Finding and Creating Spaces to Dive: Livelihood Strategies of the Moken in Thailand's Marine National Park

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Abstract

Focusing on the case of the Moken in Thailand, this paper aims to depict how an indigenous group try to secure a place for their foraging and hunting in prohibited space. The Moken are a nomadic seafaring people who have traditionally migrated from island to island by boat. However, almost all of them have settled down on islands and in coastal areas permanently especially after a series of national parks declarations in the 1980s. The Moken of the Surin Islands were confronted with great difficulty in foraging sea creatures, especially sea cucumber, due to the marine national park regulations. To make matters worse, the number of sea cucumber have been on a sharp decline as a result of boats being donated by domestic and international aid organizations after the 2004 Indian Ocean Tsunami. The increase of these boats have caused intensive competition

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วารสารวิจัยสังคม ปีที่ 38 ฉบับที่ 1 (ม.ค.-มิ.ย.2558) หน้า 35-87

in fishing activities among the Moken. In contrast with the past, the national park staff in Surin Islands started to strictly control Moken's sea cucumber harvest. Although national park staff verbally order the Moken to refrain from fishing activity, the Moken continue to conduct their sea harvest by introducing new fishing equipment such as long-shafted harpoons and air compressors. These are livelihood strategies that enable the Moken to retain their economic and cultural survival in the face of government's conservation plan.

Keywords: Moken, National Park, 2004 Indian Ocean Tsunami, Dive Fishing

กลยุทธ์การดำรงชีพของชาวมอแกนในเขตอุทยานแห่งชาติทะเล: การเสาะหาและสร้างสรรค์พื้นที่ดำน้ำหาสัตว์ทะเล

ยูกิ ซูซูกิ

บทคัดย่อ

บทความนี้นำเสนอกลยุทธ์การดำรงชีพของชาวมอแกน ว่าสามารถจะทำการล่าสัตว์และหาอาหารในเขตหวงห้ามหรือจำกัดได้อย่างไร โดยเน้นกรณีการดำน้ำหาสัตว์ทะเล ชาวมอแกนคือชนพื้นเมืองที่ดำรงชีวิตร่อนเร่เดินทางไปตามเกาะต่างๆ โดยเรือในสมัยก่อน แต่ต่อมาชาวมอแกนส่วนใหญ่ได้ตั้งถิ่นฐานบนเกาะ หรือชายฝั่งทะเลอันดามัน หลังจากที่มีการประกาศจัดตั้งอุทยานแห่งชาติทางทะเลอย่างต่อเนื่องในช่วงทศวรรษ 1980-1990 และเนื่องด้วยข้อกำหนดของกฎหมายอุทยานแห่งชาติ ชาวมอแกนที่อาศัยอยู่หมู่เกาะสุรินทร์จึงมีปัญหาในการล่าและเก็บสัตว์ทะเลโดยเฉพาะอย่างยิ่งปลิงทะเล หลังจากเหตุการณ์ธรณีพิบัติสึนามิในมหาสมุทรอินเดียในปี พ.ศ. 2547 จำนวนปลิงทะเลเริ่มลดลง ส่วนหนึ่งเพราะชาวมอแกนได้รับเรือบริจาคจากองค์กรทั้งในประเทศและต่างประเทศ จำนวนเรือที่เพิ่มขึ้น ประกอบกับความต้องการของตลาด จึงทำให้เกิดการจับปลิงทะเลมากขึ้น และเจ้าหน้าที่อุทยานแห่งชาติเข้มงวดกับการหาปลิงทะเลของชาวมอแกนเพิ่มขึ้น ชาวมอแกนได้ปรับเปลี่ยนวิถีการจับสัตว์ทะเลด้วยนำอุปกรณ์ใหม่มาใช้ ตัวอย่างเช่น ฉมวกยาว หรือเครื่องอัดลม เหล่านี้คือกลยุทธ์การดำรงชีพเพื่อความอยู่รอดทางเศรษฐกิจและวัฒนธรรมท่ามกลางกระแสนโยบายการอนุรักษ์ของรัฐ

คำสำคัญ: มอแกน, อุทยานแห่งชาติ, สึนามิในมหาสมุทรอินเดีย พ.ศ. 2547, การดำน้ำเพื่อหาสัตว์ทะเล

Preface

The Moken are an indigenous people who live in the Andaman Seas coastal and island areas surrounding Thailand and Myanmar [Burma]. The population is estimated at 2,800 people [Narumon 2006: 140; Narumon et al. 2007: 9]. There are more than 800 islands in this area [Human Rights Watch: 4], which Moken previously traveled around by boat. Because of this lifestyle, the Moken have been known as Sea Gypsies or Sea Nomads [Sopher 1977 (1965)] and have been described as 'Chao Lay' or the Sea People in Thai. They have traditionally conducted their sea harvest throughout the year, especially during the Northeast Monsoon season. However, since the 1980s the Moken have been restricted from capturing marine resources such as sea cucumber, turbo snail, and trochus shell due to the registration of national parks on many islands and coastal areas along the Andaman Sea.

This article focuses on the dive fishing practices of the Moken, discussing their livelihood strategies in Thailand's marine national park. The article has the following structure. First, in Section 1, I reconstruct the history of Moken dive fishing in the period when they moved about the sea with relative ease, drawing on literature and oral sources. Next, Section 2 discusses how the Thai government's establishment of a marine national park in the Andaman Sea

affected the Moken's dive fishing practices. I also discuss the background of the boom in sea cucumber collection after the 2004 Indian Ocean Tsunami, and describe the process up to the national park administrative office announcement of a ban on sea cucumber collection. Section 3 examines how the Moken find and create areas to carry out their dive fishing in a region restricted by government management. Section 4 ends the article with a discussion of Moken strategies for maintaining their livelihood spaces, based on consideration of the case studies presented in Section 3.

1. History of Moken's dive fishing

This section discusses the history of dive fishing among the Moken, dividing that history into four time periods for convenience in discussion. The First Period is when the Moken harvested marine products for barter trade, the Second Period covers the period of constraints on fisheries activates as a result of war, the Third Period is characterized by collection of sea cucumber and mother of pearl over a broad marine area, and the Fourth Period is a time of government territorialization of the sea. The Fourth Period is taken up in detail in the Section 2.

1.1 First Period: Barter exchange with Chinese and Malay merchants

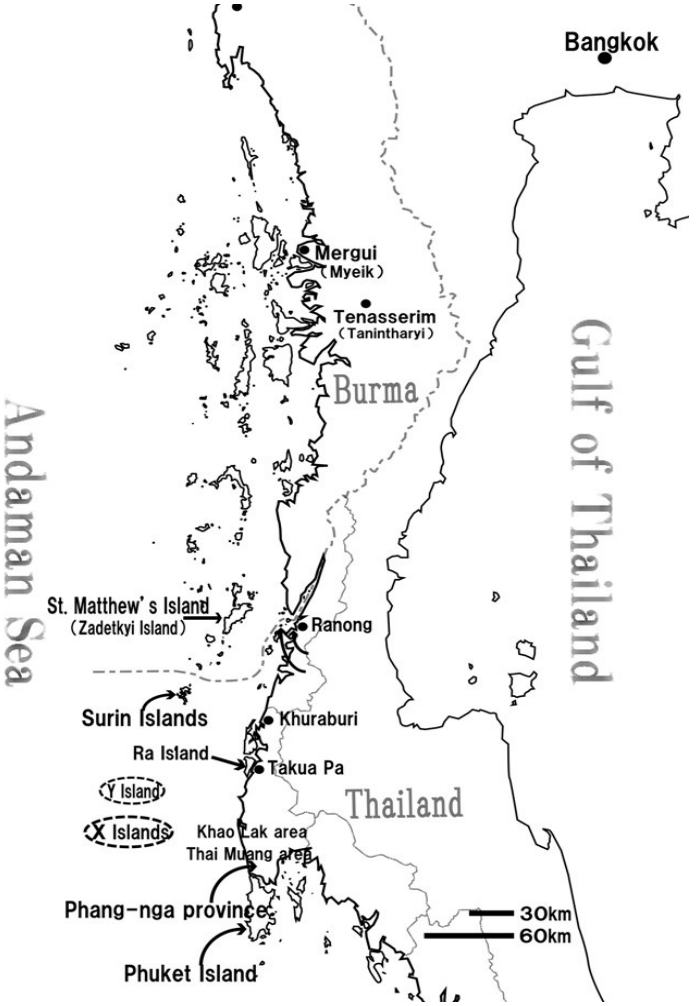
The oldest reference to the Moken people is from 1825, the year before Burma was colonized by Britain. This

report tells of Moken collecting mother of pearl for merchants, in exchange for handkerchiefs[1] and other goods, and the yearly amount of sea cucumbers brought to Mergui (Figure 1) by the Moken reaching 16,500 kg [Maingy 1928 (1825): 8]. This indicates that 200 years ago the Moken were already very active in fishing in the Andaman.

The following descriptions from 1828, 1843 (published in 1860), and 1846 (published in 1883) also demonstrate that the Moken were primarily collecting sea cucumbers. (Italics and parentheses are the author's notation.)

[1] 'Handkerchiefs' is a transcription of the original sources, but may also refer to clothes such as underskirts.

Figure 1: The Andaman Sea region (sites are marked in the general area with X and Y in order to protect their identity)



Their home is their boat, for they never form settlements on shore or cultivate, *their chief employment being the collection of sea-slag, birds'-nests, and other natural productions of the islands*……Excluding these itinerants, the Mergui islands appear almost entirely destitute of inhabitants. [Hamilton 1828: 226]

(Moken,) a race of people dwelling on the islands between Mergui and Penang, far below the Karens in knowledge and civilization, despised, abused, and robbed by Chinese, Malays and all the surrounding tribes; whose *only means of livelifood is fishing*, and fabricating a species of mats. [Mason 1860: 100]

Aside from the small amount of mats made in the Southwestern Monsoon season, *sea cucumbers are their (Moken) only source of income*. … *Sea cucumbers are collected during the Northeast Monsoon season during low tide of the spring tide*. [Durand 1883; cf. Mason 1860: 101; Anderson 1890: 6]

These references show that capture fishing was the Moken's main livelihood activity throughout the year, specifically mentioning the importance of sea cucumber harvest in the Northeast Monsoon season (dry season). Sea cucumber harvesting was conducted year-round, but the observation that the Northeast Monsoon season, when the sea is relatively calm, was the most suitable season will be

an important factor in the following discussion. The Moken obtained necessary items for daily life by trading their sea cucumbers with Malay and Chinese people.

1.2 Second Period: Marine warfare between the Japanese and British

The Second World War began in 1939, and its influence was felt in the Andaman region as well. At this time the Moken came into contact with a new set of outsiders, the Japanese. According to my interviews with elders, a rumor that Japanese soldiers committed acts of sexual violence when they encountered women spread throughout the region, and whenever a Japanese ship approached a village, all the women would flee to the forest and hide. Another man described how the Japanese army would moor their ships at a Moken village, and cut a large amount of the village's coconut leaves and use them to cover their ships so that the enemy would not know where they were. One of the pioneers of research on the Moken, Narumon Arunotai [1996: 54] reported hearing from many people that the British military constructed a lookout at the top of the mountains on the Southern Surin Island. This indicates that lookouts were used to monitor Japanese movements in the Andaman.

There are also reports of a Moken man being killed by a 'stray bullet' when they were fishing in the sea during

battles between the Japanese and the British [Suzuki 2008:74]. This story was told by the grandson of the man who was killed, but he is not sure if the bullet that killed his grandfather was British or Japanese. However, one man among the elders was certain that the bullet was from a Japanese gun, and he asserted that the British never attacked the Moken. The British were allied with the Burmese, but the Japanese readily attacked any Burmese they found at sea. So, he believes, the 'stray bullet' that killed the Moken man was surely shot mistakenly at someone believed to be Burmese. Not able to carry on with the fishing activates that would allow them to engage in trade, the Moken could not obtain the food and clothes they needed. During this period, some Moken cooperated with the British, informing them of the routes that Japanese ships might take, and some worked loading bombs onto British fighter planes [Ivanoff 1997: 21]. At the same time, some Moken in Burmese territory collaborated with the Japanese [Ferrari et al. 2006: 25], but no records of the details remain.

It should be emphasized here that during World War Two, the Moken could not go to sea and their fishing activities could not be continued. During periods of fighting, collection of marine products was completely restricted. Thus it should be remembered that because of the fighting between the Japanese and the British, there was a definite

period of restriction on Moken fishing activities (particularly dive fishing).

1.3 Third Period: Mines, mother of pearl and drive-in net fishing

When the War ended with Japan's surrender, peace returned to the Andaman region and the Moken returned to the sea to harvest marine products. After the war, mining activities quickly spread along the west side of the Malay Peninsula. Burmese and Thai people took up employment in the mines, and some Moken joined these activities as well. The British mining expert F. N. Cholmely employed Moken between 1946-1947 to look for appropriate sites for mine development in the Southern Mergui islands [Ivanoff 1997: 59]. There is also record of a Moken man being involved with mining operations in Burmese territory alongside Thai, Burmese, Karen and Chinese people [Suzuki 2008:71]. It seems that although their main livelihood was fishing, during the Southwestern Monsoon season when the sea is rough, many Moken did physical labor carrying sand gravel in mines. It is interesting to note that in Burmese territory there were many ethnic groups working together. This shows that during this period it was comparatively easy to cross the border between Burmese and Thai territory by boat.

Collection of the mother shell oysters used in the raising of pearls was one important area of work for the

Moken in the post-War period. According to Miyauchi Yasuo, who in 1962 was the first Japanese person establish pearl raising operations in the Andaman, in the 1960s and 1970s, a Chinese merchant named Sugyam based in Ranong controlled a broad area from Burma to Ranong, and employed 500 Moken to collect a large amount of pearl oyster (*Pinctada maxima*)[2]. Raising of pearls was already underway in the Burmese Andaman, but nothing was done in Thai territory until Mr Miyauchi arrived and there was still a large amount of pearl oyster left in Thai marine territory. In 1966, the Thai and American navies collaborated to conduct a survey of 1,807 ships in 89 places in Thai waters. This included Moken houseboats, but the records report boats 'used by pearl divers working in the vicinity of the Surin Islands' [Holbrook 2000 (1967): 255]. The amount of pearl oysters collected daily reached approximately 100 kg, and these were apparently sold on Ra Island [Holbrook 2000 (1967): 256]. When pearl raising began in the Thai Andaman in the 1960s, employment of Moken dive fishermen was initiated and a strange relationship between Japanese and Moken developed.

The author heard another interesting episode in the post-War relationship between Japanese and Moken from Mr

[2] This data is from interviews at the Marine Project (diving tour company) offices in Bangkok, on September 15 and 16, 2010.

Miyauchi. In the 1970s, there were fisherman from Okinawa engaged in dive fishing together with the Moken in the Takua Pa area of Phang-nga province. The Okinawan fisherman were surprised to find Moken who could dive to deep depths in the same way that they did. Fishermen from the main and outer islands of Okinawa are known to fish in many areas around the world, but the fisherman who came to the Andaman were not the skilled bonito fisherman from Miyako or Yaeyama, rather it was believed they were fisherman skilled in drive-in net fishing from Itoman on the main island.

From these stories, we can see that the Andaman is an area rich in resources, where people from other regions have always gathered. During these times, if there was work to be done, it was possible to cross informally into neighboring countries. The narratives of the local people who remember those times recall that it was still relatively easy to move across the sea in the 1960s and 1970s.

1.4 Fourth Period: The rise of the tourist industry

Moving in the 1980s, the Moken experienced significant social changes. The tin mining industry that had thrived in the post-War area went into decline, pearl raising slowed down, and the Moken lost their work in hauling sand gravel in the mines and collecting pearl oysters. At the same time, however, this marine area saw the rapid rise of the

tourist industry, with development of resorts focused on Phuket. The rich natural environment of the Andaman region became a tourism resource and advertising point for the Thai government as it worked to attract tourists from Thailand and beyond. The Thai government also began to promote nature conservation and designated marine national parks all over the Andaman.

As a result of the actions of the government, tourist use of the marine areas was promoted, while the fishing activities of Moken and other coastal fishing communities were restricted. The national park legislation does not allow private ownership of gazetted land, and any activities deemed to have an impact on the ecology of the region are strictly prohibited [DNP 2004: 13-14]. Cutting of trees in a protected area to build a house and boat is not permitted, and collection of flora and fauna is also prohibited. The government's efforts to promote national parks in the Andaman in the 1980s amounted to a complete denial of the Moken traditional lifestyle. It became impossible to build and maintain the *kabang*, the residence and means of transportation of the Moken [Narumon 2000], and harvesting of marine products could not be done freely. In the Burmese Andaman, the growth of large-scale fishing activities was accompanied by a government policy to sedentarize the Moken. As a result, the Moken, unable to move freely in the Andaman, stopped their boat-based lifestyle to live in

raised houses on designated islands or coastal areas, and engage in fishing activities.

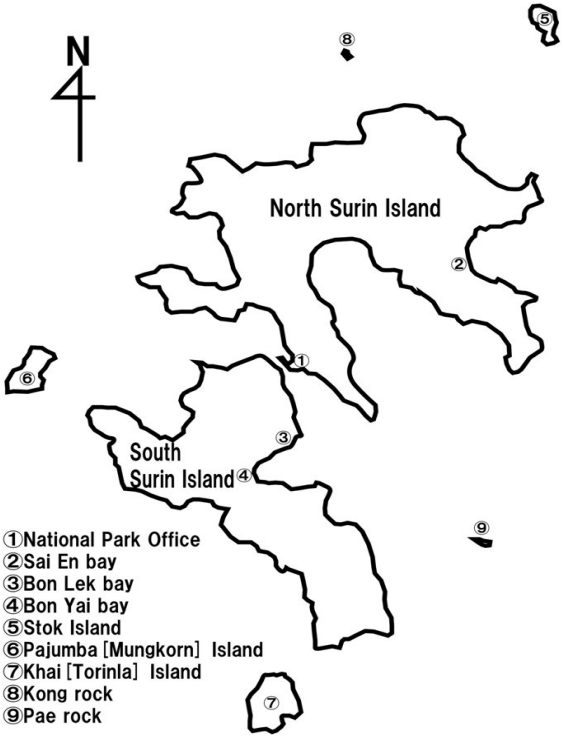
Section 2 will discuss the case of the Surin Islands in Thailand, in order to demonstrate in more detail how the tourism industry developed, how the Moken began sedentary land-based lives and how this impacted their dive fishing livelihoods.

2. Effect of national park enclosure on Moken dive fishing – Surin Islands case study

2.1 Surin Island Marine National Park

The Surin Islands are located 720 km to the southwest of Bangkok, the capital of Thailand, 60 km to the west of Khuraburi Port. The islands fall under the jurisdiction of Phang-nga Province, although it is closer to cross over to islands in Burmese territory than to reach the Thai mainland. The Surin Islands are therefore on the periphery of Thai-administered waters. There are many inlets on both North Surin and South Surin Islands, and the Moken have long used these areas to moor their boats. Mangrove forests and sandy beaches are scattered around the islands, but behind these are steep mountain slopes. The lack of flat land is a key characteristic of these islands (Figure 2).

Figure 2: The Surin Islands



The only significant rain falls in the Southwest Monsoon season (rainy season), but the yearly precipitation is quite high at 3,000 ml. Because of the high humidity and temperatures the landscape is dominated by tropical forest. The rich forest ecology is home to species of birds that are rare elsewhere in Thailand. Off the coast are well-developed coral reefs, where many of the shoal fish found in the Andaman congregate [Thon and Anuwat 2007]. In addition

to these fish species, there are also populations of lobster and other crustaceans, Tridacna and various other mollusks, in addition to echinoderms such as sea cucumbers. Thus, the reefs are considered to be areas of high biodiversity. The Surin Islands are useful to the Moken not only for sheltering their boats, but are also an attractive area for fishing activities.

However, the valuable ecology of the Surin Islands caught the attention of not only the Moken, but the Thai government as well identified this area for nature conservation. Since the National Park Management law was issued in 1961 during the Sarit regime, the Thai government has declared many areas of natural wealth as national parks. The Surin Islands were identified as one of these. On December 30, 1971, the Forestry Department designated protected forest areas, and on July 9, 1981 Surin Islands and the surrounding marine area were designated as a national park. The 29th national park designated by Thailand, the Surin Islands are also the 6th marine park in the country. The designated area is 135 km^2, and the land area within this is 33 km^2.

With the designation of the national park in 1981, the Moken began their first significant contact with Thai administrative authorities. Staff from the Royal Forestry Department came to the island to conduct surveys, and the

Moken became providers of information regarding the natural resources of the islands. The location of the Moken settlement was turned over to the local authorities, and the national park offices were built on that site. A campsite for tourists was built as well. In this way, the Moken have found themselves in a close relationship with the national park authorities since the 1980s [Narumon 2007].

2.2 Land-based sedentarization and reduction of the fishing season by half

The Surin Islands were designated as a national park in 1981, but this was not officially announced until April 28, 1985. From this point on, the general populace could only visit the islands during the annual Northeast Monsoon season[3], and the islands became a site for snorkeling and diving. The Surin Islands reef attracted not only government staff and the Moken, but tourists as well, as the number of actors involved in the region grew.

Tourists started visiting the islands in 1986. A national park office was built on North Surin Island, and the construction of toilets and a restaurant was begun. While

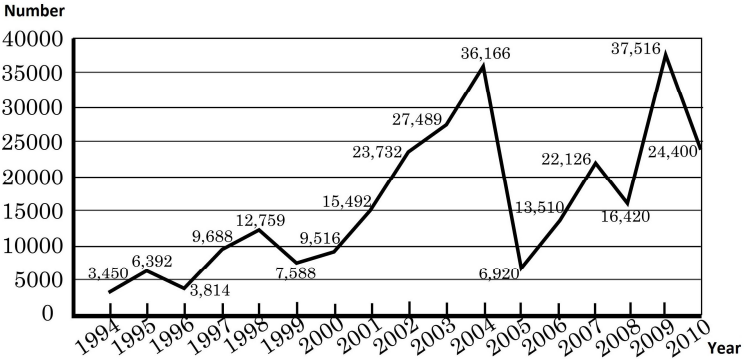
[3] The period during which people can visit the Surin Islands is limited to the Northeastern Monsoon season (normally mid-November to early-May). The islands are closed during the Southwest Monsoon season because the unpredictable weather makes it dangerous to take boats out on the sea [cf. Phuket Gazette Homepage 2007; 2008; 2009; 2015].

some Moken men took up jobs as boat pilots with the national park office, the women and children started to sell porcelain shells to tourists. In addition, the national park office announced that it would buy sea turtle eggs for three baht per egg (0.2 dollar at the time), and from that time the Moken began to sell sea turtle eggs [Narumon 1996: 147-148], which until that time they had only considered to be a source of food. Porcelain shells, which to the Moken were nothing more than a nice part of the underwater seascape, now had a commercial value, and sea turtle eggs became a resource that could be exchanged for cash. These signal changes in meaning of the local environment for the Moken.

It was just at this time that some Moken began to live sedentary land-based lifestyles. Some people lived in the Surin Islands only during the dry season, when tourists visit, but the number of Moken living boat-based mobile lives declined sharply. One of the drivers of this change was the government's territorialization of the Andaman Sea. Since the designation of the national park, many of the surrounding areas, such as the X Islands, the Thai Muang area, and the Khao Lak area, were put on the list for marine national park designation. Tourists began to increase in these listed areas, the Moken built permanent houses and lived together in designated areas. Some tourists came to these villages to observe the Moken [Suzuki 2011].

As tourism in the Surin Islands developed, the national park office tightened its management of the Surin Islands and surrounding areas. For example, the Moken selling of shells, which until this point the authorities turned a blind eye to, was now prohibited, and the capturing of lobsters and sea turtles, which were only infrequently taken for food, was strictly monitored. When the author asked the advisor to the director about the reason for this, he first told me that "Fishing activities cannot be recognized because the national parks law is applied to the Surin Islands", but then he also mentioned that there was another reason, that "seafood that the snorkeling and diving tourists prefer should not be depleted". For some time after the designation of the national park, the sale of shells was permitted and harvest of lobsters was not closely regulated. Considering these fact, we can assume that of the official's two answers, the first was the 'proper' answer, while the second was what he really believed. Basically, we can interpret his position as stating that tourist use of the reef should be prioritized, and the use of the reef by the local minority should not be allowed because it does not contribute to the interests of the state. Ichinosawa's [2010: 32] assessment that, Thai reefs had once been sea where people lived, but now they were sea where people looked, seems applicable to the Surin Islands as well.

Table 1: Changes in the number of people visiting the Surin Islands (created based on data from the DNP homepage)



Entering 2001, the number of tourists visiting the Surin Islands continued to increase. In 2000[4], the number of people entering the island was less than 10,000 but in 2004 that number exceeded 36,000 people. In 2005, the number of visitors dropped sharply as a result of the Indian Ocean Tsunami, but from 2006 on the number of visitors increased again (Table 1). Tourists, which had only amounted several thousand in the 1990s, now numbered in the tens of thousands. With the limited flat lands on the islands, and the crush of people visiting within the period of half a year, the number of people to work in service provision was

[4] In Thailand, one year is counted as the period from October to the next September. For example, 2008 covers the period between October 2007 until September 2008.

significant as well. More than ever before, the Moken did wage labor in various areas of service provision.

These developments brought about big changes in Moken dive fishing practices. In the past, the Moken engaged in fishing throughout the year, but now it is limited to the period of the Southwestern Monsoon only. As mentioned in the previous section, more than a century ago the Moken preferred to harvest sea cucumbers in the dry season, but the priority for use of the sea during that period is given to the tourists. The Moken cannot harvest sea cucumbers any more. The formation of the Andaman marine national parks in the 1980s resulted in not only the land-based sedentarization of the Moken, but also brought about a change in the season for dive fishing (Table 2).

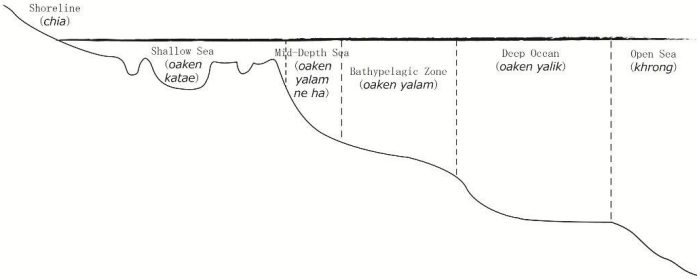
Table 2: Main annual Moken activities before/after the designation of the national park

	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Month												
Season	Dry (cool)			Dry (hot)			Rain					
Wind	Northeast Monsoon						Transition	Southwestern Monsoon				Transition
Before park	harvest of seafood (sea cucumber, shellfish, manta, hawksbill turtle, etc.) and collection of swallow nests						boat construction and repair, harvest of certain seafood (especially sea cucumbers)					
After park	engagement in tourism industry						harvest of certain marine products (sea cucumber, shellfish)					

The next section will focus on sea cucumber harvesting to examine how the Southwest Monsoon season dive fishing is currently conducted.

2.3 Dive fishing in the Southwestern Monsoon

Figure 3: Moken names for diving spaces



Moken diving areas on the sea are divided roughly into five different types of space, according to depth (Figure 3). The shallow sea from the shoreline (*chia*) to the reef flat, or the top of the reef face is called *oaken katae*[5]. The space from the reef face to mid-depth waters is called *oaken yalam ne ha*, while the gentle sloping bathypelagic zone is called *oaken yalam*. Deep sea with many sandy areas is called *oaken yalik*, and the open sea is called *khrong*. (Words in lowercase italics below are also Moken words.)

The word used for shallow sea, *katae*, actually refers to when the sea recedes during the low tide. So when the term *oaken katae* is used in daily life, this refers to the

[5] This refers to what the Moken consider shallow sea. Normally, when fauna is taken as the criteria, deep sea are water deeper than 200 meters, while shallow sea is less than 200 meters.

shallow sea that is below knee-height. When used in the context of fishing, this means waters that are deeper than knee-height, approximately 1 to 2 meters in depth. Mid-depth sea is between 3 and 9 meters, the bathypelagic zone is 10 to 19 meters and the deep sea is 20 to 30 meters, according to the Moken conception of sea spaces. The open sea is any space deeper than this, with the additional indicators that the sunlight does not reach the sea floor and there are no coral reefs. Most skin dive fishing is done within the shallow sea and bathypelagic zone area.

However, it is important to realize the numerical depths mentioned here are just generalizations of convenience to give the reader a rough idea of the differences. In reality, the Moken do not perceive the differences in these areas based on any numbers. Their perception of the sea is not related to measurements, but rather they measure the sea depth in terms of their experiences and physical sensations. For example, if ones hands touch the sea floor when swimming, that depth is called *oaken katae* (shallow sea), and if one can faintly see the sea floor when looking down that depth is called *oaken yalik* (deep sea). So the people using these when they are diving and the natural conditions at the time of the dive (strength of the sunlight and clarity of the water) will affect the actual numerical depth of the area.

There are two main patterns of sea cucumber harvest for the Moken during the Southwest Monsoon season. Each year at the end of April to the beginning of May, winds starting blowing from the southwest in conjunction with the arrival of rain clouds, and the national park is declared closed. Released from their responsibility of looking after the tourists, the national park staff decreases, and the Moken natural resources management becomes the priority of the Surin Islands. The closing of the park brings quiet to the islands, and the Moken men set out to sea in their boats[6]. When the seas are rough due to bad weather, they do not go out fishing. But on all other days, the men rush off to fish. The dive points for each day are determined based on consideration of the wind direction and tidal flows, and several men board one boat and move out. (When the author joined the fishing excursions, there was always at least two men on board, while the highest number was 21.) It is common for brothers or kinsmen to fish on the same boat, and they often fish in groups of five people. One person is always the dedicated helmsman.

[6] While men engage in deep water fishing, women process sea cucumbers by washing, gutting, boiling, and drying them.

Photo 1: Foraging sea cucumbers (Left: Before diving, Center: Underwater, Right: After diving)

When they finally arrive at the dive point, the fishermen put on their masks and jump into the water. (Men between in their teens to thirties use masks that are identical to the snorkeling masks used by the tourists (Photo 1-right). The older men often use water goggles that are very similar to the *mi-kagan* goggles invented by fisherman in Okinawa and Itoman.) Before they enter the water, one can usually hear the fisherman utter the word *siru*, as if talking to himself. This is a sort of incantation that means "Please let me get sea cucumbers" (*bo moi kaji*). This is not limited to sea cucumbers, but is the same word uttered when collecting turban snails and Trochus shells [Paladej 2003: 112].

When the men have finished a day of dive fishing, they get back into their boats, which are heavily laden in the sea cucumber harvest of the day, and make their way back to the village in high spirits. The men carry plastic tanks full of sea cucumbers back to the beach or their houses where

the women are waiting. Up to this point is the men's work, but the work of processing the sea cucumbers is the work of the women.

Processing of the sea cucumbers consists of the following steps. The body of the sea cucumber is slit and the intestines taken out. The body is put into a large pot filled with seawater and boiled (Photo 2-left). Then they are placed on a piece of corrugated roofing that has been set over a low flame. It takes a long time to extract all moisture (Photo 2-center). The sea cucumbers are then dried in the open air for several days, and the final product is a dried sea cucumber (Photo 2-right). Processing is done up to this point by the Moken, after which they are sold to middlemen. The price of the dried sea cucumbers depends upon the shape and the strength (the more completely the moisture is removed, the better). After that, they are delivered to Chinese markets around the world.

Photo 2: Processing sea cucumbers (Left: Boiling, Center: Roasting, Right: Air drying)

As long as the weather and sea conditions are good, this is repeated every day from the beginning of May until the seasonal fishing ban is announced by the national park office at the end of September. The national park office conducts regular surveys of the sea conditions. When the sea cucumber numbers have declined to a certain level, to the best of the official's knowledge, they ban further collection by the Moken. However, starting in around 2006, the fishing season was shortened to from the beginning of May to the end of August or beginning of September. This means that the sea cucumbers are being exhausted more quickly than previously. One of the main reasons for this change is the assistance activities after the 2004 Indian Ocean Tsunami.

On 26 December, 2004 the tsunami following the Sumatra earthquake hit the Surin Islands and the Moken lost

all their houses and boats. After that, domestic and international aid groups began to visit the villages, and the Moken started to receive many types of relief assistance. The aid groups were particularly concerned with reconstructing Moken livelihoods, and boats were continuously donated so that they could return to their fishing activities. As a result, the boats, which had numbered only 13 at the time of the tsunami [Narumon 2005], had by September 2007 more than doubled to 27. The increase in boats raised the Moken fishing capacity, and the period in which the sea cucumbers were exhausted was shortened. The sea cucumbers inhabiting the shallow sea and bathypelagic region were exhausted particularly quickly. Recognizing these abnormal conditions, the national park office issued the fishing ban on August 24, 2007, significantly earlier than previous years.

The Moken's response to this notification was serious. The author finished his dinner at about 6 p.m. on that day, and went out to the beach to be with the men, as usual. Many expressed complaints about the national park office. After a short time, people were saying "The sea does not belong to the national park!" and "How do they expect us to live?", expressing anger at the national park's decision. As the sun set and darkness descended, the talk died down as everyone returned home. The next day was perfect weather for fishing, but the Moken fishermen did not go out

to sea. They spend the day repairing their boats and collecting other seafood in the shallow sea. By that time, no one was complaining about the national park office, and it seemed that people were going to obediently adhere to the ban and the year's season would end without any further dive fishing. However, shortly after that, sea cucumber harvest started again. The next section will take up two case studies, introducing how fishing activities restarted in 2007, and then exploring the new directions that dive fishing took in the period between 2008 and 2010.

3. Finding and creating space

3.1 Case 1 – Dive in secret

The first case study taken up here is the development of August 31st, one week after the national park office announced the ban on Moken sea cucumber harvesting. It began at breakfast on that day when the head of the author's home stay family suddenly said that he was going to collect sea cucumbers. He is well known in the village for his long experience and diving skills, and holds the respect and confidence of the young men in the village. He went outside to check the wind conditions and the tide currents, and decided to go to sea in the early afternoon.

Just after 2 p.m., he led two other Moken men and left the village. The boat travelled in a clockwise direction, and after passing Khai [Torinla] Island they headed out to

the southwestern area of South Surin Island (See Figure 2). The author has accompanied the Moken on fishing trips on many occasions, but this was the first time to dive in this location. This season was the Southwestern Monsoon, when the sea is rough, so the Moken usually prefer to avoid the winds by diving on the east side of the islands or in the inlets. The winds on this day were relatively calm for the Southwestern Monsoon season, however the waves were rougher and the water deeper than the normal dive sites. At this location the winds blow directly from the southwest in the Indian Ocean. The waves cut into the islands' quay wall and it is difficult for coral to grow. It was clear that this location was not appropriate as a dive point. The author had dived with them many times before, but at this site the waves were stronger, and one was required to swim with stronger arm strokes and kicks than normal. Until that time, the author's diving skills were recognized by the Moken as being sufficient, but diving at this point would not only require much more physical energy, but if one was unlucky there was a danger of being drawn by the currents offshore towards the Indian Ocean, so it was a psychologically draining time as well.

However, that was exactly the reason for choosing this dive point. The accompanying Moken men said, "The water is very deep, and there are not many people who can dive here". Furthermore, they explained "The national park

office can't see us here". In other words, in a place like this that is not suited for dive fishing, only people with very high diving skills can collect the sea cucumbers that live on the sea floor. They were also implying that the officials' monitoring of their activities was weak.

The days fishing ended after 5 p.m., and the fishermen returned to the village at about 6 p.m. As a result of the fishermen's recount of the day activities to their relatives and acquaintances, starting the next day more and more people headed out to the southwestern side of the Southern Surin Island. The Moken were aware of the geographic limitations to the national park's monitoring, and they were able to dive out of the sight of the park staff. Fishing activities were continued at this point in this manner.

3.2 Case 2 – Dive in another area

The second case study is about diving to collect shellfish in the area of the X Islands, on September 5 and 6. The X Islands are in a different area designated as a national park. Below is the record of these fishing activities, based on the author's fieldnote.

I woke up at before 7 a.m., and as always sat with the Moken men drinking coffee and chatting. The day was a spring tide day, and the weather was nice with no wind. In the course of talking, the men decided to go out to the X

Islands. The X Islands have many deep waters, so one can only dive during the low tide on spring tide days.

At just past 11 p.m., 21 adult males boarded one boat. The boat set out, but 21 passengers were too many. When the waves shifted, it was clear that there was a danger of the boat sinking, and the boat turned around after about 1 hour and returned to the village. In the end, the fishing team departed again in two boats. The boat I was on had 14 people and it was very tight. But the Moken men made good use of the available space, laying down with their feet on each other. Aside from the helmsman and the cook, the men either conserved their energy by sleeping, or made repairs to their fins.

We arrived at the Y Island within 5 ½ hours (7 hours if the time for the U-turn is included, the time was already 6 p.m.). The anchor was lowered and the boat stopped at a location about 20 meters from the island. The passengers scrambled to dive into the water, leaving on the helmsman and the cook on board. From them the fisherman spent about one hour fishing, making one pass around the island. At this time, no one got any turban snails, and the only harvest was commercial top shells. The sky was getting dark, so the boat set out for the X Islands, and everyone ate the dinner that had already been prepared. The main dish eat with our rice was a simple dish of chilies stir-fried with

shrimp paste and sugar. It was completely dark when the X Islands finally came into sight, and the engine was slowed down in order to reduce the sound. About 30 minutes later, the roof of the boat was taken off so as not to attract attention to the boat. In another 30 minutes (approximately 8:30 p.m.) we finally arrived at the northern-most island of the X Islands.

When the first dive point was decided, the Moken on-board made themselves busy with preparations. They took their modified flashlights, and one-by-one quietly entered the water. In the water, they pointed the flashlights towards the sea floor and turned on the power. When one person mistakenly turned on the power with the flashlight pointed upwards, he was immediately castigated by everyone, “Point it down!” The atmosphere of this fishing expedition was much more tensed than any I had experienced before, so I decided not to dive with them from the first to the third points.

I decided to dive at the fourth point, as I had by then gotten the feel of this dive, such as the timing of entering the water and how much time should be used for the dive at each point. However, this dive was completely different from the night dive fishing in the Surin Islands. In the Surin Islands, night diving is done only in shallow sea, so with the weak light of the flashlight one can see to a certain

extent what is going on under the water. The dive site at the X Islands was very deep and the light did not reach the sea floor. It was hard to see anything. The area illuminated by the flashlight is still black and one loses one's sense of direction. It is even hard to be sure if one is descending, swimming laterally or floating up to the surface. It was everything I could do just to keep up swimming with them, keeping an eye on the dim light as I put my face out above the water surface.

At the fifth point, I didn't go into the water, opting to stay on-board with the helmsman keeping watch. Suddenly, the helmsman raised his voice in warning. Apparently there was a national park patrol boat approaching. One Moken diver who had come up for air caught the warning from the helmsman and transmitted the message to the others. The divers in the water quickly turned off their flashlights and pushed the boat into the shadow of a rock to hide. It probably didn't take three minutes to move the boat into the shadow of the rock after the helmsman's signal. Staying quiet aboard the boat, we saw another boat shining a red light pass in front of us heading to the west. According to the other members, the plan was to dive at two more points, but they decided to stop fishing in the X Islands and head directly back to the Y Island to dive there again.

When we arrived at the Y Island, nine men dived. By now it was already past midnight. After about 2½ more hours of diving, we left the Y Island after 3 a.m. and made our way back to the Surin Islands. Except the helmsmen, all of the Moken were sound asleep. Shortly after dawn everyone woke up and had breakfast. The group then compared and discussed the size and shape of the turban snails they collected until the boat reached the Surin Islands at about 10 a.m.

That was the story of the fishing trip to the X Islands that the author joined. First of all, we see that the Moken make long trips in spring tide periods. This is related to the depth of the sea at the X Islands. The traveling time between the Surin Islands and the X Islands is approximately seven hours, but they also did dive fishing at Y Island, located along the way.

In the X Islands they changed location and dived at several points, but the national park patrols were tight and the Moken ended their activities suddenly. They then changed their location again, returning to Y Island to continue dive fishing. According to one Moken man, “The X Islands are in a different national park from the Surin Islands, and the staff are different. We don’t come often to the X Islands, so even if we were caught, they wouldn’t do much to us.” In other words, the Moken pick out the differences

between the multiple national parks in the Andaman – here, the difference in management – to maintain a broad area for their livelihood activities. Even if they are not able to do dive fishing in the area around where they live, we can see that they have gathered and share knowledge about target species and the underwater topography of other dive sites, enabling them to expand their life space.

3.3 Case 3 – Introduce new gear

The third case study concerns the introduction of dive fishing new gear during the period of 2008 to 2010. Similar to 2007, in 2008 the sea cucumbers in the shallow to bathypelagic area were exhausted earlier than usual, and the fishermen found themselves facing the need to dive in deeper waters. The new gear introduced in July 2008 was a specialized harpoon for sea cucumbers.

When the national park is closed, construction of structures used as bungalows is done, and sometimes the iron brought from the mainland is left over. The Moken can obtain these materials by collecting the leftovers, or asking the staff for a small amount. With this they forge their own fishing gear. Until that time the Moken had used these materials to make harpoons for small fish and spears for fish that swim just under the surface of the water.

Photo 3: Left: Specialized harpoon for sea cucumbers, Center: Harvesting sea cucumbers with specialized harpoon, Right: Compressor

A hook-like piece is fastened onto the tip of the harpoon, making it difficult for the sea cucumber to slip off the harpoon once speared. This harpoon is very similar in shape to a normal harpoon for small fish. The main difference is the harpoon for small fish uses only iron, but the sea cucumber harpoon uses materials other than iron. Long thin and flexible pieces of bamboo are cut and then put into the fire so that they can be straightened. They prefer pieces of bamboo that are long and straight, but not too thick. The work of straightening is repeated several times until the moisture is gone and bamboo becomes hard. Gradually the bamboo takes the desired straight shape. Then the harpoon is inserted into the center of the bamboo and tied tightly with a string to finish the gear. It is difficult to see in the picture, but the thin line perpendicular to the

bamboo is the harpoon piece (Photo 3: Center). In the picture on the left (Photo 3: Left), a woman is walking and she is approximately 150 centimeters in height, and one can get an idea of how long the harpoon bamboo is. The harpoon shown in this picture is of average length, approximately 8 meters long. Using this length, it is possible to make a living from the deep sea without worrying about the tidal variation. In non-spring tide times as well, it is possible to harvest sea cucumbers living in waters deeper than 21 meters.

In 2010, another new gear was introduced. This was a full set of diving gear (compressor, air tube and specialized mask) (Photo 3: Right). The catalyst for this appeared when the middlemen that purchase sea cucumbers from the Moken lent them the gear. In this year, from May to July the Moken were skin diving for sea cucumbers as usual. In August the crossed over to the mainland to sell the sea cucumbers that they had collected, and on this trip the middlemen handed over two diving suits to the Moken. This coincided with the depletion of sea cucumbers in the shallow to bathypelagic zone. They were already reaching the limits of their capacity to harvest in the deep sea, even using the specialized harpoon. The middleman was aware of this situation, and had prepared the diving equipment for the Moken.

In this set-up, oxygen is sent from the compressor through a tube that is hooked up to the mask, which meant that the Moken would be able to dive for long periods of time. One compressor could supply two divers with oxygen, and each dive could be sustained for 15 to 30 minutes. With the previous skin diving, at most a diver could stay submerged for two minutes, so this new gear represented a major change. But that was not all. They were now able to dive in deeper waters than the deep water zone, in open sea areas up to 40 or 50 meters[7]. The divers carried large rocks as weight to prevent their bodies from floating up when harvesting the sea cucumbers. According to the information obtained from interviews with men using this diving gear, the national park staff was only keen to patrol waters up to bathypelagic areas, where the coral reefs are located. They explained that the national park staff were not interested in patrolling the deep sea or open sea areas. In other words, the Moken were able to use the new fishing gear to secure new spaces by moving their dive points to deeper waters.

[7] The use of diving gear such as compressors may increase the risk of caisson disease (i.e. divers' disease). Deep water fishing is more dangerous compared with their traditional style done in shallower waters.

4. Conclusion

As a result of the government's enclosure of parts of the Andaman region in the 1980s, fishing activities in the Northeastern Monsoon season (dry season), which for the Moken is the most appropriate period for fishing, was restricted, and they shifted to conducting their dive fishing mainly in the Southwestern Monsoon (rainy season). Moreover, boats were donated after the 2004 Indian Ocean Tsunami by domestic and international aid groups and competition for resources in the Surin Islands area increased. Concerned with the depletion of resources, the national park office placed restrictions on Moken dive fishing. Considering the course of events to this point, the picture is one of a loss of Moken livelihood space at the hands of the government's efforts towards territorialization of the sea[8]. However, in reality it was not such a simple story.

In Case One, the Moken's selection of dive points in spaces not covered by the monitoring of the national park. Legally, there is no consideration of geographic spheres of the center and periphery in the designation of national parks. The binding force of the law should function equally in all places. However, the Moken's choice of dive points in

[8] Some believed that government territorialization has helped to prevent the depletion of marine resources and secure space for Moken fishing during the Southwestern Monsoon season.

the southwestern area was based on the fact that the government management did not cover this place because of its distance from the national park office. Even in places that are supposedly administered in the same way, some places are under strong management and others under weak management. This means that the Moken actively sought out sites located in the areas of weak management to carry out their dive fishing[9].

Case Two described how after the Moken harvested the sea cucumbers in the Surin Islands area to exhaustion, they moved to another marine national park area[10]. The Moken believed that because the officials managing the X Islands were different than those managing the Surin Islands, even if they were caught fishing they would not be punished seriously since the Moken did not frequently come to that area. Even though the multiple marine parks of the Andaman region are governed by the same legal regulations, from their own experience the Moken know that the officials managing each area are separate entities and they utilized the gaps in governance to continue their dive fishing

[9] Other non-Moken people also use this strategy around the area. During my stay in the Surin Islands, I happened to encounter on several occasions boats setting up fish cages for trapping.

[10] This does not mean that the Moken destroy natural resources. The Moken are not always engaged in illegal fishing, but rather try to secure locations for foraging despite limited conditions.

activities. The Andaman Sea region was cut into multiple zones and several marine national parks were established. But the Moken were fully aware of the differences in management across the region, and took advantage of this to identify new places to dive.

Case Three demonstrated how in an area administered as one unit, the force of governance differed according to depth of the waters. The Moken were aware that the management of the national park office varied in the waters of different depth. This fact is closely related to the transformation of the Surin Islands into a tourist destination. Most tourists visiting the Surin Islands go snorkeling, but the area of visual enjoyment they seek is limited to waters of a depth up to 30 meters only. This is because water transparency in the Surin Islands waters is 30 meters [Krom Pamai n.d.: 31], meaning that the sunlight only penetrates to 30 meters, which defines the area in which coral can grow.

As discussed in Section 3.2 above, one of the main purposes of the national park's efforts to protect the reef is to meet the 'visual' enjoyment of the tourists that come to snorkel and dive. Therefore the national park staff's enthusiasm for patrolling the sea is limited to the waters up to a depth of 30 meters, where the coral is plentiful and there are many diverse fish populations. The Moken are

aware of this fact, and with the introduction of new fishing gear, they were able to successfully dive in waters deeper than 30 meters[11]. In this case, rather than simply finding a new place to dive, we can say that they created a new space.

In this way, competition for fishing resources grew within Moken society after the donation of boats in the post-tsunami period of aid. Despite the restrictions placed on their dive fishing by the national park, the Moken were able to find the gaps in the governance system's spatial order, and using new gear they were able to strategically maintain space in which they could live. Regardless of the constraints put on the temporal and spatial aspects of their dive fishing by the territorialization of the sea, the fact that the Moken were able to continue to find space to conduct their livelihood activities demonstrates clearly the agency and autonomy that minority groups possess.

However, the question of whether or not the Moken will continue to be able to find new places for their dive fishing is an important concern for the future. That is to say, the depths at which they are fishing have been increased by the specialized harpoon and diving sets, but what happens after they have exhausted the marine resources of the Surin

[11] Limited numbers of National Park staff are trained in marine/scuba patrol as their background is usually in forestry.

Islands, or in the event that the national park management becomes stricter than previously, remains to be seen. The Moken's success in finding new places to fish was because there were still options available to them, in terms of areas that could be accessed with a certain degree of mobility. The Moken may not necessarily continue to deepen and broaden the space in which they can do their dive fishing. We will have to observe how the Moken find livelihood space in the future.

Based on the above analysis, the author has made three recommendations to the Thai government (or national park authorities).

The first point is that the Moken's self-sufficiency fishing activities should not be restricted. Their rights to access the basic minimum requirement of seafood (excepting sea turtles, crocea clams and lobsters) for their livelihoods should be respected as in previous times. However, as will be raised in the second and third points below, the use of modern equipment and growing pressure on resources offers a different angle of discussion.

The second point is that the use of modern equipment such as compressors should be strictly prohibited. This is not just a matter of over-harvest upsetting the ecological balance. Looking into the future, diving in deep sea exhausts the resources there as well, and Moken

livelihoods will suffer as a result. In order to maintain sustainable ecological conditions and sustainable livelihoods, there should be regular checks to ascertain if the Moken are using modern equipment in their fishing. Similarly, it is necessary to monitor the Andaman Sea area to see if other fishing groups are using modern fishing gear.

The third point is that when regulating the fishing practices of the Moken, a more flexible approach should be taken than has been the norm. Previously, when it became apparent that the number of sea cucumbers was greatly reduced, a complete ban on sea cucumber harvesting was issued. This report has demonstrated, however, that this is not necessarily an effective measure. When fishing in the Surin Islands has been banned, the Moken move to other islands in the region. Thus, a complete ban should not be issued suddenly, rather a certain no-fishing period could be established, for example. In these cases, gradual approaches to restricting dive fishing would be more appropriate.

5. Acknowledgments

I would like to thank members of Andaman Pilot Project in Chulalongkorn University Social Research Institute (especially Dr. Narumon Arunotai, Khun Paladej Na Pombejra, and Khun Jeerawan Buntowtook). The fieldwork on which this article based was carried out in from January 2006 to March 2012 intermittently, and was financially supported by

the Japan Foundation, the Fuji Xerox, the Sonpo Japan Environment Foundation, the Resona Foundation for Asia and Oceania, and the Japan Society for the Promotion of Science. The author gratefully acknowledges the Moken people in Surin Islands for their long-lasting generous support of this study.

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