

## **A Study Of Local Community Perception And Attitude On Environmental Impact Of Ecotourism At Kuala Koh National Park (KknP), Kelantan**

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### **Abstract**

*Local community is one of the important elements within ecotourism development and they play a major role that contributes to positive and negative impacts on conservation of environment. However, some of the local community has low awareness about the environmental impact of ecotourism. Therefore, this study will explore the perception and attitude of local community on environmental impacts of ecotourism activities in Kuala Koh National Park (KKNP). A total of 400 respondents have participated in the survey. The questionnaires were distributed randomly among the local community that lives at the nearby area of KKNP. Descriptive and inferential data analysis were applied in this study. The finding showed that local community perceived ecotourism development at KKNP positively. The results indicate that both perception and attitude of local community are influence by socio-demographic factors like gender, age, and year of residency. Thus, it is important to maintain the good perception and attitude of local community through environmental education and comprehensive policies with viable information. It serves as useful tool in future development plan to minimize the potential negative impact of ecotourism and maximize its benefits.*

**Index Term:** *local community; perception; attitude; environmental impact; ecotourism. Kuala Koh National Park*

### **Introduction**

Ecotourism can be defined as a tourism that consists of exotic environment that include endangered species or ecosystem with the purpose of conservation and research development (Kiper, 2013). According to Mariapan et al (2015), ecotourism sector is part of tourism sector. In the past few decades, ecotourism sector has become one of the major contributor in the tourism industry. Simply stated, ecotourism can be a form of interpretive tourism that required conservation, understanding and appreciation of the environment and cultures visited (Nor, Mohd, Alias, 2014). Thus, ecotourism has become popular recently for tourists due to its concept of nature preservation and conservation practiced.

In Malaysia, most of the national parks and other protected areas were establish for the purposes of conservation and management of natural resources. The National Park in Malaysia hosts many species of flora and fauna that consists of endemic, rare and vulnerable species that is unique. The flora in the National Park is considered as one of the richest species and has diverse genetic. It has more than 3000 species of plants (UNESCO, 2014). It also hosts the largest populations of animals which are about 150 species. The National Park is believed to exists about 130 million years ago that housed diverse terrestrial ecosystems. The richness of plant and animal communities, species and genetic diversity is the result of ecological and biological processes.

Ecotourism could prosper the economic development while conserve the protected area (Mosammam et al, 2016). However, poor planning and lack of environmental attitude of local community that live nearby could cause adverse impact to the sustainability of national park towards ecotourism place. The uncontrollable dumping of waste by tourists and local community can cause pollution and the deterioration of water resources in national park (Hassan & Azhar, 2017). Lack of knowledge on the proper ways in conserving the natural environment among local community is the main factor contribute to negative impact of ecotourism. According to Holmes (2013), local community can be a

direct threat to protected areas if they fail to participate in initiatives of ecotourism. Local community are involved with illegal logging and hunting at national park. Some people attempt to gain profit by selling natural products of flora and fauna illegally without the consent from the authorities. Therefore, perception and attitude of local community on natural conservation through ecotourism is very crucial. This study will explore the perception and attitude of local community on environmental impact of ecotourism at Kuala Koh National Park. It could give an insight towards better planning of ecotourism in Malaysia's National Park.

## **Literature review**

### ***Environmental Impact of Ecotourism.***

According to Wall (1997), there is research on the environmental impacts of ecotourism that demonstrated it can be destructive as other industries, if there is no action taken although it is not affecting the environmental image negatively because it also can induce substantial ecological changes in protected areas. Thus, ecotourism also can bring negative impacts on the environment. It includes the destruction of plant and wildlife habitats, disruption on nutrient cycles, reduction in biodiversity and alteration of geological regimes (Robinson, 2012). There are three different types of impact of ecotourism which are on the context of environmental, social and economic. Generally, the most damage comes from the context of environmental impact. The potential environmental impacts can be the deforestation from the firewood harvesting, construction and camping. It also comes from the dumping of waste, littering, oil residues or vehicle exhaust that causes pollution.

The disturbance of the nature can cause the destruction of unique flora and extinction of fauna. Moreover, pollution that happened will lead to different kind of pollution such as water and soil pollution. Water pollution will cause the deterioration of water quality while the soil erosion can affect the living species at the sites and human safety (Environmental Guidelines for the USAID Latin America and Caribbean Bureau, 2000). Tropical forest constitutes of 7% of world land surface area, but it contains over 50% of all plants and animal species. The devastation can be seen because half of the forest areas have been destroyed. This occurs because of the unsustainable and uncontrollable harvesting and logging of the forest resources. The waste products are the main causes of pollution.

Deforestation causes soil erosion while the production of litters and sewage cause deterioration of water quality (Sunlu, 2003). The activities of deforestation lead to the extinction of wildlife and sensitive microorganism. The clearance of the forest for development purposes has resulted in environmental degradation (Tyagi, Garg, & Paudel, 2014). Ecotourism focus on taking care of the natural environment and involves local community in the provision of tourist facilities, but it still has positive and negative impacts. In natural environment, the visitors also degrade the natural environment such as pollution and other impact in unforeseen ways. The activity of experiencing local culture can have positive and affirming effect on the culture itself. Direct involvement of local community in ecotourism can bring positivity to them about the tourism and empower them as community (Tosun, 2000). However, negative effect also can be seen from the ecotourism which are the disruption of existing relationship between local community and the illegal transaction of cultural heritage (Kennedy, 2018).

### ***Perception and Attitude on Environmental Impact of Ecotourism.***

In the early stages of ecotourism research, little attention was paid to the perception and attitude of local community towards ecotourism. According to Johansson (1998), individuals are varied and have dissimilar in terms of perception on environmental problems. Successful management of ecotourism and conservation of protected areas often require local community's support. The conservation of the protected areas is influenced by the perception of local community regarding the impacts of conservation that are experience by themselves (Sekhar, 2003). Based on research from Ramdas & Mohamed (2017), the perception of local community on the tourism is positive for the economic value, but they also agreed that the environment especially the water quality was being affected negatively.

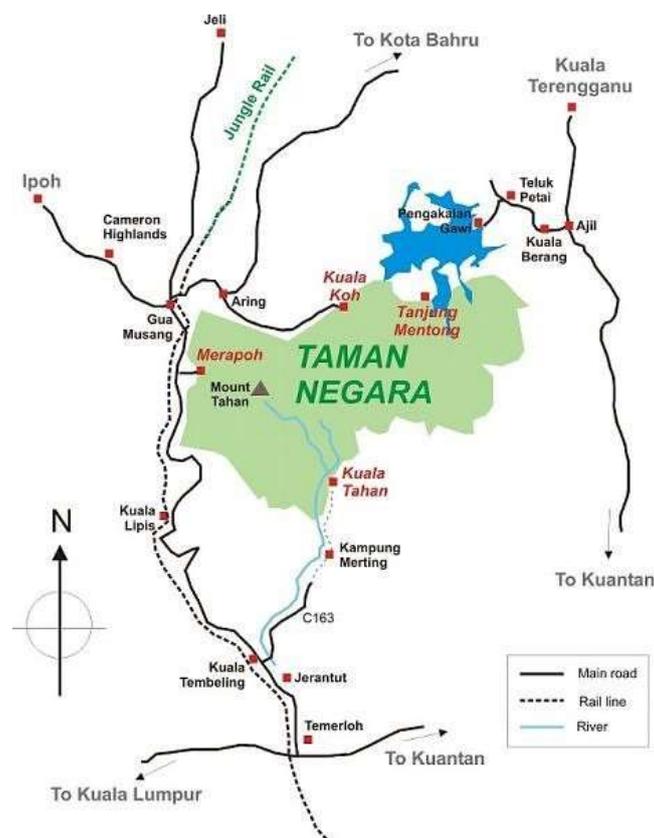
Attitude is a mind-set or a tendency to act in a particular way due to both an individual's experience and temperament (Pickens, 2005). It is a complex combination of things that people assume as

personality, beliefs, behaviors, motivations and values. The lack of consistent and reliable information regarding the awareness of local community towards the sustainable ecotourism has negative influence on the decision-making process (Muresan et al, 2016). According to Ap (1992), the attitude of residents towards ecotourism impacts are important in policy planning and consideration in order to achieve successful development of existing and future program.

## Methodology

### Study area

This research was conducted at the nearby area of Taman Negara Kuala Koh. It is located in the territory of Gua Musang which is near the borderlines of Pahang and Terengganu. Taman Negara Kuala Koh also located within the Reserves forest of Bukit Hantu and Lebir. It just 96 kilometres away from Gua Musang town that has access via Gua Musang- Kuala Krai road. It is one of the four entry points to Malaysia's National Park (Gua Musang District Council, 2018). Taman Negara Kuala Koh has the diversity of flora and fauna, and unique tropical rainforest ecosystem that become the fatal attraction for the ecotourism destination. This park has been designated as an Important Bird Area by the Birdlife International Organization. Apart from that, Taman Negara Kuala Koh is the home of 200 species of mammals, over 300 species of birds, 55 species of frogs, 109 species of freshwater fish and 67 species of snakes. This information is extracted from the Gua Musang District Council (2018). The study area for this research is shown in figure 1.



### Data Collection

A total of 400 respondents that live nearby of Kuala Koh National Park were selected through random sampling. Questionnaire was developed as an instrument for data collection. There are two types of question which are open ended and closed ended question. The questionnaire was divided into three main sections. The first section captured the demographic characteristic or background of the respondent. It used a categorical data type that includes gender, age, education, average income, occupation and other related question. The second section collected information about the perception

of local community towards environmental impact of ecotourism. The third section determined the awareness of local community towards ecotourism at Taman Negara Kuala Koh. Both second and third section used an ordinal data type which is Likert scale (Wee & Abas, 2015; Peters, 2018). The scores are from 1 to 5 that indicate “strongly disagree,” “disagree,” “neutral,” “agree,” and “strongly agree,” respectively. The respondent chose one of the scales given to answer the questions.

### **Data Analysis**

Descriptive and Inferential statistical analysis were applied using SPSS Software version 18.0. Descriptive analysis was used when analyzing the demographic characteristics, perception towards environmental impact of ecotourism and awareness of the local community towards ecotourism itself. Inferential analysis like ANOVA and t-test was adopted to detect the differences perception and awareness between experimental group mean. It compromised of one dependent variable that is a continuous parametric numerical outcome measure with one or more independent variables. In addition, it quantifies the relationship between the dependent variable and the independent variable. The hypotheses of this study were constructed as follow:

H<sub>0</sub>: there is no significant between different demographic characteristic on respondent’s perception and awareness towards environmental impact of ecotourism

H<sub>1</sub>: there is a significant between different demographic characteristic on respondent’s perception and awareness towards environmental impact of ecotourism

### **Result and discussion**

#### **Socio-demographic profile of respondents**

Table 1 shows majority of respondents are male (69.0%), Malay (67.6%) with an age between 21-30 years old (45.2%). Moreover, majority of the respondents were married (74.4%) and obtained the secondary school education (48.2%). Most respondents working for private sector (60.7%) which as a worker of nearby plantation. In term of gross monthly income, majority of respondents (78.0%) earned below RM 2000 per month. Statistic shows that most of the respondents have lower income whilst only a few of them (4.2%) has income more than RM 3000 per month. Most of the respondents (90%) are live nearby Kuala Koh National Park (KKNP) area which is within 10 km radius. Besides that, most of respondents have live in Kuala Koh region for the period of five to ten years (52.4%) and only 26% of respondents are live there more than 10 years. This statistic shows that most of respondents are not live in Kuala Koh since they were born. In general, most of local community that live in Kuala Koh have come to Kuala Koh for job purposes and they are not originated from there. Majority of respondents (70%) are live within parameter 6 km – 10 km from KKNP. According to Stem et al (2003), local community live close to ecotourism area has significant influence the ecotourism activities. Therefore, local community that live nearby KKNP might directly influence the ecotourism activity which has impact to environment.

Table 1: Socio-demographic Background of Respondents (N= 400)

<b>Variable</b>	<b>Percentage (%)</b>
<b>Gender</b>	
Male	69.0
Female	31.0
<b>Race</b>	
Malay	67.6
Chinese	32.4
<b>Age</b>	
<20	3.0
21 – 30	45.2
31 – 40	35.1
41 – 50	10.1
>51	6.5

<b>Education level</b>	
Unschooler	3.0
Primary school	3.6
Secondary school	48.2
University	45.2
<b>Occupation</b>	
Government	15.5
Private	60.7
Self-employed	13.7
Student	5.4
Unemployed	4.8
<b>Monthly income</b>	
< RM 2000	78.0
RM 2000 – RM 3000	17.9
> RM 3000	4.2
<b>Period of residency in Kuala Koh</b>	
< 5 years	21.4
5 years– 10 years	52.4
> 10 years	26.2
<b>Distance from Kuala Koh National Park (KKNP)</b>	
< 5 km	20.0
6 km – 10 km	70.0
11 km – 15 km	6.8
> 16 km	3.2

### ***Perception of Respondents on Environmental Impact of Ecotourism***

Table 2 shows respondents' perception towards the environmental impacts of ecotourism at KKNP. Based on mean, the result shows the respondents believe that ecotourism could increase environmental protection awareness (4.31). The lowest mean is the perception of local community whether ecotourism can cause deforestation (2.66). The results suggest that ecotourism at KKNP is acceptable for local community that live at the nearby area of KKNP. They could gain benefits from the implementation of ecotourism at KKNP because it can increase their awareness to the importance of protecting environment. It can also be beneficial for the present and future generation.

Majority of respondents have agreed that ecotourism conserve the biodiversity and natural resources at 45.2%. About 42.9% of respondents strongly agree to this statement and 0.0% of them was strongly disagree. 38.7% of respondents strongly agree that ecotourism provides more parks and recreational areas while 0.0% of them were strongly disagree. Most of them agree about this statement at 46.4%. 33.9% of respondents strongly agree that ecotourism reduce overexploitation of natural resources but the result shows that most of the respondents agree to this statement (57.0%), followed by 49.4% of them strongly agree that it also increase environmental protection awareness. For those statements, 0.0% of respondents was strongly disagree.

The result in Table 3 indicates that 19.6% of respondents were strongly disagree that ecotourism activities cause deforestation while only 4.8% of them strongly agree. The statement that ecotourism cause destruction of unique flora and fauna show that majority of the respondents were neutral (26.8%) while 17.3% of them were strongly disagree and 15.5% were strongly agree. 26.2% of respondents had a neutral perception that ecotourism increase pollution because of waste disposal or vehicle exhaust. Some of the respondents were strongly disagree (17.3%) and some of them were strongly agree (13.7%).

The result also indicates that 26.2% of respondents was disagree that ecotourism cause deterioration to water resources and quality. Only 11.3% of the respondents were strongly agree with this statement. The majority of the respondents had a neutral perception that boat activities cause bank

erosion and destruction of riparian vegetation at KKNP (33.3%). 13.1% of those respondents were strongly disagree and 6.0% of them were strongly agree about this statement. Lastly, the construction of facilities and accommodation destroy the environment and wildlife habitat show that only 11.9% of respondents were strongly disagree while 6.0% of them were strongly agree.

According to the results in Table 2, it can be concluded that the perception of local community towards environmental impact of ecotourism is positive. The majority of them aware that ecotourism has many positive impacts on environment instead of negative impact. It can conserve the biodiversity and natural resource at KKNP, provide recreational area for visitor and increase the awareness on protecting environment among local community. However, some of local community think that ecotourism activities cause negative impact to environment. From their perception, ecotourism activities cause deforestation through the development of facilities and activities' site such as development of resort, restaurant and canopy's walk site. It also can be seen that the majority of the respondents have neutral opinion regarding the effect of boat activities to bank erosion and destruction of riparian vegetation. The effect is minor because they follow the provided trail to transport the visitor to selected location. Most of them disagree that ecotourism can increase pollution and cause deterioration on water resources because those impact are contributed by the exhaust from the factories and lorries and also from the oil palm plantation surrounding the Kuala Koh.

Table 2: Perception of Respondents on Environmental Impact of Ecotourism based on Mean and Percentage (1- Strongly disagree, 2- Disagree, 3- Neutral, 4- Agree, 5- Strongly agree)

No.	Statements	Mean	1	2	3	4	5
		Percentage (%)					
1.	Ecotourism conserve the biodiversity and natural resources	4.31	0.0	0.0	11.9	45.2	42.9
2.	Ecotourism provides more parks and recreational areas	4.22	0.0	1.8	13.1	46.4	38.7
3.	Ecotourism reduce overexploitation of natural resource	4.12	0.0	3.0	16.1	47.0	33.9
4.	Ecotourism increase environmental protection awareness	4.34	0.0	1.8	11.9	36.9	49.4
5.	Ecotourism activities cause deforestation	2.66	19.6	28.0	23.8	23.8	4.8
6.	Ecotourism cause destruction of unique flora and fauna	2.92	17.3	22.6	26.8	17.9	15.5
7.	Ecotourism increase pollution because of waste disposal or vehicle exhaust	2.90	17.3	22.6	26.2	20.2	13.7
8.	Ecotourism cause deterioration of water resources and quality	2.82	19.0	26.2	20.2	23.2	11.3
9.	Boat activities cause bank erosion and destruction of riparian vegetation	2.73	13.1	30.4	33.3	17.3	6.0

<b>10.</b>	The construction of facilities and accommodation destroy the environment and wildlife habitat	2.85	11.9	26.2	32.7	23.2	6.0
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***Awareness of Respondents towards Environmental Impact of Ecotourism***

Table 3 presented the awareness of local community towards environmental impact of ecotourism. In the aspect of awareness towards environmental impact of ecotourism, 45.2% of the respondents were strongly agree that they are protected the natural environment. Only 0.6% of the respondents were strongly disagree that they involve in illegal logging but most of them were strongly agree (47.0%). None of the respondents were strongly disagree that they practice proper disposal of waste but majority of them were strongly agree (46.4%). Majority of them protect the diverse species of flora and fauna (55.4%) and none of them were strongly disagree (0.0%).

For the awareness towards ecotourism management practice, 47.6% of respondents were strongly agree that they practice conservation of the environment, 26.9% of them aware about the conservation of environment and 50.6% know that ecotourism management can minimize environmental impact (48.2%). None of the respondents were strongly disagree about those statements. In term of awareness towards local satisfaction, 38.1% of respondents agree that ecotourism can provide employment opportunities but 3.6% of them were strongly disagree. The majority of the respondents agree that ecotourism can generate income opportunities (41.7%) but only 4.2% of them were strongly disagree. This is because they gain benefits from the ecotourism activities at KKNP such as fishing activities, business and transport opportunities. 42.3% of the respondents agree that ecotourism provide more recreational area but only 1.2% of them were strongly disagree about this statement.

Meanwhile, in the aspects of awareness towards the importance of conserving natural resources, 51.2% of the respondents were strongly agree that they know the importance and 0.0% of them were strongly disagree. Most of the respondents know the importance of reducing the extinction of flora and fauna (47.6%) and none of them were strongly disagree (0.0%). The majority of the respondents know that ecotourism can prevent illegal logging and hunting (47.6%) but 0.6% of them were strongly disagree. Thus, it can be implied that most of them have a positive awareness towards the importance of conserving the natural resources. They know that natural resources are important in order to meet the needs of future generations and saving the Earth. By preventing illegal hunting and logging, the diverse species of flora and fauna can be conserved and protected.

Table 3: Awareness of Respondents towards Environmental Impact of Ecotourism (1- Strongly disagree, 2- Disagree, 3- Neutral, 4- Agree, 5- Strongly agree)

No	Statements	Mean	1	2	3	4	5
		Percentage (%)					
<b>1.</b>	<b>Awareness towards the surrounding of ecotourism destination</b>						
	Protect the natural environment	4.33	0.0	0.6	11.3	42.9	45.2
	Did not involve in illegal logging	4.30	0.6	0.0	14.9	37.5	47.0
	Practices proper disposal of waste	4.26	0.0	1.2	17.9	34.5	46.4

	Protect diverse species of flora and fauna	4.42	0.0	0.0	13.1	31.5	55.4
<b>2.</b>	<b>Awareness towards ecotourism management practice</b>						
	Practice conservation of environment	4.37	0.0	0.0	10.7	41.7	47.6
	Aware about the conservation of environment	4.39	0.0	0.0	11.9	37.5	50.6
	Know that ecotourism management can minimize environmental impact	4.33	0.0	2.4	10.1	39.3	8.2
<b>3.</b>	<b>Awareness towards local satisfaction</b>						
	Ecotourism can provide employment activities	3.69	3.6	10.7	23.2	38.1	24.4
	Ecotourism can generate income	3.74	4.2	8.9	20.2	41.7	25.0
	Ecotourism provide more recreational area	4.22	1.2	0.0	15.5	42.3	41.1
<b>4.</b>	<b>Awareness towards the importance of conserving natural resources</b>						
	Know the importance of conserving forest resources	4.40	0.0	0.0	11.3	37.5	51.2
	Know the importance of reducing the extinction of flora and fauna	4.36	0.0	0.0	11.9	40.5	47.7
	Know that ecotourism can prevent illegal logging and hunting	4.31	0.6	0.6	13.7	37.5	47.6

### ***Socio-demographic Factors Influence Perception and Awareness of Local Community***

Table 4 showed that different gender [ $t(398) = 4.386, p = 0.000$ ,  $t(398) = 6.321, p = 0.000$ ], age [ $F(4, 398) = 3.228, p = 0.014$ ,  $F(4, 398) = 2.460, p = 0.047$ ], and year of residency in Kuala Koh [ $F(2, 398) = 5.184, p = 0.000$ ,  $F(2, 398) = 4.992, p = 0.001$ ] have significant influence the perception and awareness of local community on the environmental impact of ecotourism. Statistic show female respondents has better perception and awareness towards environmental impact of ecotourism as compared to male respondents. Besides that, respondents with age more than 40 years old and has live in Kuala Koh more than 5 years has better perception and awareness. Ewert and Baker (2001) has highlighted that age and gender differences affect individual concerns over environmental care. According to Garces, Thomas and Currie (2002), women more concern on their environmental as compared to man.

Moreover, different occupation [ $F(4, 398) = 3.864, p = 0.002$ ], monthly income [ $F(2, 398) = 4.269, p = 0.016$ ], and house distance to Kuala Koh National Park (NNPK) [ $F(3, 398) = 4.093, p = 0.020$ ] have significant influence the local community awareness towards environmental impact of ecotourism. In particular, respondents that working as a government and student have better awareness towards environmental impact of ecotourism as compared to other occupation. Besides that, respondents with monthly income more than RM 2000 and live less than 5 KM radius from

KKNP have good awareness on environmental impact of ecotourism. Power and Elster (2005) have stated that peoples with a stable monthly income is like to have better awareness and awareness on environment. Furthermore, statistical analysis also shows that different race and education level have not significant influence the local community perception and awareness.

Table 4: The Result of ANOVA test

Socio-demographic	Mean		Perception		Awareness	
	Perception	Awareness	t/F-value	P=value	t/F-value	P=value
<b>Gender</b>						
Male	31.92	54.11	t-4.386	0.000*	t-6.321	0.016*
Female	35.74	56.13				
<b>Race</b>						
Malay	33.7	55.11	t-0.132	0.895	t-0.143	0.822
Chinese	33.9	55.13				
<b>Age</b>						
< 20 years old	31.78	52.23				
21 – 30 years old	32.94	53.59	F-3.228	0.014*	F-2.460	0.047*
31 – 40 years old	33.22	55.76				
41 – 50 years old	34.89	57.88				
> 51 years old	35.95	56.12				
<b>Education</b>						
Unschooling	32.87	54.98				
Primary school	33.55	55.21	F-1.276	0.284	F-1.519	0.212
Secondary school	33.94	55.12				
College/University	34.76	55.16				
<b>Occupation</b>						
Government	34.01	56.51				
Private	33.86	54.15	F-0.963	0.443	F-3.864	0.002*
Self-employed	33.67	53.82				
Student	33.98	57.91				
Unemployed	33.68	53.23				
<b>Income</b>						
< RM 2000	33.76	53.51	F-0.900	0.409	F-4.269	0.016*
RM 2000 – RM 3000	33.86	56.68				
> RM 3000	33.97	55.18				
<b>Years of Residency</b>						
< 5 years	31.62	53.55	F-5.184	0.000*	F-4.992	0.001*
5 years– 10 years	33.98	54.58				
> 10 years	35.81	57.23				
<b>Distance from KKNP</b>						
< 5 km	33.74	56.56				
6 km – 10 km	33.91	55.35	F-1.980	0.116	F-4.093	0.020*
11 km – 15 km	33.82	54.48				
> 16 km	33.89	54.12				

\*Significant with P-value < 0.05

The results from this research indicated that the local community have a positive perception and awareness. It can be concluded that the positive awareness portrayed shows that the local community desire to minimize the negative impact of ecotourism on nature. To maintain a balance between the positive and negative impact of ecotourism is by engaging local community in ecotourism development is important. This is because it is strongly connected with their will to support ecotourism development. Their support to ecotourism can help to shape the future policies that are

able to minimize potential negative impact of ecotourism and maximize its benefit to environment, local community and economy of the country.

The establishment of ecotourism also improve the quality of life of local community because of its effect to conserve the environment such as the reduction of pollution. It also beneficial in the aspect of recreational alternative because ecotourism can create more recreational areas and parks that related with nature. The comprehensive research on human perception and awareness in the areas of KKNP and their impact on ecotourism development need to be done. It should examine the extent of environmental, social and economic impacts of ecotourism especially the negative impacts. The lack of knowledge on the importance of ecotourism and its impact can be solved through environmental education and by providing ecotourism policy plan with viable information. It serves as a useful tool in future development plan to minimize the potential negative impact of ecotourism and maximize its benefits.

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