

# Local socio-economic and socio-cultural effects of geotourism

An analysis of the BioGeoTrail in Kubang Badak, Malaysia



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## Abstract

This research embarks on the expected socio-economic and socio-cultural effects of geotourism and in particular on the expected effects for the Kubang Badak community in Langkawi, Malaysia through the development of the BioGeoTrail. The BioGeoTrail is a new mangrove tour that will be based on geotourism. The outcomes of this research are based on the expected effects based on literature on geotourism, the Kubang Badak community perceptions and the expectations of local experts. This mixed method research uses surveys to measure the community perceptions and in depth-interviews for the expectation of the local experts.

From the literature research and the results seen in the other geoparks, it can be concluded that the UNESCO geopark model has the potential to be a gateway to socio-economic and socio-cultural development. In the case of the BioGeoTrail, the potential success is heavily influenced by the support of the local community. The outcome of the survey suggests that the Kubang Badak community is very supportive of the project and expects very positive effects through the development.

The local experts, building from the geopark goals, similarly predict positive socio-economic and socio-cultural effects. They expect that the cooperation of the Kubang Badak community, the national university (UKM) and Langkawi Development Authority (LADA) can lead to a successful BioGeoTrail that will enhance the local economy, lead to economic growth and more dominance of the local community in terms of socio-economic development. They also expect that the BioGeoTrail, by involving the local community in the development, will contribute to their appreciation of the area and create a sense of belonging. This will increase the local community support and will make it more likely that the community takes care of the place, which is necessary for the socio-cultural and environmental sustainability of the area.

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# Chapter 1. Introduction

## 1.1 Background

Langkawi Geopark is located in the far northwestern corner of Malaysia (Halim et al., 2011). Since the establishment of the Langkawi Development Authority (LADA) in 1990, systematic development was brought to the islands and it transformed them into the present day modern tourist destination (Leman et al, 2007). Langkawi grew out to be one of Malaysia's premier tourism destinations. In 2007, the island gained recognition from UNESCO and Langkawi was announced as Malaysia's and Southeast Asia's first Global Geopark (Halim et al., 2011).

As part of the Langkawi Geopark, LADA in cooperation with the national university of Malaysia (UKM) initiated the BioGeoTrail in Kubang Badak. Kubang Badak is a small fishing village along the Siam river in the northern part of Langkawi. The BioGeoTrail, see figure 1, is a boat trail along the river that consists of twelve sites of interest. These sites incorporate aspects of biology, geology and culture, which led to its name. The trail is based on geotourism; tourism that sustains, or even enhances, the geographical character of a place, such as its culture, environment, heritage, and the wellbeing of its residents (NGS, 1997).



Figure 1. The BioGeoTrail in Kubang Badak, Langkawi (ESRI, digital globe, 2018). The pictures are adopted from Komoo (2017).

When taken the right steps, the BioGeoTrail could be a modern and successful tool for achieving the goals of geoparks, e.g. to conserve, promote, develop, revitalize, educate, and raise awareness. However, the main challenge for local experts is not to develop the trail or designate geosites, but to actually make it succeed. In doing this, it is important to consider the possible economic and socio-cultural impacts on the local community, since the feasibility and success of a geopark will only be realized if local communities benefit from its establishment and participate in building harmony between people and nature (Anyaoku and Martin, 2003). However, not only the scientific perspective on the possible economic and socio-cultural impacts should be taken into account, but also the expectations of the local community. If the geosites do not stir-up social dynamics or if they don't produce an income, raise local pride or nurture a sense of place or of local ownership, the local community will probably neglect it, no matter how scientifically important it is (Popa et al., 2017).

Even though the number of studies on local community attitudes towards future tourism development is increasing due to the nexus between community support and government future development, not much research embarked on what specifically the role is of perceived personal benefit and which perceived benefits are most influential on residents' support towards future tourism development (Angelkova et al., 2012). Thus, Jafari (2001) suggested that tourism development research should consider the roles of perceived benefit on tourism planning and development.

## **1.2 Problem statement**

Since no scientific research on the Kubang Badak community's expectations on the BioGeoTrail has been done yet, this research aims to establish if their perceptions are positive or negative and whether they coincide with the expectations of local experts and the expected socio-economic and socio-cultural effects based on the literature. This leads to the following research question;

*What are, according to the literature on local (geo)tourism, socio-economic and socio-cultural effects of Geoparks? And which effects do the Kubang Badak community and local experts expect through the development of the BioGeoTrail in Langkawi, Malaysia?*

Prior to answering the central research question, five secondary questions will be answered:

1. What are, according to literature on geotourism, the socio-economic and socio-cultural effects other geoparks have experienced?
2. What are the expectations of the Kubang Badak community on the socio-economic and socio-cultural effects by the development of the BioGeoTrail?
3. How do local experts predict the BioGeoTrail will affect the Kubang Badak community with regards to socio-economic and socio-cultural development?
4. Are the expectations of the Kubang Badak community and local experts the same? If not, why?
5. To what degree do the expectations of the Kubang Badak community coincide with what would be expected based on literature on local (geo)tourism?

### **1.3 Methodology**

The research questions will be answered through both primary and secondary research. Firstly, an extensive literature research has been done to report on the effects other geoparks have experienced. Secondly, the expectations of the Kubang Badak community are researched through the use of surveys. And lastly, the expectation of the local experts are researched through in-depth interviews. The results of these methods are compared and concluded. Also, recommendations on further research are made. More information on the methodology can be found in chapter 3.

### **1.4 Structure of the thesis**

After the introduction of the subject, the theoretical framework will be discussed in chapter 2. The theoretical framework is a review of the existing literature on geoparks and geotourism and the conceptual model and hypotheses are derived from the described theories. In chapter 3 the methodology and the ethical considerations are explained. Chapter 4 describes the results of the survey for the Kubang Badak community and chapter 5 shows the results of the in-depth interviews with the local experts. Following these chapters is the conclusion where the main results are discussed and concluded.

## Chapter 2. Theoretical framework

### 2.1 Geoparks

UNESCO Global Geoparks are single, unified geographical areas where sites and landscapes of international geological significance and are managed with a holistic concept of protection, education and sustainable development (UNESCO, 2017). Geoparks are defined geographical areas, but should include not only sites of geological significance but also sites of ecological, archaeological, historical or cultural value. In many societies, natural, cultural and social heritages are inextricably linked and, thus, cannot be separated (UNESCO, 2006a). A geopark is a sustainable development tool that can ensure balance between conservation of heritage resources; development of tourism and infrastructure; and enhancement of local participation and socio-economic development (Komoo and Patzak, 2011).

Geoparks are established through a bottom-up process involving all relevant local and regional stakeholders and authorities in the area. By raising awareness of the importance of the area's geological heritage in history and society today, it can give local people a sense of pride in their region and strengthen their identification with the area. And the creation of innovative local enterprises, new jobs and high quality training courses is stimulated as new sources of revenue are generated through geotourism, while the geological resources of the area are protected (UNESCO, 2017).

### 2.2 The appearance of geotourism

Geotourism is one of the core activities of geoparks, often in combination with educational activities as an appropriate form of local economic development and an increasingly important source of income for the local communities (Farsani et al., 2011b). The National Geographic Society (1997) defines it as tourism that sustains, or even enhances, the geographical character of a place, such as its culture, environment, heritage, and the wellbeing of its residents. It benefits the local community and not only celebrates sense of place, but also supports principles of conservation related to natural resources, culture, heritage and traditions (Miller and Washington, 2009). Geotourism is a form of natural area tourism that specifically focuses on geology and landscape (Newsome and Dowling, 2010).

While geotourism as niche marketing is still at an early stage of commercial development, experience illustrates that the creation of geoparks and the development of geotourism as a branch of sustainable tourism can be a solution for the development of rural economies (Farsani et al., 2011b).

### 2.3 Residents perception and community support

At present, UNESCO's declaration on geoparks as a model of sustainable development and protection of nature has strongly emphasized the strategy of local communities' participation in natural areas. It is stated that the local communities of geoparks should not be removed from the lands where they live, since the locals' knowledge, traditional arts and traditional lifestyle play a vital role in geopark management (Farsani et al., 2011a).

And while the tourism industry faced a rapid growth with holistic support from local communities who are involved directly and indirectly in this industry (Hanafiah et al., 2013), local support isn't a given. When dealing with economically underprivileged areas, transforming geosites into an economic or socio-cultural resource for the local community becomes almost mandatory. If it cannot be transformed into attractors, for instance, valuable cultural and/or economic assets, and the conservation of some potential geosites might fail due to lack of local public support (Popa et al., 2017).

Most of tourism literature suggests that local residents' perception of tourism impact varied based on their perception on the benefit generated from the development (Dyer et al., 2007). A positive impact will generate a sense of local ownership and pride. This in turn assures the local support that is needed for conserving the sites and for using them in educational activities (Popa et al., 2017). Local community support for tourism is also necessary to ensure the commercial, socio-cultural, physiological, political and economic sustainability of the industry. The role of local communities in influencing the tourism development activities through working together with the government is vital (Hanafiah et al., 2013).

Therefore, it is essential to promote positive perceptions among local residents as this affects their support on tourism development (Dyer, et al., 2007). Thus, geoparks' management plans have to give emphasis to inclusive elements, particularly in engaging local community involvement in conservation efforts to take ownership of resources and locations that are deemed to contribute positively to their better living (McKeever, 2009). To achieve this, geoparks should actively participate in the socio-economic and socio-cultural development of their territory and immediate surroundings (Hose, 2007).

#### **2.4 Geotourism and socio-economic development**

Geoparks play an important role in local socio-economic development by enhancing employment opportunities for the local population and foster economic benefits for them, usually through the development of a sustainable tourism (Ngwira, 2015). A geopark must have a management plan to foster sustainable socio-economic development predominantly based on geotourism.

There are different definitions and measures of socio-economic development. Farsani et al. (2011b) measure socio-economic development through the following objectives; the living conditions, better quality of life for local populations and the stimulation of economic growth, engaging local communities in geotourism and improving the local economy. These will also be the objectives used in this paper to measure socio-economic development.

One way geoparks can contribute to socio-economic development is through the development of geological heritage sites. They can generate employment and new economic activities, especially in rural regions in need of new or additional sources of income (El Wartiti et al., 2009). And geoparks can contribute by creating new products related to the geoheritage sites, new recreational activities and creating new jobs for local communities (Ngwira, 2015).

Involving the local community has also proven to be a successful strategy to create socio-economic development. For instance, the management of Bergstrasse-Odenwald Geopark (Germany) invited local groups to join and more than 150 active geopark guides were trained (Eckhardt, 2009). And the Lesvos Petrified Forest Geopark (Greece) are now attracting 90,000 visitors annually and employing 35 local people directly (Ngwira, 2015). Observations from Farsani et al. (2011b) demonstrate that in 2009, geoparks employed an average of about 18 local persons in geopark structure. These local population involvement elements are important for the area because it creates the awareness that the ability to control economic activities and decision making in the territory are, in a large degree, in the hands of local population (Ramos & Fernandes, 2015).

Geoparks have the potential to deliver positive impacts such as enhancing local economies, being a source of new employment opportunities and additional tax receipts, foreign exchange earnings and income. If done correctly, it could create the potential to outweigh the negative outcomes of tourism (Ko & Steward, 2002). And when the economic benefits exceed the cost, the residents will be more positive on tourism development (Wang & Pfister, 2008), which then increases local community support.

## **2.5 Geoparks and socio-cultural sustainability**

From a socio-cultural perspective, community attachment is assumed to be another significant factor that affects locals' support for tourism development, especially in rural areas (Meimand et al., 2017). Intrinsic motivation affects support for tourism development through mediating variables of perceived socio-cultural benefits and perceived socio-cultural costs (Jurowski et al., 1997).

Recently, geoparks – through promoting geotourism in their territory – have been striving to achieve key themes of cultural sustainability and revive traditional culture while decreasing the negative cultural impacts of tourism (Farsani et al., 2011a). Cultural sustainability increases people's control over their lives and strengthens the community identity; it is also compatible with the locals' culture and values (McKercher, 2003). The World Commission on Culture and Development (1995) defined cultural sustainability as inter- and intra-generational access to cultural resources. Whereas all geoparks have to be established in rural areas (Zouros and Martini, 2003), geoparks and geotourism are opportunities for cultural sustainability and rural developments (Farsani et al., 2011a).

One of the ways geoparks try to achieve socio-cultural sustainability is by raising awareness of the importance of the area's geological heritage in history and society today. It gives local people a sense of pride in their region and strengthens their identification with the area (UNESCO, 2017). The awareness of the local community on the importance of the area's geological heritage sites will be best achieved if members of the community are actively involved from the first stages. If they are involved in identifying the natural and cultural identity of the sites, they are basically involved in discovering or rediscovering parts of their own local identity. The usual result is that they will nurture a sense of ownership and a sense of place and will be more likely to share the cultural and scientific information related to the sites (Popa et al., 2017).

## 2.6 Hypotheses

Above theories and insights can be conceptualized in the following model that captures the effects of expectations of the local community on the local support in the tourism development and ultimately the impact on the success of the BioGeoTrail. The model shows that positive expectations from the local community and local experts of the socio-cultural and socio-economic effects will increase local support, which then will positively affect the success of the BioGeoTrail. If the expected effects are negative, the local community and local experts will lack support, which will negatively influence the success of the BioGeoTrail.

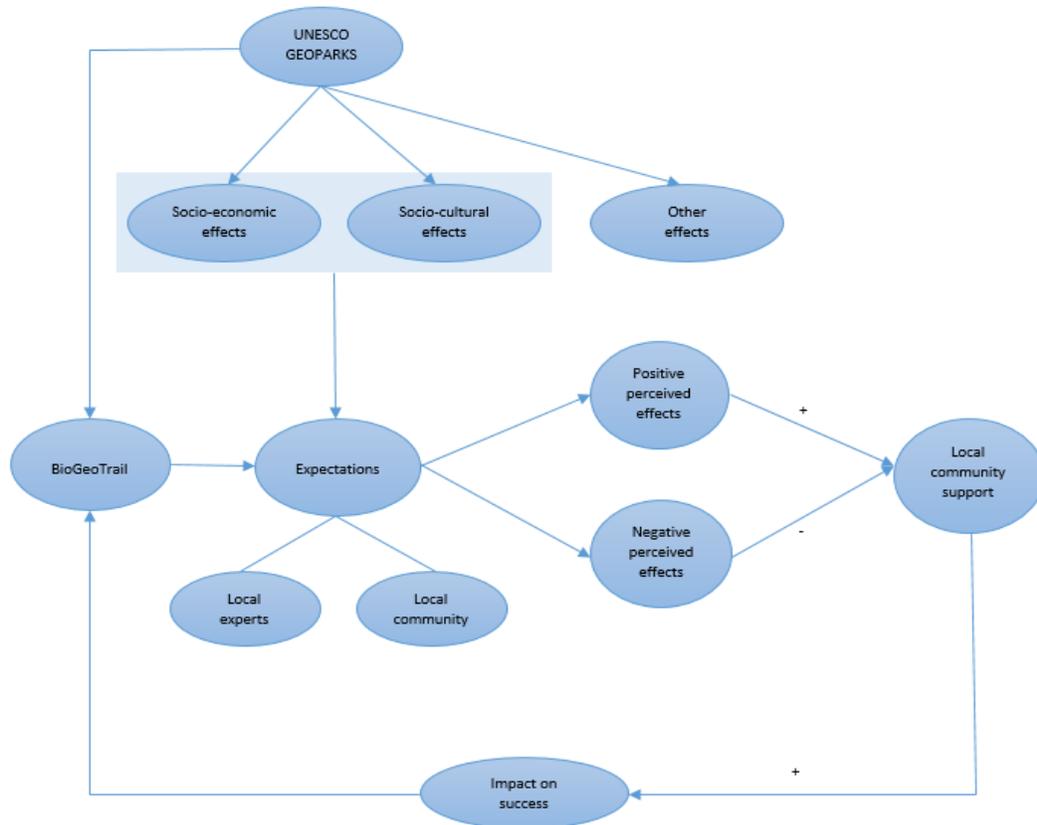


Figure 2. Conceptual model

Geoparks and geotourism can be opportunities for local communities to achieve socio-economic and socio-cultural development, but do local experts and the Kubang Badak community also expect this? Based on above stated literature, it could be hypothesized that the local experts, building from the geopark goals, will expect positive socio-economic and socio-cultural effects by the development of the BioGeoTrail. And since the tourism industry faced a rapid growth with holistic support from local communities (Hanafiah et al., 2013), it would be expected that the local community overall perceives positive socio-economic and socio-cultural effects and are supportive of the tourism development.

## Chapter 3. Methodology

The main objective of this research is to provide a first look in the expected socio-economic and socio-cultural effects for the Kubang Badak community through the development of the BioGeoTrail. It will be based on the expectations of local experts and the local community. The outcomes will be compared with the effects that would be expected based on literature. Therefore, the research methodology includes both primary and secondary research.

### 3.1 Questionnaire design

The first part of the research consists of a survey on the Kubang Badak community expectations on the socio-economic and socio-cultural effect of the BioGeoTrail. It consists of statements that are related to the attitudes and expectations of the local community and are adopted from Meimand et al. (2017). All the statements are derived from previous studies in the same field and are mostly published in impact factor journals to assure the usage of standardized questionnaires from qualified studies (Meimand et al., 2017). These questions are based on a series of review on the existing literature dealing with local community attitudes toward tourism development.

But even though standardized questions were used, some changes were made. The statements in this survey directed the focus to the BioGeoTrail and not tourism in general and are worded to the future tense, instead of the past tense. The questions are worded solely positive and the answers are based on the five point Likert-scale, where the '1' stands for strongly disagree and '5' stands for strongly agree. Also, the survey is translated to the local Malay language.

The data collection took place in the Kubang Badak jetty and was based on convenience sampling. A convenience sample is a type of nonprobability sampling method where the sample is taken from a group of people easy to contact or to reach (Saunders et al., 2012).

After the data collection the results were analyzed. For every statement the percentages per answer are given. These percentages can help understand how strongly the population agrees or disagrees with the statement. The percentages per answer were compared to see differences between the statements. The results of this questionnaire could lead us in understanding how they support tourism development in their region.

### 3.2 In-depth interviews

The second part entails interviewing the local experts of their expectations of the effects of the BioGeoTrail. To get a holistic point of view of the case, representatives of LADA, UKM, FLAG (friends of Langkawi Geopark) and of the Kubang Badak community have been interviewed (see table 1), since they are the main players in the development of the project. This research method additional to the survey is chosen because the primary advantage of in-depth interviews is that they provide much more detailed information than what is available through other data collection methods (Boyce & Neale, 2006). Also, the local experts view the development from a different point of view than the local community.

Table 1. Overview of the local experts

<b>Name</b>	<b>Representative</b>	<b>Function</b>
Ibrahim Komoo	UKM	Professor in geology, specialized in engineering geology, conservation geology and sustainability science.
Sharina Halim	UKM	Environmental sociologist, specialized in indigenous and island community issues and cultural heritage conservation.
Rasanubari Asmah Rahmah	LADA	Administrative officer for the geopark division of the Langkawi development authority.
Dato' Kamarulzaman Abdul Ghani	LADA/FLAG	Former manager of Langkawi development authority and CEO of Friends of Langkawi Geopark (FLAG).
Mr. Jan	Kubang Badak community	Chairman of the fisherman community, Koperasi Nelayan, of Kubang Badak.
Othman Ayeb	Kubang Badak community	Nature guide, geopark ambassador for Langkawi UNESCO global Geopark and a Kubang Badak community member.

After the interviews took place, they were transcribed. The data was analyzed through a thematic analysis by coding into themes, looking for patterns and interconnections and finally building themes through a code tree. The codes used in this analysis are deducted from the literature and are based on the same measurements of socio-economic and socio-cultural development as in the literature review. The findings will be linked back to the research questions and related to the literature to get an idea of the local expert's expectations and to what extent they align with what is expected from the literature.

The main results of the in-depth interviews are shown through the use of quotes. The quotes of the local experts are used as literally as possible, but for the purpose of making the text more readable some adjustments were made. By doing this the quotes become more understandable and their points come across better. The full quotes can be read in appendix 6, and the complete transcripts can be requested from the researcher. Additionally, summaries of the in-depth interviews can be read in appendix 5.

### **3.3 Quality of the data**

Since this research contains two parts, the quality of the data is discussed separately. During the data collection of the survey it became clear some of the questions were not understood or possibly misinterpreted. This could be explained by a part of the community not being able to read and a part mostly speaking Thai. Fellow researchers in the research center of the UKM explained that this causes problems more often since a big part of the community often did not pass elementary school and don't know how a survey works and how to fill it in. Therefore, the results of the survey could include a bias and further research on the communities' expectation is advised. The view of the community is not lost completely in the research since in the in-depth interviews two residents of the Kuban Badak community were interviewed.

The quality of the in-depth interviews is good. A representative of every stakeholder in the development has been interviewed to provide a holistic overview. The data collection as well as the data analysis went smoothly and substantiated conclusions could be drawn.

### **3.4 Ethical considerations**

Different ethical considerations had to be accounted for in the research process. Both the participation in survey as the in-depth interviews was voluntary and based on informed consent. The participation could be stopped at any moment and the survey was anonymous. The participants of the in-depth interviews are aware that their quotes will be used in the paper and had the opportunity to see how they have been incorporated.

## Chapter 4. Kubang Badak community's view on the BioGeoTrail

The questionnaire for the Kubang Badak community consists of 18 statements about the residents' ideas regarding tourism development characteristics. The results of this questionnaire could lead us in understanding how they support tourism development in their region.

### 4.1 Demographic profile

The demographic profile of the 51 respondents is shown in table 2. As table 2 shows, respondents from all age categories participated in the questionnaire. Males and females are almost equally represented in the sample. Most of the respondents received education in their lifetime but this was predominately primary and secondary education. And the majority of the respondents is working in the governmental sector or is self-employed.

Table 2. Demographic profile of the respondents

Indicators	Variables	% of respondents	Indicators	Variables	% of respondents
Age	Below 18	11	Gender	Male	53
	18-35	36		Female	47
	35-50	32	Occupation	Non-Governmental	26
	Above 50	21		Governmental	16
Education	Primary School	22		Student	14
	Secondary school	43		Self-Employed	30
	High school diploma	26	Unemployed	14	
	Bachelor Degree	9	Total number of respondents		51
	Master Degree	0			

### 4.2 Kubang Badak community's support

The outcomes of the questions on the local support are visible in table 3. When looking at the percentages per answer it becomes clear that the community mostly answers neutral to strongly agree on the questions. Since all the questions are worded positively, high percentages in the agree and strongly agree section would indicate support. The results for none of the questions would suggest that the community lacks support. There is however, some differences in the extent that the community agrees with the statement. The highest percentage strongly agreeing (37%) was on the statement that the respondent supports the BioGeoTrail and would like it to become an important part of their village. However, for the statement that their village should become more of a tourist destination and that they support new tourism facilities the reactions were more mixed with 10% (strongly) disagreeing.

Table 3. Community support on the BioGeoTrail

	% strongly disagree	% disagree	% neutral	% agree	% Strongly agree
I support the BioGeoTrail and would like to see it become an important part of my village.	2	2	16	43	37
I support new tourism facilities that will attract more tourists to my village.	2	8	14	48	28
My village should become more of a tourist destination.	4	6	10	45	35
I believe the tourism sector will play a major role in the economy of my village.	2	0	18	48	32
The future of my village will be more sustainable with tourism.	2	6	20	43	29
Many people in my village are in favor of the Biogeotrail.	2	0	23	41	34

#### 4.3 The expected socio-economic effects by the Kubang Badak community

Table 4 shows the socio-economic effects of tourism development that the Kubak Badak community expects through the development of the BioGeoTrail. Per statement more than one third on the population agrees resp. strongly agrees with the statement. The other one third of the community responds in the strongly disagree to neutral categories with a concentration in the neutral category with the percentages being between the 12 and 24 percent. The community strongly agrees with a peak of 42% to the statements that the BioGeoTrail will help improve the economic situation and will create part time jobs for Kubang Badak residence. To the statement that local businesses will benefit the most from tourists the results hangs slightly more towards a neutral response (24%).

Table 4. The expected socio-economic effects of the BioGeoTrail

I expect that....	% strongly disagree	% disagree	% neutral	% agree	% Strongly agree
The benefits of the BioGeoTrail to the community will outweigh its costs.	2	4	20	37	37
The BioGeoTrail will create desirable employment opportunity for the residents in the community.	2	4	12	46	36
Local businesses will benefit the most from tourists.	2	2	24	38	34
The BioGeoTrail will help improve the economic situation for many residents in the community.	2	2	18	36	42
The BioGeoTrail development creates part time jobs for Kubang Badak residence.	2	0	21	35	42

#### 4.4 Socio-cultural effects expected by the community

Concerning the socio-cultural impacts of tourism, see table 5, respondents believe that the BioGeoTrail will lead to positive effects. Again a concentration is visible in the neutral to strongly agree categories, with a focus on the agree category. The majority of the respondents agrees to strongly agrees with statements with the percentages being between the 68 and 84%.

The highest percentages were to the statements that the BioGeoTrail will increase the quality of life and it will encourages a variety of cultural activities in the village. The least negative reaction to a statement, with only 2% of the population (strongly) disagreeing, was to the statement that the BioGeoTrail will help the village to learn about new cultures and introduce our culture to foreign tourists. And the most mixed reaction was to the statement that overall the social benefits of tourism will outweigh the costs of tourism. It had the highest percentage of respondents disagreeing with the statement as well as the second highest percentage strongly agreeing with it.

I expect that....	% strongly disagree	% disagree	% neutral	% agree	% Strongly agree
The BioGeoTrail will increase the quality of life in my village	2	4	10	51	33
The BioGeoTrail will increase the pride of villagers.	4	6	20	50	20
Overall, for me personally, the social benefits of tourism outweigh the costs of tourism.	2	8	22	27	41
The BioGeoTrail will help to preserve and improve the village culture and tradition.	4	4	20	42	30
Government will spend more money in our village due to the BioGeoTrail.	2	2	18	36	42
The BioGeoTrail encourages a variety of cultural activities in the village, for example cultural performance and making handicrafts.	2	4	18	52	24
The BioGeoTrail helps my village to learn about new cultures and introduce our culture to foreign tourists.	2	0	20	38	40

#### 4.5 Kubang Badaks' community expectations

Overall, the outcomes of the survey suggest a positive outlook from the Kubang Badak community. The responses in the different categories were positive, with most of the community (strongly) agreeing to the statements. There are not astonishing differences between the different categories (support, socio-economic and socio-cultural effects). However, the community reacted slightly more positive towards the socio-economic aspects. This is in accordance to what would be expected based on literature. Because when the perceived economic benefits exceed the cost, the residents will be more positive on tourism development (Wang & Pfister, 2008).

Similar to the the socio-economic effects, the response to the statements on socio-cultural effects was very positive. The majority of the population agree to strongly agree with the statements, with the main distinction to the socio-economic effects being that the reactions to the socio-cultural effects are more polarized and on the socio-economic effect there is more of a consensus. However, these differences are small and to understand these differences better more research needs to be done.

#### **4.6 Reflection on the questionnaire data**

As explained in the methodology there is the possibility that the results of the survey could contain a bias. During the data collection it became apparent that perhaps some questions were not understood or misinterpreted. It could possibly be explained by a lack of knowledge of the locals on the use of semantic differentials or being inclined to give to socially wanted answer. Therefore, further research on the communities' expectation is advised.

## Chapter 5. Local experts view on the BioGeoTrail; a dream come true?

### 5.1 Socio-economic effects of the BioGeoTrail

#### 5.1.1 Community attachment in Kubang Badak

Langkawi Geopark is an inclusive concept that encourages geoheritage conservation and sustainable economic development, particularly in generating socio-economic activities for the local people. But in order to bring about real sustainable development in local communities, local people need to be actively involved in the entire process from the start (Azman et al., 2011). Despite this, the level of participation of the communities in the ecotourism projects often remains in the stage of tokenism on Arnstein's ladder of participation. Tokenism is a level of participation that people are being heard and allowed to argue, but they do not have the ability to get a guarantee that their point of view will be considered by the decision makers (Tjahjono et al., 2014). However, the local experts stressed that the BioGeoTrail is taking a different approach and that the local community is actively involved in the development.

“The local community are actually the main player in developing the Kubang Badak BioGeoTrail from the very beginning. From the thinking process. Often times we get the local community to participate after the thinking process has been done, but no, they are involved in the planning stage now. (Interview Sharina Halim, 2017)”

The Kubang Badak community is very positive towards the development of tourism, the local experts explained. They have seen the positive economic effects in the other areas in Langkawi that are part of the Geopark and that it can be a way to earn more income. The local community is the one that wants to develop something in their area, but they don't know how to bring it together. It is generally acknowledged that inadequate capacity (expertise, understanding and awareness) of the local community is the ultimate barrier to community participation (Cole, 2006). The following quote explains how the BioGeoTrail plans overcome these obstacles.

“So by having additional ideas from LADA and the UKM on this BioGeoTrail, it becomes a merger of what they want. So I must say the local community has the idea of making the place as a place of the tourism, or one of the attraction for tourist. And LADA and UKM bring knowledge based tourism ideas. So that it's more useful, it can attract more tourist and hopefully it's more sustainable. (Interview Ibrahim Komoo, 2017)”

#### 5.1.2 Economic growth

Geoparks have been established to enhance employment opportunities for the local population and to foster economic benefits for them (Ngwira, 2015) and the BioGeoTrail can be an opportunity for the Kubang Badak community. Rural areas usually have few sources of comparative advantage for attracting economic activity other than agriculture or industries based on harvesting natural resources, and tourism is one of the few sectors that can be suitable (Wiggins et al. 2001). By the BioGeoTrail attracting more tourists, different jobs can arise. Possible jobs the local experts mostly named are tour guides, boat

operators and boat owners. Currently there are no special souvenir shops for Kubang Badak yet, even though many geoparks use the promotion of local cuisine, local products and handicrafts as a strategy for socio-cultural development (Farsani et al., 2011a). Therefore, a chance lies in the development of specific souvenir items for Kubang Badak or the promotion of local food. Sharina Halim explained that the development is still in the process of discovery and that the handicraft shop will be one of the attempts to increase the woman participation in this Kubang Badak BioGeoTrail.

However, despite the efforts to increase employment in the development areas, often times the local community ends up in the executive end of the tourism industry instead of actively leading a professional tourism business. Therefore, business engagement and development is another form of strategy that tourism authorities can adopt to encourage local community participation and enjoy financial benefits from tourism (Chili & Ngxongo, 2017). Ibrahim Komoo argued the strategy of starting tourism businesses based on a joint venture between the government (LADA) and the community. In this way, the local community can benefit from development while being given help in starting a business.

"The Geopark in general would like to shape more opportunity and specifically more opportunity for the local community. ... Meaning that the big companies will start to give a share or have a partnership with the community, so that ultimately the local community is more dominant in terms of socio-economic development in Langkawi." (Interview Ibrahim Komoo, 2017)

Another strategy named by the local experts to overcome this inadequacy was to provide educational training, to try to improve the quality of life for Kubang Badak community. They hope these courses will attract the younger generation. By supplying the younger generation with more education they are given the opportunity to take advantage of the economic development of the region and to make them more likely to want to get involved.

## **5.2 The expected socio-cultural effects by local experts**

One of the key success factors for sustainable conservation is the level of awareness and appreciation on the heritage value of the resources by stakeholders and particularly the local communities (Azman et al., 2010). The awareness on the importance of the area's geological heritage sites will be best achieved if members of the community are actively involved from the first stages (Popa et al., 2017).

On the question if the local community was involved in the creation and discovery of the geological heritage sites the reactions were mixed. Most of the sites are discovered by geologists, Sharina Halim explained, but sometimes the discovery is done together with the local community. Dato' Kamarulzaman does see benefits in involving the local community versus it being a task for geologist, as the following quote explains.

"I think the community knows more than what we have identified. They know certain areas more than what we have identified. And it's one of the points of interest. So it's a matter of getting them together and speaking the same language about this point of interest so that there won't be any conflict of information. And of course, with the involvement of PPL, I think the correct scientific information will be delivered to them so that there won't be miscommunication or misrepresentation of facts about that area." (Interview Dato' Kamarulzaman, 2017)

Because if the local community are involved in identifying the natural and cultural identity of the sites, they are basically involved in discovering or rediscovering parts of their own local identity. The usual result is that they will nurture a sense of ownership and a sense of place (Popa et al., 2017). And culture is part of the main things to make them feel a greater sense of belonging to the area, because culture is something they can associate with very easily. The following quote of Sharina Halim explains how she sees the BioGeoTrail will increase their awareness and sense of belonging.

‘‘ The Kubang Badak BioGeoTrail I think, will make them appreciate the thing they have in their backyard and how they are actually able to promote it as part of tourism. But it’s not just all about money, not just that, but to strengthen their sense of belonging and sense of appreciation towards what they have in their village. . . . Kubang Badak reunites the sense, the feeling of maybe togetherness among the village community when they come to work together on Kubang Badak BioGeoTrail, as a platform to strengthen community relationships. . . . Sometimes communities need a platform to work together and this is definitely the platform if we can convince all of them.’’ (Interview Sharina Halim, 2017)

The local experts stressed the importance of focusing on creating this sense of belonging and awareness of the area. By raising awareness of the importance of the area’s geological heritage in history and society today, it can give local people a sense of pride in their region and strengthen their identification with the area (UNESCO, 2017). When this doesn’t occur, the local community will probably neglect the area, no matter how scientifically important it is. Therefore, the involvement of the Kubang Badak community is important in helping them create this sense of awareness to make the community realize to take care of the area and to be able to create socio-cultural sustainability.

### **5.3 Quality versus quantity**

The local experts consider the community’s awareness of the area very important, since the lack of this created problems in other parts of the Langkawi Geopark. Several times the comparison to the Kilim Karst Geoforest, a mangrove area on the northeast side of the Langkawi Geopark, was made. The Kilim Karst Geoforest experienced problems with the carrying capacity and the ecology of eco-tourism sites, especially fragile sites like Kilim Mangrove swamp and cave (Azman et al., 2015). To prevent this from happening in Kubang Badak, the developers of the BioGeoTrail decided to take a different approach and bring the idea of specialized tourism rather than mass tourism. As Othman Ayeb explained, the development of the BioGeoTrail can help reduce the current number of visitors in Kilim and bring positive competition.

‘‘Through specialized tourism many things can happen in terms of environmental sustainability and community sustainability. Environmental sustainability means no damage to the mangrove and economic sustainability means actually that the number of tourists coming in is much less but the socio-economic effect to the community will be better. And by having the activity at the jetty, not spread out at the village. I think the impact to social tradition will maybe be slightly less.’’ (Interview Ibrahim Komoo, 2017)

The approach Dato Kamaruzaman named was to promote the area to a small group of operators that can concentrate on this area and by doing that bring in a higher quality of tourists. Quality tourists coming in would mean they are willing to pay higher fees or price for any of the services within the BioGeoTrail. However, the economic aspect is the most important factor influencing the local community support and the approach of quality tourism is not the fastest way to achieve economic benefits for the local community. Therefore, the local experts expressed their concerns since “we do not have a big dollar sign in this geotrail”.

“The biggest weakness actually is that we want to introduce a quality product. But the community there, they are still very basic. I’m afraid they’re not able to handle this approach and they will go back to the most common way that they do things. Back to mass tourism, not much guiding and bending the rule and regulation. That is my biggest worry.” (interview Ibrahim Komoo, 2017)

In trying to prevent the community to go back to the common way they do things, the challenge is to create motivation that builds awareness and conviction rather than just making people do something to gain some benefits in return (Burkey, 1993). Thus, the basis for increasing knowledge and understanding of geoparks lies in developing sound, practical and achievable public education programs (Azman et al., 2010). In addition, there needs to be more regulation from LADA to monitor the area closely to see if the development is going according to plan, since most of the problems in Kilim occurred because of a lack of regulation. However, this is a different approach than LADA is familiar with and Ibrahim Komoo expressed his concerns.

“In general, I can see that in LADA there is also a mixed policy. While wanting to have a high quality product for tourism they still talk about mass tourism. So hopefully this is a thing that can be resolved soon.” (interview Ibrahim Komoo, 2017)

## Chapter 6. Conclusion

A geopark is a sustainable development tool that can ensure balance between conservation of heritage resources; development of tourism and infrastructure; and enhancement of local participation and socio-economic development (Komoo and Patzak, 2011). Some of the socio-effects other geoparks have experienced are local community participation, economic growth and an improvement in the living conditions and a better quality of life for local populations. Some of the socio-cultural effects they have experienced are community attachment, a sense of pride in their region and strengthened identification and awareness of the local community on the importance of the area's geological heritage sites. Based on the literature research and results of the other geoparks it could be concluded that the UNESCO Geopark model can be a gateway to socio-economic and socio-cultural development. However, the success of the geopark is heavily influenced by the support of the local community. And most of tourism literature suggests that local residents' perception of tourism impact varied based on their perception on the benefit generated from the development (Dyer et al., 2007).

In the case of the BioGeoTrail, the results of the survey on the expectations of the Kubang Badak community showed that the community is very positive and their support is high. This is in line with the hypothesis that the local community has positive perception and is supportive. The perception is specifically positive with regard to the socio-economic effects, similarly to what would be expected based on literature. Because when the perceived economic benefits exceed the cost, the residents will be more positive on tourism development (Wang & Pfister, 2008). However, during the research it became clear some of the questions of the survey were not understood or possibly misinterpreted. Therefore, the results of the survey could include a bias and further research on the communities' expectation is advised.

The local experts think the cooperation of the Kubang Badak community, the UKM and LADA can lead to a successful BioGeoTrail that will enhance the local economy and lead to economic growth by creating jobs for the local community. Involving the local community will lead to more dominance in terms of socio-economic development and by supplying the younger generation with more education they're given the opportunity to take advantage of the economic development of the region. However, to achieve this, continuous education for the local community is needed. Also, joint-venture partnership can be a starting point for the local community to get a more dominant role in the development.

Additionally, the local experts believe the BioGeoTrail by involving the local community in the development will contribute to their appreciation of the area and create a sense of belonging. This will increase the local community support and will make it more likely that the community takes care of the place, which is necessary for the socio-cultural and environmental sustainability of the area.

However, constant managing of LADA is necessary for them to make sure the development goes according to plan and it is not heading in the direction of mass tourism. Also within LADA a consensus needs to be achieved so that mixed policy can be prevented and that quality tourism can be developed. So a BioGeoTrail can be developed, that is sustainable for the community and the environment.

“To make a dream come true here.” – Mr. Jan, Kubang Badak community member

Thus as hypothesized, the local experts, building from the geopark goals, expect positive socio-economic and socio-cultural effects by the development of the BioGeoTrail. Their expectations coincide to a large degree with what would be expected based on literature on local (geo)tourism. And the expectations of the Kubang Badak community and the local experts are both very positive and quite similar, possibly because the Kubang Badak community is informed on the BioGeoTrail by the local experts.

### **6.1 Recommendations**

The main recommendation coming from this research would be to do further research on the Kubang Badaks' community expectations on the BioGeoTrail and use a different research method. If chosen to use surveys, it would be advised to get the survey translated by somebody living in the village, since the language is very specific for the region. Interviewing members of the community would possibly be a better way to research to get more context for the answers. Further research could be done after the BioGeoTrail has been active as a tourist destination, to see how the development went and if it's going in the right direction. Research like this could be done on regular basis, for instance yearly or per every couple of years.

### **6.2 Acknowledgement**

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## Appendix 1. Survey BioGeoTrail (English)

This survey on the Kubang Badak's community view on the BioGeoTrail is part of research conducted by Marrit Bolwerk, student of Universiti Kebangsaan Malaysia. Contribution is voluntary and completely anonymous. At any point in the survey it is possible to stop and withdraw.

<b>1. Support</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly agree</b>
<i>I support the BioGeoTrail and would like to see it become an important part of my village.</i>					
<i>I support new tourism facilities that will attract more tourists to my village.</i>					
<i>My village should become more of a tourist destination.</i>					
<i>I believe the tourism sector will play a major role in the economy of my village</i>					
<i>The future of my village will be more sustainable with tourism.</i>					
<i>Many people in my village are in favor of the Biogeotrail.</i>					

<b>2. I expect that...</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly agree</b>
<i>The benefits of the BioGeoTrail to the community will outweigh its costs</i>					
<i>The BioGeoTrail will create desirable employment opportunity for the residents in the community</i>					
<i>Local businesses will benefit the most from tourists</i>					
<i>The BioGeoTrail will help improve the economic situation for many residents in the community</i>					
<i>The BioGeoTrail development creates part time jobs for Kubang Badak residence</i>					

**3. I expect that...**

**Strongly disagree      Disagree      Neutral      Agree      Strongly agree**

<i>The BioGeoTrail will increase the quality of life in my village</i>					
<i>The BioGeoTrail will increase the pride of villagers</i>					
<i>Overall, for me personally, the social benefits of tourism outweigh the costs of tourism</i>					
<i>The BioGeoTrail will help to preserve and improve the village culture and tradition</i>					
<i>Government will spend more money in our village due to the BioGeoTrail</i>					
<i>The BioGeoTrail encourages a variety of cultural activities in the village, for example cultural performance and making handicrafts</i>					
<i>The BioGeoTrail helps my village to learn about new cultures and in</i>					

**4. General information**

**Age :** ..... years

**Gender :** Male / female

**Highest achieved education :** Primary school / Secondary school / high School diploma / Bachelor degree/ master degree

**Occupation :** Non-governmental / Governmental/ Student / Self-employed / unemployed

## Appendix 2. Survey BioGeoTrail (Malay)

Kajian soal selidik ini adalah untuk mendapatkan pandangan Komuniti Kubang Badak berkaitan BioGeoTrail. Kajian ini dijalankan oleh pelajar bernama Marrit Bolwerk. Sumbangan pandangan bersifat sukarela dan nama anda tidak akan direkod. Sepanjang soal selidik ini, anda boleh memilih berhenti dan menarik diri.

<b>1. Sokongan</b>	<b>Sangat tidak bersetuju</b>	<b>Tidak bersetuju</b>	<b>Neutral</b>	<b>Setuju</b>	<b>Sangat bersetuju</b>
<i>Saya sokong BioGeoTrail dan mahu melihat ia menjadi sebahagian perkara penting di dalam kampung saya.</i>					
<i>Saya sokong kemudahan fasiliti perlancongan yang baru kerana ia dapat menarik lebih ramai pelancong ke kampung saya.</i>					
<i>Kampung saya sepatutnya dijadikan sebagai salah satu destinasi perlancongan.</i>					
<i>Saya percaya sektor perlancongan memainkan peranan yang besar dalam pembangunan ekonomi kampung saya.</i>					
<i>Masa depan kampung saya lebih lestari dengan perlancongan.</i>					
<i>Banyak orang kampung saya menyukai BioGeoTrail.</i>					

<b>2. Saya jangkakan...</b>	<b>Sangat tidak bersetuju</b>	<b>Tidak bersetuju</b>	<b>Neutral</b>	<b>Setuju</b>	<b>Sangat bersetuju</b>
<i>Kelebihan BioGeotrail lebih kepada komuniti berbanding kos pembinaan.</i>					
<i>BioGeoTrail akan membuka peluang pekerjaan kepada komuniti setempat.</i>					
<i>Peniaga tempatan akan mendapat manfaat dari pelancong yang datang.</i>					
<i>BioGeoTrail akan membantu meningkatkan taraf ekonomi penduduk</i>					
<i>BioGeoTrail dapat membuka peluang pekerjaan sementara kepada penduduk Kubang Badak.</i>					

### 3. Saya jangkakan...

	Sangat tidak bersetuju	Tidak bersetuju	Neutral	Setuju	Sangat bersetuju
<i>BioGeoTrail akan dapat meningkatkan kualiti hidup penduduk kampung saya.</i>					
<i>BioGeoTrail akan dapat memupuk rasa bangga dikalangan penduduk kampung.</i>					
<i>Saya berpendapat, secara keseluruhannya, keuntungan sosial lebih tinggi dari kos pelancongan.</i>					
<i>BioGeoTrail dapat membantu mengekalkan dan menambahbaik tradisi dan budaya kampung ini.</i>					
<i>Kerajaan akan membelanjakan lebih banyak wang di kampung saya untuk BioGeoTrail</i>					
<i>BioGeoTrail akan menggalakkan kepelbagaian aktiviti budaya contohnya persembahan budaya dan pembuatan seni tangan.</i>					
<i>BioGeoTrail dapat membantu orang kampung untuk belajar tradisi baru dan juga dapat memperkenalkan budaya disini kepada pelancong asing.</i>					

### **4. Maklumat umum**

**Umur :** ..... Tahun/

**Jantina :** Lelaki / Perempuan

**Tahap pendidikan tertinggi :** Sekolah Rendah / Sekolah Menengah / Sijil / Diploma / Ijazah Sarjana Muda / Ijazah

**Pekerjaan :** Bukan Badan Kerajaan / Kerajaan/ Pelajar / Bekerja Sendiri / Tidak bekerja

### Appendix 3. Results of the survey

Respondent	Support					
1	4	4	4	4	4	4
2	4	4	4	4	3	3
3	5	4	5	5	4	-
4	5	5	5	5	5	5
5	3	3	3	3	5	3
6	5	5	4	5	4	3
7	4	4	4	4	4	4
8	5	5	5	5	5	3
9	5	5	5	5	5	5
10	4	4	4	4	5	5
11	4	4	4	4	4	4
12	5	-	5	-	5	-
13	4	4	4	4	5	5
14	4	4	4	3	4	4
15	4	3	4	4	4	3
16	5	4	5	5	4	4
17	4	4	4	3	4	4
18	4	4	5	4	5	4
19	5	5	5	4	4	5
20	3	2	2	3	3	3
21	5	5	5	5	-	-
22	3	2	2	3	2	3
23	4	4	5	4	5	4
24	4	4	4	4	3	4
25	3	3	3	3	3	3
26	4	5	4	5	5	5
27	4	4	5	4	5	5
28	4	4	3	4	-	4
29	4	4	4	5	4	4
30	5	4	4	4	4	5
31	1	1	1	1	1	1
32	4	5	4	4	4	5
33	3	3	4	4	3	4
34	3	2	2	3	2	3
35	4	4	4	4	3	4
36	5	5	5	5	4	-
37	5	4	4	5	4	5
38	4	4	5	5	5	5
39	4	3	4	4	3	4
40	5	4	5	5	4	5
41	5	5	5	4	4	4
42	3	3	3	3	3	3
43	5	4	4	4	3	4
44	4	5	4	5	4	4
45	2	2	1	3	2	3
46	3	3	3	4	3	5
47	5	5	4	4	5	5
48	5	5	5	5	4	5
49	4	4	4	5	4	4
50	5	4	5	4	5	5
51	5	5	5	4	4	4
% strongly disagree	1,960784314	2	3,921568627	2	2,040816327	2,127659574
% disagree	1,960784314	8	5,882352941	0	6,12244898	0
% neutral	15,68627451	14	3,803921569	18	20,40816327	23,40425532
% agree	43,1372549	48	45,09803922	48	42,85714286	40,42553191
% strongly agree	37,25490196	28	35,29411765	32	28,57142857	34,04255319
% total	100	100	100	100	100	100

<b>Socio-economic</b>				
4	5	4	4	4
3	4	5	5	4
3	4	5	5	5
3	4	5	4	3
2	3	3	3	3
4	5	5	5	5
4	4	4	4	4
5	5	5	5	5
4	5	5	5	5
4	4	5	5	5
4	4	3	3	3
5	-	5	-	5
5	5	5	4	5
4	4	4	4	4
3	4	5	5	5
4	5	5	5	4
4	4	3	3	4
5	4	5	4	5
5	4	4	5	5
3	2	2	3	3
5	4	-	5	-
2	2	3	2	3
5	4	4	5	5
5	4	3	3	4
3	3	3	3	3
5	5	4	4	5
4	4	5	5	5
4	3	4	5	4
5	5	5	5	5
4	4	4	5	4
1	1	1	1	1
5	5	4	4	5
4	4	3	4	-
3	3	3	3	3
4	4	4	4	4
5	5	4	4	4
5	5	4	5	4
4	4	4	5	5
4	4	3	4	4
5	5	4	4	4
5	5	4	5	5
3	3	3	3	3
4	5	4	4	5
4	5	4	4	4
3	3	3	3	3
3	4	3	4	3
5	4	5	4	-
4	5	5	5	5
5	4	4	5	5
5	5	5	5	4
5	5	4	4	4
1,360784314	2	2	2	2,083333333
3,321568627	4	2	2	0
13,60784314	12	24	18	20,83333333
37,25430196	46	38	36	35,41666667
37,25430196	36	34	42	41,66666667
100	100	100	100	100

socio-cultural							
4	4	2	4	4	4	4	4
5	3	3	3	4	3	5	5
5	5	5	5	4	4	5	5
4	3	3	5	3	5	4	4
3	3	2	3	3	3	3	3
5	4	3	3	4	4	5	5
4	4	4	4	4	4	4	4
5	3	5	5	5	5	5	5
4	4	4	5	5	5	4	4
4	4	4	4	5	4	5	5
4	4	4	4	4	4	4	4
5 -		5 -		5 -			5
4	4	5	5	5	4	4	4
4	3	4	4	4	3	4	4
4	3	3	4	3	4	3	3
4	4	3	4	4	4	4	4
4	4	4	3	4	3	3	3
5	5	4	5	5	5	5	5
4	4	5	5	5	5	4	4
3	2	3	3	3	2	3	3
5	5	5	5	5	4	5	5
2	2	2	1	2	2	3	3
4	4	5	4 -		5	4	4
4	4	5	5	4	4	4	4
3	3	3	3	3	3	3	3
4	4	5	5	5	4	5	5
4	5	5	4	5	5	5	5
4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5
4	4	5	5	4	4 -		
1	1	1	1	1	1	1	1
5	4	4	4	5	4	5	5
4	4	3	3	5	4	4	4
3	2	3	3	3	3	3	3
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5	4	5	4	5	4	4	4
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4	3	3	3	4	4	4	4
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4	5	5	4	5	5	5	5
3	3	3	2	3	3	3	3
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2	1	2	2	3	3	3	3
4	3	4	3	3	3	3	3
5	5	5	4	4	4	5	5
5	5	5	5	5	5	5	5
4	4	4	4	4	4	4	4
4	5	4	4	5	4	5	5
5	4	5	4	4	4	4	5
1,960784314	4	1,960784314	4	2	2	2	2
3,321568627	6	7,843137255	4	2	4	0	0
9,803921569	20	21,56862745	20	18	18	20	20
50,98039216	50	27,45098039	42	36	52	38	38
33,33333333	20	41,17647059	30	42	24	40	40
100	100	100	100	100	100	100	100

Age	Gender	Educatin	Occupatis
39	P	S	BBK
26	L	SM	BS
38	L	D	BS
23	L	SM	BBK
14	L	SM	P
17	P	D	P
16	P	SM	P
20	P	SM	BBK
35	L	SM	BS
24	P	D	BS
54	P	SM	TB
27	L	-	-
39	L	SM	BS
27	P	SM	BS
43	P	SR	BS
37	L	S	BBK
56	L	D	BBK
19	P	SM	P
-	-	-	-
64	L	SM	TB
24	P	ISM	K
52	L	D	BS
33	L	D	BBK
53	L	SM	BBK
21	P	D	K
56	L	SM	BS
41	P	SR	BBK
48	L	SM	TB
25	L	ISM	K
42	P	D	BS
61	P	SR	TB
53	P	-	-
56	L	SR	K
49	P	SR	-
17	L	SM	P
-	-	ISM	K
18	L	D	BBK
42	L	SR	BBK
45	P	SR	TB
51	L	SM	K
-	-	-	-
28	P	SM	-
24	P	D	BS
29	P	D	BS
-	-	-	-
44	L	SM	-
37	P	D	TB
16	L	SR	P
26	P	ISM	K
28	L	SM	BBK
23	L	SR	BS
<b>&lt;18</b>	<b>L-</b>	<b>SR-</b>	<b>BBK-</b>
5	25	9	11
0,106382979	0,531914894	0,195652174	0,255813953
<b>18-35</b>	<b>P-</b>	<b>SM-</b>	<b>K-</b>
17	22	19	7
0,361702128	0,468085106	0,413043478	0,162790698
<b>35-50</b>		<b>D-</b>	<b>P-</b>
15		5	6
0,319148936		0,108695652	0,139534884
<b>&gt;50</b>		<b>ISM-</b>	<b>BS-</b>
10		4	13
0,212765957		0,086956522	0,302325581
		<b>I-</b>	<b>TB-</b>
35,31914894		0	6
		0	0,139534884

## Appendix 4. In-depth interview for the local experts

### **Introduction**

1. Could you introduce yourself?
2. Can you shortly explain what the BioGeoTrail is?
3. How are you involved in the development of the biogeotrail

### **Community support**

Most of tourism literature suggests that local resident's perception of tourism impact varied based on their perception on the benefit generated from the development (Dyer et al., 2007).

4. How do you think the community perceives the BioGeoTrail? Are they positive or negative?
5. Does the BioGeoTrail actively promote positive perceptions among local residents as to increase their support on tourism development? If so, how? If not so, why not?

At present, UNESCO's declaration on geoparks as a model of sustainable development and protection of nature has strongly emphasized the strategy of local communities' participation in natural areas.

6. To what extent is the Kubang Badak community participating now? And in what ways are they participating?
7. How did you achieve this community participation?
8. If necessary, what actions will be undertaken to increase the local community participation?

### **Socio-economic effects**

9. How much do you think the BioGeoTrail will influence the local economy? And through what ways?
10. How many local people are currently working in the BioGeoTrail? And what type of jobs do they do?
11. What could be possible jobs that can arise from the tourism development?
12. Do the people of Kubang Badak want to work in the tourist sector? And are they capable to work in this industry?

13. Through what ways do you believe the BioGeoTrail could be a way to improve the living conditions and the quality of life of the community?

### **Socio-cultural effects**

Recently, geoparks – through promoting geotourism in their territory – have been striving to achieve key themes of cultural sustainability and revive traditional culture while decreasing the negative cultural impacts of tourism

14. What is done by the BioGeoTrail to preserve and improve the village culture and tradition?

15. Has the BioGeoTrail for instance been involved in promoting regional food and craft products?

16. How do you think the development and the extra tourism will influence the cultural practises?

17. Awareness of what the geopark can mean for the local community starts with awareness of the area's geological heritage sites. Are you involving the local community in the creation of geological heritage sites? And to what extend?

Tourism is a double edged sword and can also have very negative effects for the local community. For example, demise of the local language, vanishing local customs and traditional way of life etc.

18. What are possible negative effects for the local Kubang Badak community that could happen through the development BioGeoTrail?

19. What do you think at this moment is the biggest weakness of the BioGeoTrail? And the biggest threat?

20. How do you plan to overcome these issues?

21. So in what way do you expect the lives of the local community will change in the next couple of years?

## Appendix 5. Summaries of the in-depth interviews

### **Interview Sharina Halim, UKM, 13 October 2017**

BioGeoTrail is a program that uses geology, biology together with the cultural aspect to develop a natural trail in an area called Kubang Badak in Langkawi. And this trail is used to bring tourist to appreciate nature in Kubang Badak from the geology, biology, as well as the culture of the area. The BioGeoTrail is a program to promote tourism of the Kubang Badak area.

I am one of the researchers from Langkawi Research Centre of the national University of Malaysia and we do this research on Kubang Badak BioGeoTrail since about 1.5 year ago. Because we realised that we need to identify more nature-culture trails to highlight local uniqueness, so that it can be used for the local community to boost their socio-economic opportunities, to boost their income and to generate more opportunity for the local to participate in geopark based activities. At this moment, there are many potential sites in Kubang Badak, but it has not been packaged in a way that it can be promoted as a sustainable tourism product on the Island.

The local community are actually the main players in the development of the Kubang Badak BioGeoTrail from the very beginning, the thinking process. Often times we get the local community to participate after the thinking process has been done, but now they are involved in the planning stage. Where the local community are the ones that want to develop something in their area, because they see the potential but they don't know how to bring it together. So that's why the local community and Langkawi development Authority with the researchers from the Langkawi research Centre are working together to think about the strengths and opportunities of this trail and how can we move on.

The local community has this kind of awareness to develop something in their area because they see that more of the concentration of economic opportunities go down on the other side of the island. The only thing we need to do is train them and give them knowledge of the area, because they don't have a geology or biology background. They have the local knowledge, but they just need to be quick with the scientific information so that it is more factual.

And more training needs to be given, so that they will be able to carry out this activity more strategically. That it is a well-planned activity rather than just taking ideas from another area and implementing it in their area. Because it's easier to copy from a place such as Kilim, which is also a mangrove area and a very successful tourism mass tourism product. But how can you be different than Kilim? In a sense that they don't want to be mass tourism and then again they want to have more income so how can we package it so that they can provide quality instead of quantity.

As part of the BioGeoTrail, culture is also very important. Culture is part of main things to make them feel a greater sense of belonging to the area. Because culture is something they can associate with very easily. I think the BioGeoTrail will bring back the sense of the importance of preserving and conserving their cultural heritage while appreciating the natural heritage. Because sometimes we tend to take for granted what is in behind our backyard. So Kubang Badak BioGeoTrail I think, will make them appreciate the thing they have in their backyard and how it can actually be promoted for tourism . But it's not just about money, but also to strengthen their sense of belonging and their sense of appreciation towards what they have in their village. The BioGeoTrail has the potential of creating the feeling of togetherness among the village community and to be a platform to strengthen community relationships.

However, despite the positive expected effects I would say a concern is the carrying capacity. Because usually the tourism starts slow but eventually the place becomes more flourished or more active. And then

the issue of carrying capacity is into place. But that sort of issue should have been thought of earlier. That means you need to have proper planning from the very beginning, not when you already have the issue at hand then you start to be reactive about it.

Another threat is investors interest to make it a mass product. Because it is very pristine area in the island and a lot of people really want to make as much as they can from this. So how do you make them control themselves to develop in a mass tourism way. How can you convince them to develop in a way that small is beautiful.

My goal is that with god's will everything will go as planned with the researchers and the local community, as well as LADA. Hopefully we can make Kubang Badak a truly unique experience of mangrove that combines the geology as well as the biology as the cultural and hopefully that will boost the income of the local community, but most importantly it will be an example. So that other initiatives can follow Kubang Badak. We can make it small, we can make it quality, we don't have rush for quantity and still we can try to achieve development, conservation and try to improve the lives of the community. This is our aspiration for Kubang Badak BioGeoTrail.

### **Interview Ibrahim Komoo, UKM, 9 December 2017**

I introduced the idea of the BioGeoTrail and I see Kubang Badaks' potential to be developed as a geotourism product and the best way to develop is by having a boat trail. There is already another boat trail in Langkawi, the Geotrail of Kilim. However, Kilim has become mass tourism, and it has reached or is expected to reach the capacity from the trail. So, we thought of creating a new trail, that's why we choose Kubang Badak as the new geotrail for tourism in the geopark.

Honestly when we have a geopark, we have the difficulty to bring the local community to involve in activities. Only in Kilim we manage to ask the community through their cooperative to actively participate. And after some time thought: this is not good enough. So now, we start to talk to Kubang Badak community cooperative group and we discuss carefully on their role. Meaning if possible we want to give them more responsibility, more more participation and in the future they can get more profit from this. So, our plan, LADA's plan, is to make a better community participation than Kilim. One of the strategies for this is that when they want to start a tourist company, it should be a joint venture between LADA, the government, and the community. Once we have a joint venture we can provide better rules and regulation for the tourism activity.

And we are hoping that the fee for the tourist or for the cost for that product is higher. So, even if they just bring two trips a day, they can get good income. So the strategy here is smaller trips, less time but bigger benefit for the local community.

How do the local community see the BioGeoTrail?

I think the initial idea came from the local community itself. They see the place as more or less the same as Kilim and they have started small scale tourism. But it was not quite successful because maybe the place is too small or the facility is not good enough. So they cannot attract tourist to got here. So by having additional idea from LADA and UKM on this BioGeoTrail it is sort of a merger of what they want. The local community had the idea to it a place of tourism, and LADA and the UKM bring knowledge based tourism ideas. So that it's more useful, it can attract more tourist and hopefully it's more sustainable.

However, I can see some negative effects occurring if it's not managed carefully. Then only a small number of the community will take advantage and the rest will remain the same. So we try to avoid this through cooperative participation, rather than individual participation. We can also see possible impacts to mangrove area because the area is a bit small and the mangrove is quite sensitive. That's why we purposely choose to bring the idea of specialized tourism rather than mass tourism. And through this specialised tourism many things can happen in terms of environmental sustainability and community sustainability. Environmental sustainability means no damage to the mangrove and economic sustainability is a situation where the number of tourists coming is much less but the socio-economic effect to the community are better.

The biggest weakness actually is we want to introduce quality product. But the community there, is still very basic. I'm afraid they're not able to handle it properly. For example, that they will go back to the most common way that they do things. Back to mass tourism, not much guided and bending the rule and regulation. And I personally don't have a solution to this problem because it's very much LADA who calls the shots and I will try my best to influence LADA. But in general I can see that in LADA there is also a mixed policy. While wanting to have high quality product for tourism they still talk about mass tourism. So hopefully this thing can be resolved soon.

#### **Interview Dato' Kamarulzaman Abdul Ghani, FLAG & LADA, 6 December 2017**

The geopark is about conservation, about education and of course about the cultural and the social-economic development of the community within the geopark. And the BioGeoTrail is a new name. I think Komoo came up with it to signify the importance of geology and the combination with biodiversity which makes the geopark. The community is very responsive to be named the BioGeoTrail and of course there are some quarters that feel they don't connect to this BioGeoTrail concept and it needs good explanation and direction and networking with the local community. I think if it'll be well planned we can understand this area, the community can anticipate and they can benefit. If it can be organized properly then it can be reduce the negative aspects of tourism, such as mass tourism. So really looking at places, getting educated, and achieving a minimum education about nature. And we need a very consistent effort in this, a well-planned one and we need to sit down and gather information and make a strategic plan for the area and how to organize all the visit to the area.

With regards to the creation of geological heritage sites, I think the community knows more than what we have identified. They know certain areas more than what we have identified. So it's a matter of getting them together and speaking the same language about this destination, about this point of interest so that there won't be any conflict of information. And of course with the involvement of PPL, I think the correct information, the scientific information, will be delivered to them so that there won't be miscommunication or misrepresentation of facts about that area.

And we have to conserve. And let people understand what they have then they will appreciate and they will want to conserve, because it's valuable to them. If they don't value this thing, they won't have the urge to conserve anything at all. Because I think in a tourist destination like Langkawi, so many people are looking at the dollar sign. So it's a challenge for this BioGeoTrail to consist of nature based when the income prospect in this particular place is not that big as any other commercial destinations.

Therefore, we have to promote it to a small group of operators that can only concentrate on this area and by doing that can have better quality tourist coming in. And quality tourist coming in would mean they are willing to pay higher fees or price for any of the services within the GeoBioTrail.

### **Interview Rasanubari Asmah Rahmah, LADA, 14 November 2017**

The community of Kubang Badak is very supportive, since the moment we first came. Actually, it's the community itself that wanted to do more. More than just fishing activities in Kubang Badak. It's voluntary by the community itself. LADA doesn't have to encourage. We encourage them by doing a program with them, but it's voluntary. They are willingly to participate in the program. Sometimes they are the one that organize a program or activities they want to do in Kubang Badak. Also, we have several places that are similar to Kubang Badak in Langkawi. But it's the management and the way of approach of the management that is a bit different. Kubang Badak is more towards the sustainable way. Currently, the project is focussed more on the quality of tourist. The quality of tourist that will come to Kubang Badak is higher than other places.

What we have done one in the first series, is to research the community there. What is the basic knowledge they should have about Kubang Badak. So we are preparing them for the first phase and during those courses they're sending a younger generation from them to participate in the courses.

I think the tourism will have positive and negative effects but we can minimize the negative effects. We have learned from other places like Kilim and Tanjuh Rhu, that negative effects can happen through bad regulation of the mangrove area. It's because of the speeding of the boats, and also the wildlife there could be disturbed with the human activities.

### **Interview Mr. Jan, Koperasi Nelayan of Kubang Badak, 26 October 2017**

We offer quite some support on the UKM work of prof. Dato Ibrahim Komoo and LADA also. And we support LADA. We support them, to make sure that there is, the GeoBioTrail in Kubang Badak. To make a dream come true here. We join any program with Biogeotrail, going there and giving support.

I think and I hope, when the real program of BioGeoTrail starts in Kubang Badak, they will give more information especially to our community to protect our nature. And that they also they give knowledge to our guest when they come to make a tour in Kubang Badak. Maybe to give some information and knowledge to the tourist. So that they don't just pay to come here, but at least they will take back with them some knowledge or know how the culture is in Kubang Badak.

And we have to make clear that it's very important to protect our nature and environment. And firstly we have to make everybody in Kubang Badak and especially the fisherman understand and aware of the BioGeotrail.

### **Interview Othman Ayeb, Kubang Badak community member, 28 October 2017**

Maybe one of the best ways to start the BioGeoTrail is that we can start to create a niche market for people that really want to enjoy the environment. And not really like in Kilim now. That is quite busy. Some people that really want to enjoy nature, they want quiet, relax, not to fast and we can see the potential of Kubang Badak. That's why I started to talk to the local people over there and the Langkawi development Authority. The BioGeoTrail can also help reduce the current capacity or the numbers in Kilim and maybe slowly the people in Kilim can see the positive competition.

Once the Kubang Badak community saw what happened in Kilim, what happened in Tanjuh Rhu, they also want their place to become a tourist centre. I can see when I started to share with them most of them that they want it. But they say; are you sure that we can survive? And how can we survive?

One of the best ways to help the community with this is to create more events. When LADA or the university has a special symposium or conference, they should bring people, more people, to go there and that the participants that go there can also give feedback. And we need to make sure that the info is given by both parties and is transferred in a good way. Because sometimes, some people are negative. But you must make them understand. For me LADA has to do some things to promote and try to get more student groups or government agencies here.

And they should transfer knowledge. A study done by the university needs to be transferred to the local community or maybe to the guides. Because a lot of study that has been done has not been share with the local community.

## Appendix 6. Full quotes of the local experts used in this research

### **Interview Sharina Halim**

1. So they have this kind of awareness to develop their area when they see that they need to do something so that more of the economic opportunities go down for them on this side of the island, because as you can see the concentration of uhm opportunities are mostly in selected areas in Langkawi, like Kilim or even like Cenang, Kuah, Padang Matsirat, right?
2. So Kubang Badak BioGeoTrail I think, will make them appreciate the thing they have in their backyard and how the thing in their backyard is actually able to be promoted as part of tourism . But it's not just all about money, not just that, but to strengthen their sense belonging, sense of appreciation towards what they have in their village. So it has the potential. It's kind of like, Kubang Badak reunites the sense, the feeling of maybe togetherness among the village community and to come to work together on Kubang Badak BioGeoTrail. As a platform to strengthen community relationships. It has that.. I see it that way. Sometimes communities need a platform to work together and this is definitely THE platform if we can convince all of them.
3. But I was told that sometimes the discovery was done together with the local community. That the local community pointed out to them. They don't know what it is, but they saw something very outstanding or something very peculiar or very unique. So they tell the researcher in the jungle together with them: you know i saw something, you know what it is? So that's how they discover together. But most geosites are identified by the geologist, by the scientist through their research expedition.
4. the local community are actually the main player in developing the Kubang Badak BioGeoTrail from the very beginning.
5. So it's still in the process of discovery and that's why they are engaging with some of the woman members, like the handicraft shop is one of the attempt to get the woman participation in this Kubang Badak BioGeoTrail from their handicraft as well as sometimes food. But still not not many products yet. But more to come, certainly.

### **Interview Ibrahim Komoo**

1. So by having additional idea from LADA and UKM on this BioGeoTrail it is sort of merch what they want. So i must say local community have the idea of making the place as one of the tourism, or one of the attraction for tourist. And LADA and UKM bring knowledge based tourism ideas. So that it's more useful, it can attract more tourist and hopefully it's more sustainable.
2. then through specialised tourism many thing can happen in term of environmental sustainability and community sustainability. Environmental sustainability is no damage to the mangrove and economic sustainability is actually the number of tourist coming is much less but the socio-economic effect to the, to the community is better. UH, by having the activity at the jetty, not spread out at the village. I think, the impact to social, social tradition maybe slightly less. So meaning when they go there, they go there at the place to work. Then when they go back, they go back to the villages it's like business as usual, so not much impact. Unless they started having the homestay or things like that.

3. The biggest weakness actually is we want to introduce quality product. But the community there, they still very basic. I'm afraid they're not able to handle., for example they will go back to the most common way that they do things. Back to mass tourism, not much guided and bending the rule and regulation. That is my biggest worry.
4. Less and less meaning the big company, start giving share or having a, having a partnership with the community. And ultimately the community is more, the local community is more dominant in terms of socio-economic development in Langkawi.  
Langkawi looks so advanced in a certain way but in term of local community building only slightly improved. So, but I can see the geopark changed this. Meaning there are now more and more people who now see that we should take the opportunity instead of giving it to outside.
5. Ok, uh, I personally uh doesn't have solution because it's very much LADA who calls the shots and I will try my best to influence LADA. In general I can see in LADA there is also mix, mix policy, mix policy. While wanting to have high quality product for tourism they still talking about mass tourism. So hopefully this thing can be resolved soon.

### **Interview dato Kzaman**

1. I think the community knows more than what we have identified. So certain areas, they know certain areas more than what we have identified. And it's one of the points of interest. So it's a matter of getting them together and speaking the same language about this destination, about this point of interest so that there won't be any conflict of information. And of course with the involvement of PPL I think the correct information, the scientific information, will be delivered to them so that there won't be miscommunication or misrepresentation of facts about that area
2. Because I think in a tourist destination like Langkawi, so many people are looking at the, the dollar sign, so we don't have a big dollar sign in this geotrail. And they see a lot of things for commercial, commercial places where they can earn high commission then they can get more income including the taxi driver, the tourist agent and tour operators. And uh, so it's a challenge for this BioGeoTrail to consist of nature based and the income prospect in this particular place is not that big as any other commercial based destination related to the tourism industry.

### **Interview Rasanubari Asmah Rahmah, LADA**

1. Hm, we actually uh, this is all the thing in Kubang Badak. It's a voluntary by the community itself. We doesn't have to encourage, we encourage them by doing a program with them, but it's voluntary. They are willingly to participate in the program. Sometimes they are the one that organise program or activities they want to do in Kubang Badak.