

PERCEPTION OF LOCAL COMMUNITY TO HUMAN-ELEPHANT CONFLICT SURROUNDING ELEPHANT CONSERVATION HABITAT IN ACEH, INDONESIA

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Abstract: The aim of this research is to identify the perception of local community to human- elephant-conflict surrounding the elephant conservation habitat in Aceh Besar, Aceh Province, Indonesia. This research uses a quantitative approach and proportional sampling technique for data collection. In the process of observation, the study considers several aspects include the description habitat disturbance of the Sumatran elephant in the conflict area, the level of damage caused by the Sumatran elephants, and how the local perception around the area of human-elephant conflict towards elephant conservation. This type of disorder that is caused by human-elephant conflict varies, from medium to moderate interference with the interpretation of a large loss. The study finds that the local perception of research sites against human-elephant conflict have good levels of perception.

Keywords: Perception of local community, Human elephants conflict, Sumatran elephant

Introduction

Elephant *Sumatranus* (*Elephas maximus sumatranus*) is one of Indonesia's fauna which is a rare animal and is feared to be extinct (Alikodra, 2010). Therefore capturing the illegal elephants in its natural habitat, maintaining without permission and trading them are forbidden. The Sumatran elephant is well known by the people of Aceh, from 25,000 BC to 1937 during the Sultanate of Aceh M. Junus Djamil. This animal is very glorified and given the nickname as *Pomerab*, which means friendly, kind and noble. Elephants are often used as vehicles of the Kings at royal ceremonies. Previous research on Sumatran elephants conducted found an edge effect with elephants avoiding forest boundaries up to 3 km into the forest interior, suggesting that elephant populations depend on undisturbed forested habitat. Consequently, as the forested landscape is continuously encroached upon by humans and most lowlands are now dominated by agriculture, the availability of suitable habitat has been compromised. As elephant habitat on Sumatra increasingly becomes fragmented, the remaining elephant groups are forced to reside in smaller isolated patches of forest occurring on the higher mountain slopes (Rood et al., 2010).

Fragmentation of habitat often causes wildlife animal lose their natural habitat (Kumar, 2010). The Indonesian Elephant Communication Forum (FKGI) says that the management of Aceh's forest habitat is getting worse and causing expand the elephant-human conflicts every year. The elephant habitat condition in the forest area can be found in Gampong Panca, Gampong Teuladan and Gampong Lamkubu Kecamatan Lembah Seulawah, have been mostly damaged. Species of plants where elephants get food have been lost due to human altered. Forests are damaged 7.0% of the total forest in Aceh (Ahmad, 2013).

This conflict has increased almost in most of Aceh's low land areas. Expected the information obtained in this observation will be useful for an institution which manages the Sumatran elephant conservation issues and become inputs to prevent prolonged conflict between human and Sumatran elephant due to the disturbance of physical factors of its habitat. Previously, local

community look very salute to Sumatran elephant as great animal, the many new comer and plantation destruction problem increased surrounding elephant's habitat (Abdullah et al., 2013).

Based on these facts, this study intends to study identify the perception of local community to human- elephant-conflict surrounding the elephant conservation habitat in Aceh Besar, Aceh Province, Indonesia. The findings of this study is hoped to be used by the relevant authority to conserve the elephants in the region.

The rest of this study is structured in the following sequences. Next section discusses the reaseach method, followed by the findings and discussion in Section 3. Finally, the conclusion of the study is provided in the last section.

Material and Methods

Time and Field Site of Study

The study was conducted in Gampong Panca sub-district of Lembah Seulawah Regency of Aceh Besar, Aceh Province.

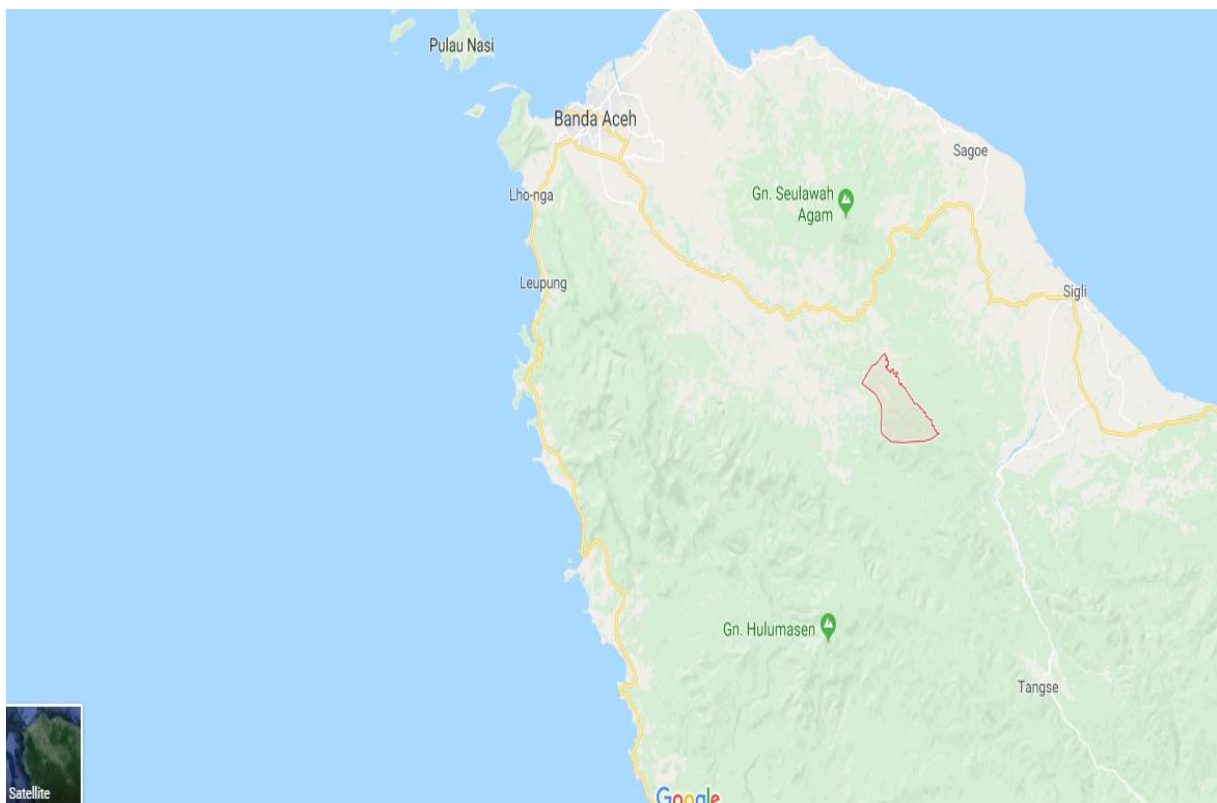


Figure 1. Field site for data collection in Panca (red line)

Method of Study

This study uses a quantitative approach and using the subject of proportional sampling. It is aimed to get a description of habitat disturbance and local perception of elephant-human conflict in Gampong Panca Kecamatan Lembah Seulawah, Aceh Besar.

Data Collection

In this study, the data are collected by proportional sampling, there were two groups of respondents used, i.e. people that ever became victim of elephant conflict and people which never become victim of elephant conflict.

Data Analysis

After knowing the perception of community around elephant-human conflict area toward elephant conservation and its habitat in Gampong Teladan, Gampong Panca and Gampong Jalin in Kecamatan Lembah Seulawah, Aceh Besar. The data is processed quantitatively and analyzed by using Chi-square statistic (Arikunto, 2006)

$$X^2 = \sum \frac{(f_o - f_h)^2}{f_h}$$

where X^2 is the Chi- square, f_o is the observed frequency, and f_h is the expected frequency. The f_h is calculated by the following formula:

$$f_h = \frac{\text{number of rows}}{\text{the sum of all}} \times \text{number of columns}$$

To accept and reject the hypothesis, the 5% significance level with the following provisions is used: If $X_2 \text{ Count} \leq X_2 \text{ table}$, then the H_0 is accepted, on the other hand, if $X_2 \text{ Count} > X_2 \text{ table}$, then the H_0 is rejected.

RESULTS AND DISCUSSION

To study the local perception in the elephant-human conflict area in the District of Lembah Seulawah District of Aceh Besar, 134 respondents were selected from Gampong Panca in Kecamatan Lembah Seulawah, Aceh Besar.

From Table 1, it can be inferred that Gampong Panca has ± 500 hectares of plantation with 10 hectares have been destroyed by elephants. Percentage of plantation area damage was 2%. There were 5 types of plants in Gampong Panca, i.e. rice, corn, bananas, sugar cane and papaya. Plants are damaged by elephants are rice, corn and bananas. Percentage of plant species damaged is 60%. For housing residents there was no damaged.

Table 1. Type of Habitat Disorders of the Sumatran Elephants in Lembah Seulawah Area

Location	Types of disorder	Result	Total	Percentage
Panca	Farm (ha)	± 10	± 500	2%
	Plant (species)	3	5	60%
	House (unit)	-	-	-

Table 2 shows the elephant activities in every location in Lembah Seulawah. As observed from Table 2, it can be inferred that Gampong Panca gains Elephant conflict in medium category. People are harmed because Elephants destroy large amounts of plantation land, but there are no casualties

Table 2. Elephants Activities in Gampong Panca

No	Medium Disorder	Yes	No
1	Staying for more than 2 days	✓	-
2	Destroying plantation land and eating a lot of crops.	✓	-
3	Disturbing but not killing	✓	-

Next, Table 3 illustrates the field survey results of community activities to herd elephants back to their habitat.

Table 3. Local Activities Herding Elephants Back to Habitat in Five Strategies

No	Community Activities	There is	There is no
1	Burning tires	✓	-
2	Bamboo meriam	✓	-
3	Bring the domesticated Elephant	✓	-
4	Torch	✓	-

Based on Table 3, the people in Gampong Panca anticipate the elephant-human conflict in some activities to herding the elephants back to their habitat in the traditional way such as burning tires, bamboo mariam also burning torch. But the elephant conflict has not been resolved properly, then the people and related parties bring a tame elephant to the conflict site, and bring the wild elephant to the elephant training center (PLG) in Aceh Besar.

The results of data analysis at a significance level of 5%, showing the $X^2_{count} > X^2_{table}$, thus therefore the hypothesis "The local perception around the area of human elephant conflict on the conservation and habitat in the District of Lembah Seulawah" is accepted.

Finally, as for the local perception to human elephant conflict, from the results of interviews with some communities in Gampong Panca, Lembah Seulawah district, it can generally be concluded that the community is very unhappy when the elephants often go into the settlement, this is very disturbing residents. In addition to disturbing, residents also feel aggrieved by the entry of elephants, because many damage to farmland or plantation. However, there are some people who think that elephants also need protection, conservation and utilization. Residents are very hopeful to the Government of Aceh Besar and related parties to be more wise in understanding the existence of wildlife around the community so that the action of handling and preventing wildlife conflict with human beings harmed without harming the community and conserving the wildlife. Actually, almost local community want to live cohabitually with Sumatran elephant in same area with barrier area to animal habitat, called elephant sanctuary. The local community realized the animal and people need habitat for good live, but this condition need good habitat and wildlife management (Abdullah, 2013)

Conclusion

The study found that the disturbances caused by human elephant conflicts has damaged plantation land and eating plants in planting resulting in large losses. Viewed from the aspect of community knowledge in Gampong Panca, Gampong Teuladan and Gampong Lamkubu, they have a good level of knowledge.

The results of the data analysis Chi-squared $X^2_{count} > X^2_{tables}$ at the level of 5%, so the hypothesis is accepted, that the people affected by the conflict elephant with people who are not affected by human- elephant conflict in the village of five, Gampong Teuladan and Gampong Lamkubu in the District of Lembah seulawah have had a good level of perception.

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