

# Effect of Elephant Conservation Based Tourism Development on Living Status of Mahouts (Elephant-Keepers) in Ngalaik Elephant Camp, Myanmar

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**Abstract:** Wildlife tourism could improve the green economy for developing countries and provide the opportunity to manage sustainable wildlife resources. Elephant Conservation Based Tourism (ECBT) has developed by Myanma Timber Enterprise (MTE) since 2016 and got much attention. There are still limited studies about assessment of changes in living status of mahouts and their families due to the recent development of ECBT. In this case study, the total population of twenty-three mahouts employing in Ngalaik elephant camp and their households were interviewed through semi-structured questionnaires and also conducted direct field investigation by the researcher. Descriptive statistics and qualitative analysis were applied to figure out perceived living status changes of mahouts and their families. Findings revealed that the positive impacts on human and social state of affairs have perceived by the mahouts and their households because of ECBT development while it has a few negative impacts on their financial status including households' income and subsistence needs. This study, therefore, provides basic facts and evidences related to site-specific living status of mahouts and their families changing from timber camp to the ECBT camp. To be ethical and sustainable tourism in the future, fruitful experiences and positive impacts by their development policy have to be produced and sustained for the related environment and stakeholders under ECBT.

**Keywords:** Changes, Elephant Camp, Living Status, Mahouts, Tourism

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## 1. Introduction

Elephants play an important role in timber logging operation so-called reduced impact logging using elephant power in Myanma Timber Enterprise (MTE) because of Myanmar Selection System for natural forests. It is said that Asian elephant (*Elephas maximus*) were brought into captive environments over 4,000 years ago and these captive elephants constitute about 22–30% of the remaining Asian elephant population [10, 11]. Myanmar is also home to the world's largest captive Asian elephant population and perhaps with the best developed and organized captive management system, which originated from the British

colonial period [4]. It is the only country still extensively employing elephants in the timber industry and considered by many to be one of the last strongholds of traditional mahouts' (elephant-keepers') knowledge [13]. Based on current reports, captive elephants make up roughly 80% of the total elephant population with wild elephants the remaining 20% in Myanmar [2].

Additionally, MTE takes in charge of more than 3,000 captive elephants, in which 40% are suitable for workforce of skidding but the rest 60% are not suit for work as they are babies and mothers, pregnant, training, disable under intensive care and/or aged elephants. Every elephant in MTE except babies has his/her care-taker so-called — mahout. For that reason, MTE, captive elephants, their mahouts, and

mahouts' families are closely attached as a big group in Myanmar. According to Collins English Dictionary, a mahout is an elephant rider, trainer, or keeper (a mahout starts as a boy in the family profession when he is assigned an elephant early in its life [14]. The elephant has had a relationship with man in Asia for millennia, as an object of worship, an instrument of war, a beast of burden, the pride of kings, and the companion of mahouts [5, 8]. The Asian elephant called "flagship species" has been included in CITES (Convention on International Trade in Endangered Species) Appendix I since 1975 [2] and the global status of the species in IUCN (International Union for Conservation of Nature) red list is listed as endangered [1]. The estimated original range of the Asian elephants was 9 million km<sup>2</sup> but it has declined to about 500,000 km<sup>2</sup> [8]. Furthermore, other problems such as deforestation, human elephant conflicts, elephant poaching and illegal wildlife trading remain unresolved not only in Myanmar but also in global debate. In Myanmar, MTE owns more than 3,000 captive elephants, among which more than one-third is suitable to perform logging operation [12] and these elephants also need to be used and conserved.

Meanwhile, the Myanmar government implemented a one-year ban on logging operations across the entire country and ten years logging ban in Bago mountains region since 2016, and took reducing annual timber harvesting quota throughout the country. It led to the disclosure of some extraction agencies of MTE. These reforms have saddled the Ministry of Natural Resources and Environmental Conservation, Myanmar with the unemployment crisis of captive elephants and their mahouts. For these reasons, MTE became the main actor for managing the captive elephant conservation and developing an alternative livelihood option for the concerns of mahouts' well-being after logging ban policy. This calls for captive elephants to be trained and used for ecotourism purposes, so-called Elephant Conservation Based Tourism (ECBT). Currently, ECBT, therefore, is reflected to be a handy solution to solve the problems of out-of-work, insecure elephants and their mahouts. Among these, establishing the elephant camps would be the solution to solve such problem because they could join the elephants in captivity and conservation in the future. Since 2016, MTE therefore established and promoted ECBT camps after the wake of a one-year logging ban over the whole country in the 2016-2017 fiscal year. In 2016, MTE initiated five ECBT camps under the purposes of conservation and replenishing out-of-work captive elephants together with mahouts and their families. At present, there are twenty-two ECBT camps across the country running under MTE.

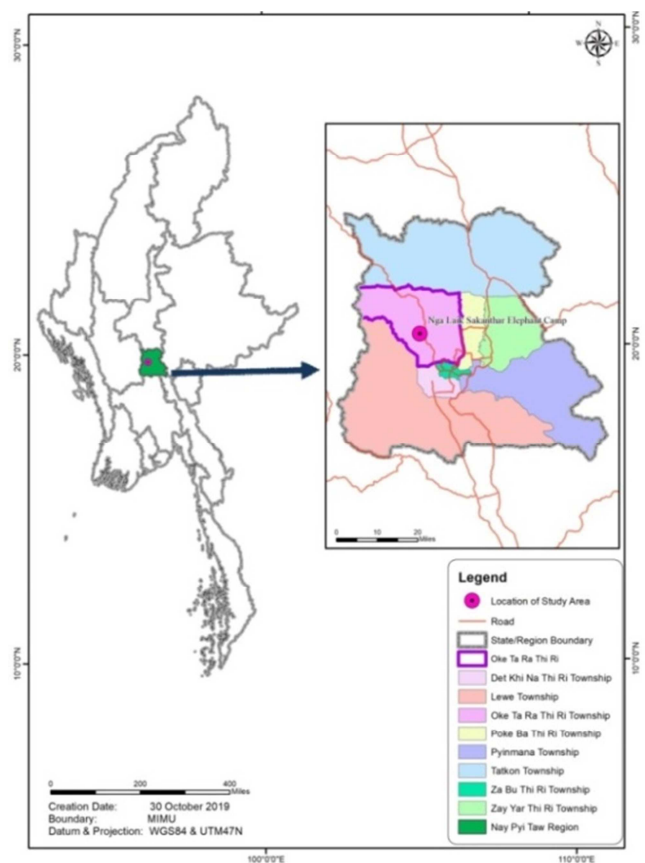
Under these situations, some of the mahouts under MTE have been relocated from timber camps to ECBT camps and there might be several changes dealing with their past and present working environment. Also, the problem in Myanmar lies in retaining mahouts and recruitment issues need to be anticipated in the future and alternative options have come to be considered [5]. One of the objectives of ECBT development is furthermore mentioned that to create alternative job opportunities for elephant staff (mahout) and

local community. Therefore, the present study is aimed to investigate how the mahouts and their families perceived by the initiation of ECBT through elaborating on the impact of their living status in order to balance these conservation and development policies in the elephant camps management and recommending for their development in the long-run.

## 2. Methodology

### 2.1. Study Area

This study was conducted in Ngalaik Sakanthar elephant camp (Figure 1) which is located between 19°52'51" N and 96°0'22" E in Oaktara Thiri township, Nay Pyi Taw Union Territory. The camp is situated inside the Ngalaik Reserved Forest and near Ngalaik dam and it was founded by MTE in 2017.



(Source: Illustrated by author, 2019)

Figure 1. Location map showing the study area.

### 2.2. Sampling, Data Collection and Data Analysis

The case studies allow preserving the holistic and important characteristics of real-life events and are an ideal method when the researcher has little or no control over the circumstance. It also grants the flexibility to collect information through several techniques like direct observation, interviewing and any kind of documents [15]. In line with the descriptive approach, it was decided to use the

case study strategy due to its characteristics in this study. A total of twenty-three mahouts were interviewed in the Ngalaik elephant camp and therefore the enumeration of the survey is evaluated to be 100 percent. Face-to-face interviews with mahouts (total number of mahouts in the camp) including their household members were conducted by using structured and semi-structured questionnaires and also took a verbal survey through participant observation. This verbal survey could be used to quantify a few, specific things that coincide with the information found in the participant observations and the semi-structured interviews [12]. Moreover, a focus group discussion (FGD) was conducted with the camp manager, a veterinarian and mahouts' in-charge to obtain more detailed information about the camp.

Data were coded, computed and analyzed by descriptive statistics using the Microsoft Excel 2010 and the Statistical Package of Social Sciences (SPSS) version 20. This study besides employed a qualitative analysis to escalate the overall understanding of the quality, characteristics achieved from quantitative analysis.

Secondary data related to ECBT and Ngalaik elephant camp were also collected from Nay Pyi Taw (south) extraction agency, headquarter of MTE and other related sources. Data triangulation was completed by individual mahout's household interview, discussion with camp authorities and direct field investigation by the researcher.

### 3. Results

#### 3.1. Basic Information of Mahouts and Their Households

Regarding ethnicity, there is no complex diversity in the camp and it was found that there is only one major ethnic group, Bamar (87%) but few Karen (9%) and Kadu (4%) ethnic households live in the camp. All of them are Buddhists. All mahouts are between the age of 19 and 57 years old and the average age of mahouts is estimated at 34 years old. Concerning education level, the results show that the majority of mahouts have primary education (70%) followed by secondary education (22%) and only 8% of mahouts did not have any formal education.

Particularly, there are seventeen mahouts, one apprentice mahout, two assistant mahouts in-charge, two mahouts in-charge, and one unit-leader of mahouts although all respondents are mahouts in the camp. It was found that more than half of the mahouts (52%) moved to this camp during this year while 39% moved last year and only 9% of mahouts have worked for two years. Mahouts have different working experiences depending on their previous working places. The results show that 69% of mahouts worked in "working elephant camp", 22% worked in "baggage elephant camp", and 9% worked in "aged and unhealthy elephant camp" before moving to the Ngalaik elephant camp, which is for captive elephant conservation and tourism purpose.

In light of the above, most of the mahouts in the camp are therefore young-aged and have low education level. Mahouts and their households came from different types of elephant

camps and their working experience in the Ngalaik elephant camp differs from each other. Therefore, mahouts have different experiences in handling elephants and their living conditions are seemingly changing more or less depending on the working environments.

#### 3.2. Changes in Living Status of Mahouts and Their Households

The following results show a portfolio of living status change of mahouts and their households due to the introduction of ECBT in the study area.

##### 3.2.1. Differences in Monthly Income and Households' Expenditure

According to face-to-face interviews with mahouts, they mentioned that all mahouts in the Ngalaik elephant camp were government staff. Therefore, they are paid a salary due to their positions. In this regard, their monthly salary is different depending on their positions since employing in timber camp.

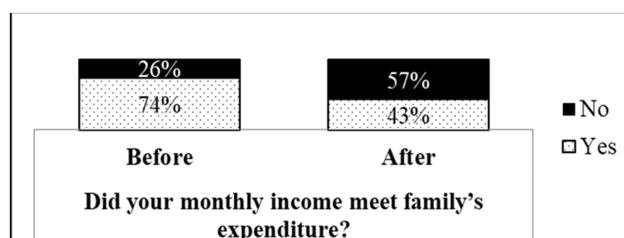
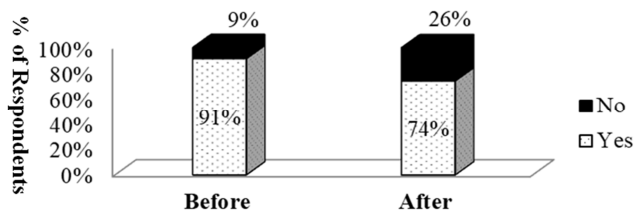


Figure 2. Increased percentage of mahouts who were not sufficient their monthly income (N=23).

For expenditure, households spend about 130,000 MMK per month on average before moving to the camp (i.e. in timber camp) whereas they have to spend about 170,000 MMK per month at present camp. Results reveal that only 26% of mahouts' households are not sufficient with their income to meet households' expenditures previously. However, 57% of mahouts have increased who are not sufficient with their income in the Ngalaik elephant camp (Figure 2).

##### 3.2.2. Changes in Additional Income-Earning Opportunities and Activities

In Figure 3, about 91% of mahouts reported that they had additional income-earning opportunities in the timber camp whereas only 74% of mahouts revealed that they had a few additional income sources in the study area. In other words, only 9% of mahouts had no additional income-earning opportunities before moving to the elephant camp but the percentage of mahouts had increased (about 26%). Consequently, there had been an increase in the numbers of mahouts who had no additional income-earning opportunities after working in the elephant camp. Previously in the timber camp, mahouts received a bonus for timber logging with elephants during the extraction season. In Ngalaik elephant camp, all mahouts receive a weekly bonus (~4,000 MMK) and a monthly bonus (~15,000 MMK) as additional financial support from the organization.



**Figure 3.** Increased percentage of mahouts who do not receive any additional income ( $N=23$ ).

Kinds of livelihood activities engaged by mahouts' households in the timber camp and in this elephant camp are shown in Table 1. Mahouts and their family members had a variety of household activities to earn additional income while they were working in the timber camp. However, the number of household activities has decreased about two times as they work at the Ngalaik elephant camp. As a consequence, the income of mahouts in this elephant camp is lesser than that of mahouts in the timber camp.

**Table 1.** Changes in kinds of livelihood activities of mahouts' households ( $N=23$ ).

Before	After
1. Charcoal making	
2. Bamboo collection	
3. Collection and selling of bush-meats and wild vegetables	1. Collection and selling of medicinal roots
4. Collection of medicinal plants	2. Making wooden elephant-bells
5. Firewood collection	3. Retail shop
6. Retail shop	4. Livestock husbandry
7. Livestock husbandry	
8. Working as follower in departmental logging	

In focus group discussion, it was found that mahouts in the elephant camp had lesser leisure time than in the timber camp. Therefore, they could not engage in other income-earning activities to earn additional income (Box 1).

Accordingly, changes in households' income among mahouts are significant in the study area.

*Box 1 Changes of working condition that affect additional incomes of mahouts and their households*

Previously, in the timber camp, we don't need to work too much during logging season except in the working elephant camp. Therefore, we have a chance to work as wage labors to earn additional income during our free time. Now, we all have to take care of camp elephants throughout the day-time. Thus, we have more working hours and working environment is very tight. (Focus group discussion; Ngalaik elephant camp; February 2019).

### 3.2.3. Changes in Living Conditions

According to Table 2, Table 3 and Box 2, the development of ECBT produces positive impacts on living conditions such as better social, educational status, more accessibility of health care and good housing of mahouts' households to some extent. On the other hand, it has also affected negative impacts on their financial status (i.e., income, number of additional income-earning opportunities and activities) and their subsistence needs as well.

**Table 2.** Changes in kinds of livelihood activities of mahouts' households ( $N=23$ ).

Living conditions	Perceptions	Mahouts (%)	
		Before	After
Difficulty in water usage	Yes	0	0
	No	100	100
Amount of subsistence food collection	Rare	0	65
	Abundant	100	35
Accessibility of Non- timber Forest Products (NTFPs); especially bamboo collection	Yes	61	17
	No	39	83
Accessibility of medicinal plants collection	Yes	22	48
	No	78	52
Engagement in capacity building program	Yes	0	70
	No	100	30
Accessibility of education for children	Yes	20	100
	No	80	0
Accessibility of health care	Yes	17	100
	No	83	0

Living conditions	Perceptions	Mahouts (%)	
		Before	After
Safe and security	Secure	70	43
	More secure	4	35
	Insecure	26	22
Social dealing	Good	87	30
	Better	0	70
	Bad	13	0
Personal feeling living in the camp	Happy	74	61
	Happier	9	17
	Unhappy	17	22

**Table 3.** Summary of overall impacts on mahouts and their households (N=23).

Livelihood status	Positive	Negative
Income (monthly)	<i>Differ with their position since before</i>	
Households' expenditure (monthly)		<i>Increase</i>
Number of households that had debt		<i>Increase</i>
Additional income-earning opportunities		<i>Decrease</i>
Income-earning activities		<i>Less</i>
Subsistence food collection	<i>No significant change</i>	<i>Rare</i>
Difficulty in water usage		
NTFPs collection		<i>More Difficult</i>
Medicinal herbs collection		
Accessibility of children's education		
Accessibility of health care	<i>More collection for selling</i>	
Engagement in capacity building program	<i>More accessible</i>	
Safe and security	<i>More accessible</i>	
Social dealing	<i>Improve</i>	
Personal feeling	<i>More secure</i>	
	<i>Better</i>	
		<i>Less happy</i>

**Box 2** Perceived benefits and impacts of ECBT development on living conditions of mahouts' households

We have perceived better social facilities such as school, health care in this elephant camp than the previous timber camp because this camp is located near the capital and available better transportation and communication for our families. (Focus group discussion; Ngalaik elephant camp; February 2019)

Most of our houses and accommodations are getting better and developed than in the timber camp. The camp authorities provide us thatch roofing and bamboo floorings. We have a better housing type. (Head of the mahouts; Ngalaik elephant camp; February 2019)

this camp do not meet their monthly expenditure with their monthly income because of the increasing cost for households' welfares than in timber camp. Alternatively, the numbers of mahouts who have no additional income-earning opportunities after moving to the elephant camp have increased for the reason that they cannot work as wage labors in their leisure time and holidays due to more working hours than in timber camp and tight working environment under the close supervision of seniors and departmental authorities. Similarly, Indian mahouts have been found to spend less time with and frequently switch elephants following reduced employment opportunities [7, 9]. However, all staff in the camp have already received some extent of additional financial support from the organization but it is not sufficient for their livelihoods.

## 4. Discussions

Conferring to the findings, mahouts in the camp are young-aged and have low education level because most of them inhabited remote timber camps for many years of their lifetime and in poorly accessible areas for their schooling before they moved to the Ngalaik elephant camp. Similar findings were reported by Marshal et al. [6], who estimate that 46.7% of the mahouts have only lower primary education; 23.3% have upper primary education and only 10% are educated in high school and above the remaining 20% are illiterate.

### 4.1. Impact on Household Income and Expenditures

Regarding expenditures, mahouts' households (57%) in

### 4.2. Impact on Income-Earning Activities

In this study, mahouts' households engaged less income-earning activities in the elephant camp than in timber camp based on their classification of activities available. In timber camp, forest resources are easily accessible and they had fewer working hours except during timber logging and dragging seasons. However, they employed with more duty engaged by elephant handling intensively, tight working environment, rare and limited nearby forest resources for both households' uses and selling in this camp. Consequently, they cannot engage with other income-earning activities like in timber camp. The mahouts in charge of intensively kept elephants are often underpaid, their knowledge is decreasing fast and many of them are addicted to alcohol and other drugs [3].



### 4.3. Impact on Living Assets

According to impacts on their living status, their subsistence food nearby forests became less as compared to the past because of rare and limited forest resources for collection. Similar to timber camp, they have no difficulty in water usage. But, the collection of non-timber forest products, especially bamboo, is more difficult than before because of rare resources and limited access for households' uses. Interestingly, mahouts in this camp make collection of more medicinal herbs than in timber camp and hence, they can get additional income by selling them to camp's visitors.

About education and health care, mahouts' children have an opportunity to attend the school and they can easily access health care centers (e.g., hospitals, clinics) in this ECBT camp because they have had experienced to use long inland and waterway to go to the health care centers in the timber camp. Dealing with capacity building, mahouts have engaged more in elephant care training and talks celebrated in this camp than in timber camp.

### 4.4. Impact on Safety and Security

For the safety and security concerns, their households became more secure in this elephant camp than before but a few mahouts have concerns about the safety of their children because there may be kidnapping along the way to their schools. Based on their clarification, they developed into more polite manners and better social adherence among the staff and families as a result of the high degree of contacts and harmonization with diverse cultures among the visitors. Nevertheless, employing their personal feeling, a few number of mahouts' households in this camp perceived unhappier than ever before because of less leisure time and more tightly working atmosphere under the camp's supervision.

## 5. Conclusion

Mahouts share a relationship with elephants that is rarely matched in other human-animal interactions. They play a very important role in the welfare and health status of elephants. This study could be seen as an additional step toward a deeper understanding of ethical operation of ECBT under the green economy. Changes in living status of mahouts including their households and comparisons were based on differences between their past experiences in timber camps and the present situation in the Ngalaik elephant camp. Engaging in ECBT camp, nowadays, positive impacts on their human and social standing have perceived by the mahouts' households while it has more negative impacts on their households' needs and income. These empirical and scientific evidences about such living status changes of mahouts after the recent growth of elephant camps would be valuable to further development of ECBT. This would expose existing challenges and issues faced by the mahouts and their households to the authorities in order to provide better alternative opportunities for the mahouts employing under ECBT. Further research could be conducted in the area of

comparison between the camps for more intensely understanding the cross-variability in livelihoods of mahouts and impact on local community nearby the elephant camps after some years of ECBT development in Myanmar.

## 6. Recommendation

Dealing with this study, a few mahouts have a willingness to change their present career (being mahoutship) in this study because they have become more accessible to urban and better communication than in timber camp. This could lead to shift their profession from mahoutship to some nearby employments such working as wage labors or driving motorbike-taxi for their livelihoods. Consequently, the traditional mahouts will be leaving these facilities and the elephants are increasingly left under the control of non-traditional mahouts. There is a saying that the elephant keeper's welfare is an indication of elephant welfare. Therefore, it should be better to take into consideration of mahouts' welfare in the future policy of ECBT development. Besides, the authorities should provide a good living and quality of life for mahouts in the ECBT camp in order to make the career more attractive and the traditional talent and competency needs to be retained with better socio-economic and welfare standards, not only for the effective management of captive elephants but also for security of mahouts' livelihoods. In such a way, mahouts who have a good attitude about their job, greater knowledge and experience and more appreciation of elephants likely take better care of them, which would lead to better and effective elephant conservation and substantial development of ECBT industry in the future.

For the welfare of mahouts in Ngalaik elephant camp and to be more delightful and ethical elephant based tourism, some recommendations are listed below:

- 1) A training center for staff, especially for mahouts and apprentices, should be formed to certify their eligible qualifications.
- 2) To have better communication with visitors, especially foreigners, on-job training about basic foreign language should be provided to the mahouts.
- 3) The authorities should promote alternative income-earning opportunities and provide incentives and financial support to get a better socio-economic status of mahouts at the elephant camps.
- 4) Traditional practices of keeping elephants done by mahouts should be sustained by encouraging young mahouts because it is a risky profession and difficult to hand over to other people.
- 5) It should enhance job appreciation that would ensure mahoutship and also benefit elephant conservation based tourism in Myanmar.

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