



# **The acceptance of a protected area and the benefits of sustainable tourism: In search of the weak link in their relationship**

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# **The acceptance of a protected area and the benefits of sustainable tourism:**

## **In search of the weak link in their relationship**

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### **ABSTRACT**

Sustainable tourism is seen as a major development opportunity for regions with pristine nature and biodiversity hotspots, particularly in developing countries. The economic advantages of sustainable tourism are supposed to convince local persons that use restrictions and regulations set within a protected area (PA) are necessary and beneficial. Nevertheless, local persons are hardly found to positively assess PAs and their environmental protection efforts. This study combines earlier findings on the existence of PAs, their potential for tourism, their restrictions for economic development and the local population's acceptance of environmental protection into a comprehensive model. Based on a representative survey of 686 people in the Hoang Lien National Park in Vietnam, we analyse the links in the suggested transmission mechanism. The results identify one major bottleneck for the acceptance of a PA: The people indeed acknowledge the economic advantages of a sustainable tourism sector, but do not see themselves as actual beneficiaries. Even if they are already involved in tourism, they feel the main benefits are generated for outside agents, while local persons have to deal with the restrictions imposed. This result has far-reaching implications for successful tourism policy and implementation of protected areas.

### **KEYWORDS**

Attitudes towards protected area, Sustainable tourism, Economic development, Environmental protection, Hoang Lien National Park, Vietnam

### **ACKNOWLEDGMENTS**

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## 1. Introduction

Environmental protection and conservation of biodiversity are primary targets of a protected area (PA), which can have a strong impact on the local population (Bennett & Dearden, 2014; Bruner, Gullison, Rice, & da Fonseca, 2001; Bush, Hanley, Moro, & Rondeau, 2013; W. Liu et al., 2016; J. K. Strickland-Munro, Allison, & Moore, 2010; Thapa Karki, 2013). In order to successfully achieve these goals, it is important that the local population support the protected area and its conservation idea (Bennett & Dearden, 2014; Nepal, 2000; Scherl & Edwards, 2007). However, people in the region might feel disadvantaged by PA use restrictions and strict park management regulations (He et al., 2008). Thus, local persons rather express negative attitudes towards a PA (Newmark, Leonard, Sariko, & Gamassa, 1993; Walpole & Goodwin, 2001; Weladji, Moe, & Vedeld, 2003).

The relation between tourism, environment and local population has been studied by now since three decades in academic research (Ap, 1992; Holden, Sonne, & Novelli, 2011; J. C. Liu, Sheldon, & Var, 1987; Nepal, 2000). The findings show that a good park management and a sound park concept that incorporates the local population are necessary but not sufficient conditions for achieving a satisfactory level of acceptance (Nepal, 2000). The literature identifies sustainable tourism as a possible tool for combining protection and economic development and overcoming the negative attitudes stemming from restricted use (Agrawal, 2014; Carr, Ruhanen, & Whitford, 2016; Ferraro & Hanauer, 2014; W. Liu et al., 2016; Mbaiwa & Stronza, 2011; Ormsby & Mannle, 2006; Sekhar, 2003; Walpole & Goodwin, 2001). Thus, the PA becomes an important factor for the development of sustainable tourism as an economic sector in the region. Protection and valorisation of biodiversity are then important assets with a view to attracting tourists (He et al., 2008; Puppim de Oliveira, 2005; J. Strickland-Munro & Moore, 2013). Consequently, this economic development could positively affect the attitudes of the local population towards the PA conservation idea (Scherl & Edwards, 2007; Sekhar, 2003; Walpole & Goodwin, 2001).

In order to understand acceptance of a PA by the local population, the perception of the PA and the perceived living conditions is a powerful tool and might be even more important than the actual situation (Andereck, Valentine, Knopf, & Vogt, 2005; Sirakaya, Teye, & Sönmez, 2002; Webb, Maliao, & Siar, 2004). Andereck et al. (2005) and Sirakaya et al. (2002) indicate that people, who are more in contact with tourists and more knowledgeable about park concept, are also more in favour of the PA conservation idea. Thus, a positive response to tourism development depends on the perception of benefits and costs as well as on the knowledge of development projects conducted to achieve tourism and conservation targets. We are consequently interested in identifying the main bottleneck in the transmission mechanism between the existence of a PA and acceptance of its conservation idea by the local population by setting up a sustainable tourism sector.

Sustainable tourism is particularly growing in developing and emerging countries, while visits to protected areas in developed countries are found to be stagnant or even declining (Balmford et al., 2009; W. Liu et al., 2016; Pergams & Zaradic, 2008). Nevertheless, recent literature still indicates a lack of research on

developing countries, which are particularly dependent on natural resources and suffering from pollution (Nunkoo & Gursoy, 2012; Sharpley, 2014). Therefore, the area of interest is Vietnam, which is currently experiencing a substantial economic growth in general and particularly also in the tourism sector with eight million international tourist arrivals in 2015 (Hampton, Jeyacheya, & Long, 2017; Trang, Duc, & Dung, 2014; Truong & Le, 2016). More specifically, this study uses a specially conducted survey of local communities in the Hoang Lien National Park (HLNP) in the northern uplands of Vietnam. The HLNP is a biodiversity hotspot with a large variety of endemic species and, at the same time, an area with a strongly growing tourism sector with over one million arrivals in 2015 (Nguyen Thi Hai, Nguyen Thi Quy Hoi, & Hoa, 2008; Sobey, 1998; Vu & Sato, 2010). Moreover, the Vietnamese government has issued a rather ambitious policy paper on the future development of tourism in this specific region (VTOCO, 2015). The HLNP is in a stage with far-reaching consequences for the future development of sustainability and living standard. Consequently, it is important to identify critical aspects for a development strategy compatible with the protection targets, but also with the necessary poverty reduction (Andam, Ferraro, Sims, Healy, & Holland, 2010; Ferraro & Hanauer, 2014; Truong, Hall, & Garry, 2014).

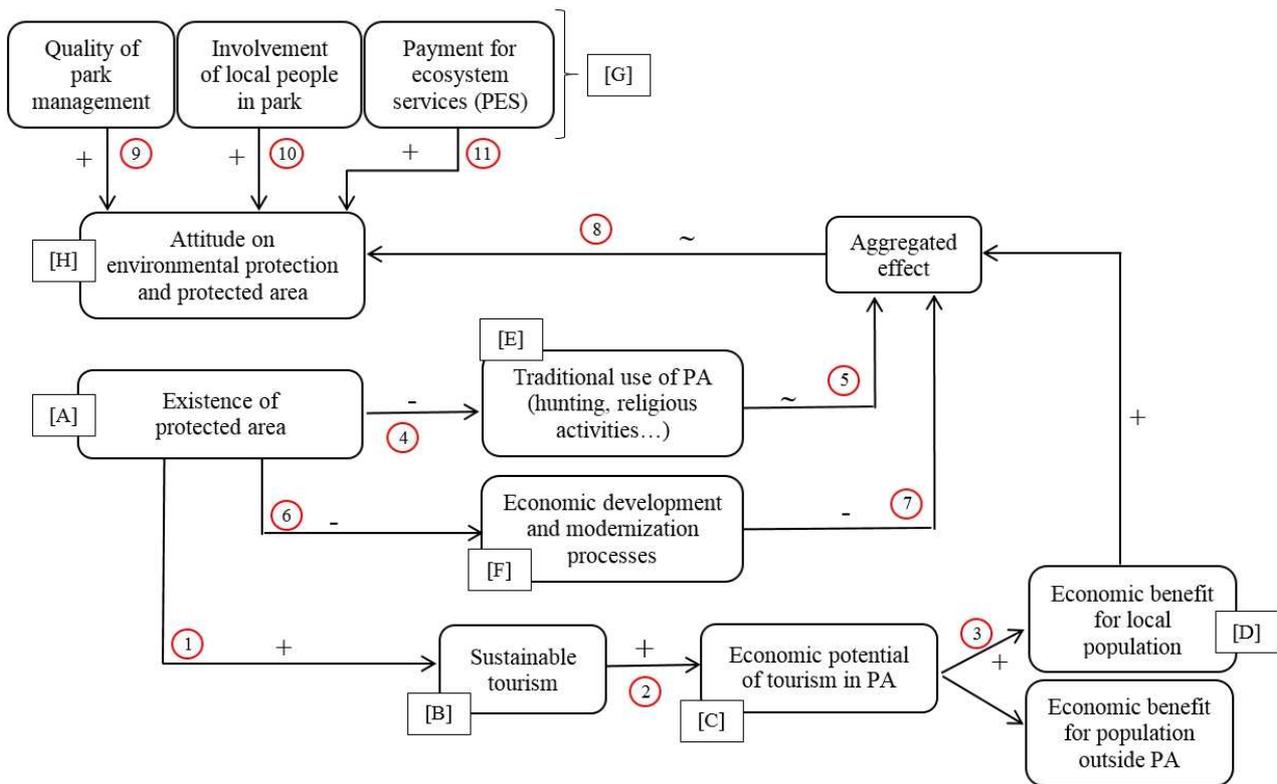
The HLNP was recently the subject of a qualitative analysis of the relationship between tourism and poverty alleviation (Truong et al., 2014). This paper extends earlier literature in this research field in a threefold way: First, it integrates the separate findings of various previous studies on the relationship between acceptance of a PA, tourism, poverty alleviation into an overall comprehensive model of transmission mechanisms between the existence of a PA, its potential for tourism, improvement of economic conditions and acceptance of the environmental protection idea by the local population. Second, the analysis considers these relationships systematically based on a representative sample of the local population. This permits us to analyse how pronounced relationships are regarding sustainable tourism and protected areas in developing countries that are investigated in the current literature. Third, the results of this study allow an essential weak point in the transmission mechanisms to be identified: The transmission chain between the local people's understanding of the overall economic benefit and their perception that such an advantage actually benefits the local population is largely disturbed. In the prevailing study, people recognize the economic advantages of a growing sustainable tourism sector, but do not believe that these advantages will directly improve their own financial situation.

For this purpose, the further paper is structured as follows: along with the presumptions and findings in the literature, a model representing a set of hypotheses about the relevant relationships is proposed in Section 2. Section 3 describes the study area and Section 4 the data. The results are then presented in Section 5 and discussed in Section 6. Section 7 concludes the paper.

## **2. Literature**

The literature on sustainable tourism in protected areas identifies different relations between the existence of a PA and the attitudes of the local population towards this PA, sustainable tourism, the economic situation in the region, the modernization and development opportunities and the acceptance of

environmental protection. The overall findings can be summarized as shown in Figure 1, which comprises the corresponding literature in this model of transmission mechanism.



**Figure 1.** Graphic representation of the transmission mechanism between the attitudes of local people towards the protected area, sustainable tourism, economic development and use of the protected area

As already stated in the Introduction, conservation of biodiversity is a central target of a protected area (Bennett & Dearden, 2014; Bush et al., 2013; Gössling, 1999; Thapa Karki, 2013). Due to the restrictions imposed by such a PA, the negative perception of the conservation idea in the local population is a main challenge for successful implementation [④,⑥] (Newmark et al., 1993; Thapa Karki, 2013; Vedeld, Jumane, Wapalila, & Songorwa, 2012; Walpole & Goodwin, 2001; Weladji et al., 2003). On the other hand, the PA and the protected environment are important assets for a successful sustainable tourism sector that could positively affect the local economy by e.g. generating new jobs or providing training and education ① (W. Liu et al., 2016; Ormsby & Mannle, 2006; Scherl & Edwards, 2007; S. L. Snyman, 2012; J. Strickland-Munro & Moore, 2013). As Sekhar (2003) indicates for the Sariska Tiger reserve in India, the population identifies the benefits from the PA conservation targets for the tourism sector in the region. Similarly, Walpole & Goodwin (2001) find that the population of Komodo National Park in Indonesia recognizes the positive effect of the PA on tourism. Akama & Kieti (2007) find that local people in the Mombasa Resort in Kenya identify tourism as a benefit for their community, as tourism provides employment and business opportunities. Therefore, the advancement of a sustainable tourism sector in the PA is seen as a strategy for improving the economic situation [②,③] without interfering in the conservation goals and, thus, for overcoming the negative attitudes of the local people (Mbaiwa & Stronza, 2011; Ormsby & Mannle, 2006; Sekhar, 2003; Walpole & Goodwin, 2001). Consequently, PAs might not only

be a tool for conservation but possibly also a tool for economic development and hence might provide an opportunity for improving the financial situation in the region and that of the local population within and outside the boundaries of a PA. Therefore, a central recommendation of Scherl & Edwards (2007) is to allow “local communities to be active partners and managers of tourism ventures” (p. 85). S. L. Snyman (2012) analysed the perception of conservation in the local community in three countries of southern Africa. She derives that people employed in ecotourism operations, which benefit directly from environmental protection, are more in favour of conservation and tourism. Moreover, S. L. Snyman (2012) highlights that the local communities were eager to obtain more information about conservation and ecotourism and that education further improves the acceptance of conservation. Likewise, Nyaupane & Poudel (2011) examine the linkage between tourism, conservation and livelihood improvement within three communities in the Chitwan National Park in Nepal. They identify tourism as an important mechanism for changing residents’ perception of conservation and improving livelihood in the communities by providing jobs, infrastructure or education: “Tourism and conservation activities provided many skills-development, income-generating, and leadership training opportunities for local residents. These training programs help local people find jobs and start small-scale tourism-related enterprises.” (p. 1361). However, the impact also depends on the development level of the considered community. Nyaupane & Poudel (2011) find that the most highly developed tourism site also benefits most and shows the greatest awareness for biodiversity. Thus, local people who benefit directly from tourism [③] are also found to be even more in favour of the conservation idea and show particularly positive attitudes towards tourism (Krüger, 2005; Scherl & Edwards, 2007). A problem indicated in the literature is, however, that the local population does not necessarily benefit from tourism in a PA (W. Liu et al., 2016; Vedeld et al., 2012). If the costs of a protected area are higher as the (expected) benefits, the local community will not support the conservation idea (Gössling, 1999; He et al., 2008; Thapa Karki, 2013). As He et al. (2008) indicate for the Wolong Nature Reserve for giant pandas in China, the economic benefits for the local population were small and confined to a small number of households, as most investment and labourer were from outside the park. The success of sustainable tourism in conservation depends strongly on the involvement of local people (Krüger, 2005). Furthermore, an inappropriate tourism development can cause problems in protected areas, like pollution (Amuquandoh, 2010; Harris, 1991), erosion (Croall, 1995; Farrell & Marion, 2001) or disturbance of wildlife and nature (Farrell & Marion, 2001; Kanunah & Sindiga, 1999)

The establishment of a PA also causes, of course, far-reaching changes for the local population. The traditional uses of the area by the local people like hunting, collecting plants and mushrooms, logging or use for religious purposes might be restricted, if these traditions conflict with the PA regulations and the conservation requirements ④ (Bush et al., 2013; He et al., 2008; Sarkki, Heikkinen, & Puhakka, 2013; Thapa Karki, 2013; Vedeld et al., 2012; Zielinska, 2014). Moreover, economic and tourist development and modernization processes like the exploitation of raw materials or the installation of hydropower

stations or cable cars within protected areas might be hampered due to the regulations prevailing in such areas to protect the environment © (Getzner, 2010; Hemanta, 1982; Naidu, 2013).

These restrictions exerted by a PA have a negative effect on the economic situation of the population in the affected region ⑦ (Gössling, 1999; Kari & Korhonen-Kurki, 2013; Vedeld et al., 2012; Zielinska, 2014). Kari & Korhonen-Kurki (2013) present a study on the local attitudes towards ecosystem services and conservation goals in the Ranomafana National Park area of Madagascar. They indicate that the conservation goals might be good for the population in the end, but that the short run costs for the local population are high. Vedeld et al. (2012) indicate for the Mikumi National park in Tanzania that the current strategies are mainly to exclude local communities by denying them access to the resources of the park and thus the “protected area policy comes at cost” (p. 21). The livelihood of local people is consequently found to be constrained by these restrictions. The overall effect of a PA on the situation of the population in the corresponding region depends on at least three separate effects: the positive influence of sustainable tourism ①, the negative influence of restricted traditional use ④ and the negative influence of hampered modernization and development in the PA ⑥. Whether the balance of these three effects is positive or negative, might be the final factor in deciding whether local communities are in favour of or against the ideas of environmental protection and biodiversity conservation as supported by a PA ⑧ (Gössling, 1999; Mbaiwa & Stronza, 2011; Sekhar, 2003; Walpole & Goodwin, 2001). If the economic situation deteriorates as the restrictions are too severe or the local population feels passed over, this environmental target will hardly be accepted. However, if the overall effect improves the economic situation because it develops sustainable tourism, the local attitude towards environmental protection will be positive (Sekhar, 2003).

Additionally, three factors affect the acceptance of environmental protection: the quality of park management ⑨, involvement of the population in park management ⑩ and external payments for the conservation of biodiversity in the region, e.g. payment for ecosystem services (PES). Webb et al. (2004) indicate that the support of a park depends on how people perceive management and outcomes of the park.. They find that the perception of park management depends on economic opportunities and location. Equitable park policies, alternative economic opportunities and active involvement of local people in decision-making become very important, particularly if a region is isolated and economically dependent on the park area. The current literature finds, however, that local people often exert a negative perception of park management and governance. Thus, a central recommendation is to improve the relationship between park staff and local people ⑩ (Bennett & Dearden, 2014; Vedeld et al., 2012). Furthermore, Mbaiwa & Stronza (2011) find that not only the economic benefits from conservation and sustainable tourism but also the role of local communities in the management of natural resources improve the attitude towards conservation in the Okavango Delta in Botswana. Further, the already mentioned study by Sirakaya et al. (2002) identifies the exclusion of local residents from tourism planning as an important problem for the limited support for conservation and tourism in the region. Similarly, J. Strickland-Munro

& Moore (2013) state that indigenous people are concerned with their involvement in park management particularly associated with difficulties in cross-cultural communication ⑩.

Finally, the attitude towards conservation and environmental protection will also affect the attitude of the local population towards the protected area in general. As Stone & Nyaupane (2016) recommend “if PAs aim to survive and prosper, the best course of action is to take a long-term view and understand that if it treats the community well, the community will realize the benefits of living with PAs” (p. 690).

Based on this transmission mechanism summarized in Figure 1, we investigate these relationships identified in the literature using a representative survey conducted in a national park in Vietnam.

### **3. Study Area - Hoang Lien National Park**

This study is conducted in the Hoang Lien National Park in Vietnam (cf. Figure 2). This national park can be found south-east of the Himalayas in the northwest of Vietnam between the districts of Sapa in Lao Cai and Than Uyen in Lai Chau (220 09' 30" - 220 21' 00" N and 1030 45'00" - 1040 59'40" E). On an overall area of 29,845 hectares, the HLNP comprises 11,875 hectares for a strictly protected area, 17,900 hectares for forest rehabilitation and 70 hectares for administration services. The HLNP lies at an altitude between 380 and 3,143 metres above sea level and covers large gradients of geological, topographical and climatic diversity.

The HLNP has been a well-known regional tourist destination since the early 20<sup>th</sup> century and is characterized by rich local cultures, unique natural landscapes and a high level of biodiversity (Nguyen Thi Hai et al., 2008; Sobey, 1998). The population consists of about 24,000 people living in 4,362 households. The core zone of the park is composed of the communes Ban Ho, Lao Cai, San Sa Ho and Ta Van; the town of Sapa with nearly 9,000 inhabitants is located to a large extent in the buffer zone (Hoang Lien National Park, 2012). Mainly five ethnic minority groups live in the HLNP (both the buffer and the core zone), namely the Dzao, Dzay, Hmong, Kinh and Tay. The Hmong ethnic minority has the largest population and inhabits all six communes in the HLNP, while Kinh people live mainly in the buffer zone (General Statistic Office of Vietnam, 2009). In this paper, people of all ethnicities living in the core and buffer zone of the HLNP are called “local persons”.

Overall, the larger Lao Cai region generally has an annual GDP growth rate of 12.7% (between 2006 and 2010). The tourism sector in the region is currently experiencing a boom due to rapid developments in tourist investments and improved infrastructure (like, for example, launch of a cable car to Fansipan Peak; or the highway connecting the HLNP and Hanoi). In 2015, more than one million visitors were registered in the region. Nevertheless, many ethnic groups in this region live in poverty. Important aspects of daily living conditions like the healthcare system, schools and transportation are poorly developed by comparison to those of other regions of Vietnam. Truong et al. (2014) provide further details on the district of Sapa and the development of the tourism sector. The development of the tourism sector in the Lao Cai region as a key economic sector until 2020 (with an outlook until 2030) is provided in the Tourism Master Plan (VTOCO, 2015).



**Figure 2.** Location of the Hoang Lien National Park in Vietnam (source: authors)

#### 4. Data and Methods

Based on the earlier findings in the literature, this paper uses a questionnaire to examine the acceptance of a protected area in a developing country. This questionnaire was developed to survey the attitudes towards the conservation goals of a PA within the affected local communities, conditional on the sustainable tourism, the economic benefits for local people and non-local people and alternative use of the PA for cultural or development reasons.

The structure and wording of the questionnaire follows corresponding literature and is inspired by the World Value Survey (WVS, 2015) and earlier research dealing with the perception of tourism and conservation in the local population (Infield, 1988; Sekhar, 2003; S. Snyman, 2014; S. L. Snyman, 2012; Walpole & Goodwin, 2001). The employed items for collecting the attitudes of the people in the HLNP for each part of Figure 1 are summarized below in Table 1 (indicated by [A], [B]...) after motivating their selection.

The existence of a protected area supports the establishment of a sustainable tourism sector [B]. In order to identify whether the local population in fact recognizes a PA as a precondition for sustainable tourism, we isolated three important services provided by a PA to sustainable tourism, namely biodiversity, landscape and culture. We assess the corresponding attitudes of the local population for these three aspects (cf. Tab. 1, [B]). Furthermore, we consider whether local persons agree that tourism possibly generates economic benefits in the HLNP with two different emphases. A first question assesses the perceived potential of tourism for the HLNP in general, while the second question is more restrictive and aims to evaluate the specific advantage of the park for the community (cf. Tab. 1, [C]). Clearly, it is necessary to consider that local people might recognize the potential welfare produced by the tourism sector overall without, however, actually experiencing a gain from it (cf. Fig. 1, [D]). Furthermore, even if a PA is an

important asset for a possibly growing sustainable tourism sector, PA rules might be at odds with other activities pursued in the same area (cf. Fig. 1, [E]) and might also hamper processes of modernization and economic development in other sectors (cf. Fig. 1, [F]).

The more frequently local persons need the park areas for alternative activities and the more important these activities are, the less they might eventually be in favour of strict environmental regulation. Therefore, we asked the interviewees to consider a specific range of activities, namely collecting mushrooms, plants or firewood, use for cultural aspects, drinking water abstraction or pasture, growing plants, use of timber, hunting. Similarly, local people might oppose the HLNP if they strongly prefer modernization processes. The survey thus aims to assess how local persons perceive their current situation and how much importance they actually put on the financial benefits of tourism particularly for local people (cf. Tab. 1, [D]), the alternative use of the area besides the tourism sector (cf. Tab. 1, [E]) and the economic development of the area (cf. Tab. 1, [F]).

The opinion of local persons about environmental protection is additionally influenced by the park management (cf. Tab. 1, [G]). The corresponding questions aim to obtain an overall judgement of the staff by the persons surveyed and to more specifically assess components like thoughtfulness, manners and involvement. Finally, we consider how these opinions about the economic benefits, sustainable tourism, and alternative use of the protected area potentially influence the overall attitudes of the interviewees about the conservation idea and the existence of the HLNP. Thus, the three questions posed will give an idea of how important the local people feel the HLNP is, whether they themselves can identify with the establishment of a PA as a conservation measure and how they generally conceive the conservation of biodiversity (cf. Tab. 1, [H]).

**Table 1.** Questions used for this study

<b>Fig. 1</b>	<b>Wording of questions / Description of indicator</b>
[B] PA affects sustainable (1) tourism	For tourism in the park to be successful its landscape has to be preserved. For tourism in the park to be successful its plants and animals have to be preserved. For tourism to be successful the local culture has to be preserved.
[C] Economic potential of (2) tourism in PA	Generally speaking, tourism in the HLNP is an important economic base. Tourism in the park is a great opportunity for the community.
[D] Economic benefit of (3) tourism for local people	The HLNP´ tourism does not benefit the local people. Tourism in the park makes sense only if it is profitable for the local people.
[E] Traditional use of PA (4) - (5)	Sum of stated traditional/private activities in the HLNP. Importance of traditional/private activities in the HLNP.

[F] (6) - (7)	Economic development and modernization process	The restrictions on the HLNP cause fewer opportunities for regional development.  Here are two statements people sometimes make when discussing the environment and economic growth. Which of them comes closer to your own point of view?  1- Protecting the environment should be given priority, even if it causes slower economic growth and some loss of jobs. 2- Economic growth and creating jobs should be the top priority, even if the environment suffers to some extent.
[G] (9)	Quality of park management	Under the given conditions, HLNP' staff do a good job.  HLNP' staff try to take care of the needs of the local people.  HLNP' staff go about their tasks in a friendly way.
(10)	Involvement of local people in park management	Local people should have more influence on management of the HLNP.
[H]	Attitude on environmental protection and protected area	It is good that plants and animals are protected by the HLNP.  The HLNP is important for the livelihood of the local people.  Generally, the restrictions imposed by the HLNP are too severe.

Moreover, socio-demographic characteristics like age, gender, ethnicity, education, profession sector (mainly tourism, agriculture, forestry, public administration) as well as experience with tourism (like offering homestay services or selling souvenirs) were asked in the course of the interview. A summary of the questions from the survey used in this study and the measurement scales is provided in Table A.1 in Appendix I.

The questionnaire was drawn up in English and pre-tested twice using a sample of advanced students and staff members at the University of Innsbruck. Afterwards, the questionnaire was translated into Vietnamese and checked by two native speakers (also by translating it back into English). Finally, a pilot study in Vietnam directly on site was conducted as a pre-test for final adjustments.

The interviews for this survey were conducted in September and October 2015 in the town of Sapa in the buffer zone and in four communes in the core zone of the HLNP (San Sa Ho, Lao Cai, Ta Van, Ban Ho). The village chiefs provided lists of all adult residents of these communes and a random sample of about 1,000 local inhabitants was drawn for the interviews. A stratified sampling technique was used to ensure representativeness. 893 people agreed to participate in the survey, and 686 valid questionnaires were ultimately collected for this study. The main challenges faced during the survey were the mostly low formal educational level of the people questioned (not able to read or write), the different local languages of the communes and the secluded rural locations of the communes, which made it difficult to reach them. To overcome these issues, five teams of two persons each conducted the interviews in Vietnamese. Local interpreters were present to support communication with the local ethnicities.

Before beginning the survey, participants were informed of the goal of the interviews in a statement shown and read by the interviewer and assured that the data would be analysed anonymously (see supplementary

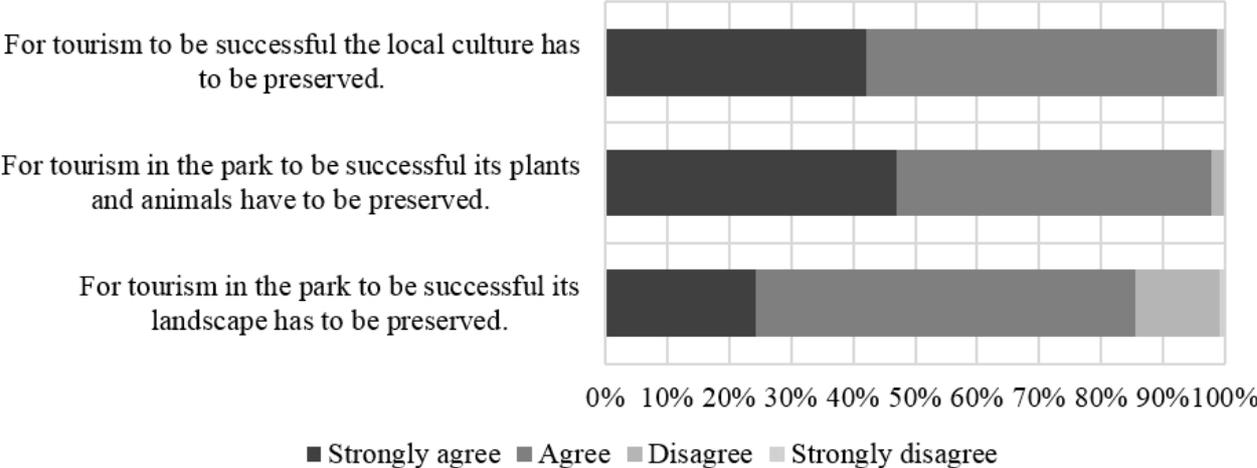
information in Appendix II). Interviews were conducted after obtaining the respondent’s verbal consent to participate.

The questions are mainly statements and the respondents are asked to decide whether they strongly agree, agree, disagree or strongly disagree (4-point Likert scale). Mann-Whitney-U tests are conducted to investigate the relationships in the argumentation path in Figure 1. Differences are interpreted as statistically significant if the p-value is smaller than 0.05.

**5. Results**

***Protected area affects sustainable tourism - D***

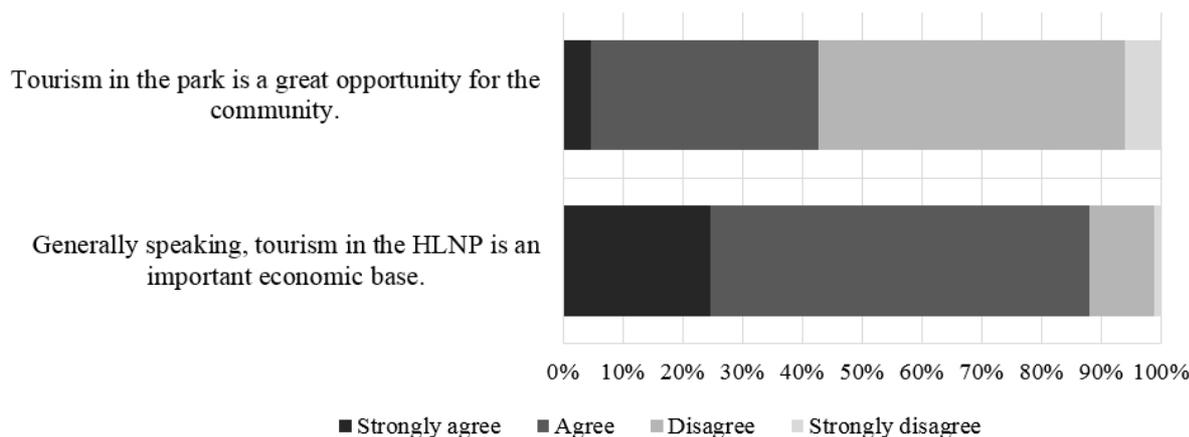
The establishment of a PA might be a precondition for sustainable tourism, as indicated in Figure 1 [B]. However, does the local population recognize this? We find that the local population actually strongly agrees that landscape, culture, plants and animals are important for successful tourism in the HLNP (cf. Fig. 3). Concordance on these statements is so high, that it can be adopted as an overall prevalent general opinion in the area.



**Figure 3.** Perception of the influence of culture, biodiversity and landscape on tourism in HLNP [B]

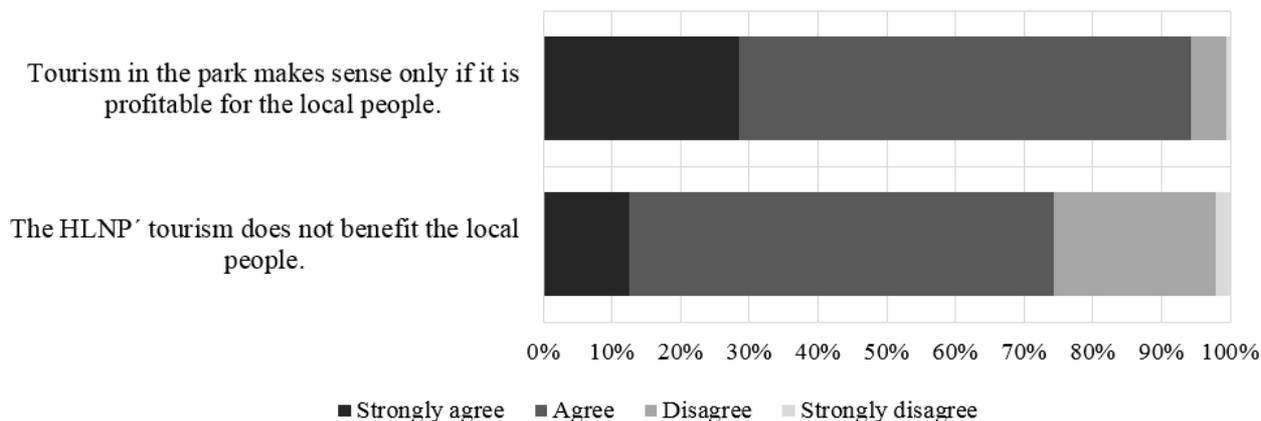
***Economic Potential from tourism in the protected area – [C] & [D]***

As nature and culture are seen as prerequisites for tourism, the next link in the transmission mechanism is, whether tourism is seen as an economic opportunity [C] and whether its benefits are expected to go to the local population [D]. As shown in Figure 4, a large share of the respondents (strongly) agree that tourism is an important basis for economic livelihood in the HLNP. More than 40% also agree that tourism provides an opportunity for their community, but still 60% do not agree. This is a first indication that people acknowledge the potential, but also consider that the benefits are not directed at the local community.



**Figure 4.** Perception of the economic potential of tourism in the HLNP [C]

This seems to be a critical point, as three-quarters of the persons surveyed state that HLNP' tourism does not benefit local peoples and more than 90% indicate that profitability for the local population is essential (Fig. 5). Thus, respondents acknowledge tourism in general to be economically important without, however, actually improving the situation of the local population [D].



**Figure 5.** Perception of economic potential of tourism for local persons [D]

As this opinion might also depend on involvement in the tourism sector, the respondents are asked whether they themselves or a family member has done any work for tourists, like providing food or beverages, acting as tour guide or working for a hotel or a restaurant. A large share of 80% confirm that they or someone in their family has done such work for tourists or the HLNP. The largest share (34.5%) supply local products to hotels and restaurants, while only 19% actually work in a hotel or restaurant. About 16% of the respondents identify their main profession as being related to tourism, while more than half of the people state that they work in agriculture.

We tested by rank correlation whether work in the tourism sector has an influence on the perceived profitability for the local population, but surprisingly found no significant relationship.

***Alternative use of PA: Traditional use @, Economic development and modernization @***

The establishment of a PA furthermore affects how the local population can use the area. This can be related to restrictions in the traditional use of the area [E], but also to restraints on the modernization opportunities and economic development of the region [F].

Figure 6 shows how often the respondents use the HLNP area as alternative subsistence basis and Figure 7 how important the alternative use of the HLNP is. More specifically, the figures illustrate whether local people need the HLNP area often, sometimes, rarely or never for 11 possible activities and whether they consider these activities to be very important, rather important, not very important or not at all important. Only 17% of the respondents claim to not use the HLNP area for their own necessities. The most often mentioned activities performed by the local people are growing plants (86%), using the park as pasture (75%), for abstraction of drinking water (80%) and for firewood (71%). The respondents categorize these activities also as being the most important. Hardly anyone uses the area for more sophisticated activities like aquaculture, mineral extraction or hunting.

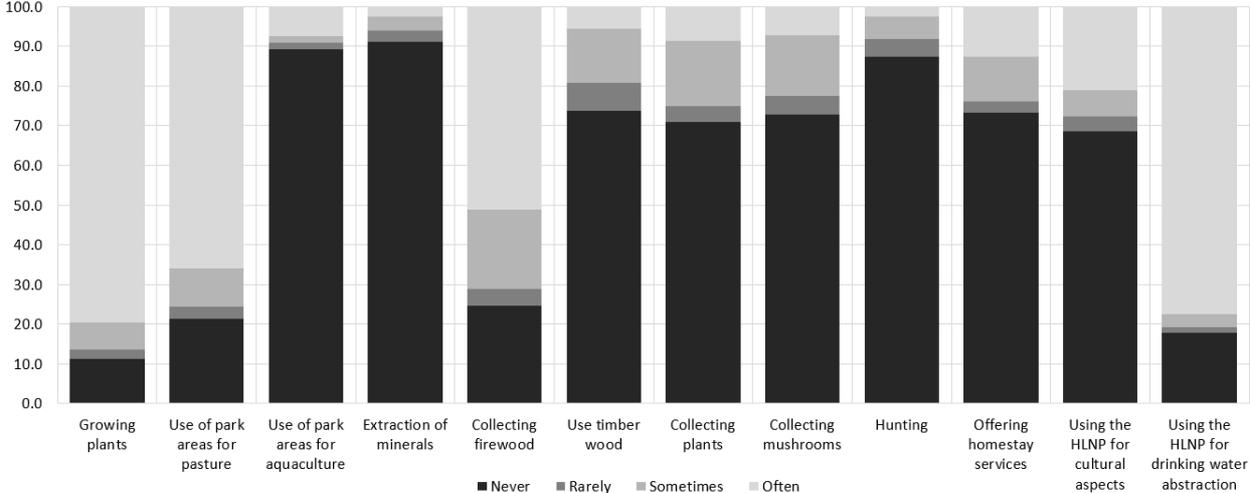


Figure 6. Frequency of traditional/private activities in the HLNP [E]

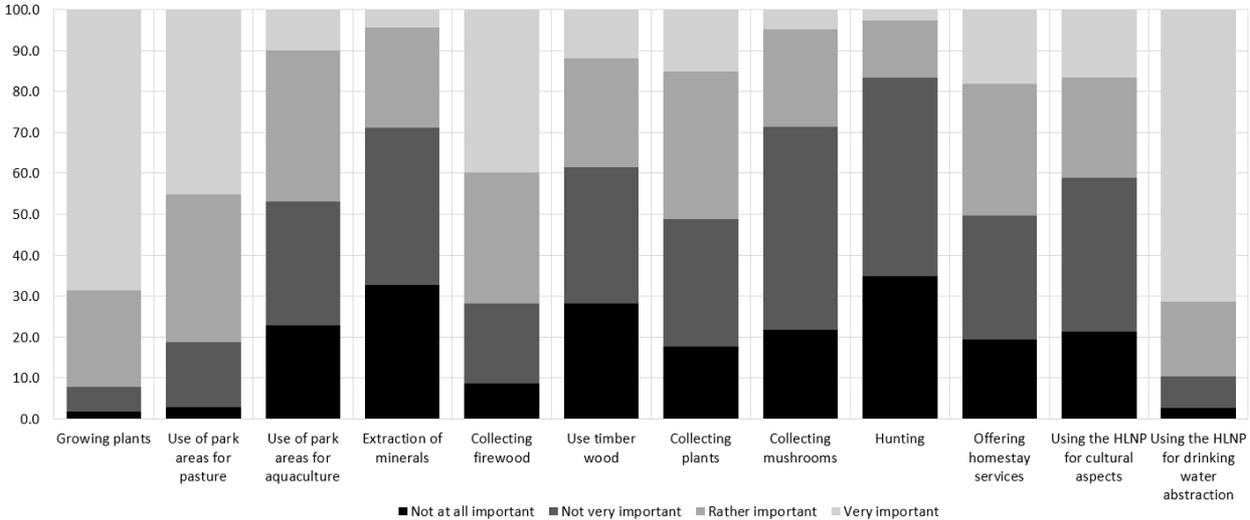


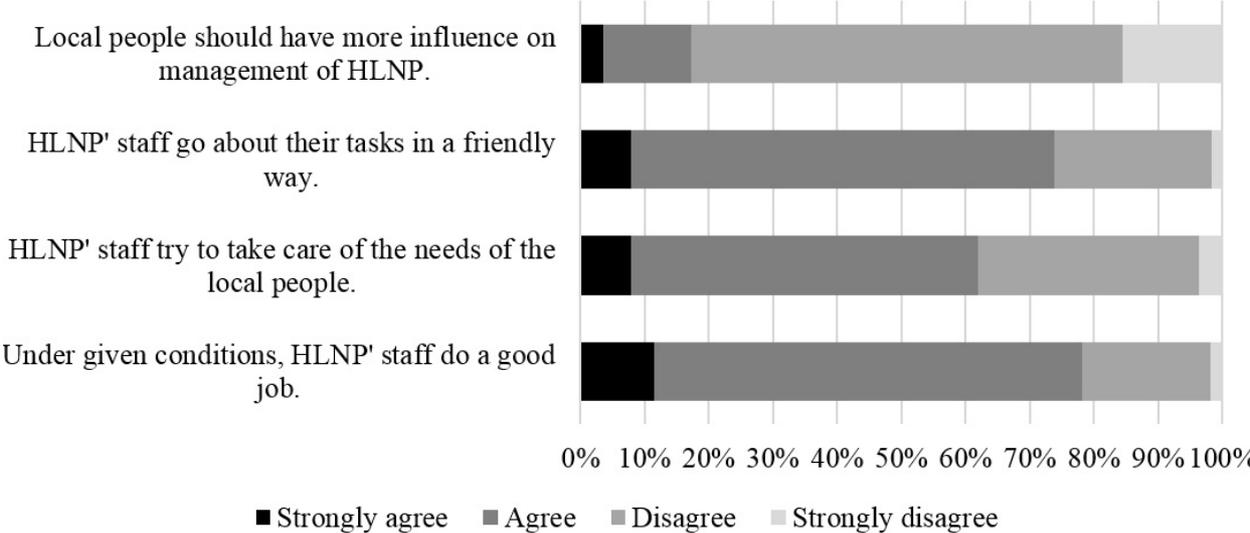
Figure 7. Importance of traditional/private activities in the HLNP [E]

The results show that traditional park use by local persons is frequent and important for a broad majority. Restrictions on such traditional activities are therefore a potential source of conflict with the park management.

Perhaps even more important is the perception of the park for future economic development of the region. We therefore consider the beliefs of respondents on how the existence of the park's influences the regional development. Additionally, the respondents are asked whether they have a preference for economic development over environmental protection or vice versa. Nearly half of the respondents (43%) indicate that the restrictions incurred by the HLNP weaken regional development and two-thirds of the respondents would give priority to economic growth over environmental protection. By combining these two opinions, we see that 25% of the people state that they prefer economic growth and that the HLNP causes fewer opportunities for regional development. In search of the most important bottleneck, this is an important percentage but by far not a majority.

***Involvement of local persons and quality of park management*** ⑨, ⑩

The satisfaction of local persons with their involvement in park management and the overall perceived quality of the park management [G] is analysed next. Figure 8 shows the shares of people, who (strongly) agree or (strongly) disagree that the HLNP' staff is good, friendly and cares about their local needs ⑩ and whether local persons should have more influence on park management ⑨. Respondents are mostly satisfied with the staff and with their influence on management. The share of people, who would prefer to have more influence, is about 17% and, thus, quite low. Interestingly, those who would prefer more involvement are significantly more in favour of the protection of plants and animals in the HLNP. Overall, park management seems to be satisfactory and to not negatively influence perception of the park.

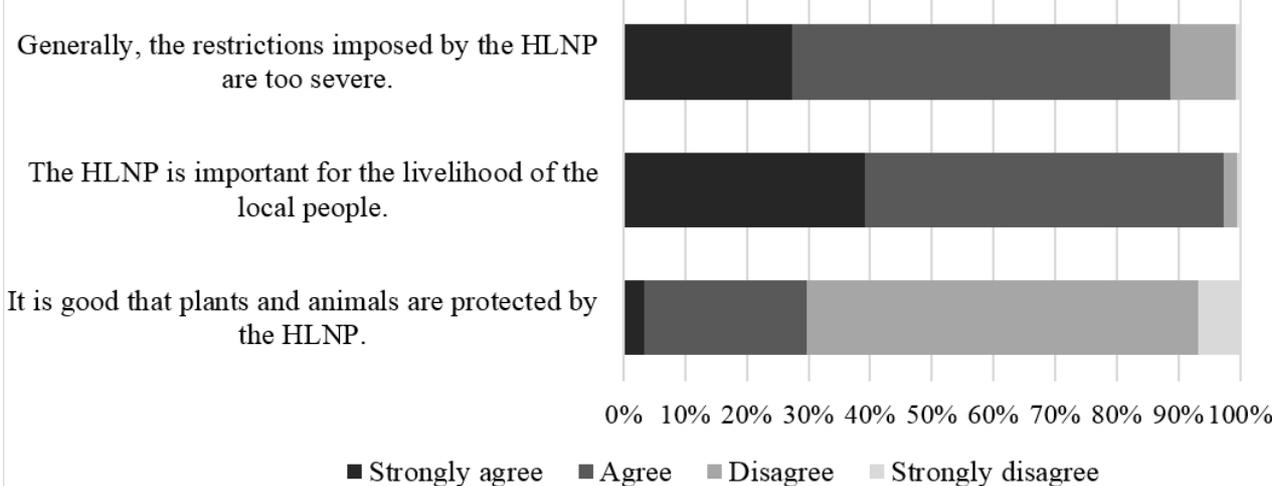


**Figure 8.** Perception of park management [G]

***Acceptance of environmental protection and attitude towards the HLNP*** [H]

These opinions and activities of the respondents will ultimately have an influence on their opinion about the HLNP's main target, i.e. the protection of plants and animals, and on their attitude about how the PA's existence affects the life of the local population [H]. These attitudes about the PA are summarized in Figure 9. The results show an unfavourable picture for environmental protection. Only about one-third of the respondents in the HLNP support the protection of plants and animals by the national park. Instead, 63%

disagree and nearly 7% strongly disagree that protection by the HLNP is a good idea. The conflict between the local population and the strict rules of the national park is reflected in the population’s opinion that the restrictions imposed by the HLNP are too severe, as stated by 88% of the people. Finally, 97% of the respondents recognize the HLNP as important basis of existence for locals, while the restrictions and the environmental protection are experienced as too strict.



**Figure 9.** Attitudes towards the HLNP and its environmental protection targets

People, who agree that the HLNP tourism is an important economic factor [C], also agree significantly more often that the HLNP is important for local livelihood and that the restrictions are too severe. Respondents, who state that local persons do not benefit from tourism in the park while it should be profitable for the local population [D], again agree more often that the restrictions are too severe. Furthermore, people, who use the HLNP area more often and find these activities to be more important [E], agree significantly more often that it is good that the HLNP protects plants and animals ( $p = 0.093$ ) although they find the restrictions too strict.

**6. Discussion**

The results of the survey presented in the previous section tell a pretty clear story alongside the relationships shown in Figure 1. The local population identifies both benefits and disadvantages from the existence of the HLNP. However, acceptance of the main objective of the park (i.e. the protection of animals and plants) and of the regulations imposed by the park is alarmingly low. This raises the question about the bottleneck in the transmission mechanism illustrated in Figure 1.

In contrast to some earlier studies (Bennett & Dearden, 2014; Vedeld et al., 2012), we can exclude that bad park management or too little involvement of the people in park management drives this low acceptance (cf. Fig. 8). Possibly, two other rationales are also conceivable: (1) the perceived restrictions on economic development and (2) the regulations on traditional use. With regard to the first argument, a quarter of the interviewees acknowledge the potential limitation for the economy and also have stated preferences for economic development over environmental protection. However, this 25% share does not explain why 70% of the persons surveyed do not agree that animals and plants should be protected. Indeed,

the acceptance rate for the protection idea is similar, even if we consider only the remaining 75% of the respondents, who are not worried about economic advancement. Thus, a possibly hampered economy is (at least) not the sole factor for the disregarded environmental protection.

The second possible reason for the low acceptance, namely the effect of limitations on traditional use of the park area, should be identified by the question asking whether the restrictions are too severe (cf. Fig. 9). The results in the Figures 6 and 7 show that traditional use of the territory is frequent and important for the surveyed local population. Thus, it is likely that this affects the low acceptance rate of the PA and its targets. We could not identify a significant impact, but this might be due to the lacking variation as nearly the whole population states that it uses the PA for one or the other private activity. Nonetheless, the impact of the frequency and importance of the various activities seems to not be very strong. We thus expect that the negative effect of limited private use could be outweighed by the positive effects of sustainable tourism in the area.

The question remains, what else could be a driver for the predominantly negative attitude towards environmental protection? The main targets of a PA, namely the conservation of biodiversity, landscape and culture, are unanimously seen to be important assets for successful tourism (cf. Fig. 3). Similar to the findings of Akama & Kieti (2007), about 90% of the interviewees recognize tourism as an important basis for economic livelihood. This is also in line with Truong et al. (2014), who report that 23 out of 36 people think of “tourism as a potential mean of poverty alleviation” (p 1083). However, 75% of the persons surveyed feel that the value added of sustainable tourism in the HLNP does not go to the local population. This result corresponds again with the findings made by Truong et al. (2014), namely that “tourism in Sapa is often perceived to be of little benefit to poor people” (p. 1079). We can confirm these qualitative results using a representative sample of the population. The local population feels they have to bear the burden of the HLNP regulations (restricted use and hampered modernization), while people from outside the area reap the benefits from the tourism sector (Sirakaya et al., 2002). The fact, that 40% see tourism as a great opportunity for the community mitigates this result only slightly. Thus, similar to earlier literature (Sekhar, 2003; S. L. Snyman, 2012), we can derive so far that a much larger share of the value added from tourism has to benefit the local community if the government wants to convince the local population more strongly of the advantages of tourism and the HLNP.

## **7. Conclusion**

This study analyses how the local population in a developing country with a strongly growing tourism sector and an ambitious tourism policy plan perceive the existence of a protected area, the sustainable tourism sector and the biodiversity conservation. A representative survey of people living in the Hoang Lien National park in Northern Vietnam indicates that locals acknowledge the economic advantages of a sustainable tourism sector in the park, but do not see themselves as actual beneficiaries. Even if they are already involved in tourism, they rather perceive that the main benefits are generated for agents from outside, while locals have to deal with the restrictions imposed. As a consequence, the local population

neither supports the regulations imposed for the environmental protection nor the conservation of plants and animals, the central target of the HLNP.

This conclusion has far-reaching consequences for a sustainable tourism strategy. The share of the value added generated by the tourism sector in a region depends on the quantity, the quality and the price of the production factors needed to produce tourist services. Thus, the two main factors involved are capital for investments and labour, particularly the qualified workforce. A poor region such as analysed in this study has neither sufficient capital nor qualified persons. Therefore, a sustainable tourism sector has to be created from scratch, which clearly takes time.

A political strategy that aims to keep a considerable share of the economic benefits in the affected region could have positive effects in both financial and environmental terms. However, if only a small part of the value added actually benefits the region, a much larger number of tourists needs to be attracted in order to generate the necessary income. This would subsequently imply that much greater pressure is exerted on the environment and the local culture and traditions, thus destroying the basis for sustainable tourism (Ormsby & Mannle, 2006). A slowly growing sustainable tourism sector based on locally available resources is therefore a necessary frame for combining environmental protection and successful poverty reduction and economic development. Thus, we agree with Puppim de Oliveira (2005), who states that a good balance between investment in tourism and environmental protection is needed in order to have a successful sustainable tourism sector. Unfortunately, the recent development plan for Lao Cai Province (VTOCO, 2015), where Hoang Lien National Park is located, takes the exactly opposite direction.

## References

- Agrawal, A. (2014). Matching and mechanisms in protected area and poverty alleviation research. *Proceedings of the National Academy of Sciences*, *111*(11), 3909-3910.
- Akama, J.S., & Kieti, D. (2007). Tourism and socio-economic development in developing countries: A case study of Mombasa Resort in Kenya. *Journal of Sustainable Tourism*, *15*(6), 735-748.
- Amuquandoh, F.E. (2010). Residents' perceptions of the environmental impacts of tourism in the Lake Bosomtwe Basin, Ghana. *Journal of Sustainable Tourism*, *18*(2), 223-238.  
doi:10.1080/09669580903298531
- Andam, K.S., Ferraro, P.J., Sims, K.R.E., Healy, A., & Holland, M.B. (2010). Protected areas reduced poverty in Costa Rica and Thailand. *Proceedings of the National Academy of Sciences*, *107*(22), 9996-10001. doi:10.1073/pnas.0914177107
- Andereck, K.L., Valentine, K.M., Knopf, R.C., & Vogt, C.A. (2005). Residents' perceptions of community tourism impacts. *Annals of Tourism Research*, *32*(4), 1056-1076.  
doi:http://dx.doi.org/10.1016/j.annals.2005.03.001
- Ap, J. (1992). Residents' perceptions on tourism impacts. *Annals of Tourism Research*, *19*(4), 665-690.

- Balmford, A., Beresford, J., Green, J., Naidoo, R., Walpole, M., & Manica, A. (2009). A global perspective on trends in nature-based tourism. *PLoS Biol*, 7(6), e1000144.
- Bennett, N.J., & Dearden, P. (2014). Why local people do not support conservation: Community perceptions of marine protected area livelihood impacts, governance and management in Thailand. *Marine Policy*, 44, 107-116. doi:<http://doi.org/10.1016/j.marpol.2013.08.017>
- Bruner, A. G., Gullison, R. E., Rice, R. E., & da Fonseca, G. A. B. (2001). Effectiveness of Parks in Protecting Tropical Biodiversity. *Science*, 291(5501), 125-128. doi:10.1126/science.291.5501.125
- Bush, G., Hanley, N., Moro, M., & Rondeau, D. (2013). Measuring the Local Costs of Conservation: A Provision Point Mechanism for Eliciting Willingness to Accept Compensation. *Land Economics*, 89(3), 490-513.
- Carr, A., Ruhanen, L., & Whitford, M. (2016). Indigenous peoples and tourism: the challenges and opportunities for sustainable tourism. *Journal of Sustainable Tourism*, 24(8-9), 1067-1079. doi:10.1080/09669582.2016.1206112
- Croall, J. (1995). *Preserve or destroy: tourism and the environment*: Calouste Gulbenkian Foundation.
- Farrell, T.A., & Marion, J.L. (2001). Identifying and assessing ecotourism visitor impacts at eight protected areas in Costa Rica and Belize. *Environmental Conservation*, 28(3), 215-225.
- Ferraro, P. J., & Hanauer, M. M. (2014). Quantifying causal mechanisms to determine how protected areas affect poverty through changes in ecosystem services and infrastructure. *Proceedings of the National Academy of Sciences*, 111(11), 4332-4337.
- General Statistic Office of Vietnam, G. (2009). The 2009 Population and Housing Census of Viet Nam. Retrieved from <http://www.gso.gov.vn/khodulieudanso2009/>
- Getzner, M. (2010). Impacts of Protected Areas on Regional Sustainable Development: The Case of the Hohe Tauern National Park (Austria). *International Journal of Sustainable Economy*, 2(4), 419-441. doi:<http://www.inderscience.com/ijse>
- Gössling, S. (1999). Ecotourism: a means to safeguard biodiversity and ecosystem functions? *Ecological Economics*, 29(2), 303-320. doi:[http://dx.doi.org/10.1016/S0921-8009\(99\)00012-9](http://dx.doi.org/10.1016/S0921-8009(99)00012-9)
- Hampton, M. P., Jeyacheya, J., & Long, P. H. (2017). Can Tourism Promote Inclusive Growth? Supply Chains, Ownership and Employment in Ha Long Bay, Vietnam. *The Journal of Development Studies*, 1-18. doi:10.1080/00220388.2017.1296572
- Harris, C. M. (1991). Environmental effects of human activities on King George Island, South Shetland Islands, Antarctica. *Polar Record*, 27(162), 193-204.
- He, G., Chen, X., Liu, W., Bearer, S., Zhou, S., Cheng, L. Y., . . . Liu, J. (2008). Distribution of economic benefits from ecotourism: a case study of Wolong Nature Reserve for Giant Pandas in China. *Environmental Management*, 42(6), 1017.
- Hemanta, R. M. (1982). Balancing Human Needs and Conservation in Nepal's Royal Chitwan Park. *Ambio*, 11(5), 246-251.

- Hoang Lien National Park, H. (2012). [Report on Conservational plan and Special-use forest sustainable development of Hoang Lien National Park up to 2020].
- Holden, A., Sonne, J., & Novelli, M. (2011). Tourism and poverty reduction: An interpretation by the poor of Elmina, Ghana. *Tourism planning & development*, 8, 317-334.
- Infield, M. (1988). Attitudes of a rural community towards conservation and a local conservation area in Natal, South Africa. *Biological Conservation*, 45(1), 21-46. doi:http://dx.doi.org/10.1016/0006-3207(88)90050-X
- Kanunah, M., & Sindiga, I. (1999). Unplanned tourism development in sub-Saharan Africa with special reference to Kenya. *Journal of Tourism Studies*, 10(1), 25.
- Kari, S., & Korhonen-Kurki, K. (2013). Framing local outcomes of biodiversity conservation through ecosystem services: A case study from Ranomafana, Madagascar. *Ecosystem Services*, 3, E32-E39. doi:10.1016/j.ecoser.2012.12.003
- Krüger, O. (2005). The role of ecotourism in conservation: panacea or Pandora's box? *Biodiversity & Conservation*, 14(3), 579-600. doi:10.1007/s10531-004-3917-4
- Liu, J. C., Sheldon, P. J., & Var, T. (1987). Resident perception of the environmental impacts of tourism. *Annals of Tourism Research*, 14(1), 17-37. doi:http://dx.doi.org/10.1016/0160-7383(87)90045-4
- Liu, W., Vogt, C. A., Lupi, F., He, G., Ouyang, Z., & Liu, J. (2016). Evolution of tourism in a flagship protected area of China. *Journal of Sustainable Tourism*, 24(2), 203-226. doi:10.1080/09669582.2015.1071380
- Mbaiwa, J. E., & Stronza, A. L. (2011). Changes in resident attitudes towards tourism development and conservation in the Okavango Delta, Botswana. *Journal of Environmental Management*, 92(8), 1950-1959. doi:http://dx.doi.org/10.1016/j.jenvman.2011.03.009
- Naidu, S. C. (2013). Legal exclusions, private wealth and livelihoods: An analysis of work time allocation in protected areas. *Ecological Economics*, 89, 82-91. doi:http://dx.doi.org/10.1016/j.ecolecon.2013.02.001
- Nepal, S. K. (2000). Tourism in protected areas: The Nepalese Himalaya. *Annals of Tourism Research*, 27(3), 661-681. doi:http://dx.doi.org/10.1016/S0160-7383(99)00105-X
- Newmark, W. D., Leonard, N. L., Sariko, H. I., & Gamassa, D.-G. M. (1993). Conservation attitudes of local people living adjacent to five protected areas in Tanzania. *Biological Conservation*, 63(2), 177-183.
- Nguyen Thi Hai, Nguyen Thi Quy Hoi, & Hoa, T. T. M. (2008). Territorial organization for ecotourism development in Hoang Lien National Park, Sapa District, Lao Cai Province. *VNU Journal of Science, Earth Sciences*, 24(1), 1 - 9.
- Nunkoo, R., & Gursoy, D. (2012). Residents' support for tourism: An identity perspective. *Annals of Tourism Research*, 39(1), 243-268.
- Nyaupane, G. P., & Poudel, S. (2011). Linkages among biodiversity, livelihood, and tourism. *Annals of Tourism Research*, 38(4), 1344-1366. doi:http://dx.doi.org/10.1016/j.annals.2011.03.006

- Ormsby, A., & Mannle, K. (2006). Ecotourism Benefits and the Role of Local Guides at Masoala National Park, Madagascar. *Journal of Sustainable Tourism*, 14(3), 271-287.  
doi:10.1080/09669580608669059
- Pergams, O. R. W., & Zaradic, P. A. (2008). Evidence for a fundamental and pervasive shift away from nature-based recreation. *Proceedings of the National Academy of Sciences*, 105(7), 2295-2300.  
doi:10.1073/pnas.0709893105
- Puppim de Oliveira, J. A. (2005). Tourism as a Force for Establishing Protected Areas: The Case of Bahia, Brazil. *Journal of Sustainable Tourism*, 13(1), 24-49. doi:10.1080/17501220508668471
- Sarkki, S., Heikkinen, H. I., & Puhakka, R. (2013). Boundary Organisations between Conservation and Development: Insights from Oulanka National Park, Finland. *World Review of Entrepreneurship, Management and Sustainable Development*, 9(1), 37-63. doi:http://www.inderscience.com/wremsd
- Scherl, L. M., & Edwards, S. (2007). Tourism, indigenous and local communities and protected areas in developing nations. *Tourism and protected areas: Benefits beyond boundaries*, 71-88.
- Sekhar, N. U. (2003). Local people's attitudes towards conservation and wildlife tourism around Sariska Tiger Reserve, India. *Journal of Environmental Management*, 69(4), 339-347.
- Sharpley, R. (2014). Host perceptions of tourism: A review of the research. *Tourism Management*, 42, 37-49.
- Sirakaya, E., Teye, V., & Sönmez, S. (2002). Understanding Residents' Support for Tourism Development in the Central Region of Ghana. *Journal of Travel Research*, 41(1), 57-67.  
doi:10.1177/004728750204100109
- Snyman, S. (2014). *Assessment of the main factors impacting community members' attitudes towards tourism and protected areas in six southern African countries* (Vol. 56).
- Snyman, S. L. (2012). The role of tourism employment in poverty reduction and community perceptions of conservation and tourism in southern Africa. *Journal of Sustainable Tourism*, 20(3), 395-416.  
doi:10.1080/09669582.2012.657202
- Sobey, R. T. (1998). *Biodiversity Value of Hoang Lien Mountains and Strategies for Conservation*, Sa Pa, Lao Cai Province, Vietnam.
- Stone, M. T., & Nyaupane, G. P. (2016). Protected areas, tourism and community livelihoods linkages: a comprehensive analysis approach. *Journal of Sustainable Tourism*, 24(5), 673-693.  
doi:10.1080/09669582.2015.1072207
- Strickland-Munro, J., & Moore, S. (2013). Indigenous involvement and benefits from tourism in protected areas: a study of Purnululu National Park and Warmun Community, Australia. *Journal of Sustainable Tourism*, 21(1), 26-41.
- Strickland-Munro, J. K., Allison, H. E., & Moore, S. A. (2010). Using resilience concepts to investigate the impacts of protected area tourism on communities. *Annals of Tourism Research*, 37(2), 499-519.  
doi:http://dx.doi.org/10.1016/j.annals.2009.11.001

- Thapa Karki, S. (2013). Do protected areas and conservation incentives contribute to sustainable livelihoods? A case study of Bardia National Park, Nepal. *Journal of Environmental Management*, 128, 988-999. doi:http://doi.org/10.1016/j.jenvman.2013.06.054
- Trang, N. H. M., Duc, N. H. C., & Dung, N. T. (2014). Research Note: Empirical Assessment of the Tourism-Led Growth Hypothesis — The Case of Vietnam. *Tourism Economics*, 20(4), 885-892. doi:10.5367/te.2013.0307
- Truong, V.D., Hall, C.M., & Garry, T. (2014). Tourism and poverty alleviation: Perceptions and experiences of poor people in Sapa, Vietnam. *Journal of Sustainable Tourism*, 22(7), 1071-1089.
- Truong, V.D., & Le, A. (2016). The Evolution of Tourism Policy in Vietnam, 1960–2015. *The Routledge Handbook of Tourism in Asia*.
- Vedeld, P., Jumane, A., Wapalila, G., & Songorwa, A. (2012). Protected areas, poverty and conflicts: A livelihood case study of Mikumi National Park, Tanzania. *Forest Policy and Economics*, 21, 20-31. doi:http://doi.org/10.1016/j.forpol.2012.01.008
- VTOCO. (2015). *Tourism Master-Plan for 2015-2020 and vision 2030 of Lao Cai*.
- Vu, N., & Sato, M. (2010). Tourism development and amenity migration in Hill Stations: The case study of Sapa in Vietnam. *観光創造研究* *Advanced Tourism Studies*, 7, 1-16.
- Walpole, M.J., & Goodwin, H.J. (2001). Local attitudes towards conservation and tourism around Komodo National Park, Indonesia. *Environmental Conservation*, 28(02), 160-166.
- Webb, E.L., Maliao, R.J., & Siar, S.V. (2004). Using local user perceptions to evaluate outcomes of protected area management in the Sagay Marine Reserve, Philippines. *Environmental Conservation*, 31(2), 138-148. doi:10.1017/S0376892904001377
- Weladji, R.B., Moe, S.R., & Vedeld, P. (2003). Stakeholder attitudes towards wildlife policy and the Benoue Wildlife Conservation area, North Cameroon. *Environmental Conservation*, 30(04), 334-343.
- WVS (2015). World Value Survey 1981-2014 Longitudinal Aggregate v.20150418. World Values Survey Association. Aggregate File Producer: JD Systems, Madrid SPAIN.
- Zielinska, A. (2014). Analysis of Sustainable Management Forms on Protected Areas. *Economics and Sociology*, 7(1), 183-192.

## Appendix I

Table A.1: Complete list of questions used in the study

Wordings of questions	Scale/Values
<p>Which of the following activities have you or anyone in your family ever done for tourists or the HLNP?</p> <p>1 Offer homestay services; 2 Provide food and beverage; 3 Act as local tour guide; 4 Sell souvenirs such as clothes, traditional medicine etc.; 5 Work for the HLNP; 6 Work for a hotel or a restaurant; 7 Supply local products to hotels or restaurants; 8 Provide transport services for tourists such as taxi, bus, baggage transport etc.; 9 Others</p>	0- No; 1- Yes
<p>For each of the following activities that are possible in the HLNP, please indicate: How often have you done the activity? AND How important is each of the activity for you?:</p> <p>1 Growing plants; 2 Use of park areas for pasture (grazing livestock); 3 Use of park areas for aquaculture; 4 Extraction of minerals; 5 Collecting firewood; 6 Use timber wood; 7 Collecting plants; 8 Collecting mushrooms; 9 Hunting; 10 Offering homestay services; 11 Using the HLNP for cultural or religious aspects; 12 Using the HLNP for drinking water abstraction</p>	<p>1- Never 2- Rarely 3- Sometimes 4- Often</p> <p>1- Very important 2- Rather important 3- Not very important 4- Not at all important</p>
<p>For each of the following statements about the HLNP, please specify whether you strongly agree, agree, disagree, or strongly disagree with it</p> <p>1 The HLNP is important for the livelihood of the local people. 2 The restrictions on the HLNP cause fewer opportunities for regional development. 3 Generally speaking, tourism in the HLNP is an important economic base. 4 The HLNP' tourism does not benefit the local people. 5 Generally, the restrictions imposed by the HLNP are too severe. 6 It is good that plants and animals are protected by the HLNP. 7 Local people should have more influence on management of the HLNP. 8 Tourism in the park is a great opportunity for the community. 9 Tourism in the park makes sense only if it is profitable for the local people. 10 For tourism in the park to be successful its landscape has to be preserved. 11 For tourism in the park to be successful its plants and animals have to be preserved. 12 For tourism to be successful the local culture has to be preserved.</p>	<p>1- Strongly agree 2- Agree 3- Disagree 4- Strongly disagree</p>
<p>Concerning the HLNP' staff, please indicate whether you strongly agree, agree, disagree, or strongly disagree with the following statements:</p> <p>1 Under the given conditions, HLNP' staff do a good job. 2 HLNP' staff try to take care of the needs of the local people. 3 HLNP' staff go about their tasks in a friendly way.</p>	<p>1- Strongly agree 2- Agree 3- Disagree 4- Strongly disagree</p>
<p>Here are two statements people sometimes make when discussing the environment and economic growth. Which of them comes closer to your own point of view?</p>	<p>1- Protecting the environment should be given priority, even if it causes slower economic growth and some loss of jobs. 2- Economic growth and creating jobs should be the top priority, even if the environment suffers to some extent.</p>
<p>What is your main profession related to?</p>	<p>1- Agriculture; 2- Forestry; 3- Manufacture; 4- Tourism 5- Public administration; 6- Other: [Respondent Specify]</p>
<p>What is your year of birth, please?</p>	
<p>Gender of the interviewee</p>	<p>1- Male; 2- Female</p>

How many children do you have?	1 No children; 2 One child; 3 Two children; 4 Three children; 5 Four children; 6 Other, please specify:
What ethnicity are you?	1 Dzao; 2 Dzáy; 3 H'Mong; 4 Hoa; 5 Kinh; 6 Tày; 7 Mường; 8 Nùng; 9 Thái; 10 Xà Phó(Phù Lá); 11 Other, please specify: [Respondent Specify]
What is the highest educational level you have attained?	1 No formal education; 2 Primary school; 3 Secondary school; 4 High school 5 Higher education
Are you employed now or not?	1 Unemployed; 2 Employed; 3 Self-employed; 4 Student; 5 Military services; 6 Retired/pensioned; 7 Housewife not otherwise employed; 8 Other, please specify: [Respondent Specify]
What is your main profession related to?	1 Agriculture; 2 Forestry; 3 Manufacture; 4 Tourism 5 Public administration 6 Other: [Respondent Specify]

## Appendix II

### SUPPLEMENTARY INFORMATION

The statement below was shown on the first screen and read to the interviewees in order to make the objectives and incentives of the project clear and to demonstrate the support of the institutions:



Welcome to the Hoang Lien National Park Survey!

The National Economics University, Vietnam, together with the University of Innsbruck, Austria, is conducting a study on Hoang Lien National Park (HLNP). We are here because we would like to learn what opinion you have about Hoang Lien National Park and what you think about its future.

For this purpose, we would like to ask you to give your opinion on a series of questions. Beforehand, we would like to remind you that you are not obliged to participate in this survey. You are absolutely free to decide whether to participate or not.

If you are willing to spend about 25-35 minutes of your time, we would be very grateful and you can be sure that you will be making an important contribution to the development of the HLNP to meet the needs of the local people.

Please be assured that all information will be kept strictly confidential and used exclusively for scientific purposes. All data will be published only in summary. Therefore, no conclusions can be drawn on you or your family.

Are you willing to give me about 25-35 minutes of your time? Of course, you can ask a question at any time during the interview or simply end the interview.

Thank you for your willingness to participate in this survey!

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Sibylle Puntscher, Duc Tran Huy, Janette Walde, Ulrike Tappeiner, Gottfried Tappeiner

The acceptance of a protected area and the benefits of sustainable tourism: In search of the weak link in their relationship

**Abstract**

Sustainable tourism is seen as a major development opportunity for regions with pristine nature and biodiversity hotspots, particularly in developing countries. The economic advantages of sustainable tourism are supposed to convince local persons that use restrictions and regulations set within a protected area (PA) are necessary and beneficial. Nevertheless, local persons are hardly found to positively assess PAs and their environmental protection efforts. This study combines earlier findings on the existence of PAs, their potential for tourism, their restrictions for economic development and the local population's acceptance of environmental protection into a comprehensive model. Based on a representative survey of 686 people in the Hoang Lien National Park in Vietnam, we analyse the links in the suggested transmission mechanism. The results identify one major bottleneck for the acceptance of a PA: The people indeed acknowledge the economic advantages of a sustainable tourism sector, but do not see themselves as actual beneficiaries. Even if they are already involved in tourism, they feel the main benefits are generated for outside agents, while local persons have to deal with the restrictions imposed. This result has far-reaching implications for successful tourism policy and implementation of protected areas.

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