistent with information from the Agricultural, Livestock and Forestry Census (2007), as it presents 3,098 production units mostly dedicated to agriculture and occupy an area of 5,205 hectares (56 per cent of the total municipal territory). In those units, 2,533 workers are relatives and 2,421 are hired by producers.

Only land transport infrastructure is available in the municipality, serving 26 of its 62 localities and connecting Tlalpujahua to four municipalities: two from the State of Mexico (El Oro and San José del Rincón) and two from the state of Michoacán (Senguio and Contepec). This road network consists of the Atlacomulco-Morelia federal highway, the San Pedro Tarímbaro road section (Atlacomulco-Maravatío) and the Angangueo road section (Villa Victoria-El Oro de Hidalgo), while stretches of unpaved roads link most of the other localities.

Tlalpujahua was included in the MTP in 2005, through the appointment of its capital Rayón. Until 2015, all the projects from the program have targeted the improvement of urban appearance and buildings. However, a study published by the former Centre for Higher Studies in Tourism in 2013 revealed that Tlalpujahua de Rayón showed one of the worst tourism performances among Magic Towns, as well as being in a period of stagnation. The concept of tourism performance refers to the degree of "success that a tourist place has,
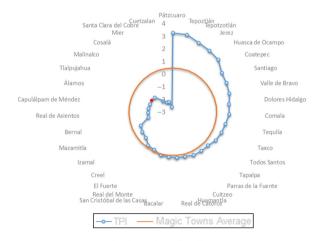
when citizens and businesses are satisfied with their community, and when the locality in
question lives up to the expectations of visitors and investors" (Hall and Boyd, 2005).
Pátzcuaro is the Magic Town with the highest tourist performance index, while Cuetzalan
has the lowest (Figure 3). Along this spectrum, Tlalpujahua ranks sixth among the towns
with the lowest tourism performance index.

In a SWOT (Strengths, Opportunities, Weaknesses and Threats) analysis of Tlalpujahua
de Rayón, weaknesses were represented by the insufficient supply of accommodation
during cultural events, lack of articulation among natural attractions, among others
(ITESM, 2014). As strengths and opportunities, the analysis identified the privileged
landscape of the municipality, the potential to create infrastructure and public equipment
(ITESM, 2014), proximity to natural attractions such as the Monarch Butterfly, the
opportunity to develop tourism products and take advantage of the great potential of its
attractions, among others (CESTUR, 2013). The studies recommended a diversification of
tourism products, since Tlalpujahua and most other Magic Towns are characterised by a
wide extension of vegetation and farmland. Tlalpujahua borders the Monarch Butterfly
Biosphere Reserve and thus adhered to the Territorial Ecological Management Program of
the Monarch Butterfly Region (POETMM) (INE, 2007). For this reason, monitoring the
population growth of Tlalpujahua and a reduction in economic activities with high
environmental impact such as mining were also recommended. Tlalpujahua is included in
the Priority Regions Program for Conservation of Biodiversity because of its relevance to
three relevant domains of conservation: terrestrial, hydrological and bird conservation.

Identification of the marginalised locality for ecotourism. La Trampa, selected because of
fulfilling most of the necessary conditions for ecotourism, is located in Santa María
(Figure 4), an ejido (or communal land) spreading over 950 hectares (570 of high natural
forest and 380 divided into farmland, pastures and intractable lands). In total, 55 per cent of
the ejido shows minimal alterations and a mountainous relief with elevation between 2,600
and 3,000 m above sea level. Its transport infrastructure consists of a road that crosses the
town, and the Villa Victoria-El Oro de Hidalgo-Angangueo road section that connects it to
the municipalities of San José del Rincón, Angangueo and to the Atlacomulco-Morelia
federal highway. Its 461 residents (none of which speak indigenous language) mostly work

Source: Own creation based on data from CESTUR (2013)

Figure 3.
Tourism performance
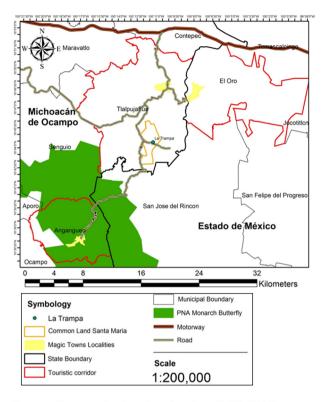index (TPI) in 35
Magic Towns

Figure 4.
Location of La
Trampa

Source: Own creation based on data from RAN (2016),
INEGI (2016), CONABIO (2012)

in agriculture and sustainable timber harvesting and face the problems of unemployment and migration.

4.1 Participatory dialogues in La Trampa and Tlalpujahua

The obtained participatory dialogues revealed that the main economic activity in La Trampa is subsistence agriculture and livestock production, followed by extraction of timber forest certified by the government. Of lower importance are cutting and selling firewood, masonry, employed rural work, work in the capital, Morelia, Toluca, Mexico City or migration to the United States. The main local problems are unemployment, lack of employment for women, badly paid and inconvenient work in the capital, low productivity of farmland, low profitability in livestock activities because of rising animal theft and lack of timber commercialisation channels.

The environmental problems in this locality were revealed to be low-level, clandestine logging, water erosion, soil acidity caused by fertilisers and pesticides and climate change (exemplified by hail, frost, droughts and extreme cold weather) altering agricultural cycles.

The organisational capacity of the local community has been able to support sustainable projects. Initiatives including the deer and wild UMA, "best practices" of forest

management, dams, national certification of sustainable forest management have derived social, economic and environmental benefits to the community.

The dialogue also identified available resources potentially contributing to ecotourism, such as large variety of mammals and birds, medicinal plants, variety of fungi, forests with high conservation value and natural landscapes.

FAS model applied to La Trampa. The locality of La Trampa exhibits the structural elements to meet the requirements of ecotourism and the strategies set out by the Tlalpujahua Magic Town.

4.1.1 Analysis of attractors. The first of the two phases of analysis of attractors is the systematisation of attributes and evaluation of each georeferenced attraction. The georeferencing system resulted in a map (Figure 5) with 11 different tourist resources (deer UMA, cultivation plot, Pumpkin Stick, Springs, Los Angelitos, La Peña, the Garden, Cañada honda, El Cargadero, the Sawmill and the Hall), in addition to the edges of the ejido, existing communication routes and approximate undertaken route made.

According to Fayos-Solà *et al.* (2014), IS indicators of attractor status refer to the ability to attract and satisfy tourism demands based on existing facilities. On the other hand, II indicators of importance refer to the potential of the tourist attraction to play a strategic role within the destination, or alternatively its desired role in the future (Fayos-Solà *et al.*, 2014), based on the interest shown by tourists visiting Tlalpujahua.

As a result of the survey, we obtained a battery of indicators with classification of attractions (natural, cultural or artificial) based on Gallego and Pedro (2004, p. 28) and Fayos-Solà *et al.* (2014), and their respective ratings on a scale of 1 to 5. The proposed classification scheme consists of natural attractions (NA) relying on natural resources, cultural attractions (CA) such as historic cities or museums and artificial attractions (AA) created specifically to attract tourists such as theme parks, shopping centres or facilities to host congresses and conventions.

According to Fayos-Solà *et al.* (2014), the quadrant A11 is located in the upper left and comprises top priority attractions regarding tourism policies and strategies because of their location and relevance. However, their current evaluation is insufficient as they are unable to satisfy tourist demands and therefore rapid action is recommended. Likewise, attractions in the A12 quadrant are also relevant and prioritised because of their high attractiveness; however, in their current state, they are already able to meet demands, and accordingly actions should focus on maintenance, prevention, planning and management. Attractions in A21 and A22 quadrants are less important because of insufficient attractiveness. In such cases, the available budget and technical resources determine whether those attractions are included in tourism policies.

The attractiveness matrix (Figure 6) presents conservation activities related to the natural resources in the locality. The attractions have high status indicators, placing the threshold line (which triggers actions to improve IE in those attractions) at the median value of 4. It is recommended to improve the condition of only two attractions: "farming plots" and "cultural events". It is worth mentioning that a score of 4 was given by almost tourists regarding their interest in activities related to nature. This homogenised the line of importance around that value since attractiveness (relevance) is based on interest in the same segment. As a result, attractions related to landscape, forest, diversity of flora, mammals, amphibians, reptiles and birds, historical background, sites with historical and cultural value, forest-based economic activity, sawmill and environmental education hall talks are all located in A12. This quadrant exhibits a high level of attractiveness and importance, and therefore its attractions are a priority during the initial planning and structuring of tourism products. Table 1 is a full list of local attractions.
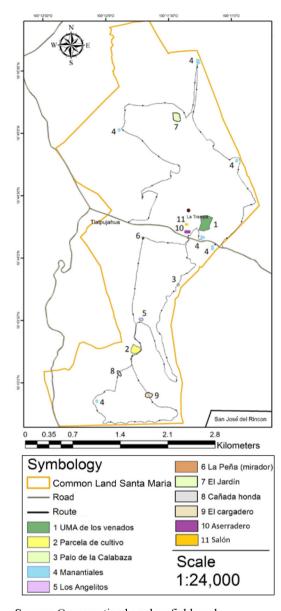
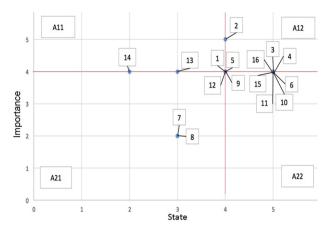**Figure 5.**
Tourist attractions in
La Trampa

Source: Own creation based on field work

4.1.2 Analysis of support systems. This analysis is based on indicators of state. The potential for infrastructure development is derived from assessments of its current status and recommendations for improvement. Figure 7 and Table 2 show the matrix of support systems and corresponding IS and II values.

Source: Own creation based on fieldwork

Figure 6.
Attractions matrix

Attractions	IS	II	Quadrant
NA			
1 Woodland	4	4	A12
2 Landscape	4	5	A12
3 Diversity of Flora	5	4	A12
4 Diversity of mammals	5	4	A12
5 Diversity of amphibians and reptiles	4	4	A12
6 Diversity of birds	5	4	A12
7 Springs	3	2	A21
8 Rivers	3	2	A21
CA			
9 Historical remains	4	4	A12
10 Sites of historical value	5	4	A12
11 Sites of cultural value	5	4	A12
12 Economic activity in forests	4	4	A12
13 Farming plots	3	4	A11
AA			
14 Organisation of cultural events	2	4	A11
15 Sawmill	5	4	A12
16 Environmental education hall	5	4	A12

Notes: NA, natural attractions; CA, cultural attractions; AA, artificial attractions; IS, indicators of state; and II, indicators of importance
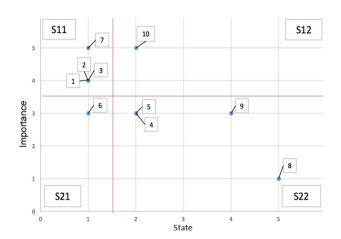**Source:** Own creation based on fieldwork

Table I.
Attractions

Because of the lack of tourist products, the locality also lacks indispensable support systems to satisfy the demands of the tourism segment based on nature. Therefore, it is highly advisable to improve the state of the support systems in quadrant S11, namely the infrastructure of lodging in general, cottages, camping areas and restaurants. It should also be a priority to improve the distribution of tourist information, which is virtually absent at

Source: Own creation based on fieldwork

Support systems	IS	II	Quadrant
HS			
1 Cottages	1	4	S11
2 Camping areas	1	4	S11
3 Catering	1	4	S11
TS			
4 Private transport (taxi)	2	3	S22
5 Local transport: public	2	3	S22
6 Local transport: tourists	1	3	S21
SS			
7 Provision of information	1	5	S11
8 Security	5	1	S22
9 Health	4	3	S22
10 Signalling and Signage	2	5	S12

Notes: HS, hospitality system; TS, transport system; SS, supplementary systems; IS, indicators of state; and II, indicators of importance
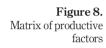**Source:** Own creation based on fieldwork

the present. On the other hand, there is a single support system in quadrant S12 (signalling and signage), and hence its maintenance and inclusion in planning effort is a priority.
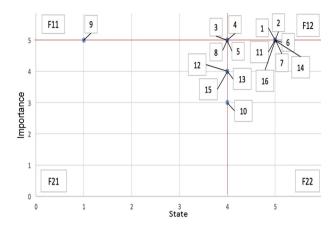
4.1.3 Analysis of productive factors. The same methods of information collection were applied to the analysis of the current status of natural; physical (NF); financial (FF); and human, social and institutional (HF) production factors. Figure 8 and Table 3 illustrate the matrix of productive factors and corresponding IS and II values.

The matrix shows great similarity with the attractiveness matrix because of the good evaluation of each factor and the importance of natural factors. Ecotourism is highly dependent on land or water areas (Buckley, 2010), which highlights the importance of the indicators of importance at Level 5 on the scale. In addition, activities of conservation and

Figure 8.
Matrix of productive
factors

Productive factors	IS	II	Quadrant
NF			
1 Springs	5	5	F12
2 Rivers	5	5	F12
3 Mountains	4	5	F12
4 Woodland	4	5	F12
5 Climate	4	5	F12
6 Flora	5	5	F12
7 Fauna	5	5	F12
8 Protection areas	4	5	F12
HF			
9 Human capital	1	5	F11
10 Churches	4	3	F22
11 Current initiatives: Forest-based economic activity	5	5	F12
12 Religious rites and popular beliefs	4	3	F22
CF			
13 Public expenditure in tourism development	4	4	F22
14 Public expenditure in tourism marketing	5	5	F12
15 Roads	4	3	F22
16 Capital attraction potential	5	5	F12

Notes: NF, natural factors; HF, human factors; CF, capital factors; IS, indicators of state; and II, indicators of importance
Source: Own creation based on fieldwork

Table III.
Productive factors

sustainable management of natural resources and the support to tourism by the Magic Towns program raise the state of natural and capital factors, determining that indicators up to Level 4 should be prioritised. As a result, the F12 quadrant includes 11 productive factors, all with high indicators of state (IS) and importance (II). Based on the observed pattern, it is a priority to focus on factors with a very low IS and II, namely human capital located in quadrant F11. From our theoretical perspective, this means the need to train individuals so that they are able to provide ecotourism services.

5. Conclusions

The aim of this study was to establish the potential for ecotourism of a highly marginalised locality in the Municipality of Tlalpujahua, a Magic Town in the State of Michoacán, Mexico. The community of La Trampa was identified because of its tourist attractions, local organisation and empowerment, and interested local actors. The results show that studying the characteristics of highly or very highly marginalised localities may contribute to the expansion of benefits brought about by the Magic Towns Program. A diverse methodology applied key elements to identify localities suitable for ecotourism, characteristics of marginalisation and endowment of natural heritage. We conclude that the benefits to localities included in the MTP can be expanded to surrounding spaces through strategies such as ecotourism.

In the Magic Town of Tlalpujahua, ecotourism in the town of La Trampa is a viable and necessary option because of its natural resources available and inclusion in priority sites for biodiversity conservation. It was shown that the town has the essential elements to develop an ecotourism project that promotes social welfare and conservation. The diagnosis identified the specific needs of the population, socioeconomic and environmental characteristics favouring the ecotourism activity, the interest in the resources that can be converted into tourist attractions, and the projects that attempted to overcome some of problems facing the locality.

The information obtained clarified specific questions as to how ecotourism projects can serve local communities. The potential for ecotourism identified through the FAS models highlights the ability of La Trampa to incorporate and initiate tourist activities and products. However, its support systems still show weaknesses that may be solved through the resources at the disposal of the Magic Town of Tlalpujahua.

We have demonstrated the pertinence of proposing an ecotourism project in the locality because of its economic relevance. Furthermore, it is essential to know the will and views of the local population, as the existence of local initiatives play a very important role in triggering endogenous development processes (Vázquez-Barquero, 2002). As a result, we observed that La Trampa exhibits a significant level of organisation and is able to carry out sustainable projects, having already received support in their execution and taken advantage of some of their social, economic and environmental benefits.

The FAS method identified factors to be promoted and the advantages of the peripheral location of La Trampa. To carry out activities related to ecotourism, such advantages must be used in strategies and actions. In general, the locality must improve the conditions of attractions related to farmland and cultural events, as well as create tourism products generating new experiences during visits to trails and plots. Regarding its support systems, the locality of La Trampa must upgrade its lodging and catering infrastructure, mechanisms of distribution of tourist information, signalling and signage at the destination and training in tourism provision.

References

Alburquerque, F. (2003), *Teoría y práctica del Enfoque del Desarrollo Local*, Instituto de Economía y Geografia. Consejo Superior de Investigaciones Científicas, Madrid.

Buckley, R. (2010), *Adventure Tourism Management*, Butterworth-Heinemann.

Cerón, M.H. (2016), "Desigualdad en el Consumo Turístico de los Hogares en México", in Martínez, R., García, M. and Ríos, B. (Eds), *Equidad y Desarrollo. Retos de las políticas públicas en México*, Instituto Politécnico Nacional y Colofón, México.

CESTUR (2013), *Evaluación de desempeño de los Destinos turísticos en el Marco de los Convenios de Coordinación en Materia de Reasignación de Recursos. Análisis del desempeño turístico local Modelo de Satisfacción de Los Turistas*, CESTUR, Conacyt y Sectur, México.

CONABIO (2012), "Áreas Naturales Protegidas Federales de México, Agosto 2012. [Shapefile]. Escala no vista. "Catálogo de metadatos geográficos. Comisión Nacional para el Conocimiento y Uso de la Biodiversidad"", Octubre de 2012, available at: www.conabio.gob.mx/informacion/metadata/gis/anp_agosto12gw.xml?_httpcache=yes&_xsl=/db/metadata/xsl/fgdc_html.xsl&_indent=no (17 de noviembre de 2016).

CONEVAL (2014), *Metodología para la medición multidimensional de la pobreza en México (segunda edición)*, CONEVAL, Coneval, México.

Coria, J. and Calfucura, E. (2012), "Ecotourism and the development of indigenous communities: the good, the bad, and the ugly", *Ecological Economics*, Vol. 73, pp. 47-55.

Covarrubias, R.R. and Conde, P.E.M. (2009), *Percepción del nivel de satisfacción de los residents con la actividad turística: Caso Comala*, TuryDes, Colima, México, No. 2, p. 4.

Donohoe, H.M. and Needham, R.D. (2006), "Ecotourism: the evolving contemporary definition", *Journal of Ecotourism*, Vol. 5 No. 3, pp. 192-210.

Dubin, J. and Durham, W.H. (2008), "Educating ecotourists: lessons from the field", *Ecotourism and conservation in the Americas*, pp. 141-152.

Fayos-Solà, E., Fuentes, L.M.E. and Muñoz, A.I.M. (2011), "El modelo FAS: Orígenes, desarrollo y aplicación en destinos turísticos", *Estudios turísticos*, No. 188, pp. 27-62.

Fayos-Solà, E., Fuentes, L.M.E. and Muñoz, A.I.M. (2014), "Key factors for development. En tourism as an instrument for development: a theoretical and practical study", *Bridging Tourism Theory and Practice*, Vol. 5, pp. 29-54.

Gallego, L.J. and Pedro, B.A. (2004), *Planificación de los destinos turísticos*, UOC, Barcelona.

Garraway, J. (2009), "Ecotourism as a means of community development: the case of the indigenous populations of the Greater Caribbean", *Ara: Revista de Investigación en Turismo*, Vol. 1 No. 2, pp. 11-20.

Geilfus, F. (2002), *80 herramientas para el desarrollo participativo: diagnóstico, planificación, monitoreo, evaluación*, IICA, San José C.R.

Guillén, L.M., Valenzuela, B.A. and Jaime, R.M. (2013), "Efectos del Programa Pueblos Mágicos en los residentes locales de El Fuerte, Sinaloa. Una aproximación al estudio de los imaginarios sociales", *Topofilia*, No. 4, p. 1.

Hall, M.C. and Boyd, S.W. (2005), *Nature-based Tourism in Peripheral Areas: Development or Disaster?*, Channel View Publications, p. 21.

Hernández, L.J. (2012), "Tequila: centro mágico, pueblo tradicional, ¿Patrimonialización o privatización?", *Andamios*, No. 6, p. 12.

Hoyos, C.E. and Hernández, L.O. (2008), "Localidades con recursos turísticos y el Programa Pueblos Mágicos en medio del proceso de la nueva ruralidad. Los casos de Tepotzotlán y Valle de Bravo en el Estado de México", *Quivera*, Vol. 10, No. 2, pp. 111-130.

INE (2007), *Propuesta de Programa de Ordenamiento ecológico Territorial de la Región Mariposa Monarca (POETMM)*, INE, IG, UNAM, México.

INEGI (2009), *Prontuario de información geográfica municipal de los Estados Unidos Mexicanos*, Instituto Nacional de Estadística y Geografía, INEGI, México.

INEGI (2010), *Cartografía Geoestadística Rural, Cierre del Censo de Población y Vivienda 2010*, Tlalpujahua. Instituto Nacional de Estadística y Geografía, INEGI, México.

INEGI (2016), *Marco Geoestadístico, junio 2016. [Shapefile]. Escala no Vista.* "Marco Geoestadístico Nacional", available at: www.beta.inegi.org.mx/app/biblioteca/ficha.html?upc=702825217341 (17 de noviembre de 2016).

ITESM (2014), *Diagnóstico sobre Competitividad y Sustentabilidad del Pueblo Mágico*, Tlalpujahua de Rayón, Tlalpujahua, Michoacán.

Jafari, J. (2005), "El turismo como disciplina científica", *Política y Sociedad*, Vol. 42 No. 1, pp. 39-56.

Kiper, T. (2013), *Role of Ecotourism in Sustainable Development, Advances in Landscape Architecture*, en www.intechopen.com/books/advances-in-landscape-architecture/role-of-ecotourism-in-sustainable-development (20 de marzo de 2015).

OMT (2014), *Global Report on Adventure Tourism*, World Tourism Organization (UNWTO), Madrid, No. 9.

ONU (1993), *Informe de la Conferencia de las Naciones Unidas sobre el Medio Ambiente y el Desarrollo*, Vol I. Recuperado el 5 de Marzo de 2015, de: https://documents-dds-ny.un.org/doc/UNDOC/GEN/N92/836/58/PDF/N9283658.pdf

Osorio, G.M. (2010), "Turismo masivo y alternativo. Distinciones de la sociedad moderna/posmoderna", *Convergencia*, Vol. 17 No. 52, pp. 235-260.

RAN (2016), *Perimetrales de los núcleos agrarios certificados.[KML]. Escala no Vista*. "Entidad Federativa Michoacán", Enero de 2016, http://datos.ran.gob.mx/filescd/dgcat/ran_da_dgcat_poligonos_nucleos_agrarios_mich.kml (17 de noviembre de 2016).

Rodríguez, H.I. and Pulido, F.J.I. (2010), "Análisis del desarrollo turístico en los pueblos mágicos de México. una revisiónde los efectos de la política pública en los destinos mexicanos", *En Retos Para el turismo Español: Cambio de Paradigm*, pp. 797-819.

Royuela M.M. and Ramírez de la, O.I. (2015), "Patrimonialización, desarrollo, gobernanza, gobernabilidad y gubernamentalidad en Malinalco, Pueblo Mágico", *Revista de Cultura e Turismo*, No. 9, p. 2.

SECTUR (2014), *ACUERDO por el que se establecen los Lineamientos generales para la incorporación y permanencia al Programa Pueblos Mágicos. Secretaría de Turismo*, Diario Oficial de la Federación, México, Disponible en: www.dof.gob.mx/nota_detalle.php?codigo=5361690&fecha=26/09/2014

SECTUR (2016), "Localidades que cuentan con el nombramiento de Pueblo Mágico", Secretaría de Turismo, Disponible en: http://catalogo.datos.gob.mx/dataset/localidades-que-cuentan-con-el-nombramiento-de-pueblo-magico/resource/6604fee4-b634-4898-ae1e-cbaf340c147d

Stronza, A. (2008), "The bold agenda of ecotourism", in Stronza, A. y Durham, W.H. (En.), *Ecotourism and Conservation in the Americas*, Ecotourism book series, Vol. 7, p. 1.

Vázquez-Barquero, A. (2002), *Endogenous Development: Networking, Innovation, Institutions and Cities*, Routledge, Londres.

Vázquez-Barquero, A. (2007), "Desarrollo endógeno. Teorías y políticas de desarrollo territorial", *Red de Revistas Científicas de América Latina, el Caribe, España y Portugal*, No. 11, pp. 183-210.

Yin, R. (2011), *Applications of Case Study Research*, 1st ed., Sage, Thousand Oaks, CA.

Further reading

Butler, R. (1980), "The concept of a tourist area cycle of evolution: implications for management of resources", *Canadian Geographer*, Vol. 24 No. 1, pp. 5-12.

CONAPO (2013), *Índice absoluto de marginación 2000-2010*, Secretaría de Gobernación, México.

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