

อนาคตของความมั่นคงทางอาหารในกลุ่มชาติพันธุ์กะเหรี่ยงใน  
ประเทศไทย: ความท้าทายของชุมชน

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## บทคัดย่อ

บทความนี้อธิบายสถานการณ์และแนวโน้มความมั่นคงทางอาหารของชาติพันธุ์กะเหรี่ยงในผืนป่าตะวันตกของประเทศไทยท่ามกลางสถานการณ์ที่นำไปสู่ความเปราะบางของชุมชนกะเหรี่ยงด้วยวิธีการศึกษาเชิงคุณภาพที่ประกอบด้วย การสัมภาษณ์ และสนทนากลุ่มผู้เกี่ยวข้องในชุมชนกะเหรี่ยงที่อยู่ในผืนป่าตะวันตกในจังหวัดกาญจนบุรีจำนวน 3 ชุมชน การศึกษาครั้งนี้ใช้แนวคิดเรื่องความมั่นคงทางอาหาร 4 ด้านคือ ความพอเพียง การเข้าถึง การใช้ประโยชน์ และเสถียรภาพ ประเด็นความมั่นคงทางอาหารเริ่มต้นจากมุมมองเรื่องความมั่นคงทางอาหารในระดับโลกที่พบว่าเกิดปัญหาความอดอยากหิวโหยในส่วนต่างๆ ของโลก ดังนั้นการลดปัญหาความอดอยากหิวโหยด้วยการสร้างความมั่นคงทางอาหารให้ประชากรของโลกสามารถมีอาหารที่พอเพียง สามารถเข้าถึงอาหารที่เหมาะสม สามารถใช้ประโยชน์จากอาหารได้อย่างเต็มที่และต้องมีเสถียรภาพทางอาหารได้ทั่วโลก สำหรับประเทศไทยที่มีฐานะเป็นประเทศเกษตรกรรมหรือประเทศผู้ผลิตอาหารแล้วแม้จะมีปัญหาบางส่วนแต่ในภาพรวมของประเทศยังไม่ประสบปัญหาความอดอยากในระดับอันตรายเช่นในภูมิภาคอื่นๆ ของโลก อย่างไรก็ตามสถานการณ์ความมั่นคงทางอาหารในระดับชุมชนในกลุ่มชาติพันธุ์กะเหรี่ยงกำลังเปลี่ยนไปจากปัจจัยท้าทายต่างๆ ที่เข้ามากระทบให้วิถีชีวิตที่เคยผูกพันกับการผลิตแบบยังชีพและมีความหลากหลายกลายเป็นการผลิตเพื่อการค้าที่พึ่งพากับภายนอกมากขึ้น มีมูลค่าการลงทุนที่สูงขึ้น และราคาผลผลิตผูกติดกับตลาดภายนอก ซึ่งล้วนส่งผลต่อแนวโน้มความมั่นคงทางอาหารที่จะเปราะบางมากขึ้นเรื่อยๆ เมื่อผนวกกับประเด็นท้าทายที่สร้างความอ่อนแอในด้านความมั่นคงทางอาหารที่ประกอบด้วยปัญหาด้านทรัพยากร ปัญหาการพึ่งพาจากภายนอก และปัจจัยภายนอกอื่นๆ ในระดับประเทศและโลก ทำให้ออนาคตของกลุ่มชาติพันธุ์กะเหรี่ยงอยู่ท่ามกลางกระแสการเปลี่ยนแปลงขาดความมั่นคงทางอาหารมากขึ้นในขณะที่ยังนโยบายในระดับประเทศและระดับโลกต่างมุ่งเสริมสร้างความมั่นคงทางอาหารด้วยการสร้างอาหารที่พอเพียง เข้าถึง

ใช้ประโยชน์ได้ และมีเสถียรภาพในองค์รวม แต่ละเลยวิธีการผลิตในชุมชนที่เคย  
เป็นฐานความมั่นคงทางอาหารในอดีต

**คำสำคัญ:** ความมั่นคงทางอาหาร, ความเปราะบางของชุมชน, ชาติพันธุ์,  
กะเหรี่ยง และผืนป่าตะวันตก

## The Future of Food Security in the Karen Ethnic Group in Thailand: Community Challenges

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**Abstract**

This study aims to explain the possibility and situation of food security of the Karen ethnic people who inhabit the forest areas in the western part of Thailand amidst fragile and tension-affected situations. In this study, the three Karen villages in Kanchanaburi province located in the western region were examined. The study follows a qualitative research method based on interview and discussion with interested parties, using the theory of “food security” that consists of food availability, food access, food utilization and sustainable food system. Given the fact that hunger and famine are prevalent in all parts of the world, food security is thus essential to ensure sustainable food system, adequate food access and sustainable food utilization. Based on an agricultural society, Thailand has never experienced severe food insecurity compared to other countries. However, the internal and external shocks have led to severe food crisis within the Karen ethnic groups. In this respect, the traditional food production based on self-sufficiency and biodiversity has been shifted into a more market-oriented production rendered with high costs of production and market-driven prices. This shift has led to severe food insecurity within the Karen community. Additionally combined with environmental degradation, high external dependency, and exogenous factors in international and national levels, the Karen ethnic people have been even more prone to severe food crisis. Whereas the policies in national and international levels aim at ensuring adequate food availability, food access, and

food utilization, traditional food production which has been used as a base for a sustainable living is completely ignored.

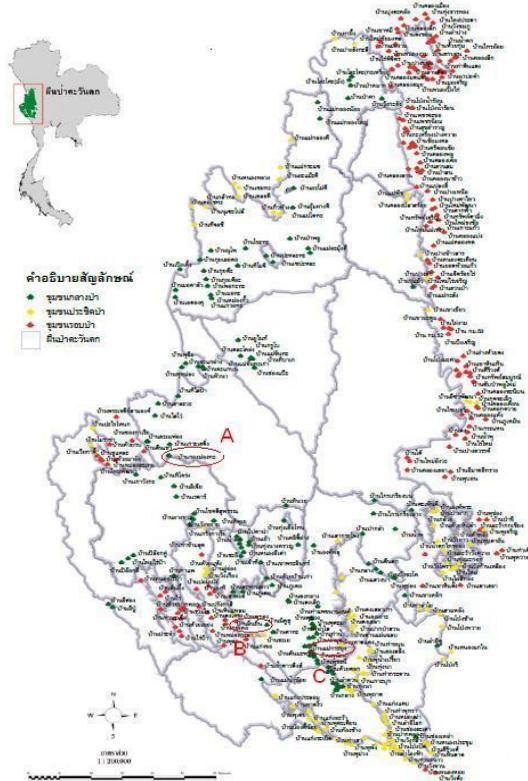
**Keywords:** Food security, community vulnerability, ethnic, Karen people and the western forest

## Introduction

Food security becomes an increasing focus in an international level (WFP, 2015). According to hunger map of WFP in 2015, it reveals that most of the world's hungry are heavily concentrated in Southern Africa and some Asian countries. *The Guardian* (2007) reported that, in 2007, some 40 percent of the world's agricultural land was seriously degraded. In Africa, the land degradation adversely affected sustainable food system because there was no adequate food production to sustain the living. The situation was exacerbated due to an expansion of farming areas to produce biofuel crops.

In the concept of "food security", there are food producing and food consuming countries. Thailand is categorized as food producing country, particularly rice production. In 2011-2014, Thailand was ranked 6<sup>th</sup> after China, India, Indonesia, Bangladesh and Vietnam, respectively (Bank of Thailand, 2014). Thus, as one of the World's biggest rice exporter, it can be implied that Thailand may not then be categorized as food-deficit country. In an effort to eradicate hunger, Thailand has incorporated the concept of food security into the strategic framework for food management in Thailand (National Food Committee, 2011) and the strategic framework on food security (Planning committee on strategic framework on food security, 2002) in order to ensure an equilibrium within the community – that is, improving food security in remote communities would be expected to have marked sustainable contributions to the national level. Nevertheless, while the traditional lifestyle of ethnic groups relies on forests to maintain their well-being, their high

presence always leads to an ongoing tension with the State (Sunderlin et al., 2005).



Map 1: Area study in The West Forest, A, B and C

Source: modified from Jom-Pa Project

There has been a misunderstanding about the coexistence of “man” and “forest” between forest-dwelling ethnic groups and state officials. Despite the state’s effort to collaborate with the ethnic groups to preserve forest areas, the protracted tension can

often be seen due to a different set of discourse communities – that is, on one hand the state declared national parks and wildlife sanctuaries in many areas where ethnic groups have harmoniously lived together with the forests for decades; on the other hand, the forestry authorities claim that the traditional cultivation is not sustainable and not in harmony with the forest ecology. Therefore, restrictions on subsistence farming areas and resettlement of ethnic populations are essential to preserve natural resources (Taotawin, 1999; Pinthong, 1992; Delang, 2002; Shu, 2015). Consequently, this tension has always led to fragility of the community.

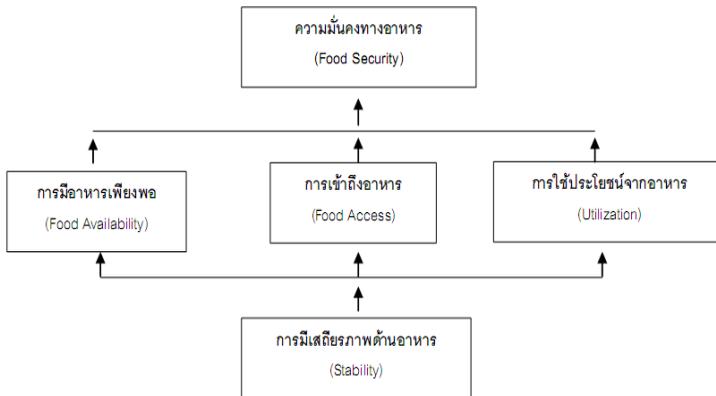
This study seeks to explain the possibility and situation of food security of the Karen ethnic people who inhabit in forest area in the western part of Thailand amidst fragile and tension-affected situations. This study is part of the research on building greater stability in a sustainable manner through self-sufficiency and governance in Thai society in three forest areas in the western part of Thailand (Map 1) – (1) Baan Kong Mong Ta, Sangklaburi (A), a community located in the middle of the forest (2) Baan Nong Bang, Thongphapum (B), a community located at forest boundary (3) Baan Mae Kra Bung, Sri Sawat (C), a community located along forest boundary and in the middle of the forest.

## **Food security at the community, regional and global levels**

“Food security” was termed by Food and Agriculture Organization (FAO) at the World Food Summit in 1996 and defined as “food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life”.

### **I. Food security at the regional and global levels**

At the global level, the concept of food security is based on hunger prevention. The term was introduced during 1970-1979 when the world experienced severe food shortages which; consequently, fueled a rapid increase in oil prices and other food production costs. These problems thus gave rise to the concept of “food security” in the World Food Summit in 1996. Inadequate food supplies lead to food insecurity (FAO, 2006). According to FAO, there are four dimensions of food security – (1) Food availability which addresses the supply side of food security to ensure various nutrients intake (2) Food utilization which is to ensure sufficient energy and nutrient intake and clean production (3) Food access which aims to guarantee adequate access to food of all individuals (4) Food stability which addresses equitable distribution of food to maintain stability of the other three dimensions.



**Figure 1:** Food Security Diagram - FAO

**Source:** modified from Food and Agriculture Organization (FAO).

“Food Security” in Policy Brief Issue 2. January 2006. 1

The ASEAN Integrated Food Security (AIFS) and Strategic Plan of Action on ASEAN Food Security (SPA-FS) were initiated in 2009-2013. The dramatic drop in agricultural production-led by higher cost of production substantially contributed to a sharp rise in food prices which has brought a serious concern on possible socio-economic impacts on ASEAN Member States. In response, the Special Senior Officials Meeting of the 29<sup>th</sup> Meeting of the ASEAN Ministers on Agriculture and Forestry (Special SOM-29<sup>th</sup> AMAF), held on 5-7 August 2008, was convened to discuss the concept note of the ASEAN Integrated Food Security Framework (AIFS Framework). The Meeting underscored the need to ensure food security which would require common understanding among the Member States, timely and reliable data and information for

policy decisions, a long-term agricultural development plan focusing on sustainable food production and trade.

The AIFS Framework comprises four components, which are interrelated to facilitate cooperation in addressing food security in the ASEAN region – (1) Food Security and Emergency/ Shortage Relief (2) Sustainable Food Trade Development (3) Integrated Food Security Information System (4) Agricultural Innovation. Thus, within the aim to incorporate the AIFS Framework into the country's strategies for food security, Thailand established the Sub-Committee on National Strategic Planning, on 22 October 2009, headed by Permanent Secretary under Ministry of Agriculture and Cooperatives and other planning-related agencies. On 10 September 2012, Thailand agreed to implement Food Security Strategy Framework (2013-2016) of Ministry of Agriculture and Cooperatives (MOAC).

## **II. Food security at the national level**

According to Office of the National Economic and Social Development Board (2012), Thailand is the 8th in the world of food and agriculture product exporters. The household food insecurity accounts for 87 percent; of which 54 percent is rice producing agricultural households. In 2013, land for agriculture is 45.6 percent of total land in Thailand. However, there is a concern on the decline in Thailand's productivity because of low investment in R & D relative to GDP. In Thailand, the R & D investment accounts for 0.2 percent; while it accounts for 0.7 percent in Malaysia and 2.5 percent in Singapore. South Korea's R & D investment accounts as

high as 3.5 percent of GDP. Rice production in Thailand is currently lower than that in Vietnam.

The study on food security in Thailand (Yaimeung, n.d.) found that villages located near urban area highly depend on external market; whereas villages located near forest area tend to be self-sufficient and depend more on forests such as Nong Sa-Rai village, Non-Yang village and Mae Surin village. At Nong Sa-Rai village, the villagers-produced food accounts for 27 percent, forest-based food accounts for 8 percent and food purchase accounts for as high as 63 percent. The villagers at Non-Yang village depend less on purchase food which accounts for 37 percent of total food supply. Their own produced food accounts for 47 percent; while forest-based food accounts for 13 percent. The villagers at Mae Surin village appears to be more self-reliant, with the amount of their own-produced food and producing forest-based food account for as high as 80 percent of total food supply; while that of purchase food accounts for as low as 20 percent.

However, Thailand has incorporated the concept of “food security” into the country’s action plans such as the strategic framework for food management in Thailand (National Food Committee, 2011) under Thailand’s National Food Committee. Pursuant to Thailand National Food Committee Act of 2008, there are four core strategies – (1) Food Security (2) Food Safety (3) Food Quality (4) Food Education- which cover the whole food chain (Khopailbool, 2012). Apart from that, Thailand also signed various international treaties and agreements related to food safety such

as International Covenant on Economic, Social and Cultural Rights (ICESCR), International Covenant on Civil and Political Rights (ICCPR), Convention on Biological Diversity (CBD), International Convention on the Elimination of All Forms of Racial Discrimination (CERD), Cartagena Protocol, and Nagoya Protocol. Thailand is thus bound to recognize, respect and protect the rights of indigenous people through laws, policies and programs on a non-discriminatory basis. In addition, these international agreements address the concerns about production and consumption to ensure food security at all levels.

It is undeniable that policies related to development and food security promotion; such as Thailand Policy Framework for Forest Management and Conservation, cause significant impacts on ethnic groups and villagers. Up until the period of King Rama V, the government had never interfered in forest management, but maintaining traditional lifestyle in each area. The forest management came into play when a modern system of administration was established – that is, the state administrative structure was replaced by a more centralized system. In 1896, the Royal Forest Department was established as well as its related laws, rules and regulations on forest protection were promulgated (Chamarik and Santasombat, 1995) such as Land title deed using the Torrens title system, Wild Animal Reservation and Protection Act of 1938, Land Code of 1954, and Forest Act of 1941. The Forest Act of 1941 is the first to introduce the definition of “forest”. The term was defined as “land which is not acquired by any person under the Land Code”

(Maneeswat, 1996). Not only does the Forest Act allow the authorities to manage natural resources, it also led to a number of related laws and resolutions. As a result, millions of hectares of land have been declared as reserved conservation forests or protected areas. These laws and resolutions have had severe impacts on indigenous people's rights to residence and land. As indigenous people are unable to manage their own resources, the tension between indigenous people and state authorities arises over land and forests. The impacts vary from regions to regions. Even though the Office of the Prime Minister issued a regulation concerning community land titles in 2010, there is no tangible action taken to deal with the tension.

### **The Karen ethnic group and Food security**

Karen people are living in Thailand as ethnic group for a long time and most of them live in highland which border between Thailand and Burma in western and north of Thailand. By the location, their houses are located in forest and practiced the tradition culture, which animists or believe in spirit and Buddhists. This study selected three villages from difference located that related the forest.

Baan Kong Mong Ta, Sangklaburi (A) is located in the middle of the forest. This community is stay in Thungyai Naresuan Wildlife Sanctuary, the protection area. 241 years ago, the village is settlement near Runtree River. Arduous transportation from landscape, hunting and gathering culture in forest was their lifestyle. Shifting cultivation

was used in a past till the forest act in 1941. Fruit garden, cassava, upland rice and vegetable garden are main agriculture.

Baan Nong Bang, Thongphapum (B) is located at forest boundary. They are migrating from Vajiralongkorn Dam area in 1932 and settlement next to Erawan National Park, that opposite site of forest. Land deed in house area is limited and their farm in forest area is rare limited. Sugar cane, upland rice, cassava and rubber tree are main agriculture.

Baan Mae Kra Bung, Sri Sawat (C) is located along forest boundary and in the middle of the forest. This 174 years old village is stay in Erawan National Park without land deed. Land right is an oral agreement between government and people. Without electricity, villager is still live in the old tradition way of life. Corn, upland rice and chilies are the main crop in hill area and vegetable garden is planted around house.

All communities have Karen culture and tradition as believe and rule in everyday life. According to inhabit the forest area and whose lifestyle is harmoniously associated with the forests to maintain their living. Their sustainable lifestyle offers a choice to choose and use resources and ensures food security within the community. However, their land and forest has been invaded and their lives have been controlled by state laws. The tension between the Karen ethnic group and state officials thus raises the question of social justice within the society. Limited rights and access to their lands and farms has caused various severe effects on the Karen ethnic group, particularly food

production, because these laws make the full participation of indigenous communities in community forestry and resource management impossible. These limitations consist of limited farming area, limited access to the forest area and limited size of forest area compared to the past. Therefore, the Karen's resource utilization and higher demand of forest products in the market have raised the issue of balance between the production and utilization which may lead to problems in the future.

Management rights of the Karen ethnic group from 3 communities over forests and village lands has always contradicted with state policies on conservation forests reservation and forest areas protection. The Karen forest management is harmoniously integrated with the forest, using traditional belief as natural law to manage natural resources (Kesmanee, 1996). *"We combine the farming into our life style. When we were in forest, we should respect the forest (sprites) and used them as a very important resource. We have a tradition law to take care our forest"* (Father Ju, **personal interview**, 19 April 2013). In this respect, forests are divided into farming areas and sacred areas. Traditional forest management thus leads to more effective natural resource utilization.

The lack of participation in resource management of ethnic groups becomes more evident when the state declared reserved conservation forests or protected areas after an establishment of a modern system of administration during King Rama V (Maneeswat, 1996) – that is, when land title deed using the Torrens title system, Forest Act of 1941, and Natural Reserved Forest Act of 1964 were

promulgated. These laws and regulations represent an effort of the state to intervene in resource management by allowing private agencies to utilize resources in the forest without any concern about the impacts on the indigenous communities (Gordon, 1999). It is therefore evident that the state has monopolized over natural resources, and the situation became more severe to indigenous communities after the National Forest Policy was implemented in 1985. This policy serves as forest management aiming at natural resources conservation and forest concession for mining to private business groups. In contrast, the indigenous communities consider managing natural resources under customary and traditional values. *“Government agent from the Forest Department was extruding us from the forest and limited our farm land and farm style.... They order us to obey.”* (Pongsakorn Tongpasukum, **personal interview**, 7 June 2013)

Furthermore, the state is responsible for ownership and resource management. This can be divided into two systems which are state property and private property. The importance of forest gains an interesting focus from the state due to a rapid loss of forests (Tabtun and Prachuabmoh, 1992). The granting of forest concession to private business groups along with cash crop promotion does not contribute to sustainable forest management. It is thus seen that intervention for development is part of the state's discourse to justify its action to manage resources. The state's intervention has been proven not to solve the problem of participation, instead creating distrust between ethnic groups and the state like in Kalayaniwattana

case study (Sittikreangkrai, 2012) and the three Karen villages in Kanchanaburi province. According to field data and Kesmanee (1996), the relationship between nature and villagers has changed – that is, the concepts between ethnic groups, wisdom and natural resources are intertwined. The idea and management knowledge of soil, water and forests of the Karen communities are governed by the law of nature which, in turn, is linked to their traditional way of life. The Karen communities are thus seen continuing their way of life rooted with traditional belief such as traditional cultivation/farming practice and culture.

The Karen traditional cultivation practice, particularly rice, always creates tension with Thai forestry authorities who claim that the cultivation destroys the forest and invades the protected forest area declared by the state. The invasion is in the forms of house settlement and farming practices, not deforestation. Turning uninhabited area into farming is believed to increase soil fertility without using fertilizers because the ash from burning and leaf mold on uninhabited land under rotational system contain nutrients the soil must supply for plant growth (Laungaramsri, 2004 & Arunotai et al., 2010).

*“Karen was used rotation farming for a long time. We do not have knowledge for fertilizer, so we leave the land to abound itself and come back in 6 to 10 years. Slash and burn is look direful but this is our way of life. We plant very variety native plant in one crop, rice, chilly, pumpkin, squash and spices. In*

*a year, we can cultivate enough food for our family.”* (Pawit Tongpor, **personal interview**, 1 May 2013)

*“We are losing our plant diversity because the monocrop, corn, cassava, sugarcane, rubber tree and other mono crop from the policy and outsider trend. Some year, we buy rice or others foods that never happen in the past. We are depending on market and outsider more than past, so we can control our life style anymore.”* (Piboon Chwybomrongwong, **personal interview**, 8 June 2013)

The use of different species in rotational agriculture is an important process that improves greater nutrient availability for all year round and allows greater improvement of biological soil environment for crops. There are up to 207 different species used in order to preserve soil structure (Kanjapan, 2004). The same idea is also explained in the work of Taworn (Culture Department, 2011). At Baan Mae Jok located at moo 8, Tambon Pa-Pae, Amphoe Mae Tang, Chiang Mai, it was found that there are 40 types of plants with 130 different species used for cultivation because this technique is applied to conservation of agricultural biodiversity in agro-ecosystem or so-called “in situ”. Crop rotation is a practice of growing a series of different types of crops, not just rice. Farmers could then practice crop rotation all year round, but the sequence of rotation depends on the nature of soil, climate and precipitation. The Karen’s

agricultural pattern has changed over time because of the flux of globalization. The traditional cultivation linked to the nature was shifted to be more dependent on external factors – that is, high technology, chemical substances and machines are brought into part of the production. High dependence on external factors thus causes severe food insecurity.

Therefore, as a result of the national economic and development plan, capitalism, consumerism, agricultural policy, education system and the need of villagers to live a better life, the traditional way of life of all ethnic groups in Thailand has severely been impacted. They thus became working middle class in an urban area due to Thailand's plans concerning development of highlands (Bouadang, 2009) and other related rural development plan. The production process depending more on external factors leads to higher costs of production. However, instead of yielding higher returns, the high fluctuation of market prices brings about instability to the ethnic groups (Sakbun, 2010). Consequently, food insecurity is evitable at the household and community levels.

### **Possibility of food security amidst past and present challenges**

The challenges to external factors and fragility in ethnic group communities that have severe impacts on food security are as follows;

1. Environmental degradation and management rights over the lands and forests; whether soil problems, degradation, scramble for natural resources, are factors leading to fragility and food

insecurity of the ethnic group communities. Several factors that have severe impacts on the three Karen villages are mentioned in this study.

a. In 2013, it was found that there were approximately 149.2 million of rai entitled to agricultural areas, accounting for 46.5 percent of total lands. Rice production constitutes a large portion of the total production. In forest area, villagers were limited land used by the government. Forest Act and National Park Act constrained their agriculture area. Rice or upland rice was not the main product of Karen people, while corn, cassava, sugar cane and monocrop product were raise. However, according to statistics, rice production is currently in decline, from 26 rais in 1986 to 22 rais in 2009. At present, less than 10 rais are entitled to farmers (Boonchai, 2013) and it was found that a large number of farmers did not have their own lands to live their lives due to economic situation and economic development aiming at industrial promotion rather than agricultural promotion. *“We lose many limit lands from generation to generation for the heritage and sell when we are aground. We cannot dilate farm land as the past, so we selected to use them very benefit. In this case, rice is not the best choice anymore.”* (Pongsakorn Tongpasukum, **personal interview**, 7 June 2013)

Among others, state’s intervention in forest management leads to significant impacts on indigenous people because they had to move out of their own lands. The state is unable to grant land title deeds because of different sets of thought. Even though the state

tried to grant management rights over lands, the tension between those who live in the area and farmers makes the effort impossible (Cabinet's report, 2012). Due to land limitations, the Karen ethnic people then have to opt for the most profitable crops in order to live their lives. Some of them decided to grow other types of plants apart from rice for their own daily consumption. Land crisis is thus a protracted tension created severe impacts on indigenous communities.

b. Access to water resources is another major problem. Low level of natural water and poor water management, particularly irrigation system, are causing problems to agricultural productions. In addition, drought, inundation, water quality and a scramble for water resources are other severe impacts on agricultural sector. Even though a scramble for water resources is not a problem within ethnic groups, lack of water resources is creating direct impacts on ethnic groups. Seasonal changes like level of precipitation have also impacted on farming areas and paddy fields of the Karen communities highly dependent on natural source of water. During 2012-2013, the three Karen villages were facing low level of precipitation and unable to grow their crops. Some farming areas that could get access to water were facing drought when the rice grains already developed, leading to low rice productivity.

The relationship between the Karen ethnic group and water, particularly precipitation and river, are highly interlinked. Despite the shift from rice production to cash crops like corn, tapioca, sugar cane, the Karen ethnic group still depends on

natural source of water to perform agricultural activities. Therefore, level of precipitation may lead to income instability. *“We use the rain for grow the rice and some plant in farm like the old way. The hill area is not use irrigation for our plantation.”* (Mother Helk, **personal interview**, 19 April 2013)

c. Forest degradation is a consequence of environmental degradation. In Thailand, the forest area is dramatically in decline. Although the forest concession has been abolished since 1989, the decline of forest has severe impacted on level of natural source of water such as drought and an ability to store water. In consequence, forest degradation is major problem that causes tension between the Karen ethnic group and the state authorities. The Karen people are blamed for deforestation, gathering saleable items from the forest and animal hunting, which is both myths and reality. The traditional belief of forest conservation that aims to put people out of the forest easily creates conflict and may also lead to other tensions. Furthermore, the Karen people are highly dependent on the forest. It is prevalent to see these people gather forest items for their own consumption. Consequently, forest degradation has significant impacts on the Karen. *“We are take care of forest because there are dependent between human and forest. We have a word “Or Tee Ka Tor Tee Or Kor Ka Tor Kor” that mean protect water if drink water and protect forest if live in forest.”* (Pawit Tongpor, **personal interview**, 1 May 2013)

d. Soil structure has been degraded due to pesticides, chemical residues used in modern cultivation and failure to increase fertility, making it impossible to plough. Degradation of soil structure stems from the use of chemical residues and pesticides instead of improving soil structure such as using organic fertilizer, decreasing the rotation period in farming areas used to utilize chemical residues and grow cash crops. However, it is impossible to decrease the rotational period because of the limitation on farming areas imposed by Forest Act and National Parks Act. This degradation of soil structure directly affects the way of life of the Karen people who have never utilized fertilizers. The costs burden from fertilizers and serious impacts on infertile soil, consequently, lead to low productivity.

2. High dependency on external factors such as modern technology for food production, free trade or modern trade, agriculture for commercial purpose directly contribute to food insecurity within the community. This modern system of production only aims at high productivity at low costs so that everyone could afford in the global food system (Institute of Medicine, 2012 ), and thus leads to two problems as follows;

a. Unsustainable production. The production aimed at high productivity severely threatens environment, biodiversity and seasonal changes. Mono-crop farm was poaching tradition farm. They lose their seed diversity and depended on the seed company.

b. Unable to eradicate poverty and lack of adequate nutrients. Therefore, the modern system of food production could not ensure food security. In addition, free trade or modern trade to

import and export with other countries directly threatens farmers at the household level because only good quality products are chosen for exports and imports. This can be implied that it requires an intensive use of chemical residues and utilization of modern system of production; from seeds selection, production process, harvesting, and marketing, In consequence, this free trade or modern trade only responses to this new system of production, not traditional method of production; particularly within rural communities.

The high costs burden on agricultural production process directly threatens farmers; such as the costs of seeds, chemical residues like fertilizers and pesticides, and labor wages. *“We pay too much cost for the chemical. In the other way, we earn a lower income from them.”* (Santi Khiaw-Luang, **personal interview**, 20 April 2013) The choice of seed selection and animal breeding is widely debatable about costs and benefits on farmers at all levels. A major problem of the Karen ethnic group is that plants and animals do not have high adaptive capacities compared to local ones. Additionally, the extinction of local animals and plant species becomes severe, and the new species of plants and animals are replacing them. These new species must be purchased from private companies, which are mostly sterile and unable to reproduce. The chemical residues in modern agricultural practices become more severe for all farmers. A large number of farmers believe in advertisement of chemical residues-producing companies and become addictive to the use of chemical substances. Farmer in villager used chemical for increases their farm product, that mean

expensive pesticide and fertilizer in agriculture area is increases their costs. Thailand is thus one of the biggest chemical residues-importing countries, from 2000 till 2015 (Department of Agriculture, 2016). According to the World Bank, Thailand's imports of chemical residues account for 0.86 kilograms per rai. The costs of chemical residues and fertilizers account for one third of total investment in production. Therefore, the costs originated from the use of chemical residues, high costs of investment, infertile soil structure and poor health of farmers are inevitable.

3. Other factors such as consumer culture, water, food and energy crisis as well as climate change also have impacts on indigenous communities.

These factors impose challenges to achieve food security in the future; especially at the community level. The Karen communities are extremely affected because they lack of opportunities and land ownership over protected forest areas. Additionally, vague and unclear practices and policies of the state also impose challenges and pressures on the Karen communities.

### **Conclusion: The future challenges for ethnic community**

Supposed that today was an answer of food security for the Karen communities, there would be no answer for future food security. In term of food availability, access, utilization and stability, those depend on opportunity to produce food by them self, planting, hunting, gathering and buying. With low income and high outcome of Karen people, buying is the last choice to make the

food security in their household. Government Laws narrow Karen to produce food as planting, hunting and gathering in forest area. However, it can be explained as follows;

1. Right for produce food, the rights over lands and farming areas are an important issue to be considered because the Karen is deprived of their rights over their own lands. Even though they are able to at least live their lives under limited rights, their descendants, when growing up or staying apart from families, will not be able to live on their own all year round due to limited access to lands. Nevertheless, there seems to be no future for the Karen's traditional agricultural practices, and they will eventually change their way of life by using advanced technology to improve productivity under limited farming areas. Their lives are not thus secured if they cannot adapt to future challenges.

2. The income for food stability, there is more dependency on external factors such as the use of chemicals residues, advanced technology in production and luxurious accessories like mobile phones, cars, cosmetics. These are associated with high costs even when there is credit insurance or cash installment. Even though people do not buy luxurious accessories, they have to depend on chemical residues which incurs high costs burden on the Karen in their production process. Furthermore, licenses to use plant patents also incur high costs and depend more on imported seeds. These dependencies have direct impacts on food security within the communities. With high costs burden, the Karen could

not cultivate their own food and have to divide their income to invest in agricultural activities rather than buying good quality food.

However, as the future of food security is tied to the concept of conventional food security and fragility of the communities, the future food security of the Karen ethnic group is seen unclear. Based on the interviews conducted, there are a lot of uncertainties and worries over the lands and farming areas that are essential to live their lives. Therefore, whether to the insiders or outsiders, the future of food security is projected in the form of a very fragile image.

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### **Interview**

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