



El Colegio de la Frontera Sur

Desarrollo de indicadores de sustentabilidad turística aplicado a  
una comunidad indígena de la Selva Lacandona

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Por

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para obtener el grado de **Maestro en Ciencias en Recursos Naturales y Desarrollo Rural.**

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## **Resumen y palabras clave**

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El turismo se ha impulsado en muchos países, pues se cree fomenta el crecimiento económico en aquellas regiones o comunidades con bajo desarrollo económico. Los espacios indígenas han sido el foco de atención como en México, donde se han destinado más de 309 millones de pesos para su fomento. Sin embargo, el turismo ha generado impactos negativos al medio ambiente y la sociedad dado su deficiente o nula planificación. Ante esta situación hay una preocupación creciente en el uso de indicadores para medir el curso sustentable del turismo tanto por la parte académica y gubernamental.

El turismo sustentable apunta a la planificación de dicha actividad para minimizar su impacto negativo al ambiente y mantener cubiertas las necesidades de los visitantes, el beneficio económico y social para las comunidades anfitrionas presentes y futuras. El logro de estos objetivos depende del interés común de los actores locales y que estos se reflejen en los indicadores del turismo sustentable.

En esta perspectiva, el presente trabajo tiene por objetivo elaborar un sistema de indicadores de turismo sustentable para los espacios indígenas a partir de la identificación de problemáticas destacadas en el desarrollo del turismo y reconocimiento de objetivos comunes. Se hizo una caracterización del espacio comunitario y aplicaron entrevistas y encuestas a un conjunto de actores locales; como la población, autoridades locales y representantes de proyectos de ecoturismo e instituciones gubernamentales.

Se identificaron 13 problemas prioritarios y se formulan 39 indicadores agrupados en cuatro dimensiones del turismo sustentable, aunque dos fueron los de mayor reconocimiento. Asimismo, algunos principios para el desarrollo del turismo sustentable no fueron identificados por los actores. Esto se asocia al escaso conocimiento que tiene la comunidad indígena y los actores locales sobre los impactos y las dinámicas del desarrollo turístico.

**Palabras clave:** actores, ecoturismo, planificación, turismo sustentable

## **Capítulo I Introducción**

Encontrar alternativas que guíen a las actividades y sociedades humanas hacia la sustentabilidad es un proceso complejo, y se ha vuelto un reto tanto para la academia, como para los gobiernos y la sociedad civil. Una vía que aproxima el acercamiento a los principios de la sustentabilidad es mediante la identificación e interpretación de indicadores, lo cual es una parte integral de la política internacional y nacional en los últimos años (Reed et al. 2006). Sin embargo, el aporte de los indicadores de sustentabilidad como instrumentos que guíen a las políticas del desarrollo sustentable es limitado por las diferencias que prevalecen en su definición e importancia entre los diversos sectores y escalas espaciales (Reed et al. 2006; Dahl 2012). Además que existen muchas aproximaciones teóricas y prácticas sobre cómo medir la sustentabilidad. Hay discrepancia y es una tarea difícil, tanto por la parte técnica, como por la discusión académica sobre qué es la sustentabilidad.

La gran capacidad de la industria turística en impulsar otros sectores y actividades económicas expresada en la generación de divisas, empleos e ingresos (Skerritt y Huybers 2005) ha hecho que sus impactos negativos se vean reflejados en el medio ambiente y la sociedad. Es así que el turismo se ha convertido en un agente importante para el cambio ambiental global (Gössling 2002; Mao et al. 2014; Saenz-de-Miera y Rosselló 2014). Cuando dichas actividades son planificadas deficientemente, el cambio e impacto negativo al ambiente se puede agravar. Ante esta situación, hay una preocupación creciente por la generación de políticas turísticas y una mayor planificación que encajen con las diversas culturas y contextos locales para el manejo sustentable de los recursos naturales (Mao et al. 2014).

El ecoturismo, uno de los segmentos con mayor proyección a la conservación del medio ambiente y el impulso socioeconómico, ha cobrado gran interés para el desarrollo del turismo sustentable (Park y Yoon 2011; Liu et al. 2014; Das y Chatterjee 2015). Lo que permitió a que fuera reconocido en la Cumbre Mundial del Ecoturismo en Québec 2002, (Weaver y Lawton 2007). Ya que esta actividad puede:

a) contribuir activamente a la conservación de patrimonio natural y/o cultural, b) ser incluyente a la participación de las comunidades locales e indígenas en la planificación, desarrollo y operación con la finalidad de favorecer a su bienestar, c) contribuir a la interpretación del patrimonio natural y cultural, d) minimizar los impactos causados por los visitantes en el destino, pues quienes practican esta actividad son viajeros independientes y en pequeños grupos (OMT 2002; Das y Chatterjee 2015).

Sin embargo, la eficacia del ecoturismo como promotor de la sustentabilidad en el turismo es incipiente en la investigación, por lo que es un proceso discursivo que incorpora un conjunto de creencias y valores de un grupo social a otro (Fletcher 2009). Estudios realizados por Doan (2000); Enríquez-Narváez y Blanco Sepúlveda (2002); Trench (2005), evidencian que la práctica del ecoturismo con planeación deficiente, ha generado implicaciones socioambientales y culturales dentro de los espacios comunitarios e indígenas. Entre los que destacan: la sobreexplotación de la biodiversidad, descontrol de la capacidad de carga turística, pérdida cultural y montaje de escenarios culturales. En contraste, los discursos gubernamentales y no gubernamentales plantean beneficios y éxitos del ecoturismo, sin un sustento apoyado en el análisis técnico y empírico de la sustentabilidad local.

En los últimos años, diversas instituciones públicas y privadas, así como la comunidad científica, han desarrollado esfuerzos en la elaboración de indicadores para examinar la sustentabilidad del turismo (Torres-delgado y Saarinen 2014). Instituciones internacionales como la Organización Mundial de Turismo (OMT), la Organización para la Cooperación y el Desarrollo Económicos (OCDE) y la Asociación de Estados del Caribe (AEC) destacan su liderazgo en la propuesta de indicadores de turismo sustentable a escalas nacionales y macroregionales.

La sustentabilidad turística, hace énfasis en el desarrollo de dicha actividad en donde las necesidades de los turistas y regiones anfitrionas sean satisfechas, al mismo tiempo que protege y mejora las oportunidades actuales y del futuro. Esto puede ser alcanzable mediante la gestión integral de los recursos, de tal forma que se satisfagan las necesidades económicas, sociales, estéticas, a la vez que se respeta la integridad cultural, y los procesos ecológicos esenciales para la diversidad biológica y los sistemas

de apoyo a la vida (UNEP y WTO 2005). Se reconoce que la atención equilibrada de los aspectos ambientales, económicos, socioculturales y político institucional en las diversas etapas que comprende el desarrollo del turismo en un destino o territorio, es necesario para lograr la sustentabilidad en esta actividad (Choi y Sirakaya 2006).

Para Ibáñez-Pérez (2012), la mayoría de los esfuerzos en el desarrollo de indicadores se han limitado a elaborar listas de criterios e indicadores globales que pueden resultar poco precisos durante su aplicación práctica a escala local. Esto es debido a que los contextos social, ambiental, económico y político pueden ser distintos en cada región. Por ejemplo, los aspectos culturales, regímenes de organización social, apropiación territorial, actividades económicas y nivel educativo. Es necesario por tanto, generar indicadores del turismo sustentable que puedan ser adaptables y aplicables a contextos locales. En este sentido, existen vacíos de conocimiento sobre cómo se implementan iniciativas de turismo en zonas rurales y territorios indígenas, que consideren las problemáticas y dinámicas locales.

Considerando el entorno de los espacios indígenas y del impulso del ecoturismo en dichos contextos, así como desde las problemáticas y objetivos comunes que guían el proceso de “sustentabilidad” del turismo en estas comunidades; esta investigación propone elaborar indicadores de turismo sustentable a través de la participación local y de las instituciones que fungen como actores claves del desarrollo del turismo.

Para ello, se seleccionó a la comunidad indígena de Frontera Corozal, ubicada en la Selva Lacandona del estado de Chiapas. En esta comunidad se encuentra el centro ecoturístico denominado Escudo Jaguar, primer proyecto turístico en la población. Dicho proyecto fue tomado de referencia para la Organización Mundial del Turismo (OMT 2001) como ejemplo del ecoturismo en espacios indígenas. A partir de esta experiencia hay un ascendente número de proyectos de turismo en la comunidad (Saragos-Méndez et al., 2013), y ha cobrado importancia turística al integrarse al proyecto turístico Mundo Maya que conforma el desarrollo en la confluencia regional de los países de México, Guatemala y Belice (Hernández Cruz et al. 2005).

Particularmente en la Selva Lacandona se ha implementado una serie de políticas de desarrollo a fin de contribuir al combate al rezago social. Entre ellas la actividad turística



se ha destacado en los últimos años como apuesta al desarrollo social y económico. Dichas políticas surgen principalmente desde el gobierno federal y estatal, aunque también provienen de las organizaciones interesadas en la conservación de la naturaleza a través el turismo. Para ello, desarrollan esfuerzos en el acaparamiento de tierras en puntos estratégicos para lograr tales objetivos. Por otro lado las comunidades indígenas y campesinas en donde se realiza tales transacciones, han desarrollado redes de resistencia a estas iniciativas mediante coaliciones comunitarias y organizaciones civiles (Rocheleau 2015). En ese sentido la diversidad de intereses y acciones de diferencian y hacen complejas la búsqueda de caminos y objetivos comunes.

### **La construcción de indicadores locales para la sustentabilidad**

La Agenda 21 (1992) hace referencia a la construcción de indicadores de desarrollo sustentable para reconocimiento de metas y objetivos entre los actores de un espacio y territorio y anticipar con todo ello las condiciones futuras. Meyer y Weber (2000, citado en Frausto 2006), mencionan que es importante destacar que las relaciones existentes entre el medio ambiente, la sociedad y la economía no son equilibradas en los espacios; por ello los indicadores deben diferenciarse entre regiones y localidades. Por tanto, se asume que la elaboración de indicadores parte de un proceso participativo comunitario de actores relevantes, con la finalidad de tener validez interna como externa de tales indicadores (McAlpine y Birnie 2005; Pasape et al. 2014). De acuerdo a Lozano-Oyola et al. (2012), al identificar las problemáticas locales en los destinos turísticos podremos abordar y planear para mejorar el nivel de sustentabilidad de dichos destinos.

La elaboración de indicadores mediante la participación de actores locales, es decir, con una visión de “abajo hacia arriba”, es uno de los procesos metodológicos recomendados en varios autores como Miller y Twining-Ward 2005; Reed et al. 2006; Fraser et al. 2006. Sin embargo, se reconocen restricciones en el proceso de su elaboración como la falta de tiempo, las limitaciones financieras y la capacidad de generar interés del público (Mcalpine y Birnie 2005). Además, hay que considerar los

conflictos socioambientales que caracterizan a las comunidades indígenas y la relación investigador comunidad en la transferencia e interpretación de la información.

En este contexto, los indicadores pueden representar información sobre un fenómeno específico; simplificando la información relevante para que dicho fenómeno de interés sea destacado y comunicado de forma oportuna, bajo el contexto y espacio dado (Frausto Martínez et al. 2006). Por su parte Tomadoni (2013), señala que un indicador es una herramienta metodológica que permite desagregar impactos de procesos tanto de mejoramiento y fortalecimiento. La OMT (2005), menciona que estos indicadores pueden medir cambios en las propias estructuras turísticas, tanto factores internos como externos que puedan afectar y repercutir en el desarrollo de la actividad turística.

La presente propuesta pretende sentar las bases de la gestión sustentable del turismo en la Selva Lacandona y otras regiones indígenas del país, y supondrá una contribución a la literatura científica especializada en el turismo en espacios indígenas. Bajo esta perspectiva, se intenta responder los siguientes cuestionamientos ¿La obtención de información en la comunidad indígena permite un involucramiento activo y reconocimiento de objetivos y metas comunes de turismo sustentable? ¿Los indicadores basados en fuentes comunitarias y de actores en el territorio permiten medir el desarrollo del turismo sustentable?

Para el desarrollo de la presente investigación, se plantearon los siguientes objetivos:

### **Objetivo general**

Elaborar un sistema de indicadores de turismo sustentable para los espacios indígenas a partir de objetivos y metas comunes.

### Objetivos específicos

- a) Identificar las problemáticas más destacadas relacionadas al desarrollo del turismo en espacios comunitarios indígenas.
- b) Reconocer objetivos y metas comunes del turismo sustentable en la Comunidad Lacandona de Frontera Corozal.

- c) Elaborar indicadores de turismo sustentable desde las problemáticas comunes y cuestiones de sustentabilidad turística.
- d) Emitir recomendaciones sobre las técnicas y herramientas metodológicas en el diseño de indicadores con énfasis en los espacios indígenas.

El presente trabajo de tesis, es de tipo no monográfico, por tanto se ha iniciado con una breve introducción como el capítulo I. A continuación, el capítulo II, se presenta el artículo correspondiente a esta modalidad de tesis, bajo lineamientos editoriales de la revista *Journal of Sustainable Tourism* donde éste fue sometido. Finalmente en el capítulo III, se plantean las conclusiones generales y las citas bibliográficas utilizadas en la introducción de este trabajo.

## Capítulo II

### Indicators for sustainable tourism: application in indigenous areas

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#### Abstract

Sustainability indicators based on compliance with theoretical parameters and not on the practical context may not represent the sustainability sought to be measured. Therefore, a “bottom-up” method was applied to develop indicators for sustainable tourism in an area with indigenous communities in Mexico. To this end, a set of local stakeholders was considered to obtain information on local tourism-sustainability problems. Based on the identification of thirteen main problems, thirty-nine indicators were created, which were subsequently weighted according to degree of importance based on the interrelationships of tourism sustainability in the community. This method is important in defining themes and indicators for sustainable tourism. However, the stakeholders did not identify certain principles for the development of sustainable tourism. This failing is associated with the low level of awareness among the indigenous community and local stakeholders regarding the impacts and dynamics of tourism development. In the indigenous area, the social and political aspects received the greatest emphasis with respect to the development of sustainable tourism.

Keywords: indicators; sustainable tourism; local participation; territory; indigenous

## **Introduction**

As an economic activity, the tourism industry contributes to global environmental change because of its negative impact on the environment and society (Gössling, 2002; Saenz-de-Miera & Rosselló, 2014). Therefore, the sustainability paradigm has encouraged the use of indicators by the scientific community, governments and international institutions to determine the sustainable course of such activity (OMT, 2005; Blancas, Lozano-Oyola, & González, 2015). Sustainable tourism aims to plan tourism in a manner that minimises the negative impact on the environment and society while meeting the needs of visitors and providing economic support to host communities (UNEP & WTO, 2005). The achievement of these objectives depends on the society's political system, which includes the participation and involvement of local stakeholders. Therefore, a special focus on the political dimension is critical for sustainable tourism (Choi & Sirakaya, 2006).

In the development of sustainability indicators, the literature acknowledges that when indicators are obtained from official national data, the data present problems and limitations for the analysis and interpretation of sustainability on different scales (Mascarenhas, Coelho, Subtil, & Ramos, 2010). The literature emphasises that the indicators are not directed toward the evaluation of management at the local level (Sherry, Halseth, Fondahl, Karjala, & Leon, 2005), and rigor is lacking in the collection and storage of such information (Riley, 2001). In addition, indicators constructed by expert consensus may encounter problems with subjective judgments regarding the indicator's weight (Singh, Murty, Gupta, & Dikshit, 2009; Mikulić, Kožić, & Krešić, 2015).

By failing to capture the first-hand experience of local stakeholders (Schianetz & Kavanagh, 2008), these problematic approaches may omit specific conditions of the local context of sustainability in an area and critical issues of sustainable development at the community level

(Reed, Fraser, & Dougill, 2006). In addition, communities may have their own definitions of sustainability. Therefore, the literature agrees on the importance of constructing indicators based on the community because sustainability refers to a particular context in space and time (Tsaour, Lin, & Lin, 2006; Reed et al., 2006) and responds to current, specific concerns in the area (Valentin & Spangenberg, 2000).

From this perspective, there is an emphasis on the construction of indicators based on the use and triangulation of information from sustainability stakeholders at the local level (Reed et al., 2006; Fraser, Dougill, Mabee, Reed, & Mcalpine, 2006), whereby the participation of community members and leaders, political stakeholders and experts involved in tourism development ought be considered (Miller & Twining-Ward, 2005; Park & Yoon, 2011). However, the achievement of sustainability depends on whether the goals of the stakeholders are consistent with the principles of sustainability (Reed et al., 2006).

Government and community participation in the identification of indicators determines effectiveness and support in the use and monitoring of the indicators (Tanguay et al. 2013). Additionally, such participation ensures the contribution of the indicators to policy planning and the sustainable management of tourism as part of the overall objective of the indicators (Lozano-Oyola et al. 2012).

Advances in the development of indicators for sustainable tourism have focused on consolidated tourism destinations whose interests are homogenous with those of the relevant social space and stakeholders. The development of indicators based on the characteristics and dynamics of indigenous communities using the "bottom-up" method remains in its infancy. How several processes for tourism sustainability function and the viability of indicators for development and possible application in such contexts remain obscure.

Among studies related to the indigenous and rural context, supported by the use of the Delphi technique, we highlight those conducted by Tsaour et al. (2006), who analysed sustainability indicators based on the availability of the resources required for sustainable tourism in an indigenous ecotourism destination in Taiwan. In the rural context of Korea, Park and Yoon (2011) developed indicators to assess rural tourism as a destination. Choi and Sirakaya (2006) proposed indicators to measure the development of community tourism in the context of sustainability in this tourist segment. In addition, Pasape, Anderson and Lindi (2014) evaluated potential sustainability indicators for ecotourism in Tanzania using a survey of ecotourism participants.

Given the limited research on the development of indicators for sustainable tourism in indigenous areas and the participatory implications of the bottom-up method, this study aims to contribute to closing this knowledge gap by answering the following questions: Does obtaining information on the indigenous community facilitate active involvement and the recognition of the common goals and objectives of sustainable tourism? Do indicators based on community sources and stakeholders in the territory enable us to measure the development of sustainable tourism?

Thus, this study discusses the development of a system of sustainable tourism indicators based on community information and the main stakeholders in tourism in an indigenous community in the Lacandon Jungle in South-eastern Mexico. The World Tourism Organization (2001) has recognised this community's successful ecotourism initiative. Currently, indigenous areas are subject to intervention by governmental and non-governmental agencies at the international level to create policies to facilitate market growth and the development of ecotourism products (Whitford & Ruhanen, 2010; Ruhanen, Whitford, & McLennan, 2015). The interest of such agencies is in large cultural and natural reservoirs and the pristine ecosystems

threatened which are of substantial attraction for the ecotourism market of these areas (Alarcón-Cháires, 2006; Boege Schmidt, 2008).

### ***Sustainability indicators from indigenous communities***

In the development and use of indicators to measure tourism sustainability in an area, one must know the complexity of the tourism system and its relations with the specifics of the area in which sustainability is to be evaluated (Franzoni, 2015). To construct the indicators, in addition to knowing the context (social, economic, political and environmental) in which the communities, stakeholders and primary information sources are embedded, one can use indicators to reveal the path taken and to provide guidelines to follow the chosen path (Hart, 1997 cited in Miller, 2001, 351 p.).

The indicators should represent summarised and relevant information on the quantitative (Frausto Martínez, Rojas López, & Santos, 2006) and qualitative status of trends and changes and anticipate the future sustainability (Lyytimäki, 2012). In addition, they should serve as an early warning system to prevent negative effects of tourism development, which will enable measuring changes in the tourism structures based on internal and external factors that may affect tourism development (OMT, 2005).

This paper assumes that an indigenous community is a dimension of social organisation that consists of an area for a community's development and maintenance as a social organisation (Iyall Smith, 2007). Members of the community can be bound by primary relationships, such as kinship ties, and may define cohesion and identity regarding their membership in a space governed by their own government that regulates social life beyond the laws of the State (Garibay, 2002; Iyall Smith, 2007).



The indigenous community shares a repertoire of values, norms and symbols that define the customary management of land ownership (FAO, 2004; Wilson & Memon, 2010). This form of organisation is recognised and redefined by the law of the State by granting titles to land (Larson, 2010) accompanied by new mechanisms of territorial regulation by government institutions (Bauer, 2015). This action is essential for the introduction and development of new exogenous activities in the community, such as ecotourism.

#### *Sustainable tourism for development in indigenous communities*

The association of indigenous communities with areas with low economic development (from the perspective of economic growth) cause these areas to be perceived as incapable and requiring assistance to achieve development (Limón Aguirre, 2005). Therefore, these areas are included in the scope of a government's development policies through the use of ecotourism, with the assumption that ecotourism can contribute to combating the poverty that is recorded (OMT, 2001) in addition to the cash flow generated by tourists and support from government and conservation agencies (Drumm & Moore, 2005).

However, in indigenous communities, the organisation conditions for the development of ecotourism involve a challenge because the current organisation reflects such a community's historical trajectory (Bello Baltazar, López Meza, & Alvarado Dzul, 2003). Although government legislation has been applied in indigenous territories, the type of community organisation and use of these resources remains embedded in the indigenous system of local organisation and kinship relations (Estrada Lugo & Bello Baltazar, 2009).

In this context, community participation in ecotourism involves direct intervention in the community's system of organisation and production by offering cultural and environmental resources as a product for tourists (Wu, Wall, & Tsou, 2014). Therefore, we should question the

sustainability of this activity when such goods and services are products of value based on tourism marketing as established by the government (Hernández-Ramírez, 2015). Thus, the system privileges the supply of the cultural and natural exoticism of one ethnic group or community over others (Trench, 2005).

#### *Government promotion of ecotourism in Mexico*

Government institutions aimed at fighting poverty, conservation and economic development lead the development of ecotourism in the country's indigenous communities (Palomino Villavicencio & López Pardo, 2008; Garduño Mendoza, Guzmán Hernández, & Zizumbo Villarreal, 2009). Through multiple projects, they perform the role of funder, trainer and promoter of ecotourism. From 2001 to 2005, such institutions invested 119.8 million pesos through the National Indigenous Institute, today known as the National Commission for the Development of Indigenous Peoples (Comisión Nacional para el Desarrollo de los Pueblos Indígenas – CDI, Spanish Acronym) (Palomino Villavicencio & López Pardo, 2007).

Investment is concentrated on the poorest states and with the largest cultural and environmental repertoire, such as Chiapas, Oaxaca, Puebla, Michoacan and other states. In 2009, 1,239 ecotourism projects were reported, of which 325 were by private companies and 914 were community projects (Garduño Mendoza et al., 2009; Pedro, Sánchez, & Valverde, 2009). In 2013, through the CDI, 286 projects were supported in 23 states with a budget of 190.3 million pesos (over 2.4 million USD) (CDI, 2014).

However, given the deficient ecotourism planning in indigenous communities, there is a lack of knowledge regarding the effectiveness of projects, community actions and stakeholders with respect to sustainability. The evaluation of the benefits of an activity in terms of conservation and social and economic development in indigenous and rural communities is

complex and has not produced tangible positive results (Brenner, 2006; Guerrero Rodríguez, 2010; Mendoza Ramos & Prideaux, 2014).

Indigenous communities that participate in ecotourism projects have had to adapt their processes of appropriation in the use and management of natural resources (Hernandez Cruz, Bello Baltazar, Montoya Gomez, & Estrada Lugo, 2005). However, they remain unaware of the capacities necessary for the supply of ecotourism services, such as administration, accounting and the promotion of products and services to the market, because these capacities are alien to their traditional way of life (López Pardo & Palomino Villavicencio, 2008). In this context, the following question arises: which indicators are representative in indigenous territories and contribute to planning sustainable ecotourism?

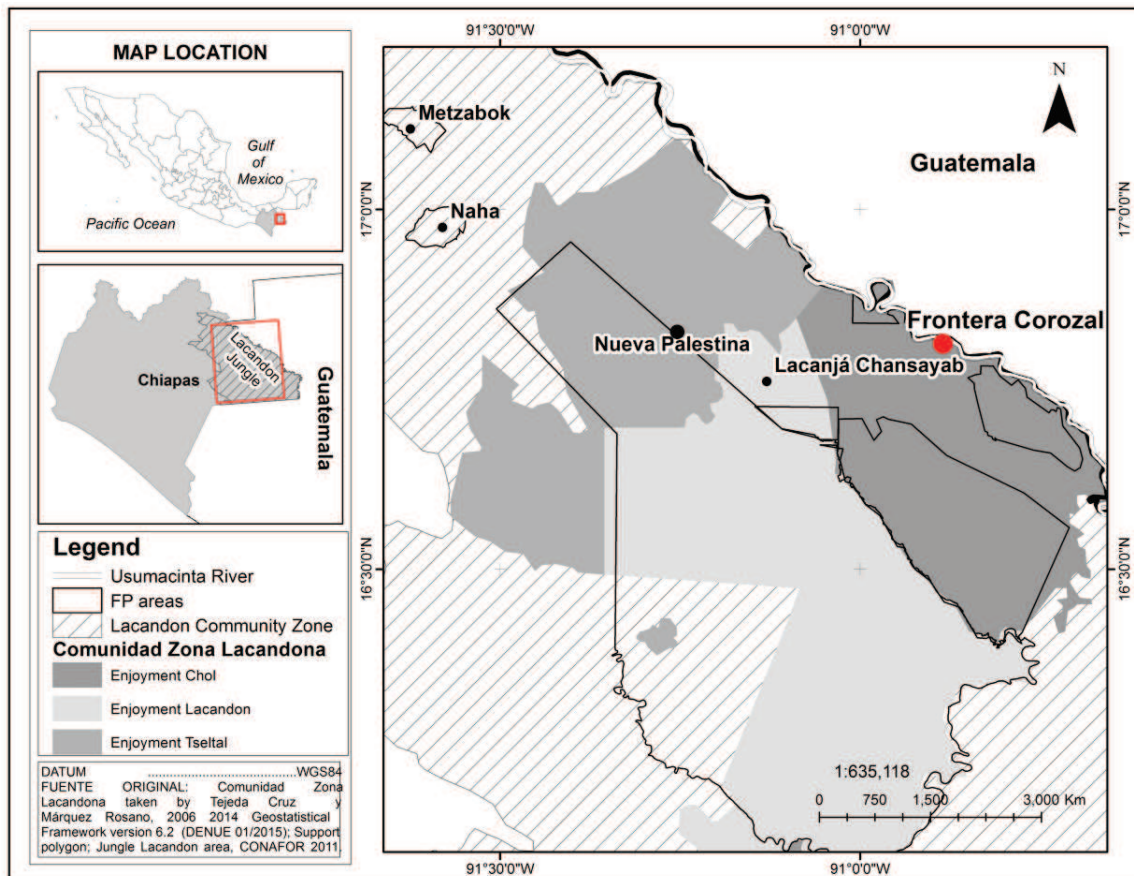
### ***Study area: Lacandon Jungle and Frontera Corozal***

To promote the conservation (Trench, 2008) of the biological wealth of the Mexican tropics, seven natural and community areas in the Lacandon Jungle, Chiapas, were decreed federally protected and included in the Mesoamerican Biological Corridor (Álvarez Icaza, 2010). This biological wealth is accompanied by the historical precedent of the region's Mayan civilisation, which today is represented by indigenous communities with poor health, housing and basic services (PHR, CCESC, & ECOSUR, 2006). In 1988, the area, which hosts important archaeological sites, such as Palenque, Yaxchilán and Bonampak, strengthened its tourist importance by becoming part of the Mundo Maya tourism project.

The community of the Frontera Corozal (the Chol ethnicity), which includes the villages Nahá, Metzabok, Lacanjá Chansayab (the Lacandon ethnicity) and Nueva Palestina (Tseltal ethnicity), were recognised by the Mexican government in 1972 as owners of 621,324 ha of the Lacandon Jungle, where the seven protected areas (Figure 1) would subsequently be located. The

so-called Lacandon Community Zone (Comunidad Zona Lacandona - CZL) consists of 1,450 owners known as "commoners". This recognition left certain communities who settled within the limits of the CZL as "invaders", which led to a series of conflicts between the CZL, the government and affected communities.

Figure 1. Frontera Corozal and CZL in the Lacandon Jungle.



Government recognition for the management of the CZL is established in a communal statute that governs the division and common usufruct of natural resources and the appointment of a representative of the Lacandon ethnicity and own authorities in each community (Interior Regulation of the Lacandon Community Zone 1992). The primary demand of the CZL

inhabitants emphasises the physical demarcation of their land by the government. Thus, the State compensates the communities that reside there when they vacate their plots and can compensate the CZL when it expropriates that land. However, the compensated communities return to occupy the land after receiving payments for it, which causes the conflict to persist (Calleros-Rodríguez, 2014).

Against this background, during tense periods, the CZL maintains a constant liaison between the government and the area communities. Since 1972, agrarian problems have occurred when new stakeholders have appeared. Among these stakeholders are children of the "commoners" who do not possess land titles and individuals who belong to the region's increasing population. Members of both groups are land claimants. In addition, a Tseltal was elected CZL representative in 2014, which marked a new stage in the agricultural and social conflict.

The Chol indigenous community of Frontera Corozal, which is located in the Lacandon Jungle (Mexico), was selected for study. In the community, residents have been developing strategies related to various ecotourism projects since 1996, when Escudo Jaguar started operations as the community's first ecotourism centre (Hernandez Cruz et al., 2005). The ecotourism centre was recognised by the World Tourism Organization (2001) as a model ecotourism initiative in Mexico. This recognition contributed to the centre's reputation among tourism destinations in the region. Currently, there is increasing support for indigenous participation in this activity. However, the initiative has received little research attention (Mendoza Ramos and Prideaux 2014).

With an illiteracy rate of 35%, the communities in the CZL, such as Frontera Corozal, exhibit the region's highest number of individuals without education. Regarding daily life, 83.6% use firewood as their primary source of fuel for cooking, and most homes, 70.4%, are constructed

of wood. Regarding basic services, 99.4% of homes have electricity, and 14.7% have a drainage system (Salvatierra Izaba, Nazar Beutelspacher, & Morales Domínguez, 2013). Villagers use a local water supply and harvest wood for domestic needs, firewood, wildlife, and various edible fruits. The Xate palm (*Chamaedorea* spp.) is commercialised (López-Feldman & Taylor, 2009).

## **Methodology**

In this paper, the development of indicators is studied using a bottom-up method (Fraser et al., 2006; Reed et al., 2006; Roberts & Tribe, 2008). Information is identified and selected based on three levels (community, territory and government) (Figure 2) due to the complexity of relationships and integration between the levels in the development of tourism and sustainability (Ross & Wall, 1999; Schianetz & Kavanagh, 2008).

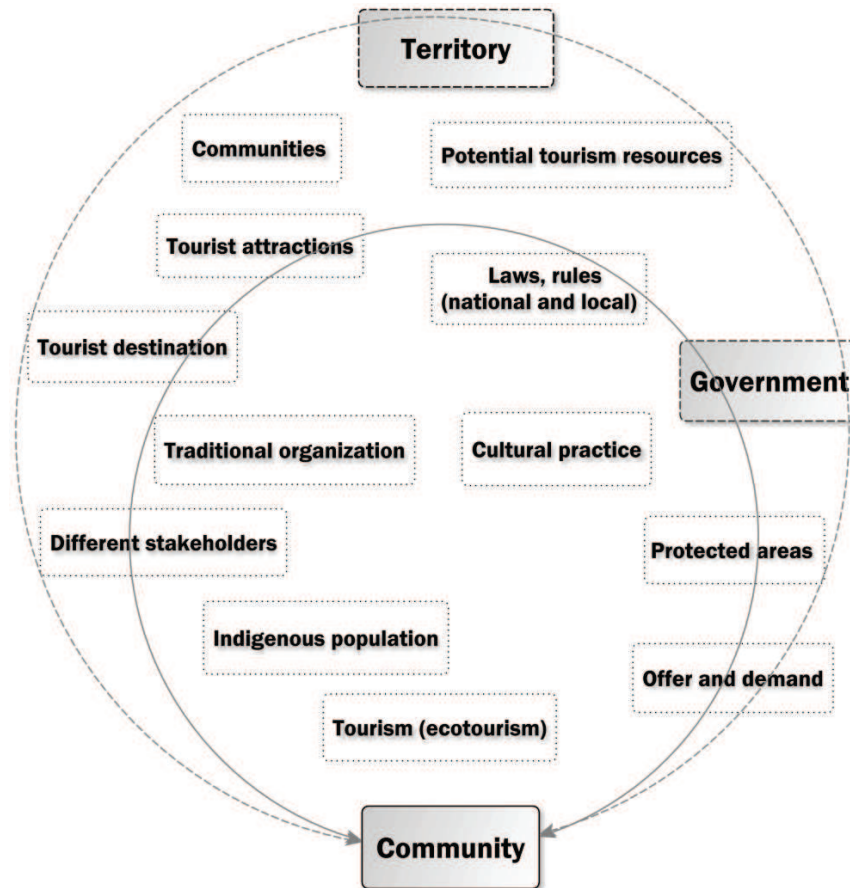
The community level (Figure 2, continuous circular line) represents information from the area on the use of community lands, whereby the community exercises its rules of social organisation to develop traditional economic activities and ecotourism. Therefore, the level includes the agreements of the community assembly, the representative community authorities and tourism establishments that are developed in the community.

The territory level (dashed line) includes information on the area in which the indigenous community maintains adjacent lands that are typically used with other communities with whom community agreements must be generated (or disagreements resolved) regarding the management of and access to natural resources, the travel of inhabitants between community plots, the trade or exchange of products and regional tourist facilities and attractions.

The government level (embedded in both lines; see Figure 2) corresponds to the institutions that represent the various government agencies that promote tourism, conservation and community development. The executives and representatives of these institutions possess

developed knowledge regarding the status of the tourism projects in these indigenous communities. Generally, these organisations maintain a record of the process of community participation and the various tourist activities.

Figure 2. Spatial and institutional level for the identification of community information.



Source: Own elaboration

The acquisition and integration of these three levels of information is conducted such that the indicators do not represent the perceptions of only one group of stakeholders or only institutional perspectives, which may not be relevant to the study area (Miller, 2001; Roberts & Tribe, 2008).

The aspects of tourism sustainability considered for the construction of indicators were environmental, socio-cultural, economic (OMT, 2005) and political (Choi & Sirakaya, 2006), as part of a simultaneous equilibrium to ensure the sustainability of tourism and the community. The environmental aspect corresponds to the contribution of improved environmental health and welfare provided by local initiatives (i.e., local control) and government stakeholders in tourism as well as control over environmental resources and the availability of traditional resource use and management.

The sociocultural aspect includes issues related to equal participation by gender and culture in the tourist activity. Such participation contributes to the preservation of culture and traditional organisation to ensure that tourism development is compatible with the local culture and community values (Sánchez, 2010) while encouraging the organisational capacities of the community in the territory. Although the political aspect belongs to the social dimension, it is necessary to analyse this aspect in greater depth because of the importance of institutions in this process, i.e., the coordination capacity of government institutions to generate agreements and policy tools geared toward the sustainable development of tourism with the community (Choi & Sirakaya, 2006). Accordingly, in defining the collective future, the citizen's role in decision making must prevail (Sánchez, 2010). In this regard, tourism-development issues, such as the participation of local stakeholders and the community, are considered.

The economic aspect of sustainability includes community capacity and ecotourism projects designed to obtain the economic benefits of tourism (e.g., employment and diversification of products and services) (Sánchez, 2010). To this end, we considered the profitability and stability of tourism from the perspective of ecotourism project managers and the community as well as the generation of stable jobs and whether these jobs represent an opportunity for everyone in the community (Tsaur et al., 2006).



### ***Data collection***

Based on the literature review, municipal statistics and local data banks provide the community and territorial context. Interviews were conducted with the current authority, two ex-officials from Frontera Corozal and five representatives or active members of ecotourism projects using the snowball qualitative technique (Briman, 2012). Additionally, a survey was administered to individuals in 110 of the 1,065 homes, in a random fashion, in Frontera Corozal (INEGI, 2010). A total of 70% of the survey was conducted in the local language (Chol) and 30% in Spanish. Of the total number of respondents, 53% were men, of whom 35% were employed in agriculture. Of the interviewed women, 38% were housewives.

At the government level, officials were interviewed who represented federal government institutions related to the development of tourism in the community. A representative of a civil organisation was also interviewed (Table 1).

Table 1. Sources of information in community and government.

<b><i>Stakeholder-institution</i></b>	<b><i>Current role</i></b>	<b><i>Data</i></b>
Community authority	Commissar	Interview and database
Former commissary	None	Interview
Former municipal auxiliary agent	Partner of Escudo Jaguar (ecotourism)	Interview
Tour guide	Manager of Siyaj Chan	Interview
Tour guide	Partner of Siyaj Chan	Interview
Ecotourism center	Manager of Nueva Alianza	Interview
Ecotourism center	Partner of Nueva Alianza	Interview and database
Ecotourism center	General manager of Escudo Jaguar	Interview
Population	Resident over 10 years	110 surveyed
CONANP	Director of the National Park of Palenque	Database
CONANP	Head of the Department of Conservation of the National Park of Palenque	Database
CONANP	Department of Tourism and Environmental Education of Ocosingo	Database

SEMARNAT	Head of Department of Productive Projects of Lacandon Jungle	Interview
CDI	Manager of headquarters in Ocosingo	Interview
CONANP	Technician Department of productive projects in Frontera Corozal	Interview
Municipality	Head of Tourism in Palenque	Interview and database
Municipality	Tourism Coordinator in Ocosingo	Interview and database
Wilum (civil association)	Legal representative in Frontera Corozal	Interview

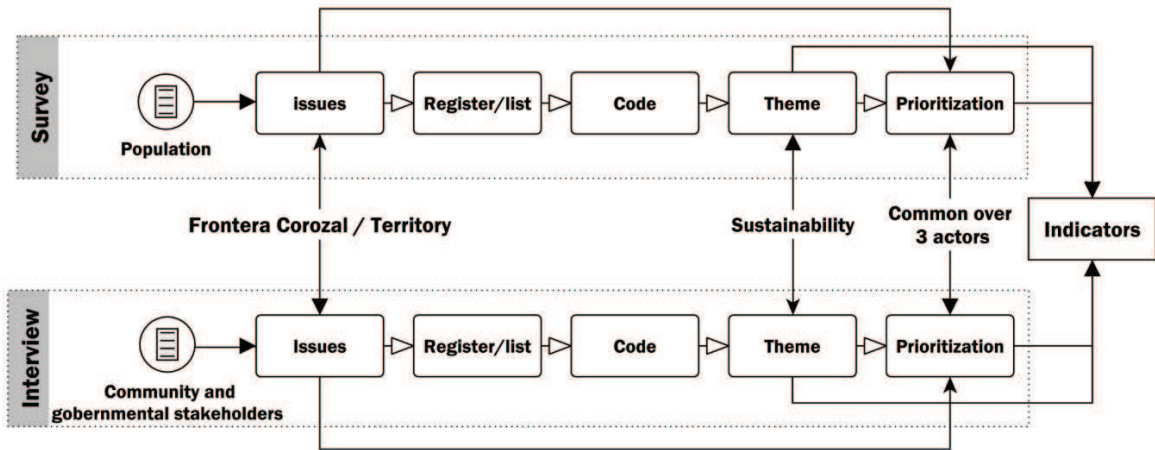
Source: Own elaboration.

The surveys and interviews were conducted in 2015 during the months of low and high tourism in the community. In addition, participant observation was conducted regarding tourism experiences, tourist facilities and local community-authority interaction in tourism development (Ross & Wall, 1999). The compiled stakeholder opinions and attitudes cover the perspectives of these individuals from the establishment of tourism to today. Finally, the opinions were grouped according to the thematic dimensions of sustainability proposed in this study.

#### *Systematisation of issues*

We proceeded by recording the issues (obtained from the surveys and interviews) that correspond to the community and the territory (Figure 3). Each issue was coded based on the theme of sustainability that it represents. The criterion for prioritising issues was based on how often an issue was mentioned by the participants (more than three times). Finally, based on the themes of the prioritised issues, indicators for monitoring the issues were defined. In Figure 3, the white arrows correspond to the systematisation process, and the black arrows represent the necessary or corresponding action in the process.

Figure 3. Problematic grouping of community and territory.

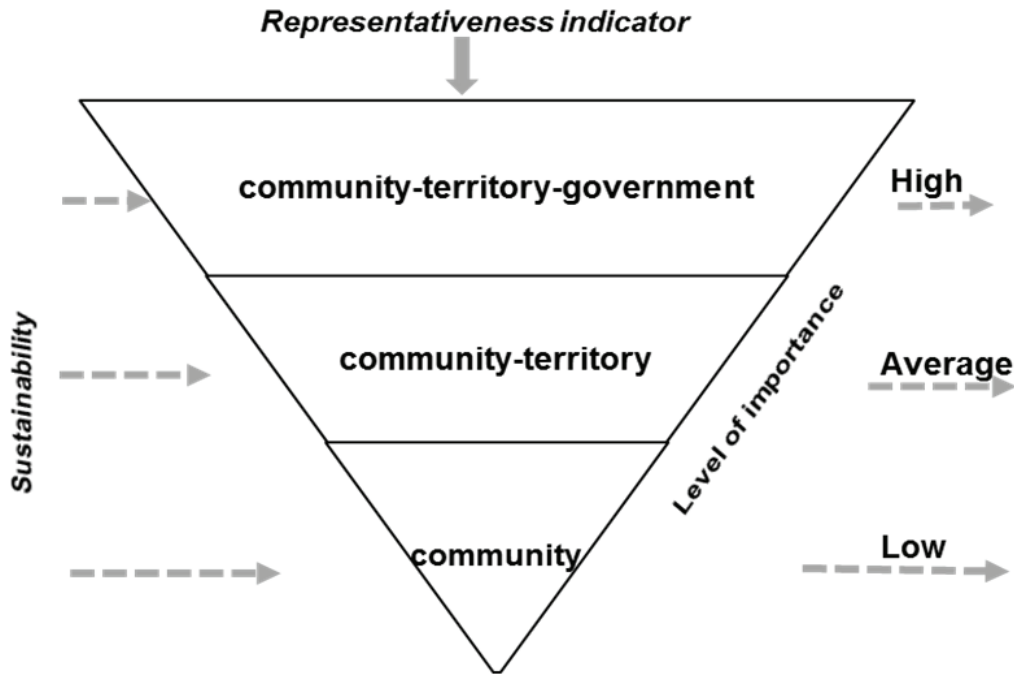


Source: Own elaboration.

### *Validation of indicators*

Due to the spatial complexity of sustainable tourism development in an indigenous community, the indicators were weighted according to their ability to monitor an issue and to represent the community, territory and government levels. In Figure 4, one can observe that an indicator has a higher value if it can monitor an issue and represent the three levels involved in achieving sustainability. If the indicator can monitor a community problem but only represents a single level, it has a low value with respect to its informativeness.

Figure 4. Weighting of indicators.

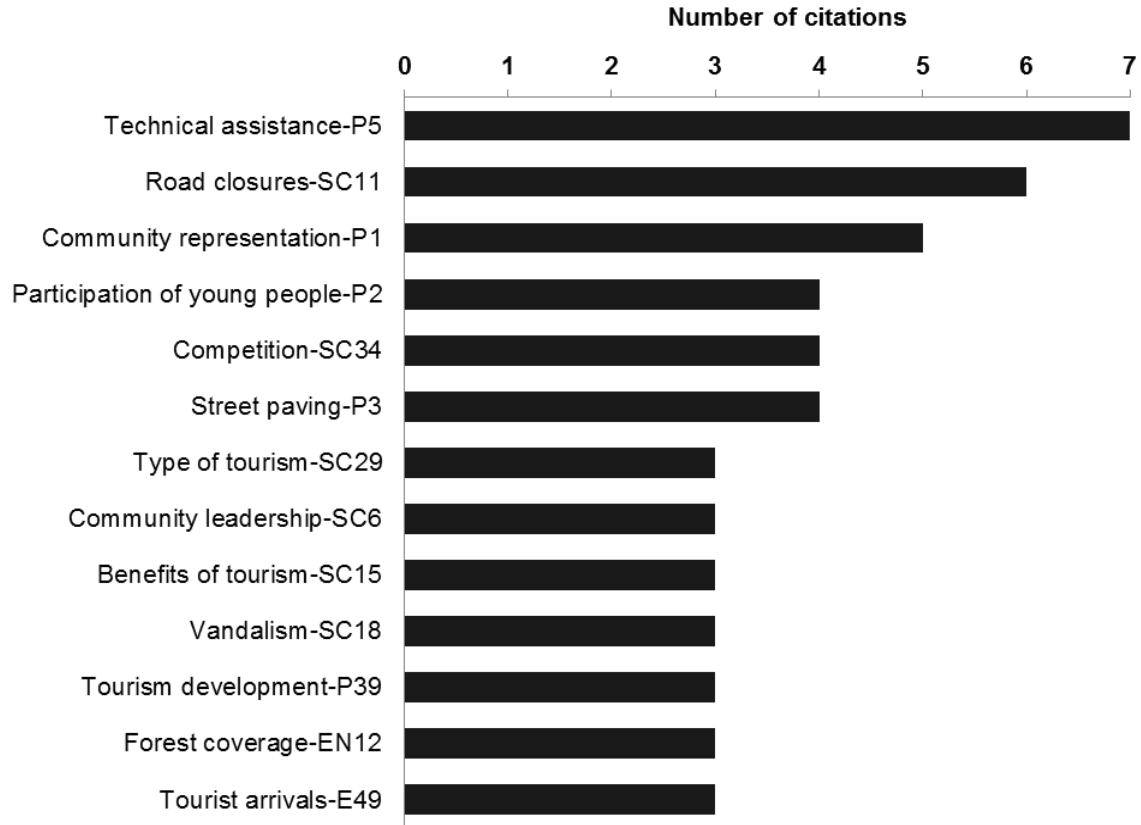


Source: Own elaboration.

## Results and discussion

The community's concerns and problems regarding sustainable tourism development are reflected in 119 issues connected with various topics. Of these, 13 were identified as priority issues (Figure 5) based on how often they were noted by the stakeholders. The topics were grouped according to their relationship with political (P), sociocultural (SC), environmental (EN) and economic (E) aspects. Notably, the first two topics had five and six priority issues, respectively, whereas the EN and E topic only had one priority issue each, according to the established criteria.

Figure 5. Themes and priority aspects of community tourism sustainability.



Source: Own elaboration.

Based on indicators and themes of sustainable tourism proposed in Tsaour et al. (2006), Roberts and Tribe (2008), Park and Yoon (2011) and Pasape et al. (2014), 39 indicators for the community are proposed (Table 2). In addition, based on the particular context of the community, the available sources of information required for monitoring each indicator are identified.

Table 2. Development indicators of sustainable tourism within indigenous communities.

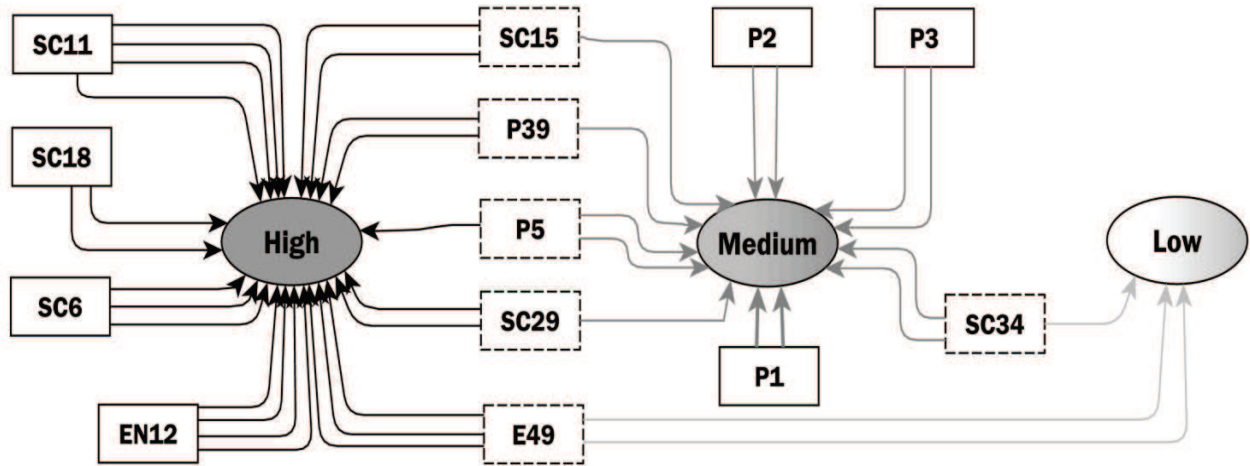
Priority thematic dimension	Issues of tourism sustainability	Indicators	Source
P5	Management and training of human resources	Proportion of personnel trained in ecotourism in the community. Number of programs for managing community tourism projects. Number of certified ecotourism projects in sustainability.	Providers of tourist service centers. Government policies and development plans. Tourism Centres.
SC11	Accessibility	Primary demands of those that block roads % of visitors affected by roadblocks Routes for solving community demands Road security to ecotourism destinations	Community and Intercommunity Assembly. Travel Agencies. Local and national authorities. Travel agencies
P1	Election of Community authority	Election of community authorities according to tradition. Principal conflicts and consequences for change of authorities.	Community authorities and local regulations. Population and local authorities.
P2	Community participation	% of the population supporting ecotourism. % of young people and those with land use rights participation in tourism. Number of tourism establishments engaged in promotion and publicity.	Community agency Tourism centers and service providers. Manager of tourism projects.
SC34	Market competition	% Investment in promotion and publicity of ecotourism establishments. Legal framework for tourism service providers in the Community.	Manager of tourism projects. Community and intercommunity authority.
P3	Services and infrastructure	Easiness of transit on the streets and roads. % of unpaved roads. % of resident satisfaction.	Survey. Mapping. Local and intercommunity population.
SC29	Satisfaction	% of satisfied visitors. % of complaining visitors.	Visitor satisfaction survey. Tourism centers and service providers.
SC6	Social cohesion	Organization and community participation in tourism development. Number of community catered demands for tourism development. Number of meetings and intercommunity agreements.	Community authorities. Community survey. Community file and assembly.
SC15	Community benefits from tourism	% of families participating in ecotourism projects. Number of tourism workers. Number of groups providing tourism services.	Community census. Tourism centres and service providers. Governmental support institutions.

SC18	Crime and harassment	Number of vandalism crimes to the population.	Community agency files.
		Number of vandalized tourists.	Community agency files.
P39	Community tourism management	Fundraising for the community	Community agency
		Number of experts' assessment for the development of ecotourism.	Community agency
		Community programs and municipal long-term ecotourism development.	Community and municipal agency
EN12	Land use	% of tree coverage before and after tourism development.	Mapping and community perception survey.
		% of native tree coverage where ecotourism is developed.	Mapping
		Number of hectares of conservation areas and use of natural resources.	Mapping and authorities
		Number of restricted areas and natural resources	Community authorities.
		% of overnight stays a year.	Tourism centres and community lodges.
E49	Sales and income	Increase rate of the number of visitors.	Tourist centres and service providers.
		Increase rate of direct sales.	Tourist centres and service providers.
		Daily average amount spent per tourist in the community	Tourism survey tourists
		Number of demands for services provision and tourism products.	Tourism service providers.

Source: Own elaboration.

The indicators are classified based on their ability to represent the community, territory, and government levels as high, medium or low value depending on their importance for monitoring sustainability (Figure 6). Each indicator represents a corresponding thematic dimension of sustainability. The topics represented by indicators that have multiple values are enclosed in rectangular boxes with dashed lines, whereas the thematic indicators that have a single value are enclosed in rectangular boxes with solid lines.

Figure 6. Indicators and their level of importance by theme.



Source: Own elaboration.

Of the 39 indicators, 23 have high values, 13 have average values and three have low values. The SC aspect has 18 indicators, whereas the political, environmental and economic aspects have 12, four and 18 indicators, respectively. As shown in Figure 6, indicators with high importance are derived from the issues with fewer mentions (E49, EN12, P39, SC18, SC15, SC6, and SC29) for the community-territory-government representation of tourism sustainability. The topic with the highest number of mentions (P5) is represented by indicators with medium and high value. In addition, issues such as SC15, P39, P5, SC29 and E49 correspond to indicators with different priority values.

***Opportunities and implications for stakeholder participation: Local information***

The integration of local stakeholders in identifying problems related to the development of sustainable tourism in the community becomes important given the significant role of stakeholders and their impact on employment in the area and their interaction with other



stakeholders. In addition, these stakeholders are important with respect to generating opinions and implementing agreements and public policy. In addition, they represent the end users of the indicators and thus legitimise the importance of monitoring and evaluating the indicators (Phelan, 2008). The information enables the identification of priority problems that eventually coincide with sustainability issues that arise in the course of tourism development.

However, it is difficult for various stakeholders to recognise certain themes that are central for ecotourism, such as female participation in the activity, cultural and ethnic protection or the impact of visitors on natural resources. Regarding women's participation, because the inclusion of women in the system of community organisation and participation is uncommon, this topic is often ignored. The issues of cultural status and its preservation were not recognised by the stakeholders although according to Yang (2011) and Ruhanen et al. (2015) these elements are decisive for attracting visitors in indigenous areas.

Therefore, the bottom-up method does not necessarily provide all of the elements required for an integrated analysis of tourism sustainability (Schianetz & Kavanagh, 2008; Park & Yoon, 2011). However, it facilitates the identification of basic indicators that respond to those reported by the community and stakeholders. These indicators can generate interest in and support for the rest of the indicators of tourism sustainability proposed in the literature because each stakeholder recognised in the study exhibited substantial interest in and support for the orderly and balanced development of tourism.

Another issue regarding the method used to collect information is the lack of awareness of the stakeholders regarding the community relationships generated by ecotourism. Stakeholder perceptions regarding the issues of sustainability in the case of the inhabitants and those involved in ecotourism projects were limited to issues of government support (economic), community support (support from the assembly) and land rights (Mendoza Ramos & Prideaux, 2014). The

interest of governmental stakeholders was limited to issues of compliance in the implementation of development plans and policies (Rocheleau, 2015). However, this problem only reflects concerns connected with certain political events and circumstances.

The preceding problem represents an opportunity in terms of increased support for indicators by these stakeholders because the prioritisation of issues subsequently increases efforts for their recognition. However, importantly, these indicators do not lose their representative quality with respect to interrelated sustainability at the international level, not only in the local context. The development of a destination or project is increasingly emphasised by the sustainability that it represents with respect to the different dimensions of sustainable development (Cucculelli & Goffi, 2016). Although tourism projects in indigenous communities are located in remote and inaccessible areas, the sustainable capacity of their operation represents an opportunity for recognition at the national and international level.

#### *Thematic issues and indicators*

The grouping of community problems within the dimensions of sustainability considered in this paper contributes to identifying indicators under the same thematic axis, thus avoiding the selection of a large number of indicators that hinder usefulness and measurement. In addition, the tourism sustainability issues associated with each problem facilitate understanding for the users, i.e., the community, regarding what is important to evaluate and monitor for each indicator and for what purpose. In addition, a common goal of achieving sustainability based on community and government interests facilitates tourism planning (Khadka & Vacik, 2012).

Several problems of tourism sustainability and the indicators proposed in this paper resemble those reported by Tsaour et al. (2006) for indigenous ecotourism in Taiwan. Similarly, our proposals coincide with proposals by Pasape et al. (2014) regarding potential indicators of

ecotourism sustainability in Tanzania or by Park and Yoon (2011) for Korea. However, due to the unpredictable and temporary nature of the topics that appear in the priority problems, the topics should be updated regularly, as should the indicators (Sherry et al., 2005; Jovicic, 2014). This temporary nature can derive, for example, from changes in government policies and tourism, which influence the spatial context and the stakeholders in the community space. Similar to Scheyvens (2011), this research places greater emphasis on the social and political dimensions of sustainable tourism. Thus, in the development of sustainable tourism in the indigenous space, we emphasise that social and political issues should receive greater attention.

Additionally, sustainable tourism development in an indigenous community implies the recognition of essential elements, such as accessibility, the development of technical and market-related skills as well as knowledge of the tourism development trends in which such development occurs. This recognition is impossible without the participation of various stakeholders because otherwise the community's effort would not follow the tourism development trend, which is based on policies and contexts external to the community that guide and support the actions necessary for the activity's sustainability. Therefore, the importance of sustainability indicators is recognised by these stakeholders, without losing sight of local participation and recognition (Khadka & Vacik, 2012).

#### *Weighting the values of indicators*

The weighting of the value of each indicator expresses the specific spatial character and does not necessarily have the same value for other communities (Rodríguez-Iglesias & López, 2011). Unlike indicators that may be applicable to other destinations, the value or importance of these weights are not universal due to the varying interests and problems of each area. Therefore, there

must be a preliminary recognition of each spatial context in which the indicator operates (Fraser et al., 2006).

The representative nature of the indicators with respect to the community, territory and government levels facilitates their understanding and the delegation of responsibilities for the improvement of sustainability. Thus, the indicators help share the responsibilities and goals of the study through orientation toward a set of sustainability indicators for a certain space (Fraser et al., 2006), which can generate synergies among the stakeholders and with other communities. To weight values as high, medium and low, as in this paper, does not refer to ideal indicators or others that are less valuable but rather the importance of the support and responsibility that the indicator represents for each sector or group of stakeholders.

### **Conclusion**

The development of indicators for sustainable tourism based on the characteristics and dynamics of ecotourism in indigenous communities using a bottom-up method is a valuable tool to help identify issues in sustainable tourism recognised in the literature and by institutions that support tourism. These indicators may promote the interest and support of community inhabitants and government institutions and thus contribute to the proper planning of tourism policies for community spaces.

In this paper, problems related to 13 priority topics in tourism sustainability were identified by the stakeholders and grouped according to their political, socio-cultural, environmental and economic aspects, whereby the first two aspects had six and five themes, respectively. Thirty-nine validated indicators were proposed with other indicators identified in the literature on tourism. The ability of the indicators to represent and monitor the community,

territory and government levels determined their assessment as high, medium and low value in terms of their importance for monitoring sustainability.

Based on this analysis, the bottom-up method is a viable means to develop indicators of tourism sustainability in indigenous areas. However, the method is not integral to the principles of sustainable tourism because of the limited knowledge among ecotourism stakeholders regarding the relationships generated by tourism development in the community. Given the low educational level, poverty and lack of entrepreneurial skills in the indigenous community, knowledge regarding the sustainability of tourism is difficult to achieve. Therefore, indicators obtained using a "top-down" method would complement the local sustainable tourism indicators by integrating the external perspective with the perspective of local stakeholders.

The historical context of indigenous communities and the problems these communities face today make it difficult to obtain a consensus of interests on the sustainability of an activity such as tourism. Achieving consensus is also difficult because the stakeholders in the territory's development of tourism have varied interests and perspectives and may be susceptible to sudden changes. However, the unification of the diverse local and external interests enables sustainability issues to be brought more in agreement with the local and external realities of tourism development.

Finally, to identify ecotourism issues in indigenous communities, it is important to understand the system of cultural organisation of the involved social group and the historical trajectory that defines the current community. This understanding requires a thorough knowledge of the community area to be studied. After this understanding is achieved, one can identify the main problems and key internal and external stakeholders in the territory for the development of sustainable tourism.

### **Acknowledgements**

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### **Capítulo III**

#### **Conclusiones generales**

En esta investigación se pone de manifiesto, que a través de la información local, comprendidas por problemáticas y objetivos comunes entre la comunidad indígena junto con los actores del turismo, es posible elaborar indicadores para el turismo sustentable. Dada las características culturales de organización y otras cuestiones propias del grupo social, no fue posible valorar algunos elementos de sustentabilidad como la participación femenina, por ejemplo, puesto que no fue identificado como elemento común de desarrollo sustentable del turismo. Aunque en los principios del turismo sustentable, la participación equitativa por género es fundamental para la distribución de beneficios del turismo y la toma de decisiones para la planificación.

Lo anterior destaca la particularidad con que algunas comunidades y actores visualizan el desarrollo y administración particular de las actividades, este aspecto resalta a la discusión sobre la dificultad de integración de algunos principios del turismo sustentable en los espacios indígenas. Sin duda es una oportunidad para la búsqueda de alternativas de solución para la integración de estas y otros elementos que en un territorio no es reconocido como un elemento necesario o porque simplemente por las cuestiones culturales y de organización social no es permitido.

Aunque finalmente estas particularidades son pocas, ya que la gran mayoría de los indicadores aquí propuestos, basados en la información proporcionada por los actores, son similares a las propuestas en otras áreas de estudio. Lo que permite su validez y reconocimiento para la sustentabilidad de la actividad turística, al mismo tiempo, su apoyo dentro de los actores reconocidos en el territorio, como las instituciones gubernamentales y las no gubernamentales. El desarrollo de una política de planificación de dicha actividad, permite guiar ese camino siguiendo un objetivo común con más apoyo y reconocimiento desde las diversas esferas organizacionales locales y externas a la comunidad o territorio.

Lo anterior se deriva a que el desarrollo del ecoturismo por parte de las instituciones gubernamentales y organizaciones ambientales en el área de estudio, se han limitado a

la inversión del capital en el desarrollo de infraestructuras y/o embellecimiento de los proyectos ya existentes, así como a la búsqueda de reconocimiento nacional e internacional de estos centros turísticos. Dichas acciones no han contribuido a la construcción de capacidades sociales para el manejo sustentable de los recursos naturales adheridos al término de sustentabilidad. La falta de acuerdos comunes y de una planificación para la gestión del ecoturismo, ha repercutido negativamente en varios aspectos, como la competencia entre socios, el regateo de precios y el control de los servicios turísticos por ciertos grupos en detrimento de otros. En el caso de las localidades periféricas que no practican el ecoturismo, no han sido beneficiadas, sino más bien se han diferenciado de las que si desempeñan actividades de turismo.

La importancia del uso de indicadores de sustentabilidad cobra importancia y puede definir el futuro incierto del desarrollo del turismo en la Selva Lacandona y aminorar la brecha existente entre las diferencias de actores y comunidades que hoy en día existen, y que muchas veces ha sido la barrera de la planificación del desarrollo sustentable de las actividades emanadas desde las instituciones gubernamentales, donde las inquietudes y problemáticas de los actores locales son excluidas. El control del desarrollo se han dado desde los gobierno mientras las comunidades y actores locales no se han definido claro esas responsabilidades.



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