



Improving population health through
public policies a new challenge:

case studies of Thailand

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CONTENT

Thai Healthy Public Policy: From Philosophy to Health Innovation	7
Rice: A Way of Life	11
Community-Based Collaboration for Community Wellness in Bang Rakam Subdistrict	21
Tri-Water Province	33
The Reflection Voice from Map Ta Phut	45

Thai Healthy Public Policy: From Philosophy to Health Innovation

The World Health Organization (WHO) characterizes healthy public policy by an explicit concern for health and equity in all areas of policy and by an accountability for health impact. Since equity and accountability are the main characters, health choices could be made possible and accessible for all citizens.

Health Value

Thailand is a country rich in culture. According to the 2007 National Health Act, “health” means the state of human being which is perfect in physical, mental, spiritual, and social aspects, all of which are holistic in balance.

In the pursuit of the policy, not only the Thai government sector initiates the policy proposals, but the private sector and local governments could also take part in the mechanism of healthy public policy development. Improving healthy living with a holistic balance and protecting negative health consequences could be considered an essential factor when formulating policy.

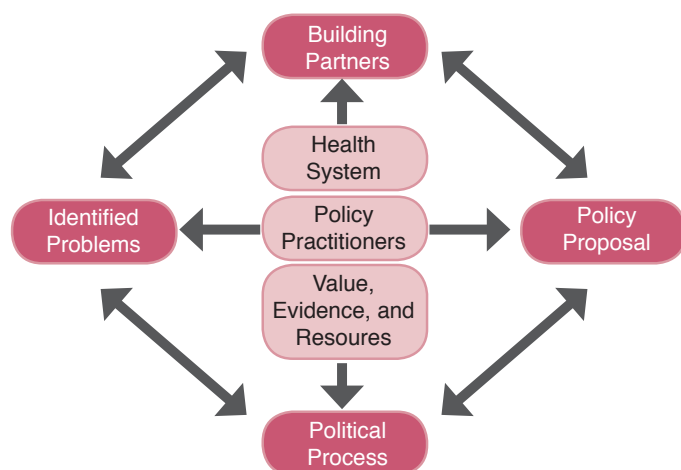
Healthy Public Policy Development

The developmental process of healthy public policy could include several factors, which affect health status. For example, the knowledge and trustworthy evidence are important in informing the public of the positive and negative impacts on health status.

It is essential that personnel in the health sector should be encouraged to work collaboratively with non-health sectors in creating healthy

public policies. To reach the expected goal, building environmental factors, which strengthen supportive work, is necessary inputs to develop the direction of healthy public policy.

According to “The Contribution of HIA Development to Healthy Public Policy Formulation in Thailand” (Decharut Sukkumnoed, 2005) and “HIA Institutionalization in Thailand: The Struggle of Power and Rationality in Public Policy Process (Decharut Sukkumnoed et al., 2008), the development of Thai healthy public policy has focused on the process of empowering all stakeholders to have a critical mind to analyze the causes and effects of policy changes (or stability) leading to the choice conducive to health. Therefore, the participation of all sectors in the whole loop of policy- and decision-making for sharing values, evidence and resources known as “deliberative decision-making” is crucial to achieving healthy public policy objectives.



Source: Healthy Public Policy and Health Status of Thai People
Decharut Sukkumnoed, 2004).

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- Healthy Public Policy and Health Impact Assessment Program, 2005. “The Contribution of HIA Development to Healthy Public Policy Formulation in Thailand” by Decharut Sukkumnoed, 2005
- Healthy Public Policy and Health Status of Thai People. Decharut Sukkumnoed. 2004. Health Systems Research Institute.
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The following articles describe the potential of several communities in achieving healthy living in a holistic way.



Rice:

A Way of Life



Rice:

A Way of Life

Laiad Jamjan
Vipavee Thongpriwan



Suphan Buri at a Glance

Suphan Buri, a province rich in culture and beautiful scenery, is located in the central region of Thailand, approximately 100 kilometers northwest of Bangkok. It was formerly called Suvarnabhumi (the land of gold).

With the advantages of Suphan Buri's landscape on the fertile lowland and the main Tha Chin River, farmers are the majority of its population. There are various public and private organizations, which mainly strengthen the knowledge and practice of rice cultivation, cultural preservation, and farming, such as the National Museum of Thai Rice Farmers, the Buffalo Village, and the Khao Khwan Foundation.

Rice Culture in Thailand

Rice (*khao*) and farmers (*chao-na*) are considered the roots of Thai society. They involve all aspects of life, such as diet, culture, and economy. On a daily basis, rice serves as the main course, and Thais consume rice three times. It is also an ingredient in Thai desserts, for example rice with coconut milk called *khao-niao moon* and rice with egg custard called *khao-niao sang-kha-ya*.

Rice is also a central theme of Thai culture. It appears in various country songs such as *Noom-na-khao sao-na-kluea* [literally meaning a young man from a rice field and a young woman from a salt field].

It also influences proverbs such as *khao-yak-mak-paeng* (the era of things that are very expensive) and *liang-sia-khao-sook* (not repaying the gratitude of parents or a person who takes care of).





Moreover, rice is one of the main exports that bring tremendous profits to Thailand. To grow rice, farmers traditionally rely on climates, non-toxic substances, and buffalos. Since the advent of technology and globalization, chemical fertilizers and pesticides are widely used leading to the deterioration of the ecosystem in paddy fields, the rapid spread of insects and pests, the rising costs, and the decreased crop production. As a result, farmers suffer from insufficient incomes to make a living and the worsening of health status.

“Thai farmers work tirelessly three times a year,” said a farmer.
 “The more we work, the poorer we become. Our health is also poor due to hard work and chemical exposures.”

One of the key strategies to promote healthy status for all Thais is to introduce a sustainable way of living through agriculture since farmers are the majority of population. His Majesty King Bhumibol Adulyadej initiated the “sufficiency economy philosophy” several years ago to guide his subjects to lead a balanced way of life. The philosophy focuses on living in moderation and being self-reliant as a means to protect against negative outcomes of rapid economic and cultural transitions.

Khao Khwan Foundation: Rong-rian Chao-na

Thai rice farmers presently encourage their offspring not to continue their career as rice growers because the most of them give up their hope and fall into debt. To sustain the root of Thai society, it is essential that the farmers have to change the way of thinking and retain the value of their career.

The Khao Khwan Foundation (rice foundation), a non-governmental organization, was established in 1984 under the supervision of the Appropriate Technology Association (ATA). The rice-fish project and integrated farming in northeastern Thailand was first initiated. In 1989, KKF left the ATA to set up its own organization under the name of Technology for Rural and Ecological Enrichment (TREE), which was subsequently renamed Khao Khwan Foundation (KKF), well-known as Rice Farmers School or *Rong-rian Chao-na*.

The main goals of *Rong-rian Chao-na* are to help rice farmers rely on the self-reliance principles, to cut external costs and inputs, and to ensure that farmers keep their hope alive to continue their career. It also promotes sustainable agriculture including the use of non-chemical fertilizer, herbal pesticides, natural crop protection, and selection of good plant varieties.

At present, KKF has established more than 36 networks throughout the nation. One of its outstanding projects is the Agricultural Technology Learning Center, commonly called Non-chemicals and Food Safety Group.



Agricultural Technology Learning Center: Non-chemicals and Food Safety Group

Based in Sanam Khli subdistrict of Suphan Buri province, the Non-chemicals and Food Safety Group was established by six female farmers with the intention of using non-chemical substances in growing rice and vegetables. Previously, they experienced several difficulties in their career as farmers.

The founding of the Group was supported by the Bangkok Archdiocese's Social Department, MISEREOR, and Caritas Thailand. Group members have attended and joined training as well as field trips to visit other organic farms and centers. They later put the knowledge into practice in their own rice fields using the principles of the sufficiency economy philosophy.

“Previously, I didn't follow my parents' footsteps in growing rice,” said a Group member. “It was convenient to buy and use chemical fertilizers. The more I continued using them, the smaller amounts of crops I harvested. That made me wonder what happened and how we started it.”

Starting from Beliefs and Rituals

It is generally believed that there are several goddesses related to rice culture and rituals. According to Thai folklore, the goddess of earth is called *Mae Pra Thoranee*. The utilization of chemical substances damages the quality of soil textures leading to the decrease in crop yield. It symbolizes the harm to *Mae Pra Thoranee*; and the spirit of earth would go away. At the beginning of the planting season, *Mae Pra Thoranee*, therefore, is called upon to protect rice seeds and young seedlings.

The most important thing to increase crop yield is to improve the quality of soil. It is like we return life back to *Mae Pra Thoranee*. Good soil is the soil that is alive.”

Thai farmers also respect the goddess of rice called *Mae Phosop*. It is believed that *Mae Phosop* would protect the rice fields from pests including rats and insects as well as other spirits that would damage the rice fields.



“Around the middle of the planting season, we would perform the ritual to drive away evil spirits that would harm the rice fields by calling upon *Mae Phosop* to watch over the plants and to ensue that the fields give a good harvest.”

Innovation and Practice

The Non-chemical and Food Safety Group calls our attention to a practical way of living. They start from what they believe about rice and *Mae Pra Thoranee* by improving the quality of the soil textures using non-chemical substances. The main activities of the Group are divided into small groups or subgroups as shown in the diagram below:



From the above diagram, group members also emphasize that each activity was originated from the practice-based learning. Everything is also interrelated. After returning life to the earth, the farmers adopted integrated farming practices for rice, fish, fruits, and vegetables. They also use organic fertilizers made from pig manure and other waste materials. The important step is to maintain a balanced household



budget using the household accounting system. All products are kept for the main purpose of consumption and the surplus amounts, if any, are later sold to earn some income.

Besides the main activities, members of the Group continue raising social awareness about the use of non-chemical substances. They welcome all visitors to exchange information in a practical, effective way. They are also invited to give information on what they do to students and others. Reported by Group members, the negative attitude towards the use of non-chemical substances is the main barrier to changes.

It appears that the Group uses rice to represent a symbol of life and to teach us how to live in a sustainable way. What we have learned from this Group are ways of systematic thinking, self-reliant living, and cooperation rather than competition. Lastly, the Group members' hospitality comes from the heart.

If each community in Thailand has the potential to manage its own resources, it will increase the strength of the county to survive despite the existence of all negative changes.





Community-Based Collaboration for Community Wellness

in Bang Rakam Subdistrict,
Bang Len District,
Nakhon Pathom Province



Community-Based Collaboration for Community Wellness

in Bang Rakam Subdistrict,
Bang Len District,
Nakhon Pathom Province

Nichada Santwanpas
Sriwan Meeboon
Wiliporn Khamwong



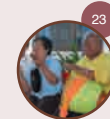
Nakhon Pathom at a Glance

Bang Rakam subdistrict is located in Bang Len district of Nakhon Pathom province, about 60 kilometers west of Bangkok, and is one of the oldest towns in Thailand. The subdistrict (*tambon* in Thai) covers an area of around 30 square kilometers with 15 villages, 1,242 households and a total population of 4,606.

The prominent point that promotes the development of Bang Rakam subdistrict is its plains with fertile soil which is suitable for all kinds of agricultural activities. Moreover, the subdistrict has many natural canals and is divided into the west and east banks by the Tha Chin River. From these perfect natural resources, most residents earn their living from agriculture, i.e. plantations and animal farming, growing food crops, flowers and fruit trees. Therefore, most areas of Bang Rakam are covered with green fields.

Although the people here have been trying to be happy with the blessed nature in their communities and have simple ways of lives, the dramatic changes of society and technology result in global impacts which ultimately affect the people and communities of Bang Rakam. These changes have caused many problems for the people and communities such as disparities in health services and information, lack of care for the elderly, having low income, lack of revolving funds for occupational investment, lack of an information center for agriculture, little support for promoting local custom and culture, lack of awareness and knowledge about environmental conservation, having little participation of people in community activities, and lack of a center for community activities or meetings, etc.

To solve the above-mentioned problems, community-based organizations, both governmental and non-governmental, which are close to the people, need to take more responsibilities with decentralized authority, especially the Bang Rakam Subdistrict Administrative





Organization (SAO). The SAO was established in 1995 under the decentralization policy of the Thai government and is considered a small local government unit.

This SAO is charged with the administrative management of public services for the benefit of local people within its area of jurisdiction. Most of its responsibilities in detail are related to healthy public policy at the local level, mainly dealing with creating supportive environments such as providing basic infrastructure and development activities related to economy, health, social security and living conditions to enable Bang Rakam people to have healthy lives.

In the effective pursuit of healthy public policy at the local level, Mr. Nattawat Chaninngam, Chief Executive of the SAO, stated that *“the most important factor for sustainable development of our community is people’s participation. We usually solve the problems and provide public services to the people by asking them to participate in the process of designing SAO development plans. Participation of the people is very useful for us because we can formulate the policies and projects that are relevant to people’s problems and needs in our designated area. It can be said that most community activities and community wellness can be undertaken or accomplished because of their participation.”*

A Center for Building Happiness: The Wisdom of Bang Rakam People

“Community builds love and shares happiness” is the motto of the community center, “Sala Sangsuk” literally meaning a pavilion for building happiness. The center, located in Sukwattanaram Temple in Bang Rakam subdistrict, was set up in 2007 and effectively run with community’s collaboration. In addition to local residents, the major community organizations that collaborate and support the center activities include the Bang Rakam SAO, the 18th Social Development Center of Nakhon Pathom Province, the Bang Rakam Subdistrict Health Center, and Sukwattanaram Temple.

For the purpose of setting up this center, Mr. Nattawat Chaninngam, Chief Executive of the SAO, said, *“Due to changes in society and existing community problems, we realize that we need to have a place for giving an opportunity to the people who may be or have been affected by the changes or problems to join social activities in order to improve their potential, building social immunity, protecting their safety, and ultimately developing community’s well-being. Most activities or projects are proposed and implemented by the people with SAO’s financial support and good relationship building. We have found that the best method to develop local wellness is to continually collaborate with community organizations at all levels especially the people’s sector.”*

Since the beginning, the center has focused on the activities for three age groups: juveniles, housewives (middle-aged) and the elderly. The social activities consist of: (1) activities that promote good relationships among the people based on custom and culture of the community such as ceremonies related to “virtue leading to happiness”, rice blessings, and tom-tom dance; (2) activities that encourage the people to spend free time creatively on, for example aerobics and elderly clubs; and (3) activities for developing physical, mental, intellectual and emotional skills based on occupational interests of the people such as safe or pesticide-free agriculture, cloth weaving, artificial flower making, Thai dessert cooking and traditional Thai massage.

In addition, several activities and subcenters have been launched or set up at Sala Sangsuk such as physical examinations by health-care teams from the Bang Rakam Subdistrict Health Center and Luang Pho Poen Hospital (a community hospital), sightseeing and



study tours, information dissemination, Community Welfare Fund, Community Money Institute, Light House of Community Wisdom, Agricultural Technology Center, Family Development Center, and Woman Volunteers Group. All activities are regularly arranged on the 10th day of every month. Members of all community organizations will come and do these activities together at the center.

“Although Sala Sangsuk was just recently established, it is very good for our community. Nowadays it is difficult to find a society like the one we have here. This center helps us to have closer relationships with each other. We can meet and share happiness by doing activities together. It reminds me of what I did when I was a kid in the good old days. At first, there were not many people coming to join the activities; until we get the current SAO Chief Executive. He is a very good leader,” said Mrs. Chalong Pinthongkam, Chairman of Sala Sangsuk.

Similarly, Mr. Boonsong Sritip, head of the village health volunteers group, said, *“This center was initiated by the current SAO Chief Executive less than two years ago. However, it is very good for the people. The people who usually stay home alone can come to join the activities. So, they will get friends and do not feel lonely. Regarding health, the people who participate in the activities, especially the elderly, will know of their health status from the monthly physical checkups, at least about their blood pressure and weight. The people will also get the information about health and self-care. We will record the results of physical examinations in their health record books. If we find something wrong with their health, a health official will give advice and/or treatment or refer them to Luang Pho Poen Hospital.”* On the 10th day of every month, elderly people will carry their health record books to the center and give them to the staff from the Bang Rakam Subdistrict Health Center for recording the new results of their physical examinations.

Having Sala Sangsuk changes the working styles of the staff at the Bang Rakam Subdistrict Health Center and Luang Pho Poen Hospital. Mr. Payung Nidpranee, Head of the Health Center, said, *“Previously, we usually had to wait for the people to come to the health center for getting physical examinations or other health services. But now we do our job in a more proactive manner. We provide outreach health services to the people in the community. On the 10th day of every month, we will provide basic physical examinations to the people at the center, and every four months we will collaborate with the healthcare team from Luang Pho Poen Hospital in providing mobile*





health services to the people in the community. Thus, having this center in our community is not only good for the people but also helps us. For us, we can disseminate or provide information about health to the people. We can also do the follow-up of the patients at the center. In addition, we can have good relationships with the people in the area”.

Environmental Protection for Community Wellness

“Water is life” is the saying generally recognized by Thai people because Thailand is known as an agricultural country for so long. Thais build their houses by the river or canal and use natural water for growing crops.

Bang Rakam subdistrict has the Tha Chin River as the main source of natural water for its residents. This river is still clean for fish and aquatic plants because a group of young people who love their

home get together to do creative activities to preserve the river that they love, such as running campaigns on cleaning the river and prevention of river pollution. These activities are financially sustained by the SAO. As a result, plants and vegetables growing in this river or on its riverbanks are chemical-free and can be healthy food for people.

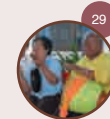
A Group of Safe Agriculture for Bang Rakam

The main careers of people in Bang Rakam are farming and gardening, which are the ways that humans and nature come together with the intent of creating beauty and benefiting each other. Thus, gardeners and farmers in Bang Rakam choose organic or non-chemical fertilizers produced with the natural process, which is promoted by the Bang Rakam SAO. They understand that non-chemical gardening is closest to nature and is beneficial to the environment and their families.

Most gardeners and farmers in Bang Rakam subdistrict use non-chemical fertilizers which are produced from herbs and cow manure. They formed a group for safe or pesticide-free agriculture. The major activity of this group is to provide knowledge about producing non-chemical fertilizers. Besides the safety environment, using handmade, non-chemical fertilizers helps the gardeners and farmers to decrease the production costs. Mr. Somkiat, a jasmine gardener, said, “My garden is next to my house. I have children. If I use chemical fertilizers, they might be hazardous to my family. Now, I’m sure that I can breathe deeply and feel safe. I reassure my friends of the safe use of such products. I don’t need to buy chemical fertilizers anymore. The organic fertilizers we produce are cheaper than chemical fertilizers”.

Leadership and Participation Work Best for Decentralization Policy at Bang Rakam SAO

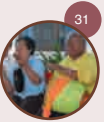
Implementing the decentralization policy is an opportunity to strengthen local governance and requires leadership as well as community participation. Active participation of community members, SAO staff, and government officials result in the Sala Sangsuk establishment, Tha Chin River conservation, and a group for safe agriculture. These activities are successful with the wisdom of the SAO Chief Executive and community participation. Community members are





those who help each other without asking for anything in return; they are just willing to work together.

"Before participating in the activities, I hardly knew anyone. I was just an ordinary gardener. Then, I started being a member and learned a lot about chemical substance hazard prevention. I get to know more people and share my knowledge and tips for working with my friends. Now, I've got a lot more work to do. Sometimes I feel tired, but I am very proud of what I do," said one of the gardeners.





Tri-Water Province:

Samut Songkhram



Tri-Water Province:

Samut Songkhram

Malinee Jumnian
Peranan Jerayingmongkol
Nutthita Petchprapai



Samut Songkhram at a Glance

Samut Songkhram or **Mueang Mae Klong** is a small province of 416 square kilometers and located only 72 km southwest of Bangkok. There are more than 300 natural and dug-out canals. It is a province of fertile land, plants and food grains, vegetables and fruits, as well as a vast variety of seafood and other products such as coconuts, palm sugar, lychees, fish, shellfish and shrimp which are a source of income of local people.

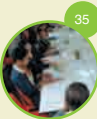
That's why the people in Samut Songkhram province recognize the importance of water for earning and living especially the people who live in Phraek Nam Daeng subdistrict, which is on the seashore. It has a plentiful fishing ring zone and also its inner plateau area has a black fertile soil. Phraek Nam Daeng has three water zones: freshwater, seawater, and brackish water. The water flowing naturally from these natural sources creates a balanced nature. The people who live in each zone of water have a different lifestyle and occupation.

Construction and Destruction

No one can dispute that water is our real need since we have realized that human beings cannot survive without water.

So far, many communities have to rely on natural water resources.

Floodgates were constructed under the authority of the Royal Irrigation Department after the government constructed Thon Buri-Pak Tho road. The road separated the zones of fresh water and seawater and also separated the zones of rice fields, snakeskin gourami (salid) fish ponds, salt farms and shrimp farms. The balance of water flowing in the natural water system was destroyed by the floodgates.





The people in Phraek Nam Daeng suffer from the government project because it made them lose income from erratic natural water system. They also lost the good relationships with friends from the other zones. Some people reflect their opinions as follows:

“The government always thinks for people and makes unilateral decisions without evidence. This is not information-based.”

“The government always does something without asking the people what causes people’s suffering.”

“Since we had the floodgates, I lost a lot of income because my prawn farm was damaged from fertilizers and soil sediments that flowed from the freshwater zone.”

“The government project made me sick, we were stressed and sorrowful.”

“The government did not know how much the project caused pressure to community. We rejected that because we lost income and the relation existing between the freshwater and seawater zones. We have a strong incompatibility with opening the floodgates.”

Incompatibility: The Way to Development

The environment is necessary for farming and living. The people in Phraek Nam Daeng need to have a better life without incompatibility of both zones.

Ban hap phoei, a specially designed floodgate, is an **innovation with local wisdom**; and it helps resolve the prolonged conflict between the freshwater and seawater groups of people.

Ban hap phoei is the floodgate that opens automatically when the water level is the higher than normal; and it closes when the seawater rises. Also, it is a slide gate that can modify the level of freshwater. The baffle gate in the base will keep the sediment from the wastewater. Everyone in community accepts it after we tried out the *ban hab phoei* floodgate “**that works**”.

The action of community people has led to the public policy because the Royal Irrigation Department has adopted the *ban hab phoei* floodgate designed with local wisdom as a standard model.

The Key to Success: Local Research

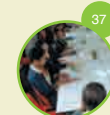
The key to success is the local research because the people from the community knew the real problem. We need cooperation and participation by thinking, doing and making decisions that are mutually beneficial.

“We started to talk about our history with peace and persuaded more and more people to join us.”

“We never blame other thoughts because every thought is worth consideration.”

Effect of Local Research:

The economy and environment are necessary factors of the public health since the economic situation reflects the well-being of people in the community. Eventually, a peaceful life, safety and improved economy come to both groups of people from freshwater and seawater zones after the people solve the problem with local research using



the participatory approach. The local research would make life better for everyone; each one has a peaceful life with safety and a higher income.

Peaceful life, people in the community live without conflict.

Safety from the water pollution, people eat safe food.

Good economy, people in the community get a higher income from their products.

The process of local research is the basis for developing the projects that are related to the health policy such as a compromised policy at the Saeng Tawan Homestay Guesthouse.

A compromised policy: Saeng Tawan Homestay

“If you want to do something, do your best” is the motto that Khru (or teacher) Somsong uses to remind himself whenever he wants to do anything. For the agricultural system in his orchard, he adopts the idea of biotechnological agriculture, using the nature to kill, heal and nurture the nature, never relying on any pesticide.

Khru Somsong owns pomelo, coconut and lychee orchards. He is also a key person who got many local people together to produce local products through a small business system. Khru Somsong presents a cycle of his success through many experiences that the visitors can find when they stay in Saeng Tawan Homestay.

Keys to Success from Khru Somsong

1. Not using chemicals to get rid of weeds but frequently clipping weeds and grass and using them to make organic fertilizer.
2. Not using pesticides. Khru Somsong explains that all of the insects lay eggs on young leaves, so he lures those insects by clipping the grass under the trees more frequently. As a result of the young grass, insects will lay eggs on the grass, not on the young leaves of the tree. Frogs and birds are the predators that get rid of the eggs on the grass because the grass is short and close to the ground.



3. Not using chemical but biotechnological fertilizer only. Khru Somsong has his own fertilizer formula which is composed of waste products from rice, rice bran, ashes, fish, prawn and salt pans mixed together and let the mixed stuff compost for 10-20 days. All the ingredients can be found locally and this fertilizer helps pomeloes grow bigger in size with a better taste.

4. Using all parts of everything. There is no waste product for Khru Somsong as everything is usable and useful. For example, after peeling a pomelo for sale, the outer shell can also be used as herb while the inner shell can be made as a dessert.

5. Dealing with waste products from salt pans was a painful problem for the villagers in the past. The dried and smelly topcoats of the salt pans consist of mosses and seaweeds that came with rainwater runoff in the rainy season. The salt pans will be used in summer; the 2-3-mm thick topcoat has to be manually removed at a cost of 500 Thai baht a rai (1,600 m²). If this topcoat is not completely removed, the salt from that pan will be dirty and the amount produced will be low. Using this topcoat from a salt pan was accidentally discovered by a pupil when he used it to grow cabbage in his class assignment and his cabbage grew better and faster than those of other students. A systematic review of the topcoat was done through several research studies. The results in the laboratory showed that the topcoat had 1.3% of phosphorus, 2% of potassium and several other things useful for plants. Several action research projects have confirmed that fruits that use the topcoat have a sweeter taste. Recently, salt pan's topcoat is accepted and ordered by many other agriculturists from many other provinces.

The Green Farm

After we solve the problem of balance of water, we have a process of thinking to create another project for people in Phraek Nam Daeng. **Greening the farm** is the project which we implement with our concern about mutual benefit in the community.

Mr Somboon, a farmer in the freshwater area, and his neighbors adopt the idea of biotechnological agriculture by using local wisdom and lifestyle, not using any pesticides or chemical substances.



That's why it can reduce the cost and does not destroy the environment. This way of life makes the people in this area have their occupations sustainable; they are now in good health including good mental health all over the area.

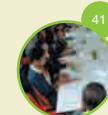
"The utilization of chemical substances damages the quality of soil textures and reduces our productivity in the future."

"Now our farmers here are not using pesticides or chemical substances. Natural fertilizers are good for plants in a wide range of soil types and weather conditions without stressing the soil."

"Organic farming still takes up a very small part of the rice business," he said, "but it should take a larger part. I think demand will continue to grow."

Honesty Savings Group

Moreover, the outcome from community's participatory learning makes the people create an **"honesty savings group or Sajja Om Sap Group"** for collecting their money and helping with the



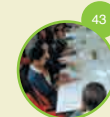


accounting in the area. It was created with the common reason for the people in Phraek Nam Daeng, in both seawater and freshwater zones, to join the group in undertaking some form of savings activity. Saving is vital to enabling people to manage shocks and emergencies, to smooth out peaks and troughs in income and expenditure, to make investments in the home, family and business, and to provide for old age as well as sickness of family members.

Participating in a savings group is one of the best ways to encourage social mobilization among the people and can lead to other forms of livelihood development.

These abovementioned statements are the reflections from a group of people in Samut Songkhram province. These full sets of ideology as well as real needs arising from community people who have had a strong intention to develop their own communities. In the future, good collaboration and local wisdom may change the new style of water management in the community. The integrated working activities among organizations may be developed to solve the problem by using the participatory learning process for development and knowledge management in deciding which actions should be adopted. Therefore, this is the model of water management that is appropriate for ecology and lifestyle of the people in community.

As a result, there is no doubt that most of their provincial development plans come from grassroots people (such as a city plan). Interestingly, this obvious phenomenon is rarely found in other provinces and this is the answer why Samut Songkhram is full of local researchers and philosophers in almost every village or cluster of villages.





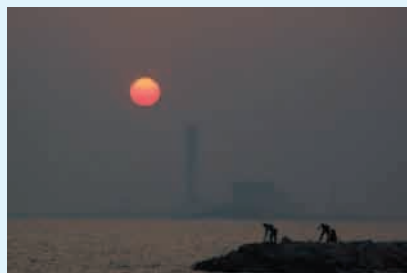
The Reflection Voice from Map Ta Phut,

Rayong



The Reflection Voice from Map Ta Phut, Rayong

Sukjai Charoensuk
Pornruedee Nitirat
Patcharapa Kanchanadom



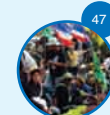
Rayong at a Glance

Rayong is one of the four provinces located on the east coast of Thailand, 179 km from Bangkok, and is composed of eight districts (amphoe in Thai), namely Mueang Rayong, Klaeng, Ban Khai, Pluak Daeng, Ban Chang, Wang Chan, Khao Chamao and Nikhom Phatthana. It is well known for a variety of delicious fruits, advanced industrial estates, high-quality fish sauce, a beautiful island and a famous poet.

The Origin of Map Ta Phut

The rapid expansion of industry in Bangkok causes many problems such as traffic jams, inadequate housing, inadequate public utilities, etc. Since the 1980s, the government has been solving those problems. However, country development efforts to become a new industrial country (NIC) have never been stopped and the idea of decentralizing development to other provinces became an alternative; and this is the beginning of industrial estate establishments outside the capital. This has resulted in decentralized growth from the capital to provincial areas.

Map Ta Phut is an area by the sea in Mueang Rayong district. Since 1981, natural gas pipelines, petroleum refinery facilities, petrochemical factories and its downstream industries, power plants, industrial seaports, and many other infrastructure facilities and industries have been developed and operated in the Map Ta Phut area. The government considered Map Ta Phut as a location of the industrial estate because its topography is suitable and it is not far from Bangkok. The basic projects to accommodate the industry in the



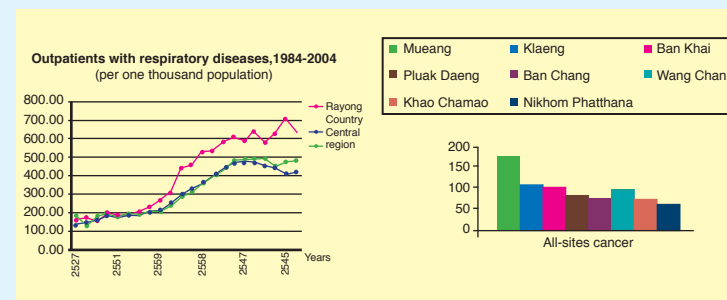
Map Ta Phut Industrial Estate such as a deep sea port, a road system, a water supply system, and a telecommunication system were also developed. Development is the goal of the government in decentralizing for economic growth from the capital to other provinces.

Nowadays the Map Ta Phut Industrial Estate is regarded as the biggest industrial estate in Thailand with a total area of 10,000 rai (or approximately 4,000 acres) and 95 large industrial plants. The total investment in Map Ta Phut is 1.14 billion baht with the employment of 246,000 people. The land in the Estate is for a lease of 30 years, and then the lease can be extended for 20-year periods. In terms of land use, the entire Estate is divided by the type of industry or service into a general industrial zone and a business industrial zone, which are composed of accommodations and government units such as a municipality, an immigration office, a customs office, a hospital, a telephone service office, a water supply system, a wastewater treatment system, a central area, a green area, a relaxation area, and public utility systems.

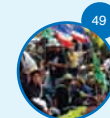
Consequences of the Development

The industrial development does not create only positive impacts, but many environmental and health problems also emerge. A series of health impact assessments (HIA) by Decharut Sukkumnoed and others reflected serious environmental and health problems in Rayong. In 1997, a pollution crisis occurred in the Map Ta Phut area. Hundreds of students in the local high school, located adjacent to the large oil refinery plant, were sick due to severe air pollution. Volatile organic compounds (VOCs) have been a serious danger in Map Ta Phut for a long time but no mechanisms have been implemented to prevent the problems, particularly there were no environmental standards for VOCs in Thailand until 2007. Other significant air pollutants are nitrogen oxides (NO_x) and sulphur dioxide (SO₂), which are mainly emitted from fuel burning and industrial production processes. Therefore, if the industrial development is going on, the air quality in the Map Ta Phut area will very likely be severely affected. Contamination of heavy metals in the groundwater is another serious problem for all communities surrounding the Map Ta Phut Industrial Estate. The quality of both surface water and seashore water has rapidly declined. Seashore erosion and hazardous waste are also critical issues that need to be taken into consideration.

Concerning respiratory diseases, the number of outpatients with such illnesses from 1984 to 2005 in Rayong was a little higher than those in other central region provinces and the rest of the country in the beginning period. But since 1992, the number in Rayong increased significantly and the rate of outpatient visits was 696.09 per 1,000 population in 2004, while the rate for the country has been decreasing since 2001. For cancers, the epidemiological study in 1997-2001 conducted by the National Cancer Institute revealed that both all-sites cancer and leukemia are clearly higher in Mueang district, where the Map Ta Phut Industrial Estate is located, than those in Rayong's other districts. Another study conducted in 2001-2003 found a higher rate compared with the first study for lung cancer and leukemia. Moreover, a survey conducted in the Map Ta Phut area by the Department of Social Welfare and Labor Protection in January 2007 also found that, among the 65 plants in the Industrial Estate, 2,461 workers in 20 plants were at risk with 19% experiencing health problems that needed the assistance of an occupational health expert.



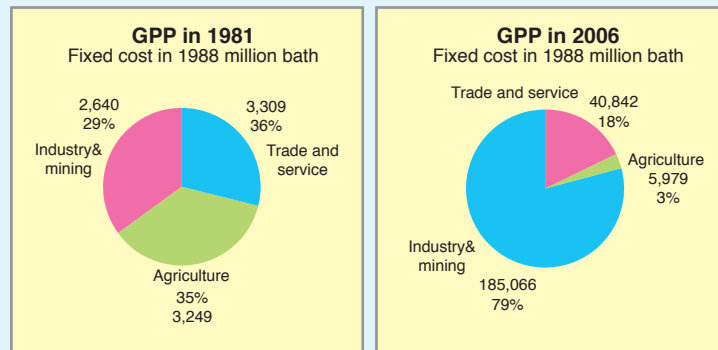
In terms of social impacts, the social transformation arising from industrial development has caused various negative impacts on the mental health and way of life of local people. Importantly, the suicide rate in Rayong is about 72.17 per 1,000 population, which is about 11 times higher than the national average. Furthermore, there are many social problems and impacts as a result of the social change in "an industrial society". The key drivers in the case of Map Ta Phut area are a huge number of migrant workers from other parts of Thailand and the neighboring countries. Approximately, only 40% of Map Ta Phut's residents are locals. Problems of social integrity due to little social relation and cooperation occur because most workers move to stay in the area only for a short period of time; so it is hard to promote community management and development. Being heavily populated and slum areas without adequate infrastructure and social services



definitely leads to various problems like poor sanitation, improper wastewater disposal, traffic jams, road accidents, etc.

The economic structure of Rayong has also dramatically changed. Before the start of the eastern seaboard development in 1981, Rayong had a balanced economic structure among three modes of production: the service sector accounting for 36% of GPP, while the agricultural and industrial sectors accounting for 35% and 29% respectively. The “three-pillar economy” was replaced by “one-pillar economy”; the industrial sector has rapidly expanded and now accounts for 79% of GPP, while the service and agricultural sectors contribute only 18% and 3% to GPP respectively.

Comparative GPP Structure of Rayong in 1981 and 2006



Responsibilities for Safety and Preservation

The Map Ta Phut Industrial Estate is the golden area of petrochemical, chemical, and fertilizer, steel, oil refinery, and power plants in Thailand. Therefore, it is difficult to deny that Map Ta Phut Industrial Estate has brought prosperity to the country. It is commonly known that country development and environment preservation never go hand in hand. However, Map Ta Phut Industrial Estate pioneers were concerned about this point when establishing this industrial estate as seen in the policy where the environment is one of the five





equilibriums taken into account (the five equilibriums include economy, equitability, environment, education, and ethics).

The vision and mission of the Map Ta Phut Industrial Estate evidently show its concern about the environment in order to prevent adverse effects. The Estate's management policy was also clearly stated when the idea of industrial estate was firstly introduced in Thailand. Numerous efforts have been made to preserve the surrounding environment, for example, air quality control, water quality control, waste management, and so on. With such achievements, the Map Ta Phut Industrial Estate received the certification of International Standard Operation of Environment or ISO 14001 in 2002.

With modern equipment and systems, the success in air quality control becomes the pride of the Map Ta Phut Industrial Estate. All factories are required to install the equipment to check the condition of air from the stacks all day and all night and send the record to the air control center at the Map Ta Phut Industrial Estate Office. Furthermore, four air pollution control stations located around the Estate can automatically check air quality and send information to the air control center as well. The information received from many sources

will be examined and interpreted by technicians. This approach is very sensitive to detect air pollutants and the solution can be provided in time in case any problem occurs.

The Map Ta Phut Industrial Estate does not only provide a concrete action plan and takes actions to preserve the environment, but it also practices the environment preservation principles to save Rayong province as a whole. One obvious activity the Estate has been practicing for more than five years is cleaning Rayong's seashore. This activity is held once a year on the second Saturday of September. Besides, the Estate has been carrying out many beneficial projects in communities. This might be a way to return good things to communities and society.

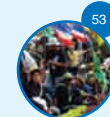
Overall, the administrators of the Map Ta Phut Industrial Estate believe that environmental preservation has been a serious concern and much has been properly undertaken for this purpose.

"In Asia, I do believe that the environmental management system at the Map Ta Phut Industrial Estate is above standards. However, as Map Ta Phut is an industrial area, it is impossible to make it perfectly clean; and it is not dangerous for anyone who lives in the area," said the Director of the Map Ta Phut Industrial Estate.

There is no doubt that healthy public policy exists in the Map Ta Phut Industrial Estate. Still, the appearance of health conditions as a result of the Estate's policy implementation is the fact. Thus, the important question is not whether healthy public policy is there, but why the policy does not work well as expected.

Efforts to be Proactive

The Rayong Provincial Public Health Office is responsible for health of all Rayong people. Since the Map Ta Phut Industrial Estate was established, health surveillance is a main task of the provincial health office. After the harmful event in 1997, many authorities have been alerted to swiftly solve the problem, resulting in the development of the Rayong Protection Plan, which aims to help victims in emergency situations or industrial accidents such as an explosion of a chemical agent. The Plan consists of three levels of assistance depending on the number of victims. The first level is for less than 20 victims,



requiring Rayong Hospital and community hospitals near the event to be involved. The second level is for 20 to 50 victims, requesting all public and private hospitals in Rayong to be prepared. The third level is for more than 50 victims, calling for collaboration of all hospitals in Rayong and adjacent provinces to help the victims. In implementing the Rayong Protection Plan, Rayong Hospital becomes the main health setting responsible for medical treatment to be given to the victims who need expert care for those exposed to any chemical substance; so a Toxicology Center was established at Rayong Hospital. Presently, the Center, headed by Dr. Sunthorn Rheanpumikankit, primarily aims to save victims from industrial chemical harms and to provide safety information to the public.

The leakages of chemical agents that had been constantly reported during the past few years prompted all public sector agencies in Rayong especially the Provincial Public Health Office to actively respond. A strategic plan focusing on occupational health has been created by the Provincial Public Health Office; under the plan, two focal strategies, including (1) occupational and environmental health promotion and disease prevention among workers and (2) effective treatment and surveillance of occupational and environmental diseases, will be implemented.

Mrs. Suda Paniangtong has taken responsibility for occupational and environmental health of Rayong province for five years. She puts a lot of efforts to build a team; and a Chemical Surveillance Rapid Response Team (SRRT-C) was then set up in early 2008. The team is composed of an advisory board and working groups. Administrators from related sectors are invited to serve on the advisory board; whereas members of the working groups are experts in occupational and environmental health who voluntarily get engaged. Materials regarding health and safety practices need to be sufficiently provided, and occupational health education for Rayong residents also needs to be promoted. The budget is partially provided by the government and the Healthy Rayong Fund.

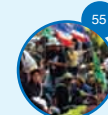
Efforts of the public sector to provide a proactive response to occupational and environmental problems that may occur in Map Ta Phut need to be promoted continuously rather than occasionally. As a government official, Mrs. Suda faced several difficulties such as a lack of budgetary and manpower support. She had normally worked alone with a small amount of financial support for years until the opportunity came to knock at her door recently.



“After the government system reform, initially it was only me who took care of occupational and environmental health activities. The Occupational and Environmental Health Section was downsized and became part of the Health Promotion Section at the provincial health office. Anyway, it’s lucky that since early this year, more support has been given by the government. We now have more money and personnel,” said Mrs. Suda.

To work proactively, it is essential for the public sector to work collaboratively with factories for mutual benefits. To date, many occupational nurses work in factories and most of them are full-time nurses in public hospitals. To implement the occupational and environmental health promotion and disease prevention among workers strategy, Mrs. Suda has got a plan to involve these nurses and asked them to integrate occupational and environmental health promotion and disease prevention among workers into their routines at the factories.

In the corner of effective treatment and surveillance of occupational and environmental diseases, both qualified human resources and





materials need to be prepared and accurate information needs to be provided.

"Personnel need special training, and materials need to be ready for prompt use. We should plan before the situation occurs; and if it happens, we need to know the truth as to what happens or what kind of chemical the victim has been exposed to," said Dr. Sunthorn.

Hope for Harmony Development

Last but not least is the perception of local people. This group of people is directly affected by the Map Ta Phut Industrial Estate. All the people there seem to agree that factories have an impact on health conditions and they might be the victims of the consequence of this kind of country development activity. Talking of local people's reactions to the Map Ta Phut Industrial Estate, an interesting finding is that there are two obviously different reactions based on two different points of view.

The first view is compensation-focused. The people in 29 communities (the majority of local residents) agree that the communities have been affected by the Map Ta Phut Industrial Estate. However, they perceive that the problems in the Estate have occurred for a long time. Those problems are too complicated and serious to be fixed. Hence, a better way for them is accepting this reality and receiving the assistance from factories in the Estate. After the appearance of environmental costs and health conditions, 30 million baht from the Estate was provided to the affected communities in the form of funding for improving the quality of life and the environment. The money can compensate for some loss and costs of the communities. The representatives of NGOs who agreed with this view point also work with the communities in managing the funds for the maximum benefit of the communities.

It is not surprising that local people in the aforementioned group are those who have had quite close-knit relationships with factories in the Estate. Many of them are those who work in Map Ta Phut factories. Some have houses for rent in the area. Some have businesses such as food courts in factories, security guard companies, transportation services, and so forth. Good cooperation between this group of people and the Map Ta Phut Industrial Estate might reflect their mutual benefits.



The second view is environment preservation-focused. Compared to the first group, the number of local people who support the second view is much smaller. Therefore, their voice does not seem to be loud enough to make any change. In 2003, local people in Map Ta Phut complained and protested against a large coal-fired power plant project. But finally, the plant was built and has been operational. This group of local people accepted that, at this moment, it is unfeasible not to have factories in the Map Ta Phut area. Thus, to preserve the environment, some significant suggestions were made as follows:

1. The number of factories must be limited. New factories should not be allowed to establish anymore. For the existing factories, regulations should be seriously and strongly enforced to compel the factories to preserve the environment.
2. Environmental control standards and practical investigation guidelines developed by multi-sectors (government, private and civil) are needed. The standards and investigation guidelines should be used for all factories; and punishment should be rapidly given to any factory that violates the regulations.

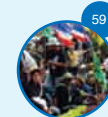
So far, this group of local people has been taking actions for the purpose of environment preservation. The activities undertaken consist of environmental effect surveillance and environmental problem exploration. The process of environmental preservation includes: (1) as soon as a local resident finds that an environmental problem occurs, he or she will report the problem to a preservation team (composed of NGO representatives and local residents); (2) then the preservation team submits a petition to authorities concerned for solution; (3) people call for measures to address problems that might re-occur in the future; and (4) compensation from factories should be legislatively based and thus a pollution control taxation law should be passed.

Since the 2007 National Health Act was enacted, Map Ta Phut's local residents exercise their right by submitting a letter explaining the situations to the National Health Commission Office. According to the Act, a HIA was conducted in Map Ta Phut aiming to utilize the knowledge and intellect for solving the problems as well as to empower local stakeholders and communities to participate meaningfully in the public policy process.



The Rayong paradox was presented and discussed at the first forum of Health Assembly on 9 October 2007. All different development scenarios were synthesized as development alternatives, which were presented and discussed at the second forum of Health Assembly on 13-14 January 2008. The HIA report and the recommendations for healthy public policy were presented and discussed at the third forum of Health Assembly on 22 June 2008. The National Health Commission agreed with the proposed healthy public policy to solve the problems in Map Ta Phut as follows:

1. The Rayong Development Plan is to be reviewed and amended focusing on the participation of all stakeholders.
2. The information related to occupational health impacts and health promotion should be rapidly provided to the public throughout Rayong province.
3. All related public sector agencies need to develop an action plan for safety prevention and disaster alleviation.



4. The National Health Commission needs to strengthen the civil sector.
5. The expansion of new factories in Map Ta Phut and Ban Chang industrial estates should be slowed down during the revision of the Rayong Development Plan.

Living together in peace in Map Ta Phut does not depend only on the regulations of the government, but also on the cooperation of all stakeholders indeed. Despite a different view point of enterprises, government officials and local residents all share a common goal-helping people to harmoniously live together with industrial development.

