

DEVELOPMENT ON SEA TURTLE ECOTOURISM IN MANNAI ISLAND

Junichi Okuyama¹, Kanokwan Boonhai², Panumard Boonmee²,
Somchai Mananunsap², Mickmin Charuchida², Nobuaki Arai¹

¹Graduate School of Social Informatics, Kyoto University, Kyoto 606-8501, Japan
E-mail: okuyama@bre.soc.i.kyoto-u.ac.jp, arai@i.kyoto-u.ac.jp;

²Sea Turtle Conservation Station, Eastern Marine and Coastal Resources Research Center,
Ministry of Natural Resources and Environment, Rayong 21190, Thailand.
E-mail: mannai@loxinfo.co.th

ABSTRACT

Nowadays there are many tourists visiting Rayong for the marine sports. Some of them make a trip to Mannai Island to see sea turtles. Sea Turtle Conservation Station in Mannai Island was established for the biological study and the conservation of sea turtles, and can be the facility for environmental education and suitable base of ecotourism in the future. Our aim of the survey is to examine the possibility of the ecotourism development in Mannai Island. To understand the current situation of the tourism in the area, we interviewed 39 tourists and 47 local people in the Mannai Island area. A lot of local people have the opinion that the environmental conservation is important, even though comparing with the economic development. The local people largely feel the environmental and economic conditions are good. This fact won't fuel their motivation so much to participate in ecotourism. However, the result that most local people wanted to be involved in the main job or the side job related to ecotourism has the important significance. To make a program which can give another job to them can be the key to the success of ecotourism.

INTRODUCTION

All sea turtles are vulnerable to a variety of human threats, including: commercial trawling; boat strike; pollution; reef bombing; ingestion of litter; vehicular traffic on beaches; and tourism development (Arianoutsou, 1988; Johnson et al., 1996; Wilson and Tisdell, 2001). For the conservation of them, sustainable use of bio-resources and understanding of the people about their vulnerability is necessary. In addition, we will have to seek the effective conservation measures that promote them. In recent years, ecotourism is paid attention to as the means that materializes effective conservation.

Mannai Island belongs to Rayong Province and is located about 200 km at the east of Bangkok. The long beach at Rayong is the famous tourist spot. There are

many tourists for the marine sports. According to tourism statistics of Rayong (Tourism Authority of Thailand, 2002) the number of tourists visiting to Rayong province in 2002 is 2,388,546. The Mannai Island area is divided up into the three sections. The first is the resort section which has a long beach. In this section, many hotels, restaurants and tour agency are built densely along the coast. The second section is the fishery section. The Mannai Island area has the scattered fishery villages where the fishermen live by fishing squids, crabs and some fishes. The third is the urban section which is a little far from the coast. And in the Rayong waters there are various size of the Islands, and the one of which is Mannai Island. Samet Island which is the biggest Island in

the Rayong waters is designated as the Ocean National Park and is also the famous tourist spots for diving, swimming.

In Mannai Island, Sea Turtle Conservation Station (STCS) was established for the biological study and conservation of sea turtles. Some of the tourists made a side trip to Mannai Island to see the sea turtles. The number of tourists visiting to Mannai Island in 2002 is more than 6,000. The STCS has the educational exhibition of the sea turtles and other marine endangered species. Therefore, the STCS can be the facility for environmental education and suitable base of ecotourism in the future.

Interpretation and education has been advocated as the most effective management strategy in tourist-wildlife interactions because it increases awareness about a species and encourages a conservation ethic. The effective utilization of the specialized educational functions of the STCS can contribute to future conservation of the sea turtles.

Under such condition, we are planning to develop "Ecotourism" in the Mannai Island area. Sustainable ecotourism must meet the demands of the five actors related with itself; the local people, tourists, researchers, travel agency and administrators (Maita, 2001). Many interrelated processes influence the potential and success of ecotourism within a protected area and links between natural areas, the local people and tourism (Ross & Wall, (1999)). Furthermore, if planning and decision-making do not involve local populations, then ecotourism will not succeed, and may even be detrimental to local communities (Ziffer, 1989). And local perceptions will be an important factor influencing how its development proceeds (Campbell, 1999).

Recently a lot of researches related to ecotourism are conducted in various place, for example, Projeto TAMAR in Brazil (Marcovaldi & Marcovaldi, 1999), Awala and Yalimpoo in French Guiana (M. H. Godfrey, 2001), Tortuguero National Park, Gandoca and Manzanillo Wildlife Refuge and Leatherbacks of Guanacaste National Park in Costa Rica (L.M.Campbell, 2002), and the Mon Repos Conservation park in Australia (Wilson & Tisdell, 2001), and of which some research have the socio-economic aspects of the sea turtle conservation. Achievement of wildlife conservation should be considered not only the aspect of natural science but socio-economic science. And also guidelines and criteria concerned ecotourism must encompass not only the biological impacts but also the social and political issues surrounding development, as Scheyvens mentioned (1999). In making the guideline and the

management program of ecotourism, the idea of working on case-by-case basis for ecotourism is an important one, and should not be ignored the community in question. The needs and possibilities of the local areas should be the focus of design and planning, rather than the specifics of programmes elsewhere. The focus should not be so much on emulating other programmes elsewhere, but finding solution to problems and situations specific to the community in question (Matthew, 2001).

The Mannai Island area differs in one major way with other research sites above. It is that the sea turtles seldom lay the eggs in the Mannai Island area. This has considerable influence over the ecotourism model. Generally, ecotourism has three objectives; environmental conservation (including environmental education), local economic development and development of another tourism. The sea turtle ecotourism sites above heavily tinges with environmental conservation. In the case of the Mannai Island area, ecotourism will emphasis on environmental education, local economic development and development of another tourism, rather than sea turtle conservation directly. It is within this context that we have to make another management program on the basis of the socio-economic attributes of the local community.

Our aim of the survey is to consider the current situation of the tourism, the local community at Rayong, Thailand, and attempt to evaluate the potential for developing ecotourism in the Mannai Island area. Therefore we are planning to investigate into the demands of the actors, especially local people and tourists by the questionnaire methods.

SURVEY METHODS

In the beginning, we conducted the preliminary study in the Mannai Island area from 15 to 17 November 2002. We interviewed 47 local people and 39 tourists, of which 47 and 37 were valid respectively. Some questions were not filled out, therefore we excluded these questions from consideration.

QUESTIONNAIRE SURVEY & INTERVIEW FOR THE LOCAL PEOPLE

The questionnaire survey and interview for the local people were conducted in the resort section, the fishery section and the urban section where the

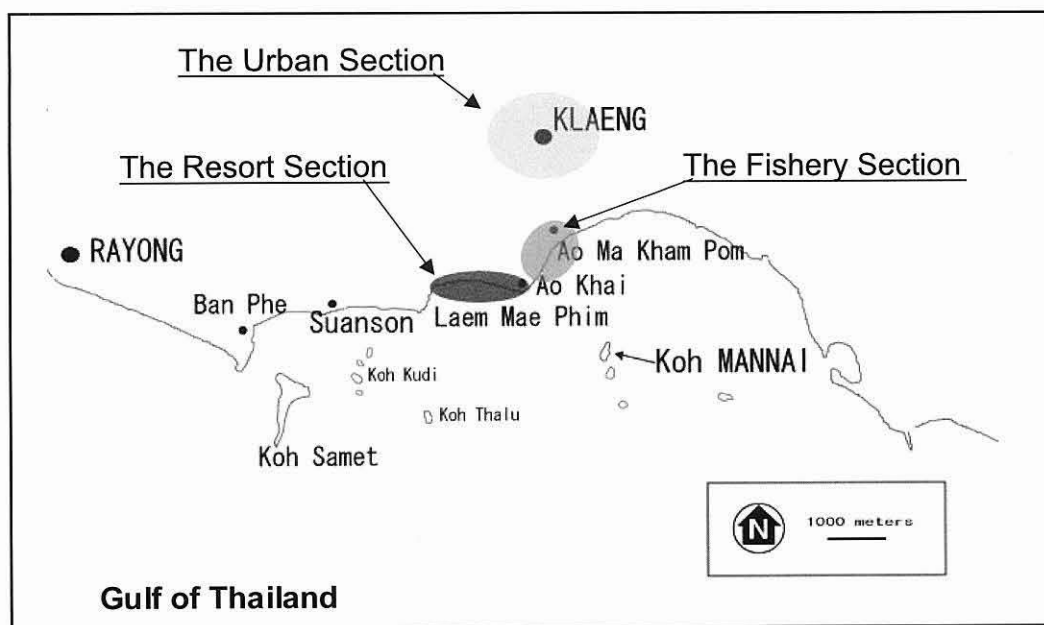


Fig. 1 The Mannai Island area, Rayong, Thailand. Three elliptical marks " of black, charcoal gray and light gray indicate three sections of the resort " section, the fishery section and the urban section respectively.

numbers of respondents were 20, 10 and 17 respectively (Fig.1). The contents of the questionnaire for the local people were the basic attribution and the awareness concerning the local society, the environmental, and the sea turtles.

QUESTIONNAIRE SURVEY FOR TOURISTS

The questionnaire survey was conducted for the tourists visiting to Mannai Island. The contents of the questionnaire for tourists were the basic attribution, and the awareness concerning the environmental, and the sea turtles. The questions about environmental awareness were same as for the local people. The valid responses were 28 Thai tourists and 9 foreign tourists. The foreign tourists included 2 persons who live Bangkok at the time of the survey.

RESULTS AND DISCUSSION

ENVIRONMENTAL CONCIIOUSNESS

To promote of developing on ecotourism, the perceptions and the awareness which the actors related with itself have are important factor, and the environmental awareness has a essential role in their

decision-making concerned with ecotourism. In this paper we asked the local people and the tourists about their environmental awareness.

As a result of the question; "Are you interested in the environmental issues?", 81% local people (38 of 47 respondents) and 95% tourists (35 of 37 respondents) answered "Interested very much", or "Interested a little". In each category, the respondents felt to have the strong environmental awareness subjectively. Few local people had no concern to the environmental issues.

In another question; " Which is more important, " Economic development", "Environmental conservation"?" (Fig.2), 50% tourists (18 of 36 respondents) and 13% local people (6 of 46 respondents) had the opinions that economic development is more important than environmental conservation. On the other hand, 39% tourists (14 of 36 respondents) and 59% local people (27 of 46 respondents) had the opposite opinions.

Some respondents answered "Both" because we made a mistake how to ask. However, even if the number of respondent had answered "Both" added to the fewer answer in each question, the results were comparable.

To be summarized, most respondents answered "I'm interested in environmental problem". On the other hand, in the case of the question which compares environmental conservation with economic development, the tourist's perception was different from the local

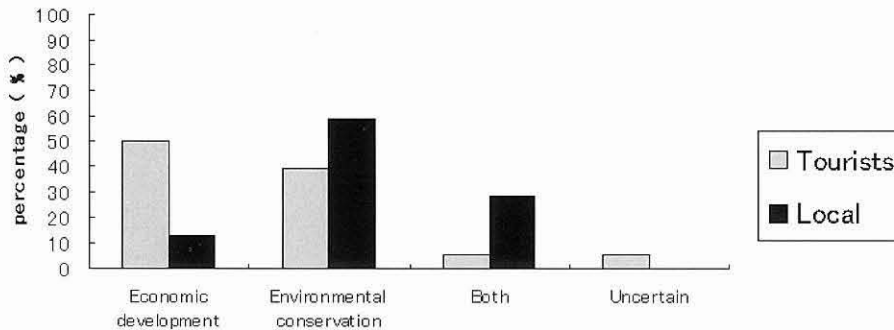


Fig. 2 The results of the question; "Which is more important, "Economic development" or "Environmental conservation"?". Tourists ; n = 36, Local people; n = 46

people's one. The reason of this difference can be that the respondents judged their environmental awareness subjectively. In consequence, the questions which need more objective judgment by comparing with economic development led a different result. The result of these questions indicates that most people who felt to have strong environmental awareness regarded economic development as important in reality.

IMPRESSION ON & KNOWLEDGE OF THE DECREASING OF SEA TURTLE

The impression on and the perception of the sea turtles are very important to make a management plan of ecotourism and to promote the sea turtle ecotourism. In this paper we asked the local people and the tourists about the impression on the sea turtles, the relationship between them and the sea turtles, and the perception of decreasing of the sea turtles. In addition, only for the residents who lived in the fishery section, we interviewed them deeply about their relationship to above factors.

In the question; "Do you like the sea turtles?", 84% local people (38 of 45 respondents) and 89 % tourists (33 of 37 respondents) answered "Yes". Some respondents answered "Unknown", and only two local people answered "No". Table.1 shows the result of the question; "What do you think about sea turtle?". In the local people, "Beautiful" was the most opinion answered by 13 respondents, "Cute" was the third most opinion. As a result, many local people showed the favorable impression on the sea turtle's appearance. The second and fourth most opinions were "Obligation of conservation" and "Endangered species" respectively, and the other some opinions were concerned with the decreasing of the

sea turtles. In the tourists, "Cute", "Obligation of conservation" and "Beautiful" were the prevailing opinions as well as the local people. And there was no pessimistic or negative opinion in both the local people and the tourists. In consequence, it is suggested most local people and tourists had a favor impression.

To the question; "Do you know the sea turtles are endanger species globally?", 72% local people (28 of 47 respondents) and 89% tourists (29 of 37 respondents) answered "Yes", the other respondents answered "No".

Furthermore, we asked the reason why they are decreasing of the respondents who answered "Yes" (Table.2). In the local people, all reasons answered were concerned with the responsibility of humanity and many of them were abstract. In the concrete reasons, there were eight answers concerned with "Drowning because of fishing gears like a gill net, trawling net". 6 of the eight respondents were fishermen, and then it seems that the people were rare except fishermen who understood the incidental catch by fishing gears. 6 of 7 fishermen answered "Drowning because of fishing gears". It indicates that many fishermen acknowledged the main reason of sea turtle's decrease is the incidental catch by fishing gears. On the other hand, there were 6 answers concerned with "Human eat the sea turtles", two and another two of which are concerned especially on "The egg harvesting" and "Fishermen eat the sea turtles", respectively. And there was one discriminatory description about fishermen that "Some fishermen don't have any knowledge because of no education, so they eat sea turtles and their eggs without worrying about anything" by a local.

In the tourists, there were many abstract answers concerned with the responsibility of humanity as well as the local people. "The sharks eat the sea

Table 1. Summary of all opinions of the local people and the tourists, and the number of themselves in concerning to the question; "What do you think about the sea turtles?"

Local People	Number	Tourists	Number
Beautiful	13	Cute	8
Obligation of conservation	6	Obligation of conservation	4
Cute	3	Beautiful	3
Endanger species	2	Big, Various size	3
Interesting	1	Interesting	2
Big, Various size	1	Never seen before	2
Unusual, Rare	1	Unusual, Rare	2
Emotional	1	Endanger species	1
		Emotional	1
Total	28	Total	26

Table 2. Summary of all opinions of the local people and the tourists and the number of themselves in concerning to the question; "Do you know the reason why the sea turtles are endangered?"

Local People	Number	Tourists	Number
Drowning because of fishing gears	8	Humanity	9
Consumed by human	6	Destruction, Pollution of Environment	8
Destruction, Pollution of Environment	5	Consumed by human	5
Humanity	4	Hunting for shell	3
Saling	3	Saling	1
Other	2	Drowning because of fishing gears	1
		Predation by Shark	1
		Other	1
Total	28	Total	29

turtles" was only answer related to a natural mortality. In concrete answers, "The sea turtles drown because of fishing gears" was the only one. The reason of such vagueness can be that the tourists don't have a relationship to the sea turtles as well as the local people except fishermen. There were 5 answers concerned with "Human eat the sea turtles", and two of which were concerned especially on "The egg harvesting". All of these 5 respondents were Thai and no foreign tourists. These results imply the foreign tourists don't have so strong relationship to sea turtles and the traditional habit of eating them. On the other hand, Thai used to eat sea turtles and their eggs, and the local people seem to guess some of them still eat sea turtles illegally.

On the decreasing of the sea turtles, 76% local people (36 of 47 respondents) and 97% tourists (35 of

36 respondents) regarded their decreasing as serious. In this result the percentage of the tourists was higher than the local people as well as the knowledge that sea turtles are endangered.

ATTITUDE TO ECOTOURISM

To introduce ecotourism has various effects on the local society. There are not only good but also bad effects. When we will promote to develop ecotourism, the actors related with itself, especially the local people must understand the various effect and have a effort to encourage good effects and to control bad effects. In this paper we asked the local people about the awareness of the present environmental and economic condition

around the Mannai Island area. We asked them to determine whether to approve the introducing of ecotourism after we explained briefly to them about the likely impact of ecotourism.

Fig.3 shows the results of the question concerned with the present environmental and economic condition. As to natural environment, 38% (17 of 46 respondents) and 34%(16 of 46 respondents) answered "Good" and "Neutral" respectively. The percentages of respondents who answered "Bad" or "Very bad" amounted to 15%, and it can be concluded many local people evaluated the natural environment was not bad. Concerning to the present economic condition, 52% (24 of 46 respondents) and 33% (15 of 46 respondents) answered "Good", "Neutral" respectively. The percentages

of respondents who answered "Bad" or "Very bad" amounted to 13%, and it can be concluded many local people evaluate the economic condition was not bad as well as the natural environment.

In the next, after we explained briefly the likely impact of ecotourism to the local people, we asked them to approve of introducing ecotourism or not. This result is as follows, "Strong agree"; 38% (18 of 47 respondents), "Agree"; 57% (27 of 47 respondents), "Neutral"; 5% (2 of 47 respondents), and there was no respondent who disagreed. We think there were few people who disagree to rational ecotourism, but the method of explanation was not good to have a clear result. Therefore we interviewed the reason why the local people agree to ecotourism (Fig.4). In consequence, the most opinion

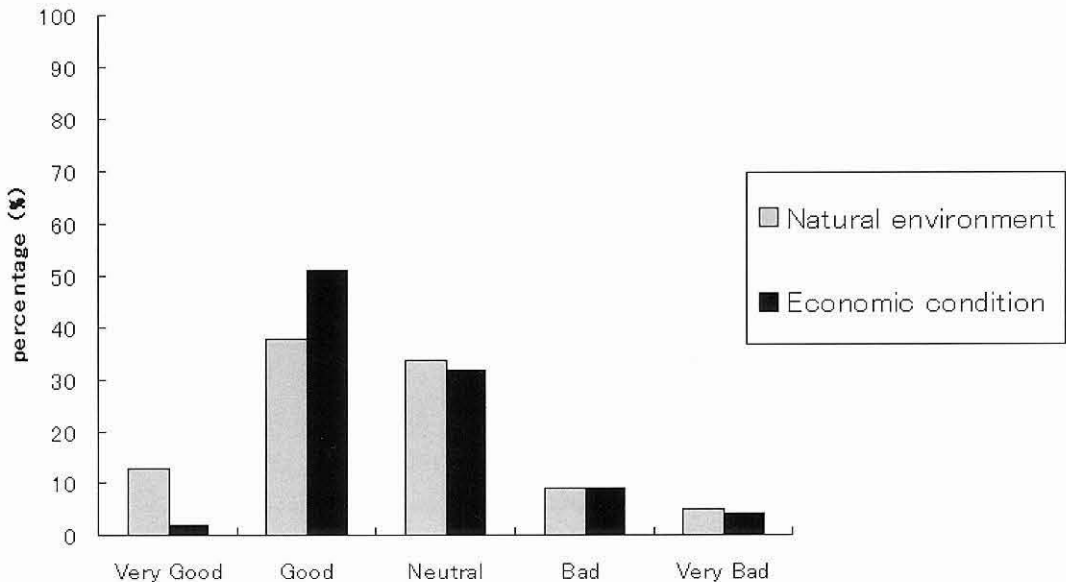


Fig. 3 The results of the local people (n = 47) by feeling about the natural environment and the economic condition in the Mannai Island area.

was "Because of environmental conservation"; 58% (20 of 34 respondents) and the second most opinion was "Because of economic development"; 15% (5 of 34 respondents). The other opinions were " Because of good effect on both environmental and economic", "No special reason", both percentages of which are 6% (2 of 34 respondents).

Additionally, we asked them what you expect from ecotourism (Fig.5). The percentages of "Appropriate conservation of natural environment", "Economic development from enhanced employment" and "Education or learning about natural environment" were each 46% (19

of 41 respondents), 17% (7 of 41 respondents) and 20% (8 of 41 respondents) respectively. These results suggest that the local people in the Mannai Island area had high level of environmental perception generally.

Fig. 6 shows the result of the question; "Do you prefer to get the job related to ecotourism?" 4% (2 of 45 respondents), 89% (40 of 45 respondents) and 7% (3 of 45 respondents) answered "As a main job", "As a side job" and "Don't want" respectively. According to this result, most local people were a favor of another job, but they are of no mind to change their job.

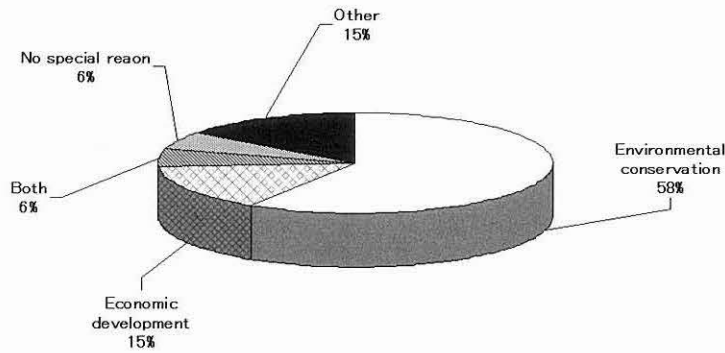


Fig. 4 Summary of the reason why the local people ($n = 34$) agree to ecotourism.

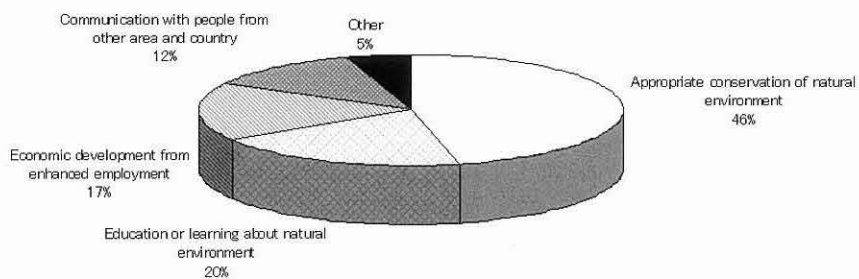


Fig. 5 Summary of what the local people ($n = 41$) expect from ecotourism.

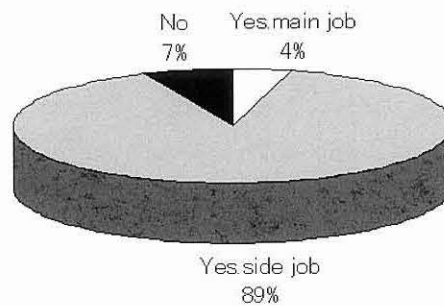


Fig. 6 The result of the question; "Do you prefer to get the job related to ecotourism?", for the local people ($n = 45$)

CONCLUSION

To date, Rayong province has been working as the tourist spots which sells the natural environment and many tourists visit there to enjoy the beautiful sea and the sandy beach. In such conditions, it was prospected that the local people at Rayong have a high level of environmental awareness. In this survey, a lot of local people have the opinion that the environmental conservation is

important, even though comparing with the economic development. Additionally regarded to the question about introducing of ecotourism, many local people have the answers concerned with environmental conservation. It can be concluded that the local people had enough environmental awareness and tended to regard environmental conservation as important more than tourists did.

In this Mannai Island area, it is reported that sea turtles are frequent but rarely come to shore for laying.

Most local people and the tourists did not have a bad impression on sea turtles which usually have no relationship to them, and understood the sea turtles are endanger species. These awareness and the knowledge of them can be brought from the aquarium and the media such like TV and magazines. Many respondents regarded the decrease of the sea turtles as serious, and so they favored the activity for the conservation of the sea turtles. Many answers about the reason why sea turtles were decreasing are abstract, and only few respondents except the fishermen understood the reason of sea turtle's concrete decrease. Therefore the result of this survey seems to indicate the significance of the education about the environment and the sea turtles, and for this purpose, we could reconfirm the availability of developing on ecotourism.

The local people felt the environmental and economic conditions in the Mannai Island area are good for the most part. As Campbell (2002) said, local perceptions will be important factor in promoting to develop on the ecotourism. On the basis of this concept, the fact that the local people feel good about the environmental and economic condition won't fuel their motivation so much to participate in ecotourism.

Additionally, considering the main motivation of local participation is the economic condition, the result that most local people wanted to be involved in the main

job or the side job related to ecotourism has the important significance. From the result of this research, the local people tended to have further income, but not want any life-altering risk. This implies that the difficulty in introducing ecotourism into the Mannai Island area, because their hope for not altering the present life could motivate them to avoid new things. To make the local people to be willing to develop ecotourism by themselves, ecotourism will have to be something appealing that they can benefit from. Therefore, when we will develop the sea turtle ecotourism, whether we can make a program which gives another job that the local people want (for example, the short time job which we can employ many local people) to them can be the key to the success of ecotourism. And when the sea turtle ecotourism is developed, to investigate how local favorable perception and awareness toward ecotourism connect to their participation will be a next issue.

ACKNOWLEDGEMENT

The author's research is supported by all of the members of the Sea Turtle Conservation Station.

REFERENCE

- Campbell, L.M.** 1999. Ecotourism in rural developing communities. *Annals of Tourism Research* **26**(3): 534-553.
- Campbell, L.M.** 2002. Conservation narratives and the "received wisdom" of ecotourism: case studies from Costa Rica. *International Journal of Sustainable Development* **5**: 300-325.
- Godfrey, M.H. & Drif, O.** 2001. Guest Editorial Developing Sea Turtle Ecotourism in French Guiana: Perils and Practicalities. *Marine Turtle Newsletter* **91**: 1-4.
- Johnson, S.A., K.A. Bjorndal, and A.B. Bolten.** 1996. A survey of organized turtle watch participants on sea turtle nesting beaches in Florida. *Chelonian Conservation and Biology*, **2**, 60-65.
- Maita, A.,** 2001. A historical study on the definition of the Ecotourism and its form of concept (in Japanese). *The total report of Ecotourism*, 15-40.
- Marcovaldi, M., Marcovaldi, G.G.** 1999. Marine turtles of Brazil: the history and structure of Projeto TAMAR-IBAMA. *Biological Conservation* **91**: 35-41.
- Ross, S., Wall, G.** 1999. Ecotourism: towards congruence between theory and practice. *Tourism Management* **20**: 123-132.
- Scheyvens, R.** 1999. Case study. Ecotourism and the empowerment of local communities. *Tourism Management* **20**: 245-249.
- Tourism Authority of Thailand,** 2002. Tourism Statistics in Rayong.
- Wilson, C., Tisdell, C.** 2001. Sea turtles as a non-consumptive tourism resource especially in Australia. *Tourism Management* **22**: 279-288.
- Ziffer, K.** 1989. Ecotourism: The uneasy alliance. Working Paper Series, Washington, DC: Conservation International.