ECO-ENVIRONMENTAL TERMINOLOGY AND FOLK CLASSIFICATION OF THAI COAST-DWELLERS : A CASE STUDY IN BANG KHUNSAI SUBDISTRICT, BAN LAEM DISTRICT, PHETCHABURI PROVINCE

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ABSTRACT

This study aims to explore Thai coast-dwellers' perceptions and classification of eco-environment, and to demonstrate their culture through an analysis of lexical terms. Bang Khunsai Subdistrict, Ban Laem District in Phetchaburi Province was the area under study. It is an area on the coast of the upper Gulf of Thailand with several traditional coastal villages and great ecological diversity. Word data in the semantic domains of landforms, soil, water, wind, coastal plants and marine animals, was elicited from locals living in a coastal village in Bang Khunsai from the end of 2009 to the end of 2010. An ethnosemantic approach was applied for use in the study. The semantic field methodology comprised an analysis of componential meaning and folk taxonomy in order to analyze the word data.

The findings show the coastal villagers' perceptions and classification system of local eco-environment associated with each semantic domain, precisely illustrated by taxonomy. A part of the study demonstrates that the coastal locals possess a great deal of specialized knowledge about the sea. It also uncovers the existence of numerous and complex words for indentifying water phenomena and waves used by locals. In addition, they are able to identify distinguishing features of various coastal plants and marine animals based on the determinants of physical and cultural properties. The existence of terms and the classification of things in relation to the environment also reflects the coast-dwellers' cultural way of living, such as the usage and division of land, their ways of making a living, time of working, utilization of resources, and beliefs regarding the sea and fishing activities.

This current study provides an insight into the local ecological knowledge system and culture of the coastal Thai community. Therefore, the research outcome can contribute to the body of folk marine knowledge. It can also lead to linkages between local classification knowledge and scientific classification.

KEY WORDS : TERMINOLOGY / FOLK CLASSIFICATION / ENVIRONMENT / ETHNOSEMANTICS

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ระบบคำศัพท์และการจำแนกสิ่งแวดล้อมทางนิเวศของคนไทยชายฝั่งทะเล : กรณีศึกษาในตำบลบางขุนไทร อำเภอบ้านแหลม จังหวัดเพชรบุรี
ECO-ENVIRONMENTAL TERMINOLOGY AND FOLK CLASSIFICATION OF THAI COAST-DWELLERS : A CASE STUDY IN BANG KHUNSAI SUBDISTRICT, BAN LAEM DISTRICT, PHECHABURI PROVINCE

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บทคัดย่อ

การศึกษานี้ มีวัตถุประสงค์เพื่อศึกษามุมมองและการจำแนกสิ่งแวดล้อมทางนิเวศของคนไทยชายฝั่งทะเลและชี้ให้เห็นวัฒนธรรมท้องถิ่นที่สะท้อนจากคำศัพท์ทางนิเวศ การศึกษาทำในพื้นที่ตำบลบางขุนไทร อำเภอบ้านแหลม จังหวัดเพชรบุรี ซึ่งอยู่แถบชายฝั่งทะเลอ่าวไทยตอนบน เป็นพื้นที่ที่มีหมู่บ้านชายทะเลแต่ดั้งเดิมและมีความหลากหลายทางนิเวศ ข้อมูลคำศัพท์ในวงความหมายของพื้นที่ ดิน น้ำ ลม พืชชายฝั่งทะเลและสัตว์ทะเลถูกรวบรวมจากคนท้องถิ่นที่อาศัยอยู่ชายฝั่งทะเลระหว่างช่วงปลายปี 2552 ถึงปลายปี 2553 โดยประยุกต์ใช้แนวทางการศึกษาทางอรรถศาสตร์ชาติพันธุ์ วิธีการศึกษาประกอบด้วยการจัดกลุ่มความหมาย (semantic field) การวิเคราะห์องค์ประกอบความหมาย (componential analysis) และการจำแนกแบบชาวบ้าน (folk taxonomy)

ผลการศึกษา แสดงให้เห็นถึงการับรู้และระบบการจำแนกสิ่งแวดล้อมทางนิเวศของชาวบ้านชายฝั่งทะเลในแต่ละวงความหมาย โดยนำเสนอในลักษณะของอนุกรมวิธาน (taxonomy) ส่วนหนึ่งของการศึกษาชี้ให้เห็นว่าคนชายฝั่งทะเลในท้องถิ่นมีความรู้อย่างลุ่มลึกเกี่ยวกับทะเล ซึ่งสะท้อนออกมาจากคำศัพท์เรียกปรากฏการณ์ของน้ำและคลื่นที่มีจำนวนมากและมีความหมายซับซ้อน นอกจากนี้ชาวบ้านชายฝั่งทะเลสามารถจำแนกพืชชายฝั่งและสัตว์ทะเลโดยพิจารณาจากลักษณะกายภาพและลักษณะทางวัฒนธรรม คำศัพท์และลักษณะการจำแนกสิ่งแวดล้อมต่างๆ ยังสะท้อนให้เห็นวิถีวัฒนธรรมการดำรงชีวิตของคนชายฝั่งทะเลในท้องถิ่น ได้แก่ การใช้และจัดแบ่งพื้นที่ในทะเล ลักษณะการทำมาหากิน ช่วงเวลาทำงาน การใช้ประโยชน์จากทรัพยากรธรรมชาติ รวมถึงความเชื่อเกี่ยวกับทะเลและการประกอบอาชีพ

การศึกษานี้นำไปสู่ความเข้าใจความรู้นิเวศพื้นบ้าน และวัฒนธรรมของชุมชนไทยชายฝั่งทะเล ผลการศึกษาให้องค์ความรู้พื้นบ้านเกี่ยวกับทะเล และสามารถนำไปสู่การเชื่อมโยงความรู้ในการจำแนกแบบชาวบ้านกับทางวิทยาศาสตร์ต่อไป

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CHAPTER I
INTRODUCTION

1.1 Background and rationale of the study

There is consensus about the relationship between humans and their environment as described in Berlin's quote (1992 : 8) : "Human beings everywhere are constrained in essentially the same ways – by nature's basic plan – in their conceptual recognition of the biological diversity of their natural environments". The local knowledge of the various groups which have lived with nature over a long time is particularly relevant to the classification system of the eco-environment and seen as a crucial knowledge-base for the management, utilization, and conservation of natural resources. This local knowledge is useful for developing a deep understanding of modern biology and ecology. Sometimes, modern global knowledge is passed on from a study of the local environmental knowledge system, for instance for medicine. Local knowledge, therefore, has become of interest to societies in various countries. It is also one of the general issues of this research area. However, local ecological knowledge, particularly in the classification systems of the environment by particular groups of people, needs to be studied extensively and deeply. Today, many local knowledge systems are at risk of becoming lost. This is because, globally, natural environments are rapidly changing along with cultural changes. As for research concerning the folk classification system of natural surroundings in particular, there are very few studies available to reinforce the linkage between folk and scientific knowledge. From this point of view, the researcher is truly aware of the importance of relevant study and understanding of the means by which local people classify their environment. Therefore, in an effort to precisely examine local knowledge, linguistic methods will be employed.

As is generally known, language is key to cultural and knowledge transmission. To reveal a language as a part of culture, it is easier to discuss the relationship between vocabularies and other facets of culture than that between

grammars (Fraenkel, 1967: 22). According to Sapir (1949) and Frake (1980), the existence of words that are used for calling things in a community's environment that the people see or feel shows that such things exist significantly in the culture. It can be said that words are evidence of a particular people's attention and their values granted to things. The study of words can lead to an understanding of a community's worldview, knowledge systems and cultural models. Therefore, many semantic studies, especially in the field of ethnosemantics, are basically due to human's thought and worldview expressed through lexical words.

Earlier lexical studies on the ethnosemantic approach have, far the most part, focused on basic cultural references such as kinship terms, color terms, taste terms, disease terms and geographical names. Nowadays, the analysis of the meaning of words is applied to other fields leading to studies of local or indigenous knowledge systems. For instance, the field of ethnoecology focuses on relationships between humans and their environment aims to make an understanding of ways of thinking and categorizing the natural surroundings of each group of people. Ethnoecology relies on the analysis of local names such as the names of plants and animals (Martin, 2007). An example can be seen from a study of plant names used by the Tzeltal speaking community in Mexico, comparing with the botanical names used in the article "Folk taxonomies and biological classification" by Berlin and others (1996). There are a few studies in Thailand that have explored issues in language and environment such as the lexical study of community-forest and environment in Mien by Kamontham (1996 in Thai) and a comparative study of classification of water source terms in 6 provinces of the central and northeastern region of Thailand by Watcharaphon (1992 in Thai). However, these Thai studies do not emphasize the folk classification of natural environment.

Local or indigenous knowledge belongs to each society and is related to natural surroundings as cited by Wasrren (1991 cited in Gerique, 2006), "Knowledge is linked to a specific place, culture or society; it is dynamic in nature; it belongs to groups of people who live in close contact with nature system and it contrasts with modern or western formal scientific knowledge". The common lifestyle of Thai people as well as those of different ethnic groups in rural areas depends on the natural surroundings close to their community. The natural surroundings in different areas are

unique according to its geographical characteristics. Therefore, the ways of life of dwellers and their worldview and indigenous knowledge are different. In the provinces of the sea area in the southern, eastern, and in the lower central regions of Thailand, there are several coastal communities where dwellers have a way of life which depends on the sea; they mainly earn their living from marine resources.

Thai coastal-dwellers are the focus group for my current study on environmental terminology according to the following rationales. Firstly, these dwellers, who live in areas where the geographical features are unique and sea ecology is changing constantly, must possess a particular knowledge in order to be able to live in and use the areas. Secondly, the local ecological knowledge relating to the sea, particularly identifying of sea phenomena, plants and marine animals, is worth exploring because the sea environment is essentially linked with food cycle and diversity of living things. And finally, no research has been conducted on the ecological knowledge of various Thai coastal communities under a linguistic analysis methodology.

The chosen area for this study is a coastal community in Bang Khunsai Subdistrict in Ban Laem District, Phetchaburi Province. This subdistrict is situated on the coast of the upper Gulf of Thailand. The area is resource-abundant and ecologically diverse. It is also a nature reservation (conservation area) as declared by the Ministry of Natural Resources and Environment. The coastal village condition is still rural where the original inhabitants work in local, small-scale fisheries. Bang Khunsai is known as a strong community and good for a study, according to Silpakorn University Research and Development Institute (2002 in Thai) and Rattana and Jarin (2008 in Thai). Many research has been made regarding this area such as Kamonthip's research (2005 in Thai) which is a study about the community's learning process for sustainable mangrove natural resources development. However, no linguistic study has been undertaken to date. The researcher believes that language is a knowledge system supporting resource management and the people's lives.

During September to October 2009, the researcher primarily observed and collected data in Bang Khunsai community and found very interesting linguistic features such as complicated words for identifying water phenomena, the names of plants and animals referred to by the villagers which are different from their scientific

classification; for instance, the names of coastal plants, “Samae Dam” [samĕ: dam] referred to by the villagers as, “Samae Khao” [samĕ: khă:w] and “Samae Khao” [samĕ: khă:w] known as, “Samae Dam” [samĕ: dam]. The researcher was told by an officer of the Mangrove Resources Development Station 6 (Phetchaburi) that local people in other communities refer to them the same. The primary data encouraged the researcher to find out more about the coast-dweller’s knowledge system and ways of classifying ecological items that are related to their culture and livelihood through the study of their words or terms of daily usage. The study tries to utilize a linguistic study approach in order to discover the villagers’ thinking processes and knowledge systems so as to contribute valuable finding for the benefit of society.

1.2 Objectives of the study

The objectives of this study are as follows:

1.2.1 To explore Thai coast-dwellers’ perceptions and classification of their natural environment through an analysis of terminology concerning their eco-environment.

1.2.2 To demonstrate how local culture is reflected in terminology concerning the eco-environment of Thai coast-dwellers.

1.3 Benefits of the study

It is hoped that this study will derive the following benefits.

1.3.1 As for this terminological study, it can result in insight into the local ecological knowledge system, the livelihood and culture of the coastal Thai community in the studied area. Therefore, the findings from the study can contribute to the body of folk knowledge relating to the sea.

1.3.2 The findings can also lead to linkage between local classification knowledge and scientific knowledge.

1.3.3 The research outcome can be of use for development projects, community planning and those who need to work in the area.

1.3.4 The linguistic study can be expanded into a study of folk wisdom and connected to other fields of study such as sociology, ethnoecology, and environmental sciences.

1.4 Hypothesis of the study

The hypothesis is that the terminology used by locals for a particular subject such as landforms, soils, plants, or animals constitutes a picture of the classification system of Thai coast-dwellers and also reflects their culture.

1.5 Scope and limitation of the study

1.5.1 Lexical domains

The terminology to be studied include:

- Words or terms concerning ecological environment of which there are about six semantic domains; landforms, soil, water, wind, coastal plants and marine animals, which relate to the coastal area.

- Words or terms for plants and animals which refer only to coastal plants and marine animals that are generally found in the area studied. Terms for coastal plants and marine animals that local people regard as extinct or no longer used, or terms which are unclear descriptively are not collected.

1.5.2 Studied area

The studied area is in Bang Khunsai subdistrict, Ban Laem district, Phetchaburi Province, focusing on Ban Bang Khunsai M.2. The researcher collected data from Ban Bang Khunsai M.2 for the study because of the fact that it is unquestionably a traditional community on the coast and adjacent to mangrove forest; the villagers live closely within the same area; and Ban Ban Khunsai M.2 has a high number of villagers working in typical small-scale fisheries in Bang Khunsai subdistrict. (Bang Khunsai District Administration, 2009 in Thai)

1.6 Theoretical approach

This study is based on ethnosemantics (or ethnographic semantics), which focuses on the study of words or lexicon in a language and meanings given by members of a community in order to discover how a specific area of culture categorizes domains of knowledge. Also, the Sapir-Whrof hypothesis which incorporates the opinions of Sapir and Whorf on the relationship between language, thought, and culture, is the conceptual foundation used in this study. Linguistic methodologies used together for data analysis are semantic field theory, componential analysis, and folk taxonomy.

1.7 Definition of terms

Terminology refers to a group of particular words or terms referring to phenomena, objects or activities distinguished in culture.

Coast-dwellers are the people living in communities adjacent to the sea and earning a living by exploiting marine resources. In this study, this term refers to people living in Bang Khunsai Subdistrict, Ban Laem District, Phetchaburi Province.

Classification means the ways in which the members of a culture divide up the natural and social world into categories, usually linguistically encoded.

Eco-environment refers to the natural environment in the area of which geographical features are land, soil, water, and wind, including plants and animal resources. These are related to each other.

Local knowledge or **Indigenous knowledge** is knowledge and experience adopted for creating a way of life that co-exists with the ecological system of the area. This knowledge is gained by direct experience or learned from ancestors.

CHAPTER II
LITERATURE REVIEW

This chapter is concerned with a review of literatures as follow: general information about the studied area, theoretical concepts and approaches of the study, and related research.

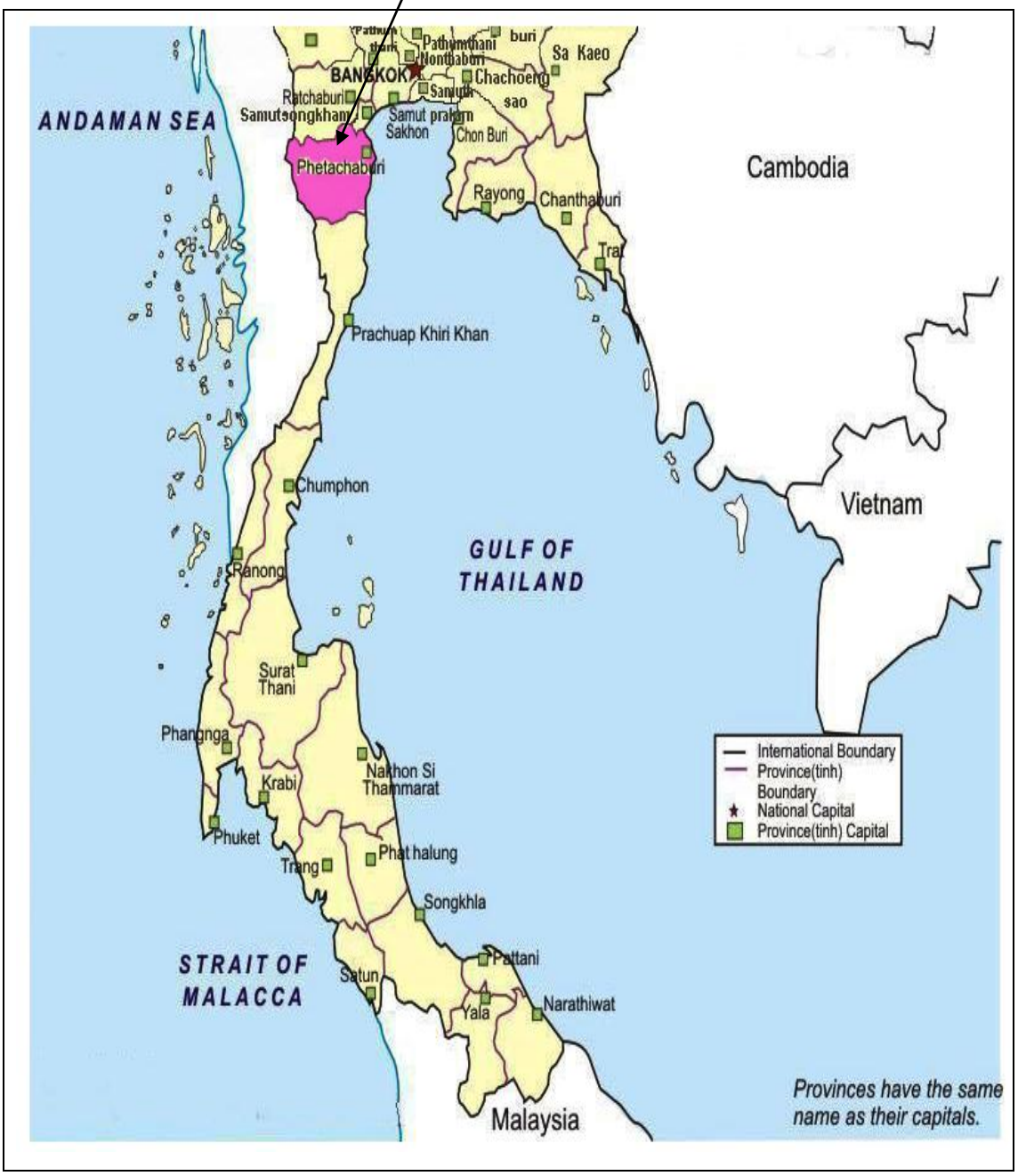
2.1 General information about the studied area

Many documents have provided similar data about the physical features and the history of Bang Khunsai Subdistrict, Ban Laem District, Phetchaburi Province, namely, Silpakorn University Research and Development Institute (2000 in Thai), Wongkae (2004 in Thai), Kamolthip (2005 in Thai), Rattana and Jarin (2008 in Thai) and Bang Khunsai Subdistrict Administrative Organization (2009 in Thai). In this study, these documents are summarized into 2 topics: general information about Bang Khunsai Subdistrict community and specific information about Ban Bang Khunsai M.2 which is the focus area of this study.

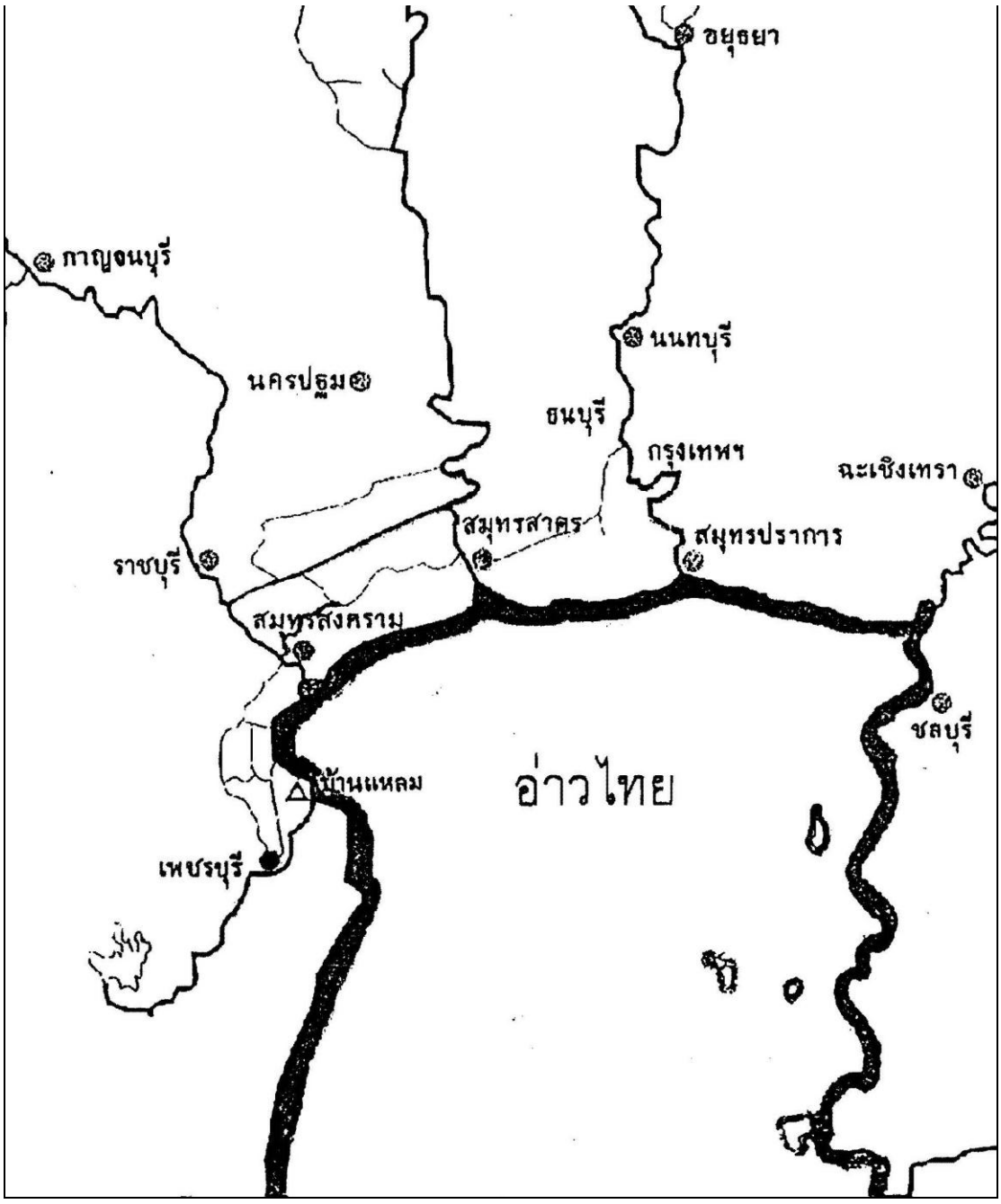
2.1.1 Bang Khunsai subdistrict community

The geographical setting

Bang Khunsai Subdistrict is located in Ban Laem District, Phetchaburi Province. It is about 20 kilometers from the provincial center. The eastern part of this subdistrict meets the upper Gulf of Thailand. Bang Khunsai now consists of 11 villages in an area of about 15,732 rai (25.7 sq km) made up of plains and coastal plains with a mudflat. The mangrove forest makes of about 450 rai, 10 kilometers along the coast. Referring to Bang Khunsai's geographical features, the area can be categorized into 2 main areas: a coastal area and plain area further from the coast, otherwise referred to as the sea zone and the land zone. The differences between the zones have influence on the local people's way of living.



Map 2.1 Location of Phetchaburi Province and the neighboring coastal provinces



Map 2.2 Location of Ban Laem District in Phetchaburi Province

The coastal area has dense mangrove forest with plants like “Sa-mae” and “Kong-kang” along the coast. Next to the mangrove forest is a mudflat about 3 kilometers wide into the sea at the lowest sea level. Data from Mangrove Resources Development Station 6 (Phetchaburi) says that the mangrove forest in Bang Khunsai Subdistrict is one of the most resource-abundant areas in Thailand. The area is, thus, the breeding ground and food source for various marine animals living in the mudflat such as cockles, wedge shells, mullets, crabs, shrimps and others. Furthermore, the area has fertile mud and is Thailand’s biggest natural habitat for cockles. Bang Khunsai Subdistrict, therefore, has been the main food and work source for the locals, and is an important economically, especially for those living in the area (villages M. 1, 2, 3, 4, 8 and 10) including people from nearby provinces. It has been this way for hundreds of years.

The inner plain area (area far away from the coast) is highland, good for agriculture such as rice fields, orchards and animal farms. This area is the location of villages M. 5, 6, 7, 9 and 11.

Social features

Besides the diversity of ecological features, a diversity of ethnicities is also found in Bang Khunsai Subdistrict area. According to the long-told history, the Chinese were the first group of people to settle in Bang Khunsai area because of the abundant resources and the fact that the seaside area was suitable for fisheries. Later, Muslims from Malaysia and Indonesia, as well as Lao Phuan Lao Wiang, and nearby local people came to settle in the area. There is a long-told story that a man named Khun, who came with the first Chinese, once went fishing in a wide canal along which were dense banyan trees or “ton sai”. When he checked on his fish trap in the canal, instead of finding fish like in normal days, there was gold. He took the gold to sell and donated some of the money for building a temple and named it “Wat Sai Thong” (meaning ‘the gold banyan tree temple’) in reference to the dense banyan trees along the canal together with his luck in finding gold. Later, more people immigrated into the area, forming a village. They named the village “Bang Khunsai Thong” which is a combination of Khun’s name and the temple’s name. The name has been shortened into “Bang Khunsai”.

Each ethnic group built their homes in clusters. Most of the Chinese lived in M. 1, 2 and 3. The Muslims lived in M. 4. The Lao groups lived in M. 5 and 6 while local people or those who immigrated from nearby areas mostly lived in M. 7, 8, 9 and 10. The gathering of various races in the community did not cause any problems at all. There were no racial, cultural, or religious conflicts and the people lived dependently together and earned their living from their skills. Nowadays, many traditions and cultures have been combined and blended into a mutual culture as local Thais. This includes the language itself which is Central Thai with a local accent. When a problem occurs, all villagers cooperate in solving the problem locally. An example is a case in which strangers came raking for cockles in their area and damaged the cockles' habitat and disturbed their breeding. The villagers formed a coastal resources conservation group to solve the problem. This led to their widespread recognition as a strong community.

Livelihoods

Most of the villagers living in the seaside villages of M. 1, 2, 3, 4, 8 and 10 are employed in fishing using boats to catch shrimp, crabs and fish and using sliding boards to pick cockles and wedge shells. Some families work in the salt fields in the inner land.

They operate small-scale fisheries, mostly run by families using simple fishing equipment. Collecting cockles and wedge shells with bare hands using a sliding board is a unique method passed-down over generations by professionals in Bang Khunsai community. The fisheries in the area are found in the coastal area and the area within 3 kilometers of the coast where people can find cockles, wedge shells, catfish, dark fin eels, etc. Fisheries in the sea around 3-5 kilometers away from the coast, where people need a boat to go out and catch banana prawns, pink shrimp, blue crabs, jellyfish, mackerels, are found as well (Kamolthip, 2005 in Thai). The villagers can fish all year round because of the diversity of marine life. The size of the catch depends on the season and the animals' life-cycle. Some 6-7 year-old children follow their parents collecting cockles, helping the family earn income. Though the coastal resources are not as abundant as they used to be, many villagers continue to do fishing.

The villagers living inland in villages M. 5, 6, 7, 9 and 11 earn their living in agriculture - rice fields, orchards, and keeping livestock such as cows, chickens, goats as well as fish. Some of the villagers go out to fish the coastal areas. Besides, a number people from every village in this subdistrict work as labourers in salt fields, on fishing crews and in food processing factories in nearby areas. In their free time, most of Bang Khunsai villagers collect cockles and catch fish for food or for extra income.

2.1.2 Ban Bang Khunsai M. 2 : A focus village of the study

The village M. 2 named Ban Bang Khunsai (same name as the M.1 and 3) is one of 11 villages in Bang Khunsai Subdistrict. The northern part of the village is on the coast. According to the community leader and the elderly, this community was formed by the first Teochew Chinese who migrated from Ayudthaya Province, fleeing the Thai-Burmese war. They fled towards the estuary in Samut Prakan Province and later moved into this area (Silpakorn University Research and Development Institute, 2000: 48). The village name comes from the story mentioned earlier.

At the early stage of forming the community, the general feature of Ban Bang Khunsai M. 2 was a basin with white soil created from large amounts of finely broken seashells and barnacles. The villagers call this soil “Din Krasa Khao”. There was a mudflat with a not-so-dense mangrove forest. A canal flowing through the village to the Gulf of Thailand is Klong Bang Khunsai which serves as an access to the sea for local fishermen. More immigrants have settled homes in Ban Bang Khunsai M.2; it can be said that it is one of the most densely populated community of Bang Khunsai Subdistrict. At present, 133 families make up the population of about 633; most of them do small-scale fishing using fishing gear like push nets, trawl nets and gathering cockles and wedge shells. In addition, some people are employees and merchants with only 2 households owning salt fields (Subdistrict Administrative Organization, October 2009).

● Data collection site

Map 2.3 Location of villages in Bang Khunsai Subdistrict area (Bang Khunsai Subdistrict Administrative Organization Obt. 2009)

The significant place in Ban Bang Khunsai M. 2 is the Tai Jiang Joss House with its vegetarian food hall. During Chinese New Year, local villagers of Chinese descent traditionally pay respects to gods here. On important Buddhist days such as the Buddhist Lent and the end of the Buddhist Lent, villagers of M. 2 make merit at Wat Bang Khunsai in a nearby village. The houses and lifestyle of the people in Ban Bang Khunsai M. 2 are like of other rural Thais. The villagers here speak central Thai with a Phetchaburi accent.

In brief, Bang Khunsai Subdistrict is a diverse area with a good coastal ecology. It is, thus, an important area for villagers to earn a living and is the prime factor in retaining the community's rural lifestyle. The Bang Khunsai community demonstrates the life of Thai coastal dwellers. Also, Ban Bang Khunsai M. 2 is among the first villages of Bang Khunsai Subdistrict, where local residents are familiar with the sea.

2.2 Theoretical perspectives

This section discusses the conceptual basis of this study, namely, ethnosemantics and the Sapir-Whrof hypothesis. Theoretical approaches used for analyzing the data - semantic field theory, componential analysis, and folk taxonomy are summarized.

2.2.1 Conceptual basis of the study

2.2.1.1 Ethnosemantics

Ethnosemantics or ethnographic semantics is viewed as a part of cognitive anthropology (Levinson and Ember, 1996: 209), studying the way in which different cultures organize and categorize domains of knowledge, such as plants, animals, and kin and how meaning is structured in different cultural settings in order to understand the cognitive system of any ethnic group. So, studies using this approach are interdisciplinary, involving linguistics and anthropology.

The ethnosemantic approach and its concepts are made clear in the article, "The Ethnographic Study of Cognitive Systems" by Frake (1962/1980), one of the pioneers of ethnosemantic studies. To quote Frake,

> An ethnographer should strive to define objects according to the conceptual system of the people he is studying. Let me suggest, then, that one look up the task of getting names for things not as an exercise in linguistic recording, but as a way of finding out what are in fact the "things" in the environment of the people being studied. This paper consists of some suggestions toward the formulation of an operationally explicit methodology for discerning how people construe their world of experience from the way they talk about it. Specifically these suggestions concern the analysis of the terminological systems in a way which reveals the conceptual principles that generate them.
>
> (Frake, 1980: 2)

From the words quoted above, the main point of Frake's suggestion is that to find out how different people view their world of experience, it can be done by an analysis of their terminological systems. This is an essential enthosemantic approach. Typically, the studies in ethnosemantics are almost exclusively interested on lexical semantics and gathering data on lexical domains. They focus primarily on analyzing features of meaning and describing systems of folk classification over significant semantic domains. There are several methods of analyzing data in an ethnosemantic study. Two common methods are componential analysis and folk taxonomy. They are used in this study

In early stages, ethnosemantic studies have mostly done concerning kinship terms, color terms, taste term, disease term, geographical names, plant and animal names. Later, the scope of ethnosemantic studies broadened to include analysis of the knowledge systems and belief systems of various ethnic groups. (Amara, 2006 in Thai: 82)

2.2.1.2 Sapir-Whrof hypothesis

The Sapir-Whrof hypothesis (also known as the linguistic relativity hypothesis), derives from the views of American anthropological linguists Edward Sapir (1884-1939) and his disciple Benjamin Lee Whorf (1897-1941). The

hypothesis postulates that language influences the thinking of its speakers, which in turn determines the way a person categorizes his thoughts about the world and his experiences. As Whorf (1956: 212-214) noted

> "We dissect nature along lines laid down by our native language…. We cut nature up, organize it into concepts, and ascribe significances as we do, largely because we are parties to an agreement to organize it in this way – an agreement that holds throughout our speech community and is codified in the patterns of our language…."

Sapir and Whorf drew attention to the relationship among language, thought, and culture. Sapir (1949: 90-91) states that "The complete vocabulary of a language may indeed be looked upon as a complex inventory of all the ideas, interests and occupations that take up the attention of the community". Speakers give names to important things in their physical and social environment, and once named, those things became culturally significant.

According to the Sapir-Whrof hypothesis, language and thought are interwoven. Language not only reveals the speaker's worldview but also their culture. This thesis does not seek to address the larger debate on the empirical validity and philosophical implications of the Sapir Whorf hypothesis. Rather, it uses the hypothesis as a starting point to explore and discuss the relation between language (terminology) and culture.

2.2.2 Theoretical approaches of analyzing data

Basic semantic analysis theory, especially the theories of lexical meaning such as semantic field*, componential analysis and folk taxonomy will be used to analyze data.

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* Semantic field theory and componential analysis are employed in this thesis as a practical tool for analyzing the data. Other more theoretically oriented approaches, such as cognitive semantics, could doubtless shed additional light. However, the main thrust of this thesis is descriptive in nature."

2.2.2.1 Semantic field

The field theory of semantics originated with Jost Trier in the 1930s and was later developed by others such as John Lyons in the 1970s. Semantic field theory took the view that words related in any sense belong to the same semantic field. Likewise, the lexical items in a semantic field have sense relations to other lexical items in the same field. The words in a semantic field share a common semantic property.

Lyons's basic concept of the theory of semantic field in terms of sense relations can be cited in his book, "Semantics" (1997). There are various kinds of paradigmatic sense-relations in the lexicon of a language as follows:

1. Complementarity. This is a kind of oppositeness of meaning in which there are only two lexemes involved in the notion of comparison, illustrated by such pairs as single-married, boy-girl.

2. Antonymy. This kind refers to a pair of lexemes differing from each other by being gradable opposites, such as big-small, hot-cold etc. The term contrasts in the sense relation of antonymy, where gradations between the opposites are possible (e.g. big, bigger, very big / small, smaller, very small).

3. Converseness. This also deals with certain systematic sentence transformations, exemplified by pairs of words like husband and wife. If X is the husband of Y, then Y is the wife of X.

4. Directional opposition. This is an implication of motion in one of two opposed directions, such as up-down, come-go.

5. Orthogonal and antipodal opposites. In some sets of lexemes, such as north, south, east and west, there are two kinds of opposition. Each of them is opposed perpendicularly to two others, i.e. 'north' is opposed to 'east' and 'west'. Moreover, each lexeme is opposed to one other diametrically as 'north' is opposed to 'south'.

6. Incompatability. The lexemes which are incompatible might be a non-binary contrast, exemplified by the set of words for the day in a week. To say that X is Saturday excludes X is Sunday, Monday, etc.; hence, Saturday, Sunday, Monday, … , Friday are incompatibles.

7. Hyponymy. This one is the relationship between more specific and more general lexemes. For example, ‘cow’ is a hyponym of ‘animal’, ‘rose’ is a hyponym of ‘flower’, and so on. Hyponymy is class inclusion for which its general term is the superordinate term and its specific term is the subordinate term. The set of terms which are hyponyms of the same superordinate term are co-hyponyms, such as rose, tulip, daffodil, etc. The hyponymy relationship imposes a hierarchical structure and can be represented formally as a tree diagram.

8. Part-whole relations. This kind of sense relation is different from hyponymy, exemplified by ‘arm’ : ‘body’. An arm is not a kind of body but a part of a body.

It is perceived that the semantic field is a theory of lexical organization, which can be used to make weak claims about associative meaning (Murphy, 2003: 95). To conclude this study, I will deal with some of the more important paradigmatic relations of sense which determine the structure of lexical fields, such these are hyponymy, kinds of opposition and contrast, and part-whole relations.

2.2.2.2 Componential analysis

Componential analysis, also called contrast analysis, refers to the description of the meaning of words through structured sets of semantic features or semantic components. This approach is well-known in the field of ethnography or ethnosemantics. It reveals the culturally important features by which speakers of the language distinguish different words in the domain (Ottenheimer, 2006: 20).

The semantic features are the significant characteristics of lexemes to facilitate distinguishing one from the others. Componential analysis often makes use of binary values, which are given as ‘present’ used of a plus-sign [+] or ‘absent’ used of a minus-sign [-] with reference to semantic feature. For example, in the group of words that includes “man, woman, boy, girl, and child” the meaning of each word can be explained to show its semantic features such as human, male, female, adult, and young. The dimension of contrast is gender and generation. However, the word “child” includes two values of gender, male and female. Therefore

this word is marked with both a plus-sign and a minus-sign [±], employed with respect to the values of the variable.

man	[+male]	[+adult]
woman	[-male]	[+adult]
boy	[+male]	[-adult]
girl	[-male]	[-adult]
child	[±male]	[-adult]

Nida (1975: 64-67) offers four linguistic processes employed in componential analysis - naming, paraphrasing, defining, and classification. The process of naming is an important linguistic function to identify what is referred to. Paraphrasing means to spell out the features of any semantic unit by employing types of paraphrases. For example, for the word *uncle*, one may employ a paraphrase to refer to my father's brother or my mother's brother. Defining consists of essentially combining all the various specific paraphrases into a single statement of the particular meaning. And the process of classification is employed in determining the semantic components of any words. This involves grouping together units which have features in common, separating out those units which are distinct from one another, and determining the basis for groupings. For English kinship terms, for example, it is essential to define the dimensions of contrastive feature of sex, generation, lineality, and consanguinity-affinal distinction.

The method of componential analysis is ideally suited to the study of relationship terminologies that belong to the same semantic field or domain. It is mainly useful for finding differences between words with similar meanings. Larson (1984) indicates that componential analysis is good for only some particular groups of words, especially those referring to physical objects or visible things. Connected closely with componential analysis is the study of folk taxonomy.

2.2.2.3 Folk taxonomy

Folk taxonomy refers to the classification of objects or phenomena on the basis of cultural tradition. It is the way peoples make sense of and organize their natural surroundings or the world around them. Folk taxonomy can be revealed by words or terms in language. Hickerson (1980:75) says that one variety of

folk classification system, probably the most commonly occurring in cultural systems, is the taxonomic classification, or taxonomy.

According to Hickerson (1980), a taxonomy is built on the notion of "kind of" or "inclusion", for example, an oak is a kind of tree. Therefore, it is most concerned with the way in which categories are divided into subordinate categories. Hyponymy and contrast are key semantic relations in taxonomic studies. The fundamental structure of taxonomy is a hierarchy of relations among the included sets of meanings. For example

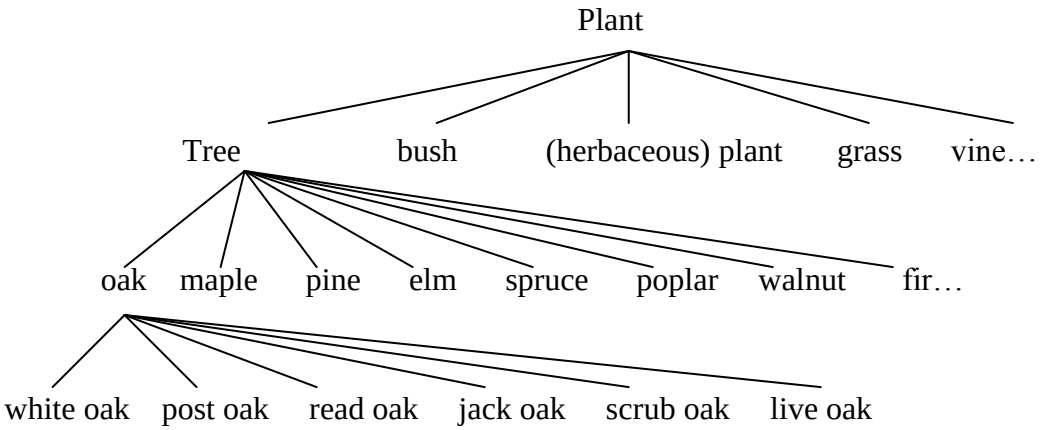


Diagram 2.1 Ethnobotanical taxonomy in English (Hickerson, 1980: 77)

Taxonomic lexical hierarchy is generated by the relationships of contrast on the same level (white oak, post oak, read oak, jack oak, scrub oak, and live oak are contrastive types of oak), but inclusion on the next hierarchical level (all these are types of oak).

As Cruse's writing (1986: 145-147), hierarchic ranks in folk taxonomies typically have no more than five levels, and frequently fewer. These levels are commonly labeled as follows.

unique beginner	(plant)
life-form	(bush)
generic	(rose)
specific	(hybrid tea)
varietal	(peace)

The most common basic level in folk taxonomy is the generic level. This level is the level of the ordinary everyday names for things and creatures such as cat, dog, oak, apple, rose, car, boat, cup, etc. Berlin (1976/1980) express the concept of rank in his study on Aguaruna folk botany, support that hierarchic rank is fundamental to all systems of folk biological classification. In Berlin's view, folk taxonomies have hierarchical levels similar to formal biological classifications of kingdom, phylum, class, order, family, genus and species.

Folk taxonomies are generated from social knowledge and are used in everyday speech. They reflect certain aspects of people's worldview. "Folk taxonomies are distinguished from scientific taxonomies that claim to be disembedded from social relations and thus universal" (wikipedia.org/wiki/Folk_taxonomy). For example, the word /pla:wa:n/ "whale" in Thai, would be included under the class of fish as indicated by the word /pla:/ 'fish'. But in scientific taxonomy, whale is included with humans under the category of mammal. This also reveals differences in the definitional criteria for categories between folk and scientific taxonomies. It has been observed that some areas of a folk taxonomy may be subdivided into a greater number of superorinate-subordinate levels than others. Nida (1975: 92) mentions that the depth of a taxonomy depends primarily upon the extent to which it is an area of cultural specialization. For example, if the society specializes in cattle, the folk taxonomy for cattle is relatively extensive, with several levels and a broad base.

The concept of folk taxonomy can be used for an analysis of both natural kinds (e.g. dog, grass, snow) and cultural kinds (e.g. cup, chair, boat) and applies to all areas of human activity. One classic example is the study on the diagnosis of disease among the Subanun of Mindanao by Frake (1964). Folk taxonomy is becoming of increasing importance in the fields of ethnography, semantics, and others. For this study, an analysis of folk taxonomy will be applied to various semantic fields of Thai coast-dwellers' terminology, especially the fields of plants and animals.

2.3 Related research

In this section, research related to environmental terminology, marine indigenous knowledge, folk taxonomic classification of the environment, and other research based on an ethnosemantic approach are reviewed.

2.3.1 Research related to the environmental terminology

Terminological research concerning the natural environment based on ethnosemantics using componential analysis is found in Watcharaphon (1983 in Thai) and Kamontham (1996 in Thai). Other recent lexical studies about environment, using methodologies other than componential analysis, include Burenhult (2005) and O'Connor (2007) on landscape terms.

Watcharaphon (1992 in Thai) conducted a comparative study of classification of water source terms in 6 provinces of the central and northeastern region of Thailand based on componential analysis methodology. The study shows the same and the different semantic features among water source terms. It is found that the terms of water sources reflect geographical features and also the way of life of population in two regions that are both similar and different.

Kamontham (1996 in Thai) studied the lexicon relating to the community-forest and environmental conservation in Mien language as spoken at Pongtaw Subdistrict, Ngao District in Lampang Province. The lexical items reflecting the idea of community-forest are those pertaining to water, plants, animals, spirits and man. It was found that that the Mien lexicon relating to community-forest reflects the speaker worldview regarding the idea of community-forest and the relationship between language, culture and environment. Environmental conservationism is indicated in beliefs surrounding various ritual ceremonies having to do with the supernatural power which influences the people's way of life.

Burenhult (2005) explores geographical cognition as reflected in landscape terms and toponyms among the Jahai, a group of hunter-gatherers in the Malay Peninsula. The more prominent landscape terms in Jahai are associated with water, landforms, forest, and their mutual relationships. Burenhult reveals that the Jahai

conceptual categories of landscape is primarily expressed by means of metaphorical extension from human domains, notably that of the human body. The Jahai territory is richly endowed with indigenous Jahai place-names. However, some Jahai place-names are borrowed from Malay.

O'Connor (2007) examined landscape terms and place-names of the Chontal region in the state of Oaxaca in southern Mexico, with a focus on terms from Lowland Chontal, a highly endangered language spoken near the Pacific coast. His study presents a general description of the physical geography of the area through terms for water, soils, geomorphic features and orientation. The primary types within the landscape terminology are water and earth. Terms *aja'* 'water' and *amats'* 'earth' are the lexical bases for much of the water-related and earth-related Chontal vocabulary. General terms for geographic features participate in most of the place-names of the region. However, the use of Chontal in conversation and place naming today is ever-dwindling, and the extent Chontal landscape vocabulary appears rather limited.

The research identified above, discussses environmental terms. They reveal relationships between language, cognition and geography, specifically, how people categorize their natural environment. Two of these studies focus on ethnic groups who live closely to the forest, the Mien (Kamontham, 1996 in Thai) and the Jahai (Burenhult, 2005). Kamontham's study reveals the Mien classification of lexicon relating to community-forest. However, she did not discuss the distinguishing features of all word-sets systematically. Watcharaphon's study (1992 in Thai) has influenced me opinion about the dimension of contrast of water source terms. The studies of Burenhult (2005) and O'Connor (2007) make use of the cognitive semantics. Their findings reveal the ethnic group's geographical knowledge. All of these terminological studies did not explore issues of marine environment.

2.3.2 Research related to marine indigenous knowledge

There are some studies discussing local marine knowledge such as Paladej (2003 in Thai), Surachit (2005 in Thai), and Nantaka (2009).

Paladej (2003 in Thai) studied the Moken people of the Surin Islands in Phang-nga province focusing on the indigenous knowledge about the sea and coastal areas, entitled "The world according to the Moken : Reflections from traditional marine ecological knowledge". The study reveals that elderly Moken People have great knowledge and vivid memories of the land and the sea where they earned their living. They can delineate the benefits of the diversity of the ecosystem. They also continue to adhere to their beliefs and customs about coastal and marine resource utilization. These days, the Moken have become more sedentary and their sea excursions are limited due to several factors, resulting in their indigenous knowledge of marine ecology declining in importance and not being passed down to following generations. New Moken generations have turned to work as daily employees in tourism so their lack of indigenous marine ecological knowledge clearly reflects the wide gap between young Mokens (under 25 years) and older Mokens (25 years up). This results in the decrease of Moken sustainable ways of living and their identity as sea nomads.

Surachit (2005 in Thai) provides information about local people who live within three water ecosystems of Mae Klong River in Samut Songkhram Province. Since the Mae Klong Estuary is located at the Gulf of Thailand, it comprises 3 kinds of water: fresh water, brackish water and salt water. Experience living with different water ecosystems provides the Mae Klong people with indigenous knowledge on water and wind. Surachit notes with reference to the Mae Klong people's knowledge of waters, that as the villagers knew the date, the period of the waxing and waning of the moon, and the month, they could tell the hour that the water rose, the overall height of the water and whether the morning water or the evening water would be the highest of the day or equal. This is known as "Na Nam Chao" (morning water season), "Na Nam Yen" (evening water season) and "Nam Song Kradong" (equal water in the morning and the evening). With local wisdom, the villagers categorized the winds, referring to direction, and were able to predict when and from where each wind would come; for instance, the Pattaya wind would come from the south-east, from June to July. Mae Klong people's way of living is thus based on water and wind. Their activities and means of employment were relevantly linked to time and season. For

instance, fishermen would stop fishing and keep their boats on boat stocks during "Lom U-ka" season when the wind was too strong. Inland people knew about water while coastal people needed to know well about both wind and water since they relied on resources in the water. Such knowledge helped people of the Mae Klong to adapt themselves well to the wind and water, and their ecological system.

Nantaka (2009) wrote a thesis on "Indigenous knowledge and natural resource management: Development impacts on the transfer of knowledge of the Urak Lawoi". The Urak Lawoi group in Phuket Province in Southern Thailand was chosen as a case study. This study found that the Urak Lawoi who have traditionally inhabited coastal regions possess indigenous knowledge of marine ecology known as "Arn Nam Cham Lom, Arn Fah Cham Dao" (read water remember wind, read sky remember star) and are used to living together harmoniously with the surrounding ecological system. They observe and classify the surrounding nature and then apply it to their livelihood depended on the sea. For example, when there is a wave-type which Urak Lawoi call "Ngan" or "U-Mak-Pala-Ga", the villagers will not go to collect rock oysters because they know this wave is rather dangerous. Urak Lawoi have methods for controlling the utilization of natural resources through beliefs and traditions. In the community, Urak Lawoi exchange and transfer their knowledge so that all villagers can survive. Nowadays, tourism development and the conservation of the marine environment have impacted on the lives of the Urak Lawoi. Although the young and middle-aged appear to be well adapted to the new economic and social opportunities, the study finds an erosion of indigenous knowledge, resulting in the weakening of ethnic identity.

The review of research related to marine indigenous knowledge indicates that people who are accustomed to the sea or estuarine areas know how to categorize their eco-environmental features, especially the water and wind. Two of these researches studied the ethnic groups, Moken (Paladej 2003) and Urak Lawoi (Nantaka 2009), who have traditionally inhabited coastal regions and practiced a sea-based culture. A part of Paladej's study presents Moken words concerning their marine ecology such as words for geographical areas, waves, seawater conditions, tide, and

depths of the sea. This work directed my perspective of the classification of landform and water around the costal villages in my research. Surachit's study reveals the Mae Klong people's indigenous knowledge concerning water ecosystems in the Mae Klong River basin in Samut Songkhram Province which is close to the Gulf of Thailand. Bang Khunsai Subdistrict which is the area under study for this research is though it is also in the Gulf of Thailand, but the focus of my study is those people who live within the coastal ecology of the mudflats, which is different from other studies. This study highlights the worldview and culture of the local Thai people of this the area.

2.3.3 Research related to folk taxonomic classification

Taxonomies have been extensively studied by anthropological linguists and other ethnoscientists. Previous research related to this study includes Berlin (1966, 1976) and Jacobs (2003).

Berlin and others (1966) studied the native plant names of the Tzeltal-speaking municipio of Tenejapa, Chiapas in Mexico by interviewing native informants. They classified the correspondence between Tzeltal taxonomy of plants and standard botanical classification into three categories - underdifferentiated, one-to-one correspondence, and overdifferentiation. The underdifferentiation category is composed of specific Tzeltal plant names which include more than one botanical species. The one-to-one correspondence category includes specific Tzeltal plant names which correspond in a one-to-one fashion with botanical species. And the overdifferentiation category includes more than one Tzeltal specific plant names mapped to one botanical species.

Table 2.1 Examples of the three categories of Tzeltal specific plant names (Berlin and others, 1966: 273)

Tzeltal specific name	Botanical classification
	Underdifferentiation
ʔahate ʔes	*Archibaccharis flexilis* Blake (Compositae) *Gaultheria odorata* Willd. (Ericaceae) *Ugni Montana* (Benth.) Berg (myrtaceae) *Vaccinium leucanthum* C. & S. (Ericaceae)
ʔičil ʔak’	*Clematis dioica* L. (Ranunculaceae) *Clematis grossa* Benth. (Ranunculaceae) *Serjania* spp. (Sapindaceae)
	One-to-one correspondence
balamk’in	*Polymnia maculate* Cav. (Compositae)
kašlan bok	*Brassica oleracea* L. (Cruciferae)
ɸaʔteʔ	*Ateleia pterocarpa* Sessé & Moc. (Leguminosae)
weʔbalil ɸib	*Marattia weinmaniifolia* Liebm. (Marattiaceae)
	Overdifferentiation
ɸahal ščuʔil čenek’ k’anal ščuʔil čenek’ ihkal šlumil čenek’ cahal šlumil čenek’ sakil šlumil čenek’	*Phaseolus vulgaris* L. (Leguminosae)
k’atk’at bohč sepsep bohč ɸu čahk’oʔ	*Lagenaria siceraria* (Mol.) Standl. (Cucurbitaceae)

In a sample of 200 Tzeltal native plant names, 82 were found to be underdifferentiated, 68 map in a one-to-one correspondence, and 50 are overdifferentiated. Berlin et al.'s inference is that category of underdifferentiation include plants of low cultural significance with little or no utility; category of one-to-one correspondence are plants of moderate cultural significance, used for food, firewood, or other purposes but not cultivated; and category of overdifferentiation are plants of high cultural significance which encompasses all plants intensively cultivated by the Tzeltal. This paper shows that although botanical species may be recognized in folk systems of classification, this is not necessarily reflected linguistically in a one-to-one relation.

Berlin (1976/1980) has presented the Aguaruna folk botanical classification in a part of his article "The concept of rank in ethnobiological classification: some evidence from Aguaruna folk botany". Aguaruna plants are grouped hierarchically into a small number of botanical ranks. Four taxa of life form rank have been described which correspond to 'tree', 'vine', 'herbaceous plant', and 'palm'. Berlin's suggestion is that Aguaruna recognize specific classes of plants primarily because of cultural considerations which bear on the utility of organisms to man. The Aguaruna's view of plants provides additional support the hypothesis that a concept of rank is fundamental in folk biological classification.

Jacobs (2003) introduced an ethnosemantic analysis on the domain of rattlesnakes of Arizona focused on the taxonomic classification of rattlesnakes and rattlesnake attributes. The material presented herein is based on interviewing a person dedicated to educating people about rattlesnakes. As the finding, there are seventeen different types of rattlesnakes in Arizona. The classification of rattlesnakes is dependent on the names and their attributes such as habitat, degree of venomy, physical size, distinct behaviors and color variations, and population sizes.

A review of the work of Berlin et al. and Jacobs shows that folk taxonomic system of plants and animals is reflected from their names and is dependent on understanding their attributes. Folk biological classification can be comparable to

those of scientific. Berlin et al. and Jacobs's studies will serve as a guideline for this research, in an analysis of folk classification of coastal plant and marine animal.

2.3.4 Other research based on an ethnosemantic approach

Some other research on an ethnosemantic approach under the means of componential analysis are following.

Suwilai (1987) wrote an article on "A study of Thai and Khmu cutting words". The study shows that the cutting field in Thai requires 89 components of meaning which can be grouped into four basic classes: characteristics of the cutting instruments, the objects being cut, the cutting actions, and purpose or result of cutting. In Khmu there are altogether 100 components which can be formed in the same way as was done in Thai. The finding is concludes that Thai and Khmu have different semantic structures of lexicon realized by different sets of words expressing cutting activities. This illustrates a different culture.

Anchalika (2000 in Thai) studied taste terms in four Thai dialects: Bangkok, Chiang Mai, Ubon Ratchathani, and Nakhon Si thammarat. She found that there are eight semantic dimensions of contrasts in taste terms including taste bud, state of acid, tongue taste, degree of spiciness, nausea, state of tongue numbness, smell receptive, and oiliness. Each taste term found in each dialect can reflect the food normally consumed in each area.

Gittisak (2000 in Thai) conducted the semantic analysis of verbs of motion in Thai. The research methodology was use of the semantic fields and componential analysis. The study finds that the basic component of the semantic field "make a thing move" are body parts of tools used for moving things, the characteristic of things be moved, the characteristic of moving actions, and the result of moving. The semantic components and the distinctive component of each word are based on these basic components.

Amara (2001) wrote an article on "A componential analysis of kinship terms in Thai." She presented a componential analysis of the basic and non-basic kinship terms. For 17 basic kinship terms, there are five dimensions of contrast

including generation, lineality, age, sex, and paternal side. For 32 non-basic kinship terms, there are three more dimensions of contrast, i.e. sex of the speaker, euphemism, and new marriage added from the dimensions of contrast of the basic terms. This study reveals that each dimensions of contrast play important roles in signifying the reflection of Thai culture through the kinship system.

Pichitra (2004 in Thai) conducted an ethnosemantic study of names and the system of making traditional Sin-Mud-Mee of the Tai Puan in Amphoe Ban Mi, Lop Buri Province. There are five basic names representing the basic categories of Sin-Mud-Mee found. These basic names are differentiated by four semantic dimensions of contrast. Regarding the isolated design names, eighteen names are found. They are differentiated by sixteen dimensions of contrast. As for the Mud-Mee weaving system, it is composed of two sub-systems: the Mud-Mee basic weaving system and Mud-Mee design system. The design names of Mud-Mee reflect three aspects of the lifestyle of The Tai Puan in Amphoe Ban Mi, Lop Buri: closeness to nature and agriculture, faith in Buddhism, and certain cultural objects.

Watit (2005 in Thai) studied rice terms and the conceptual system of rice in Southeast Asian languages. Terms were compared to find distinctive features by methodology of componential analysis. The finding shows that the rice terms in five languages including Vietnamese, Malay, Burmese, Hmong and Thai are distinguished by two significant dimensions of contrast: being plant and being food, which are common among the five languages. About the conceptual systems of rice, only Thai speakers consider rice of different features the same token, as represented by a single generic rice term. Whereas the speakers of the other languages conceptualize rice of different entities, as represented by numerous terms.

Piyaluck (2006 in Thai) conducted an analysis of the semantic components of terms referring to fighting techniques in Muay Thai. The finding reveals that, firstly, there are five terms for basic skills of Muay Thai differentiated by two semantic dimensions of contrast: body parts and sole of the foot. Secondly, there are thirty names of single skills in Muay Thai differentiated by five semantic dimensions of contrast: body parts, sole of the foot, path, manner of body parts, and methods.

Thirdly, there are eighty seven names of complex skills in Muay Thai differentiated by six semantic dimensions of contrast: single skills, offensive fight, defensive fight, target, application, and tactics. The analysis of the names for fighting techniques in Muay Thai reflects the system of Thai ways of fighting and also five aspects of Thai people's everyday life: weapons, animals, ways of living, natural phenomena, and the influence of Ramayana.

Supapas (2006) studied Thai regional cooking terms. Bangkok, Chiang Mai, Ubon Ratchathani, and Suratthani are the representative location. An analysis of the data reveals 102 cooking terms (31 terms for Central Thai, 27 terms for Northern Thai, 21 terms for Northeastern Thai, and 23 terms for Southern Thai). All these terms could be classified, based on the heat source method of international standard, into three groups: moist heat method, dry heat method, and dry heat using fat method. The tables of semantic components and parameters of the four regional cooking terms show the similarities and differences of each term.

Kantima (2007 in Thai) conducted a study of haptic terms and terms expressing attitudes to touch in Thai. The results of the study show that in Thai there are twenty-five basic haptic terms representing twenty-four basic haptic categories e.g. /khrukhra/ 'rugged', /riap/ 'smooth', /sa:k/ 'rough', etc. The meanings of all these basic haptic terms are differentiated by four major dimensions of contrast: substance, surface, wetness, and temperature. The analysis of terms expressing attitude toward touch indicates that they are classified into three groups according to the meanings: positive, negative, and neutral terms. The ethnosemantic approach used in the analysis was very effective in revealing the distinctive system of perception of touch reflected in Thai, which may be different from that reflected in other languages.

Manasikarn (2007 in Thai) studied terms for spirits of the Thais in Wat Suan Kaew community, Tambon Bang Len, Amphoe Bang Yai, Nonthaburi Province. The finding shows that there are 59 ghost terms representing 52 types of ghost. Some ghost types are represented by more than one term. There are ten semantic dimensions of contrast in ghost terms including form, appearance, good/evil, condition of death, dwelling, duty, age, food, gender, and specialty. All the ghost terms can be categorized

into six hierarchical classes: unique beginner, life-form, generic, specific and varietal. Thai people conceive ghosts as human. Indeed, most types of ghosts have a human shape and live closely to humans. Like humans, they are distinguished by their kindness or badness, sex, age, dwelling place, and the food they take.

Kosin (2009 in Thai) studied cooking terms in Northern Thai. The finding shows that there are 48 cooking terms. The four primary semantic dimensions of contrast among terms are purpose, how to make food edible, water, and oil. The secondary dimensions are time, adding chili paste, kind of chili paste, equipment, and ingredient. A folk taxonomy of all cooking terms shows that the unique beginner term is เญี๋ยะ-กิ๋น /ɲia˥˩ʔ/ ‘to cook’. The level under the unique beginner is that of generic cooking terms composed of twelve terms. The rest are twenty-nine specific cooking terms. The conceptualization of cooked food in Lanna is divided into two kinds: food cooked with heat and food cooked without heat.

Sasitorn (2009 in Thai) studied the system of kinship terms in Suai (Kui-Kuai) spoken by different age groups in Sisaket Province. The results of this study show that Suai (Kui-Kuai) kinship terms are differentiated by five dimensions of contrast: generation, lineality, age, parental link, and sex. The number of Kui kinship terms and Kuai kinship terms are different. There is no variation in the kinship system between the different age groups. An analysis of the frequency of the kinship terms used by the two age groups reveals that Suai speakers of different ages are influenced by standard Thai, Northeastern Thai and Khmer. It implies the tendency of language change in Suai due to Thai influence.

Puncharee (2010) studied Dara-ang (Palaung) kinship terms by means of componential and structure analysis in order to discover the relationships between the language and culture of the Dara-angs. Lexically, Dara-ang kinship terms are based on 15 basic kinship terms, which are composed of a single word. The non-basic kinship terms are compound words that use the basic kinship terms as a head. Structurally, there are two types of Dara-ang kinship terms: compound words, and cliticised words. The significant components used to identify kinship terms were generation, gender, lineality, age, and marriage. Dara-ang kinship terms society reveal many aspects of

their social lives- seniority, family, marriage form, labor division between Dara-ang men and women, and interrelationships between ethnic groups.

All of research identified above, present the componential analysis for one semantic domain and mainly focus on basic culture e.g. kinship terms (Amana 2001, Sasitorn 2009, and Puncharee 2010), cooking terms (Supapas 2006 and Kosin 2009), and taste terms (Anchalika 2000). Only Manasikarn (2007) and Kosin (2009) categorize terms into taxonomic classes. I reviewed these works in order to synthesize the use of the theoretical methodology.

CHAPTER III
RESEARCH METHODOLOGY

This chapter outlines the research methodology consisting of four major steps: research preparation, data collection, data organization, and data analysis. Each of these steps includes further steps, the details of which will be provided. Finally, some problems and limitations regarding the study are also mentioned.

3.1 Research preparation

3.1.1 Documentary review

Documents on the linguistic concepts and theories relating to this study, related researches and community information have been reviewed from various sources in order to understand the concepts and theoretical methodology needed and to gain more information for the study.

3.1.2 Community survey

The researched conducted a general survey of the focus area: Bang Khunsai Subdistrict community, Ban Laem District in Phetchaburi Province. Observations were made about the area's physical features, the villagers' lifestyle, and other general information was gathered in order to evaluate the suitability of the focus area. Bang Khunsai Subdistrict is a large subistrict with 11 villages. Because of the limited time for the study and the need for in-depth interviews, the researcher chose to focus on a smaller area of the community. The village at M. 2, named "Ban Bang Khunsai", was chosen as the data collection site because the reviewed documents and information gained from the villagers suggested that village M. 2 was among the first villages formed in the subdistrict, it is on the coast where the villagers live in densely-populated neighborhoods and the villagers earn their living doing small-scale fishing. Information from Bang Khunsai Subdistrict Administrative Organization (2009 in

Thai) confirms that the village M. 2 is one of the villages where the villagers do the most fishing in Bang Khunsai Subdistrict. The researcher contacted the village headman and related governmental officials in the area, to inform them about my research and what to do in the area, and to seek approval for temporary residence.

3.1.3 Framework definition

The framework of the study was defined. Lexical items concerning natural environment will be studied in six domains, namely landform, soil, water, wind, plants, and animals. Each lexical domain will be covered within some of the principal dimensions as shown in the following table and all these are related to the coastal area.

Table 3.1 Lexical framework of the study including lexical domains and principal dimensions

Lexical domain	Principal dimension
Landform	sea and nearby water sources, forests, and other geographical features which dominate the landscape
Soil	soil types and related others
Water	water phenomena, water condition, and related others
Wind	wind types, wind condition, and related others
Plant	local coastal plant names
Animal	local marine animal names

3.2 Data collection

3.2.1 Data collection methods

Lexical data and information on the socio-culture context of the coast-dwellers were obtained during the fieldwork. The researcher stayed in the area under study to collect data from local people. Seven locals, with good indigenous knowledge and earning their living in the area, especially in fishing, aged at least 35 years old, were selected as key informants. The data were also elicited from several other members of the community, not only from the key informants.

To elicit lexical data in the field, the researcher used mainly the methods of interview and observation. Various interview techniques were used.

3.2.1.1 Interview

The main way of gathering data was to talk to the key informants and other villagers and ask them details in order to determine particular lexical items. It was often a casual conversation, not a formal interview. Through semistructured interviews, a list of topics within the lexical framework was prepared and used as a guideline. Some questions had been prepared before each interview. Additional questions arose during the course of the discussion. In-depth interviews were held with key informants to find out the meaning of each lexical item in the insider's view.

There were both personal and small group interviews used for data collection. Group interview in this study refers to talking with two or more informants and or other villagers, at the same time time, at someone's house. This can be a useful way to gather detailed data. For example, when a person cannot recognize or is not sure about information or some lexical term for something, another person in the group can contribute or help to share their knowledge. This leads to the discovery of more explicit data.

Sometimes, a field interview was conducted. This consisted of entering the mangrove or some other area of the village or going out to sea on a fishing boat with an informant, listening to him and asking him about the surroundings such as plants, animals and other things related to this study. The information was noted down during the talk. Field interviews allow informants to talk more about their perception of the environment around them and their livelihood.

Real objects, pictures and photographs taken during data collection were used as complementary aids during the interviews. A tape recording was done for long interviews.

3.2.1.2 Observation

The researcher observed what the villagers did and how they used the coastal area and natural resources and what they called things during

conversations, so as to ask about the words. This meant also talking with villagers who were not necessarily key informants. Sometimes, participant observations were conducted during which the researcher participated in their activities such as selecting marine animals and cooking. While joining in the activities, the researcher would observe and ask for information, and try to record as much as possible for later inquiries about words.

3.2.2 Data collection process

At the beginning of the fieldwork, the researcher was drawn into a broad range of discussions with local people to learn about the villagers' general lifestyle and to observe what they did. After that, the researcher would elicit lexical data gained from the conversations with informants and other villagers, about their experiences in making a living, marine occupations, perceptions about the natural surroundings concerning with each studied domain, other local knowledge about marine ecology, including their marine beliefs and traditions. The researcher collected as many key words or specific terms as possible (all the different marine animal terms, for example) learned from direct questioning and from discourse data and asked about each word's meanings in detail.

After the folk data of local terms for marine animals and coastal plants had been obtained, the researcher studied common Thai names and the scientific names of those referred to by local people from research documents, taxonomy books of marine zoology and coastal botany, and also from relevant websites. Moreover, the researcher asked for information about coastal plants and marine animals from specialists at the Mangrove Resources Development Station 6 (Phetchaburi), an office in the Bang Khunsai area, and also at the Marine and Coastal Resources Research Center for the Upper Gulf of Thailand, located in Samut Sakhorn Province, both of which are under the Department of Marine and Coastal Resources. Pictures and photographs were used with the inquiries about coastal plants and marine animals.

3.2.3 Time setting for field data collection

To collect data, fieldwork was conducted eight times from November 2009 to December 2010. The researcher stayed in the village for about two weeks each time

in the home of a local member of Ban Bang Khunsai M. 2 Subdistrict Administrative Organization who was also a key informant.

3.3 Data Organization

3.3.1 Word transcription

Lexical data on each word or term are transcribed into International Phonetic Association (IPA) symbols in Thai phonological system together with in Thai writing. According to Ruengdej (1982 in Thai) and Somsonge (2000 in Thai), the Thai dialect with Phetchaburi accent, which is the language of the people in the area under study, is classified as Central Thai. Phonemically, Thai dialect with a Phetchaburi accent can be presented in the Central Thai phonological system which is the same as standard Thai as follows.

Table 3.2 Thai consonant phonemes and letters

	Bilabial	**Alveolar**	**Palatal**	**Velar**	**Glottal**
Plosive unaspirated voiceless	p ป	t ต, ฏ	c จ	k ก	ʔ อ
aspirated voiceless	p^h พ, ภ, ผ	t^h ท, ธ, ถ, ฐ, ฑ, ฒ	c^h ช, ฉ, ฌ	k^h ค, ข, ฆ	
voiced	b บ	d ด, ฎ			
Fricative	f ฟ, ฝ	s ซ, ศ, ษ, ส			h ห, ฮ
Nasal	m ม	n น ณ		ŋ ง	
Lateral		l ล ฬ			
Trill		r ร			
Semivowel	w ว		y ญ, ย		

All of these consonants can occur as an initial consonant, but only /p, t, k, m, n, ŋ, w, y/ can occur as a final consonant.

Table 3.3 Thai vowel phonemes and markers

	Front vowel	**Central vowel**	**Back vowel**
Monothongs High	i iː –ิ –ี	ɨ ɨː –ึ –ื	u uː –ุ –ู
Mid	e eː เ–ะ เ–	ə əː เ–อะ เ–อ, เอิ-	o oː โ–ะ โ–
Low	ɛ ɛː แ–ะ แ–	a aː –ะ , –ั –า	ɔ ɔː เ–าะ –อ
Diphthong	ia เ–ียะ	ɨa เ–ือะ	ua –ัวะ

Table 3.4 Thai tone phonemes and markers

Mid tone	**Low tone**	**Falling tone**	**High tone**	**Rising tone**
unmark	◌่ (-◌่)	◌้ (-◌้)	◌๊ (-◌๊)	◌๋ (-◌๋)

3.3.2 Word arrangement

All lexical words or terms are compiled and later they are arranged into the specific semantic domains, or area of meaning according to research framework in which are domain of landform, soil, water, wind, coastal plant, and marine animal.

3.4 Data analysis

The data analysis starts with categorization of the word-sets in the semantic domains based on basic principle of the theory of semantic field. Inside each specific semantic domain, lexical words or terms are classified into meaning subset (subfield) according to paradigmatic sense-relations such as antonymy, hyponymy, part-whole relations and so on. For example, the domain of water is sub-classified into

the subset of water types, cycles, seasons, conditions, and others. Subsequently, lexical words will be analyzed based on methodology of componential analysis and folk taxonomy.

3.4.1 Use of folk taxonomy

Folk taxonomy is used for analyzing the sets of words or terms related to the concept of hyponymy. The taxonomic hierarchy for words is displayed as a tree diagram showing how the words are related to one another. The researcher makes use of folk taxonomy analysis mainly for sets of words such as kinds of coastal plants and marine animals, soil and wind types, and others.

3.4.2 Use of componential analysis

Componential analysis is used to identify dimensions of contrast and to determine semantic components used to distinguish the meanings of words or terms in the same set, how they share the meanings and what the contrasts are. The researcher used of componential analysis in sets or pairs of words such as water sources, soil types, water types and wave, wind types, and coastal plants and marine animals. To analyze the components of meaning, three semantic features or semantic components are proposed in this study; binary features, multiple features, and unique features.

Binary features are semantic features which come naturally in pairs and can assume one of only two possible values. Such features are marked with a sign [+] or [-] to distinguish between the positive and the negative values of what is referred to as a feature. For example folk terms for soil type, /le:n/ (เลน) is fluid and /dinda:n/ (ดินดาน) is not fluid. The distinctive feature of these terms is represented as below.

/le:n/ (เลน) [+fluid]

/dinda:n/ (ดินดาน) [-fluid]

Multiple features are semantic features which do not appear to be dichotomous but appear in multiple equipollent contrasts. This is only the use of a plus-sign [+] to indicate the positive values of the features. A minus-sign [-] is not used because multiple features are non-binary values. For example folk terms for two

kinds of mantis shrimp, /kâŋ kɛ̂:w/ (กั้งแก้ว) with white colored body and /kâŋ kada:n/ (กั้งกระดาน) with dark brown colored body. The distinctive feature of these terms is represented as below.

/kâŋ kɛ̂:w/ (กั้งแก้ว) [+white colored body]

/kâŋ kada:n/ (กั้งกระดาน) [+dark brown colored body]

Unique features are semantic features of which only one of particular type exists. Such features are marked with a plus-sign [+] to indicate that the feature in question is present. For example, a term /p^{h}rɛ̂:k/ (แพรก) specifically refers to water source diverging from a canal into an empty field. Unique feature of this term is represent as [+diverging from a canal into an empty field].

It is noted that the binary, multiple, and unique features may be presented together in a term. The componential features with values of the variable which have both positive and negative values, are marked with a sign [±].

Analysis of the cultural reflections through terminology was done after analysis of the semantic components of words and folk classification for the environment in all of the domains under study. Finally, the research outcomes are concluded and presented in the structure chapters.

3.5 Some problems and limitations regarding the study

A problem occurring during the fieldwork in the studied area was that most villagers spent a lot of time out at sea fishing or in the coastal area every day but the time out working varied each day depending on the tide. During the day, they would go fishing when the tide was out and come back when the tide was in. Therefore, on some days they went fishing in the morning and came back in the evening. On another day, they went fishing at around noon and came back at around midnight. If they went out in the evening, they would come back at around dawn and would spend the rest of the day sleeping or doing other activities, and then preparing

start to go out fishing again. This happens all year round. For this reason, the researcher could only collect data from key informants for a very limited time each day. It required the researcher to make several appointments with key informants and to spend extra days collecting data on each field trip. It should be noted that the researcher was unable to follow the informants or other villagers when they worked out at sea or in the coastal area because of the inherent danger.

Studying ecological words, especially the names of marine animals, sometimes needed pictures or photographs as tools for interviews, clarification, and for checking with the villagers, including for the researcher's own base data. However, some creatures could not be photographed. For example, some species of sergestid shrimps (Acetes japonicus) that local villagers refer to as kinds of /k^hɔ:y/ (เคย), are very small and can only be found at unpredictable times.

CHAPTER IV
TERMS AND CLASSIFICATION OF LANDSCAPE

This chapter reveals how the Thai coast-dwellers of Ban Bang Khunsai perceive and categorize the landscape in which they live through their terminology, including terms for landform, soil, water, and wind respectively; plants and animals will be discussed in the next chapter. Lexical words founded in the studied area will be listed along with their cultural meanings and identified in relation to their typical way of classification.

4.1 Terms for landform

Along the coast of Bang Khunsai Subdistrict, there are mangrove forests consisting mainly of /koːŋkaːŋ/ (โกงกาง) and /samĕː/ (แสม) trees. The foreshore area consists of mudflats. At the rising tide, the area is virtually flooded. On the other hand, when the tide is out, the dry mudflats can be seen for approximately 3 kilometers from the shore.

Figure 4.1 The mudflats area at the low tide

The local villagers are familiar with the mudflats because they have been living close to them and reaping benefits from the area for a long time. They also have the ability to identify geographical features which dominate the landscape. There are general names or terms for each landform related to the sea and to the nearby land as mentioned below.

4.1.1 Sea type and related geographical localities

The villagers have classified the sea into two types; namely, /t^{h}ale:tî:n/ (ทะเลตื้น) ‘shallow sea’ and /t^{h}ale:lɨ́k/ (ทะเลลึก) ‘deep sea’ based on their physical qualities and benefits. The sea in Bang Khunsai Subdistrict is regarded as /t^{h}ale:tî:n/ (ทะเลตื้น) ‘shallow sea’ which is different from /t^{h}ale:lɨ́k/ (ทะเลลึก) ‘deep sea’. The classification of the sea by the villagers can be shown in the following hierarchy.

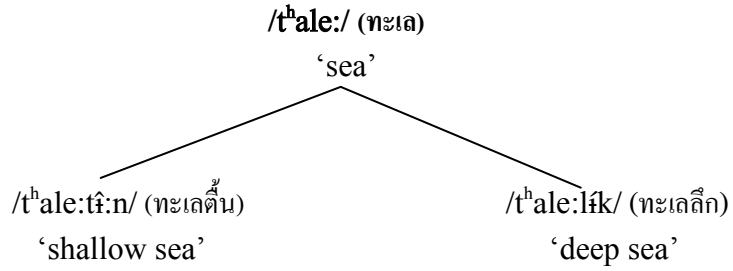


Diagram 4.1 Folk classification of the sea

The term **/t^{h}ale:tî:n/** (ทะเลตื้น) ‘shallow sea’ refers to the sea with a large foreshore area. Towards the sea, the foreshore maintains the same level before gradually sinking. When the water is low, a large flat emerges out of the sea. Sea with mudflats, such as that of Bang Khunsai Subdistrict, or with a foreshore area consisting of a mixture of mud and sand called /sa:y k^{h}î:pèt/ (ทรายขี้เป็ด) ‘duck feces-sand’, is identified as /t^{h}ale:tî:n/ (ทะเลตื้น). Generally, /t^{h}ale:tî:n/ (ทะเลตื้น) has softer and smaller waves, compared with /t^{h}ale:lɨ́k/ (ทะเลลึก) ‘deep sea’. The closer it is to the shore, the

softer the waves. In the area of this sea type, fishing activities can take place not far from the foreshore known as coastal fishing.

The term **/tʰale:lɨ́k/** (ทะเลลึก) ‘deep sea’ refers to the sea with a narrow foreshore area. When the water is low, a plot of sand emerges not far from the shore. Offshore, the land sinks down forming a pan-like shape resembling an inland basin. In this type of sea, the waves stronger than in the /tʰale:tɨ̂:n/ (ทะเลตื้น). Mostly, sea with a beach is classified into this type. In the /tʰale:lɨ́k/ (ทะเลลึก), fishing activities are not possible in the foreshore area. However, fishing is possible in the deeper areas away from the shore.

A dimension of semantic contrast which is a characteristic of the different descriptions of the sea is classified according to the villagers’ perspective; including, the width of foreshore area at the time the tide receding, the slope of the foreshore, the physical qualities of foreshore area, the strength of the waves, and also style of fishery related to the sea.

/tʰale:tɨ̂:n/ (ทะเลตื้น) ‘shallow sea’	**/tʰale:tɨ́:n/ (ทะเลลึก)** ‘deep sea’
+wide foreshore area	- wide foreshore area
+foreshore sinking into the sea	- foreshore sinking into the sea
+foreshore area being mudflat	- foreshore area being mudflat
- stronger waves	+stronger waves
+coastal fishing	- coastal fishing

Geographical localities and landform which dominate the landscape are identified. Some localities have been given specific place-names, or toponyms, by the coastal residents. General terms for each landform, a feature of the earth’s surface, such as a plain, cape, bay, and others are shown in Table 4.1. Folk definition for each term in detail can see in an Appendix A.

Table 4.1 Terms for geographical localities and landform in the sea area

Terms	Gloss	Brief folk definition
/fàŋ/ (ฝั่ง)	shore	Land bordering the sea, river and canal
/c^{h}a:yfàŋ/ (ชายฝั่ง)	coast	An area from the shore to a place bordering the farthest range of sea tide with the regularly inundated land.
/nɔ̂:k c^{h}a:yfàŋ/ (นอกชายฝั่ง)	offshore	An area extending seaward counting from where the land bordering the farthest extent of the sea.
/c^{h}a:yt^{h}ale:/ (ชายทะเล)	seaside	The land close to the sea or nearby.
/c^{h}a:y pà:/ (ชายป่า)	borders the end of mangrove forest area	Borders of the end of forest area, marking an entrance to the forest. Villagers usually identify positions in the sea in reference to mangrove forest border.
/hŭapà:/ (หัวป่า)	beginning of mangrove forest	A part of the mangrove forest at the beginning of canal or of a dug-up waterway at the point where boats travel in or out to sea. Tall trees grow in high density in this area.
/ná:m nɔ̂:k/ (น้ำนอก)	literally, 'outside-water'	A distance of 2 kilometers into the sea from the shore.
/k^{h}úŋ/ (คุ้ง)	bend of watercourse	A curved area close to the sea or bend in the river.
/lɛ̌:m/ (แหลม)	cape	A long, large piece of land jutting out into the sea.
/hŭalɛ̌:m/ (หัวแหลม)	headland (head of the cape)	The end point of land jutting out into the sea.
/hà:t/ (หาด)	beach	An area sloping into the sea, spanning in length across the shore, able to be walked on.
/hŭak^{h}ò:t/ (หัวโขด)	specific place-name	A specific place-name for the coastal area around the entrance of Bang Khunsai canal connecting with the sea.
/kɔ̀ʔ/ (เกาะ)	island or dune above water	A piece of land surrounded by the sea or a sand dune above water when the tide is down surrounded by water where people can walk.
/ʔà:w/ (อ่าว)	bay, gulf	A large area of the sea which extends into surrounding land.
/pà:k (mɛ̌:)ná:m/ (ปากน้ำ/ปากแม่น้ำ)	river entrance	A part of the river connecting to the sea, serving as a route for ships to travel back and forth.

Figure 4.2 Geographical localities and landforms of the coastal area in Bang Khunsai Subdistrict.

It is noted that the geographical term /c^{h}a:yfàŋ/ (ชายฝั่ง) and /c^{h}a:yt^{h}ale:/ (ชายทะเล) according to local coastal villagers have a different meaning from those in various Thai dictionaries. According to villagers, the term /c^{h}a:yfàŋ/ (ชายฝั่ง) or /c^{h}a:yfàŋ t^{h}ale:/ (ชายฝั่งทะเล) refers to an area from the shore to a place bordering the farthest range of seawater with the once-underwater land, while this term in the Royal Thai dictionary means the area upward from the shoreline. The term /c^{h}a:yt^{h}ale:/ (ชายทะเล) according to villagers, it refers to the land close to the sea or nearby, while this term in the Royal Thai dictionary means the area bordering the lowest range of seawater and the farthest range of seawater (the area between the lowest tide that led up to the maximum).

The locals' concept of the landform called /hà:t/ (หาด) is that of an area spanning the length and breadth of the shore, and firm enough to be walked on. The term does not only refer to sand beach. As the locals informed, in the past, the shore on Bang Khunsai Subdistrict was /hà:t/ (หาด) 'beach' made up of fragments of shells, locally called /hà:t krasá:/ (กระซ้า) 'Kra-za beach'. In the locals' view, it was more beautiful than conventional beaches. Taking a walk on /hà:t krasá:/ (หาดกระซ้า) was possible without the fear of getting stuck in mud. However, the site no longer exists. For the shore area being muddy, it is not locally called /hà:t/ (หาด) at all because it is impossible to walk on. The detail for term is described in Appendix A.

4.1.2 Identification of sea and nearby water sources

Other local water sources, not far from and receiving water from the sea as well, are classified by the features and named differently for folk definition, as seen in Appendix A. From the villagers' perspective, dimensions of contrast between different types of water sources include shape of water source, its width, length, depth, condition and origin as shown in Table 4.2 respectively. In addition, unique features are ascribed to some specific water terms.

Table 4.2 Semantic features of terms for water sources

Semantic features / Terms	being in course	wide / large	long	deep	never dry	natural source	running through provinces.	running through subdistricts or districts	diverging from a canal into an empty field	Running along the village or the field	Running along the sea
/t^{h}ale:/ (ทะเล)	-	+	+	+	+	+	+				
/mɛ̀:ná:m/ (แม่น้ำ)	+	+	+	+	+	+	+				
/k^{h}lɔ:ŋ/ (คลอง)	+	±	+	+	-	±		+			
/p^{h}rɛ:k/ (แพรก)	+	-	+	-	-	+			+		
/mɨ̌aŋ/ (เหมือง)	+	-	±	-	-	-				+	
/rɔ̂:ŋ/ (ร่อง)	+	-	+	-	-	-					+
/bɔ̀:/ (บ่อ)	-	±	-	-	-	-					
	Binary features						Unique features				

Terms for local water sources /rɔ̂:ŋ/ (ร่อง) and /mɨ̌aŋ/ (เหมือง) are considered to be meaningful specifically in the local culture, particularly /rɔ̂:ŋ/ (ร่อง) which refers to the water source in the sea. **/rɔ̂:ŋ/ (ร่อง)** 'waterway' refers to a dug-up waterway or water channel along the coast for the transportation for fishing boats from villages to coastal areas when the tide is down. /rɔ̂:ŋ/ (ร่อง) is as moderately wide as a canal but shallower. It is approximately 3 kilometers in length from the coast out to the furthest reaches of the receding water. When the tide is down from the foreshore, /rɔ̂:ŋ/ (ร่อง) water deposit still remain. Re-digging is done if /rɔ̂:ŋ/ (ร่อง) is considered too shallow. On the other side of /rɔ̂:ŋ/ (ร่อง), there are poles called /má:ykuy/ (ไม้กุย). These are trunk-length palm trees, erected separately in rows to mark a border of the waterway. Generally, 5-6 /má:ykuy/ (ไม้กุย) poles along a /rɔ̂:ŋ/ (ร่อง).

/mɨaŋ/ (เหมือง) refers to a man-made water channel, directly connecting with sea or canal, or a dug channel on the border of mangrove forest up to which the water can reach. It is dug to irrigate rice fields and salt pans. It also serves as drainage, taking excess water out of the field. /mɨaŋ/ (เหมือง) is small and shallow. Its length varies depending on geographical features of an area. /mɨaŋ/ (เหมือง) has had one end. Some part of it might lack water altogether and other parts are dry up when the water in it is drained. /mɨaŋ/ (เหมือง) is found in villages where there are either rice fields or salt pans.

/rɔ̂:ŋ/ (ร่อง)

/mɨaŋ/ (เหมือง)

Figure 4.3 Water sources locally called /rɔ̂:ŋ/ (ร่อง) and /mɨaŋ/ (เหมือง)

4.1.3 Mangrove forest

Any area where mangrove trees and other kinds of trees grow in large number and covers a rather wide range of land is locally referred to as /pà:/ (ป่า). This means the mangrove forests. Mangrove forests are found at the border of the coastal area and other areas where the sea tides can reach. The long-tailed macaque known as /liŋ samɛ̌:/ (ลิงแสม) is usually found in thick mangrove forests. The area of mangrove forest in Bang Khunsai Subdistrict an expand 100-150 meters from the coast into the sea.

Local coastal villagers identify the type of mangrove forest according to the kind of trees growing in majority in that particular area. For example, where there are /samĕ:/ (แสม) trees is called /pà:samĕ:/ (ป่าแสม) or Samae forest. A majority of /ko:ŋka:ŋ/ (โกงกาง) trees is called /pà:ko:ŋka:ŋ/ (ป่าโกงกาง) or Kong-kang forest. /pà:tabu:n/ (ป่าตะบูน) or Tabun forest is where /tabu:n/ (ตะบูน) trees are most abundant. However, the name, /pà:c^{h}a:yle:n/ (ป่าชายเลน), is a general term for forests close to coastal areas, regardless of what tree species growing there. The villagers claim that the term is an official one.

From the local villagers' perspective, /pà:samĕ:/ (ป่าแสม) 'Samae forest' is of natural origin. It is not necessary to plant /samĕ:/ (แสม) trees because they grow naturally. In nature, /samĕ:/ (แสม) seeds are able to float along with the current before reaching suitable land and germinating. Meanwhile, /pà:ko:ŋka:ŋ/ (ป่าโกงกาง) 'Kong-kang forest' is artificially grown in many areas because /ko:ŋka:ŋ/ (โกงกาง) trees do not reproduce easily, compared with /samĕ:/ (แสม) trees. /ko:ŋka:ŋ/ (โกงกาง) pods, which fall and stick in the mud around the trees are able to germinate but if the pods are taken to coastal area for planting, it is likely that they would be washed away by sea tide.

Thus, significant semantic features used to contrast /pà:samĕ:/ (ป่าแสม) from /pà:ko:ŋka:ŋ/ (ป่าโกงกาง) according to the locals are as below.

/pà:samĕ:/ (ป่าแสม)	**/pà:ko:ŋka:ŋ/ (ป่าโกงกาง)**
+ /samĕ:/ trees as its majority	+ /ko:ŋka:ŋ/ trees as its majority
+ natural forest	± natural forest

4.1.4 Geomorphic features

Local coastal villagers identify geomorphic features, particularly of the sea area, by different terms. Geomorphic features pertain to the forms of the earth's surface. For example, the coastal locals are aware that the strength of waves varies depending on the geomorphic features of the seashore.

/tʰîːdɔːn/ (ที่ดอน) or **/dɔːn/** (ดอน) ‘highland’ refers to ground higher than the surrounding area. When waves approach /tʰîːdɔːn/ (ที่ดอน), they increase in strength.

/tʰîːlûm/ (ที่ลุ่ม) or **/lûm/** (ลุ่ม) ‘lowland’ refers to a ground lower than the surrounding area. It can be reached by water. As waves approach the low land, the strength of the waves diminishes.

/tʰîːrâːp/ (ที่ราบ) ‘plain’ refers to land of the same level as the surrounding area.

/tʰîːlàːt/ (ที่ลาด) ‘slope’ refers to ground that has a natural incline. As waves move to slope land or /tʰîːlàːt/ (ที่ลาด), the strength of the waves diminishes.

/tʰîːcʰan/ (ที่ชัน) ‘scarp’ refers to ground with a steep slope. When waves move to /tʰîːcʰan/ (ที่ชัน), they increase in strength.

/nəːn/ (เนิน) ‘mound’ refers to elevated land rising above the common level of the surrounding land; such as /nəːn saːy/ (เนินทราย) ‘sand mound / dune’.

/kʰòːt/ (โขด) ‘knoll / hillock’ is land or a large stone rising above level ground; such as /kʰòːt hĭn/ (โขดหิน) ‘rock’. Also, an area where the horse mussel, known as /hŏːy kapʰoŋ/ (หอยกะพง), lives in a colony, appearing like a hill, is called /kʰòːt hŏːy/ (โขดหอย).

4.2 Terms for soil

Local soils are classified by the coastal villagers into different types, with a different term for each. In addition, they are identified into two groups based on area or zone where the soil is found; one in the sea or another water source, and the other on land. Folk classification of local soils and each term for soil are illustrated in the taxonomic hierarchy shown in Diagram 4.2 below.

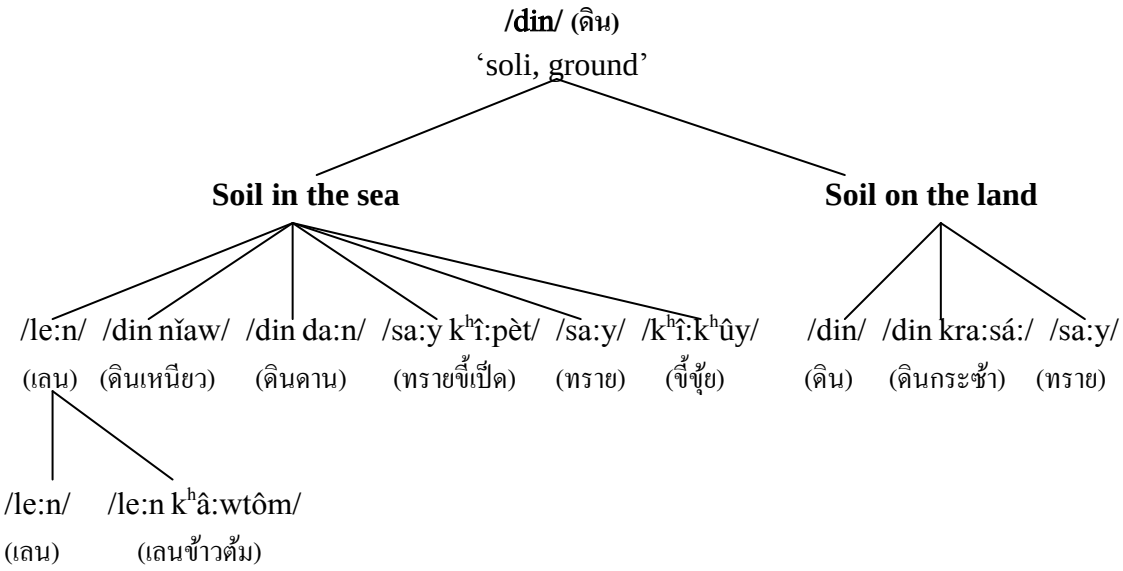


Diagram 4.2 Folk classification of local soils

4.2.1 Soil types

Local soils found in the sea are classified into several types as Diagram 4.2 shows. **/le:n/** (เลน) 'mire' refers to wet, muddy soil along the coastal areas and in other water sources. If we put our foot on this soil, it will sink deep down into it. Also, /le:n/ (เลน) is specifically identified based on its physical features such as **/le:n kʰâ:wtôm/** (เลนข้าวต้ม) 'porridge-like mire', **/le:n ʔɔ̀:n/** (เลนอ่อน) 'soft mire' and **/le:n yà:p/** (เลนหยาบ) 'rough mire' (see Figure 4.4). Of these three terms, /le:n kʰâ:wtôm/ (เลนข้าวต้ม) is distinctly classified into a type of mire or /le:n/ (เลน). It refers to a very muddy soil resembling porridge with half of its elements consisting of water. That is why it is locally called /le:n kʰâ:wtôm/ (เลนข้าวต้ม), literally, 'porridge-mire'. Another, /le:n ʔɔ̀:n/ (เลนอ่อน) refers to wet, muddy soil but with a more soil-like texture than /le:n kʰâ:wtôm/ (เลนข้าวต้ม). Compared to /le:n yà:p/ (เลนหยาบ), it is less compact.



/le:n k^{h}â:wtôm/ (เลนข้าวต้ม) /le:n ʔɔ̀:n/ (เลนอ่อน) /le:n yà:p/ (เลนหยาบ)

Figure 4.4 /le:n k^{h}â:wtôm/ (เลนข้าวต้ม), /le:n ʔɔ̀:n/ (เลนอ่อน), and /le:n yà:p/ (เลนหยาบ)

/din nǐaw/ (ดินเหนียว) 'clay' refers to a wet, muddy soil. It is found along the shore or at the river bank where flooding is temporary. A subsoil with hard and compact features along the sea or other water sources is called as **/din da:n/** (ดินดาน). According to the villagers, it is found up to 12 inches or more below the surface. Other types of soil along the sea identified by the locals are **/sa:y/** (ทราย) and **/sa:y k^{h}î:pèt/** (ทรายขี้เป็ด). /sa:y/ (ทราย) 'sand' refers to very small grains of rock. It covers some parts of the coast in the Bang Khunsai area. /sa:y k^{h}î:pèt/ (ทรายขี้เป็ด) refers to the mushy soil consisting of sand and fragments of shells mixed with mire. The term /sa:y k^{h}î:pèt/ (ทรายขี้เป็ด), literally, 'sand-duck excrement' is used because it looks disgusting, resembling the excrement of a duck. In addition, the soil around the burrow of a sea creature (e.g. that of crab, fish and some shellfish) is classified and specifically named **/k^{h}î:k^{h}ûy/** (ขี้ขุ้ย), literally, 'excrement-Khui'. The word /k^{h}ûy/ (ขุ้ย) in the term /k^{h}î:k^{h}ûy/ (ขี้ขุ้ย) is not found to be significant.

According to the local villagers, the majority of the soil on the coastal land of Bang Khunsai sub-district is made up of a type known as **/din kra:sá:/** (ดินกระซ้า). The term /din kra:sá:/ (ดินกระซ้า) refers to a mixture made of crushed dead shellfish (fragments of shells) called /kra:sá:/ (ดินกระซ้า) with a soil. Apart from that, the locals rarely classify different types of soil on the land. Therefore, the general term **/din/** (ดิน) 'soil, ground' is used.

It can be summarized that the coastal villagers characterize local soil based on a variety of dimensions. They mainly play attention to physical features or properties and texture (determined by the number of component particles). The significant semantic features presented in the dimensions of contrast of terms for soils according to villagers are softness (muddy - hard), stickiness (sticky - unsticky), shaping ability (able to make shapes - unable to make shapes), stability (stable-unstable), and sources (in water or on land), including the suitability for mud-skiing (see Table 4.3). Details of each term for soil according to the villagers are shown in Appendix A.

Table 4.3 The semantic dimensions of contrast of terms for soil

Semantic features / Terms	muddy	liquid	sticky	able to make shapes	sinking as being walked on	in water resource	suitable for mud-skiing	texture of sand and fragments of shells mixed with mire	texture of soil mixed with fragments of shells	texture of small grains of rock	being above and below the creature's hole
/le:n/ (เลน)	+	-	-	-	+	+	+				
/le:n kʰâ:wtôm/ (เลนข้าวต้ม)	+	+	-	-	+	+	-				
/le:nʔɔ̀:n/(เลนอ่อน)	+	-	-	-	+	+	+				
/le:nyà:p/(เลนหยาบ)	+	-	rather +	rather +	+	+	+				
/din/ (ดิน)	-	-	-	-	-	-	-				
/din nǐaw/ (ดินเหนียว)	-	-	+	+	-	+	-				
/dinda:n/ (ดินดาน)	-	-	very +	+	-	+	-				
/din kra:sá:/ (ดินกระซ้า)	-	-	-	-	-	-	-		+		
/sa:y/ (ทราย)	-	-	-	-	-	±	-			+	
/sa:y kʰî:pèt/ (ทรายขี้เป็ด)	-	-	-	-	-	+	-	+			
/kʰî:kʰûy/ (ขี้ขุ้ย)	+	-	-	-	+	+	-				+
	Binary features							Unique features			

In the local villagers' experience, /le:n k^{h}â:wtôm/ (เลนข้าวต้ม) is exclusively present in the sea area of Bang Khunsai Subdistrict and, reportedly, much of it in particular parts of the area, especially in the coast of M.2 village. Villagers also mention that this soil type is rich in various nutrients, nourishing marine creatures, especially those of shellfish species. Species such as blood cockle grow well in /le:n k^{h}â:wtôm/ (เลนข้าวต้ม) and are tasty when cooked. However, a large amount of /le:n k^{h}â:wtôm/ (เลนข้าวต้ม) in creature holes might end their lives because of the effect of suffocation. In an area where there is thick /le:n k^{h}â:wtôm/ (เลนข้าวต้ม), mud-skiing is difficult. Details of term for /le:n k^{h}â:wtôm/ (เลนข้าวต้ม) are in Appendix A.

The soil known as /din kra:sá:/ (ดินกระซ้า) is mainly found along the shoreline close to the sea where the access of the tide brings seashells and mire which mix together to form land. The coast-dwellers commonly use /din kra:sá:/ (ดินกระซ้า) for landfill because of its properties – it is stable and doesn't turn muddy in rain or flood. Details of /le:n k^{h}â:wtôm/ (เลนข้าวต้ม) term are in Appendix A.

4.2.2 Types of burrows created by marine creatures

Besides identification of soil, the local villagers also classify the burrows or holes called /ru:/ (รู) above and below the surface of the soil belonging to creatures. The burrows of some marine animals are very large and hollow like a pipe, specifically called /pɔ̀:ŋ/ (ป่อง). Different holes of different creatures consist of different forms of /k^{h}î:k^{h}ûy/ (ขี้ขุ้ย) (see Appendix A). The following terms are for different types of burrows in the sea and in other water sources.

Table 4.4 Terms for burrows in ground created by marine creatures

Term	Gloss	Brief folk definition
/ru:loŋ/ (รูลง)	downward hole	The first, main hole that a creature builds from the surface into the ground.
/ru:k^{h}ɨ̂n/ (รูขึ้น)	upward hole	A hole built by a creature as an exit from the ground.
/ru:dɨ̀ŋ/ (รูดิ่ง)	straight hole	A hole which goes straight through under ground. It may be either /ru:loŋ/ (รูลง) or /ru:k^{h}ɨ̂n/ (รูขึ้น).
/ru:c^{h}ɔ:n/ (รูชอน)	meandering hole	A hole which twists and turns underground.
/ru:yê:k/ (รูแยก)	intersect hole	A hole that is separated from other holes.
/ru:mɔ̂:/ (รูหม้อ)	pot-like hole	An underground hole with round and big shape. It belongs exclusively to the catfish.
/ru:tâu/ (รูเต้า)	dimpled hold	A hole the middle of which is dimpled. It belongs to the eel.
/ru:làk/ (รูหลัก)	pole hole	A hole which looks like a hollow clay channel more than 1 inch but less than 2 inches from the surface. It belongs to a kind of clam known as /hɔ̂:ysìap/ (หอยเสียบ).

The holes /ru:loŋ/ (รูลง) and /ru:k^{h}ɨ̂n/ (รูขึ้น) are distinguished according to the manner by which its used by the creature it belongs to, as the name indicates. Other types of holes are distinguished by shape. Some terms for creature holes are named in an analogy with something according to villagers' view. For example, the term /ru:mɔ̂:/ (รูหม้อ) meaning 'pot hole' derives from its shape which is round and looks like a pot; the term /ru:tâu/ (รูเต้า) is used because the middle of the hole is dimpled, resembling part of a Thai sweet cooking pan called "Tao Kha Nom Krok" (เต้าขนมครก); and the term /ru:làk/ (รูหลัก) refers to the shape of a hole which is a hollow channel into the soil like a pole or stake. More details of terms for types of holes created by creatures can be seen in Appendix A. According to the locals, some marine creatures create only one hole as a downward and upward hold. Some creatures create more than one hole with various manners of holes, such as those of catfish.

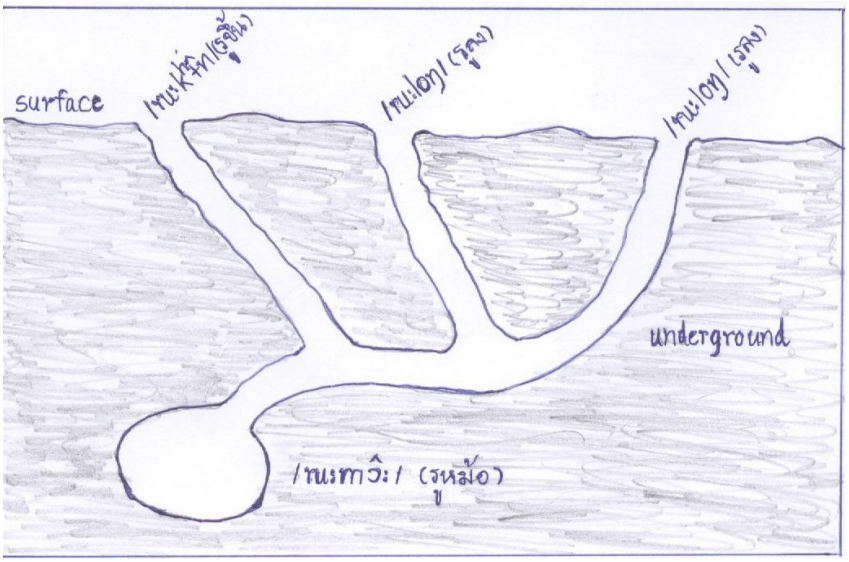


Figure 4.5 Various types of catfish holes. (adapted from a villager's drawng)

The coastal area of Bang Khunsai subdistrict consists mainly of mire. When one takes a walk along the coast, part of his body is likely to sink deep into it. According to the villagers, the more one tries to walk close to a sea creatures burrow, such as that of /pla: ʔâjaŋ/ (ปลาไอ้จัง) fish or of /pla: ʔâtʰô:/ (ปลาไอ้โถ้) fish, the faster their feet will sink deep into it, possibly to thigh level. Such a condition of sinking is called /tʰalûŋ/ (ทะลุ่ง). The term refers to the act of putting one's foot into the mire and sinking into it, deep and fast. The term /tʰalûŋ/ (ทะลุ่ง) is also used to refer to the condition of mire that is too soft to walk on.

4.3 Terms for water

Those who have been living in coastal areas are able to expertly observe, remember and classify natural marine occurrences. They recognize the nature of seawater, and can indicate the characteristics of the water, as well as predict tides and other water phenomena if they know the days, nights (the date as reckoned by the waxing or waning moon) and months in the Lunar Calendar. This knowledge is reflected through their use of vocabulary with a number of words or terms. The

naming of such natural water phenomena obviously explains the main characteristics of seawater at that time.

Water terms found can be categorized into various subfields according to the local coast-dwellers' perspective, namely, water types, water fluctuation, water cycle, water seasons, water conditions, and waves.

4.3.1 Water types

Water is identified by type such as /ná:m kʰem/ (น้ำเค็ม) 'salt water', /ná:m cɨ:t/ (น้ำจืด) 'freshwater' and /ná:m krɔ̀:y/ (น้ำกร่อย) 'brackish water' based on its source and taste. The term /ná:m kʰem/ (น้ำเค็ม) refers to water of the sea and ocean. Water sources that are not influenced by seawater are /ná:m cɨ̀:t/ (น้ำจืด) 'freshwater' and /ná:m krɔ̀:y/ (น้ำกร่อย) 'brackish water,' which is found in areas where saltwater mixes with fresh water. In addition, the coastal villagers distinguish between three types according to the feelings of the person in contact with a particular type of water to see if it is viscous. They also recognize the creatures living in each type of water. The folk-semantic dimensions of contrast among three types of waters can be expressed as below.

/ná:m kʰem/ (น้ำเค็ม)	**/ná:m cɨ:t/ (น้ำจืด)**	**/ná:m krɔ̀:y/ (น้ำกร่อย)**
+ salty	+ tasteless	+ brackish
+ in seawater resource	+ in water resource far from the sea	+ in area where saltwater mixing with fresh water
+ be viscous	- be viscous	+ be viscous
+ habitat of sea creatures	- habitat of sea creatures	± habitat of sea creatures

Besides, the villagers commonly experience saltwater as it when the saltwater merges with a fresh water source such as a canal. In such cases, the saltwater lies below the fresh water.

4.3.2 Seawater fluctuation

The coastal villagers observe the changing sea tides to determine their work time at sea. They have coined specific terms that indicate the state and quantity of water in pairs of opposites such as /náːm kʰîn/ (น้ำขึ้น) - /náːm loŋ/ (น้ำลง) and /náːm kɔ̀ːt/ (น้ำเกิด) - náːm taːy/ (น้ำตาย), and in mutually related pairs such as /náːm tʰɔ́ː/ (น้ำเท้อ) - /náːm tʰaːm/ (น้ำทาม) and /náːm lót/ (น้ำลด) - /náːm tʰɔːn/ (น้ำทอน), and other related terms. Terms are characterized by the semantic dimension of water level and quantity as shown on the table 4.5.

Table 4.5 Semantic dimension of terms for seawater fluctuation

Term	Semantic dimension
/náːm kʰîn/ (น้ำขึ้น) - /náːm loŋ/ (น้ำลง)	water level
/náːm kɔ̀ːt/ (น้ำเกิด) - náːm taːy/ (น้ำตาย)	water quantity, water level
/náːm tʰɔ́ː/ (น้ำเท้อ) - /náːm tʰaːm/ (น้ำทาม)	water level
/náːm lót/ (น้ำลด) - /náːm tʰɔːn/ (น้ำทอน)	water level

The term /náːm kʰîn/ (น้ำขึ้น) and /náːm loŋ/ (น้ำลง) indicate water level. The following are the folk definition of terms.

/náːm kʰîn/ (น้ำขึ้น) ‘high tide’ refers to a higher level of seawater during a particular time period. The beginning of it is called /húanáːm kʰîn/ (หัวน้ำขึ้น) ‘head-high tide’.

/náːm loŋ/ (น้ำลง) ‘low tide’ refers to the lower level of seawater during a particular time period. The beginning of it is called /húanáːm loŋ/ (หัวน้ำลง) ‘head-low tide’.

Villagers recognize that high and low tides are daily phenomena. At Bang Khunsai, the high tide occurs twice every day and so does the low tide. It takes approximately 6 hours from the beginning to the end of the process. The interval between high tide and low tide is also 6 hours. For example, of the 5th waxing moon

night of the 10th month, the high tide begins at 6 am, and the low tide occurs around 12 p.m. The process re-occurs at around 6 p.m. and 12 a.m., respectively. Nevertheless, the interval between tides may be shorter or longer than 6 hours depending on the wind and the current quantity of water. Each high tide / low tide varies in level. The villagers realize this and are able to predict the tides by observing the moon. They know that the moon rises above the horizon, the tide is down. When the moon reaches its peak (the moon moves vertically to an overhead position), the tide is up. Different days mean different times for the tides. Approximately, the tide rises 1 hour later each day. For example, on a particular day, if the low tide is at 6 p.m. and the high tide at around 12 a.m., on the following day, the low tide will be at 7 p.m. and the high tide at 1 a.m.

The term /ná:m kɔ̀:t/ (น้ำเกิด) and /ná:m ta:y/ (น้ำตาย) relate to water quantity, indicating the amount and level of water which varies depending on the waning and waxing of the moon. The following are the folk definition of terms.

/ná:m kɔ̀:t/ (น้ำเกิด) or sometimes called **/ná:m pen/** (น้ำเป็น) 'spring tide' refers to the state of water when it is at very high or very low levels. This occurs monthly during the waxing and waning moon on the 13th, 14th, 15th, 1st, 2nd, 3rd, 4th, and 5th nights, especially around the 3rd and 4th nights which are the peak of the spring tide. During the spring tide, water levels may reach full capacity of the shore. Likewise, as the water recedes, its level drops very low. Generally, the current flows rapidly and strongly during spring tide. The villagers are aware that marine creatures have plenty of food during that period, as large amounts of water and the strong current, carry along plankton, the main food source. Some species that shed their skin, such as prawns and crabs, become to be in full strength during spring tide or /ná:m kɔ̀:t/ (น้ำเกิด).

Another term in relation to the state of an extremely high tide with a large quantity of water is **/ná:m yày/** (น้ำใหญ่), literally, 'water-big'. If the tide is high during the night, such as in October and November, /ná:m yày/ (น้ำใหญ่) will occur in the

morning. In contrast, if the tide is high during the day, such as in June and July, /náːm yày/ (น้ำใหญ่) will occur in the evening. /náːm yày/ (น้ำใหญ่) does not usually occur during daytime because of the regularity of the neap tide. This usually occurs in the windy season, such as during the seasons of /lom tawanʔɔ̀ːk/ (ลมตะวันออก), /lom ʔukaː/ (ลมอุกา) and /lom salăːtan/ (ลมสลาตัน). /náːm yày/ (น้ำใหญ่) also occurs during the season of /náːm klaːŋkʰɨ̂ːn/ น้ำกลางคืน, and these terms will be explained later.

/náːm taːy/ (น้ำตาย) 'neap tide' refers to a state of water being at slightly high or low levels. This occurs monthly during the waxing and waning moon on the 7^{th}, 8^{th}, 9^{th}, 10^{th}, 11^{th}, and 12^{th} nights, especially around the 10^{th} and 11^{th} nights which are the peak of the neap tide. During the neap tide, the water will not rise or recede as strongly as the spring tide. The quantities of water are not as extreme as the spring tide and the current is slow during the neap tide. Local villagers say that the neap tide marks the start of the turn of /náːm kàw/ (น้ำเก่า) into /náːm mài/ (น้ำใหม่), an interval between /hŭa náːm/ (หัวน้ำ) and /hăːŋ náːm/ (หางน้ำ). These terms will be explained in the part on water cycles. Most of the villagers do not catch shellfish during this period of neap tide because the water retreats to a point not far away from the shoreline where shellfish are not so abundant.

The term /náːm tʰɤ́ː/ (น้ำเท้อ) and /náːm tʰaːm/ (น้ำทาม) indicate the state of the water flow. The following are the folk definition of terms.

/náːm tʰɤ́ː/ (น้ำเท้อ) refers to the state of water when its level is up as the water is running down. The water then alternates repeatedly from down, to suddenly up in level. The state of the water is unstable; metaphorically, like a person who hesitates to making a decision to do or not to do something. The water continues to rise and fall in this way until it reaches its full course. However, the majority of /náːm tʰɤ́ː/ (น้ำเท้อ) results in a rising tide and occurs during the neap tide. It takes approximately half an hour or less before it finishes. During the period of /hăːŋ náːm/

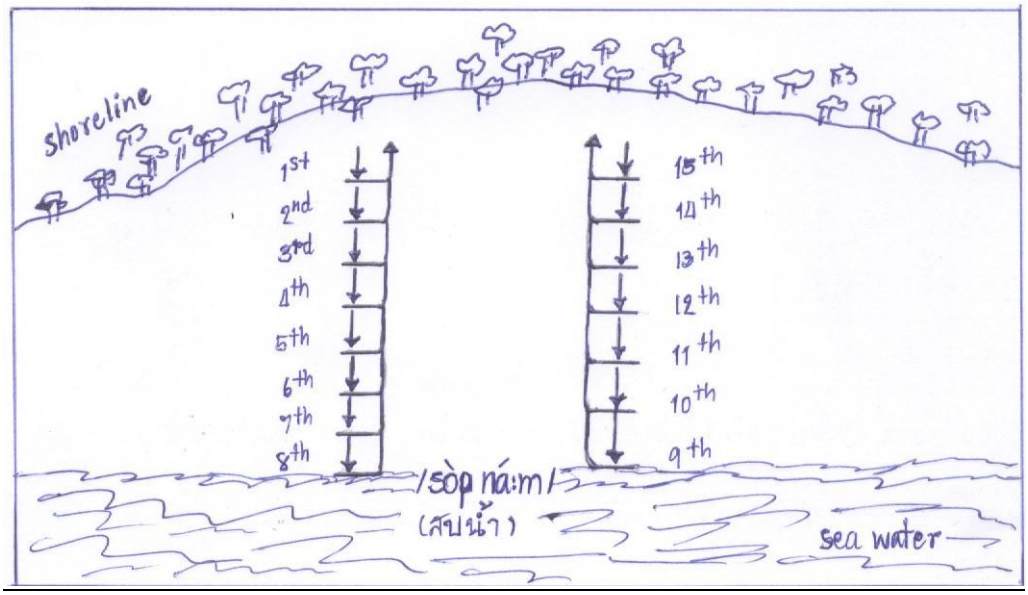
(หางน้ำ), /ná:m tʰɔ́:/ (น้ำเท้อ) will take longer than during the period of /kla:ŋ ná:m/ (กลางน้ำ), These terms will be explained in the next part on water cycles.

/ná:m tʰa:m/ (น้ำทาม) refers to the state of water when it does not recede far from the shore and the current is slow. Generally, the state of /ná:m tʰɔ́:/ occurs at the same time. /ná:m tʰa:m/ (น้ำทาม) usually happens during the neap tide, especially during the last days of /hă:ŋ ná:m/ (หางน้ำ). This term will be further explained in the part on water cycles.

The term /ná:m lót/ (น้ำลด) and /ná:m tʰɔ:n/ (น้ำทอน) indicate water receding from the shore as a result of the geographical characteristics of the sea. In the Bang Khunsai area, there is a large foreshore so the receding water can be clearly observed. The following are the folk definition of terms.

/ná:m lót/ น้ำลด or **/ná:m lót cʰa:yfàŋ/** (น้ำลดชายฝั่ง), literally, 'water-recede-foreshore', refers to a state of water when it recedes and dries along the shoreline to the point that the water usually reaches. The seawater keeps receding and rising repeatedly from the first day of the water receding. As a result, the foreshore area, once underwater, is exposed and expands further as the water recedes days after day. The coastal villagers know that the water will recede from the shoreline and dry up around the mangrove forest area during the first day of water recession, for approximately 30 wa (60 meters). During its second day, the water recedes further from mangrove forest area, another 30 wa (60 meters) and then rises again. From the third day, the water is low and dries up more than twice as far as on the previous two days. For example, on the 1st waxing moon day, the water begins receding from shoreline and dries up 30 wa (60 meters) around the mangrove forest area. Then it rises again, reaching the shore. Next, on the 2nd waxing moon day, it recedes further to 60 wa (120 meters) before rising again to the shoreline. Then, on the 3rd waxing moon day, it recedes approximately 180 wa (360 meters) before returning to the shoreline. In general, the level of receding water may vary depending on the wind and quantity of water. The water will recede and dry up as far as 3 kilometers from the shoreline on

either the 7th or 8th days, from the first day that it begins to recede. When the water recedes to its maximum extent it is called **/sòp náːm/** (สบน้ำ), as shown in Figure 4.6. During the peak of /sòp náːm/ สบน้ำ, the seawater recedes and rises the most rapidly, compared to on other days. After the day of the peak of /sòp náːm/ สบน้ำ, over the following days, water recedes and dries up decreasingly further from the shoreline.



↓ shows level of the water recession

Figure 4.6 Water receding along the coastal area in Bang Khunsai Subdistrict called /náːm lót cʰaːyfàŋ/ (น้ำชายฝั่ง)

/náːm tʰɔ́ːn/ (น้ำทอน) or **/náːm tʰɔ̌ːy/** (น้ำถอย) refers to a state of water when it recedes and dries up closer to the shoreline than on previous days. It occurs after the day of /sòp náːm/ (สบน้ำ) reaching its peak. For example, on the 8th night as the extreme recession of /sòp náːm/ (สบน้ำ) reaches its peak, the water recedes and dries up as far as 3 kilometers from the shoreline. The following morning of the 9th night, the water recedes to a less-extreme point, less than 3 kilometers from the shore. After that, on the 10th night, the water recedes even less than on the 9th night. This state is called as

/náːm tʰɔːn/ (น้ำทอน). On the first day of /náːm tʰɔːn/ (น้ำทอน), following the full phase of /sòp náːm/ (สบน้ำ), the water begins receding by about 30 wa (60 meters). On the following days, the water recedes twice as far as or more than on the days before. /náːm tʰɔːn/ (น้ำทอน) takes 6-7 days, counting from the peak of /sòp náːm/ (สบน้ำ). After the last day of /náːm tʰɔːn/ (น้ำทอน), the water increasingly recedes daily from the shoreline until the date /sòp náːm/ (สบน้ำ) reaches its peak.

On some occasions, the sea is in a state of stability, meaning without the receding and rising of water. The term **/náːm yùt/** (น้ำหยุด) or **/náːm nîŋ/** (น้ำนิ่ง) indicates this state.

4.3.3 Water cycle

By observing and recognizing the naturally receding water from the foreshore area, the villagers realize that the seawater changes are cyclical. They have classified two water periods based on time indicator known as /sɔ̌ːŋ náːm/ (สองน้ำ) ‘two-water’ in a month, or around 15 days for each period called /nɨ̀ŋ náːm/ (หนึ่งน้ำ) ‘one-water’. Relevant terms for water cycle are shown in Figure 4.7.

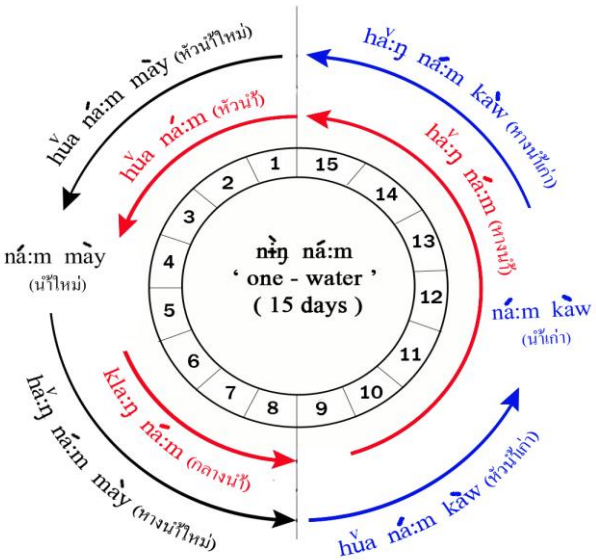
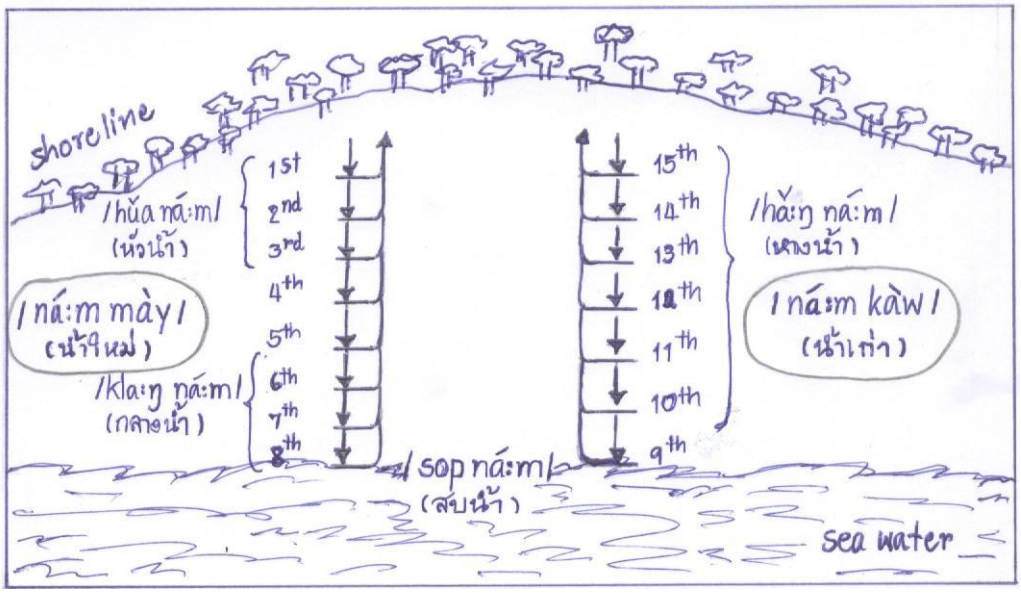


Figure 4.7 A cycle of one period of water called as /nɨ̀ŋ náːm/ (หนึ่งน้ำ) ‘one-water’

The term **/nɨŋ ná:m/** (หนึ่งน้ำ) ‘one-water’ refers to a period of water counted from when the water level begins to be decline and dries up to about 30 wa (60 meters) from the shoreline. The rate of seawater recession increases over the next days until the day when the water returns to recede and dries up and equal distance from shoreline as on the beginning of the first day of the receding seawater. In total, in one water period, it takes around 15 days, as shown in Figure 4.8 below. Over the next 15 days, water recession repeats as before, counting another water period. There are, then, two water periods in a month. The cycle continues like this every month.



↓ shows level of the water recession

Figure 4.8 15 days for one water period known as /nɨŋ ná:m/ (หนึ่งน้ำ)

/hŭa ná:m/ (หัวน้ำ), literary ‘beginning-water’ refers to water at the stage when it recedes and dries up away from shoreline during its first 3 days. In the state of /hŭa ná:m/ (หัวน้ำ), the seawater recedes no more than 120 wa (240 meters) from the shoreline. A minimal area of foreshore emerges out of the sea, so collecting shellfishes during this period is not popular.

/kla:ŋ ná:m/ (กลางน้ำ), literary ‘middle-water’**,** refers to water at the stage when it has receded during the 6th, 7th, and 8th days, from the first day of the water receding known as /hŭa ná:m/ (หัวน้ำ). In the state of /kla:ŋ ná:m/ (กลางน้ำ), the seawater is very far from the shoreline. During /kla:ŋ ná:m/ (กลางน้ำ), the seawater recedes at a high speed, and when it rises, again, it does so at an accelerating rate to a high level, which is a state called /ná:m kɔ̀:t/ (น้ำเกิด). Collecting shellfish during this stage is usually possible for many hours because the dry foreshore is vast and shellfish abundant.

/hă:ŋ ná:m/ (หางน้ำ), literary ‘last/final-water’ refers to water in the state when it recedes and dries up away from the shoreline during the 9th, 10th, 11th, 12th, 13th, 14th, and 15th days, from the first day of the water receding cycle or /hŭa ná:m/ (หัวน้ำ), especially during the 14th and 15th days, which are considered to be the very last days of /hă:ŋ ná:m/ (หางน้ำ). During /hă:ŋ ná:m/ (หางน้ำ) stage, the seawater recedes far from the shoreline to the same point as the /hŭa ná:m/ (หัวน้ำ) stage. The water level is not high, a state referred to as /ná:m ta:y/ (น้ำตาย), and the collection of shellfish during this period is not popular because the exposed foreshore is not so vast. Another reason is that most shellfish have likely already been collected in the days prior.

From the first day of /hŭa ná:m/ (หัวน้ำ) to the last day of /hă:ŋ ná:m/ หางน้ำ, is counted as one full water period or /tem ná:m/ (เต็มน้ำ) ‘full-water’. In addition, a half of /nɨ̀ŋ ná:m/ (หนึ่งน้ำ) ‘one water’, taking 7-8 days, goes from the period of /hŭa ná:m/ (หัวน้ำ) to /kla:ŋ ná:m/ (กลางน้ำ) or from /kla:ŋ ná:m/ (กลางน้ำ) to /hă:ŋ ná:m/ (หางน้ำ), and is counted as the half water period or /kʰrɨ̂ŋ ná:m/ (ครึ่งน้ำ) ‘half-water’.

The transition of water from one period to another, as recognized by the villagers, is identified by these terms, **/ná:m mày/** (น้ำใหม่) ‘new water’ and **/ná:m kàw/** (น้ำเก่า) ‘old water’. The terms reflect the condition of newness and oldness of the water

based on whether the water occurs at the beginning of the period or in the period exploited by the villagers or thereafter.

/ná:m mày/ (น้ำใหม่) 'new water' refers to the water in the days when it begins to recede from the state of /hŭa ná:m/ (หัวน้ำ) to /kla:ŋ ná:m/ (กลางน้ำ). That is the beginning period of water called /ná:m mày/ (น้ำใหม่) and is referred to as such until the water reaches the state of /kla:ŋ ná:m/ (กลางน้ำ). At the beginning of the period of /ná:m mày/ (น้ำใหม่), it is called /hûaná:m mày/ (หัวน้ำใหม่), literally 'head-water-new'. When the period of /ná:m mày/ (น้ำใหม่) reaches 2-3 days, the villagers begin their fishing activities.

/ná:m kàw/ (น้ำเก่า) 'old water' has two meanings. One refers to water after the period of /kla:ŋ ná:m/ (กลางน้ำ) and beyond, which is from the 9th day, counting from the 1st day that water recedes from the shoreline. /ná:m kàw/ (น้ำเก่า) is in the period of /hă:ŋ ná:m/ (หางน้ำ). The final period of /ná:m kàw/ (น้ำเก่า) is called /hă:ŋná:m kàw/ (หางน้ำเก่า). Another meaning of /ná:m kàw/ (น้ำเก่า) is to define the previous water period that has just ended. During the period of /ná:m kàw/ (น้ำเก่า), the majority of villagers do not go out to sea to fish because the water doesn't recede far from the shoreline. In addition, during these periods, the fishing activities have already reduced the potential size of the catch.

The end of one water period is called /mòt ná:m/ (หมดน้ำ), a transition from /ná:m kàw/ (น้ำเก่า) to the beginning of /ná:m mày/ (น้ำใหม่) as another round of the water cycle. Another stage refers to overlapping of two water periods; /hă:ŋ ná:m kàw/ (หางน้ำเก่า) meeting /hŭa ná:m mày/ (หัวน้ำใหม่) is called /c^{h}on ná:m/ (ชนน้ำ) 'meet-water'. This state is a transition between /ná:m kàw/ (น้ำเก่า) 'old water' and /ná:m mày/ (น้ำใหม่) 'new water'. According to the local coastal villagers, the last 2-3 days of /ná:m kàw/ (น้ำเก่า), /hûa ná:m mày/ (หัวน้ำใหม่) coincide. At the period of /c^{h}on ná:m/ (ชนน้ำ), water

rises to its fullest and then recedes rapidly, but only recedes to a distance of approximately 40-50 wa (80-100 meters).

The terminology representing water fluctuations and water cycles is related. According to folk definition, /náːm kɔ̀ːt/ (น้ำเกิด) is usually in the state of /klaːŋ náːm/ (กลางน้ำ). /náːm yày/ (น้ำใหญ่) occurs in the state of /náːm kɔ̀ːt/ (น้ำเกิด). /náːm taːy/ (น้ำตาย) usually appears at the beginning of /haːŋ náːm kàw/ (หางน้ำเก่า) and /hŭa náːm mày/ (หัวน้ำใหม่), that is, at the transition between /náːm kàw/ (น้ำเก่า) and /náːm mày/ (น้ำใหม่). During the state of /náːm taːy/ (น้ำตาย), /náːm tʰɤ́ː/ (น้ำเท้อ) and /náːm tʰaːm/ (น้ำทาม) are present. The co-occurrence between terms can be expressed in the same column as follows.

/náːm kɔ̀ːt/ (น้ำเกิด) /klaːŋ náːm/ (กลางน้ำ) /náːm yày/ (น้ำใหญ่)	/náːm taːy/ (น้ำตาย) /haːŋ náːm/ (หางน้ำ) /náːm tʰɤ́ː/ (น้ำเท้อ) /náːm tʰaːm/ (น้ำทาม)

Figure 4.9 The co-occurrence between items of water terminology

4.3.4 Water season

The coastal villagers consider phenomena related to the tidal patterns as regular seasons. They classify water into two seasons annually; one is called **/nâːnáːm klaːŋwan/** (หน้าน้ำกลางวัน) ‘daytime water season’ and the other is called **/nâːnáːm klaːŋkʰiːn/** (หน้าน้ำกลางคืน) ‘nighttime water season’, divided approximately in half into six-month periods. The interval between these two water seasons is called as period of **/náːm cʰaylaw/** (น้ำไชเลา). The folk classification of water season is based on the moments of each day that correspond to the tidal patterns. Water seasons influence the fishing activities of the communities.

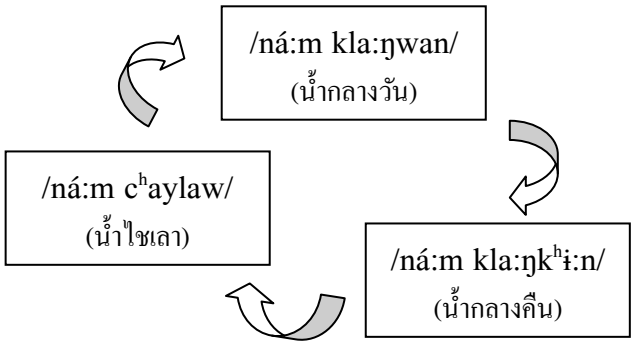


Figure 4.10 The annual circle of water season

The term **/ná:m kla:ŋwan/** (น้ำกลางวัน) 'water-daytime' refers to the seawater on days when it recedes and dries along the shoreline during the day (between dawn to 1 p.m.) The period of /ná:m kla:ŋwan/ (น้ำกลางวัน) known as /nâ:ná:m kla:ŋwan/ (หน้าน้ำกลางวัน) 'daytime water season' is from February to July. However, the peak takes 3 months from May to July (or the 6th - 8th Thai lunar months). At the beginning of the water season, the water recedes at around 4 or 5 a.m. After that, it recedes one hour later each morning as governed by the water cycle, until, towards the end of the season, the water starts receding in the afternoon. Generally, water recession in season of /ná:m kla:ŋwan/ (น้ำกลางวัน) is more extreme compared with that of /ná:m kla:ŋk^{h}ɨ:n/ (น้ำกลางคืน). In the season of /ná:m kla:ŋwan/ (น้ำกลางวัน), the villagers go out to fish during daytime.

The term **/ná:m kla:ŋk^{h}ɨ:n/** (น้ำกลางคืน) 'water-nighttime' refers to the seawater on days that recedes and dries along the shoreline during the night (between 7 p.m. to 2 or 3 a.m.). The period of /ná:m kla:ŋk^{h}ɨ:n/ (น้ำกลางคืน) known as /nâ:ná:m kla:ŋk^{h}ɨ:n/ (หน้าน้ำกลางคืน) 'nighttime water season' occurs from August to January. However, in August, the /ná:m kla:ŋwan/ (น้ำกลางวัน) coincides with the season of /ná:m kla:ŋk^{h}ɨ:n/ (น้ำกลางคืน). /ná:m kla:ŋk^{h}ɨ:n/ (น้ำกลางคืน) peaks between September and December (or the 11th - 1st Thai lunar month). At the beginning of the /ná:m kla:ŋk^{h}ɨ:n/

(น้ำกลางคืน) season, the water starts to recede at 7 p.m. or 8 p.m., and thereafter one hour later each day based on the water cycle. Towards the end of the season, the water starts its daily cycle at 2 a.m. or 3 a.m., so villagers conduct their fishing activities at sea during the night during the season of /ná:m kla:ŋkʰɨ:n/ (น้ำกลางคืน).

The term **/ná:m cʰaylaw/** (น้ำไชเลา) refers to the seawater on the day that recedes and dries along the shoreline in the late afternoon or evening (between 2 p.m. to dusk). The period of /ná:m cʰaylaw/ (น้ำไชเลา) occurs from January to the beginning of April (or the 2nd - 5th Thai lunar month). This is the period between the season of /ná:m kla:ŋkʰɨ:n/ (น้ำกลางคืน) and /ná:m kla:ŋwan/ (น้ำกลางวัน) when there is a transition from /ná:m kla:ŋkʰɨ:n/ (น้ำกลางคืน) to /ná:m kla:ŋwan/ (น้ำกลางวัน). /ná:m cʰaylaw/ (น้ำไชเลา) is also known as /hŭaná:m kla:ŋwan/ (หัวน้ำกลางวัน) 'begin of daytime water'. In January, the /ná:m kla:ŋwan/ (น้ำกลางคืน) coincides with the period of /ná:m cʰaylaw/ (น้ำไชเลา). At the beginning of /ná:m cʰaylaw/ (น้ำไชเลา), the water starts receding around at 2 p.m. and progressively later so that by the end of the period, the water starts to recede around 6 p.m. When /ná:m cʰaylaw/ (น้ำไชเลา) comes to an end, it introduces the peak period of /ná:m kla:ŋwan/ (น้ำกลางวัน). During the state of /ná:m cʰaylaw/ (น้ำไชเลา), the villagers go fishing at sea in the late afternoon or evening.

Besides, there are other water terms recognized by local people that refer to water in particular times related to the water seasons such as /ná:m fá:kʰă:w/ (น้ำฟ้าขาว), /ná:m fá:dam/ (น้ำฟ้าดำ), and /ná:m phá? kʰɔ́? rakʰaŋ/ (น้ำพระเคาะระฆัง).

/ná:m fă:kʰă:w/ (น้ำฟ้าขาว) 'water-white sky' refers to the water at the time it rises around 4 a.m. to 6 a.m. before sunrise, and the term /fă:kʰă:w/ (ฟ้าขาว) 'white sky' which means the time before dawn. This occurs during November and December in the season of /ná:m kla:ŋkʰɨ:n/ (น้ำกลางคืน). In one water period or /nɨ̀ŋ ná:m/ (หนึ่งน้ำ), there are 2-3 days when /ná:m fă:kʰă:w/ (น้ำฟ้าขาว) occurs. The term is used by those

who catch sergestid shrimps. They leave early to catch the sergestid shrimps which are plentiful at dawn. Their catch at that time is called /kʰəːy náːm fă:kʰăːw/ (เคยน้ำฟ้าขาว) ‘sergestid shrimp-water-white sky’. However, for a general definition, as used by other fishermen, the word /náːm fă:kʰăːw/ (น้ำฟ้าขาว) means the water at dawn, regardless of it being high tide or low tide. It occurs daily.

/náːm fă:dam/ (น้ำฟ้าดำ) ‘water-black sky’ refers to water at the time it recedes around 6 p.m. to 7 p.m. The term, /fă:dam/ (ฟ้าดำ) ‘black sky’ refers to the time when its almost dusk. It occurs in December, January, and February in the period of /náːm cʰaylaw/ (น้ำไชเลา). Like /náːm fă:kʰăːw/ (น้ำฟ้าขาว), in one water period or /nɨ̀ŋ náːm/ (หนึ่งน้ำ), there are 2-3 days when /náːm fă:dam/ (น้ำฟ้าดำ) occurs. The term is used by those who catch sergestid shrimps. The sergestid shrimps usually search for food as the water recedes just before dusk. The shrimp catch at that time is called /kʰəːy náːm fă:dam/ (เคยน้ำฟ้าดำ) ‘sergestid shrimp-black sky’. For a general definition, used by other fishermen, the word /náːm fă:dam/ (น้ำฟ้าดำ) means the water at dusk, regardless of it being high tide or low tide. It occurs daily.

/náːm pʰráʔ kʰɔ́ʔ rakʰaŋ/ (น้ำพระเคาะระฆัง), literally, ‘water-monk-toll-bell’, refers to water as it rises again after receding from the shoreline, or water receding from shoreline between 4 and 5 a.m. Coincidentally, this is time when the Buddhist monks toll the temple bell. The moment occurs a few times in the season of /náːm klaːŋkʰɨːn/ (น้ำกลางคืน) between the middle of August to November around the time of the Buddhist Lent. The term was coined in relation to the social time. Fisherfolk go out to sea to fish around 10 p.m. and return home at dawn around 4 a.m. When the bell is heard, they know the time and that the tide is rising. What’s more, in August, before /náːm klaːŋwan/ (น้ำกลางวัน) is over, /náːm pʰráʔ kʰɔ́ʔ rakʰaŋ/ (น้ำพระเคาะระฆัง) is the water receding between 4 and 5 a.m. Hearing the sound of the bell, the villagers prepared to go out fishing.

Villagers living along the coast recognize and are able to make a connection between the tide, water cycle and water seasons. Their ability to predict the changing water in each period of the water season is a highly specialized skill.

4.3.5 Water condition

The following folk terms indicate the condition or state of seawater, including characteristics of currents.

/náːm bìat - náːm kan/ (น้ำเบียด-น้ำกัน) refers to a state of fresh water streaming through seawater. It flows along sea the water current. The flowing-in water in this case is called /náːm bìat/ (น้ำเบียด) and the local water is called /náːm kan/ (น้ำกัน). The states of /náːm bìat/ (น้ำเบียด) and /náːm kan/ (น้ำกัน) co-occur. The area, where the two states of water meet, is rather red and turbid. Sometimes, it is smelly. At the boundary of the states of water, it is seen as a line of two different colors of water. There might also be bubbles. The villagers recognize that the majority of the phenomena involve bad water mixing with good. However, for /náːm bìat/ (น้ำเบียด), the water is not necessarily bad. When the /náːm bìat/ (น้ำเบียด) is good, the color of the water does not turn red. The occurrence of /náːm bìat/ (น้ำเบียด) is evident because the water is turbid with a stronger current compared with local water. The season in which /náːm bìat - náːm kan/ (น้ำเบียด-น้ำกัน) is found is around September to October in the windy season of /lom wâːw/ (ลมว่าว). Villagers inform that the stream of /náːm bìat/ (น้ำเบียด) comes from the east of Bang Khunsai subdistrict. The intruding fresh water comes in a great volume from the Mae Klong estuary in the province of Samut Sakhon. Fishes and other sea creatures caught in the stream of /náːm bìat - náːm kan/ (น้ำเบียด-น้ำกัน), die. If the stream of /náːm bìat/ (น้ำเบียด) enters a mussel farm, all the mussels will die. Other sea creatures trying to escape the current will be herded together. The first days or at the beginning of /náːm bìat - náːm kan/ (น้ำเบียด-น้ำกัน), in particular, fish, shrimp and jellyfish will be carried along by the stream. Some

fisherfolk, who have knowledge about this phenomenon, take the opportunity to get a big catch. However, there are no marine animals in some parts of the stream. Other following streams, coming at a different time, may carry no marine creatures. The stream of /ná:m bìat - ná:m kan/ (น้ำเบียด-น้ำกัน) comes intermittently for 3-4 days until diminishes or is forced by the sea currents into other areas. If /ná:m bìat - ná:m kan/ (น้ำเบียด-น้ำกัน) occurs at the bend of a watercourse, it will slowly flow out of that area. For 2 or 3 days after the /ná:m bìat - ná:m kan/ (น้ำเบียด-น้ำกัน) stream, marine animals are rarely found or, at best, few in number remain. This condition is called /t^{h}ale:rá:ŋ/ (ทะเลร้าง) 'sea-empty' or literally the sea without marine creatures. Some villagers then stop their fishing activities, especially those who use the push net. However, those who catch blood cockles still do their work because they know that the cockles live under the mire, which protects them from the stream of /ná:m bìat - ná:m kan/ (น้ำเบียด-น้ำกัน).

/ná:m nŭn/ (น้ำหนุน) refers to the state of water when it flows from a particular water source where there is a great amount of water to another water source. As a result, the receiving source receives higher levels of water. For example, a large amount of water in the sea flows into the nearby connecting river or canal, causing an increase in the amount of water. This is called /ná:mt^{h}ale: nŭn/ (น้ำทะเลหนุน) 'seawater flood'. In the case of fresh water flowing from an upstream river, particularly in the north, it creates an excess of water. This is called /ná:mnŭa nŭn/ (น้ำเหนือหนุน) or literally, 'water flood from the north'. /ná:m nŭn/ (น้ำหนุน) usually happens in the rainy season and is the cause of flooding.

/ná:m k^{h}wă:ŋ/ (น้ำขวาง) refers to the state of water when the current seawater flows vertically along the shore, instead of flowing into it. The direction it flows in depends on the direction of the wind. The current of /ná:m k^{h}wă:ŋ/ (น้ำขวาง) is strong during the windy season, such as in May-June. /ná:m k^{h}wă:ŋ/ (น้ำขวาง) often occurs 2

kilometers beyond the shore. The water in this area is called /náːm nɔ̂ːk/ (น้ำนอก) ‘water-outside’.

/náːm pát/ (น้ำปัด) refers to the state of water changing its direction. On some occasions, it completely reverses direction because of the changing wind. The state of /náːm pát/ (น้ำปัด) usually occurs where there is a large quantity of water. If it happens in a fishing area where nets have been set, the nets will become tangled.

/náːm won/ (น้ำวน) ‘whirlpool’ refers to a state of water rotating in a circle pattern in a particular area, and this generally occurs in deep areas of the sea. The water changing its direction and having barrier for the water current can also cause a whirlpool.

/pʰraːy náːm/ (พรายน้ำ) refers to the state of water in which its surface reflects light and glows at nighttime. When water touches something or is touched, for example, when we use our hand to touch or hit its surface or when some fish are swimming in the water, glittering reflections are given off in that area like those from conventional lights. An approaching boat may also cause reflections by generating splashes. The villagers believe that this reveals water in a bad condition, being filthy, stained and smelly. If a sergestid shrimp catching tool known as a /lawáʔ/ (ละวะ) is left in such water it will become yellow stained. Villagers report that /pʰraːy náːm/ (พรายน้ำ) can be found in every season. At some times, it occurs on a daily basis but it is difficult to notice the reflections during the daytime. This phenomenon, to the villagers’ knowledge, is bad for shellfish. They will not come out from their holes in the mud to the surface. However, there is a good side to /pʰraːy náːm/ (พรายน้ำ). From the surface of water, fisherfolk can see there are fish below because of the glittering trail left called /kʰîː náːm/ (ขี้น้ำ) ‘excrement-water’. At the same time, the fish and other sea creatures may be alerted to boats or the use of fishing gear, and swim away.

4.3.6 Waves

Most of the time, there are waves in the sea, especially in windy conditions. Local coast-dwellers are able to identify differences in the waves. They classify these into two common types of sea wave based on their characteristics; one is called **/də̀:ŋ/** (เดิ่ง) and the other is called **/kʰɨ̂:n/** (คลื่น). These are further referenced by specific terms such as /kʰɨ̂:n yà:p/ (คลื่นหยาบ) and /kʰɨ̂:n hŭafŏn/ (คลื่นหัวฝน). Folk classification of sea waves can be expressed as a hierarchy as shown in the diagram below.

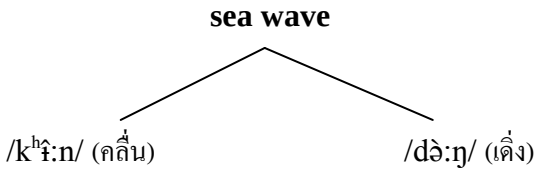


Diagram 4.3 Folk classification of sea wave

In the words of the local coastal villagers, **/də̀:ŋ/** (เดิ่ง) refers to a wave with its head unbroken. This means that the crest of the wave retains its form, without breaking into bubbles as it moves. The interval between the waves is far, so one /də̀:ŋ/ (เดิ่ง) follows another at a maximum distance of 2-3 wa (4-6 meters). A boat is then able to ride between two of the /də̀:ŋ/ (เดิ่ง). /də̀:ŋ/ (เดิ่ง) come constantly and run horizontally above the water level for a great length from the sea into the shore**.** As the /də̀:ŋ/ (เดิ่ง) hits the shore, it bursts into bubbles. Local villagers have noticed that when riding over the /də̀:ŋ/ (เดิ่ง), they can feel the boat moving up and down. It feels as if they were traveling by bus into the hills. If encountering a rather big /də̀:ŋ/ (เดิ่ง) when out searching for shellfish, it feels like being shoved strongly, and being pushed over. From the villagers' observations, the size and force of /də̀:ŋ/ (เดิ่ง) do not depend on the wind. Sometimes, when there is a strong wind blowing, there is no /də̀:ŋ/ (เดิ่ง), and at other times when there is a small breeze, a big /də̀:ŋ/ (เดิ่ง) can be seen. Sometimes with

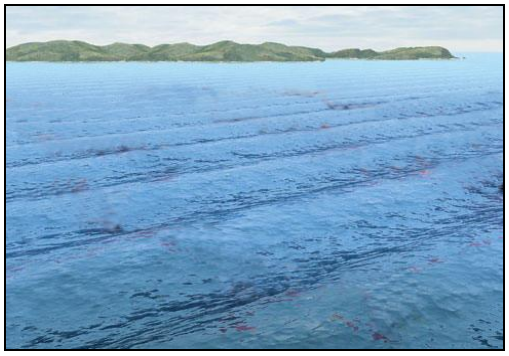
no wind at all, a /dɜ̀:ŋ/ (เดิ่ง) can be observed. Villagers, therefore, believe that /dɜ̀:ŋ/ (เดิ่ง) is an underwater wave. /dɜ̀:ŋ/ (เดิ่ง) come in different sizes, big and small. In deep sea, /dɜ̀:ŋ/ (เดิ่ง) is often big, whereas, in shallow sea, like in the Bang Khun Sai area, /dɜ̀:ŋ/ (เดิ่ง) is rather small. This kind of wave is dangerous if it is big and likely to cause small fishing boasts to capsize. Furthermore, based on the villagers' observations, prior to a strong wind, /dɜ̀:ŋ/ (เดิ่ง) usually comes first, followed by the wind and other waves. This signifies that there might be an approaching storm.

The term **/kʰɨ̂:n/** (คลื่น) refers to a wave with its head broken, in other words, where the crest has bursts into bubbles. /kʰɨ̂:n/ (คลื่น) are irregular with a shorter interval between them compared with that of /dɜ̀:ŋ/ (เดิ่ง). Each /kʰɨ̂:n/ (คลื่น) is closely followed closely by another. /kʰɨ̂:n/ (คลื่น) is bumpy, unlike /dɜ̀:ŋ/ (เดิ่ง) which is long horizontal pattern (see in Figure 4.3.6). Also, a wave or series of waves without a broken head but with previously mentioned characteristics, is also called /kʰɨ̂:n/ (คลื่น). Normally, /kʰɨ̂:n/ (คลื่น) come from sea, sometimes, they also move from the shore towards the sea, if the wind blows in that direction. The villagers say that if a boat passes over the top of a /kʰɨ̂:n/ (คลื่น), it shakes like a car going over bumps and potholes. The more powerful the wind is, the bigger the /kʰɨ̂:n/ (คลื่น). Huge /kʰɨ̂:n/ (คลื่น) are dangerous and the frequency of waves makes it difficult for boats. During the windy season, known as /lom sală:tan/ (ลมสลาตัน), /kʰɨ̂:n/ (คลื่น) are especially big.

A big or rather big /kʰɨ̂:n/ (คลื่น) is specifically called **/kʰɨ̂:n yà:p/** (คลื่นหยาบ) 'non-fine wave'. The majority of /kʰɨ̂:n yà:p/ (คลื่นหยาบ) have a bubble crest. The closer they move to shallow area, the more they break into white bubbles if the wind is strong enough. /kʰɨ̂:n yà:p/ (คลื่นหยาบ), which are huge, are capable of capsizing small boats. Another term for wave is **/kʰɨ̂:n hŭafŏn/** (คลื่นหัวฝน), 'wave-beginning the rain' referring to waves that come before rain, usually accompanied by wind. Shortly after

the rain arrives. The size of /kʰɤ̂:n hŭafŏn/ (คลื่นหัวฝน) depends on how strong the wind is. Generally, /kʰɤ̂:n hŭafŏn/ (คลื่นหัวฝน) are huge and may be referred to as /kʰɤ̂:n yà:p/ (คลื่นหยาบ). These waves are powerful and frequent because the wind prior to the rain is strong.

/kʰɤ̂:n/ (คลื่น)



/dɔ̀:ŋ/ (เด่ิง)

Figure 4.11 /kʰɤ̂:n/ (คลื่น) on the left and /dɔ̀:ŋ/ (เด่ิง) on the right

From these folk definitions of waves, there are three significant semantic features used to contrast /dɔ̀:ŋ/ (เด่ิง) from /kʰɤ̂:n/ (คลื่น); the patterns of the wave crest (broken crest - unbroken crest), the intervals between waves (long-short) and wave shape (consistent - inconsistent) as summarized below.

/dɔ̀:ŋ/ (เด่ิง)	**/kʰɤ̂:n/ (คลื่น)**
- broken crest	± broken crest
+ long interval between waves	- long interval between waves
+ consistent wave shape	- consistent wave shape

Villagers notice similarities of /dɔ̀:ŋ/ (เด่ิง) and /kʰɤ̂:n/ (คลื่น) in that, when they move from sea to steep shore or high land, the steeper the shore, the stronger the waves are. They break strongly against the shore generating a foam of white bubbles. And if /dɔ̀:ŋ/ (เด่ิง) and /kʰɤ̂:n/ (คลื่น) are big enough and crash onto a steep incline, the

waves might loop back again after hitting, whereas if they strike plain shore, they tend to break and recede with their force diminishing.

Knowledge of the characteristics of waves helps the villagers avoid danger while out at sea fishing. They are able to forecast a storms or rain by observing the waves. They have also learned to steer their boasts safely in rough seas by not aligning ing the boat horizontally to the waves and instead to zigzag to prevent the boat from capsizing. Knowing the direction of waves known as /də̀:ŋ/ (เดิ่ง) also assists them in known where to point the boat towards shore .

4.4 Terms for wind

Seasonal winds have different degrees of strength and occur at different times. Coast-dwellers recognize that the wind is influential in the movement of seawater. Therefore, they know how much the wind affects their way of life by the sea. They learn where it comes from, how it moves from the sea to the coast area, when it blows during daytime and nighttime. They also have terms for local wind coming from different directions, including ones that blow temporarily between seasons. Three folk categories of wind, therefore can be identified; wind according to position, wind according to time, and local winds. Terms locally used to define the conditions of wind are explained below.

4.4.1 Wind according to position

Because coast-dwellers live in the geographical area between the sea and the land, they are aware of the relationship between the position or source of occurrence of the wind and their geographical area with their villages serving as a center. Generally, wind, no matter when it occurs, is classified as /lom nay/ (ลมใน) and /lom nɔ̂:k/ (ลมนอก) without mentioning any specific terms.

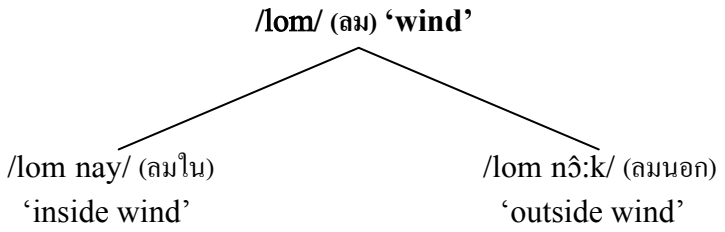


Diagram 4.4 Folk classification of winds based on position they come from.

The term /lom nai/ (ลมใน) 'inside wind' refers to the wind blowing from the land or from a village towards the sea. This includes wind blowing along the coast. On the other hand, any wind that blows from the sea to the land or to a village is known as /lom nɔ̂:k/ (ลมนอก) 'outside wind'.

Because the sea is east of Bang Khunsai village, any wind blowing from the opposite direction to the sea, that is from the west, is considered /lom nai/ (ลมใน), and wind that blows from the east is known /lom nɔ̂:k/ (ลมนอก). According to the knowledge and experience of the locals, wind blowing from the land to the sea or /lom nai/ (ลมใน) means, generally, there will be no rain. /lom nɔ̂:k/ (ลมนอก), on the other hand, is maybe followed by rain.

4.4.2 Wind according to time

Winds blow differently at different times of the day. Some blow during the day, others at night. Some winds blow continuously day and night. Depending of the time they occur, winds are classified by the locals as /lom kla:ŋwan/ (ลมกลางวัน) and /lom kla:ŋkʰɨ:n / (ลมกลางคืน).

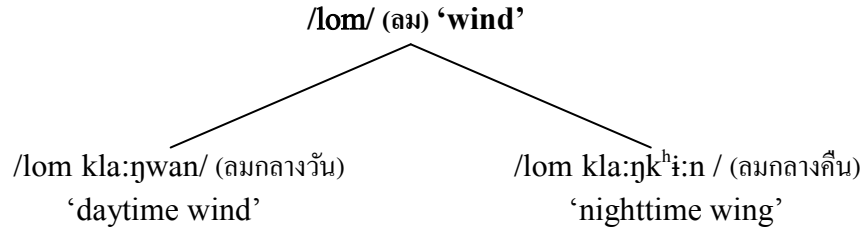


Diagram 4.5 Folk classification of winds based on the time of their occurrence.

/lom kla:ŋwan/ (ลมกลางวัน) ‘daytime wind’ refers to wind that blows between dawn and dusk, and /lom kla:ŋkʰɨ:n/ (ลมกลางคืน) ‘nighttime wind’ refers to wind that blows between dusk and dawn.

4.4.3 Local winds

Local winds are seasonal, blowing at different periods during the year. They blow from different directions. The villagers classify and name each local wind specifically according to the direction from which they blow (see Figure 4.12). They can predict when the local winds will blow and evaluate how strong each wind will be. The villagers recognize the changing seasons by the direction of the prevailing local wind.

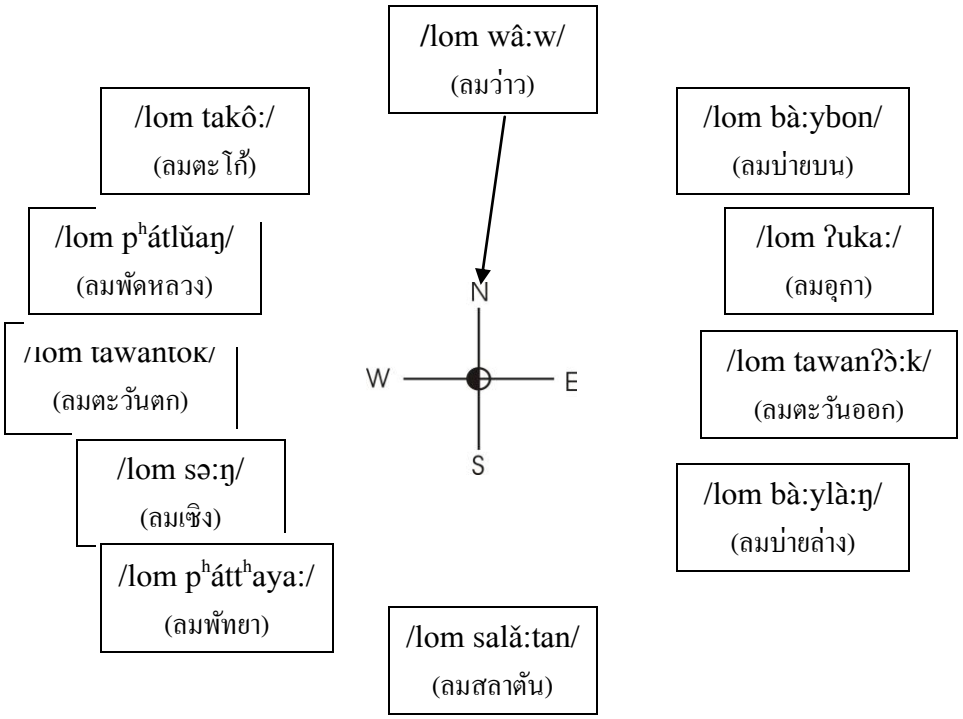


Figure 4.12 Names of local winds from each direction

Names for local winds, based on when they occur, **/lom ʔâytan/** (ลมไอ้ตัน) or **/lom sală:tan/** (ลมสลาตัน) refers to the wind blowing from the south slightly towards the

west during January to April (or in the 2nd - 5th Thai lunar months). **/lom pʰáttʰaya:/** (ลมพัทยา) refers to the wind blowing from the southwest during April to May (or in the 5th - 6th Thai lunar months). Sometimes, /lom pʰáttʰaya:/ (ลมพัทยา) and /lom sală:tan/ (ลมสลาตัน) occur in the same season or month. They blow in turns in almost the same direction. This interchange is called /lom phátthaya: sală:tan/ (ลมพัทยาสลาตัน). The term **/lom tawantòk/** (ลมตะวันตก) refers to the wind blowing from the west during April to May (the 5th-6th Thai lunar months). It blows in the same months as /lom pʰáttʰaya:/ (ลมพัทยา) but as a different time. The nickname /lom liŋ làp/ (ลมลิงหลับ), meaning the wind that makes monkeys sleep, was earned because this wind blows rather softly, making monkeys sleep forgetting to hold onto the tree. As a result, the monkeys would fall out of the tree when this wind blows.

/lom sə:ŋ/ (ลมเซิง) refers to wind blowing from the southwest but more westerly than /lom pʰáttʰaya:/ (ลมพัทยา). It occurs between May and June (or in the 6th - 7th Thai lunar months). **/lom bà:y/** (ลมบ่าย) refers to wind occurring during the daytime between May to June (or in the 6th-7th Thai lunar months). If it blows from the northeast, it is called **/lom bà:ybon/** (ลมบ่ายบน). If it blows from the southeast, it is called **/lom bà:ylà:ŋ/** (ลมบ่ายล่าง). As the locals stated, there might be /lom bà:ybon/ (ลมบ่ายบน) and /lom bà:ylà:ŋ/ (ลมบ่ายล่าง) occurring on the same day but at different times. The term **/lom pʰátlŭaŋ/** (ลมพัดหลวง) refers to wind blowing from the northeast slightly towards the west from June to July (or in the 7th-8th Thai lunar months). **/lom ʔâykô:/** (ลมไอ้โก้) or **/lom takô:/** (ลมตะโก้) refers to wind blowing from the northwest from May to August (or in the 6th-9th Thai lunar month). As its name indicates, **/lom tawanʔɔ̀:k/** (ลมตะวันออก) refers to wind blowing from the east around October, November and December (or in the 11th, 12th and 1st Thai lunar months). **/lom wâ:w/** (ลมว่าว), literally,

‘wind-kite’, refers to wind that blows from the north slightly towards the northeast from October to November (or in the 11th-12th Thai lunar months). It is also known as a cold wind. When **/lom wâ:w/** (ลมว่าว) blows seasonally, **/lom ʔuka:/** (ลมอุกา) might also join in. Together, this is called **/lom wâ:wʔuka:/** (ลมว่าวอุกา). The term **/lom ʔuka:/** (ลมอุกา) refers to a wind that blows during October, November, December and January (or in the 11th, 12th, 1st and 2nd Thai lunar months) from the northeast (more easterly than /lom bà:ybon/ (ลมบ่ายบน)). When it blows strongly and is accompanied by a yellow light sky, it is called /lom ʔuka: fá: lɨ̌əŋ/ (ลมอุกาฟ้าเหลือง), literally, ‘Uka wind - yellow sky’ or /lom ʔuka: dɛ̀:d lɨ̌əŋ/ (ลมอุกาแดดเหลือง) literally, ‘Uka wind - yellow sunshine’. The villagers are afraid of /lom ʔuka:/ (ลมอุกา), especially /lom ʔuka: fá: lɨ̌əŋ/ (ลมอุกาฟ้าเหลือง), the same as /lom tawanʔɔ̀:k/ (ลมตะวันออก) because of its severity, interrupting fishing activities and causing lots of damage. This wind is nicknamed “/lom tʰɔ́:ŋhɛ̂:ŋ/” (ลมท้องแห้ง) like that for the east wind or /lom tawanʔɔ̀:k/ (ลมตะวันออก). The term means ‘to have nothing to eat’ because, while it blows the fisherfolk can’t go out fishing and risk starving when they can’t earn an income. However, these days, /lom ʔuka:/ (ลมอุกา) is not as strong as it used to be and is not often felt during its season. Folk definitions of terms for each type of wind can be seen in an Appendix A.

The dimension of semantic contrast, which is a characteristic of the different descriptions of local winds, is classified according to the villagers’ perspective including; direction of occurrence, period of occurrence, strength of the wind, source of occurrence, and time of occurrence, as described in Table 4.6 below.

Table 4.6 The dimensions of semantic contrasts among local winds.

Term of local winds	Direction of occurrence	Period of occurrence	Strength of wind	Source of occurrence	Time of occurrence
/lom sală:tan/ (ลมสลาตัน)	south	Jan.-Apr.	strong	+ /lom nay/ (ลมใน)	+ /lom kla:ŋwan/ (ลมกลางวัน)
/lom pʰáttʰaya:/ (ลมพัทยา)	southwest	Apr.-May	moderate	+ /lom nay/ (ลมใน)	± /lom kla:ŋwan/ (ลมกลางวัน)
/lom tawantòk/ (ลมตะวันตก)	west	Apr.-May	soft	+ /lom nay/ (ลมใน)	- /lom kla:ŋwan/ (ลมกลางวัน)
/lom sə:ŋ/ (ลมเซิง)	southwest	May-Jun.	strong	+ /lom nay/ (ลมใน)	+ /lom kla:ŋwan/ (ลมกลางวัน)
/lom bà:ybon/ (ลมบ่ายบน)	northeast	May-Jun.	soft to moderate	- /lom nay/ (ลมใน)	+ /lom kla:ŋwan/ (ลมกลางวัน)
/lom bà:ylà:ŋ/ (ลมบ่ายล่าง)	southeast	May-Jun.	soft to moderate	- /lom nay/ (ลมใน)	+ /lom kla:ŋwan/ (ลมกลางวัน)
/lom pʰátlŭaŋ/ (ลมพัดหลวง)	northeast	Jun.-Jul.	strong	+ /lom nay/ (ลมใน)	+ /lom kla:ŋwan/ (ลมกลางวัน)
/lom takô:/ (ลมตะโก้)	northwest	May-Aug.	strong	+ /lom nay/ (ลมใน)	+ /lom kla:ŋwan/ (ลมกลางวัน)
/lom tawanʔɔ̀:k/ (ลมตะวันออก)	east	Oct.-Dec.	strong	- /lom nay/ (ลมใน)	± /lom kla:ŋwan/ (ลมกลางวัน)
/lom wâ:w/ (ลมว่าว)	north	Oct.-Nov.	moderate	- /lom nay/ (ลมใน)	± /lom kla:ŋwan/ (ลมกลางวัน)
/lom wâ:wʔuka:/ (ลมว่าวอุกา)	northeast	Oct.-Nov.	strong	- /lom nay/ (ลมใน)	- /lom kla:ŋwan/ (ลมกลางวัน)
/lom ʔuka:/ (ลมอุกา)	northeast	Oct.-Dec.	strong	- /lom nay/ (ลมใน)	± /lom kla:ŋwan/ (ลมกลางวัน)
/lomʔuka:fá:lɨ̆əŋ/ (ลมอุกาฟ้าเหลือง)	northeast	Oct.-Dec.	very strong	- /lom nay/ (ลมใน)	- /lom kla:ŋwan/ (ลมกลางวัน)

Note: The strength of each wind is inconsistent.

In addition, there are terms for inter-seasonal winds. Villagers recognize that these winds are unpredictable and may occur along with irregular weather patterns. However, each usually occurs in a particular season although in some years, they may occur and in others, not. Inter-seasonal winds include /lom ŋuaŋ/ (ลมงวง), /lom mă:sɛ:/ (ลมหมาแซ), and /lom pʰa:yúh/ (ลมพายุ).

/lom ŋuaŋ/ (ลมงวง) or **/lom mŭn/** (ลมหมุน) 'whirlwind' refers to a rotating vertical column of air, resembling an elephant's trunk. It is so powerful that whatever is in its way will sucked up. /lom ŋuaŋ/ (ลมงวง) occurs both on land and at sea. If it occurs at sea, the seawater forms a vertical stream up into the air. Any boat in its path will be sunk or overturned. On land, its force may uproot trees and destroy houses. A small /lom ŋuaŋ/ (ลมงวง) vanishes soon after its formation. It usually takes about an hour before the wind vanishes. There is no warning of a /lom ŋuaŋ/ (ลมงวง) forming and it generally occurs in summer during the day. Fortunately, it is rarely seen nowadays.

/lom mă:sɛ:/ (ลมหมาแซ) refers to a kind of wind that occurs during April. The word **/mă:sɛ:/** (หมาแซ) in this term has no identifiable meaning. Coming from the sea to the shore, it blows strongly once a month, over a vast area. It might cause damage, overturning boats and destroying houses. It commonly hits at around 7 a.m. and lasts approximately one hour or less, but is rarely experienced these days.

/lom pʰa:yúh/ (ลมพายุ) 'storm' refers to a strong wind or squall with thunder, lightening and heavy rain. Along its course, /lom pʰa:yúh/ (ลมพายุ) causes severe damage. It commonly blows in from the sea to the shore in either day or night, but not very often.

4.4.4 Terms defining wind condition

The following are the local terms used to define wind conditions and wind-related events.

/lom cʰĭw/ (ลมฉิว) refers to a constant and rapid blowing wind.

/lom càt/ (ลมจัด) refers to a strong wind, obstructing marine activities.

/lom sûa/ (ลมสั้ว) refers to a gentle wind or one with diminished force after blowing strongly.

/lom ŋîap/ (ลมเงียบ) refers to a small wind or when there is no wind at all. If the wind stops blowing suddenly, it may signal a change of direction.

/lom rê:/ (ลมเร่) refers to a changing wind direction. For example, /lom sală:tan/ (ลมสลาตัน) changes its direction from the south to the west becoming /lom pʰáttʰaya:/ (ลมพัทยา). From the local villagers' observation, it is normal for the wind to change direction gradually and not suddenly in a manner of the east to west wind.

The early days of the each seasonal wind is locally called **/hŭa lom/** (หัวลม). For example, /hŭa lomwâ:w/ (หัวลมว่าว) refers to the beginning of /lom wâ:w/ (หัวลมว่าว) season and occurrence of /lom wâ:w/ (หัวลมว่าว) in the early days of its season. In the same way, a period at the beginning of rainy season and the early days of rain is locally called **/hŭa fŏn/** (หัวฝน). Villagers recognize that during the period of /hŭa lom/ (หัวลม), the wind usually blows stronger than it does later on. They notice when the wind is coming from /kʰî:lom/ (ขี้ลม). The term **/kʰî:lom/** (ขี้ลม) 'wind cloud' refers to a cluster of clouds occurring before the formation of wind. It is a white cloud forming a line sitting low in the sky. If /kʰî:lom/ (ขี้ลม) occurs on the sea side, it can be seen as a white cloud on the sea horizon then slowly moving upwards into the sky. The presence of /kʰî:lom/ (ขี้ลม) indicates an approaching wind from the direction of the cloud. It is different from the term **/kʰî:fŏn/** (ขี้ฝน) 'rain cloud' which refers to a cluster of black clouds occurring before rain, starting lower and gradually moving upwards in the sky as it approaches. The presence of /kʰî:fŏn/ (ขี้ฝน) indicates coming rain from the direction of the cloud.

A comparison of the semantic features of /kʰîːlom/ (ขี้ลม) and /kʰîːfŏn/ (ขี้ฝน) is provided below:

/kʰîːlom/ (ขี้ลม)	**/kʰîːfŏn/ (ขี้ฝน)**
+ a cluster of white clouds	+ a cluster of black clouds
+ sitting low in the sky	+ sitting low in the sky
+ being before the wind	+ being before the rain

On the subject of predictability, the villagers have noticed that these days, the winds do not regularly come in the expected season and are not always of the same duration and magnitude as in the past. However, some of them point out that /lom tawanʔɔ̀ːk/ (ลมตะวันออก) and /lom wâːw/ (ลมว่าว) are the exception and do blow in their appropriate season. Notwithstanding the inconsistent weather patterns, the villagers are still able to identify the wind according to the descriptions above.

CHAPTER V
FOLK CLASSIFICATION OF COASTAL PLANTS AND MARINE ANIMALS

This chapter presents the folk classification of coastal plants and marine animals as reflected in terms. The researcher will outline several of the semantic components or semantic properties that distinguish folk specific kinds. Finally, the folk criteria used for classification of coastal plants and marine animals are summarized.

Plants and animals are part of the natural environment, and are interrelated with the geographical aspect of the area. Natural resources such as coastal plants and marine animals are used for food, medicine and other purposes. Marine animals especially are the principle source of income for people who dwell and make a living on fishing along the coastline. Local people have given names to these plants and animals and classified them into various groups and kinds according to their knowledge and views. Each name indicates a distinct folk kind, corresponding to Anna Wierzbicka (1985: 229) who stated that, "Specific terms are seen as singling out something 'special', that is to say something 'different', 'not the same'.

5.1 Folk classification of coastal plants

Coastal plants grow naturally and are generally found on the coast, especially around mangrove forests. There are not many varieties compared to general plants. Twelve generic folk names of coastal plants are identified by coastal villagers, referring to twelve different kinds of coastal plants which are currently found in the areas around Bang Khunsai villages. Some kinds are locally distinguished into sub-kinds marked by specific folk names, as shown Table 5.1.

Table 5.1 Generic and specific folk names of local coastal plants

Generic folk name	Specific folk name	Respective gloss
/samĕ:/ (แสม)	/samĕ:dam/ (แสมดำ)	‘black Samae’
	/samĕ:k^{h}ă:w/ (แสมขาว)	‘white Samae’
/ko:ŋka:ŋ/ (โกงกาง)	/ko:ŋka:ŋ baylék/ (โกงกางใบเล็ก) or /ko:ŋke:ŋ/ (โกงเกง)	‘small leaves-mangrove’ (*Rhizophora apicuta)*
	/ko:ŋka:ŋ bayyày/ (โกงกางใบใหญ่)	‘large leaves-mangrove’ (*Rhizophora mucronata*)
/tabu:n/ (ตะบูน)		‘*Xylocarpus granatum/ moluccensis’*
/taban/ (ตะบัน)		‘*Xylocarpus gangeticus*’
/k^{h}ùy/ (คุ่ย)		‘*Bruguiera cylindrica*’
/p^{h}o:t^{h}ale:/ (โพทะเล)		‘*Thespecia populnia*’
/lamp^{h}u:/ (ลำพู)		‘*Sonneratia alba/caseolaris*’
/c^{h}ak^{h}ra:m/ (ชะคราม)	/c^{h}ak^{h}ra:m k^{h}ĭaw/ (ชะครามเขียว)	‘green Chakhram’ *(Sueda maritime)*
	/c^{h}ak^{h}ra:m dɛ:ŋ/ (ชะครามแดง)	‘red Chakhram’ *(Sueda maritime)*
/p^{h}àkbîa/ (ผักเบี้ย)		‘*Sesuvium portulacastrum*’
/k^{h}lù:/ (ขลู่)		‘*Pluchea indica*’
/nă:mmɛ:ŋdɔ:/ (หนามแมงดอ)		‘*Azima sarmentosa* ’
/ŋɬakpla:mŏ:/ (เหงือกปลาหมอ)		‘*Acanthus ebracteatus* Vahl’

The locals have classified these coastal plants into two groups: large trees, and small trees. The large trees are those that have a large and tall trunk, mostly trees in the mangrove forest. The small trees are those that are more like small bushes, usually growing in clusters; some kinds creep along and cover the ground. They are generally found near or on the edge of the mangrove forest and near water channels. This folk classification of coastal plants can be illustrated in the taxonomic hierarchy below.

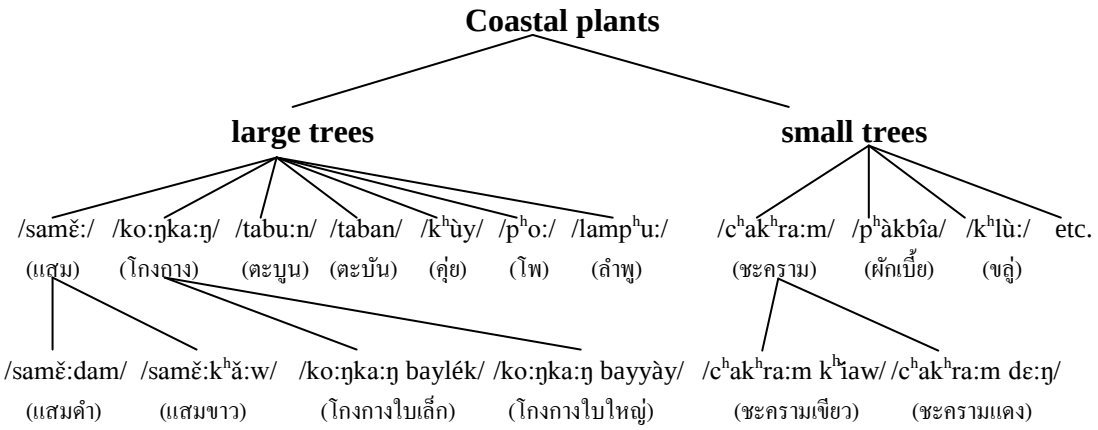


Diagram 5.1 Folk classification of local coastal plants

/samĕ:/ (แสม) and /ko:ŋka:ŋ/ (โกงกาง) are big trees which are generally found in the local area, especially in the mangrove forest. Both of them are distinguished into sub-kinds. Two kinds of /samĕ:/ (แสม), /samĕ:dam/ (แสมดำ) and /samĕ:kʰă:w/ (แสมขาว), are distinguished by the locals on the basis of the color differences seen in the stem and also the shape of the leaves and fruits. Noticeably distinguishing features of /samĕ:dam/ (แสมดำ) and /samĕ:kʰă:w/ (แสมขาว) according to folk definitions, are as described below.

/samĕ:dam/ (แสมดำ)	**/samĕ:kʰă:w/ (แสมขาว)**
+ large tree	+ large tree
+ black trunk	- black trunk
+ long-narrow and pointed leaves	+ oval-shape leaves with curved tips
+ long-shaped fruits	+ rather round-shaped fruits

It is noted that a kind of /samĕ:/ (แสม) which is locally called /samĕ:dam/ (แสมดำ) 'black Samae' is /samĕ:kʰă:w/ (แสมขาว) 'white Samae or Rvicennia alba' according to the scientific Thai common name. While a kind of /samĕ:/ (แสม) locally known as /samĕ:kʰă:w/ (แสมขาว) 'white Samae' is /samĕ:dam/ (แสมดำ) 'black Samae or Avicennia officinalis' according to the scientific Thai common name. Specific folk names and scientific common names are used alternately. As for the locals, they refer

to them according to the colors on the their trunks that are easily observed, whereas an officer at the Mangrove Forest center said the scientific name is given according to colors on the backside of the leaves.

/ko:ŋka:ŋ/ (โกงกาง), scientific named 'Rhizophora', is locally distinguished into two kinds simply by the size and shape of leaves, including its pod and root features. Distinguishing features between these two kinds of /ko:ŋka:ŋ/ (โกงกาง) according to the locals are shown below.

/ko:ŋka:ŋ baylék/ (โกงกางใบเล็ก)	**/ko:ŋka:ŋ bayyày/ (โกงกางใบใหญ่)**
+ large tree	+ large tree
+ small long leaves with pointed tips	+ bigger oval-shaped leaves
- longer in pods	+ longer in pods
+ stilt roots bend down to the ground beside its base	+ stilt roots bend down and spread on the ground

Some of the elderly locals call this /ko:ŋka:ŋ baylék/ (โกงกางใบเล็ก) with small leaves '/ko:ŋke:ŋ/' (โกงเกง) due to its root characteristics which are lankily tall with an unsteady look. And they consider '/ko:ŋke:ŋ/' (โกงเกง) as a different kind of /ko:ŋka:ŋ/ (โกงกาง) but in the same family nevertheless.

A small bush plant locally called /c^{h}ak^{h}ra:m/ (ชะคราม) is generally found near water sources along the seashore. The locals use it to cook a spicy soup. Some locals distinguish /c^{h}ak^{h}ra:m/ (ชะคราม) into two kinds on the basis of color and leaf features: /c^{h}ak^{h}ra:m k^{h}iaw/ (ชะครามเขียว) 'green Chakhram' and /c^{h}ak^{h}ra:m dɛ:ŋ/ (ชะครามแดง) 'red Chakhram'. /c^{h}ak^{h}ra:m/ (ชะคราม) with different colors can be found in clusters in the same or different areas. Distinguishing features, according to folk classification, are described below.

c^{h}ak^{h}ra:m k^{h}iaw/ (ชะครามเขียว)	**/c^{h}ak^{h}ra:m dɛ:ŋ/ (ชะครามแดง)**
+ grow in bushes	+ grow in bushes
+ green leaves and trunk	+ purple-red leaves and trunk
+ small, long, narrow leaves	+ small, long, arrow leaves and flatter than in leaves
+ popular edible	- popular edible

Nevertheless, some locals do not separate /c^{h}ak^{h}ra:m/ (ชะคราม) into different kinds because they consider that the different colors might be due to their age or quality; however, they recognize the color differences and other features shown above.

Beyond the eleven coastal plants identified above, there are other coastal plants referred to by some elderly locals such as a beach morning glory called /p^{h}ákbûŋk^{h}ăn/ (ผักบุ้งขัน) previously found along the shore, and a kind of plant growing on and covering the ground called /ti:npét/ (ตีนเป็ด) which resembles /p^{h}àkbîa/ (ผักเบี้ย) but with larger leaves. Interestingly, the plant locally called /ti:npét/ (ตีนเป็ด) is a different plant from the one with the academic name, /ti:npét/ (ตีนเป็ด) which refers to a kind of bush. However, the elderly locals recognize that this plant has not been found for a quite long time and, thus, they can not clearly define its features.

5.2 Folk classification of marine animals

Ten major categories of marine animals are identified by local coast-dwellers, namely fish, cuttlefish, shellfish, shrimp, sergestid shrimp, mantis shrimp, crab, horseshoe crab, jellyfish, and jellyfish-like creatures as in Diagram 5.2 below. In addition, each category is distinguished into specific kinds or sub-specific kinds marked by distinct specific folk names.

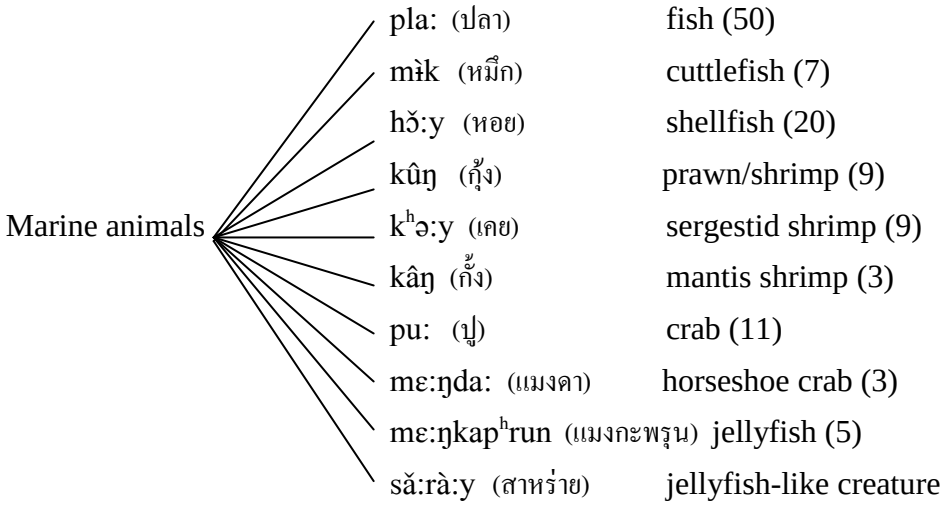


Diagram 5.2 Folk classification of local marine animals. Numbers in parentheses indicate specific kinds.

5.2.1 /pla:/ (ปลา) ‘fish’

The largest category of marine animal is that of fish. There are 50 folk generic names of local fish found, excluding those fish that are considered by locals as extinct or not seen for a long time so their features can not be clearly described. All fish names are shown in appendix B. Local marine fish are usually caught seasonally by the locals. Most fish are of those kinds that dwell in not-too-deep water; this is related to the characteristics of the sea in Bang Khunsai District. However, some kinds of fish are not found in the same quantities as in the past, and only occasionally. Three kinds of fish called /pla:tʰiŋcʰíaw/ (ปลาทิงเชี้ยว) or /pla:ti:n/ (ปลาตีน) ‘mudskipper’, /pla:ʔâytʰô:/ (ปลาไอ้โถ้), and /pla:ʔâycaŋ/ (ปลาไอ้จัง) are considered as prominent and unique to the muddy area due to their large numbers on shore and around the mangrove forest which is inundated by the seawater.

From the total number of local fish names found, 13 kinds are distinguished into sub-kinds with specific names as shown in Table 5.2.

Table 5.2 Generic and specific folk names of some kinds of local fish

Generic folk name	Specific folk name	Respective gloss
/pla:cùat/ (ปลาจวด)	/pla:cùatpɔ̀ʔ/ (ปลาจวดเปาะ)	‘typical soldier croaker’
	/pla:cùattʰian/ (ปลาจวดเทียน)	‘candle soldier croaker’
	/pla:cùatʰă:ŋkày/ (ปลาจวดหางไก่)	‘cock-tail soldier croaker’
	/pla:cùatmă:/ (ปลาจวดม้า)	‘horse soldier croaker’
/pla:laŋkʰan/ (ปลาลังคัน)	/pla:laŋkʰan(tʰammada:)/ (ปลาลังคัน(ธรรมดา)	‘common Langkhan fish’
	/pla:laŋkʰan nùatmɛ:w/ (ปลาลังคันหนวดแมว)	‘cat-whisker Langkhan fish’
/pla:kòt/ (ปลากด)	/pla:kòt kʰă:w/ (ปลากดขาว)	‘white bagrid catfish’
	/pla:kòt kʰî:lîŋ/ (ปลากดขี้ลิง)	‘monkey-shit bagrid catfish’
	/pla:kòt kʰâ:ŋlɨ̌aŋ/ (ปลากดข้างเหลือง)	‘yellow stripped bagrid catfish’
	or /pla:kòt hŭaʔɔ̀:n/ (ปลากดหัวอ่อน)	or ‘soft-head bagrid catfish’

Table 5.2 Generic and specific folk names of some kinds of local fish (continued)

Generic folk name	Specific folk name	Respective gloss
/pla:pê:n/ (ปลาแป้น)	/pla:pê:nmŭ:/ (ปลาแป้นหมู)	'pig pony fish' (pony fish with a pig face)
	/pla:pê:npâ:n/ (ปลาแป้นป้าน)	'kind of pony fish'
	/pla:pê:nmɬuk/ (ปลาแป้นเมือก)	'slimy pony fish'
	/pla:pê:nkradà:t/ (ปลาแป้นกระดาษ)	'paper pony fish' (pony fish with a paper shape)
/pla:línmă:/ (ปลาลิ้นหมา)	/pla:línmă:lék/ (ปลาลิ้นหมาเล็ก)	'small sole'
	/pla:línmă:yày/ (ปลาลิ้นหมาใหญ่)	'large sole'
/pla:k^{h}ěm/ (ปลาเข็ม)	/pla:k^{h}ěm/ (ปลาเข็ม)	'halfbeak fish'
	/pla:k^{h}ěmpà:kdiaw/ (ปลาเข็มปากเดียว)	'distinctive jaws halfbeak'
/pla:sĭ:kun/ (ปลาสีกุน)	/pla:sĭ:kun(t^{h}ammada:)/ (ปลาสีกุน(ธรรมดา)	'common trevally'
	/pla:sĭ:kun k^{h}â:ŋlɬaŋ/(ปลาสีกุนข้างเหลือง)	'yellow stripped trevally'
/pla:dà:p/ (ปลาดาบ)	/pla:dà:pŋən/ (ปลาดาบเงิน)	'silver-sword fish (hairtail)'
	/pla:dà:pla:w/ (ปลาดาบลาว)	'Loa-sword fish (dorabs)'
/pla:lăy/ (ปลาไหล)	/pla:lăynɬa/ (ปลาไหลเนื้อ)	'fleshy eel'
	/pla:lăykâ:ŋ/ (ปลาไหลก้าง)	'bony eel'
/pla:krabe:n/ (ปลากระเบน)	/krabe:nhă:ŋkrarɔ̂:k/ (กระเบนหางกระรอก)	'ray with a squirrel's tail'
	/krabe:nt^{h}oŋ/ (กระเบนธง)	'ray with a flag-like tail'
	/krabe:nnɬadam/ (กระเบนเนื้อดำ)	'black flesh ray'
	/krabe:nbaybua/ (กระเบนใบบัว)	'lotus-leaf-shaped ray'
	/krabe:nra:hŭ:/ (กระเบนราหู)	'Rahu ray'
	/krabe:nná:m/ (กระเบนน้ำ)	'water ray'
	/pla:túkka:/ (ปลาตุ๊กกา)	'Tukka fish'
/pla:ca:ramét/ (ปลาจาระเม็ด)	/pla:ca:ramétk^{h}ă:w/ (ปลาจาระเม็ดขาว)	'white butter fish'
	/pla:ca:ramétdam/ (ปลาจาระเม็ดดำ)	'black butter fish'

Table 5.2 Generic and specific folk names of some kinds of local fish (continued)

Generic folk name	Specific folk name	Respective gloss
/pla:kap^{h}oŋ/ (ปลากะพง)	/pla:kap^{h}oŋk^{h}ă:w/ (ปลากะพงขาว)	‘white bass/snapper’
	/pla:kap^{h}oŋdɛ:ŋ/ (ปลากะพงแดง)	‘red bass/snapper’
	/pla:kap^{h}oŋdam/ (ปลากะพงดำ)	‘black bass/snapper’
/pla:pàkpâw/ (ปักเป้า)	/pàkpâw/ (ปักเป้า)	‘puff fish/globe fish’
	/pàkpâwnă:m/ (ปักเป้าหนาม)	‘barb puffer fish’
	/pàkpâwmáfɨaŋ/ (ปักเป้ามะเฟือง)	‘star fruit-shaped puffer fish’
/pla:dùk/ (ปลาดุก)	/pla:dùkpɔ̀:ŋ/ (ปลาดุกป่อง) or /pla:dùkru:/ (ปลาดุกรู)	‘hole catfish’
	/pla:dùkbèt/ (ปลาดุกเบ็ด)	‘fishhook catfish’
	/pla:dùkkiâw/ (ปลาดุกเกี่ยว)	‘crook catfish’

The folk classification of some local fish can be illustrated in the taxonomic hierarchy shown below:

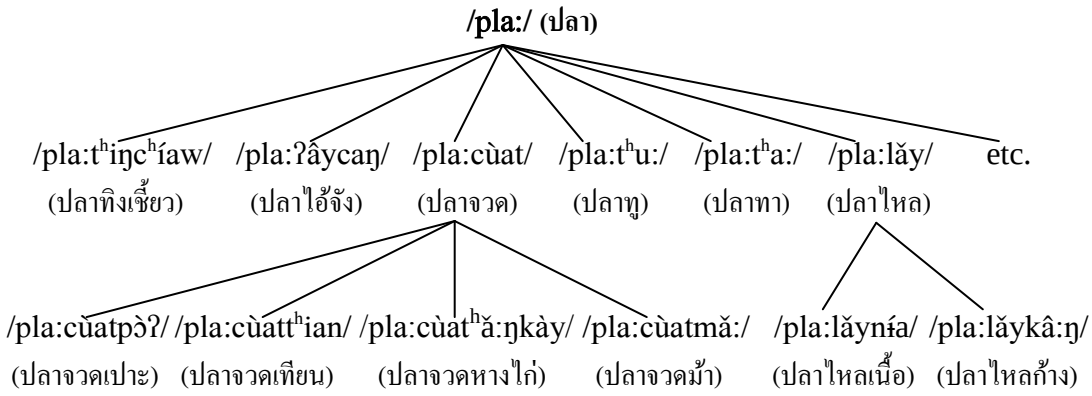


Diagram 5.3 Folk taxonomic classification of some fish

Four kinds of /pla:cùat/ (ปลาจวด) ‘soldier croaker’ are locally identified and named. Distinguishing features of various kinds of /pla:cùat/ (ปลาจวด) according to folk definitions can be described as below:

/pla:cùatpɔ̀?/ (ปลาจวดเปาะ)
+ yellowish white body/ yellow fins
+ rather flat body, shorter than /pla:cùatʰian/ (ปลาจวดเทียน)
+ smallest kind of/pla:cùat/ (ปลาจวด)
+ edible

/pla:cùatʰian/ (ปลาจวดเทียน)
+ white body/ little gray back and fins
+ stout, rounded and long
+ obvious pointed teeth
+ bigger and longer than most kinds
+ popular edible

/pla:cùatʰă:ŋkày/ (ปลาจวดหางไก่)
+ yellowish white body/ yellow fins
+ rather flat body
+ narrow and long tail
+ edible

/pla:cùatmă:/ (ปลาจวดม้า)
+ yellowish white body/ yellow fins
+ rather flat body
+ hooked face that look like horse face/ long back-fin
+ edible

The fish known as /pla:laŋkʰan/ (ปลาลังคัน) is distinguished into two kinds; /pla:laŋkʰan(tʰammada:)/ (ปลาลังคัน(ธรรมดา) which is locally also referred to as /pla:laŋkʰannɨa)/ (ปลาลังคันเนื้อ) and /pla:laŋkʰannùatmɛ:w/ (ปลาลังคันหนวดแมว) which is locally also known as /pla:laŋkʰankâ:ŋ)/ (ปลาลังคันก้าง). Distinguishing features of different kinds of this fish according to folk definitions are described below.

/pla:laŋkʰan(tʰammada:)/ (ปลาลังคัน(ธรรมดา)
+ white body/ little green back
+ whiskers under the mouth
+ softer and less bone than other one
+ fleshy
+ edible

/pla:laŋkʰannùatmɛ:w/ (ปลาลังคันหนวดแมว)
+ white body/ little yellow back
+ whiskers under the mouth
+ harder and more bony than other one
- fleshy
+ edible

Three kinds of /pla:kòt/ (ปลากด) ‘bagrid catfish’ are identified and specifically named by the body color. The significant distinguishing features of various kinds of /pla:kòt/ (ปลากด) according to folk definitions are described below.

/pla:kòt k^{h}ă:w/ (ปลากดขาว)
+ rather white body
+ short black tentacle
+ shorter and rounder body than other kinds
+ not big as /pla:kòt k^{h}î:liŋ/ (ปลากดขี้ลิง)
+ edible

/pla:kòt k^{h}î:liŋ/ (ปลากดขี้ลิง)
+ more dull and dark upper body than /pla:kòt k^{h}ă:w/ (ปลากดขาว)
+ long light purple-red whiskers
+ long body
+ bigger than other kinds
- popular edible

/pla:kòt k^{h}â:ŋlɨaŋ/ (ปลากดข้างเหลือง) or **/pla:kòt hŭa?ɔ̀:n/ (ปลากดหัวอ่อน)**
+ white with a bit yellow on its sides
+ black tentacle, and shorter than other kind
+ not big, smaller than /pla:kòt k^{h}ă:w/ (ปลากดขาว)
+ edible

The fish called /pla:pê:n/ (ปลาแป้น) 'pony fish' is distinguished into four kinds. The kinds that are generally known and often found are /pla:pê:nmŭ:/ (ปลาแป้นหมู) 'pig pony fish' and /pla:pê:nmɨak/ (ปลาแป้นเมือก) 'slimy pony fish'. Distinguishing features of various kinds of /pla:pê:n/ (ปลาแป้น) according to folk definition can be described as below.

/pla:pê:nmŭ:/ (ปลาแป้นหมู)
+ oval-rounded body, short face and swelling lips
+ white body/ little bit yellow side
+ not big
+ popular edible

/pla:pê:nmɨak/ (ปลาแป้นเมือก)
+ oval-rounded body and a bit longer than /pla:pê:nmŭ:/
+ white body/ little green back
+ slimier than other kinds
+ bigger than other kinds
+ edible

/pla:pê:npâ:n/ (ปลาแป้นป้าน)
+ longer shape than other kinds
+ white body with little grey back
+ as big as or bigger than /pla:pê:nmŭ:/
+ edible

/pla:pê:nkradà:t/ (ปลาแป้นกระดาษ)
+ flat and slim shape/ short oval-rounded body
+ white body with green and black spots on the back
+ smaller than other kinds
- edible (because of flesh-less)

Two kinds of /pla:línmă:/(ปลาลิ้นหมา) ‘tongue sole’, /pla:línmă:lék/ (ปลาลิ้นหมาเล็ก) and /pla:línmă:yày/ (ปลาลิ้นหมาใหญ่), are distinguished as different species on the basis of their body size and slightly different features. Distinguishing features according to folk definition can be described as below.

/pla:línmă:lék/ (ปลาลิ้นหมาเล็ก)	**/pla:línmă:yày/ (ปลาลิ้นหมาใหญ่)**
+ oval-rounded shape/ flat overall body	+ oval-rounded shape/ flat overall body
- bigger in size	+ bigger in size
	+ more slender, longer and sharper tail
+ usually found in not deep water	+ found in deeper water
+ edible	+ edible

The fish called /pla:k^{h}ěm/ (ปลาเข็ม) ‘halfbeak fish’ are distinguished into two kinds mainly by the shape of their distinctive jaws. /pla:k^{h}ěmpà:kdiaw/ (ปลาเข็มปากเดียว), literally, ‘single mouth halfbeak fish’ is known for its lower lip which is shorter than its upper lip, and thus differs from other one of /pla:k^{h}ěm/ (ปลาเข็ม). Distinguishing features of different kinds of /pla:k^{h}ěm/ (ปลาเข็ม) according to the locals’ classification are described below.

/pla:k^{h}ěm/ (ปลาเข็ม)	**/pla:k^{h}ěmpà:kdiaw/(ปลาเข็มปากเดียว)**
+ long needle-shaped lips upper lip	+ lower lip is long and pointed/ is shorter than upper lip/ teeth are not seen
+ long narrow and rounded shape	+ lower body is flatter/ shorter in size
+ white body/ little grey back	+ white body/ bluish green back
+ edible	+ edible

/pla:sĭ:kun/ (ปลาสีกุน) are distinguished into two different kinds. The following are the significant distinguishing features of their sub-kinds according to folk definitions.

/pla:sĭ:kun(tʰammada:)/ (ปลาสีกุน(ธรรมดา)	/pla:sĭ:kun kʰâ:ŋlăaŋ/ (ปลาสีกุนข้างเหลือง)
+ white body/ dark grey back and fin	+ white body/ light yellow fin and tail
+ bigger in size	+ smaller and shorter in size
+ wider and flatter shape	+ more well-rounded shape
+ the base of its tail is ridged with hard scales	- the base of its tail is ridged with hard scales
- fleshy and fattier flesh	+ fleshy and fattier flesh
+ edible	+ edible

It is noted that the qualifying word /tʰammada:/ ‘common or normal’ may be added to further distinguish one from the other.

Two kinds of fish called /pla:dà:p/ (ปลาดาบ) are commonly identified and specifically named. Distinguishing features according to folk definitions are described below.

/pla:dà:pla:w/ (ปลาดาบลาว)	/pla:dà:pŋən/ (ปลาดาบเงิน)
+ long flat, cutlass-like body	+ long flat, cutlass-like body / its belly look more droopy than /pla:dà:pla:w/ (ปลาดาบลาว)
+ light blue on the ridge of the back/ white belly	+ whole body with murky-creamy white
+ smaller and bonier bones	+ bigger and harder bones
- more fishy smell than the other	+ more fishy smell than the other
+ edible	+ edible

/pla:lăy/ (ปลาไหล) ‘eel’ is distinguished into two kinds; /pla:lăyɲ́a/ (ปลาไหลเนื้อ) ‘fleshy eel’ and /pla:lăykâ:ŋ/ (ปลาไหลก้าง) ‘bony eel’. Distinguishing features according to folk definitions are described below.

/pla:lăyɲ́a/ (ปลาไหลเนื้อ)	/pla:lăykâ:ŋ/ (ปลาไหลก้าง)
+ cylindrical shaped/ stouter	+ cylindrical shaped/ slimmer
+ rather brown or gray body/ yellowish white belly	+ rather brown or gray body/ yellowish white belly
+ bigger in size	+ smaller (long shape but not big)
- its spine have offshoot	+ its spine have offshoot
+ popular edible (fleshy, not bony)	- popular edible (not fleshy/ bony)

There are many kinds of rays or /pla:krabe:n/ (ปลากระเบน) according to the locals' view. Seven kinds of rays that are often or occasionally found in the local area are identified and have specific names as shown in Table 5.2.1. This includes a marine animal locally called /pla:túkka:/ (ปลาตุ๊กกา) which the locals consider as a kind of ray. Distinguishing features, which are the prominent features of various kinds of rays, correspond to the folk definitions below.

/krabe:nhă:ŋkrarɔ̂:k/ (กระเบนหางกระรอก)
+ rather rounded but flat, kite-like shaped
+ gray or dark brown, light red fins on both sides
+ black and white striped tail
+ edible

/krabe:nt^{h}oŋ/ (กระเบนธง)
+ square-shaped, the front part is expanded.
+ dark brown body
+ the tail fin is flag-like
+ large in size
+ edible

/krabe:nníadam/ (กระเบนเนื้อดำ) or **/krabe:nók/ (กระเบนนก)**
+ expanded-shaped like bird's wing
+ black back with white spots and black flesh
+ very narrow tail
+ popular edible

/krabe:nbaybua/ (กระเบนใบบัว)
+ rounded body like lotus-leaf
+ creamy brown body
+ large in size
+ edible

/krabe:nra:hŭ:/ (กระเบนราหู)
+ have a bulging-rounded shape
+ brown or grey back
+ have a horn-like lump on its head
+ very large in size
+ edible

/krabe:nná:m/ (กระเบนน้ำ)
+ rather round-flat-shaped
+ brownish grey body/ no bulging dots on the back
+ quite large in size
+ edible

/pla:túkka:/ (ปลาตุ๊กกา)
+ rather rounded and kite-like shape
+ brown body
+ shorter tail than other kinds (the tail length is as long as the body length)
+ not large in size (generally a bit bigger than an adult's palm)
+ edible

Two kinds of butterfish called /pla:ca:lamét/ (ปลาจาระเม็ด) are distinguished significantly according to their body colors. Other distinguishing features according to folk classification are described below.

pla:ca:ramétk^{h}ă:w/ (ปลาจาระเม็ดขาว)
+ white body
+ flat-rhombus-shaped
+ long jagged tail fin

/pla:ca:ramétdam/ (ปลาจาระเม็ดดำ)
+ darkish grey body
+ flat but longer in size
+ basal part of tail is a hard ridge/ shorter jagged tail fin

The fish called /pla:kap^{h}oŋ/ (ปลากะพง) is distinguished into three kinds based on body color the as same as with butterfish. Distinguishing features between different kinds of this fish according to folk definitions can be described as:

/pla:kap^{h}oŋk^{h}ă:w/ (ปลากะพงขาว)
+ silver white body
+ thick and long body

/pla:kap^{h}oŋdam/ (ปลากะพงดำ)
+ darkish grey body
+ thick and long body

/pla:kap^{h}oŋdɛ:ŋ/ (ปลากะพงแดง)
+ red or reddish pink body
+ stouter and shorter than other kinds

Three kinds of /pla:pàkpâw/ (ปลาปักเป้า) 'puffer fish / globe fish' are identified and named. Significant distinguishing features according to folk definitions are described below.

/pàkpâw/ (ปักเป้า)
+ oval-rounded shape (when not expanding)
+ soft prickles under belly
+ darkish grey body with white belly
+ a ping-pong ball size when expanding
+ poisonous

/pàkpâwnă:m/ (ปักเป้าหนาม)
+ rather oval rounded shape (when not expanding)
+ hard prickles on the skin
+ yellowish grey body with black eruption on its white belly
+ a very large rounded shape when expanding
+ poisonous

/pàkpâwmáfiaŋ/ (ปักเป้ามะเฟือง)
+ ridged-square shape like a star fruit
+ yellowish grey body with black spots all over
+ no expanding ability (stable figure)
+ poisonous

/pla:dùk/ (ปลาดุกป่อง) ‘catfish’ are distinguished and named: /pla:dùkpɔ̀:ŋ/ (ปลาดุกป่อง) or /pla:dùkru:/ (ปลาดุกรู) which refers to the catfish dwelling in its hole called “/pɔ̀:ŋ/ (ปลาดุกป่อง)” and can be caught around its hole with a kick to find the fish; /pla:dùkbèt/ (ปลาดุกเบ็ด) which refers to a catfish caught with a long-lined-fishhook set in the water; and /pla:dùkkiâw/ (ปลาดุกเกี่ยว) which refers to a catfish caught with a tool called “/sɔ̂:m/ (ส้อม)” (a crook-like tool) to hook it up in rather deep water.

According to most locals, three kinds of catfish they have distinguished are not of different species. However, some locals comment that they might be of different species because they are found in different areas and have slightly different shapes, especially, /pla:dùkkiâw/ (ปลาดุกเกี่ยว) which is quite different form the other two kinds.

Distinguishing features between catfish called /pla:dùkpɔ̀:ŋ/ (ปลาดุกป่อง), /pla:dùkbèt/ (ปลาดุกเบ็ด) and /pla:dùkkiâw/ (ปลาดุกเกี่ยว) according to folk classification are described below.

/pla:dùkpɔ̀:ŋ/ (ปลาดุกป่อง)
+ live inside the hole (its area along the coastline)
+ caught by reaching its hole
+ light grey body with yellowish white belly
+ rather big size
+ popular edible

/pla:dùkbèt/ (ปลาดุกเบ็ด)
- live inside the hole (its area in not very deep water)
+ caught by a fishhook
+ light grey body with yellowish white belly
+ rather big size
+ edible

/pla:dùkkiâw/ (ปลาดุกเกี่ยว)
+ live outside the hole (its area in rather deep water, usually beside the strake trap)
+ caught with a crook-like tool
+ darker than other kinds
- rather big size
+ edible

In addition, it should be noted that fish that look similar and are considered, by the locals, as of the same group or close species, have been given similar names,

for instance, /pla:t^{h}u:/ (ปลาทู) and /pla:t^{h}a:/ (ปลาทา), /pla:kramɔ̀ʔ/ (ปลากระเมาะ) /pla:krabɔ̀:k/ (ปลากระบอก) and /pla:kramòk/ (ปลากระหมก), etc.

5.2.2 /mɨk/ (หมึก) 'cuttlefish or squid'

Cuttlefish or squid known as /mɨk/ (หมึก) are classified into seven different kinds. Some kinds are distinguished into sub-kinds with distinct names as shown in Table 5.3.

Table 5.3 Generic and specific folk names of cuttlefish

Generic folk name	**Specific folk name**	**Respective gloss**
/mɨk sǎ:y/ (หมึกสาย)	/mɨk sǎ:ysân/ (หมึกสายสั้น)	'short arms-cuttlefish'
	/mɨk sǎ:yya:w/ (หมึกสายยาว)	'long arms-cuttlefish'
/mɨk klûay/ (หมึกกล้วย)	/mɨk klûay/ (หมึกกล้วย)	'splendid squid'
	/mɨk sɔ̀:k/ (หมึกศอก)	'long splendid squid'
/mɨk kradɔ:ŋ/ (หมึกกระดอง) or /mɨk táw/ (หมึกเต๋า)		'octopus with cuttlefish /rainbow cuttlefish'
/mɨk hɔ̌:m/ (หมึกหอม) or /mɨk tap^{h}aw/ (หมึกตะเภา)		'fragrant cuttlefish'(soft cuttlefish)
/mɨk tù:tlɛ̌:m/ (หมึกตูดแหลม)		'pointed-bottom octopus'
/mɨk katɔ:y/ (หมึกกะตอย)		'kind of small cuttlefish'
/mɨk kadum/ (หมึกกะดุม)		'button octopus' (button shaped)

In addition, the locals classify these cuttlefish or squid into two groups: /mɨk/ (หมึก) which has an internal structure or cuttlebone, a hard and wide flattened shell inside its body, called /kradɔ:ŋ/ (กระดอง); and /mɨk/ (หมึก) which has no cuttlebone or /kradɔ:ŋ/ (กระดอง). The locals point out that /mɨk sǎ:y/ (หมึกสาย) is the only kind that has no cuttlebone; all other kinds have cuttlebone. Folk classification of /mɨk/ (หมึก) can be illustrated in the taxonomic hierarchy below:

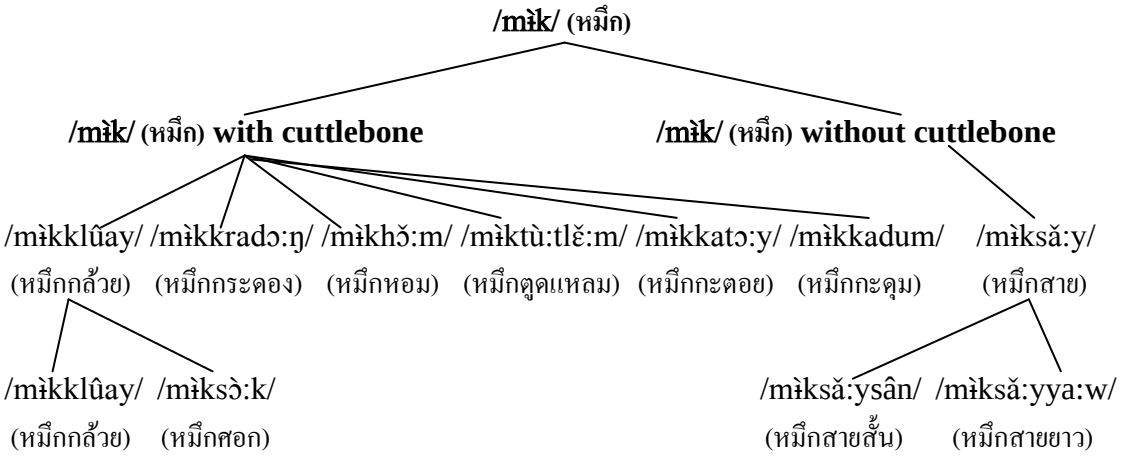


Diagram 5.4 Folk taxonomic classification of cuttlefish or squid

All kinds of /mɨk/ (หมึก) 'cuttlefish or squid' identified above are eaten by the locals. Distinguishing features of each kind according to folk definitions can be described as below:

/mɨk klûay/ (หมึกกล้วย)
+ cuttlefish with cuttlebone
+ long cylindrical shape
+ triangle fins on two sides of the lower part
+ reddish-brownish-white body

/mɨk kradɔ:ŋ/ (หมึกกระดอง)
+ cuttlefish with cuttlebone
+ flat, fat and short oval-shaped
+ fins on two sides of the body
+ upper part of body is darkish grey/ creamy white belly

/mɨk hɔ̌:m/ (หมึกหอม)
+ cuttlefish with cuttlebone
+ cylindrical shaped body
+ fins on the both edges of its body look like /mɨk kradɔ:ŋ/
+ big size/ bigger than /mɨk kradɔ:ŋ/
+ reddish-brown transparent body

/mɨk tù:tlɛ̌:m/ (หมึกตูดแหลม)
+ cuttlefish with cuttlebone
+ flat, fat and short oval shape, similar to /mɨk kradɔ:ŋ/ but has a pointed bottom (look like a protruding bone)
+ big size/bigger than /mɨkkradɔ:ŋ/
+ darkish grey back / creamy white belly

/mɨk katɔ:y/ (หมึกกะตอย)	**/mɨk kadum/ (หมึกกะดุม)**
+ cuttlefish with cuttlebone	+ cuttlefish with cuttlebone
+ rounded and long-narrow shapes like /mɨk klûay/ but has a shorter bottom	+ flat, rounded shape like a button
+ as big as an adult's thump	+ as big as or a bit bigger than /mɨk katɔ:y/
+ white body with brown spots	+ darkish grey body
+ mostly spawn	

/mɨk sǎ:y/ (หมึกสาย)

- cuttlefish with cuttlebone
+ rather rounded shape / small size
+ eight tentacles (each tentacle has similar length and is as twice-time longer than body length
+ blackish grey body with light brown/ white belly

The coastal locals are aware that all kinds of cuttlefish or squid have tentacles, but they only count the number of tentacles of the cuttlefish called /mɨksǎ:y/ (หมึกสาย). This is because this cuttlefish has long and large tentacles, as indicated by its name.

Two kinds of /mɨksǎ:y/(หมึกสาย), /mɨksǎ:ysân/ (หมึกสายสั้น) and /mɨksǎ:yya:w/ (หมึกสายยาว) are distinguished simply by the length of their tentacles. Moreover, the locals recognize that their habitats are different. Distinguishing features of distinct kinds of /mɨksǎ:y/ (หมึกสาย) according to folk definitions can be described as below.

/mɨk sǎ:ysân/ (หมึกสายสั้น)	**/mɨksǎ:yya:w/ (หมึกสายยาว)**
+ shorter tentacles	+ very long tentacles (might be up to a cubit)
+ creamy white body and tentacles	+ darkish light-grey body and tentacles/ has a darker hue
- live in the hole	+ live in the hole
+ live in the deeper water	+ live in the shallow water

A kind of cuttlefish identified as /mɨk klûay/ (หมึกกล้วย) 'splendid squid' which is a very large with a long body up to a cubit, Thai length measurement -

measure from the tip of finger to the elbow, is specifically called /mɨksɔ̀:k/ (หมึกศอก). There are two different views of the locals; the first view considers /mɨksɔ̀:k/ (หมึกศอก) as a kind of /mɨk klûay/ (หมึกกล้วย) (of a different species) which is larger than the other kind of /mɨk klûay/ (หมึกกล้วย). In Diagram 5.4, classification of /mɨksɔ̀:k/ (หมึกศอก) which is a kind of /mɨk klûay/ (หมึกกล้วย) is displayed. The other view considers /mɨksɔ̀:k/ (หมึกศอก) not as a kind of /mɨk klûay/ (หมึกกล้วย) (not a different species), but is /mɨk klûay/ (หมึกกล้วย) with a large size according to its long life. They are almost identical in all easily observable features except for size. However, there are some distinguishing features recognized by the locals as described below:

/mɨk klûay/ (หมึกกล้วย)	**/mɨk sɔ̀:k/ (หมึกศอก)**
+ not large in size (the longest length is about palm span)	+ large and very long
- think flesh	+ thick flesh
+ abundant in number	- abundant in number
+ live in the deep water	+ live in the very deep water

5.2.3 /hɔ̌:y/ (หอย) 'shellfish'

Local shellfish are diverse but not all are labeled specifically. Twenty-two folk names of local shellfish are found as seen in Appendix B. Table 5.4 shows shellfish classified into sub-kinds and marked by specific names.

Table 5.4 Some generic and specific folk names of shellfish

Generic folk name	Specific folk name	Respective gloss
/hɔ̌:y kʰrɛ:ŋ/ (หอยแครง)	/hɔ̌:y kʰrɛ:ŋ/ (หอยแครง)	female blood cockle
	/hɔ̌:y ʔâymûm/ (หอยไอ้มุ่ม) or /hɔ̌:y pà:kmûm/ (หอยปากมุ่ม)	male blood cockle
/hɔ̌:y sǎŋ/ (หอยสังข์)	/hɔ̌:y sǎŋkʰǒn/ (หอยสังข์ขน)	'haired conch shell'
	/hɔ̌:y sǎŋnǎ:m/ (หอยสังข์หนาม) or /hɔ̌:y nǎ:m/ (หอยหนาม)	'prickle conch shell'
	/hɔ̌:y sǎŋyày/ (หอยสังข์ใหญ่)	'big conch shell'

Table 5.4 Some generic and specific folk names of shellfish (continued)

Generic folk name	Specific folk name	Respective gloss
/hɔ̌:y kʰra:/ (หอยคราง)		‘kind of shellfish’
/hɔ̌:y krapùk/ (หอยกระปุก)		‘kind of shellfish’
/hɔ̌:y sìap/ (หอยเสียบ)		‘kind of shellfish’
/hɔ̌:y ce:di:/ (หอยเจดีย์)		‘pagoda conch shell’
/hɔ̌:y taka:y/ (หอยตะกาย)		‘kind of shellfish’
etc.		

Folk classification of /hɔ̌:y/ (หอย) ‘shellfish’ is illustrated in the taxonomic hierarchy below.

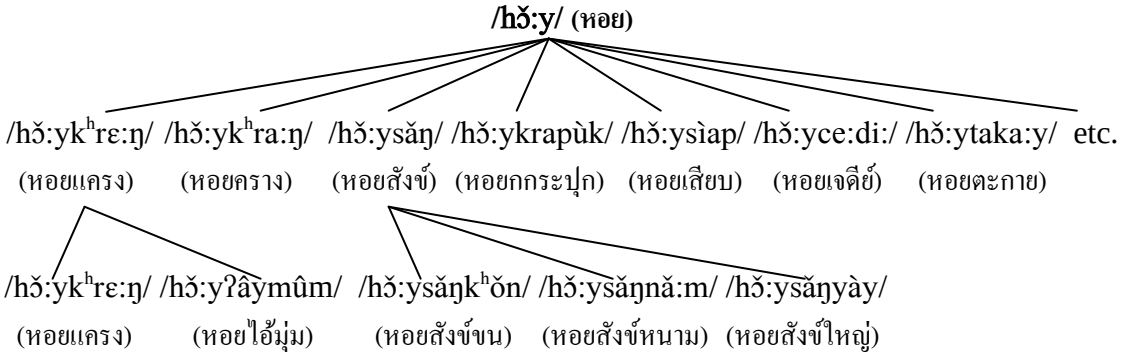


Diagram 5.5 Folk taxonomic classification of local shellfish

Two distinct kinds of blood cockles are identified; /hɔ̌:ykʰrɛ:ŋ/ (หอยแครง) refer to a female shellfish, and /hɔ̌:yʔâymûm/ (หอยไอ้มุ่ม) refer to a male shellfish, according to the locals’ view. They are similar in shape and resemble another shellfish called /hɔ̌:ykʰra:ŋ/ (หอยคราง). The locals consider /hɔ̌:ykʰra:ŋ/ (หอยคราง) as being of the same group or kind as blood cockles. The distinguishing features of /hɔ̌:ykʰrɛ:ŋ/ (หอยแครง), /hɔ̌:yʔâymûm/ (หอยไอ้มุ่ม) and /hɔ̌:ykʰra:ŋ/ (หอยคราง) according to folk definitions are described below.

/hɔ̌:y kʰrɛ:ŋ/ (หอยแครง)
+ female
+ rather curved-rounded shell
- hooked mouth (two sides of the shell hooked)
+ bigger in size than /hɔ̌:y ʔâymûm/
+ edible

/hɔ̌:y ʔâymûm/ (หอยไอ้มุ่ม)
- female
+ rather narrow oval shell
+ hooked smooth mouth/ difficult to untie
+ not big in size / middle size
+ edible

/hɔ̌:y kʰra:ŋ/ (หอยคราง)
± female
+ rounder shell than /hɔ̌:y kʰrɛ:ŋ/ (หอยแครง) and has hair
- hooked mouth
+ bigger in size than others
- popular edible

In addition, blood cockles are classified by size and named differently such as :

/hɔ̌:y lék/ (หอยเล็ก) refers to a small-sized shellfish or an offspring.

/hɔ̌:y na:ŋ/ (หอยนาง) refers to a middle-sized shellfish. As a local described, the word /na:ŋ/ (นาง) is like the term for the middle finger next to the little finger, "/níwna:ŋ/ (นิ้วนาง)".

/hɔ̌:y yày/ (หอยใหญ่) refers to a big-sized shellfish.

/hɔ̌:y kʰrô:ŋ/ (หอยโคร่ง) refers to a very-big-sized shellfish.

Shellfish called /hɔ̌:ysăŋ/ (หอยสังข์) 'conches' are distinguished and named according to their different shapes. According to the locals, /hɔ̌:ysăŋkʰŏn/ (หอยสังข์ขน) 'haired conches' and /hɔ̌:ysăŋnă:m/ (หอยสังข์หนาม) or /hɔ̌:ynă:m/ (หอยหนาม) 'prickle conches' can be found on sea bank, while /hɔ̌:ysăŋyày/ (หอยสังข์ใหญ่) 'big conches' are rarely found. Distinguishing features of each conch according to folk classification are described below:

/hɔ̌:ysăŋ kʰŏn/ (หอยสังข์ขน)

+ small-rounded shape with a horn-shaped corkscrew shell of the top part
+ long and protruding opening part
+ somewhat black shell
+ have hair on the shell

/hɔ̌:ysăŋ nă:m/ (หอยสังข์หนาม)

+ small-rounded shape with a horn-shaped corkscrew shell on the top part
+ narrow and pointed opening part and very long protruding opening part from the shell
+ brownish-yellowish-white shell
+ has rows of big and small prickle on the shell

/hɔ̌:ysăŋ yày/ (หอยสังข์ใหญ่)

+ somewhat oval-round shaped/ screw-like head
+ has a white shiny smooth shell
+ big is size
+ used as a vessel for watering the bride and the groom in Thai traditional wedding ceremony

5.2.4 /kûŋ/ (กุ้ง) 'prawn or shrimp'

The nine kinds of local prawn are identified and named differently. Only one particular kind of prawn called /kûŋkʰă:w/ (กุ้งขาว) is distinguished into sub-kinds and marked by specific names as shown in Table 5.5.

Table 5.5 Generic and specific folk names of prawn

Generic folk name	Specific folk name	Respective gloss
/kûŋkʰă:w/ (กุ้งขาว)	/kûŋkʰă:w/ (กุ้งขาว)	'common/ typical white prawn'
	/kûŋkʰă:w hă:ŋdɛ:ŋ/ (กุ้งขาวหางแดง)	'red-tailed white prawn'
/kûŋlɨ̌aŋ/ (กุ้งเหลือง)		'yellow prawn'
/kûŋʔòkkʰlâk/ (กุ้งอกคลัก)		'kind of prawn'
/kûŋlăŋkʰày/ (กุ้งหลังไข่)		'egg-backed prawn' (prawn with eggs on its back)
/kûŋkatɔ:m/ (กุ้งกะตอม)		'kind of prawn'
/kûŋkula:/ (กุ้งกุลา)		'kind of prawn'
/kûŋcʰɛ:búa/ (กุ้งแชบ๊วย)		'kind of prawn'
/kûŋru:/ (กุ้งรู) or /kûŋla:y/ (กุ้งลาย)		'hole prawn' (prawn living in the hole) or 'stripped prawn'
/kûŋkâ:m/ (กุ้งก้าม)		'pincer prawn' (prawn with big pincer)

Folk classification of /kûŋ/ (กุ้ง) **‘**prawn or shrimp’ can be shown in the taxonomic hierarchy below.

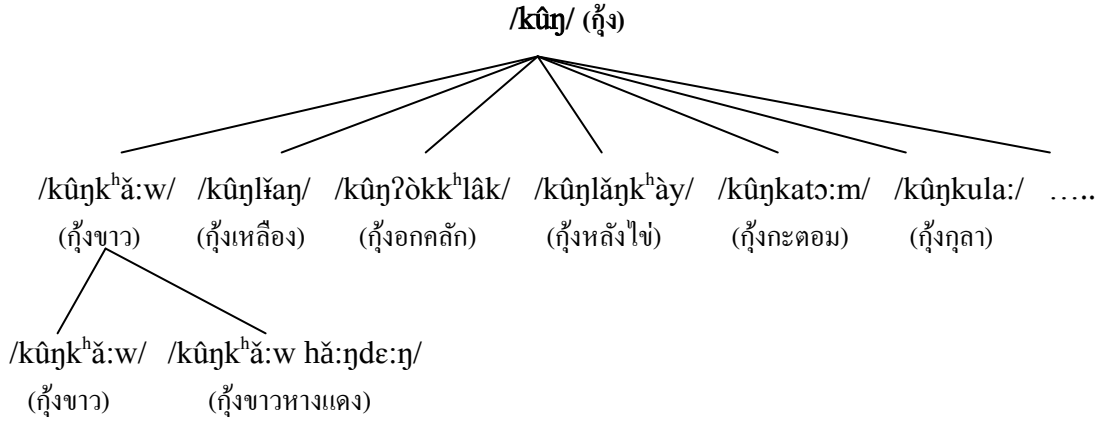


Diagram 5.6 Folk taxonomic classification of local prawn

The locals distinguish each kind of prawn according to its shape, including its habitats, for instance: /kûŋlɨ̌aŋ/ (กุ้งเหลือง) is called a prawn with a yellow body; /kûŋlăŋkʰày/ (กุ้งหลังไข่) is called a prawn with eggs on its back as villagers’ perception; /kûŋru:/ (กุ้งรู) or /kûŋla:y/ (กุ้งลาย) is called a prawn with horizontal stripes on its body that lives in a hole; and /kûŋkâ:m/ (กุ้งก้าม) is called a prawn with big claws (one is bigger than the other claw) who lives in mangrove forest. Of the nine kinds of local prawn, only /kûŋkâ:m/ (กุ้งก้าม), Thai common name /kûŋdì:tkʰăn (กุ้งดีดขัน) ‘Common snapping prawn’ is not eaten by the locals.

Two kinds of /kûŋkʰă:w/ (กุ้งขาว); /kûŋkʰă:w(tʰammada:)/ (กุ้งขาว(ธรรมดา) and /kûŋkʰă:w hă:ŋdɛ:ŋ/ (กุ้งขาวหางแดง), are distinguished simply by the colors seen on their tails. Their distinguishing features according to folk classification are:

/kûŋkʰă:w (tʰammada:)/ (กุ้งขาว(ธรรมดา)	**/kûŋkʰă:w hă:ŋdɛ:ŋ/ (กุ้งขาวหางแดง)**
+ white body	+ white body
- red tail	+ red tail
+ smaller in size	+ bigger in size
+ edible	+ edible

It is noted that the qualifying word /t^{h}ammada:/ ‘common or normal’ may be added to make further distinction.

5.2.5 /k^{h}ə:y/ (เคย) ‘sergestid shrimp (Acetes)’

The marine animal locally known as /k^{h}ə:y/ (เคย) refers to a very small shrimp-like creature with no rostrum* on its head. They are used for the production of shrimp paste. These nine kinds of /k^{h}ə:y/ (เคย) are identified and named in Table 5.6.

Table 5.6 Specific folk names of sergestid shrimp known as /k^{h}ə:y/ (เคย)

Generic folk name	Specific folk name	Respective gloss
/k^{h}ə:y/ (เคย)	/k^{h}ə:yta:dam/ (เคยตาดำ)	‘black-eye sergestid shrimp’
	/k^{h}ə:ydam/ (เคยดำ) or	‘black sergestid shrimp’ or
	/k^{h}ə:yk^{h}ày/ (เคยไข่)	‘egg sergestid shrimp’
	/k^{h}ə:ysămli:/ (เคยสำลี)	‘cotton wool sergestid shrimp’ (very white sergestid shrimp)
	/k^{h}ə:yhŭak^{h}ă:w/ (เคยหัวขาว)	‘white-head sergestid shrimp’
	/k^{h}ə:ysi:c^{h}omp^{h}u:/ (เคยสีชมพู)	‘pink sergestid shrimp’
	/k^{h}ə:yhă:ŋdɛ:ŋ/ (เคยหางแดง)	‘red-tail sergestid shrimp’
	/k^{h}ə:ysăŋkasi:/ (เคยสังกะสี)	‘zinc-colored sergestid shrimp’
	/k^{h}ə:ykì:psômʔo:/ (เคยกลีบส้มโอ)	‘pomelo-carpel sergestid shrimp’ (sergestid shrimp with a juice-sac-of-pomelo shape)
	/k^{h}ə:yt^{h}ap^{h}aw/ (เคยตะเภา)	‘Tapao sergestid shrimp’

* The section of the carapace that projects in front of the eyes is called the rostrum.

The locals also classify /kʰəːy/ (เคย) into two groups: /kʰəːy laʔìat/ (เคยละเอียด) ‘fine sergestid shrimp’ and /kʰəːy yàːp/ (เคยหยาบ) ‘rough sergestid shrimp’. /kʰəːy laʔìat/ (เคยละเอียด) refer to very tiny sergestid shrimp which are hardly able to be seen or difficult to observe. The locals note that /kʰəːy laʔìat/ (เคยละเอียด) are those with black eyes. While /kʰəːy yàːp/ (เคยหยาบ) are larger than /kʰəːy laʔìat/ (เคยละเอียด), they may be as big as baby freshwater shrimp. /kʰəːy yàːp/ (เคยหยาบ) are also distinguished into /kʰəːy yàːpʔɔ̀ːn/ (เคยหยาบอ่อน) ‘soft rough sergestid shrimp’ and /kʰəːy yàːpyày/ (เคยหยาบใหญ่) ‘big rough sergestid shrimp’. /kʰəːy yàːpyày/ (เคยหยาบใหญ่) refers to a sergestid shrimp which is of about the same size as a baby freshwater shrimp. /kʰəːy yàːpʔɔ̀ːn/ (เคยหยาบอ่อน) are generally smaller than /kʰəːy yàːpyày/ (เคยหยาบใหญ่).

Generally, the locals do not consider sergestid shrimp called /kʰəːy tapʰaw/ (เคยตะเภา) as of the same group as /kʰəːy yàːp/ (เคยหยาบ) or /kʰəːy laʔìat/ (เคยละเอียด), because they have a very different shape to that of other kinds of /kʰəːy/ (เคย), and are dangerous and can not be used for any purpose. However, for classification purposes, the locals comment that /kʰəːytapʰaw/ (เคยตะเภา) might be classified as /kʰəːy yàːpyày/ (เคยหยาบใหญ่) according to its size.

Folk classifications of mantis shrimps can be illustrated in the taxonomic hierarchy in Diagram 5.7 below. /kʰəːytapʰaw/ (เคยตะเภา) is displayed in the hierarchy, using dash lines to indicate that it might be classified, according to folk classification, in the group of /kʰəːy yàːp/ (เคยหยาบ) or excluded from the group.

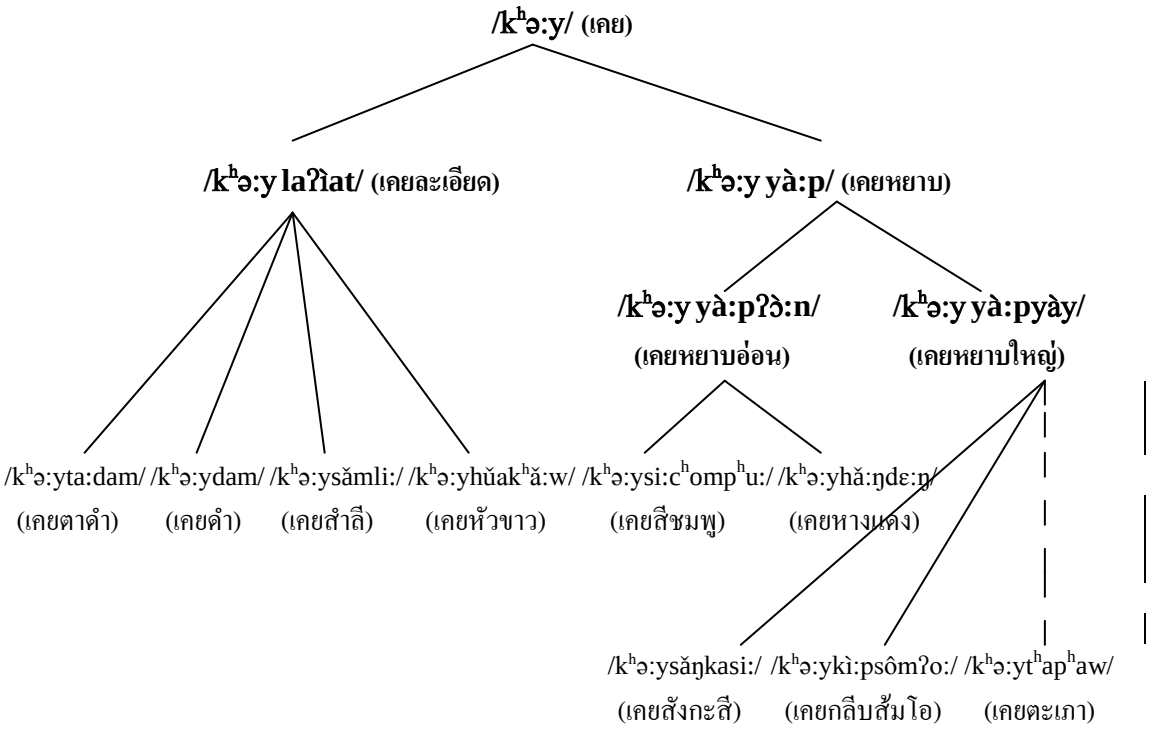


Diagram 5.7 Folk taxonomic classification of sergestid shrimps

Distinguishing features of sergestid shrimp are in terms of their shape and use by the locals. The following folk descriptions are associated with their features:

/kʰəːyta:dam/ (เคยตาดำ)

+ type of /kʰəːy laʔìat/ (เคยละเอียด)
+ grayish-opaque-white body
+ obvious black eyes
+ preferable for making shrimp paste

/kʰəːydam/ (เคยดำ) or /kʰəːykʰày/ (เคยไข่)

+ type of /kʰəːy laʔìat/ (เคยละเอียด)
+ darkish grey body and become black when dry in the sun
+ has spawns on its top part (head)
- preferable for making shrimp paste

/kʰəːysămli:/ (เคยสำลี)

+ type of /kʰəːy laʔìat/ (เคยละเอียด)
+ transparently white body
+ small and slim like thread
+ used for making shrimp paste

/kʰəːyhŭakʰă:w/ (เคยหัวขาว)

+ type of /kʰəːy laʔìat/ (เคยละเอียด)
+ white body (whiter than /kʰəːyta:dam/ (เคยตาดำ))
+ used for making shrimp paste

/kʰəːysiːcʰompʰuː/ (เคยสีชมพู)

- type of /kʰəːy laʔìat/ (เคยละเอียด)
+ pink body
+ used for making shrimp paste

/kʰəːysăŋkasiː/ (เคยสังกะสี)

- type of /kʰəːy laʔìat/ (เคยละเอียด)
+ shiny white body
+ the same size as shrimp's offspring
- used for making shrimp paste

/kʰəːytʰapʰaw/ (เคยตะเภา)

- type of /kʰəːy laʔìat/ (เคยละเอียด)
+ transparent white body
+ has prickles on its head
+ the same size as a shrimp's offspring
- used for making shrimp paste

/kʰəːyhăːŋdɛːŋ/ (เคยหางแดง)

- type of /kʰəːy laʔìat/ (เคยละเอียด)
+ white body and red tail
+ used for making shrimp paste

/kʰəːykìːpsômʔoː/ (เคยกลีบส้มโอ)

- type of /kʰəːy laʔìat/ (เคยละเอียด)
+ shiny white body/ pinkish tail
+ size and color are similar to a juice sac of pomelo
- used for making shrimp paste

5.2.6 /kâŋ/ (กั้ง) 'mantis shrimp'

Mantis shrimp known as /kâŋ/ (กั้ง) refer to marine creature that have joint-bodys like a prawn or shrimp but are flatter and without spine or rostrum on their heads. They have prickles on back and sides of the body. There are three kinds of /kâŋ/ (กั้ง) with the following specific folk names as shown in Table 5.7.

Table 5.7 Specific folk names of mantis shrimp

Generic folk name	Specific folk name	Respective gloss
/kâŋ/ (กั้ง)	/kâŋ(tʰammadaː)*/ (กั้ง(ธรรมดา)	'common/typical mantis shrimp'
	/kâŋkêːw/ (กั้งแก้ว)	'glass mantis shrimp' (mantis shrimp with a transparent body like a glass)
	/kâŋkradaːn/ (กั้งกระดาน)	'plank mantis shrimp' (mantis shrimp with a plank-shape)

*A qualifying word /tʰammadaː/ 'normal or common' may be added to make further distinction.

The folk classification of /kâŋ/ (กั้ง) ‘mantis shrimp’ can be illustrated in the taxonomic hierarchy as Diagram 5.8 below.

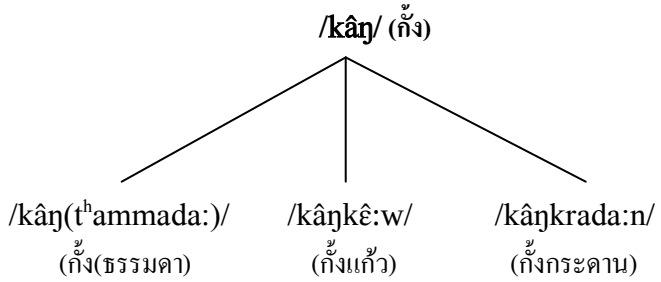


Diagram 5.8 Folk taxonomic classification of mantis shrimps

The three kinds of /kâŋ/ (กั้ง) ‘mantis shrimp’ are distinguished by their color and shape. Distinguishing features of each kind of /kâŋ/ (กั้ง) corresponding to folk definitions are described below.

/kâŋ(tʰammada:)/ (กั้ง(ธรรมดา)
+ greenish-bluish-grey body/ yellow legs
+ long rounded shaped
+ not big in size
+ edible

/kâŋkê:w/ (กั้งแก้ว)
+ transparent-white body like a glass
+ long rounded shaped like a common mantis shrimp
+ big size is bigger than a common mantis shrimp
+ popular edible

/kâŋkrada:n/ (กั้งกระดาน)
+ darkish brown body
+ flat body/ relative big head and expanded like a plank
+ the body and the center line on the head is hard ridged / have a thicker and harder tail than other kinds
+ big in size
+ popular edible

All kinds of /kâŋ/ (กั้ง) are also classified into /kâŋ nɨ́a/ (กั้งเนื้อ) ‘fleshy mantis shrimp’ and /kâŋ kʰày/ (กั้งไข่) ‘spawned mantis shrimp’. /kâŋ nɨ́a/ (กั้งเนื้อ) refer to mantis

shrimp with no eggs, locally known to be a male. /kâŋ kʰày/ (กั้งไข่) on the other hand are mantis shrimp which have eggs even out of reproductive season. The locals are mere likely to eat /kâŋ kʰày/ (กั้งไข่) than /kâŋ ɲáa/ (กั้งเนื้อ).

5.2.7 /pu:/ (ปู) 'crab'

Various small crabs are commonly found in coastal areas and water sources nearby. Eleven kinds of local sea crab are generally identified and some kinds are distinguished into sub-kinds marked by specific names as shown Table 5.8.

Table 5.8 Generic and specific folk names of local crabs

Generic folk name	Specific folk name	Respective gloss
/pu:le:/ (ปูเล)	/pu:tʰɔ:ŋdɛ:ŋ/ (ปูทองแดง)	'copper sea crab' (serrated mud crab)
	/pu:tʰɔ:ŋlǎ:ŋ/ (ปูทองหลาง)	'coral-tree sea crab'
/pu:samɛ̌:/ (ปูแสม)	/pu:samɛ̌:lék/ (ปูแสมเล็ก)	'small Meder's mangrove crab'
	/pu:samɛ̌:yày/ (ปูแสมใหญ่)	'large Meder's mangrove crab'
/pu:má:/ (ปูม้า)		'horse crab'
/pu:má:la:y/ (ปูม้าลาย)		'zebra crab'
/pu:kâ:mkʰǎ:w/ (ปูก้ามขาว)		'white pincer crab'
/pu:kâ:mdà:p/ (ปูก้ามดาบ)		'sword-pincer crab' (crab with a sword-like pincer)
/pu:pîaw/ (ปูเปี้ยว) or /pu:dam/ (ปูดำ)		'fidder crab' or 'black crab'
/pu:kʰî:kày/ (ปูขี้ไก่)		'chicken-shit crab'
/pu:bây/ (ปูใบ้)		'mute crab'
/pu:hǐn/ (ปูหิน)		'stone crab'
/pu:pɛ̂:n/ (ปูแป้น)		'green tidal crab'

Folk classification of /pu:/ (ปู) 'crab' can be illustrated in the taxonomic hierarchy as Diagram 5.9 below.

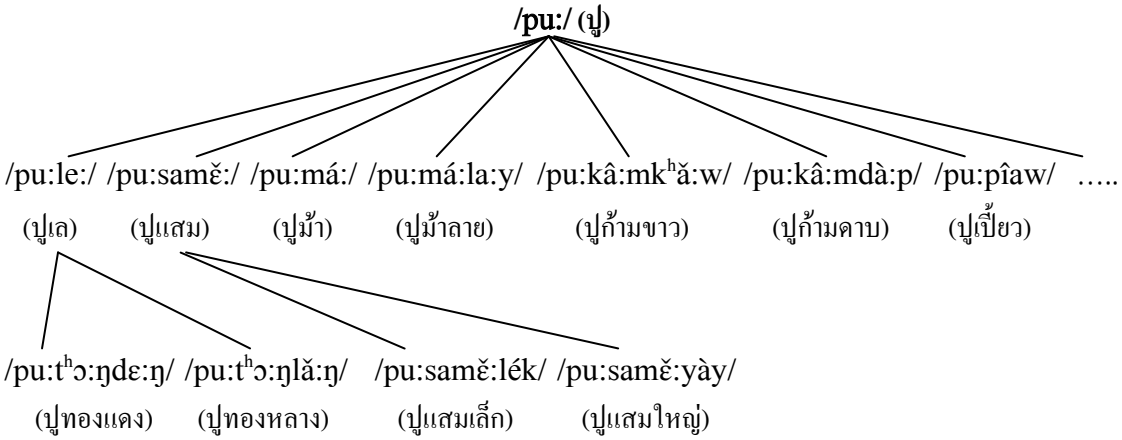


Diagram 5.9 Folk taxonomic classification of local crab

Each kind of crab has different specific characteristics. Two kinds of /pu:le:/ (ปูเล) 'sea crab', /pu:tʰɔ:ŋdɛ:ŋ/ (ปูทองแดง) and /pu:tʰɔ:ŋlă:ŋ/ (ปูทองหลาง), are distinguished on the basis of color differences seen in their carapaces and pincers. Moreover, /pu:tʰɔ:ŋdɛ:ŋ/ (ปูทองแดง) are much more easily found in the mangrove forest than /pu:tʰɔ:ŋlă:ŋ/ (ปูทองหลาง). Other distinguishing features of these two kinds of crabs according to folk definitions can be expressed below.

/pu:tʰɔ:ŋdɛ:ŋ/ (ปูทองแดง)	**/pu:tʰɔ:ŋlă:ŋ/ (ปูทองหลาง)**
+ brownish shell and pincers with faint red hue	+ olive-green shell and pincers with faint black
+ being mostly around the roots of /samĕ:/ (แสม)	- being mostly around the roots of /samĕ:/ (แสม)
+ stronger in smell (stink)	- stronger in smell (stink)
+ edible	+ popular edible

/pu:samĕ:/ (ปูแสม) 'Meder's mangrove crab' is distinguished into two kinds: /pu:samĕ:lék/ (ปูแสมเล็ก) and /pu:samĕ:yày/ (ปูแสมใหญ่). Their names indicate the size; /pu:samĕ:lék/ (ปูแสมเล็ก) is smaller than /pu:samĕ:yày/ (ปูแสมใหญ่). Distinguishing features of each kind of /pu:samĕ:/ (ปูแสม) according to folk definitions are:

/pu:samɛ̌:lék/ (ปูแสมเล็ก)	**/pu:samɛ̌:yày/ (ปูแสมใหญ่)**
+ small in size	+ bigger in size
+ black and yellow stained shell and pincers	+ black shell/ purplish pincers
- edible	+ edible

In addition, crabs are classified as male called /pu:nɨ̌a/ (ปูเนื้อ) 'fleshy crab', female called /pu:k^{h}ày/ (ปู^{ไ}ข่) 'spawn crab', or hermaphrodite called /pu:kat^{h}ɔ:y/ (ปูกะเทย). The term /pu:kat^{h}ɔ:y/ (ปูกะเทย) refers to a crab that lays no eggs at an early stage of its life but when fully grown and its skin has sloughed off, it becomes female and produces eggs according to the locals' observation. The locals note the sex of the crab by the shell on its abdomen called "/kapîŋ/ (กะปิ้ง)".

male crab

female crab

hermaphrodite crab

Figure 5.1 Crabs of different gender are classified according to distinct features on the shell or "/kapîŋ/ (กะปิ้ง)" (as told by the locals)

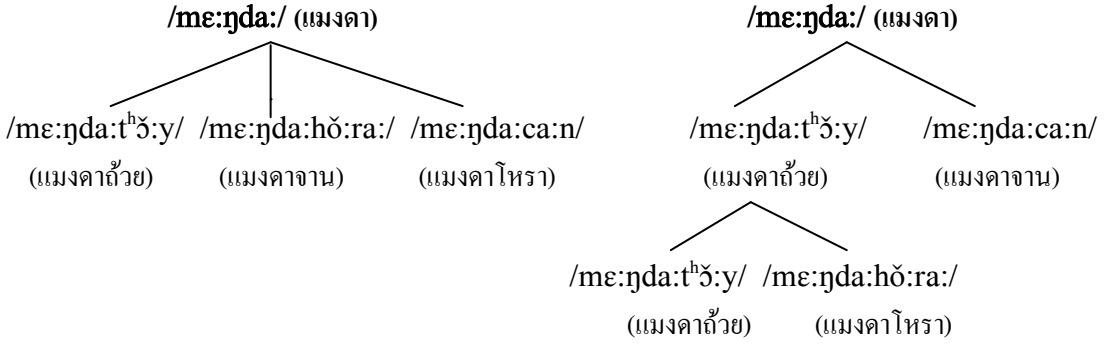
5.2.8 /mɛ:ŋda:/ (แมงดา) 'horseshoe crab'

Horseshoe crabs called /mɛ:ŋda:/ (แมงดา) are distinguished into three different kinds, labeled in folk specific names as below.

Table 5.9 Specific folk names of horseshoe crab

Generic folk name	Specific folk name	Respective gloss
/mɛ:ŋda:/ (แมงดา)	/mɛ:ŋda:t^{h}ɔ̌:y/ (แมงดาถ้วย)	'bowl horseshoe crab' (with a bowl-like shape)
	/mɛ:ŋda:ca:n/ (แมงดาจาน)	'plate horseshoe crab' (with a plate-like shape)
	/mɛ:ŋda:hǒ:ra:/ hě:ra:/ (แมงดาโหรา/เหรา)	'Hora/Hera horseshoe crab'

/mɛ:ŋda:t^{h}ɔ̆:y/ (แมงดาถ้วย) and /mɛ:ŋda:ca:n/ (แมงดาจาน) are locally well-known and can be easily found. A horseshoe crab called /hŏ:ra:/ (โหรา) or /hĕ:ra:/ (เหรา), according to the locals, is rarely found. Some locals consider /hŏ:ra:/ (โหรา) as a kind of horseshoe crab (a third kind of horseshoe crab), because it has different features from other kinds. Other locals however consider /hŏ:ra:/ (โหรา) as of the same species as /mɛ:ŋda:t^{h}ɔ̆:y/ (แมงดาถ้วย) because they have the same shape and strong poison as well. Thus, folk classification of horseshoe crabs can be illustrated in two alternative taxonomic hierarchy diagrams as shown in Diagram 5.10 below.



(/hŏ:ra:/ is a kind of /mɛ:ŋda:/) (/hŏ:ra:/ is a sub-kind of /mɛ:ŋda:t^{h}ɔ̆:y/)

Diagram 5.10 Two folk taxonomic classifications of horseshoe crabs

Distinguishing features of different kinds of /mɛ:ŋda:/ (แมงดา) according to folk definitions are described below:

/mɛ:ŋda:t^{h}ɔ̆:y/ (แมงดาถ้วย)
+ bulging shell like an upside-down bowl
+ smaller in size than a /mɛ:ŋda:ca:n/
+ reddish brown (copper) or olive-green body
+ round tail
+ smaller grain of eggs
+ poisonous
+ popular edible for egg

/mɛ:ŋda:ca:n/ (แมงดาจาน)
+ flat shell like an plate upside-down
+ bigger in size than /mɛ:ŋda:t^{h}ɔ̆:y/
+ reddish brown (copper) or olive-green body
+ triangular tail
+ bigger grain of eggs
+ poisonous
+ popular edible for egg

/mɛ:ŋda:hŏ:ra: / hĕ:ra:/ (แมงดาโหรา / เหรา)

+ similar in shape to /mɛ:ŋda:t^{h}ɔ̆:y/but smaller
+ long hairs on its body
+ more reddish than other kinds and red eyes
+ round tail
+ acutely poisonous
- edible

5.2.9 /mɛ:ŋkap^{h}un/ (แมงกะพรุน) 'jellyfish'

The five kinds of jellyfish called /mɛ:ŋkap^{h}un/ (แมงกะพรุน) are identified and specifically named as shown in Table 5.10.

Table 5.10 Specific folk names of jellyfish

Generic folk name	Specific folk name	Respective gloss
/mɛ:ŋkap^{h}un/ (แมงกะพรุน)	/(mɛ:ŋ)kap^{h}un t^{h}ŭay/ (แมงกะพรุนถ้วย)	'bowl jellyfish' (bowl-shaped)
	/(mɛ:ŋ)kap^{h}un năŋ/ (แมงกะพรุนหนัง)	'skin jellyfish' (has thick skin and body)
	/(mɛ:ŋ)kap^{h}un lɔ̂:tc^{h}ɔ̂:ŋ/ (แมงกะพรุนลอดช่อง)	'Lod-chaung jellyfish' (lod-chaung is short-sweeten-noodles made of rice eaten with coconut cream)
	/(mɛ:ŋ)kap^{h}un fay/ (แมงกะพรุนไฟ)	'fire jellyfish' (fire-like-red body)
	/(mɛ:ŋ)kap^{h}un k^{h}î:kày/ (แมงกะพรุนขี้ไก่)	'chicken-shit jellyfish' (has some feature of chicken shit)

* It is noted that the locals normally use the word /kap^{h}un/ (กะพรุน) followed by the specific name. The prefix word /mɛ:ŋ/ (แมง) is usually deleted. Then the word /mɛ:ŋ/ (แมง) are written in the brackets.

Folk classification of /mɛ:ŋkap^{h}un/ (แมงกะพรุน) 'jellyfish' can be illustrated in the taxonomic hierarchy shown in Diagram 5.11 below.

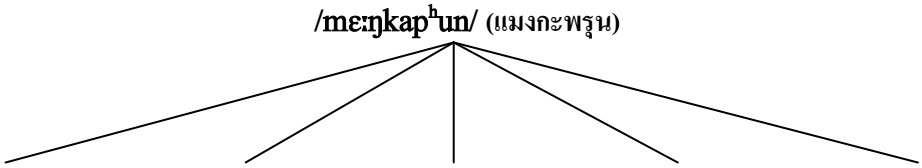


Diagram 5.11 Folk taxonomic classification of jellyfish

Significant distinguishing features between different kinds of /mɛːŋkapʰun/ (แมงกะพรุน) 'jellyfish' according to folk definitions are described below.

/(mɛːŋ)kapʰun tʰŭay/ (แมงกะพรุนถ้วย)
+ creamy white body/ some of them have tiny brown spots on the skin
+ shape and size is similar to a bowl (used for chili-paste)
+ slimy body / itchy slime
+ not edigible

/(mɛːŋ)kapʰun năŋ/ (แมงกะพรุนหนัง)
+ creamy white body/ some of them have tiny brown spots on the skin
+ larger flatter and thicker /(mɛːŋ)kapʰun tʰŭay/
+ slimy body / more itchy slime than other kinds
+ edible

/(mɛːŋ)kapʰun lɔ̂ːtcʰɔ̂ːŋ/ (แมงกะพรุนลอดช่อง)
+ varied in colors (some has blue body, some has pink, creamy white, purple)
+ lod-chaung-like tubercles on the skin
+ slimy body/ itchy slime
+ both edible and not edible (purple body is not edible)

/(mɛːŋ)kapʰun fay/ (แมงกะพรุนไฟ)
+ orange-reddish body with tiny black spots
+ has wires on underside
+ itchy greasy slime/ greasy body which can cause searing burn by touching it
- edible

/(mɛːŋ)kapʰun kʰîːkày/ (แมงกะพรุนขี้ไก่)
+ orange-reddish body with tiny white spots
+ soft body/ rather tender, easily to tear apart
+ slimy body / itchy slime
+ foul-smelling (different from other kinds)
+ not edible

5.2.10 /sǎ:rà:y/ (สาหร่าย) ‘jellyfish-like creature’ (unidentified)

A creature called /sǎ:rà:y/ (สาหร่าย), according to the locals, has a white body and bag-like shape. It has 4-5 long tentacles on its lower part. Some have yellow tentacles, some purple, and some red. Thus, they are named in reference to the color of the tentacle. These tentacles are poisonous and if touched, they attach to the skin and cause a searing burn on the skin. The prey position causes constriction, breathing difficulty and possible death. The locals consider /sǎ:rà:y/ (สาหร่าย) to be an animal because its movement and the use of these tentacles. This creature is not the same as the marine plant of the same folk name “/sǎ:rà:y/” (สาหร่าย). From the locals’ perspective, /sǎ:rà:y (สาหร่าย)/ is similar to a jellyfish but they do not consider it as a jellyfish because of its different characteristics, especially, the long tentacles, which are not clustered like with jellyfish. However, some locals comment that it might be a kind of jellyfish, but they are unsure about it.

It is noted that this creature known by the local as /sǎ:rà:y/ (สาหร่าย), is likely a kind of jellyfish, compared between folk definition and scientific data. However, the researcher presented those locally called /sǎ:rà:y/ (สาหร่าย) to a different group, not in the same group as jellyfish because it seen by the locals as different from jellyfish, as reflected by its different name and descriptions provided by the locals.

5.3 Folk criteria used for classification of coastal plants and marine animals

Analysis of the semantic components of words or terms for coastal plants and marine animals according to folk definitions reveals that marine animals are classified and distinguished into specific kinds of the same class based on various folk criteria, namely appearance of color, shape, size, sex, fleshiness, habitat and method of catching. However, there is only one criteria used for physical features (color, shape, or size) of coastal plants. Furthermore, it is commonly found that the principal

differentiating dimension used to contrast many (but not all) sub-kinds will be encoded in the folk specific names themselves.

5.3.1 Appearance of Color

Obviously, the locals distinguish sub-kinds of coastal plants and marine animals on the basis of different colors appearing on the visible parts of them, namely the color of the trunk (for plants), color of the body or other parts with prominent colors such as tail, eyes, shell (for animals). It is noted that the folk specific names refer to different kinds which commonly comprise qualifying words indicating color to make further distinctions.

The following examples of expressions contrasting two or more specific names in the same contrast set are illustrative of this dimension.

/samɛ̌:dam/ (แสมดำ)	‘black Samae (back Avicennia)’
/samɛ̌:kʰǎ:w/ (แสมขาว)	‘white Samae (white Avicennia)
/pla:sǐ:kun(tʰammada:)/ (ปลาสีกุล(ธรรมดา)	‘common/typical trevally’
/pla:sǐ:kun kʰâ:ŋlɨ̌aŋ/ (ปลาสีกุลข้างเหลือง)	‘yellow stripped trevally’
/pla:ca:ra:mét kʰǎ:w/ (ปลาจาระเม็ดขาว)	‘white butter fish’
/pla:ca:ra:mét dam/ (ปลาจาระเม็ดดำ)	‘black butter fish’
/pla:kòt kʰǎ:w/ (ปลากดขาว)	‘white bagrid catfish’
/pla:kòt kʰî:lîŋ/ (ปลากดขี้ลิง)	‘monkey-shit bagrid catfish’
/pla:kòt kʰâ:ŋlɨ̌aŋ/ (ปลากดข้างเหลือง)	‘yellow stripped bagrid catfish’
/pla:kapʰoŋkʰǎ:w/ (ปลากะพงขาว)	‘white bass/snapper’
/pla:kapʰoŋdɛ:ŋ/ (ปลากะพงแดง)	‘red bass/snapper’
/pla:kapʰoŋdam/ (ปลากะพงดำ)	‘black bass/snapper’
/kûŋkʰǎ:w/ (กุ้งขาว)	‘common/typical white shrimp’
/kûŋkʰǎ:w hǎ:ŋdɛ:ŋ/ (กุ้งขาวหางแดง)	‘red-tailed white shrimp’
/pu:tʰɔ:ŋdɛ:ŋ/ (ปูทองแดง)	‘copper sea crab’(serrated mud crab)
/pu:tʰɔ:ŋlǎ:ŋ/ (ปูทองหลาง)	‘coral-tree sea crab’

/k^{h}ə:yta:dam/ (เคยตาดำ)	‘black-eye sergestid shrimp’
/k^{h}ə:ydam/ (เคยดำ)	‘black sergestid shrimp’
/k^{h}ə:yhŭak^{h}ă:w/ (เคยหัวขาว)	‘white-head sergestid shrimp’
/k^{h}ə:ysi:c^{h}omp^{h}u:/ (เคยสีชมพู)	‘pink sergestid shrimp’
/k^{h}ə:yhă:ŋdɛ:ŋ/ (เคยหางแดง)	‘red-tail sergestid shrimp’
etc.	

It is also noted that plant and animal classifications by color differences often accompany shape differences.

5.3.2 Shape

Some kinds of marine animals are distinguished into sub-kinds according to the particular physical forms or appearances such as body-shape, mouth-shape or other distinct parts of the body. The folk specific names that refer to different kinds comprise qualifying words which indicate particular physical forms to make further distinctions. For example

/pla:laŋk^{h}an(t^{h}ammada:)/ (ปลาลังคัน(ธรรมดา)	‘common Langkhan fish’
/pla:laŋk^{h}an nùat mɛ:w)/ (ปลาลังคันหนวดแมว)	‘cat-whisker Langkhan fish’

/pla:k^{h}ĕm/ (ปลาเข็ม)	‘halfbeak fish’
/pla:k^{h}ĕmpà:kdiaw/ (ปลาเข็มปากเดียว)	‘distinctive jaws halfbeak fish’

/hɔ̂:ysăŋk^{h}ŏn)/ (หอยสังข์ขน)	‘haired conch’
/hɔ̂:ysăŋnă:m)/ (หอยสังข์หนาม)	‘prickled conch’
/hɔ̂:ysăŋyày)/ (หอยสังข์ใหญ่)	‘big conch’

An analogy with some things or metaphorical reference is also found in marine animal names, illustrating the semantic dimension of contrast by shape, for examples;

/mɛ:ŋda:t^{h}ɔ̌:y/ (แมงดาถ้วย)	‘bowl horseshoe crab’ (horseshoe crab with a bowl-like shape)
/mɛ:ŋda:ca:n/ (แมงดาจาน)	‘plate horseshoe crab’ (horseshoe crab with a plate-like shape)

/kâŋ/ (กั้ง)	‘mantis shrimp’
/kâŋkɛ̂:w/ (กั้งแก้ว)	‘glass mantis shrimp’ (mantis shrimp with a transparent body like a glass)
/kâŋkrada:n/ (กั้งกระดาน)	‘plank mantis shrimp’ (mantis shrimp with a plank-shape)
/(mɛ:ŋ)kap^{h}un t^{h}ŭay/ (แมงกะพรุนถ้วย)	‘bowl jellyfish’ (bowl-shaped)
/(mɛ:ŋ)kap^{h}un năŋ/ (แมงกะพรุนหนัง)	‘skin jellyfish’ (has thick skin and body)
/(mɛ:ŋ)kap^{h}un lɔ̂:tc^{h}ɔ̂:ŋ/ (แมงกะพรุนลอดช่อง)	‘Lod-chaung jellyfish’ (lod-chaung is short-sweeten-noodles made of rice eaten with coconut cream)
/(mɛ:ŋ)kap^{h}un fay/ (แมงกะพรุนไฟ)	‘fire jellyfish’ (fire-like-red body)
/(mɛ:ŋ)kap^{h}un k^{h}î:kày/ (แมงกะพรุนขี้ไก่)	‘chicken-shit jellyfish’ (has some feature of chicken shit)
/pla:cùatpɔ̀ʔ/ (ปลาจวดเปาะ)	‘typical soldier croaker’
/pla:cùatt^{h}ian/ (ปลาจวดเทียน)	‘candle soldier croaker’ (soldier croaker with cylindrically candle-like shape)
/pla:cùathă:ŋkày/ (ปลาจวดหางไก่)	‘cock-tail soldier croaker’ (soldier croaker with cock-tail-like tail)
/pla:cùatmá:/ (ปลาจวดม้า)	‘horse soldier croaker’ (soldier croaker with horse mouth)
/pla:pê:nmŭ:/ (ปลาแป้นหมู)	‘pig pony fish’ (pony fish with a pig face)
/pla:pê:npâ:n/ (ปลาแป้นป้าน)	‘kind of pony fish’
/pla:pê:nmɨ̀uk/ (ปลาแป้นเมือก)	‘slimy pony fish’
/pla:pê:nkradà:t/ (ปลาแป้นกระดาษ)	‘paper pony fish’ (pony fish with a paper shape)

5.3.3 Size

Some coastal plants and marine animals are distinguished into sub-kinds according to their different sizes. For example, /ko:ŋka:ŋ/ (โกงกาง) is distinguished

considering its size and leaf-shape; some kinds of fish, crabs, and shellfish are distinguished according to their different sizes of body or other parts such as length of the squid's tentacles etc. The locals indicate that those of 'small types' will not be as big as the 'big types'. Apparently, the folk specific names that refer to different kinds comprise qualifying words which define size; small or big, short or long. These qualifying words are added after generic words to make further distinctions.

The following examples of expressions contrasting two or more specific names in the same contrast set are illustrative of this dimension.

/ko:ŋka:ŋ baylék/ (โกงกางใบเล็ก)	'small leaves-mangrove'
/ko:ŋka:ŋ bayyày/ (โกงกางใบใหญ่)	'large leaves-mangrove'
/pla:línmă:lék/ (ปลาลิ้นหมาเล็ก)	'small sole'
/pla:línmă:yày/ (ปลาลิ้นหมาใหญ่)	'large sole'
/pu:samĕ:lék/ (ปูแสมเล็ก)	'small Meder's mangrove crab'
/pu:samĕ:yày/ (ปูแสมใหญ่)	'large Meder's mangrove crab'
/mɨk să:ysân/ (หมึกสายสั้น)	'short arms/tentacle-cuttlefish'
/mɨk să:yya:w/ (หมึกสายยาว)	'long arms/tentacle-cuttlefish'

5.3.4 Sex

Terms such as /kâŋ nɨa/ (กั้งเนื้อ) 'fleshy mantis shrimp' and /kâŋ k^{h}ày/ (กั้งไข่) 'spawn mantis shrimp', /pu: nɨa/ (ปูเนื้อ) 'fleshy crab' and /pu: k^{h}ày/ (ปูไข่) 'spawn crab' and /pu: kat^{h}ə:y/ (ปูกะเทย) 'hermaphrodite crab', reflect that the locals also distinguish the sex of some kinds of marine animals. In addition, they identify distinct kinds on the basis of different sex, according to perspective. Words for blood cockles, for clear example, are distinguished male and female as different kinds.

/hɔ̆:y k^{h}rɛ:ŋ/ (หอยแครง)	'female blood cockle'
/hɔ̆:y ʔâymûm/ (หอยไอ้มุ่ม)	'male blood cockle'

5.3.5 Fleshiness

Some types of marine animals are distinguished by their visible fleshiness and boniness as well as by their shape. This criteria of classification is found in eel classifications in which the name indicates the features mentioned.

/pla:lăy nɨa/ (ปลาไหลเนื้อ) 'fleshy eel'

/pla:lăy kâ:ŋ/ (ปลาไหลก้าง) 'bony eel'

Similarly, two kinds of /pla:laŋk^{h}an/ (ปลาลังกัน) 'Langkhan fish' are distinguished by their perceived feature of fleshiness; /pla:laŋk^{h}an(t^{h}ammada:)/ (ปลาลังกัน(ธรรมดา) and /pla:laŋk^{h}an nùatmɛ:w)/ (ปลาลังกันหนวดแมว), sometimes, called /pla:laŋk^{h}an nɨa/ (ปลาลังกันเนื้อ) 'fleshy Langkhan fish' and /pla:laŋk^{h}an kâ:ŋ/ (ปลาลังกันก้าง) 'bony Langkhan fish' respectively.

5.3.6 Habitat and method of catching

Marine animals such as catfish are classified by habitat or area, and method of catching. Their names indicate the features in question as illustrated below.

/pla:dùk pɔ̀:ŋ/ (ปลาดุกป่อง) 'hole catfish'
or /pla:dùk ru:/ (ปลาดุกรู)
(It refers to a catfish living in the hole called /pɔ̀:ŋ/ (ป่อง) and can be caught from its hole by kick a foot to find the fish.

/pla:dùk bèt/ (ปลาดุกเบ็ด) 'fishhook catfish'
(It refers to a catfish caught by lines of fishhooks set in a row in the water. The fishhook is set in not deep water (a bit deeper than two meters)

/pla:dùk kiâw/ (ปลาดุกเกี่ยว) 'crook catfish'
(It refers to a catfish caught by tool called /sɔ̂:m/ (สั้อม), a crook-like tool, to hook it up in rather deep water.)

Although distinguishing catfish into three kinds may not imply their different species, the existence of their different names reflects the way of thinking of the locals that they identify things according to their culture. In addition, a prawn called /kûŋru:/ (กุ้งรู) 'hole prawn' is distinguished into different kind from other shrimps by its habitat, as its names indicate.

Briefly, folk classifications of plants and animals are based on color, shape, size, sex, fleshiness and fertility, habitat and method of catching. The most distinguishing features commonly found are color and size. Moreover, the locals also distinguish animals considering their toxicity and edibility according to the animal's nature and eating culture.

CHAPTER VI
CULTURAL REFLECTIONS OF TERMINOLOGY

According to the Sapir-Whorf hypothesis, the way humans visualize their surrounding environment may be projected by language because language is influential towards how we think and therefore affects our view of the environment. However, in contrast, existing society also governs how language is used. Language also clearly reflects the role and importance of the environment affecting that society. This study supports Sapir-Whorf hypothesis in the event to words or terms concerning the eco-environment in use, based on Thai coast-dwellers' different domains, show the people's perception and classification of natural surroundings. They also obviously reflect their cultural ways of living. In this chapter, the researcher would like to prove how coast-dwellers' terminology reflect their culture.

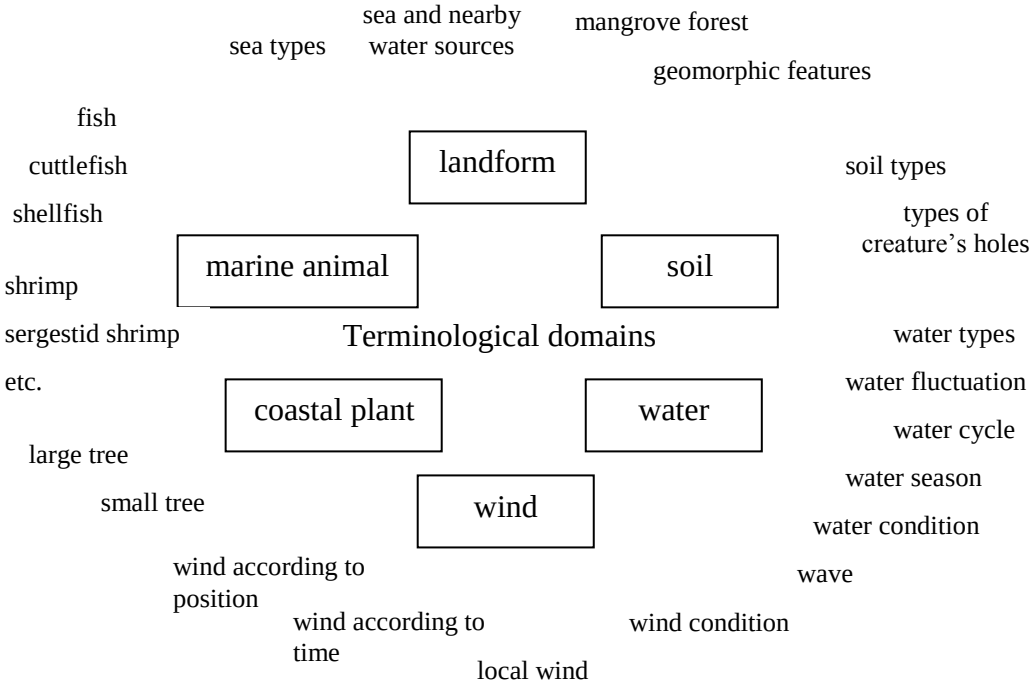


Figure 6.1 Terminological domains and semantic sub-fields

The total words or terms found associated with each domain of landform, soil, water, wind, coastal plants, and marine animals can be categorized into several sub-fields as represented in Figure 6.1 before. Each sub-field is composed of several lexical items as detailed in the previous chapters.

The existence of terms, folk definition of terms, and the classification of things in relation to the environment in domains of landform, soil, water, wind, coastal plants, and marine animals, reflects coast-dwellers' cultural way of living in the studied area, such as the usage and division of land, their ways of making a living, time of working, utilization of resources and beliefs regarding the sea and fishing activities.

6.1 Utilization area and its division

Coast-dwellers realize the importance of the sea as their place of making a living and great source of food. Generally, if they say that they are going to the sea, it means that they are going to do their fishing activities. Local people divide up and name land use areas in their local environment as mentioned in the section 5.1 in Chapter 4. Terms for landform reflect the source for making a living. Since the sea in Bang Khunsai Subdistrict is /t^{h}ale:tɤ̂:n/ (ทะเลตื้น) 'shallow sea' as classified by local villagers and the area is also home to the ubiquitous blood cockle so it is there that the villagers usually go to catch and trap sea creatures, including shellfish, sergestid shrimp or known as /k^{h}ə:y/ (เคย), fish and others. These activities are known as coastal or shallow-water fishering. The locals would do their catching within and outside the bend of the watercourse, or in mangrove forests for crabs and other creatures.

Although the local villagers generally perceive the sea as being a common area for everyone's benefit, they have divided it among members into utilization areas. This division is reflected through the use of terms, /cɔ̌:/ (จ๋อ) and /ne:/ (เน).

/cɔ̌:/ (จ๋อ) refers to an entitled area or place. In particular, this term is used to mark an area for the catching of the sergestid shrimp or /k^{h}ə:y/ (เคย). The villagers make an agreement equally dividing areas into zones for each household using

/láʔwáʔ/ (ละวะ) arranged into rows. /láʔwáʔ/ (ละวะ) is a kind of trapping tool for sergestid shrimp, made of nylon woven into long fine nets. The middle part of the net is designed in the form of a bag. The area of one /cɔ̌:/ (จ๋อ) allows 14-15 pieces of /láʔwáʔ/ (ละวะ) to be laid. In measurement terms, one piece of /láʔwáʔ/ (ละวะ) is as wide as two and a half or three Wa (four and a half or six meters). Therefore one /cɔ̌:/ (จ๋อ) is 45 Wa wide (or 90 meters wide). The /cɔ̌:/ (จ๋อ) belonging to each individual has wooden poles in rows to hold /láʔwáʔ/ (ละวะ) as shown in Figure 6.2. Each /cɔ̌:/ (จ๋อ) reserves some a small space for boats and users of mud sliding boards to pass through. Noticing the poles, the local people know to whom each /cɔ̌:/ (จ๋อ) belongs and how far it extends. As the villagers informed, in the past around 30 years ago, there is no use /láʔwáʔ/ (ละวะ) yet. The division of areas in the sea was marked for a single fishing area using /yɔ:/ (ยอ), a kind of fishing net with a long handle, measured by the width and number of /yɔ:/ (ยอ). These days, /yɔ:/ (ยอ) is no longer in use.

Figure 6.2 A row of wooden poles indicating the boundary of /cɔ̌:/ (จ๋อ) (the distance between the poles being measured by the length of a piece of /láʔwáʔ/ (ละวะ))

The use of area or /cɔ̆:/ (จ๋อ) belonging to another person, especially in trapping the sergestid shrimp, is called by the word /ne:/ (เน). For example, when someone says “I go to /ne: cɔ̆:/ of Uncle Man”, that means the speaker uses the area belonging to Uncle Man for trapping sergestid shrimp. The use of another person’s area or /ne:/ (เน) when it is obvious that the owner of the area or /cɔ̆:/ (จ๋อ) does not use it. However, if the owner wants to use his area, the person must remove his /láʔwáʔ/ (ละวะ) unconditionally or it would be removed by the owner of the area.

Ownership of /cɔ̆:/ (จ๋อ) is passed down from one generation to another in the family. However, the rights to use /cɔ̆:/ (จ๋อ) may be sold or rented depending on an agreement between involved parties. Nonetheless, its ownership is not usually for sale unless the owner stops the trapping of the sergestid shrimp. In that case, that person would often sell his /láʔwáʔ/ (ละวะ) and his fishing boat, together with the ownership. Some local villagers may therfore own more than one of /cɔ̆:/ (จ๋อ) because they have purchased from others. However, those not originally in the fishing business for sergestid shrimp, would have no /cɔ̆:/ (จ๋อ). Still, they can do other fishing activities in any area of the sea.

In the sea area around Bang Khunsai Subdistrict, about 1 kilometer from the mangrove forest out to sea, rows of wooden poles are visible along the shore, indicating the presence of /láʔwáʔ/ (ละวะ) used by the villagers for catching sergestid shrimp and zoning the boundary of their /cɔ̆:/ (จ๋อ) or entitled area. In front and after behind the single row of wooden poles, there are no additional /láʔwáʔ/ (ละวะ) because they would obstruct the route of others out trapping sergestid shrimp. This has been a customary practice of mutual management of marine resources among the villagers since ancient times, reflected in terms used in describing the area.

6.2 Ways of making a living

Villagers whose occupation is to catch blood cockles and other shellfish work by mud-skiing along mudflats at periods when the water recedes from the shoreline and catching shellfish with bare hands is possible. Mud-skiing has been in practice for generations and has become part of the local identity. Based on the study of terms for soil types, the classification of soil by the locals is considered according to mud-skiing qualities that whether it is good or not for such activities. Distinguishing features of soil in terms of its compatibility with mud-skiing reflect the villagers' way of making a living as part of local culture, namely the use of mud-skiing as a fishing method. This also indicates the strong relationship between working methods and local ecology borne out by the fact that the coastal area of Bang Khunsai Subdistrict is muddy and suitable for mud-skiing.

Figure 6.3 Villagers use mud-skiing in catching blood cockles along the mudflat.

Obviously, some terms for water are specific to occupation. They indicate the method of fishing such as the terms /náːmkʰwăːŋ/ (น้ำขวาง) and /náːmnôːk/ (น้ำนอก). These two words relate to location for fishing, especially trapping segestid shrimp. In practice, the villagers would leave their /láʔwáʔ/ (ละวะ) in the sea waiting for the

sergestid shrimp to come in. This process is called /rɔ: k^hə:y/ (รอเคย) or ‘waiting for the sergestid shrimp’. There are three ways of trapping segestid shrimp as described below.

Trapping the sergestid shrimp during the rising tide is known as /rɔ: k^hə:y ná:mk^hɯ̂n/ (รอเคยน้ำขึ้น). This is done by turning the mouth of the net of the /láʔwáʔ/ (ละวะ) towards the sea to catch the segestid shrimps which are carried along by the currents towards the shore.

Trapping the sergestid shrimps during the ebbing tide is known as /rɔ: k^hə:y ná:mloŋ/ (รอเคยน้ำลง). This is done by turning the mouth of the /láʔwáʔ/ (ละวะ) net towards the shore to catch the segestid shrimps which are carried away from shore back to sea.

The trapping of the sergestid shrimp on the tide moving horizontally along shoreline is known as /rɔ: k^hə:y ná:mk^hwă:ŋ/ (รอเคยน้ำขวาง). This is done by putting the mouth of the net of the /láʔwáʔ/ (ละวะ) horizontally to the shore against the current. The /láʔwáʔ/ (ละวะ) is generally set up more than 2,000 meters from the shore and is called /ná:mnɔ̂:k/ (น้ำนอก); the term /ná:mnɔ̂:k/ (น้ำนอก) refers to the sea at a distance of 2,000 meters or more from the shore. Sergestid shrimp found at this distance are called /k^hə:y ná:mnɔ̂:k/ (เคยน้ำนอก). This way of trapping is usually practiced during the windy season of /lom wà:w/ (ลมว่าว). The wind blows along the shore causing the current to flow parallel to the shoreline.

In the period of full-ebb tide, such as in the windy seasons of /lom bà:y/ (ลมบ่าย) and /lom sală:tan/ (ลมสลาตัน) during May to July, the villagers go out to trap sergestid shrimp during the rising tide further out from the shore compared to other seasons. They do their trapping at different times of the day depending on the level of the sea water at each water season. The terms, /k^hə:y ná:m fă:dam/ (เคยน้ำฟ้าดำ) and /k^hə:y ná:m fă:k^hă:w/ (เคยน้ำฟ้าขาว) refer to the sergestid shrimps which are caught at

dawn and those trapped at dusk respectively. These terms indicate the periods at which the villagers trap the sergestid shrimps as explained in the part about water terms. The villagers usually do the trapping at dawn or at dusk because those are the times at which sergestid shrimps normally come out to feed.

The ways of making a living are also revealed by the folk classification of marine animals. Different terms for catfish, such as /pla:dùk pɔ̀:ŋ/ (ปลาดุกป่อง), /pla:dùk bèt/ (ปลาดุกเบ็ด), and /pla:dùk kiâw/ (ปลาดุกเกี่ยว), reflect the interest in the species and also reveal three specific ways the locals use to catch the fish; namely, (1) by putting a hand or foot into the fish's holes, called /yìap pla:dùk/ (เหยียบปลาดุก), literally 'treading on the catfish', a technique used for catching /pla:dùk pɔ̀:ŋ/ (ปลาดุกป่อง) or /pla:dùk ru:/ (ปลาดุกกรู); (2) by a line of fishhooks set in a row, the catfish caught by this technique known as /pla:dùk bèt/ (ปลาดุกเบ็ด); and (3) using a tool called /rɔ̂:m/ (ส้อม) made of a long piece of metal with a barb to hook the fish, the catfish caught by this technique called pla:dùkkiâw/ (ปลาดุกเกี่ยว). Details are explained in Chapter 4 under the topic of folk classification of marine animals. The villagers realize that those who are able to catch catfish need special skills and to possess general knowledge about catfish.

Besides, how the villagers identify the burrows or holes of sea creatures with specific terms such as /ru:dɨ̀ŋ/ (รูดึ๋ง), /ru:yê:k/ (รูแยก), /ru:mɔ̂:/ (รูหม้อ), and /ru:làk/ (รูหลัก), etc, reflects the means and methods the villagers use to catch fish and other sea creatures by extracting them from their burrows, especially those caught for food or for sale. The villagers clearly know the holes where catfish, shellfish or other creatures dwell very well.

6.3 Villager's work periods

The existence of words referencing water, besides reflecting the interest and perspective of coast-dwellers with respect to the marine environment, including their fishing methods, also reflects their time out fishing. In Bang Khunsai Subdistrict, the time spent by fishermen catching fish, including shellfish, trapping sergestid shrimp or using a boat putting out nets for catching other sea creatures, etc. are in relation to the water seasons as named and classified by the local villagers. The relationship between time working and the seasons of water is shown in Figure 6.4.

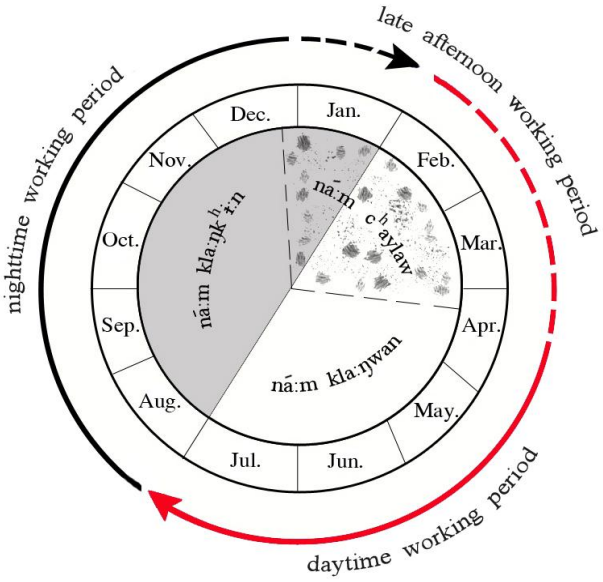


Figure 6.4 The villagers' work periods in relation to the seasons of water (The dotted line represents an interval between /náːm kla:ŋkʰɨːn/ (น้ำกลางคืน) and /náːm cʰaylaw/ (น้ำไชเลา) and that of /náːm cʰaylaw/ (น้ำไชเลา) and /náːm kla:ŋwan/ (น้ำกลางวัน))

/náːm kla:ŋwan/ (น้ำกลางวัน) - daytime working period

During /náːm kla:ŋwan/ (น้ำกลางวัน) season from February to July during which the sea water ebbs away from the shoreline and the mudflats are exposed during the day, the villagers usually go out to sea to fish during daytime and return home in the afternoon or at dusk. Especially during May to July, the villagers consider that the

/ná:m kla:ŋwan/ (น้ำกลางวัน) season is still at its peak and not bordered by the periods of /ná:m kla:ŋkʰɨ:n/ (น้ำกลางคืน) or /ná:m cʰaylaw/ (น้ำไชเลา). During these three months the villagers conduct fishing activities between dawn to dusk. The positive side of fishing during the day in the /ná:m kla:ŋwan/ (น้ำกลางวัน) season according to the villagers, is better visibility of water routes, making it easier to find the fish holes than when fishing at night. However, the negative side is that during this season, when its sunny, the ground along the coast is too dry. As a result, mud-skiing is difficult because the ground is not smooth, obstructing the catching of shellfish. It is also especially hot work at this time.

/ná:m kla:ŋkʰɨ:n/ (น้ำกลางคืน) - nighttime working period

In the season of /ná:m kla:ŋkʰɨ:n/ (น้ำกลางคืน) from August to January, a season when the sea water is retreating from the shoreline and the mudflats are exposed at night, the villagers go out to sea during the night hours, setting off at 7-8 pm. on the first day and progressively later hours thereafter up to a 1-2 am departure. They return home late at night or at dawn depending on the time at which they set off. However, the beginning of /ná:m kla:ŋkʰɨ:n/ (น้ำกลางคืน) in August borders the period of /ná:m kla:ŋwan/ (น้ำกลางวัน). During this month, the villagers go to the sea at either night time or day time, interchangeably depending on the periods /ná:m kla:ŋkʰɨ:n/ (น้ำกลางคืน) or /ná:m kla:ŋwan/ (น้ำกลางวัน). When it turns into the full period of /ná:m kla:ŋkʰɨ:n/ (น้ำกลางคืน) from September until December, the villagers go to the sea at night for these three months. Some villagers prefer to work during the period of /ná:m kla:ŋkʰɨ:n/ (น้ำกลางคืน) because it is not so hot. In addition, they claim that fish, shrimp and other sea creatures usually come out for food at night so it is a good time for the villagers to fish. Although darkness undermines the visibility of fish or shellfish holes, the villagers can still use spotlights to guide their way. However, working at sea at

night has a bad side because it deprives them of regular sleep. Instead, they are forced to sleep during the day.

/náːm cʰaylaw/ (น้ำไชเลา) - late afternoon working period

During the periods of /náːm cʰaylaw/ (น้ำไชเลา) from January to April, the period when the tide is ebbing and the mudflats are exposed in late afternoon, the villagers go to sea to fish during the late afternoon or evening. They return home at dusk or later on at around 9-10 pm. depending on the days they begin. However, things are different day by day because /náːm cʰaylaw/ (น้ำไชเลา) is the period changing from /náːm klaːŋkʰɨːn/ (น้ำกลางคืน) to /náːm klaːŋwan/ (น้ำกลางวัน). In January, the /náːm klaːŋkʰɨːn/ (น้ำกลางคืน) season is still found bordering /náːm cʰaylaw/ (น้ำไชเลา). During this month, the villagers work at sea in the late afternoon and sometimes in the evening interchangeably, depending on which day is /náːm cʰaylaw/ (น้ำไชเลา) or /náːm klaːŋkʰɨːn/ (น้ำกลางคืน). In February, it is increasingly the period of /náːm cʰaylaw/ (น้ำไชเลา) moving towards the season of /náːm klaːŋwan/ (น้ำกลางวัน). During this month, the villagers do their fishing activities at sea in late afternoon or evening and stay there until dusk or around 9-10 pm. interchangeably with working at sea during early or late mornings until the period of /náːm cʰaylaw/ (น้ำไชเลา) is finished in late April. After that, it is the season of /náːm klaːŋwan/ (น้ำกลางวัน) at the peak of its cycle. During the period of /náːm cʰaylaw/ (น้ำไชเลา), with the ebbing tide in the evenings, the villagers usually trap sergestid shrimp as the water recedes which is known as waiting for trapping /kʰɔːy náːm făːdam/ (เคยน้ำฟ้าดำ) ‘sergestid shrimp-black sky’.

It could be summed up that, at the beginning of the year which is considered the season of /náːm klaːŋwan/ (น้ำกลางวัน), the local villagers, especially those catching shellfish, do their work at sea in the daytime through the first half of the year. From midyear until the end of the year, which is known the season of /náːm

kla:ŋkʰɨ:n/ (น้ำกลางคืน), the villagers mainly catch sea creatures at night. This goes on an annual cycle. The fishing activities done by the villagers on a daily basis depends on the time of the receding tide and the exposed shore. This is predictable to the villagers. When the sea water is at its very low level, the villagers prepare themselves to work at sea. However, when the water almost has almost totally dried up from the mangrove forest, the villagers who have fishing boats hurry to take their boats to sea before the tide is too low for them to launch. For those who use mud-skiing, they wait until the water has completely withdrawn from the forest.

During the days of /ná:m kla:ŋwan/ (น้ำกลางวัน) during which the water is decreasing faster than usual, the villagers work at sea as the tide is decreasing. They stay at sea until the tide rises again. When the water starts rise, they don't return from sea immediately because they know that it takes 3-4 hours before the tide reaches the shore. Those who use mud-skiing to catch shellfish move closer to the shoreline. Their work takes approximately 6-7 hours a day. However, during the days of /kla:ŋ ná:m/ (กลางน้ำ) during which the water is decreases farthest away from the shore, the villagers stay at sea for 7-9 hours or 2-3 hours longer than during the days of /hŭa ná:m/ (หัวน้ำ) and /hă:ŋ ná:m/ (หางน้ำ). Generally, the tide starts to ebb one hour later each day. Therefore, the villagers work one hour later each day in according with the tide, for example, on one particular day, working at sea at 8 pm. and on the following day at 9 pm.

6.4 Resource utilization of coastal plants and marine animals

From the analysis of terms in use for marine animals and coastal plants, along with their classification, it was found that the terms reflect which animals are important for the local economy. The terms also reflect the villagers' eating culture in that they choose animals and plants as food according to the local environment and according to their culture and tradition - what is edible or not and popular or not, including how their food is cooked.

One of the local important economic marine animals in Bang Khunsai is the blood cockle. They can be classified by size into /hɔ̌:y lék/ (หอยเล็ก), /hɔ̌:y na:ŋ/ (หอยนาง), /hɔ̌:y yày/ (หอยใหญ่), and /hɔ̌:y kʰrô:ŋ/ (หอยโคร่ง) as mentioned in the part about terms of shellfish. /hɔ̌:y na:ŋ/ (หอยนาง) and /hɔ̌:y yày/ (หอยใหญ่) are in high demand and sell well. The locals do not usually eat the very big blood cockles called /hɔ̌:y kʰrô:ŋ/ (หอยโคร่ง) because their meat is tough and not delicious. Another kind of sea creatures which is sold and manufactured into shrimp paste is the sergestid shrimp known as /kʰə:y/ (เคย). This group of creatures is locally classified into a number of kinds and labeled by different specific folk terms based on their physique and features in the making of shrimp paste. Some /kʰə:y/ (เคย) are chosen by the locals for making shrimp paste while others are not. The shrimp paste is usually made of /kʰə:yta:dam/ (เคยตาดำ), /kʰə:ysi:cʰompʰu:/ (เคยสีชมพู), /kʰə:ysămli:/ (เคยสำลี), /kʰə:yhŭakʰă:w/ (เคยหัวขาว), and /kʰə:yhă:ŋdɛ:ŋ/ (เคยหางแดง). The group of /kʰə:y yà:pyày/ (เคยหยาบใหญ่), namely /kʰə:ykì:psômʔo:/ (เคยกลีบส้มโอ) /kʰə:ysăŋkasi:/ (เคยสังกะสี) and /kʰə:ytʰapʰaw/ (เคยตะเภา) are not used to make shrimp paste. The locals prefer shrimp paste made from /kʰə:yta:dam/ (เคยตาดำ) and it is considered the best shrimp paste because it is smooth, sticky with a good smell. Shrimp paste made from /kʰə:yta:dam/ (เคยตาดำ) sells very well. Some villagers who trap the sergestid shrimp also make shrimp paste for a living while others simply catch and sell the shrimp. Besides the blood cockle and the sergestid shrimp, several kinds of fish, shellfish, squid, shrimp, mantis shrimp, crab and horseshoe crab, have economic value or are caught for food. It is observable that the sea creatures which the villagers identify and name are usually for food or for sale.

The villagers choose particular sea creatures as food and prefer certain features of them more than others. The classification of sea creatures into either those with abundant meat or those laying eggs; such as /kâŋ nɬa/ (กั้งเนื้อ) ‘fleshy mantis shrimp’, /kâŋ kʰày/ (กั้งไข่) ‘spawn mantis shrimp’, /pu: nɬa/ (ปูเนื้อ) ‘fleshy crab’, and /pu:

kʰày/ (ปูไข่) ‘spawn crab’, reflects the popular eating habits of the villagers. The majority of villagers prefer to eat seafood containing eggs in the body as they can also taste the eggs; for example, fish with eggs, squid with eggs, mantis shrimp with eggs, eggs of horseshoe crab and many more.

Only some egg-bearing sea creatures are not so popular for consumption such as crab. The villagers like eating /pu: nɨa/ (ปูเนื้อ) better than /pu: kʰày/ (ปูไข่) because, naturally, the crab has more meat when there are no eggs. Besides, fish such known as /pla:kamɔ̀ʔ/ (ปลากะเมาะ), /pla:tʰu:/ (ปลาทู), /pla:tʰa:/ (ปลาทา) and other fish species which, when fully grown, have a thick skin, locally called /pla:sɔ̌:ŋnăŋ/ (ปลาสองหนัง) ‘two skin-fish’, are not preferred eating by the villagers. In their opinion, /pla:sɔ̌:ŋnăŋ/ (ปลาสองหนัง) do not have soft meat making it taste bad. The reason why they are called /pla:sɔ̌:ŋnăŋ/ (ปลาสองหนัง) is because when they are taken to be cooked in water, resemblingly, one layer of their skin has been removed with another layer still attached. The popularity for consuming and choosing all of the foods mentioned is reflected in their identification and specific terms in use common usage.

In general, the daily meal of coast-dwellers is comprised of mainly local and seasonal seafood caught, shared and sold among villagers. The majority of their food is made up of various kinds of fish, blood cockle, shrimp, crab and squid. They are deep-fried, boiled and stir-fried like anywhere else with nothing special. It is noticeable that the local villagers prefer preserving sea creatures using salt and fish sauce as main ingredients. In Bang Khunsai Subdistrict, salt is not hard to find because of local salt farming. The following are popular local foods and how they are preserved.

Salted cockles called /hɔ̌:y mòk klɨa/ (หอยหมกเกลือ) or /hɔ̌:y mòk kʰem/ (หอยหมกเค็ม) is preserved by bringing fresh cockles with their shell intact and mixing them with salt for one day or 24 hours. They are kept moist with water. When fully preserved, the cockles are washed to rid them of the salt. They are put in a cooking pot

without water and left to boil dry. After that, they are ready to be served. Generally, /hɔ̌:yk^{h}rɛ:ŋ/ (หอยแครง) and /hɔ̌:yʔâymûm/ (หอยไอ้มุ่ม) are chosen for this type of preservation, especially those of middle-size called /hɔ̌:y na:ŋ/ (หอยนาง). The villagers inform that salted cockles used for /hɔ̌:yʔâymûm/ (หอยไอ้มุ่ม) are more delicious and more aromatic than /hɔ̌:yk^{h}rɛ:ŋ/ (หอยแครง) and /hɔ̌:yʔâymûm/ (หอยไอ้มุ่ม) are suitable size for preserving with salt. /hɔ̌:yʔâymûm/ (หอยไอ้มุ่ม) are not generally popular for sale but popular for preserving of salted cockles. They can be kept for a lengthy period of time without being spoiled. Many villagers prefer eating salted cockles preserved by this technique.

Like salted cockles, salted fish called /pla: mòk klɨa/ (ปลาหมกเกลือ) is done by bringing raw fish without their scales removed and burying them in salt. Salt is also rutted inside. There are left for one day or 24 hours before being taken out and rinse them. The fish are hung with their heads down to drain the water and hang the fish and left to dry. The fish can be kept for a long time. The preserved fish is popular for deep-frying. Large fish, such as /pla:ʔinsi:/ (ปลาอินทรีย์) and /pla:kulaw/ (ปลากุเลา) are good for this cooking method.

Fish in brine called /pla: lɔ:y ná:mklɨa/ (ปลาลอยน้ำเกลือ) is prepared by taking descaled fish and putting them in deep salted water. There are left for awhile and if the eyes of the fish turn gray or unclear, that means they have had enough salt. The fish are then rinsed and dried but not too dry. The preserved fish are for deep-frying. /pla:cùat/ (ปลาจวด), /pla:ʔòkkaré:/ (ปลาอกกะแร้), /pla:kulaw/ (ปลากุเลา) and many others of medium size are good for using this cooking technique with.

Other preserved fish in brine called /pla: dɔ:ŋ ná:mklɨa/ (ปลาดองน้ำเกลือ) is a reference to fresh scaled fish added to salted water for a day, two or more. After that they are taken for any cooking. Salt stock is an effective way of preserving fish. Fisher folk who are forced to stay out at sea for days usually put their catch, such as /pla:t^{h}u:/ (ปลาทู) and /pla:t^{h}a:/ (ปลาทา) in salted water. The preserved fish is called /pla:ná:m/ (ปลา

น้ำ). The term /pla:ná:m/ (ปลาน้ำ) is used by villagers following those in other provinces, they said.

Dry salted fish called /pla:k^{h}em/ (ปลาเค็ม) is descaled fish mixed with salt. Dried in the sun for days, they are good for frying or other methods and they can be kept for a long period of time.

Half-dried salted fish called /pla:c^{h}amra:/ (ปลาชำรา) is descaled fish mixed with fish sauce and seasoned with a small amount of sugar. The fish are dried in the sun but not allowed to get too dry. The preserved fish is good for frying. Some people call it /pla:dɛ:tdiaw/ (ปลาแดดเดียว) 'fish-one-sunshine'. /pla:kabɔ̀:k/ (ปลากะบอก), /pla:ʔòkkarɛ́:/ (ปลาอกกะแร้), /pla:kamɔ́ʔ/ (ปลากะเมาะ) and many others are good for making half-dried salted fish or /pla:c^{h}amra:/ (ปลาชำรา).

Sweet and salted, boiled blood cockles called /hɔ̌:y dɔ:ŋ ná:mpla: ná:mta:n/ (หอยดองน้ำปลาน้ำตาล) is made from fresh blood cockles with their shells attached, boiled in a syrup with fish sauce until fully cooked. The syrup must not be allowed to overcook and become too sticky.

Sweet and salted, boiled squid called /mɨk tôm wǎ:n/ (หมึกต้มหวาน) is fresh squid mixed with syrup and fish sauce. Boil the syrup until it becomes sticky. Then put the squid in. The villagers prefer eating a squid known /mɨkkatɔ:y/ (หมึกกะตอย) preserved this way.

Some coastal vegetation is used as food, such as /c^{h}ak^{h}ra:m/ (ชะคราม). The villagers also call it /p^{h}àk c^{h}ak^{h}ra:m/ (ชะคราม) 'Cha-kham vegetable' indicating that it is classified by the villagers as a vegetable and is edible. They choose only green /c^{h}ak^{h}ra:m/ (ชะคราม), not the red one for cooking in soup with a kind of sea crab known as /pu:le:/ (ปูเล). Besides, /c^{h}ak^{h}ra:m/ (ชะคราม) is eaten with chilli paste or fried with egg. Another plant is /p^{h}àkbîa/ (ผักเบี้ย). It is generally fed to pigs but some villagers do eat it.

/p^{h}àkbîa/ (ผักเบี้ย) is good for making sour and spicy soup called /kɛ:ŋsôm/ (แกงส้ม), or made into pickle (eaten with chilli paste). Although these plants are known for their salty taste, the villagers know well how to cook them. They squeeze out the salt content from the plants before cooking them in soup. The large coastal tree known as /samĕ:/ (แสม), numerous locally, produce a fruit which the villagers cook with syrup to make a sweet called /k^{h}anŏmnĭaw/ (ขนมเหนียว) 'sticky sweet' or otherwise preserve in syrup. The villagers prefer to use fruit /samĕ:dam/ (แสมดำ) more than /samĕ:k^{h}ă:w/ (แสมขาว) 'white Samae' for making a sweet. However, these days, the cooking of /samĕ:/ (แสม) fruit is not popular.

Besides using coastal plants and marine animals as food, local villagers use plants and animals for other purposes. Dry cuttlebone of squid, for example, is ground up as a cure of protein deficiency and fever or as a yeast in baking powder. Dried sting ray skin is used for polishing the wooden parts of boats and the surfaces of various things. However, these days, sand paper is preferred because it works better though some people do continue to use sting ray skin for such purposes. The coastal plants, /samĕ:/ (แสม) and /ko:ŋka:ŋ/ (โกงกาง) are trees once used for making coal but conservation regulations these days make the mangrove forest prohibited zone for such activities. Villagers also use the core of the /samĕ:/ (แสม) tree, ground up and mixed with lime juice, to relieve coughing in children. In the past, the bark of /ko:ŋka:ŋ/ (โกงกาง) tree was boiled to obtain a dark brown water called /ná:msíap/ (น้ำเซี๊ยบ), used in dyeing the nets of the /yɔ:/ (ยอ) and adding durability to textiles and clothing. These days, /ná:msíap/ (น้ำเซี๊ยบ) is no longer produced but older villagers still refer to it to describe the treasures of the mangroves.

6.5 Beliefs of the sea and related occupation

Beliefs and superstitions related to the sea held by coast-dwellers are reflected in their definitions of the sea. One of the definitions refers to /k^{h}unp^{h}ɔ̄:că:wt^{h}ale:/ (คุณพ่อเจ้าทะเล). The villagers believe that the sea is protected by /k^{h}unp^{h}ɔ̄:că:wt^{h}ale:/ (คุณพ่อเจ้าทะเล), the spirit guardian of the sea, highly regarded by the locals. Not only do they speak of him, but they also practice social rituals in his name.

At the Bang Khunsai Village shrine (locally called the Tai Sia Shrine), there are sacred statuettes and images of divine beings. Among them, there is one called /k^{h}unp^{h}ɔ̄:că:wt^{h}ale:/ (คุณพ่อเจ้าทะเล) or in Chinese, “Hai Leng Huang”, believed to be the guardian of the sea for all living beings. During the Vegetarian Festival, Chinese descendents pay homage to the divine at the shrine. Also, fisher folk seeks blessings and wish for abundant catches. There is a spirit sending-off for /k^{h}unp^{h}ɔ̄:că:wt^{h}ale:/ (คุณพ่อเจ้าทะเล) during the festival’s last day because the villagers believe that /k^{h}unp^{h}ɔ̄:că:wt^{h}ale:/ (คุณพ่อเจ้าทะเล) and other divine beings come down from the heavens then to participate in the festival. The villagers build a raft made of banana trees with a small house on it in full decoration. Then the spirits are invited onboard. At a suitable time during the rising tide called /hŭa ná:m k^{h}i̊n/ (หัวน้ำขึ้น) around 3-4 in the morning, the raft is taken by a boat out to sea followed by a procession of boats to send the sacred spirits home (see Figure 6.5). The participants, in the procession, wearing white, are required to have only vegetarian food during the festival. After the ceremony, they may return to eating typical food. Those who can’t join the procession join in the ceremony by placing joss sticks and pieces of gold and silver paper onto the raft. The ceremony begins when the raft is taken 2-3 kilometers from offshore. The boat towing the raft makes a circle followed by the other boats. After that, there is the cutting of the rope attaching the raft and the burning of the small spirit house on the raft before finally setting the raft adrift. That marks the end of the sending-off /k^{h}unp^{h}ɔ̄:că:wt^{h}ale:/ (คุณพ่อเจ้าทะเล). This ceremony is still conducted today. In neighboring subdistricts situated by the sea, such as the subdistricts of Ban Laem and

Bang Taboon, there is a very similar ceremony, however, what makes it different is that the sending-off ceremony takes place at night.

Figure 6.5 The raft is taken by boat out to sea followed by a number of boats in a procession to send-off /kʰunpʰɔ̀:cǎ:wtʰale:/ (คุณพ่อเจ้าทะเล) and other divine spirits.

Some fishing boats, especially big ones, hoist flags called /hú:/ (ฮู้) on their bows or masts. /hú:/ (ฮู้) with sacred texts written on are believed to be sacred and blessed by /kʰunpʰɔ̀:cǎ:wtʰale:/ (คุณพ่อเจ้าทะเล) during the farewell ceremony. The fisher folk raise the flags to protect against evil while out working at sea. A number of boats fly three-colored pieces of cloth tied at the bow of the boat in worship of the female goddess of the boat called /mɛ̀:yà:na:ŋ/ (แม่ย่านาง).

/hú:/ (ฮู้)

three-colored pieces

Figure 6.6 /hú:/ (ฮู้) (on the left) and (on the right) three-colored pieces of cloth dedicated to /mè:yà:na:ŋ/ (แม่ย่านาง) tide to the bow of the boat.

The majority of big boat owners pay homage to the Boat Goddess /mè:yà:na:ŋ/ (แม่ย่านาง) during the principle Buddhist holy days. Meanwhile, persons who have the typical boats called /rɨaʔi:pá:p/ (เรืออีป๊าบ) 'E-Parb boat' and /rɨaʔi:po:ŋ/ (เรืออีโปง) 'E-Pong boat', a kind of typical boat commonly found in the villages, used them to ride over the mudflats, to perform the same act though less frequently on general Buddhist holy days.

/rɨaʔi:pá:p/ (เรืออีป๊าบ)

rɨaʔi:po:ŋ/ (เรืออีโปง)

Figure 6.7 /rɨaʔi:pá:p/ (เรืออีป๊าบ) (on the left) and /rɨaʔi:po:ŋ/ (เรืออีโปง) (on the right)

Food prepared as offerings include khanom pia (Chinese cake), chickens, ducks and certain fruits. The villagers have never offered thorny fruits such as durians. It is believed that thorny fruits symbolize obstacles and bad luck for their fishing for

example their fishing nets might be torn off or they can not catch any sea creature. When the fishing boats are about to enter deep sea zones, sometimes the boat owners light joss sticks and offer food to the god of the sea in return for a better catch and protection from harm. If their wishes are granted they are expected to fulfill their promise. Besides, in other areas, there are local spirits who are believed to be guardians of the sea, according to the villagers. However, they are called by different names.

In conclusion this chapter has discussed the utilization and division of areas, means and periods of working, the benefits derived from local flora and fauna resources and the beliefs of villagers with regard to the sea and their occupations. All are seen from a cultural perspective gained from an analysis of terminology used by coastal dwellers in relation to the environment.

CHAPTER VII
CONCLUSION AND DISCUSSION

The current study on Thai coast-dwellers' terminology and folk classification concerning eco-environment aims to discover coastal villagers' perceptions and categorization of coastal and marine environment, and to demonstrate their culture reflected through an analysis of words or terms. The studied area focuses on Bang Khunsai Subdistrict, Ban Laem District in Phetchaburi Province. It is an area on the coast of the upper Gulf of Thailand with several traditional coastal villages and ecological diversity. Word data in domain of landform, soil, water, wind, coastal plants and marine animals, were elicited from local people living in a coastal village in Ban Khunsai Subdistrict during fieldwork. An ethnosemantic approach is applied for use in the study. The semantic field methodology comprised an analysis of componential meaning and folk taxonomy in order to analyze the word data. Conclusion and discussion of the findings including suggestions for further research follow.

7.1 Conclusion of the findings

7.1.1 Terms and classification of landscape

Terms for landform, soil, water, and wind used by Thai coast-dwellers of Bang Khunsai villages reveals their perception and categorization of the environment in which they live. The coastal locals have classified two types of sea; /tʰale:tɤ̂:n/ (ทะเลตื้น) 'shallow sea' and /tʰale:lɤ́k/ (ทะเลลึก) 'deep sea' based on their physical qualities and benefits derived from them. Geographical localities and landforms which dominate the landscape are identified. Some localities have been given specific place-names, or toponyms, by the coastal residents. Local water sources that are not far away, and receiving water from the sea, are classified according to their features and named

differently. Different types of mangrove forest (e.g. /pà:samɛ̌:/ (ป่าแสม) ‘Samae forest’, /pà:ko:ŋka:ŋ/ (ป่าโกงกาง) ‘Kong-kang forest’, and /pà:tabu:n/ (ป่าตะบูน) ‘Tabun forest’) are identified by the kinds of trees growing in majority in that particular area. In addition, the geomorphic features, particularly of the sea area, are identified by different terms.

Concerning terms for soil, the local soils are classified into nine types, divided into two different groups; one soil group in the sea or around other water sources and the other on land. The coastal villagers characterize local soil based on a variety of dimensions. They mainly play attention to physical features or properties and texture (determined by the number of component particles). Besides their identification of soil, they also classify the burrows or /ru:/ (รู) of marine creatures found above and below the surface.

Those who have been living in coastal areas recognize the nature of sea water, and can indicate the characteristics of the water, as well as predict tides and other water phenomena. This knowledge is reflected through their use of vocabulary with a number of words or terms. Water terms found can be categorized into various subfields according to the local coast-dwellers’ perspective, namely, water types, water fluctuation, water cycles, water seasons, water conditions, and waves.

Coast-dwellers recognize that the wind is influential in the movement of sea water. They know how much the wind affects their ways of life from the sea. Three categories of wind can be described by these folk terms, namely wind according to position, wind according to time or temporal wind, and local winds. Besides, there are various terms for windy conditions.

7.1.2 Folk classification of coastal plants and marine animal

Coastal villagers have given names to coastal plants and marine animals and classified them into various groups and kinds according to their knowledge and perspectives. Eleven kinds of coastal plants which are currently found on the area of Bang Khun Sai village are identified. They are classified into two groups: large trees, and small trees. /samɛ̌:/ (แสม) and /ko:ŋka:ŋ/ (โกงกาง) which are big trees generally

found in the local area, especially in the mangrove forest. Both kinds are distinguished into two sub-kinds. Another kind of coastal plants that is identified into sub-kinds by some villagers is /cʰakʰra:m/ (ชะคราม). This plant is also generally found in the coastal area and in fields.

Ten major categories of marine animals are identified by The coastal locals in Bang Khunsai village, namely fish, cuttlefish, shellfish, shrimp, sergestid shrimp, mantis shrimp, crab, horseshoe crab, jellyfish, and jellyfish-like creatures. The largest category of marine animal is fish. Thirteen kinds from the total number of 50 local fish names found are distinguished into sub-kinds. Cuttlefish or squid known as /mɨk/ (หมึก) is classified into seven different kinds in two different groups and two kinds of them are distinguished into sub-kinds. Nine kinds of local prawn are identified and only one particular kind of prawn is distinguished into sub-kinds. The marine creature used for the production of shrimp paste locally known as /kʰə:y/ (เคย) are distinguished into nine kinds in two different groups. Mantis shrimp called /kâŋ/ (กั้ง) is classified into three kinds. Eleven kinds of local sea crab are generally identified and two kinds of local sea crab are distinguished into sub-kinds. The Horseshoe crab called /mɛ:ŋda:/ (แมงดา) is distinguished into three different kinds. Five kinds of jellyfish known as /mɛ:ŋkapʰun/ (แมงกะพรุน) are identified and specifically named. And the last category of marine animals the locals mention to the jellyfish-like creatures called as /săːràːy/ (สาหร่าย).

Marine animals are classified and distinguished into specific kinds of the same class based on various folk criteria, namely appearance of color, shape, size, sex, fleshiness, habitat and method of catching. However, there is only one criteria used for physical features (color, shape, or size) of coastal plants. Furthermore, it is commonly found that the principal differentiating dimension used to contrast many (but not all) sub-kinds will be encoded in the folk specific names themselves. The most distinguishing features commonly found are color and size. Moreover, the locals also

distinguish animals considering their toxicity and edibility according to the animal's nature and eating culture.

7.1.3 Cultural reflection of terminology

The existence of terms, folk definition of terms, and the classification of things in relation to the eco-environment in domains of landform, soil, water, wind, coastal plants, and marine animals, reflects coast-dwellers' cultural way of living in the studied area, such as the utilization and division of sea area, their ways of making a living, villager's work periods, utilization of resources and beliefs regarding the sea and fishing activities.

7.2 Discussion regarding the findings

7.2.1 Terminology in the eco-environmental domains

The terminology used by locals for a particular subject such as landforms, soil, water, wind, coastal plants and marine animals constitutes a picture of the classification system used by Thai coast-dwellers and also reflects their livelihood in line with this study's hypothesis. Folk classification of entities was observed in all the eco-environmental domains identified in this study. Semantic features of words or terms for environment reflect the villagers' perceptions of the world around them and their culture. In addition, the number of distinctions made within an individual domain and the degree of specialization within subtype reflects the degree of cultural interest and significance. For instance, the coastal locals label each feature of soil in the sea or nearby with a separate name (e.g. /le:n/ (เลน), /le:n k^{h}â:wtôm/ (เลนข้าวต้ม), /din da:n/ (ดินดาน), /sa:y k^{h}î:pèt/ (ทรายขี้เป็ด), and others) and thereby give it distinctive value. On the other hand, they hardly classify features of soil on the land, and it is reflected by the very few numbers of terms for soil on the land. As we have seen, only two terms for soil on the land, namely /din/ (ดิน) and /din kra:sá:/ (ดินกระซ้า), were found. This suggests that the coastal locals utilize the sea and coastal area more than land. For these reasons, they pay attention to the soil on the land less than the soil in the sea or nearby.

The seawater phenomena are specially identified and labeled because, significantly, the coastal locals' earning a living depends directly on the sea. The commonly consumed plants and animals are usually classified and valued variously by the locals. For example, they classify sergestid shrimps or /k^{h}ə:y/ (เคย) in detail because this creature is commonly used to make shrimp paste. Their classification is even more interesting.

7.2.2 Coast-dwellers' perception and specialized knowledge with respect to eco-environment

The dwellers who have long inhabited the coast in Bang Khunsai Subdistrict consider the sea as a source for food and livelihood. There is a belief that gods or holy spirits look after and dominate everything in the sea. This is reflected in the names of gods and custom related to gods of sea. The coast-dwellers tend to associate their perception of environments to sea. For example, they associate the direction of wind blowing during the day to sea called by the term /lom nay/ (ลมใน) 'inside wind' and /lom nɔ̂:k/ (ลมนอก) 'outside wind'. These terms refer to the wind blowing from the land to the sea and the wind that blows from the sea to the land respectively.

A part of the study reveals that the coastal-dwellers possess a great deal of specialized knowledge about sea water. It appears that the existence of numerous words referring to water types, water fluctuation, and water condition (as shown in the first three columns in Table 7.1) is comparable to scientific knowledge. In addition, from the researcher's point of view, local knowledge reflected in terms related to water type, fluctuation, and condition can also be comparable to that of dwellers in other coastal areas or area interconnected with the sea. This corresponds with the findings in the study of the Mae Klong people's water knowledge by Surachit (2005 in Thai). And the complicated words for water phenomena in the locals' ecological cognition of water cycle, water season and wave types (as shown in the last three columns in Table 7.1) reflect specific in-depth knowledge possessed by Bang Khunsai coast-dwellers. The perception of water cycle and water season based on time indicator, are not common among people in other areas. By and large, this is

knowledge other than scientific knowledge. It has not been found mentioned in prior research reviewed in Chapter II.

Table 7.1 Water terms found in Bang Khunsai Subdistrict

water type	**water fluctuation**	**water condition**	**water cycle**	**water season**	**waves**
náːm kʰem (น้ำเค็ม) náːm cɨːt (น้ำจืด) náːm krɔ̀ːy (น้ำกร่อย)	náːm kʰɨ̂n (น้ำขึ้น) náːm loŋ (น้ำลง) náːm kɛ̀ːt (น้ำเกิด) náːm taːy (น้ำตาย) náːm tʰɔ́ː (น้ำเท้อ) náːm tʰaːm (น้ำทาม) náːm tʰɔːn (น้ำทอน) etc.	náːm bìat (น้ำเบียด) náːm kan (น้ำกัน) náːm nǔn (น้ำหนุน) náːm kʰwăːŋ (น้ำขวาง) náːm pát (น้ำปัด) pʰraːy náːm (พรายน้ำ) etc.	nɨ̀ŋ náːm (หนึ่งน้ำ) sɔ̌ːŋ náːm (สองน้ำ) hŭa náːm (หัวน้ำ) klaːŋ náːm (กลางน้ำ) hăːŋ náːm (หางน้ำ) náːm mày (น้ำใหม่) náːm kàw (น้ำเก่า) etc.	náːm klaːŋwan (น้ำกลางวัน) náːm klaːŋkʰɨ̂ːn (น้ำกลางคืน) náːm cʰaylaw (น้ำไชเลา) etc.	dɛ̀ːŋ (เดิ่ง) kʰɨ̂ːn (คลื่น) kʰɨ̂ːn hŭafŏn (คลื่นหัวฝน) kʰɨ̂ːn yàːp (คลื่นหยาบ)

Common knowledge Specific knowledge in the area

The coast-dwellers' knowledge about sea water, waves, and wind and their ability to predict sea water phenomenon, which is acquired from experience or inherited from their ancestors, enable them to wisely utilize the sea and escape danger. In addition, the coast-dwellers possess a great deal of knowledge about coastal plants and marine animals. With this kind of knowledge, they are able to identify distinctive features for those plants and animals, and they are also able to select those plants and animals for particular consumption.

7.2.3 Folk classification of the natural environment

In this section the researcher presents two issues concerning folk classification of the natural environment reflected from words or terms for a particular subject such as landforms, soils, water, wind, coastal plant, and marine animal and these two issues have been noticed in the finding of the study. The first is the determinants of environmental classification and the second is the relationship between folk and scientific classification

7.2.3.1 Determinants of environmental (folk) classification

Considering the folk classification of the natural environment, the researcher found that there are two main determinants of environmental classification used by the villagers; physical and cultural properties. Physical properties related to things villagers see or touch (such as color, shape, size, etc.), or related to the natural characteristics are first and foremost used to indicate the basic semantic features or semantic components of environmental terms. In addition, the semantic features that constitute the distinctive meaning of each term in some word-set may also refer to the cultural properties such as using as food, material, or for some specific purposes. Terms for types of soil and sergestid shrimp, for examples, are classified into various distinct types based on physical properties including cultural properties as below.

Examples of terms for soil

/le:n/ (เลน)		**/din nɨ̌aw/ (ดินเหนียว)**
+ muddy	physical properties	- muddy
- sticky		+ sticky
- able to be put into shape		+ able to be put into shape
+ sinking as being walked on		- sinking as being walked on
+ in water resource		+ in water resource
+ suitable for mud-skiing	cultural properties	- suitable for mud-skiing

Examples of terms for sergestid shrimps known as /kʰəːy/ (เคย)

/kʰəːy sămliː/ (เคยสำสี)		/kʰəːy săŋkasiː/ (เคยสังกะสี)
+ type of fine sergestid shrimp + transparently white body + small and slim like thread	physical properties	+ type of fine sergestid shrimp + shiny white body + the same size as shrimp's offspring
+ used for making shrimp paste	cultural properties	- used for making shrimp paste

Physical properties reflect villagers' perception of the nature in particular geographical area, which villagers may perceive differently from or similar to those who live in other areas. Cultural properties, on the other hand, reflect utilization of natural resources by villagers. This is specific to individual communities. As shown in the examples earlier, the semantic features of the terms for soil, which belong to the cultural property, reflect the culture of this area in the utilization of fishery muddy shore by the locals. In this case, the villagers go fishing by mud-skiing. If we investigate the terms used for soils in different communities, we would probably find that the terms for soil may not consist the determinant of cultural property, which is semantic features of classification of soil type, or it can be different as well. Other cultural properties are exemplified in the semantic features of terms for sergestid shrimp or /kʰəːy/ (เคย). They reflect the villagers' utilization of sergestid shrimp in marking shrimp paste. In addition, it is observed that being edible or inedible is probably a biological feature which is considered to be a cultural property, given that something edible in a community may not edible in others because they do not know how to eat it. For these reasons, edibility is an important feature by which plants or animals might be distinguished from one another.

Determinants of environmental classification which are of physical properties will always appear to be a semantic feature used for classifying terms for environment. Cultural properties, on the other hand, may not appear to be a semantic feature used in classifying terms for environment or for word sets in other semantic domains. If the word sets consist of a determinant of classification which is a

cultural property, the speakers' culture will be revealed from that determinant of classification.

7.2.3.2 The relationship between folk and scientific classification

According to the results of the study, the researcher found a relationship between folk and scientific classification of coastal plants and marine animals. There are correspondences as well as incompatibilities in the folk and scientific classification. In terms of the correspondence, the local villagers sub-classify some coastal plants and marine animals in similar fashion of those in which scientific field do. In addition, some local specific names of plants and animals are found to correspond to the common names, for instances those of /ko:ŋka:ŋ/ (โกงกาง) tree, /pla:kap^{h}oŋ/ (ปลากะพง) fish, and the mantis shrimp known as /kâŋ/ (กั้ง). However, it is found that the local dwellers may use words for plants or animals alternately to scientists for example, the words for /samĕ:/ (แสม) tree. The /samĕ:dam/ (แสมดำ) in the locals' perspective are in fact /samĕ:k^{h}ă:w/ (แสมขาว) in scientific perspective, and the /samĕ:k^{h}ă:w/ (แสมขาว) tree in the dwellers' perspective are what the scientists call /samĕ:dam/ (แสมดำ). This is because, according to an official at the Mangrove Resources Development Station 6 (Phetchaburi), the villagers classify /samĕ:/ (แสม) trees based on the color of its trunk, while the scientists classify /samĕ:/ (แสม) trees based on the color of its leaves.

In terms of the incompatibility, there are two differences between traditional classification and the scientific classification. The former is concerned with the degree of specialization, and latter is concerned with the alignment of the relationship between items within a group. The difference in the degree of specialization means a difference in sub-classification. For example, some local villages generally sub-classify /c^{h}ak^{h}ra:m/ (ชะคราม), the small bush plants grown in the coastal area, into two subtypes. That is, there are two kinds of /c^{h}ak^{h}ra:m/ (ชะคราม) e.g.

the green and the red types. However, this sub classification is not found in scientific classification.

The difference in alignment of the relationship between items within a group is found in the classification of animals, for instance horseshoe crabs known as /mɛ:ŋda:/ (แมงดา). The researcher found that there are two sub-classifications of the horseshoe crabs in the local villagers' perspective. As for the first sub-classification, the horseshoe can be sub-classified into three types e.g /mɛ:ŋda:tʰɔ̌:y/ (แมงดาถ้วย), /mɛ:ŋda:ca:n/ (แมงดาจาน), and /mɛ:ŋda:hĕ:ra:/ (แมงดาเหรา). As for the second sub-classification, the horseshoe can be sub classified into two types e.g /mɛ:ŋda:tʰɔ̌:y/ (แมงดาถ้วย) and /mɛ:ŋda:ca:n/ (แมงดาจาน), and /hĕ:ra:/ (เหรา) belongs to /mɛ:ŋda:tʰɔ̌:y/ (แมงดาถ้วย) category. In scientific perspective, the horseshoe found in Thailand are sub-classified into two types e.g /mɛ:ŋda:tʰɔ̌:y/ (แมงดาถ้วย) and /mɛ:ŋda:ca:n/ (แมงดาจาน). And /hĕ:ra:/ (เหรา) is /mɛ:ŋda:tʰɔ̌:y/ (แมงดาถ้วย) which happen to be poisonous during particular months of each year. They are not sub-classified into a separate spicy.

In the current study, the researcher cannot compare and exemplify correspondence between folk taxonomy and scientific classification of coastal plants and animals in a one-to-one fashion, unlike Berlin and others (1966), who studied folk taxonomy classification of the native plants of the Tzeltal-speaking people. This is because there is no scientific study about types of sea creatures in the particular local area. This calls for a cooperating study between scientific scholars and linguists.

Nevertheless, based on the results of this study, it can be concluded that the distinctive features or criteria which the villagers use in classifying plants and animals are different from the scientific criteria. For example, the local villagers perceive sexual difference found in blood cockles and classify them into two subtypes. Scientists, on the other hand, do not classify blood cockles according to sex. Rather, they classify blood cockles according to shape. For this point, we can say that both villagers and scientists have their own classification system. Furthermore, we can also say that the villagers systematically organize the relationship between things like

taxonomy in scientific perspective. Although the pattern of traditional taxonomy is different from the scientific taxonomy, the differences between them are comparable and correspond to each other.

Apart from plants and animals, the coastal villagers classify types of sea, sea shore forest, soil, wave, and wind like scientists do. However, the classification may be different due to the difference between villagers' perspective and scientist' perspective and criteria. As mentioned in the previous paragraph, the differences between traditional taxonomy and the scientific taxonomy do not conflict. Rather, they correspond and support each other.

7.2.4 Application of ethnosemantic approach

This study employed two main ethnosemantic methods i.e. folk taxonomy and componential analysis, in order to investigate the villagers' conceptualization and classification of local environment. However, the two methods could not be used for the analysis of every single word and term for environment in various domains. This is because all words or terms for environment within individual semantic domain (e.g. words for water cycle, season, and condition) do not exhibit the notion of 'kind of / type of" or "inclusion". In other words, the relationship among items within a given category is not assumed to be hyponyms or incompatibility. Accordingly, they cannot be analyzed by using taxonomy method, and we cannot illustrate their lexical hierarchy.

The methodology of componential analysis is suitable for analyzing the structured meaning of words for coastal plants and marine animals. It can also be used for analyzing other word-set which characterize the taxonomic hierarchy of relation. In this study, they include words for type of sea, mangrove forest, soil, wave, and type of wind. As generally known, the componential analysis is normally focused to identify semantic feature or semantic component of words in terms of binary values. However, it is found that many lexicon contrasts, particularly those of words for plants and animals, do not appear to be only binary feature but appear to be multiple equipollent features and or unique features. For this reason, the multiple equipollent and unique features are used to exemplify the semantic components of the words or terms in those semantic domains (see Figure 7.1 for example).

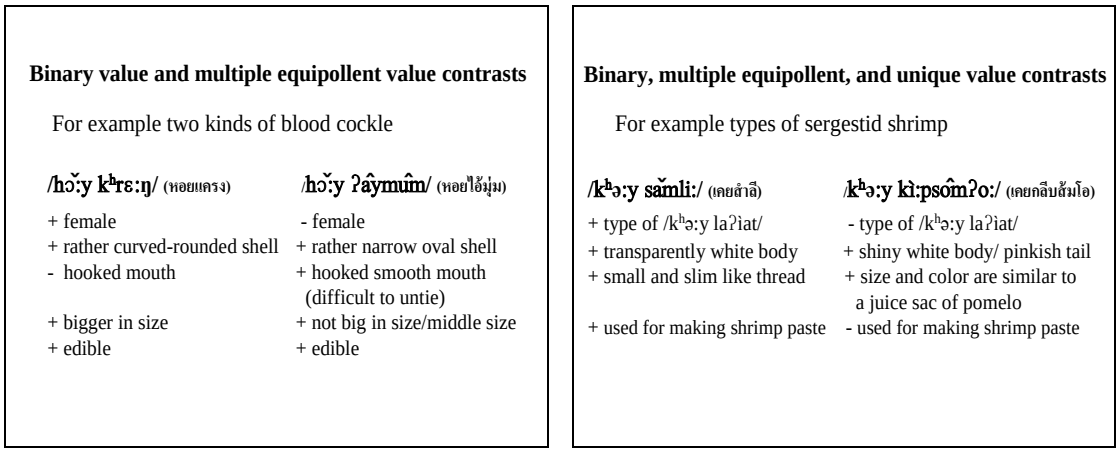


Figure 7.1 Various semantic values used to exemplify the components of meaning

Given that folk taxonomy and componential analysis are not practical for the analysis of all words or terms in particular semantic domains, it is possible to apply the two methods, together with the descriptive analysis, to study various semantic domains. Yet, an analysis of contrastive features should not be stuck with lexical items which characterize binary values. The application of an analysis of folk taxonomy and componential meaning to a variety of semantic domains, rather than one, will widen the scope of research in the field of ethnosemantics. In addition, the folk taxonomy and the componential analysis are remained valuable approaches to learning people's worldview and classification or categorization systems in the culture.

7.2.5 Contributions of this research

The contributions of the current study of terminology concerning natural environment used by Thai coast-dwellers are as follows.

(1) Lead to understanding local ecological knowledge

The study reveals the coast-dwellers' perspectives of the environment as well as eco-environment features of the local coastal area. This leads to understanding of the local ecological knowledge by people who have been living in the coastal area for a long time, especially knowledge in folk classification system of environment. There is a limited number of studies in this area/subject. This body of local knowledge e.g. about local hydrology and plant and animal classification, is

indeed valuable for coastal natural resource utilization and management. It is also valuable for the dwellers' utility of the natural phenomenon. Apart from these, the study can also show the coast-dwellers' living culture related to local environment. It is reflected by the vocabulary. This knowledge about living culture leads to understanding of the local area. Moreover, it is useful for community planning and development.

(2) Enable us to unfold local knowledge systematically

This study unfolds the local's conceptualization and folk knowledge of natural environments to be revealed to public. The local knowledge, particularly classification system of environments, were systematically categorized and precisely illustrated by taxonomy which is comparable to the scientific ones. The findings of the study can be integrated with common or scientific knowledge. Besides, the current study can be linked with studies in other fields such as ethnoecology (e.g. ethnobotany, ethnozoology, etc.), hydrology, environment sciences, and social sciences.

(3) Provide language documentation, focusing on eco-environment

The study of terminology will refine our understanding of diversity of coastal ecology. It will also mirror changes occurred in geography and natural environment. Accordingly, we will know what species exist, what species are at risk or what species are extinct. The words or terms for landform and for geographical locations are examples. The word /hà:t krasá:/ (หาดกระซ้า), which refers beach made up of fragments of shells, suggests that long time ago the sea areas in Bang Khunsai subdistrict include a dune which are full of fragments of shells along the shore. The word /hŭak^{h}ò:t/ (หัวโขด) refers to the slope area which is full of dead shellfishes (fragments of shells) near the interconnection of rivers and sea. This area used to be the place where fishermen stop their boats and took the fish they caught up to the shore. Nowadays, the dwellers still used this term even though the area no longer slopes. The terms for /p^{h}ákbûŋk^{h}ăn/ (ผักบุ้งขัน), a kind of morning glory, or the

terms for /pla:ʔi:dàk/ (ปลาอีดัก) suggest the existence of these plants and animals in the past, but not in the present days. This mirrors changes that occur in the local ecological system.

Interestingly, the researcher noticed differences in terms for things used by different generation, for example, the classification of shellfishes which are physically similar. The older generation like parents classifies the shellfish into three sub-types i.e. /hɔ̌:y ce:di:/ (หอยเจดีย์), /hɔ̌:y cúpcɛ:ŋ/ (หอยจุ๊บแจง) and /hɔ̌:y muanpʰlu:/ (หอยมวนพลู), and use three different terms for naming each sub-type of the shellfish. But some younger generation uses only a term /hɔ̌:y ce:di:/ (หอยเจดีย์) for the three types of the shellfish. The lost of words or terms for things do not only indicate the lost detailed classification and knowledge, but it may be also indicate the lost of things in the eco-environment. Language dealing with ecological theme e.g. water, plants, and animals, and may be an endangered semantic domain; need to be prior documented. The current study is therefore considered to be a document of language concerning with local ecological knowledge.

(4) Contribute to linguistic field

Years ago ethnolinguistic study usually dealt with the analysis of words of sole semantic domain concerning the basic cultures e.g. color terms, kinship term, cooking terms, taste terms, movement terms, and others. However, there is only a limit number of ethnolinguistic studies that extend many semantic domain together and integrate the field of linguistics with other scientific areas. This research is therefore the study that widens the boarder line of ethnolinguistics. It can be linked with other scientific fields as mentioned earlier.

7.3 Suggestions for further research

7.3.1 Study the terminology and folk classification system concerning eco-environment of Thai coast-dweller in different area or of different ethnic groups in order to contribute to the body of local ecological knowledge relating to the sea.

7.3.2 Comparative study between folk and scientific classification of environments such as coastal plants and marine animals, which lack of study. This is in order to link between local and scientific knowledge.

7.3.3 Compile dictionary focused on local ecological knowledge. Given that language dealing with various ecological theme e.g. land, soil, water, plants, and animals, and may be an endangered semantic domain; need to be prior documented.

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APPENDICES

APPENDIX A

FOLK DEFINITION OF LANDSCAPE TERMS

Terms for landform

Water sources

Folk term	Gloss	Folk definition
/t^{h}ale:/ (ทะเล)	sea	A great source of salt water, vast and changing on a daily basis in terms of tiding. The water in the sea never ceases to exist. The sea, they believed, is connected by provincial borders, serving as sources of living and tourism. They believe that there are sacred guardians in the sea, called as "Pho Chao Tha-leh" (Sea God), who are respected as protectors of the dwellers during marine activities. Generally, the sea is divided into 2 types, according to local people's perspective, one is called /t^{h}ale: tɨ̂:n/ (ทะเลตื้น) 'shallow sea' and another is /t^{h}ale: lɨ́k/ (ทะเลลึก) 'deep sea'.
/mɛ̂:ná:m/ (แม่น้ำ)	river	A large, natural water course. It is large and deep, generally running through districts or provinces. Its part called estuary connects to the sea and its current is up and down daily. Water in /mɛ̂:ná:m/ (แม่น้ำ) never dries up. It is believed that there is Mae Khong-kha (แม่คงคา) as its guardian.

/k^{h}lɔ:ŋ/ (คลอง)	canal	A long water course, moderately deep and wide. However, its size is smaller than /mɛ̂:ná:m/ (แม่น้ำ). The tides are changing daily. /k^{h}lɔ:ŋ/ (คลอง) is generally running through districts or provinces. Some of them are natural and others are man-made in connection either to the sea or to the river. Bang Khunsai canal, for example, directly connects to the sea. Originally it was a natural waterway. However, the canal was dug after it got shallow. /k^{h}lɔ:ŋ/ (คลอง) is believed to have the River Goddess as their guardian.
/mɨ̌aŋ/ (เหมือง)	man-made water channel	A man-made water channel, directly connecting with sea or canal, or a dug-up channel on the border of a mangrove forest up to which the water can reach. It is dug up for irrigate rice field and salt pan. It also serves as drainage, taking excess water out of the field. /mɨ̌aŋ/ (เหมือง) is small and shallow. Its length varies depending on geographical features of an area. /mɨ̌aŋ/ (เหมือง) has had one end. Some part of it might lack of water altogether and other parts are dry up when the water in it is drained. /mɨ̌aŋ/ (เหมือง) is found in villages where there are either rice field or salt pan.
/p^{h}rɛ̂:k/ (แพรก)	long waterway	A long waterway diverging from a canal into an unused land or an empty field. Its size is smaller than that of a canal. Regulary, /p^{h}rɛ̂:k/ (แพรก) is swampy all year round. It is a natural water source. In the past, it was used as a route for boats. Some of /p^{h}rɛ̂:k/ (แพรก) were long enough to cover a number of subdistricts. However, these days, it is either blocked or filled with soil.

/bɔ̀:/ (บ่อ)	well	A water source is dug up for water storage. It has different sizes. However, it is not long. There is no running water in it. Its main usage is based on aquaculture, for raising fishes or shrimps.

Geographical localities

Folk term	Gloss	Folk definition
/fàŋ/ (ฝั่ง)	shore	A land bordering the sea, river and canal; examples in such expressions as the flood reaching the shore
/c^{h}a:yfàŋ/ (ชายฝั่ง)	coast	An area from the shore to a place bordering the farthest range of sea tide with the regularly inundated land. In the area of Bang Khunsai Subdistrict, it might possibly extend 3 kilometers from shore line. According to the local villagers, a coast is also the land under shallow water during the rising tide. Beyond shoreline, the water is deep. The perception of /c^{h}a:yfàŋ/ (ชายฝั่ง) or 'coast' perceived by local villagers is quite different from the term conventionally used.
/nɔ̂:k c^{h}a:yfàŋ/ (นอกชายฝั่ง)	offshore	An area extending seaward counting from where the land bordering the farthest extent of the sea.
/c^{h}a:yt^{h}ale:/ (ชายทะเล)	seaside	The land close to the sea or nearby.
/c^{h}a:y pà:/ (ชายป่า)	borders the end of forest area	A borders the end of forest area, marking an entrance to the forest. Villagers usually identify positions in the sea in reference to mangrove forest border. It is acknowledged among them that

		the search for shellfishes near /c^{h}a:y pà:/ (ชายป่า) or the forest border means an area a bit farther beyond the mangrove forest.
/hŭapà:/ (หัวป่า)	beginning of forest	A part of the forest at the beginning of /k^{h}lɔ:ŋ/ (คลอง) 'canal' or of /rɔ̀:ŋ/ (ร่อง) 'a dug-up waterway' at the point where boats travel in or out to the sea. In this area, there are tall trees growing in high density. It is easily noticeable. The area called /hŭapà:/ (หัวป่า) points seaward. Because a digging-up of canal or of water channel, the soil in that area would be placed at the beginning of /k^{h}lɔ:ŋ/ (คลอง) or /rɔ̀:ŋ/ (ร่อง). /samĕ:/ (แสม) and /ko:ŋka:ŋ/ (โกงกาง) trees are likely to grow there and to spread in nearby areas as well.
/hŭa k^{h}ò:t/ (หัวโขด)	specific place-name	A specific place-name for the coastal area around the entrance of Bang Khunsai canal connecting with the sea. These days the area is in Moo 10 of Bang Khunsai Subdistrict. According to the local villagers, in the past, /hŭa khò:t/ used to be a seaside hill made up of dead seashells, called /krasá:/ (กระซ้า), carried by the current from the sea. The majority of /krasá:/ (กระซ้า), or a collection of dead seashells, were at the site. The seaside hill was a beautiful, white hill of seashells. In the past, the villagers parked their boats and sell their catch at the hill. These days, /hŭak^{h}ò:t/ (หัวโขด) is just a small hill. The once beautiful dead seashells got mixed with earth with mangrove forests growing along the sea. As a result, the area called /hŭak^{h}ò:t/ (หัวโขด) is shifted deeper into land. However, the

		villagers in neighborhood and those from surrounding communities still call it by the name.
/ná:m nôː k/ (น้ำนอก)	literally, ‘outside-water’	A distance of 2 kilometers into the sea from the shore.
/k^{h}úŋ/ (คุ้ง)	bend of watercourse	A curved area close to the sea or bend in the river. At /k^{h}úŋ/ (คุ้ง), there is no wind passing through. Therefore, the river at this area does not move. The soil at /k^{h}úŋ/ (คุ้ง) area is softer than other area outside and there is a lot of /leːn k^{h}âːwtôm/ (เลนข้าวต้ม) ‘porridge-like mire’ because the wind brings mire from the sea to the shore.
/lɛ̌ːm/ (แหลม)	cape	A long large piece of land sticking out into the sea. Its end point is called /hŭalɛ̌ːm/ (หัวแหลม) ‘the head of the point’ on which it could be walked.
/hŭalɛ̌ːm/ (หัวแหลม)	headland (head of the cape)	The end point of land jutting out into the sea.
/hàːt/ (หาด)	beach	An area of dune sloping into the sea, spanning in length across the shore. Beaches are temporarily flooded. They usually have a firm ground, being able to be walked on. About 30 years ago, the shore on Bang Khunsai Subdistrict was /hàːt/ (หาด) made up of dead shellfishes (fragments of shells), locally known as the /krasáː/ (กระซ้า). Geographically, the beach in this area was a dune

		along the shore for about 7-8 kilometers, ranging from the area called /hŭak^{h}ò:t/ (หัวโขด). Taking a walk on /hà:t krasá:/ (กระซ้า) 'Kra Za beach' is possible without the fear of getting stuck in mud. /hà:t krasá:/ (กระซ้า) is white of shells' color like sand. /hà:t krasá:/ (กระซ้า) or Kra Za beach used to consist of crushed seashells similar to sand. It was very beautiful when the shells glitter in the sun. The villagers were impressed saying that /hà:t krasá:/ (กระซ้า) was more beautiful than conventional beaches. However, the site no longer exists. For a seaside area being muddy, it is not called (by villagers) a beach at all because it is impossible to walk on. Generally, the sea, popular as tourist attraction, is a deep sea with /hà:t/ (หาด) or beach.
/kɔ̀ʔ/ (เกาะ)	island or dune above water	A piece of land surrounded by the sea or a sand dune above water when the tide is down surrounded by water where people can walk on.
/ʔà:w/ (อ่าว)	bay, gulf	A large area of the sea, which extends into surrounding land, such as, the Gulf of Thailand and the Gulf of Mahachai.
/pà:k ná:m/ or (ปากน้ำ) /pà:k mĕ:ná:m/ (ปากน้ำ/ปากแม่น้ำ)	river bank	A part of river connecting to the sea, serving as a route for ships to travel back and forth. It is wider than the body of river.

Geomorphic feature

Folk term	Gloss	Folk definition
/tʰîːlàːt/ (ที่ลาด)	slope	A ground that has a natural incline.
/tʰîːcʰan/ (ที่ชัน)	scarp	A ground with steep slope.
/tʰîːdɔːn/ (ที่ดอน) or /dɔːn/ (ดอน)	highland	A land higher than the surrounding area. When waves approach /tʰîːdɔːn/ (ที่ดอน), they get stronger.
/tʰîːlûm/ (ที่ลุ่ม) or /lûm/ (ลุ่ม)	lowland	A land lower than the surrounding area. It could be reached by water. As waves are approaching the low land, the strength of the waves gets lower.
/tʰîːrâːp/ (ที่ราบ)	plain	A land with an equal height as that of the surrounding area.
/nəːn/ (เนิน)	hill	An elevation of land rising above the common level of the surrounding land; such as /nəːn saːy/ ‘sand hill’.
/kʰòːt/ (โขด)	knoll / hillock	A land or large stone rising above the ground; such as /kʰòːt hĭn/ (โขดหิน) ‘rock’. Also, an area where the horse mussel know as /hɔ̌ːy kapʰoŋ/ (หอยกะพง) live in a colony, looking like a hill, is called /kʰòːt hɔ̌ːy/ (โขดหอย).

Terms for soil

Kinds of soil

Folk term	Gloss	Folk definition
/le:n/ (เลน)	mire	A wet and muddy soil found in coastal areas and in water sources. If we put our foot on the soil, it will sink deep down into it. /le:n/ (เลน) is not generally to be put into desired shape. Furthermore, there are more specific terms based on physical features of /le:n/ (เลน); such as /le:n k^hâ:wtôm/ (เลนข้าวต้ม), /le:n ʔɔ̀:n/ (เลนอ่อน) and /le:n yà:p/ (เลนหยาบ). Of the three categories, the /le:n k^hâ:wtôm/ (เลนข้าวต้ม) is distinctly classified. The terms are classified as follows.
/le:n k^hâ:wtôm/ (เลนข้าวต้ม)	porridge-like mire	A very muddy soil, resembling porridge with half of its elements consisting of water. That is why it is called /le:n k^hâ:wtôm/ (เลนข้าวต้ม), or literary the porridge-like mire. This soil is gray, unable to be put into shape. If one takes it by hand, then it runs through fingers like water. /le:n k^hâ:wtôm/ (เลนข้าวต้ม) is usually on the surface of the coast beyond the mangrove forest. In the area of mangrove forests, /le:n k^hâ:wtôm/ (เลนข้าวต้ม) is rarely found because the wind, which blows /le:n k^hâ:wtôm/ (เลนข้าวต้ม) cannot reach that forest. Approximately 1 kilometer away from the coast, /le:n k^hâ:wtôm/ (เลนข้าวต้ม) is thick. Some of the thickest kind is almost 24 inches or more than 25 centimeters. Beyond one kilometer away from the coast, there is /le:n k^hâ:wtôm/ (เลนข้าวต้ม) whose thickness is likely to

		be about 12 inches. Along the sea, the canal or water channel, the soil is often carried by water flow. If there is strong wind, a larger number of /le:n k^{h}â:wtôm/ (เลนข้าวต้ม) will be carried ashore. In an area where there is thick /le:n k^{h}â:wtôm/ (เลนข้าวต้ม), mud-skiing is difficult because /le:n k^{h}â:wtôm/ (เลนข้าวต้ม) is against the sliding. The skiing equipment is likely to be out of balance. Concerning the lives of marine creatures, like fishes, crabs, and shellfishes, a large amount of /le:n k^{h}â:wtôm/ (เลนข้าวต้ม) in their holes might end their lives because of the odor or of the effect of intoxication. Villagers also mention that /le:n k^{h}â:wtôm/ (เลนข้าวต้ม) is rich in various nutrients, nourishing marine creatures, especially ones in the shellfish species, such as the blood cockle and the common donax known as /hô:ysìap/ (หอยเสียบ). The species grow well in /le:n k^{h}â:wtôm/ (เลนข้าวต้ม) and provide good taste in cooking. If there is wind, it is predictable that it is time for the birth of shellfish. To the villagers' knowledge, /le:n k^{h}â:wtôm/ (เลนข้าวต้ม) is exclusively present in sea area of Bang Khunsai Subdristict, especially in the village of Bang Khunsai, M. 2, reportedly not much of it in other villages.
/le:n ʔɔ̀:n/ (เลนอ่อน)	soft mire	A wet and muddy soil but it has more soil texture than /le:n k^{h}â:wtôm/ (เลนข้าวต้ม). The soil is not as soft as /le:n k^{h}â:wtôm/ (เลนข้าวต้ม). It can't be put into desired shape. If we put our foot on the soil, it

		will sink deep down into it. Its color is gray, a bit darker than /leːn kʰâːwtôm/ (เลนข้าวต้ม). /leːn ʔɔ̀ːn/ (เลนอ่อน) is generally found in water holes in the sea above /leːn yàːp/ (เลนหยาบ). /leːn ʔɔ̀ːn/ (เลนอ่อน) helps mud-skiing rushing without being stuck on the surface. However, if there is too much /leːn ʔɔ̀ːn/ or it being too thick would cause the skiing to lose balance.
/leːn yàːp/ (เลนหยาบ)	rough mire (literally)	A wet, muddy soil, stickier and darker than /leːn ʔɔ̀ːn/ (เลนอ่อน). It is possible to put it into shape but its form is unstable. If we put our foot on the soil, it will sink deep down into it. /leːn yàːp/ (เลนหยาบ) is in the area of mangrove forest out into the coast on the surface and deep inside layer of subsoil. Mud-skiing is possible on /leːn yàːp/ (เลนหยาบ). However, in case of /leːn yàːp/ (เลนหยาบ) lacking water content, it is likely that the skiing is difficult.
/din/ (ดิน)	soil, ground	A general term for the top layer of the earth's surface on the coast and beyond. It is dry and hard with dark gray, unable to put into shape. It stays firms as being walked on, being both loose and hard. Mud-skiing is impossible on the soil around the coast.
/din nǐaw/ (ดินเหนียว)	clay	A wet, muddy soil. It has darker than /leːn/ (เลน). /din nǐaw/ (ดินเหนียว) is able to be put into shape. It is so sticky that it may be molded with the hand. Because of its dense structure, water is difficult to pass through. If we put our foot on the soil, it will cause a small change, not a deep hole. /din nǐaw/ (ดินเหนียว) is found along the shore or at the sea bank where flooding is temporary. Mud-skiing

		on /din nĭaw/ (ดินเหนียว) or clay is impossible because it is very sticky.
/din da:n/ (ดินดาน)	subsoil	A subsoil with hard and compact feature along the sea or other water sources. From the surface, it is found underground for approximately 12 inches or more and beyond that. Above /din da:n/ (ดินดาน), there is mainly of mire. /din da:n/ (ดินดาน) is a product of mire being compacted by wind. It might be a mixture of seashells and sand. It is dark gray. Like clay, however, it is stickier than /din nĭaw/ (ดินเหนียว) found around shoreline. The deeper /din da:n/ (ดินดาน) stays underground, the more dense it is, as a result of a prolonged period of formation. Putting the leg on it will not cause a change. It is difficult for water to pass through /din da:n/ (ดินดาน). Putting it into shape is possible but more difficult than doing it with /din nĭaw/ (ดินเหนียว). In some part of the shore, it was found that /din da:n/ (ดินดาน) is harder than the other part. Some animal species, such as catfish, would dig up their holes deep down in the ground to the layers of /din da:n/ (ดินดาน). Without mire on the surface, mud-skiing is impossible because of /din da:n/ (ดินดาน) being very sticky.
/din kra:sá:/ (ดินกระซ้า)	Kra-sa soil	Soil made of crushed fragments of shells (dead seashells) mixed with soil texture. It has a rough surface with inconsistent black and white in proportion. /din kra:sá:/ (ดินกระซ้า) is generally softer than conventional soil. However, if it is piled up for a prolonged period, it gets harder. /din kra:sá:/

		(ดินกระช้า) is loose, making it neither able to be put into shape nor possible to be skiing on. /din kra:sá:/ (ดินกระช้า) is mainly found on shoreline close to the sea where the access of the tide bringing dead seashells and mire are able to mutually accumulate to form a land. This is the main soil in coastal villages of Bang Khunsai Subdistrict. The villagers popularly use /din kra:sá:/ (ดินกระช้า) for landfill because of its properties—being stable and unable to turn muddy.
/sa:y/ (ทราย)	sand	Small loose grains of rock. It is rather brown, unable to put into shape. An area with the main content of sand is dense. Walking on dense sand area does not cause changes. On /sa:y/ (ทราย), mud-skiing is impossible. Sand is found on the beach along deep sea. Some parts of the coast in Bang Khunsai Subdistrict are covered with sand.
/sa:y k^{h}î:pèt/ (ทรายขี้เป็ด)	literally, 'sand-duck excrement'	Soil consisting of sand and fragments of shells mixed with mire. The sand is wet and muddy, looking disgusting and resembling the excrement of a duck. /sa:y k^{h}î:pèt/ (ทรายขี้เป็ด) is black and loose, being unable to put into shape. It is in a coastal area where flooding is temporary. The soil is compact, able to be walked on. Skiing for shellfish on /sa:y k^{h}î:pèt/ (ทรายขี้เป็ด) is impossible because of high viscosity. The practice may be better in case of mire being brought to /sa:y k^{h}î:pèt/ (ทรายขี้เป็ด), the skiing is to be done better. According to the villagers, /sa:y k^{h}î:pèt/ (ทรายขี้เป็ด) undermines the growth of shellfish because the shellfish is unable to expand its size due to /sa:y k^{h}î:pèt/ (ทรายขี้

		เป็ด) being dense. The majority of /sa:y kʰîː pèt/ (ทรายขี้เป็ด) is found around the coast from Bang In village, M. 8, to Pak Tha-Lae Subdistrict, which is situated next to Bang Khunsai Subdistrict. Another example is the area called Don Hoy Lot 'the Razor Shell Bar' in the province of Samut Sakhon.
/kʰîː kʰûy/ (ขี้ขุ้ย)	Soil around the creature's hole	Soil around the hole of a creature, such as that of crab, fish and some shellfish. It is unable to put into shape. Different holes of different creatures consist of different form of /kʰîː kʰûy/ (ขี้ขุ้ย). For example, /kʰîː kʰûy/ (ขี้ขุ้ย) of a crab has fine texture without forming into piece. Meanwhile, /kʰîː kʰûy/ (ขี้ขุ้ย) of a catfish consists of round chunks. However, some creature's hole does not have this feature, such as that of an eel.

Terms for burrows or holes created by marine creatures

Folk term	Gloss	Folk definition
/ruː loŋ/ (รูลง)	downward hole	This refers to the first, main hole that a creature builds from the surface into the ground. Its distinctive feature is its vertical, or a bit diagonal channel into earth. /kʰîː kʰûy/ (ขี้ขุ้ย) is likely present the entrance of /ruː loŋ/ (รูลง). Generally, /ruː loŋ/ (รูลง) is bigger than /ruː kʰɨ̂n/ (รูขึ้น) the upward one.

/ru:k^{h}ɨ̂n/ (รูขึ้น)	upward hole	This refers to the hole built by a creature as an exit from the ground. The majority of the kind of hole is straight upward. /ru:k^{h}ɨ̂n/ (รูขึ้น) usually connects /ru:loŋ/ (รูลง). However, it is smaller than /ru:loŋ/ (รูลง). Some creatures, such as catfish, may have many /ru:k^{h}ɨ̂n/ (รูขึ้น). Meanwhile, some creatures make only one of /ru:k^{h}ɨ̂n/ (รูขึ้น). Other creature, such as a fish known as /pla:ʔâycaŋ/ (ปลาไอ้จัง) has one hole representing /ru:k^{h}ɨ̂n/ (รูขึ้น) and /ru:loŋ/ (รูลง).
/ru:dɨ̀ŋ/ (รูดิ่ง)	straight hole	A hole which goes straight through under ground. It may be either /ru:loŋ/ (รูลง) or /ru:k^{h}ɨ̂n/ (รูขึ้น). It may be either /ru:k^{h}ɨ̂n/ (รูขึ้น) or /ru:loŋ/ (รูลง). The majority of /ru:k^{h}ɨ̂n/ (รูขึ้น) is /ru:dɨ̀ŋ/ (รูดิ่ง). Some crature, such as /pla:ʔâycaŋ/ (ปลาไอ้จัง) fish, which has /ru:dɨ̀ŋ/ (รูดิ่ง) as his only hole.. Meanwhile, the catfish has different kinds of hole, including /ru:dɨ̀ŋ/ (รูดิ่ง) one among others.
/ru:c^{h}ɔ:n/ (รูชอน)	meandering hole	A hole which twists and turns underground.
/ru:yɛ̂:k/ (รูแยก)	intersect hole	This refers to a hole that is separated from other holes, such as /ru:mɔ̂:/ (รูหม้อ).
/ru:mɔ̂:/ (รูหม้อ)	pot-like hole	This refers to an underground hole separated sideway to /ru:dɨ̀ŋ/ (รูดิ่ง). It is round, as big as the size of a soccer ball or perhaps is bigger than that depending on the fish size. /ru:mɔ̂:/ (รูหม้อ) is rather deep and it is found on areas with rather hard mire. Sometimes it may be found as deep as in the

		layer of subsoil or more. This kind of hole exclusively belongs to the male and female catfish as a breeding ground. For some of the catfish hole, there live a couple of catfish.
/ru:tâu/ (รูเต้า)	dimpled hold	This refers to a hole with the middle of it being dimpled resembling part of a Thai sweet cooking upan called "Tao Kha Nom Krok" (เต้าขนมครก). It belongs to the eel. The sizes vary depending on how big the eel is.
/ru:làk/ (รูหลัก)	pole hole	A hole looks like a hollow clay channel as big as the size of /hɔ̂:ysìap/ (หอยเสียบ) 'donax', erecting in the mire. It is more than 1 inch but less than 2 inches in from the surface. In the hole, there live the common donax. Below the hole, there is a channel deep into ground.

Terms for winds

Terms for local winds

Folk term	Gloss	Folk definition
/lom ʔâytan/ or (ลมไอ้ตัน) /lom sală:tan/ (ลมสลาตัน)	kind of local wind	Wind blows from the south slightly towards the west from January to April (or the 2nd – 5th Thai lunar months). /lom sală:tan/ (ลมสลาตัน) occur during daytime, blowing along the shore. It is a rather strong wind, affecting no fishing boats. During the occurrence of /lom sală:tan/ (ลมสลาตัน), the sea water is rather dry but not as dry as in the period of /sop ná:m/ (สบน้ำ). In case of the wind's prolonged blow, the land above the sea is getting drier. As a result, mud-skiing is difficult. During

		the season of /lom sală:tan/ (ลมสลาตัน), fisher folks, especially those who use trawler boat, would prefer it because the wind causes turbid water, encouraging sea creatures, especially fishes and crayfishes to come out for food. Observations by local villagers indicated that /lom sală:tan/ (ลมสลาตัน) is less strong these days compared with what happened in the past. In addition, its duration is also shorter.
/lom p^hátt^{h}aya:/ (ลมพัทยา)	kind of local wind	Wind blows from the southwest from April to May (or the 5^{th} – 6^{th} Thai lunar months). The win usually happens during daytime until nighttime around 9 pm.-10 pm. off the shore. /lom p^hátt^{h}aya:/ (ลมพัทยา) is a gentle wind. However, it is weaker than /lom sală:tan/ (ลมสลาตัน). Sometimes /lom p^hátt^{h}aya:/ (ลมพัทยา) and /lom sală:tan/ (ลมสลาตัน) occur in the same season or month. They blow in turns in almost the same direction. When /lom p^hátt^{h}aya:/ (ลมพัทยา) blows for an hour or two, another following hour or two, lom sală:tan does occur. This interchange is called /lom p^hátt^{h}aya: sală:tan/ (ลมพัทยาสลาตัน).
/lom tawantòk/ (ลมตะวันตก)	kind of local wind	Wind blows from the west from April to May (the 5^{th}-6^{th} Thai lunar months). It blows in the same months as /lom p^hátt^{h}aya:/ (ลมพัทยา) but at a different time. /lom tawantòk/ (ลมตะวันตก) occurs at night and blows almost every night during its season. Sometimes it blows during dawn until late morning off the shore into the sea. The wind blows rather soft, making monkeys sleep forgetting

		to hold on to the tree. As a result, the monkeys would fall out of the tree when this wind blows. That is why the wind earns the name /lom liŋ làp/ (ลมลิงหลับ), meaning the wind that makes monkeys sleep. The wind provides gentle wind for those who go fishing during the occurrence of west wind.
/lom səːŋ/ (ลมเซิง)	kind of local wind	Wind blows from the southwest but more westerly than /lom pʰáttʰaya:/ (ลมพัทยา). This wind occurs in May until June (or the 6th-7th Thai lunar months). It blows around 11 am. until dusk off the shore into the sea. This wind is rather strong but it is softer than /lom sală:tan/ (ลมสลาตัน). It does not obstruct fishing practices. During this wind period, wild honeybees are found because it is when the /samĕ:/ (แสม) trees bearing their flowers. The bees are of small type swarming the pollen and build their hive in mangrove forests. Therefore, during the period of /lom səːŋ/ (ลมเซิง), some villagers are out collecting wild beehives.
/lom bà:y/ (ลมบ่าย)	kind of local wind	Wind occurs during May until June (or in the 6th-7th Thai lunar months). If it blows from the northeast, it is called /lom bà:ybon/ (ลมบ่ายบน). However, if it blows from the southeast, it is called /lom bà:ylà:ŋ/ (ลมบ่ายล่าง). /lom bà:y/ (ลมบ่าย) blows from the sea to the shore. Like lom səːŋ/ (ลมเซิง), this kind of wind is not much strong. Generally, /lom bà:y/ (ลมบ่าย) does not have a strong blow, causing the water no motion. The water in that particular area does not turn turbid. Sea creatures

		are not out for food. In a single day, there might be /lom bà:ybon/ (ลมบ่ายบน) and /lom bà:ylà:ŋ/ (ลมบ่ายล่าง) occurring one after another, changing from /lom bà:ylà:ŋ/ (ลมบ่ายล่าง) to /lom bà:ybon/ (ลมบ่ายบน) or vice versa. The phenomenon causes the sea tide to change its direction, obstructing the trapping of sergestid shrimp. In the past, /lom bà:y/ (ลมบ่าย) signified the coming of rain. However, these days, the coming of this wind does not mean that the rain will follow.
/lom pʰát lŭaŋ/ (ลมพัดหลวง)	kind of local wind	Wind blows from the northeast slightly towards the west from June to July (or the 7th-8th Thai lunar months). Its occurrence is around 9-10 am. until late afternoon. This wind blows from the coast to the sea. Sometimes it is strong but not as strong as /lom sală:tan/ (ลมสลาตัน). However, it does cause the sea water to move and get turbid. /lom pʰát lŭaŋ/ (ลมพัดหลวง) does not obstruct fishing practices.
/lom ʔâykô:/ or (ลมไอ้โก้) /lom takô:/ (ลมตะโก้)	kind of local wind	Wind blows from the northwest from May to August (or the 6th-9th Thai lunar months). This wind occurs late morning for almost around midday until dusk. Sometimes, it happens all day, blowing either strong or soft. /lom takô:/ (ลมตะโก้) is rather strong during the beginning period of rising tide. It is not strong but enough to obstruct fishing boats sailing back to the shore. As the wind blows, there might be the rain co-occurs.

/lom tawanʔɔ:k/ (ลมตะวันออก)	kind of local wind	Wind blows from the east around October, November and December (or in the 11th, 12th and 1st Thai lunar months). This wind generally occurs during nighttime, especially at the beginning period of rising tide. Sometimes, it blows day and night from the sea to the coast with a strong blow or periodically the strongest of its kind. Heavy clouds might accompany it, followed by heavy rain and strong wind. As the wind gets strong, the shellfishes will bury themselves deep into the mire. The beginning of /lom tawanʔɔ:k/ (ลมตะวันออก), co-occur with /dâ:ŋ/ (เดิ่ง) coming. dâ:ŋ/ (เดิ่ง) comes before the wind. The fisher folks realize when /lom tawanʔɔ:k/ (ลมตะวันออก) is coming by observing /dâ:ŋ/ (เดิ่ง). The villagers are afraid of this wind because of its severity, immensely obstructing fishing activities and causing lots of damage. The co-occurrence of wind and /dâ:ŋ/ (เดิ่ง) can cause fishing boats to capsize. The wind is also called /lom tawanʔɔ:k/ (ลมตะวันออก) because, during its course, fisher folks starve by preventing them from fishing, depriving them from income. These days, this wind is not much seen during its season. When it occurs, its duration is very short and weaker than it used to be.
/lom wâ:w/ (ลมว่าว)	kind of local wind	Wind blows from the north slightly towards the northeast. According to information given by villagers, its origin is in China. This wind occurs from October to November (or 11th-12th Thai lunar months). Blowing day and night from the sea to the shore, it is known as a cold wind. It blows strongly and softly, but not too strong. At the beginning of the wind, there might be the rain

		coming along. However, as it enters the full season of wind, the rain vanishes. This kind of wind does not obstruct the people's way of living. /lom ʔuka:/ (ลมอุกา) might occur during the season of /lom wâ:w/ (ลมว่าว). When /lom wâ:w/ (ลมว่าว) blows seasonally, /lom ʔuka:/ (ลมอุกา) might also join in. Together this is called /lom wâ:wʔuka:/ (ลมว่าวอุกา). It happens during nighttime. /lom wâ:wʔuka:/ (ลมว่าวอุกา) blows continuously, more rapid and stronger than /lom wâ:w/ (ลมว่าว), followed by heavy clouds. /lom wâ:wʔuka:/ (ลมว่าวอุกา) takes half a month of its blow before being in the full season of /lom ʔuka:/ (ลมอุกา).
/lom ʔuka:/ (ลมอุกา)	kind of local wind	Wind blows from the northeast more easterly than /lom bà:ybon/ (ลมบ่าขบน). It occurs during October, November, December and January (or in the 11th, 12th, 1st and 2nd Thai lunar month). /lom ʔuka:/ (ลมอุกา) blows off the sea into the shore, either at night or during daytime. This wind is rather strong and it even gets stronger during late afternoon. When it blows strongly and is accompanied by a yellow light sky, it is called /lom ʔuka: fá: lɨ̌əŋ/ (ลมอุกาฟ้าเหลือง) or /lom ʔuka: dɛ̀:d lɨ̌əŋ/ (ลมอุกาแดดเหลือง). For the villagers, /lom ʔuka:/ (ลมอุกา), especially /lom ʔuka: fá:lɨ̌əŋ/ (ลมอุกาฟ้าเหลือง), is as fearful as /lom tawanʔɔ̀:k/ (ลมตะวันออก) because it brings strong waves, being able to cause fishing boats to capsize. The shellfishes bury themselves under the mire. Meanwhile, other sea

		creatures, such as prawns and fishes do not come out for food at the coastal area. As a result of that, the villagers cannot do fishing activities. This wind is then labeled /lom tʰɔ́:ŋhɛ̂:ŋ/ (ลมห้องแห้ง) like that for /lom tawanʔɔ̀:k/ (ลมตะวันออก). However, these days, /lom ʔuka:/ (ลมอุกา) is not as strong as it used to be and is not often felt during its season. Or if there is one, it takes not much time before vanishing.

APPENDIX B
LIST OF FOLK TERMS FOR COASTAL PLANTS AND MARINE ANIMALS

List of terms for coastal plants

Field	Folk terms	Respective gloss
coastal plant	/ko:ŋka:ŋ baylék/ (โกงกางใบเล็ก) or /ko:ŋke:ŋ/ (โกงเกง)	small leaves-mangrove
	/ko:ŋka:ŋ bayyày/ (โกงกางใบใหญ่)	large leaves-mangrove
	/samĕ:dam/ (แสมดำ)	black Samae
	/samĕ:kʰă:w/ (แสมขาว)	white Samae
	/taban/ (ตะบัน)	kind of large tree
	/tabu:n/ (ตะบูน)	kind of large tree
	/pʰo:tʰale:/ (โพทะเล)	kind of large tree
	/lampʰu:/ (ลำพู)	kind of large tree
	/kʰùy/ (คุ่ย)	kind of small tree
	/cʰakʰra:m/ (ชะคราม)	kind of small tree
	/tônkʰlù:/ (ต้นขลู่)	kind of small tree
	/pʰàkbîa/ (ผักเบี้ย)	kind of small tree
	/nă:mmɛ:ŋdɔ:/ (หนามแมงดอ)	kind of small tree
	/ŋɬakpla:mɔ̆:/ (เหงือกปลาหมอ)	kind of small tree

List of terms for marine animals

Field	Folk terms	Respective gloss
/pla:/ (ปลา) 'fish'	/pla:kòt/ (ปลากด)	bagrid catfish
	/pla:kòt kʰă:w/ (ปลากดขาว)	white bagrid catfish
	/pla:kòt kʰî:lîŋ/ (ปลากดขี้ลิง)	monkey-shit bagrid catfish
	/pla:kòt kʰâ:ŋlɨ̆aŋ/ (ปลากดข้างเหลือง) or /pla:kòt hŭaʔɔ̀:n/ (ปลากดหัวอ่อน)	yellow stripped bagrid catfish soft-head bagrid catfish

Field	Folk terms	Respective gloss
	/pla:krabɔ̀:k/ (ปลากระบอก)	kind of fish
	/pla:krabe:n/ (ปลากระเบน)	ray
	/krabe:nt^{h}oŋ/ (กระเบนธง)	ray with a flag-like tail
	/krabe:nnáːm/ (กระเบนน้ำ)	water ray
	/krabe:nnɨ́adam/ (กระเบนเนื้อดำ)	black flesh ray
	/krabe:nbaybua/ (กระเบนใบบัว)	lotus-leaf-shaped ray
	/krabe:nra:hŭ:/ (กระเบนราหู)	Rahu ray
	/krabe:nhă:ŋkrarɔ̂:k/ (กระเบนหางกระรอก)	ray with a squirrel's tail
	/pla:kramɔ́ʔ/ (ปลากระเมาะ)	kind of fish
	/pla:kramòk/ (ปลากระหมก)	kind of fish
	/pla:kratum/ปลากะตุม	kind of fish
	/pla:kap^{h}oŋk^{h}ă:w/ (ปลากะพงขาว)	white bass/snapper
	/pla:kap^{h}oŋdam/ (ปลากะพงดำ)	black bass/snapper
	/pla:kap^{h}oŋdɛ:ŋ/ (ปลากะพงแดง)	red bass/snapper
	/pla:kulaw/ (ปลากุเลา)	kind of fish
	/pla:k^{h}ĕm/ (ปลาเข็ม) or /pla:krat^{h}uŋhĕ:w/ (ปลากระทุงเหว)	halfbeak fish
	/pla:k^{h}ĕmpà:kdiaw/ (ปลาเข็มปากเดียว)	distinctive jaws halfbeak
	/pla:k^{h}ɨ̆a/ (ปลาเขือ)	kind of fish
	/pla:cùatt^{h}ian/ (ปลาจวดเทียน)	candle soldier croaker
	/pla:cùatpɔ̀ʔ/ (ปลาจวดเปาะ)	typical soldier croaker
	/pla:cùatmă:/ (ปลาจวดม้า)	horse soldier croaker
	/pla:cùat^{h}ă:ŋkày/ (ปลาจวดหางไก่)	cock-tail soldier croaker
	/pla:ca:ramétk^{h}ă:w/ (ปลาจาระเม็ดขาว)	white butter fish
	/pla:ca:ramétdam/ (ปลาจาระเม็ดดำ)	black butter fish
	/pla:ciŋcaŋ/ (ปลาจิงจัง)	kind of fish
	/pla:c^{h}í:fá:/ (ปลาชี้ฟ้า)	kind of fish
	/pla:si:ciam/ (ปลาซีเจียม) or /pla:hètk^{h}o:n/ (ปลาเห็ดโคน)	kind of fish
	/pla:(ʔi)dàk/ (ปลาดัก/ ปลาอิดัก)	kind of fish (look like catfish)
	/pla:dà:pŋən/ (ปลาดาบเงิน)	silver-sword fish (hairtail)

Field	Folk terms	Respective gloss
	/pla:dà:pla:w/ (ปลาดาบลาว)	Loa-sword fish (dorabs)
	/pla:dùkkiâw/ (ปลาดุกเกี่ยว)	crook catfish
	/pla:dùkbèt/ (ปลาดุกเบ็ด)	fishhook catfish
	/pla:dùkpɔ̀:ŋ/ (ปลาดุกป่อง) or /pla:dùkru:/ (ปลาดุกรู)	hole catfish
	/pla:dɛ:ŋ/ (ปลาแดง)	red fish
	/pla:takràp/ (ปลาตะกรับ)	kind of fish (spotted scat)
	/pla:tap^{h}ian/ (ปลาตะเพียน)	kind of fish
	/pla:túkka:/ (ปลาตุ๊กกา)	Tukka fish
	/pla:t^{h}a:/ (ปลาทา)	mackerel-like fish
	/pla:t^{h}u:/ (ปลาทู)	mackerel
	/pla:t^{h}iŋc^{h}îaw/ (ปลาทิงเชี้ยว) or /pla:ti:n/ (ปลาตีน)	mudskipper/ amphibious fish
	/pla:níŋnɔ̀:ŋ/ (ปลานิ้งหน่อง)	kind of fish
	/pla:bù:/ (ปลาบู่)	kind of fish (goby)
	/pla:baipɔ:/ (ปลาใบปอ)	kind of fish
	/pla:pà?kaŋ/ (ปลาป๊ะกัง)	kind of fish
	/pàkpâw/ (ปักเป้า)	puffer fish/globe fish
	/pàkpâwmáfɨaŋ/ (ปักเป้ามะเฟือง)	star fruit-shaped puffer fish
	/pàkpâwnă:m/ (ปักเป้าหนาม)	barb puffer fish
	/pla:pê:nkradà:t/ (ปลาแป้นกระดาษ)	paper pony fish
	/pla:pê:npâ:n/ (ปลาแป้นป้าน)	kind of pony fish
	/pla:pê:nmɨ̂uk/ (ปลาแป้นเมือก)	slimy pony fish
	/pla:pê:nmŭ:/ (ปลาแป้นหมู)	pig pony fish
	/pla:maŋko:y/ (ปลามังโกย)	kind of fish
	/pla:laŋk^{h}an/ (ปลาลังกัน)	common Langkhan fish
	/pla:laŋk^{h}an nùatmɛ:w/ (ปลาลังกันหนวดแมว)	cat-whisker Langkhan fish
	/pla:línmă:lék/ (ปลาลิ้นหมาเล็ก)	small sole
	/pla:línmă:yày/ (ปลาลิ้นหมาใหญ่)	large sole
	/pla:línmŭ:/ (ปลาลิ้นหมู)	kind of fish
	/pla:salìt/ (ปลาสลิด)	kind of fish

Field	Folk terms	Respective gloss
	/pla:sĭ:kun(t^{h}ammada:)/ (ปลาสีกุน(ธรรมดา)	common trevally
	/pla:sĭ:kun k^{h}â:ŋlɨ̆aŋ/ (ปลาสีกุนข้างเหลือง)	yellow stripped trevally
	/pla:yŭ:kíah/ (ปลาหยูเกี๋ยะ)	kind of fish
	/pla:lăykâ:ŋ/ (ปลาไหลก้าง)	bony eel
	/pla:lăynɨ́a/ (ปลาไหลเนื้อ)	fleshy eel
	/pla:ʔòkkalɛ́:/ (ปลาอกกะแล้)	kind of fish
	/pla:ʔi:kɨŋ/ (ปลาอีกึง) or /pla:khayɛ̆:ŋ/ (ปลาแขยง)	kind of fish
	/pla:ʔâycaŋ/ (ปลาไอ้จัง)	kind of fish
	/pla:ʔâyt^{h}ô:/ (ปลาไอ้โถ้)	kind of fish
	/pla:ʔâysa:k lék/ (ปลาไอ้สากเล็ก)	kind of fish
	/pla:ʔâysa:k yài/ (ปลาไอ้สากใหญ่)	kind of fish
	/pla:ʔâysĭm/ (ปลาไอ้สิม)	kind of fish
/mɨk/ (หมึก) ‘cuttlefish/squid’	/mɨk klûay/ (หมึกกล้วย)	splendid squid
	/mɨk kradɔ:ŋ/ (หมึกกระดอง) or /mɨk táw/ (หมึกเต้า)	octopus with cuttlefish rainbow cuttlefish
	/mɨk kadum/ (หมึกกะดุม)	button octopus (button shaped)
	/mɨk katɔ:y/ (หมึกกะตอย)	kind of small cuttlefish
	/mɨk tù:tlɛ̆:m/ (หมึกตูดแหลม)	pointed-bottom octopus
	/mɨk sɔ̀:k/ (หมึกศอก)	long splendid squid
	/mɨk săːy/ (หมึกสาย)	kind of cuttlefish
	/mɨk săːyya:w/ (หมึกสายยาว)	long arms-cuttlefish
	/mɨk săːysân/ (หมึกสายสั้น)	short arms-cuttlefish
	/mɨk hɔ̆:m/ (หมึกหอม) or /mɨk tap^{h}aw/ (หมึกตะเภา)	fragrant cuttlefish (soft cuttlefish)
/hɔ̆:y/ (หอย) ‘shellfish’	/hɔ̆:y krapùk/ (หอยกระปุก)	kind of shellfish
	/hɔ̆:y krasɨ́:/ (หอยกระสือ)	kind of shellfish
	/hɔ̆:y kap^{h}oŋ/ (หอยกะพง)	kind of shellfish (small variety of sea mussel)

Field	Folk terms	Respective gloss
	/hɔ̌:y kʰra:ŋ/ (หอยคราง)	kind of shellfish
	/hɔ̌:y kʰrɛ:ŋ/ (หอยแครง)	female blood cockle
	/hɔ̌:y cúpcɛ:ŋ/ (หอยจุ๊บแจง)	kind of shellfish
	/hɔ̌:y ce:di:/ (หอยเจดีย์)	pagoda conch shell
	/hɔ̌:y sɔ:ŋpʰlu:/ (หอยซองพลู)	kind of shellfish
	/hɔ̌:y talàp/ (หอยตลับ)	kind of shellfish
	/hɔ̌:y taka:y/ (หอยตะกาย)	kind of shellfish
	/hɔ̌:y ta:wua/ (หอยตาวัว)	kind of shellfish
	/hɔ̌:y na:ŋrom/ (หอยนางรม)	oyster
	/hɔ̌:y pà:kpèt/ (หอยปากเป็ด)	kind of shellfish
	/hɔ̌:y muanpʰlu:/ (หอยมวนพลู)	kind of shellfish (Auger Territella)
	/hɔ̌:y malɛ:ŋpʰù:/ (หอยแมลงภู่)	sea mussel
	/hɔ̌:y săŋkʰŏn/ (หอยสังข์ขน) or /hɔ̌:y mŭ:/ (หอยหมู)	haired conch shell
	/hɔ̌:y săŋnă:m/ (หอยสังข์หนาม) or /hɔ̌:y nă:m/ (หอยหนาม)	prickle conch shell
	/hɔ̌:y săŋyày/ (หอยสังข์ใหญ่)	big conch shell
	/hɔ̌:y sàpparót/ (หอยสับปะรด) or /hɔ̌:y la:y/ (หอยลาย)	kind of shellfish
	/hɔ̌:y sìap/ (หอยเสียบ)	kind of shellfish (genus Donax)
	/hɔ̌:y ʔâymûm/ (หอยไอ้มุ่ม) or /hɔ̌:y pà:kmûm/ (หอยปากมุ่ม)	male blood cockle
	/phriaŋ/ (เพรียง)	kind of shellfish (shipworm)
/kûŋ/ (กุ้ง) ‘prawn / shrimp’	/kûŋkatɔ:m/ (กุ้งกะตอม)	kind of prawn
	/kûŋkâ:m/ (กุ้งก้าม) or /kûŋ dì:t kʰăn/ กุ้งดีดขัน	pincer prawn (common snapping shrimp)
	/kûŋkula:/ (กุ้งกุลา)	kind of prawn
	/kûŋkʰă:w/ (กุ้งขาว)	common/ typical white prawn
	/kûŋkʰă:w hă:ŋdɛ:ŋ/ (กุ้งขาวหางแดง)	red-tailed white prawn

Field	Folk terms	Respective gloss
	/kûŋcʰɛ:búa/ (กุ้งแชบ๊วย)	kind of prawn
	/kûŋru:/ (กุ้งรู) or /kûŋla:y/ (กุ้งลาย)	hole prawn stripped prawn
	/kûŋlăŋkʰày/ (กุ้งหลังไข่)	egg-backed prawn
	/kûŋlɨ̌aŋ/ (กุ้งเหลือง)	yellow prawn
	/kûŋʔòkkʰlâk/ (กุ้งอกคลัก)	kind of prawn
/kʰə:y/ (เคย) 'sergestid shrimp'	/kʰə:ykì:psômʔo:/ (เคยกลีบส้มโอ)	pomelo-carpel sergestid shrimp
	/kʰə:ydam/ (เคยดำ) or /kʰə:ykʰày/ (เคยไข่)	black sergestid shrimp egg sergestid shrimp
	/kʰə:ytʰapʰaw/ (เคยตะเภา)	Tapao sergestid shrimp
	/kʰə:yta:dam/ (เคยตาดำ)	black-eye sergestid shrimp
	/kʰə:ysăŋkasi:/ (เคยสังกะสี)	zinc-colored sergestid shrimp
	/kʰə:ysămli:/ (เคยสำลี)	cotton wool sergestid shrimp
	/kʰə:ysi:cʰompʰu:/ (เคยสีชมพู)	pink sergestid shrimp
	/kʰə:yhŭakʰă:w/ (เคยหัวขาว)	white-head sergestid shrimp
	/kʰə:yhă:ŋdɛ:ŋ/ (เคยหางแดง)	red-tail sergestid shrimp
/kâŋ/ (กั้ง) 'mantis shrimp'	/kâŋ(tʰammada:)/ (กั้ง(ธรรมดา)	common/typical mantis shrimp
	/kâŋkrada:n/ (กั้งกระดาน)	plank mantis shrimp
	/kâŋkɛ̂:w/ (กั้งแก้ว)	glass mantis shrimp
/pu:/ (ปู) 'crab'	/pu:kâ:mkʰă:w/ (ปูก้ามขาว) or /pu:katɔ:y/ (ปูกะตอย)	white pincer crab
	/pu:kâ:mdà:p/ (ปูก้ามดาบ)	sword-pincer crab
	/pu:kʰî:kày/ (ปูขี้ไก่)	chicken-shit crab
	/pu:bây/ (ปูใบ้)	mute crab
	/pu:pîaw/ (ปูเปี้ยว) or /pu:dam/ (ปูดำ)	fidder crab black crab
	/pu:pɛ̂:n/ (ปูแป้น)	green tidal crab
	/pu:má:/ (ปูม้า)	horse crab
	/pu:má:la:y/ (ปูม้าลาย)	zebra crab

Field	Folk terms	Respective gloss
	/pu:le:/ (ปูเล)	sea crab
	/pu:tʰɔ:ŋdɛ:ŋ/ (ปูทองแดง)	copper sea crab (serrated mud crab)
	/pu:tʰɔ:ŋlă:ŋ/ (ปูทองหลาง)	coral-tree sea crab
	/pu:samĕ:/ (ปูแสม)	Meder's mangrove crab
	/pu:samĕ:lék/ (ปูแสมเล็ก)	small Meder's mangrove crab
	/pu:samĕ:yày/ (ปูแสมใหญ่)	large Meder's mangrove crab
	/pu:hĭn/ (ปูหิน)	stone crab
/mɛ:ŋda:/ (แมงดา) 'horseshoe crab'	/mɛ:ŋda:ca:n/ (แมงดาจาน)	plate horseshoe crab
	/mɛ:ŋda:tʰɔ̆:y/ (แมงดาถ้วย)	bowl horseshoe crab
	/mɛ:ŋda:hŏ:ra:/ hĕ:ra:/ (แมงดาโหรา/เหรา)	'Hora/Hera horseshoe crab'
/mɛ:ŋkapʰun/ (แมงกะพรุน) 'jellyfish'	/(mɛ:ŋ)kapʰun kʰî:kày/ (แมงกะพรุนขี้ไก่)	chicken-shit jellyfish
	/(mɛ:ŋ)kapʰun tʰŭay/ (แมงกะพรุนถ้วย)	bowl jellyfish
	/(mɛ:ŋ)kapʰun fay/ (แมงกะพรุนไฟ)	fire jellyfish
	/(mɛ:ŋ)kapʰun lɔ̂:tcʰɔ̂:ŋ/ (แมงกะพรุนลอดช่อง)	Lod-chaung jellyfish
	/(mɛ:ŋ)kapʰun năŋ/ (แมงกะพรุนหนัง)	skin jellyfish
/să:rà:y/ (สาหร่าย)	/să:rà:y/ (สาหร่าย)	jellyfish-like creature (unidentified)

APPENDIX C
PICTURES FOR SOME COASTAL PLANTS AND MARINE ANIMALS

/samĕ:dam/ (แสมดำ)

(/samĕ:k^{h}ă:w/ (แสมขาว) in scientific name)

/samĕ:k^{h}ă:w/ (แสมขาว)

(/samĕ:dam/ (แสมดำ) in scientific name)

/ko:ŋka:ŋ baylék/ (โกงกางใบเล็ก)

/ko:ŋka:ŋ bayyày/ (โกงกางใบใหญ่)

/p^{h}o:t^{h}ale:/ (โพทะเล)

/tabu:n/ (ตะบูน)

/pʰàkbîa/ (ผักเบี้ย)

/lampʰu:/ (ลำพู)

/cʰakʰra:m/ (ชะคราม) (green color)

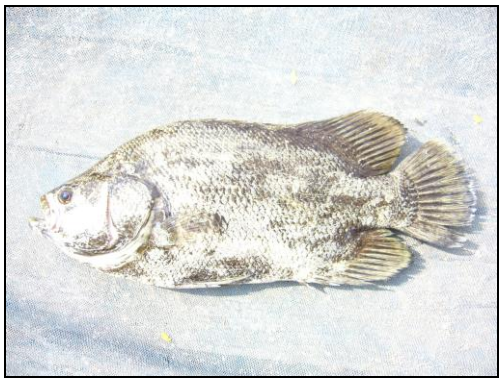
/cʰakʰra:m/ (ชะคราม) (red color)

/pla:ʔâycaŋ/ (ปลาไอ้จัง)

/pla:tʰiŋcʰíaw/(ปลาทิงเชี้ยว) or /pla:ti:n/(ปลาตีน)

/pla:takàp/ (ปลาตะกับ)

/pla:túkka:/ (ปลาตุ๊กกา)



/pla:kap^{h}oŋdam/ (ปลากะพงดำ)

/pla:dɛ:ŋ/ (ปลาแดง)

/pla:krabɔ̀:k/ (ปลากระบอก)

/pla:kramɔ̀k/ (ปลากระเมาะ)

/pla:kulaw/ (ปลากุเลา)

/pla:sǐ:kun/ (ปลาสีกุน)

/pla:sǐ:kun k^{h}â:ŋlɨ̌aŋ/(ปลาสีกุนข้างเหลือง)

/pla:laŋk^{h}an/ (ปลาลังคัน)

/pla:laŋk^{h}an nùatmɛ:w/ (ปลาลังคันหนวดแมว)

/pla:k^{h}ěm/ (ปลาเข็ม)

/pla:k^{h}ěmpà:kdiaw/ (ปลาเข็มปากเดียว)

/pla:línmă:lék/ (ปลาลิ้นหมาเล็ก)

/pla:línmă:yày/ (ปลาลิ้นหมาใหญ่)

/pla:kòt k^{h}î:lîŋ/ (ปลากดขี้ลิง)

/pla:kòt k^{h}ă:w/ (ปลากดขาว)

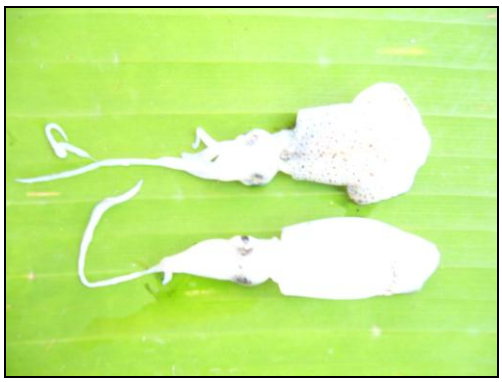
/pla:cùatmá:/ (ปลาจวดม้า)

/pla:cùatpɔ̀ʔ/ (ปลาจวดเปาะ)

/pla:cùatt^{h}ian/ (ปลาจวดเทียน)

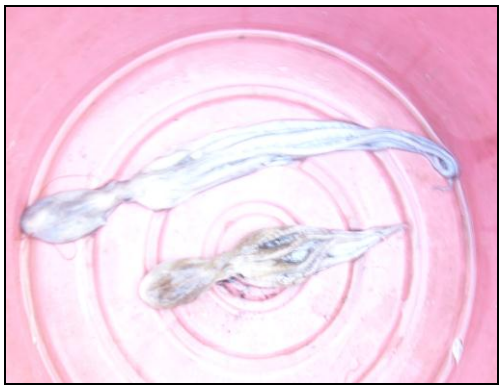
/mɨk hɔ̌:m/ (หมึกหอม)

/mɨk sǎ:ysân/ (หมึกสายสั้น)



/mɨk katɔ:y/ (หมึกกะตอย)

/mɨk kradɔ:ŋ/ (หมึกกระดอง)



/mɨk sǎ:yya:w/ (หมึกสายยาว)

/mɨk sǎ:ysân/ (หมึกสายสั้น)

/mɨk klûay/ (หมึกกล้วย)

/hɔ̆:y kʰrɛ:ŋ/ (หอยแครง)

/hɔ̆:y ʔâymûm/ (หอยไอ้มุ่ม)

/hɔ̆:y săŋkʰŏn/ (หอยสังข์ขน)

/hɔ̆:y nă:m/ (หอยหนาม)

/hɔ̆:y cúpcɛ:ŋ/ (หอยจุ๊บแจง)

/hɔ̆:y taka:y/ (หอยตะกาย)

/kûŋlɨ̌aŋ/ (กุ้งเหลือง)

/kûŋcʰɛ:búa/ (กุ้งแชบ๊วย)

/kûŋkâ:m/ (กุ้งก้าม)

/kûŋla:y/ (กุ้งลาย)

/kûŋkʰă:w/ (กุ้งขาว)

/kûŋʔòkkʰlâk/ (กุ้งอกคลัก)

/kâŋ(tʰammada:)/ (กั้ง(ธรรมดา)
/kâŋkɛ̂:w/ (กั้งแก้ว)

/kâŋkrada:n/ (กั้งกระดาน)

/kʰə:y/ (เคย)

/pu:má:/ (ปูม้า)

/pu:tʰɔ:ŋlă:ŋ/ (ปูทองหลาง)

/pu:tʰɔ:ŋdɛ:ŋ/ (ปูทองแดง)

/pu:samɛ̌:lék/ (ปูแสมเล็ก)

/pu:kâ:mdà:p/ (ปูก้ามดาบ)

/pu:pîaw/ (ปูเปี้ยว)

/(mɛ:ŋ)kap^{h}un nǎŋ/ (แมงกะพรุนหนัง)

/mɛ:ŋda:t^{h}ɔ̌:y/ (แมงดาถ้วย)

/mɛ:ŋda:ca:n/ (แมงดาจาน)

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