

Community perspectives on ecotourism carrying capacity: case studies from three bordering villages of Kayan Mentarang National Park, Indonesia

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Abstract

Too often tourism development adds to the difficulties faced by local people. In particular when the development of tourism exceeds the carrying capacity of the local community, it causes a variety of negative impacts. Upper Pujungan region located in and around Kayan Mentarang National Park (KMNP) which possesses great natural beauty, cultural traditions, and archaeological remains, offers high potential as an eco-tourism destination. Thus far, its difficult accessibility has limited the number of tourists, so that the region's carrying capacity has not yet become a significant issue. However, in a few years time, the District Government of Malinau will complete road construction which, when it reaches the region, will increase accessibility to the National Park. In participatory workshops, the risks and implications of exceeding carrying capacity were discussed and analyzed with community members.

Keywords: carrying capacity, ecotourism, rapid rural appraisal, access road construction, Kayan Mentarang National Park, Dayak, swidden agriculture.

1 Introduction

Lime and Stankey [1] wrote that carrying capacity was among the most controversial topics in recreation management. According to Coccossis [2], early definitions of carrying capacity had a limited perspective, such as biology or sociology. In 1964, Wager defined carrying capacity as a "level of recreational use an area can withstand while providing a sustained quality of recreation" [3].



Park management authorities have applied the carrying capacity approach to protect fragile environment from human activities [4]. For example, since the late 1970's, the Environment Agency of Japan has been managing the carrying capacity of the National Parks by restricting traffic to control environmental quality and the quality of recreational experience [5,6].

Discussion of carrying capacity management has been influenced by concepts of sustainable development [7], and more emphasis has been placed on the environmental, social, and economic thresholds of the host community of the tourism [2]. When the development of tourism exceeds the carrying capacity of the local community, it causes a variety of negative impacts. These impacts, such as the displacement of indigenous/local people, local cultural degradation, distortion of local economies, erosion of social structures, environmental degradation, diversion of scarce resources on which local people depend, the outbreak of disease, and so on have been observed around the world [8,9]. Ecotourism can be an alternative form of tourism and may be green business but there are growing debates on the degree of "greenness" [10]. Ceballos-Lascurain defines ecotourism as "environmentally responsible, enlightening travel and visitation to relatively undisturbed natural areas in order to enjoy and appreciate nature (and any accompanying cultural features both past and present) that promotes conservation, has low visitor impact, and provides for beneficially active socio-economic involvement of local populations" [11]. We would argue, however, that the host community of the ecotourism destination itself could have further active participation rights, not limited only to socio-economic benefit but also to their socio-ecological carrying capacity control. We wonder that if these extended participatory rights were applied to the host community, how would they define their carrying capacity and to what extent would they want to develop ecotourism. In this research, through rapid rural appraisal (RRA) at three villages, We sought community perspectives on their carrying capacity as ecotourism destinations.

2 Research site

Kayan Mentarang National Park (KMNP) covers an area of 1.4 million hectares of interior Bornean mountain region, and lies on the border between Sabah and Sarawak, Malaysia. The study sites, 3 villages belong to Upper Pujungan region and are located on the border of the southern part of KMNP (see Figure 1). According to World Wide Fund for Nature - Indonesia (WWF) [12], this region has two main ecotourist destinations: a view point from Batu Ului, a rocky peak by the Pujungan River, and a waterfall on the Melu'ung River, which ends into a deep pool where tourists can swim. These sites are located at the remotest area of the region; the penetralia of Long Jelet village. In addition to these, natural beauty, ethnic cultural traditions of Dayak and natural beauty, ethnic cultural traditions of Dayaks, and archaeological remains of this region offers high potential as an eco-tourism destination [12].



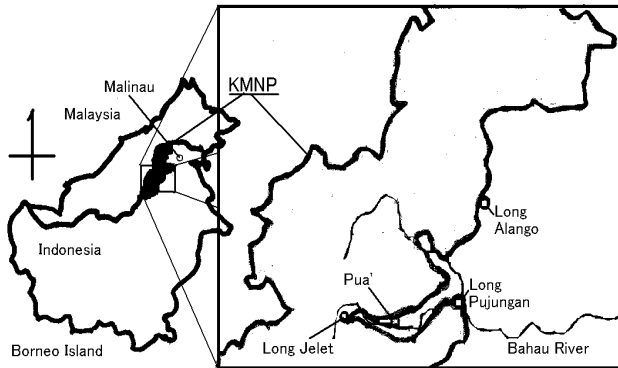


Figure 1: Map.

Community-based ecotourism initiated in cooperation with WWF began in mid-2001, funded by the Danish Agency for Development Assistance (DANIDA) and the International Tropical Timber Organization (ITTO) [13, 14]. Since then, formulation of an ecotourism committee, planning, training, cross visits to other ecotourism destinations, and trans-boundary management coordination have been implemented [13].

According to a KMNP Management Plan [15], the annual arrival of tourists to KMNP is only 25 people, so this National Park is still in a very primitive period of ecotourism development. These 3 villages have received a particularly small number of tourists because of its difficult accessibility; there is no road for car transportation. Therefore, its carrying capacity has not yet become a significant issue. Long Pujungan village has a small airport. From Malinau, the capital of the District, one can reach the Long Pujungan by air in a 5-seat plane with one weekly flight or by small boat in three to five days, depending on the weather conditions. If the condition is bad, it is totally inaccessible. Long Jelet is the most remote village, taking 4 to 6 hours by small boat from Long Pujungan and Pua' is located between Long Jelet and Long Pujungan. The populations of Long Jelet, Pua' and Long Pujungan are 59, 41 and 330 respectively. Because of high demand for ecotourism, there is a huge potential for an explosive increase in tourism development if transportation infrastructure improved.

In a few years' time, the District Government of Malinau will complete the construction of a road that will run between Malinau and Tanjung Nagka, Long Alango, and Long Pujungan according to an official statement of the Malinau District government [16]. The road has the potential to greatly increase accessibility to the National Park. The road construction is financed by selling the logs located in 1 km swaths of the forests along both sides of the planned road and both logging and road construction are implemented by a concessionaire [16]. WWF has been asking the Malinau District Government to conduct an impact assessment (EIA, *AMDAL* in Indonesian) to circumvent negative environmental consequences; however, it has not yet been done, while



it was observed that construction had begun and a 100 km of construction from Malinau had already been finished [17].

The main livelihood of this region's villagers is swidden agriculture, hunting, gathering and fishing. The swidden agriculture of these three villages is approximately a 25-year rotation of the fixed village forest area, which has been passed by generation to generation [18]. Thrupp et al. state: "the evolutionary end-result, swidden agriculture, yield[s] high returns per unit of labor; it is the most sustainable agricultural technology ever developed in tropical rain forests" [19]. Villagers produce or collect most of their subsistence needs by themselves, but they have to buy some indispensable goods, such as petrol and salts at shops in Long Pujungan.

3 Research questions

The research objective is to understand the community perspectives on carrying capacity of ecotourism host community at each of the three villages located on the border of the KMNP. "Carrying capacity of ecotourism host community" is defined as:

- how many tourists per month the village are designated to receive,
- to what extent do people in the community desire tourism development
- how do people in the community perceive development generally and think of their society and the environment and their possible vulnerability.

In each community, how and why perspectives differ between genders, experience of tourism activities, and length of commitment to customary tradition (age) are sought.

4 Research methods

The rapid rural appraisal (RRA) is defined as "an approach for developing a preliminary, qualitative understanding of a situation" [20]. Focus group workshops and semi-structured interviews were the core part of this research and the data from discussion at workshops and semi structure interview was triangulated by key informant interviews, secondary data analysis and participant observations.

According to Chambers [21], sensitive issues can be more freely discussed in groups than individuals, and it is more effective to have the group workshops considering social strata. It is reasonable to choose a workshop discussion method divided into genders, ages (divided into two categories: younger than 40 years old and older) and experience of tourism activities where possible, so that discussions induced can address some sensitive issues such as perceptions regarding land and resource use and road construction. In each village, we asked to head of the villages to call all available villagers to participate in one of the workshops, which was fitted to his/her category. However, not all villagers could



attend so semi structured interviews were conducted as supplement of the focus groups workshops.

5 Outcomes

5.1 Long Jelet

All of the three categories of villager workshops set the tourism carrying capacity of the village very low: they believe that only 1 to 10 tourists per month would be acceptable and that the number of tourists should be restricted by their time budgets depending on the season of swidden farming. At all workshops, villagers place a premium on swidden farming which they do not want to be disturbed. They will continue with their current lifestyle even though if increasing income from ecotourism may allow them to purchase anything, food they need. In all focus groups, villagers emphasize that “we will continue swidden farming and will never stop it. It should be passed from generation to generation.”

Male villagers have become more aware and concerned about the environmental destruction resulting from development activities because they have experienced working for logging companies in Malaysia and WWF project’s study tour to Malaysia. They are concerned thefts, logging and mining could deplete resources and destroy their forests. They also are aware of the social-economic consequences of development. Some of the old men participants note from their experience with the WWF’s study tour to Malaysia that “In Malaysia, we saw there were already three big hotels so it seemed to be very difficult for other local people to get any benefit from tourists.”

Women usually do not travel outside the village, and therefore have less exposure to the potentially negative aspects of development and tourism. Women villagers felt proud of their handicrafts such as bags made of rattan, which they produce for tourists, and their cooperation in promoting the tourism market through the WWF: “We feel very happy that people outside of our village can appreciate our handicrafts and buy them.” Although most women villagers have never been outside of the village, their desire to communicate with outsiders is strong. They have experienced small, but tangible benefits from handicraft sales; however, they do not want their tourism-related work to make them too busy to work on swiddens. “To make a rattan bag takes two to three months, because it needs a long process and we make it only little by little when we have spare time that does not disturb our swidden farming.”

The head of the village and the head of the ecotourism committee of the village tried to distribute to all villagers the work of guide, transportation, accommodation, and others for us: tourists. We observed at *gotong royong* (mutual help work) that all of men and women villagers and children worked collaboratively for maintenance of the bathroom which was constructed by villagers for ecotourism development in cooperation with WWF. At all workshops villagers inform that all villagers who are in the village share work



for tourists. They feel that tourism benefits them although it is still very little since tourists come just twice a year on average. They hope to develop ecotourism a little more; however, they do not want to develop it to the extent that it could be a burden for someone in the village. The community attempts to take advantages of the ecotourism development for mutual rather than individual benefit.

The planned road is not directly connected to Long Jelet village so that their forest area will not be exploited by the road construction. Most women villagers cannot imagine what a road would bring about because they have never seen a road for car transportation: “We don’t know whether we should be for or against it”. The group comprised of old men says, “We are for road construction because it may reduce the price of goods. However, we are concerned that logging companies or any other businesses and resource thieves would come to exploit this village forest more easily than before.”

5.2 Pua’

Pua’ villagers’ workshops also set the carrying capacity low: they will receive 4 to 10 tourists per month. The perceived limiting factor is slightly different between women and men. Women are concerned about their time budgets for swidden farming, whereas men are more concerned about the availability of transportation and accommodation for tourists. One of the male groups argues, “If we become too busy in tourism, we will manage divisions of work in our families.” The old women group notes “If tourism developed, men would concentrate on working with tourism and receive the benefits, and women would become much busier in swidden farming and household but receive no benefits.” Old women groups express their desire to work for tourism because swidden agriculture is quite heavy physical labor, and they found it more difficult as they got older. Most of the both women and men villagers have worked in Malaysia for logging companies. They perceive Malaysia as highly developed but they abhor destruction of their own forests like those of Malaysia. All groups discuss and agree that tourism will not have a negative environmental impact on the village; however, other development such as logging will deplete their environment and resources.

Pua’ is located in between Long Jelet and Long Pujungan. To access the current main ecotourism destinations in Long Jelet, tourists have to pass through Long Pujungan and Pua’ by small boat. Since the current ecotourism benefits are limited to boat transportation for tourists that stay no longer than two days, there is limited tangible benefit for most villagers. The men who have experienced working with tourists think that the village can receive 4 tourists per month maximum because there are only each of four villagers who has a small boat which can be used for tourists transportation from Pua’ to other villages. On the other hand, villagers in the group of men who have not previously worked with tourists think the village could receive 10 tourists per month. If the tourist number is fewer than 10, all tourist jobs are distributed to only the 4 villagers who have the boats. The group of men who have experienced working with tourists says: “We are searching a new tourist destination in this village territory



which is accessible on foot. If we can market it as a new ecotourism destination, villagers who do not have small boats can also find tourism jobs as guides and in providing accommodations and more benefits can be distributed among villagers.”

Pua’ is located two hours distance by boat from Long Pujungan, the end of the planned road. Villagers expect greater mobility and a lowering of the price of the commodities as a result of the easier transportation. The issue about the future possibility of forest exploitation is raised in one of the men’s workshops: “We are concerned about a logging company coming to exploit our forests through the constructed road in the future, thinking of our children and grandchildren.”

5.3 Long Pujungan

Villagers in Long Pujungan design a larger carrying capacity than that of Long Jelet and Pua’ because the population is about six times larger than these villages, and there are infrastructures such as a guest house which can accommodate 20 tourists per night, a small airport, a clinic, and several shops, and therefore they can cope with larger numbers. Male villagers responded with a range varying from 100 to 1,200 tourists per month as acceptable while women with a range varying from 5 to 2,000 per month.

Some young villagers of both genders in Long Pujungan express concern that local tourism development might bring about negative environmental impacts on their village: “I am concerned that a number of outsider tourist-based businesses could intrude in our village and destroy our environment and take away everything.” This perspective might be the result of their experience of receiving more visitors because of its location as a capital of Pujungan Sub-District and as a traffic conjuncture.

It is perhaps understandable that more young people seek a larger cash income, more advanced city life, and material convenience as they are more frequently exposed to a cash economy. Some of young men expressed their strong desire to work for a tourism business rather than continue to work with swidden agriculture if the income from tourism becomes reliable, but some young men want to continue swidden agriculture even if tourism becomes highly developed.

Young women do not voice a strong desire to work for the tourism business at the expense of terminating swidden agriculture, and most women say that the seasons when they are busy working for swiddens (January to March), only a limited number of tourists are acceptable. Similar to other villages, a high sense of responsibility to feed all the family and to be workers in traditional gender roles seem to be deeply rooted in women’s minds and in the society. Old women villagers hope for more tourism development because of their concern for their health and their desire to do lighter work than swidden agriculture, which is so hard for their aging bodies. Old male villagers tend to not be concerned with high tourism development because they believe that they can control it through customary laws and say, “Tourists should follow our customs such as way of bathing, and have food produced from swidden farms, fishes at rivers, and



animals we hunt, because it is too costly if they demand imported food and lifestyle.”

Long Pujungan is the planned end of the road under construction. The same as other villages, men villagers are more inclined than women to think that the local development opportunities such as road construction may bring about negative environmental and social impacts, because a larger number of men have traveled and witnessed examples of damage impacts of development and over-exploitation. Villagers want the road because they expect it would lower the purchase prices, simplify transportation means that are currently expensive and dangerous, but they will demand further explanation concerning road construction costs. If it is reasonable and indispensable, they will contribute their forests and ask the district government to keep the forest exploitation area and negative environmental impacts minimal.

6 Conclusions

Living in this capitalist economy, it is difficult to imagine for us the life of the people who live by producing most of their needs by themselves on land and forests that are passed from generation to generation. Our hypothesis stems from general notions such as women are more concern about environment degradation, elder people are more conservative, and tourism experiences give people more impetus to further development. However, other factors such as personal experience also influence an individual's perspective. For example, working at a logging company, visiting a mining location and a tourism developed area, and seeing forest destruction, fishery decline, water pollution, depletion of local economic opportunities by outside businesses, and observing negative social impacts such as prostitution and drugs make people more reluctant to accept uncontrollable development. Most villagers whose day-to-day experience is working in swidden agriculture are determined to conserve their forests and land rather than become embroiled in the cash economy to the extent of giving up the current lifestyle. They perceive their carrying capacity as low level.

Ecotourism development should be carefully planned with particular respect to and participation of the local communities, which could suffer direct threats to their livelihoods. In some communities, consideration of gender is particularly important because ecotourism has a greater potential benefit for most men and greater potential burden for most women if there are no arrangements in the distribution of costs and benefits within the community. Any sort of development project relating to this area should be carefully planned and implemented by the decisions of community members of both genders and of all social strata.

Policy planners should pay attention to the impacts that probably come up on the local community in the future by road construction. That is, on one hand, the community members have a strong desire for transportation development and they therefore decided to allow their forests to be exploited, when they were convinced that it was the only way to construct the road up to their villages.



Currently available, limited, slow, expensive and life-threatening means of transportation curtails their mobility and economic development opportunities including ecotourism. On the other hand, they also fear further exploitation of their forests and environmental change, especially the destruction of their swidden lands by other uses.

Tourism carrying capacity has been managed mainly for the protection of the natural environment and for keeping the quality of tourist experience. However, considering local socio-ecological complexity, carrying capacity should be measured and controlled by full participation of the host community.

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