

PART FOUR

The Case Studies

CHAPTER 8

Case Studies (1): Agriculture and Food

Introduction

The issue of agriculture and food is the area regarding the richness of the land, the abundance of bio-diversity, and the profusion of Thai culture.

From the mountainous landscapes of the North to the long coasts of the South, and from the rich Central Plain to the dry high plateaus of the North East, despite the immensity of cosmopolitan Bangkok, and despite the phenomenal growth of provincial urban areas in recent years, modern Thailand remains predominantly a country of rural villages, where the great majority of its sixty five millions people make a living from some forms of agriculture.

In this area of agriculture and food, there are two selected case studies are on the subject of rice. As Thailand has a “rice culture”, it is appropriate to look into issues concerning rice farming and innovative products from rice. A third is about integrated farming using herbs and organic methods. And the last concerns soil replenishing, a very basic issue for agriculture.

Agriculture has received serious attention as it is the main occupation in Thai rural life affecting and being affected by environmental, food security and food safety issues. Globalization has brought many concerns to village life as it largely changes the whole structure of village communities in terms of their relationships with other people, their relationship with nature and with supernatural forces. For example, the concern over the loss of the once so abundant bio-diversity, food security and self-dependability, self-reliance, and inter-dependability (as individual competitiveness in the capitalist system is promoted over community collective benefits).

There has been a strong movement for Sustainable Agriculture upon apprehension that village communities have lost their natural, social and cultural capitals (as mentioned above) to modernization and globalization. It is in this area that self-reliance and inter-dependence take a fundamental role as they are the cultural roots of the community, and are directly and largely connected to sustainable development.

Before looking into each case study in agriculture and food, it would be helpful to orientate and remind readers with some characteristics and basic concepts of this issue in the Thai context.

About the Farmers: Present Situation: Agriculture is still the main livelihood of about sixty percents of the population of the country. Among them, ninety percents are small farmers¹ scattered around the country and owning less than ten acres of land. Rice is the major crop for most of these farmers. Others grow cassava, soybean, sugar cane, jute, corn, rubber trees, coffee, vegetables and fruits as cash crops (Rojjanapo, 2000).

¹ Farmers who grow rice are called “chao na.” And rice farming is “tum na.”
Farmers who grow short life crops are “chao rai.” And their practice is “tum rai.”
Farmers who grow fruit trees and vegetables are “chao suan.” And their practice is “tum suan.”

Normally, they practice monoculture or single crop farming on their land. These farmers have to buy their seeds from multi-national seed companies. Mostly these seeds are hybrid varieties that require buying new seeds for each growing season, as well as the use of chemical fertilizers, pesticides and herbicides to keep up productivity. These chemicals not only react with the plants they grow and the pests they want to get rid of, but also create hazards to people and the entire national food chain. Sophisticated machinery is used to substitute labor. The expansion of cultivation areas leads to farmers moving into marginal and forest-reserve lands.

The “Green Revolution”² technology has resulted in Thailand becoming a major food exporter. However, the negative impacts of the environment, ecology and health of the farmers and the entire food chain, let alone shortcomings in social aspects, are what Thailand now has to deal with. What we can see in this scenario are the loss of indigenous varieties of plants, and traditional and cultural activities embedded in agricultural practices as the ways of doing things have changed. In fact, it has changed people’s way of production from producing for their own consumption and local markets to producing a generalized commodity. The dependency on external markets, both national and international; to sell their produce leaves them with no control over their own pricing system and weakens their self-dependence, leading to indebtedness and land loss. Rojjanpo also indicates that the problem of land loss and lack of stable land tenure has led around one to two-hundred thousand farmers to migrate to

² The Green Revolution was introduced by the World Bank at the same time as the establishment of the first National Economic Development Plan in 1961. It was expected to be the strategy for economic growth in order to solve poverty in rural areas and to increase the Gross National Product (GNP) of Thailand

Greater Bangkok or go abroad every year. These circumstances have also pulled many young girls toward prostitution.

Dishearteningly, a significant difficulty faced by farmers is the shortage of food security. She continues that in the past, Thai farmers were not aware of the issue of “food security” because Thailand is located in a tropical zone with fertile land and abundant flora and fauna, and other natural resources. This environment enables people to easily collect food from nature in the wild. In the old days, “shortage” implied the lack of “something they wanted to eat at certain period”. This did not mean lack of food security.

At present, rural people have to acquire their food from urban markets. Expenses on food account for up to twenty-five percent of their total budget. This is very different compared to their experience in the past. Up until thirty years ago, rural people could find their food by growing varieties of crops on their own land, collecting it from the wild and through exchange with their neighbors.

About Social Values, Attitudes and Cultural Practices: Even though Thailand is a Buddhist country, Buddhist principles of leading one’s life in harmony and in good relationships with society and nature have, to a certain degree, lost their meaning and relevance in contemporary society. The decline in understanding the core precepts and acting according to the principles, but rather adhering more to superficial and deviated ceremonial activities has caused dissolution in social morale and attitudes toward self-reliance using one’s own effort and wisdom (see more about Buddhism and the Thai culture in Chapter 3). Globalization and capitalism have hastened this decline. And it affects on the way people live their lives and earn their living, especially in agricultural sector.

Attitudes toward nature as the provider, Mother Nature, have also changed. Beliefs that rivers, earth, big trees, and rice, the life sustenance crop, and all other things are bestowed by supernatural forces have enhanced respect to nature with gratitude. This belief and respect are manifested through rituals and rites in all aspects of agricultural practices and cycles.

Cultural, traditional practices in agriculture bind the village community through reciprocal labor, as well as community participation in agricultural rituals and rites, create social cohesion. Losing these means losing community relationships, including knowledge and wisdom embedded therein.

Changes in social and cultural values have taken Thai farmers away from their roots and weakened their sensitivity toward natural resources that are central to their lives – water and soil, hence the degradation and depletion of the quality of resources as such. Reasonably, the case studies under this category will present four topics that can reflect the main situations and concerns in the area of agriculture and food.

While reading all the case studies, the readers should be reminded that most cases have happened a little before or after the latest national economic crisis in 1997. From that period social movements or “Civic Society”, including NGOs activities, have been increasingly strong. So, people are politically and socially motivated and empowered to take their fates in their own hands.

Four case studies have been selected as follows:

1. Rice Varieties Improvement, Pijit/ Central

Commercial rice varieties give high yields, believed to be much higher than indigenous ones. However, they also need high inputs of fertilizers and insecticides. Their cultivations also raise concerns over the disappearance of indigenous varieties. Thailand used to have over a hundred thousand varieties of rice³, but now the diversity has been reduced to about less than six thousand, with only very few of these indigenous varieties popular among the farmers. Efforts from a local young man who tried to improve the indigenous varieties once popular in his village required LW in rice identification, along with rice farming and MST in innovative selecting and germinating technique of rice grains. The success has inspired him to share this knowledge with other farmers.

2. Creative Rice Products, Pathumthani/ Central

A fashion designer turned local politician with no success, then turned to business woman. During her brief political career, she saw thousands of villagers who needed help. She wanted to start a unique business that the villagers could share income with her. Impressed since childhood by the beauty of lush green rice paddies, and the traditional drink of “young rice milk” (made from young rice), she decided to introduce this product to the market. From small beginning, now the business has grown into an SME category enterprise. Products have been diversified from beverages to include snacks, food supplementaries and cosmetics, all made from rice and young rice powder.

³ Local Rice Diversity Development Project Document 2002
http://www.rrafa.org/Local_rice_project_Thai_.htm Retrieved 1/3/2005

3. Herbal Uses and Integrated Farming, Rayong/ East

Damrongsak, a sixty-year old man with minimal schooling, is a nationally famous traditional healer in the field of herbal medicine, especially in curing poisonous snake bites. His knowledge about herbal plants and their uses is extensive. Presently, he has broadened his expertise in herbal plants to include the practice of Integrated and Organic farming. He views the knowledge of herbs and their uses as a way to self-independence, as well as being ethical, fair and safe to consumers. It is also a cost-effective way of promoting agricultural sustainability. His property has become a “learning center” for anyone wanting to learn these skills without any charge.

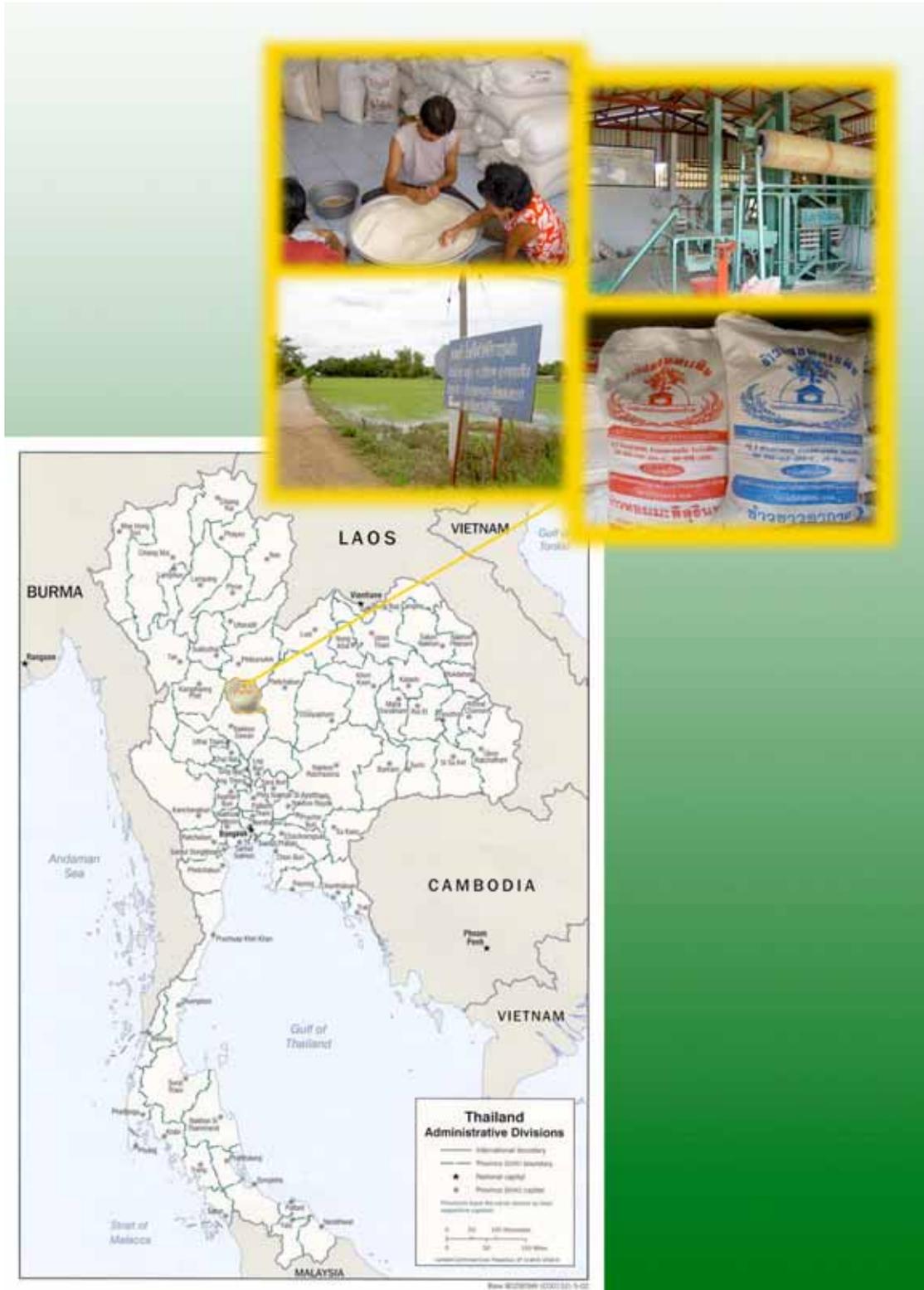
4. Soil Replenishing “From Sky to Earth Project”, Buriram/ Northeast

The Northeast is known as a barren, infertile and dry region. It is, in fact, the poorest area of the country. An initiative from a local thinker, who is well respected and praised as “local philosopher or local intellectual”, called for community participation to learn together how to solve their main problem of soil infertility. He proved that even the most barren place could become productive. He compared their LW as “earth” which is basic foundation of their life, and modern, universal and academic knowledge from outside as “sky”, hence the name of the project “From Sky to Earth”. In this project almost one hundred participant villagers produced also almost one hundred ways to replenish the soil. Learning from their own observations, interactive practices and most importantly from their own reflections on problems and solutions showed that diversity was highly desirable.

Case Study

1. Rice Varieties Improvement

Location: Nong Payom Village, Tapaan Hin district, Pijit province/
Upper Central



Contact: Mr. Sinchai Boon-art, Nong Payom, Pijit
Tel. 66-56-627802, 66-1-7077810

Mr. Daycha Siripat , Khaow Kwan Foundation, Suphanburi
Tel. 66-35-597193

Time / Duration of Data Collection: 2003-2004

Aspect(s) of Local Wisdom: Agriculture, rice farming technique

Aspect(s) of Modern Science and Technology to match: A technique to germinate rice grain without husk, knowledge about regaining hybrid vigor of the hybrid rice

Initiator(s): Sinchai Boon-art, a local young man

Main/current occupation of the initiator: a rice farmer in his home town

Previous occupation of the initiator: A gardener with his family before being a worker in a factory in Bangkok

Disruptive moment(s): Economic crisis forced him to go back to his home town. Married and living with his wife's family that earned their living on rice farming, Sinchai saw that the selling of harvest was barely profitable. He had no experience in rice farming as he was from a "*chao suan*" family practicing growing fruit trees and vegetables. Since he observed that the rice farming of his wife's family was not cost-effective, he wanted to help lower the cost of rice farming which was largely spent on chemical fertilizers and insecticides. A priority task was to substitute natural fertilizers and insecticides for chemicals.

While seeking for solution to above the problem, he found other problems emerging:

1. Many indigenous rice varieties have been lost or replaced by the commercial ones.
2. The commercial rice grains cannot provide second generation seeds for the next planting season, thus creating dependency on buying new (commercial) seeds for each new planting season.

Facilitator: In the initial steps, there was no facilitator for this effort. Sinchai and his friends relied on their own efforts in searching for

knowledge and making trials on their own. Sang Tawan Group (Sun Light Group) Community-based Organization (or People Organization – PO) in Pijit province has been involved only at the later stage, especially that of dissemination of the successful results of their efforts.

Other main actors: Old wise men in the area, Khaow Kwan (Sacred Rice for Guardian Angel)⁴ Foundation, local Agricultural Promotion Unit under the supervision of the Ministry of Agriculture and Cooperation

Story:

Rice, cereal grain of the grass, has the botanical name as *Oryza sativa*. It is native to tropics and subtropics of Southeast Asia, especially, the deltas of the great Asian rivers. Rice is cultivated mainly for the grains which form an important part of diet in many countries, especially in Asia. Rice consumption mostly goes into direct food uses. More than 50% of the world population consumes rice as staple food.

To all Asian countries, rice is life. Thailand has been known as a “Rice Bowl of Asia”. And it has a “rice culture”. However, thousands of indigenous rice varieties are at risk of being replaced by a few modern improved higher yield commercial ones. This not only poses a threat to biodiversity of rice varieties but also to the social and cultural aspects of knowledge of traditional rice farming and environmental conservation including their worldviews and values attached to the “rice culture”.

The modern commercial varieties are produced by hybrid rice technology. Rice harvested from these hybrid varieties, though with higher yields than the indigenous varieties, cannot be used for replanting because hybrid vigor is lost, resulting in lower yield and non-uniform crop stand. Then, the condition creates dependency on buying new seeds for each next planting season with the aim of making profits from market-oriented sale.

But in the case of the inbred (indigenous) rice variety, its flower contains both male and female organs, hence, it can self-pollinate and produce seeds that can be replanted (Fernandez, 2004). Some examples of the indigenous varieties of rice in the Central region are Leung On or Mild Yellow, Khao Agart or White as Air, and the modern varieties officially promoted are such as Gor Khor 1, and Gor Khor 2 (it is like saying AB 1 and AB 2, no special characteristic implied nor meaning attached to the names).

⁴ Khaow Kwan or Sacred Rice for Guardian Angel signifies that rice is revered as sacred offering to the angel

In Nong Payom village, Pijit province, central plain of Thailand, Sinchai Boon-art a young man, with minimum formal educational background, returned to his hometown in 1999 as a result of economic crisis. He observed that the farmers in the village where he lived with his wife's family spent large amount of money on rice farming every year, but with minimal income. Expenses on chemical fertilizers were the biggest part of the production costs. He tried to find ways to use homemade natural fertilizer to lower the cost. He got a lot of advice and information from local agricultural officials and books. And he tried them all. Though it did not work, Sinchai never gave up.

After his own trial-and-error and empirical observation in the fields, he hypothesized⁵ that commercial seeds were technically and chemically treated from the start. So, they acquired the taste for chemicals and did not thrive on natural fertilizers.

Where could he find the commercial *Khaow Ploog* or rice seeds for planting that would have simple appetite for natural fertilizer? This was the main first question.

Another frustrating reality he discovered was that most of the farmers did not grow the indigenous varieties they preferred to eat. Instead, they bought, because they had to save space for growing commercial varieties that gave higher yield for better income from the flour industry. Sinchai thought that this was absurd for a farmer to have to buy rice for family consumption.

To persuade other villagers to grow the indigenous rice varieties for their own consumption to save money, he must find a way to improve the varieties to give a much higher yield. And he knew he had to prove it by himself, using himself as the example that it was possible. What could he do to deal with this problem of indigenous varieties before demonstrating to everyone? This was the second question.

Together with a few villagers, he, with these questions in mind quested for knowledge by reading, talked with the old wise men in and out of his

⁵ He used the advice on natural fertilizers and pesticides gathered from officials and local people on his wife's family plots. He divided some plots for the chemical uses, and some for the experiment of the new knowledge he gathered. Though, he was not a scientist, his conclusion was based on his own action and observation in the field. Later, one scientist he met confirmed his observation that it was scientifically sound. His background in agriculture might contribute to his ability in making detailed observation about plants.

village, and travelled everywhere in search of knowledge. The wise men they met taught them how to identify indigenous rice varieties. The indigenous varieties were grown in limited areas. The grains from the rice mills were often mixed up and this made it difficult to identify each variety. Sinchai told that only old men who had more than 40-50 years of rice farming experiences could identify the seeds just by looking at them. So, most of these experienced people are in their 60s and 70s. The old wise men they met also told them some traditional formula for natural fertilizers, pesticides, and how to deal with some common rice diseases. It was the knowledge that came with traditional value and cosmological belief.

The next step, they went to agricultural officials to ask for more advice on both indigenous and commercial rice varieties. The answers did not open any door to solution. They were told that most of indigenous rice breeds had not been improved for about 90 years. And the seeds in the seeds bank were old and lost their vitality. And for their problem with commercial varieties, it was just like that and there was no other way to undo what the companies have done with the seeds. The authorities told them that the commercial seeds were prepared by the companies. Therefore, they could not help them. Even faced with these disheartening answers, Sinchai and his friends did not lose faith and hope.

From reading agricultural magazines and word-of-mouth, Sinchai came across a name that would change their destiny. They went after that name to meet Daycha Siriphat, a retired agricultural scientist who now runs Khaow Kwan (Sacred Rice for Guardian Angel) Foundation in Suphanburi. It is an NGO which focuses the movements in promoting sustainable agriculture, especially rice. It has established “*Rong Rien Chao Na*” or School for the Farmers. He provided answers to all their questions, including encouragement to go on.

Daycha⁶ taught them a simple way to regain hybrid vigor of the commercial seeds for the next planting season. He advised them to replant the commercial seeds for at least 7-9 generations to regain 80 per cent of the hybrid vigor. From each generation, they must select healthy grains for seedlings. And he demonstrated an innovative way of propagating the seeds using low cost and low-tech methods to produce

⁶ Daycha Siriphat is from a well-to-do family in Suphanburi. His family has a rice mill. So, he is familiar with and has knowledge about rice. He used to work for the government as agricultural consultant official. He entered a Buddhist monkhood for a while and after that, his worldview changed and he entered NGO work to promote sustainable agriculture. He has extensive knowledge in rice through his family business, his work and training abroad in many countries.

high quality *Khaow Ploog*. Daycha taught them how to germinate the seed without its husk. It was the way villagers had not done or known before. This technical knowledge seemed impossible for them at the first glance.

This simple technique was the only way to select the best seeds to produce seedlings for the next crop. They had to remove the husk (to see the inside grain) with great care not to break the tiny part of the rice that would germinate. If the rice was healthy it would have a full grain without any white defect on its “belly”. However, Daycha encouraged them to try this technique with their local varieties back home.

After two days and one night learning the technique, they came back to their village and experimented by themselves and were surprised at the success. One perfect healthy grain would yield about 132 young sprouts. Each young sprout would grow and give an amount of 1 liter of healthy grains. This was one liter of *Khaow Ploog* or rice seeds for planting. This amount would give enough seedlings for 1 *rai* (about .40 acre). And the yields out of these seedlings grown in one *rai* were 70 vats (105 kilograms, one vat = 15 kilograms) of rice grain. The yield was even 10 vats higher than popular or commercial varieties. They had practiced this knowledge by themselves to be able to demonstrate to other villagers. They expressed that if the villagers did not see the outcome of the experiment, they would be laughed at to talk about this quite strange technique.

From this success and experiences, Sinchai reflected that the mass media had a strong influence on how farmers would find solution to their farming problems. Villagers usually saw in the commercial advertisements the chemical fertilizers and pesticides as solutions to their daily agricultural problems. When they had problems they chose to go to salespersons in the city that had no knowledge of rice or soil. “They (merchants) live in the city and I believe some have not seen or touch rice plants in the field”, said Sinchai. These chemicals were expensive and harmful to the soil, environment and importantly to the health of farmers. He once asked the farmers why they did not want to grow rice of their own consumption. They told him that besides the lower yield of local varieties, they were afraid of the chemicals they used on the rice. They knew somehow the danger but they had to use them in the process of farming. They liked to buy rice because they did not see how it was grown. So, not seeing, not fearing.

With strong determination to make a difference in the way of living, they have been sharing the acquired knowledge ever since among other farmers through networking and mass media. Sinchai and his team work closely with Sang Tawan Group, a community-based organization. They regularly organize “*Waythee Kon Tam Na*” or “Stage for Rice Farmers” to share and exchange ideas and experiences in all aspects of rice farming among their community, farmers from other provinces and regional and national networks. For example, they go to other village community meetings to talk about their experiences in order to promote self-reliance for a better and healthier life. At the national level, local people who work on improving seeds quality have formed their local networks and gather in regional and national meetings a couple of times a year. Sinchai and his friend’s idea is to create working change agents for self-reliance, called “a volunteer to promote changes for self-reliance.”⁷

Their movements and success have caught the attention of local and national mass media. Since their works are known, they obtain good collaboration to communicate about their success. They also have been working through formal and non-formal educational systems to share their knowledge and experiences. They give talks for school children. They work closely with Provincial Non-formal Education Center. They also work with a regional higher education institute, Naresuan University, which is a regional node of the Thailand Research Fund, for wider network in knowledge sharing. They have just started a two-year project to share this knowledge and practice to 50 farmers in other villages of Pijit.

Now in their area, farmers grow indigenous rice varieties for their own consumption almost ten percent of the farm land. The yields are as high as the commercial ones. And for producing *Khaow Ploog* seeds of indigenous and commercial varieties, there is growing number of farmers using the technique. Sinchai urges villagers to produce *Khaow Ploog* because it is almost four times more expensive than normal rice for consumption. Through all the networks mentioned, mass media, and word-of-mouth, more farmers from other provinces know about their work and come to his village to find advice from Sinchai and his group.

⁷ In Thai it is “*wittayakorn karn plian plang peur karn peung ton eang*”, in short form – *Wor Por Or Pak Prachachon*. It is to mimick official training activity called *Wor Por Or*, which is offered by the Institute for Defense of the Kingdom. This kind of local volunteers is not unique or limited only to this case. It is the concept promoted by NGOs or POs around the country. The recognition that change is vital for their survival and self-reliance motivates them to multiply number of local people to share and walk in the same perspective.

Sinchai asserted that “I welcome all kind of knowledge. Modern knowledge of biotechnology like GMO could be useful. However, in Thai rural communities where farming is still a main occupation we still have many methods and knowledge in plant improvement to be re-discovered. This knowledge has already existed in our communities, though long forgotten. It is suitable to our lives that we can be self-reliant and re-create relationship among our people in rural community. We don’t need a very hi-tech knowledge now; only low-tech one can help us solve the problems. We don’t have to rush for accepting GMO. It is urgent for us to rethink about our lives in the modern era. We have to dislodge the debts caused by dependency on chemical uses and be free from them. That’s the main objective”.

Sinchai is rather open-minded. He does not assume a fundamentalist attitude and oppose new technology of GMO. He only shows the strong value of self-reliance and self-confidence in prioritizing the problems they are facing and ability to draw on local knowledge and appropriate technology suitable to their problems and conditions.

Daycha (Khaow Kwan Foundation) gave a lot of insights into the situation of Thai farmers. He has been working with farmers for almost twenty years. He said that most rice farmers today are badly in debts without hope to be free or self-reliant. Their status in the old days was recognized by society as “the backbone of the country.” But today with modern discourse when referring to rural communities, rice farmers’ status was reduced to “the grass root people.”⁸ He continued, “You know? Grass is a weed in the rice field that the farmer has to get rid of. Where is his dignity when he can be just the root of a low weed in the field? The farmers usually don’t like this term.”

Even worse, now all the popular rice breeds have identification numbers, such as *Gor Koh 1*, *Gor Koh 2* and *Hom Mali(Fragrant jasmine) 105*. Rice is reduced to just a “thing” with number, without spiritual dimension, no more value and respect, no need to treat it delicately with gratitude. In a traditional Thai family, children would be taught to eat the last grain of rice on the plate to show respect not to throw away rice like a waste in an unthankful manner. And certainly, stepping on the rice is a bad gesture or even a sin. To the Thai cultural belief, rice has a sacred goddess called “Phra Mae Posop.” There are many ceremonies to celebrate everything concerning rice farming in each stage the whole year round. For example,

⁸ Grassroots is the term used by international NGOs and is introduced to the development of rural community context by local NGOs in 1980s.

when the seeds are approaching their full stage to develop into complete grains for harvest, we say that the rice is at “pregnancy” stage (In the Central region it is called by the name of a white delicate flower – *Plub Plueng*). There is a certain ceremony to please her like it is done to please and honor a pregnant woman (in the old days). “We forget to treat our land and our rice with respect. And now we are having lots of problems”, Daycha concluded.

He talked about a recent movement that the Ministry of Agriculture and Cooperatives in promoting organic farming nationwide. He viewed that it was only a superficial act without sincerity or understanding. Most officials still believe in chemical uses. And there is a lack of research or study to understand the mechanism of local methods in natural fertilizers, pesticides and effective micro-organism in agriculture. Importantly, it holds no clear objectives or goals to enable farmers to be self-reliance. Their attitude and gesture in working with rural people are those of the superior to the inferior and less clever. The agricultural extension officials still have the outlooks of capitalism and reductionism scientific mentality and compartmental thinking. He pointed that “Working with villagers on an unequal basis leads to no success.”

He sets the goals for his work that rice farming would be chemical free. Then, the farmers would learn to produce and develop their own natural fertilizers, pesticides and use micro-organisms (Phantawutthiyanond, 2005) in various farming stages. And they would know how to improve and create rice varieties of their choices. He wants to see that farmers have alternatives and can break away from dependency on outside factors. He believes that it is essentially important to hold views of soil, plants- especially rice, and rivers as “mothers”. “When we think of them as mothers, we will do anything with better care and respect. And we don’t need to say much (to the farmers) on how to treat them (natural resources). So, change a paradigm of thinking first, and anything else will follow”, Daycha mentioned.

Daycha raised a question that, “Have you ever found anywhere that there is a big market demand but people don’t want to provide the supply? The market for organic agricultural produces is expanding domestically and internationally. But most mainstream agriculturists do not respond to this trend. “If they don’t change their paradigm of thinking, it is impossible to turn them into organic farming”, he pointed. He said that Sinchai was the exemplary case. Sinchai was even a big step beyond farmers in Suphanburi. And he was going to take the participants from his “School

for Farmers”⁹, established by the Foundation in 2003, to visit Sinchai in Pijit for an opportunity to talk, share and exchange of knowledge and experiences.

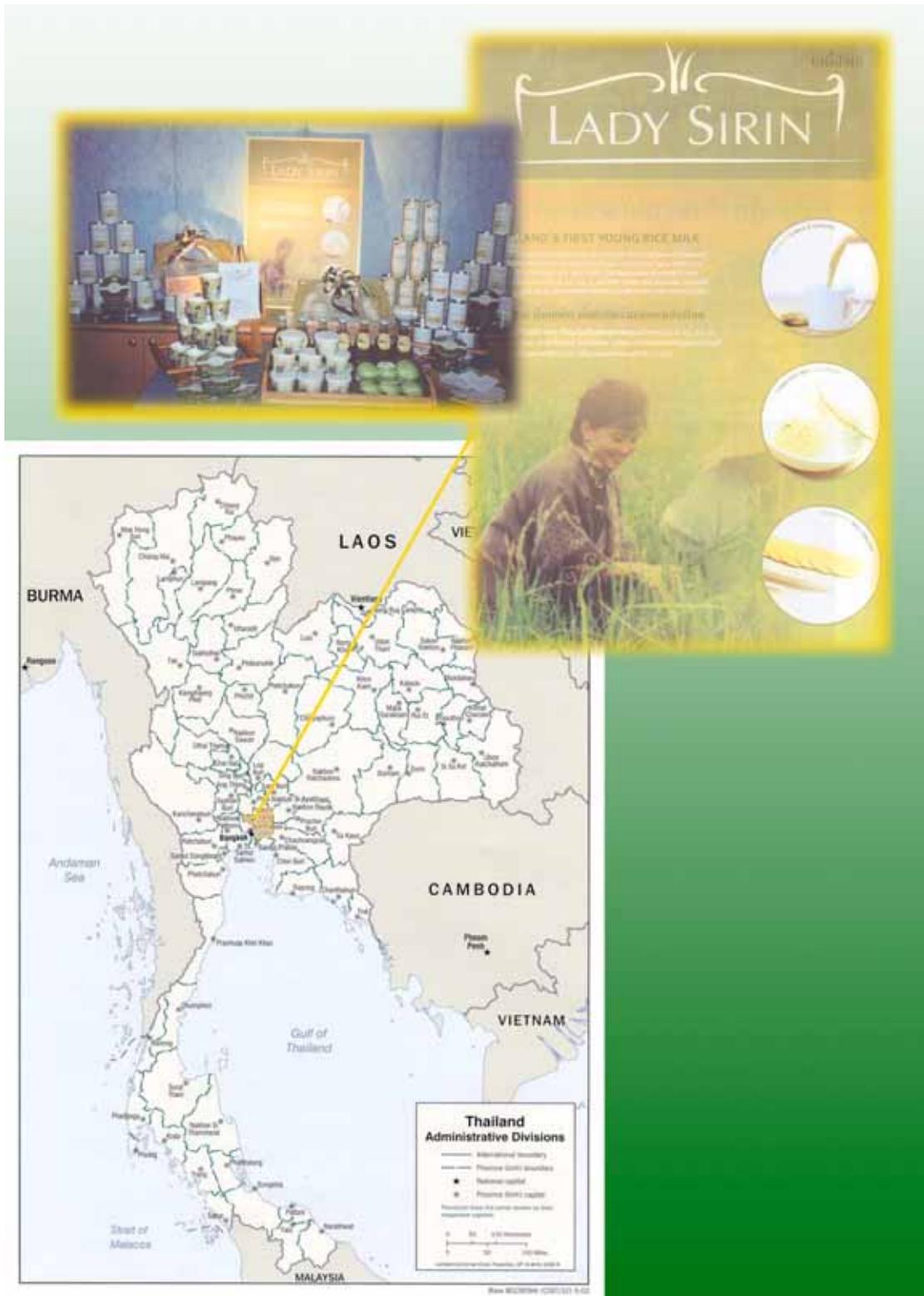
Daycha and Sinchai still keep in touch. They meet from time to time to share and learn from each other. And sometimes they take their “students” on a study visit to each other’s site. There are more people working like them in many parts of the country. The sharing and learning is done on all levels, though not in big groups or number, at community, provincial, and regional levels. And once or twice a year they would gather at a national level.

⁹ School for Farmers has literally three-stage curriculum beginning from the easy step to more and more difficult ones. The first stage is to learn how to use herbs in substitution of chemicals for pesticide. Though, chemical fertilizers can still be used, but not encouraged. The second stage is to learn how to produce their own bio-solution using effective micro-organisms collected from the wild in their local region in substitution of chemical fertilizers. At this stage, farmers have to quit using chemical pesticides and chemical fertilizers entirely. And the third stage, it aims at empowering farmers to depend on themselves in rice breed development and selection (not depending on government or seeds companies).

According to this curriculum, Sinchai’s case has shown that he is rather advanced in his effort.

2. Creative Rice Products

Location: Pathumthani, Ayutthaya, and Bangkok/Central



Contact: M.L. Sirin Rongsong, Managing Director, P. Green Herb (2001) Co.,Ltd.

83/116-117 Ngamwongwan Road, Bangkok 10210
Tel. 66-2-589 7171

Time / Duration of Data Collection: 2004

Aspect(s) of Local Wisdom: Ceremonial and traditional food and drinks from young rice

Aspect(s) of Modern Science and Technology to match: food manufacturing, food science

Initiator(s): M.L. Sirin Rongsong

Main/current Occupation of the initiator: Business woman

Previous Occupation(s) of the initiator: Fashion designer, local candidate for Member of the Parliament (MP)

Disruptive moment(s): At the initial stage, the economic crisis and political failure forced her to look for another business opportunity that would be unique, innovative and made entirely from local ingredients. Hence, “Lady Sirin”, Thailand’s first ready-to-drink young rice milk and other products from young rice milk.

First three years in young rice milk business was the period of trial-and-error. Young rice milk is temperamental, and she has lost millions in the beginning. She wanted to find a way for longer shelf life of her product in order to widen the market.

At present, she wants to increase scale and variety of production for domestic market and export. And to adapt the products to meet contemporary life style of the customers requires knowledge in food manufacturing and food science.

Facilitator: None

Other main actors: Farmers, who participate in the contracted farming to provide young rice as a raw material to the company,

Food R&D Institute, Kasetsart University-KU,
The National Genetic Engineering and Biotechnology Center (BIOTEC)
of National Science and Technology Development Agency- NSTDA,

Story: The economic crisis turned ML. Sirin Rongsong's life around changing her from a high-flying fashion designer to a small business out of Bangkok and involving farmers. She was born in an upper class traditional family that had been working for the royal family. The title 'ML or Mom Luang' signifies a royal line connection equivalent to 'Lady'.

Sirin studied fashion design in France in 1982. When she returned to Bangkok she opened a small boutique. Her fashion background brought her immediate success, but when the crisis hit she faced financial difficulties due to a decrease of customers. So, she was eventually forced to close down. She then in 1996 tried a brief political career by being a provincial candidate for Member of the Parliament (MP). It was not a success.

But she never gave up the idea of starting over. Her experiences with rural communities while she was trying her political career inspired her to do something that could involve them. She decided to look at businesses that concentrated on local raw materials.

Sirin had her deep impression with the lush green rice fields and the waving golden strands of rice seeds in the wind. In her childhood, her family of a royal service used to make young rice milk on special occasions for the royal family. Young rice milk have long been known for over two thousand years since the era of Lord Buddha. It used to be a ceremonial and religious offering. And in Thailand in the old days when rice was grown only once a year, young rice milk was a special drink to offer to the monk as a good merit. In addition, it was believed to prevent illness caused by the change from the rainy season to winter.

In the beginning of 1997, she began the research with Food Research and Development Institute, Kasetsart University. And the P. Green Herb Co.,Ltd was registered in 2001. M.L. Sirin provided scientific fact of young rice grass. It is the raw material of young rice milk that appears in the company's document "The Legend of Young Rice Juice" (2004):

" ... Thailand, due to its geographical location, has one of the best atmospheric environments in the world for rice cultivation, which since

ancient times, has only been known as a staple crop that is sold domestically and exported as polished and unpolished grains. Young rice grass juice is a new product developed from the young rice at the “early milking stage” of grain fertilization. The infusion of advanced Food Science and Technology with ancient indigenous wisdom in the preparation of health foods has enabled the development of young rice grass juice from 100% natural agricultural produce....”

When the rice plant is young, it looks like familiar lawn and field grasses. It is leafy and has a deep green color. For over fifty years, researchers have known that the cereal plant, at this young green stage, contains many times the levels of vitamins, minerals and proteins found in the seed kernel, or grain product of the mature cereal plant. The taste of young rice grass leaves varies slightly with the species of cereal plant. But the nutrient content of these grasses varies with the stage of growth and growing conditions, rather than with the species of cereal grass.

Rice grasses pass through several stages as they grow to produce their seeds (the grain kernels). A specific sequence of growth events takes place as the plant develops. Each stage is essential; the basis for each stage is the cell quality provided by the preceding stage. In order to survive, rice grasses develop unusual resistance to grazing animals. Rice plants evolve their unique property of jointing. The jointing stage is that point at which the internodal tissue in the grass leaf begins to elongate, forming a stem. In the early stages of growth *they store large amounts of vitamins and proteins in the young blades*. If these are bitten or pulled off, they grow again. Rice will give seeds to reproduce itself only if it is left alone at the final stage of growth.

Laboratory analyses clearly indicate that the nutrients found in young green cereal plants vary with the stage of growth, rather than with the age or height of the plant. Chlorophyll, protein, and most of the vitamins found reach their peak concentrations in the period just prior to the jointing stage of the green plant. Although *this period lasts for only a few days*, cereal grasses which are consumed as food supplements should be harvested precisely during this stage of the plant’s development.

Young rice milk is not boiled rice water, but pure milk extracted from Thai rice at its healthiest stage of rice milk period, known as *plub pleung* (a name of a certain kind of fragrant Lily-like flower). The farmers also call this as ‘pregnancy’ stage of the rice. At this stage, vitamins and minerals are at their peak which will result in fine, young rice milk products. From scientific research on young rice milk, it is found that it

contains high nutrients and vitamins, for example, vitamin A, B1, B2, E, dietary fiber, magnesium, calcium, protein and iron. It is an organic product with no fat nor cholesterol, and GMO free. The young rice grain, comprising the husk, nose, coat and milk, is ground with pandan leaves to enhance its aromatic flavor. After that the liquid is filtered, boiled and stirred for the right effect. Three percents of the volumes of brown sugar is added to enhance the flavor before being bottled or dehydrated for use in other products.

In the beginning, Sirin started with a single product, seven employees and bought rice direct from farmers in Pathumthani. The first recipe of young rice milk was from an old village woman named, “Pa Prayong” or Auntie (older sister of a father or mother) Prayong. With limited fund, she camped out at trade fairs. The product was first introduced under her own brand name “Lady Sirin” at the fair at Thailand Cultural Center in mid 1997. At that time, the process of making young rice milk was done totally by hand – from grinding the grains to boiling and selling. Her bottles of young rice milk with their Xeroxed labels sold well and the problem was one of meeting the market demand. If not consumed right after freshly made, it needed the right temperature to store. And it could not be kept for a long period.

In late 1997, with the help of Food Research and Development Institute, Kasetsart University, they found a way to make young rice milk to have a long shelf life. They also developed various products from young rice milk. The nutritional value and versatility of young rice milk enables it to come in a wide range of shapes and forms. In addition to ready-to-drink young rice milk, products are dispensed as young rice milk powder, and mouth watering young rice milk cookies, croissant, crackers, dumpling and low fat ice cream. With the recession and people’s enthusiasm for local products and health conscious trend, she found the perfect answer to the public’s needs.

These innovative products received a strong media attention and interest from trade fairs visitors both Thai and foreigners. She said that it was beyond her expectation to receive such a warm welcome. Her company has also received technical assistance from the National Science and Technology Development Agency (NSTDA), and the Thailand Institute of Science and Technology Research. And for other kinds of support the Thailand Research Fund, the Department of Industrial Promotion, the Department of Export Promotion, and the SME Bank take an important role.

The young rice milk business also contributes to job creation for farmers who are the backbone of the country. Her young rice, as raw material, comes mainly from contracted farms in Ayutthaya and Pathumthani as well as partly from her own farm. This business of young rice milk which uses the grain at “pregnancy” stage (3-month old) allows a year round of rice farming to ensure sufficient raw material to feed the factory. At this stage, rice is usually highly fragrant so it attracts pests. Hence, harvesting at this stage prevents pest disturbance. Sirin added that the perfect stage for harvesting this raw material took only a few days and needed skilled farmers, usually 40 years’ old and up, to do the job. These skilled farmers would know the right time to cut and to handle the rice.

It is also a response to His Majesty King Bhumibol Adulyadej’s address expressing concern for the wellbeing and improvement of the farmers’ livelihood since they form the large majority of the country’s population. She stresses the importance of non-chemical uses and harvesting by hand to keep the grain at its best. She is concerned for the consumers’ safety and health. She wants them to enjoy nutritional sustenance from young rice milk, produced from the paddy fields that has been meticulously cared for, free from chemicals and made out of cultural value and ancestral wisdom.

“It is crucial to have profound knowledge in all dimensions of the products. And we must keep in mind the honesty to the customers. Morality must precede profit”, she affirmed. She continued that as the first young rice milk business in Thailand and also in the world, quality was above all to win confidence from the customers. This business is in the SME category. In every trade fair she is always around her booth to talk directly with the customers and present her products. The quality, designs and packaging of her products, coupled with her charismatic personality as an icon of her products help in product positioning and marketing. She is always dressed in Thai silk and style. Her office and booths give an image of life in a green rice paddy. (Everything concerning her products and her dressing give different shades of green.)

Products under “Lady Sirin” brand have received many recognitions and awards. For example, one of the top-ten products in BOI 2000 Fair, held by the Board of Investment, First Prize of “OTOP Ayutthaya” in 2002; and one of the “Outstanding SMEs” of 2003. In 2004 her company has been selected, among other 7 SME companies, to have a subsidized rental space for her pilot plant in Thailand’s Science Park, National Science and Technology Development Agency (NSTDA). She works closely with

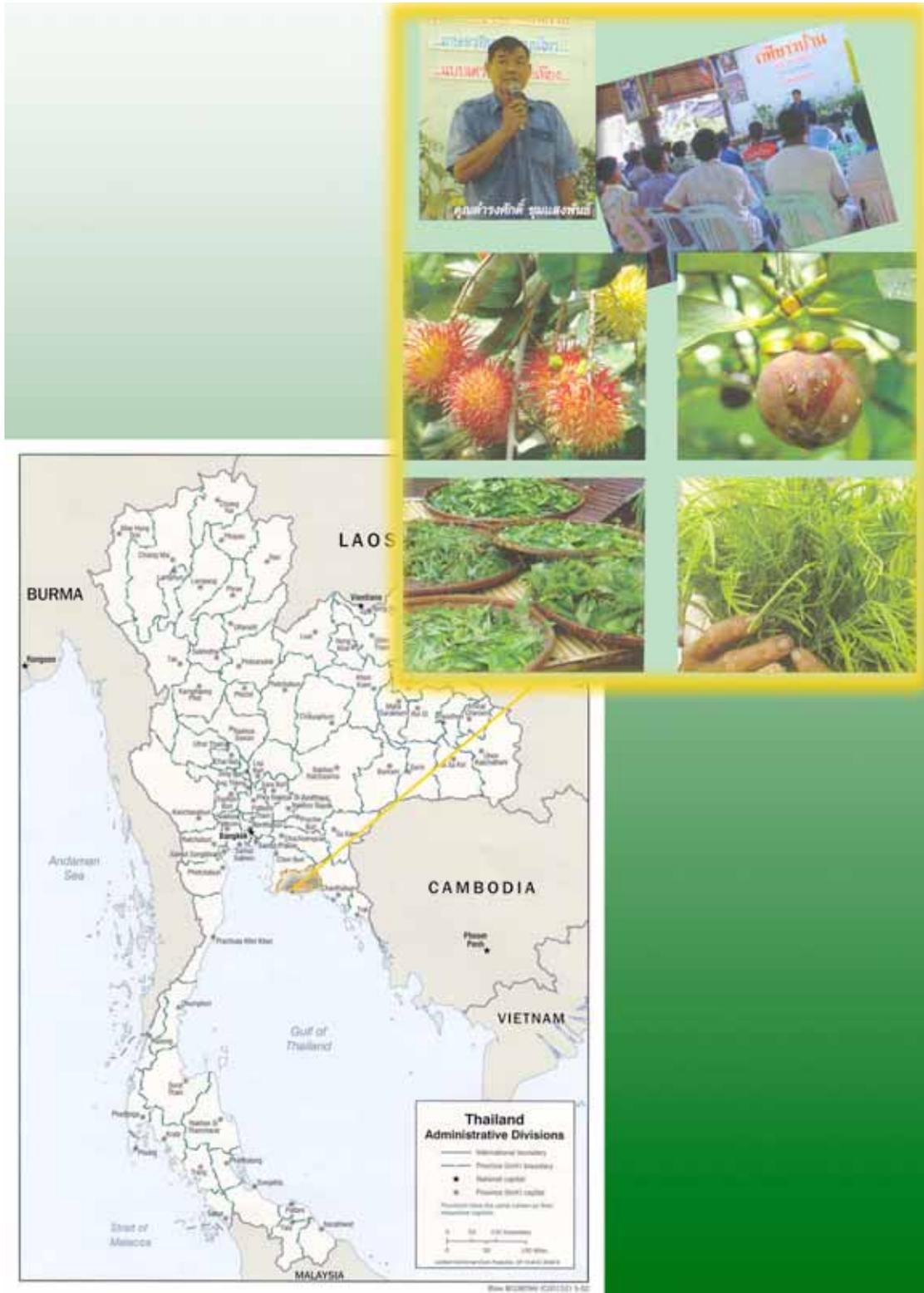
experts and researchers from the National Center for Genetic Engineering and Biotechnology (BIOTEC), NSTDA in developing new product lines, for example, young rice milk dietary supplement in capsule, rice wine and cosmetics from young rice.

After she participated in the trade fair THAIMEX-THAIFEX 2003 there came some followers. In the States there is a rice milk drink called “Rice Dream”, and also in other names in Italy and Australia. But she smiled when talking about this phenomenon “I am not afraid because we think they cannot produce young rice milk up to our quality. They even used polished rice. Though, America has the technology, they don’t have “rice culture” as we do. We have the knowledge of rice based in our long established culture for thousands of year.”

In one of her participations in international trade fairs abroad, she was approached by a European businessman who asked her about the possibility of selling young rice milk to his company to make a health drink mix under his brand. Sirin politely refused. She revealed that, Thailand was known as the world’s number one rice exporter. So, anything concerning rice, especially young rice milk, should come from Thailand. It was the pride of the country. “I realized that if I could make value-added products it would be far better than just exporting rice. And I am proud to take a tiny part in helping the farmers, providing premium quality products for Thai people and bringing foreign currency from what I can export,” she concluded.

3. Herbal Uses and Integrated/Organic Farming

Location: Payoop sub-district, Wangchan, Rayong Province/ East



Contact(s): Mr. Damrongsak Choomsaengphan
Baan Samoon Prai Thai, Payoop sub-district, Wangchan,
Rayong
Tel. 66-1-938 8189, 66-1-991 9717

Time / Duration of investigation: 2004

Aspect(s) of Local Wisdom: Herbal medicine, integrated and traditional organic farming

Aspect(s) of Modern Science and Technology: Food safety, GMP standard, production of plant hormones, fertilizers, insect repellants, and organic farming

Initiator(s): Damrongsak Choomsaengphan (or Mor Gu – Doctor (Healer) Gu as local people called him), now 61 year's old.

Main/Current Occupation(s) of initiator: agriculturist, herbal folk medicine healer (he learned about herbal traditional medicine from his father's students as his father passed away since he was just 3 year's old. He offers the service free of charge as his father did.)

Previous Occupation(s) of initiator: sugar cane and tapioca farming, herbal folk medicine healer

Disruptive moment(s): He had engaged in monocrop farming on sugar cane and tapioca as promoted by the government for many years until 1995. Then, he was tired of insincerity and exploitation from the business and government systems. He got rid of all sugar cane and tapioca plants in his plantation of 160 *rai* (about 40 acres) to grow big trees, fruit trees, rice, herbal plants and to raise fish in big ponds. And he still kept his herbal traditional medicine practice for good cause. He continued the use of chemical fertilizer and insecticides.

He is knowledgeable in herbal uses to cure poisonous snake bites and other ailments. He has been famous and well respect as he has saves many lives around his area from deadly poisonous snake bites. He was frequently invited to talk about herbal uses and his treatment. After he changed to integrated farming practice, he met an academic who talked

about organic farming in one of the seminars in which he participated. It struck him so much that it made him re-think his medicine preparation and his farming practice. "...It made me think that I am a doctor to help people. But I have given my patients poison or toxic (from chemical uses) into their mouths. Because I use chemical fertilizers and pesticides for the herbs I grow. The plants absorb and store them in their parts. Though I would dry my herbal plants to prepare for the medicine, they still have residues that my patients will take eventually. So, I decided to turn to organic farming methods for all things grown in my land," Mor Gu said.

Another reason that added to his decision was the fact that his family sold their vegetables to the local hospital. The health officials advised him to use organic method that would make it suitable to sell his products to the hospital. Also the sad personal experience to see his brother died of cancer made him think about the harmful effect of chemicals used in their farming practice.

Facilitator(s): None

Other main actors: his family (He has a big extended family. There are about 26 persons living in his farmland. Only a few are workers. Everybody helps in different ways in running the farm and other activities.),
local hospital,
provincial officials from the Department of Agricultural Promotion,
network of local traditional healers in the area, visitors and the media.

Story:

Damrongsak's father was a Chinese traditional healer who migrated from China. And he lost him since he was 3 years' old. Though he could not remember much about his father, he always heard people talk highly about him especially of his kindness and proficiency in curing. His father provided cure for village people without charging any money. It made a good impression and inspiration for Damrongsak to follow his father's step. So, when he grew up he began to search for his father's students who lived in many places. He learned about his father's knowledge in herbal medicine and curing from them. He made a record and later integrated it with knowledge he acquired from many other local healers. He was an eager person who wanted to learn about everything around him.

Most farmlands in Rayong are in forest areas and far from hospital. There, live plenty of poisonous snakes of many kinds. Each year many villagers lose their lives from deadly poisonous snake bites. One incident that made him confident in the healing effectiveness of herbs was a direct experience. When he was 17 years of age, his dog was bitten by certain kind of deadly poisonous snake. His dog was at a near death condition. Then, he decided to use a certain kind of herb widely known as having counter-poisonous effect. He ground the plant and mixed it with distilled local rice whiskey. And he mouth-spraying the solution in the face of the dog because it was in such a bad condition that it couldn't swallow anything down its throat. In less than one hour the dog was better and back to normal. This experience confirmed him on the effectiveness of herbal uses in curing poisonous snake bites.

He is famous for curing poisonous snake bites. He has knowledge in more than 200 kinds of herbal plants to cure different poisonous snake bites. He said that different kinds of snake bite require different kinds of herbal plants to be used. Regularly, he uses about 20 kinds of herbal plants to cure certain kinds of snake bites in his area.

Since he had the knowledge and experience in herbal folk medicine, besides earning a living from his farmland, Damrongsak has made his knowledge in herbal medicine useful for local villagers in the area for a long time, hence the name 'Mor Gu, (Gu is his nickname). In 1992 he participated in the government project on "Basic Health for Community" by attending a training course on folk medicine organized by Provincial Public Health Office. The project's important objective was to enable the community to take care of its own basic health issues using traditional medicine practice and local resources.

After the training, Damrongsak or Mor Gu was inspired to help more people and to enable villagers to be self-reliant. He persuaded other local traditional healers to establish a villagers' hospital called "Center of Herbs and Folk Medicine at Wangchan District Level" in 1994. Presently, there are 23 local healers and other staff to provide healing with herbs, Thai massage, traditional medicine production. It is a place for one-stop-service where villagers can come to have help for simple illness.

This center has received cooperation and advice from the local public hospital in the production of herbal medicine in terms of preparing raw materials and the production process.

After he learned about organic farming, the concept interested him so much. He was determined to turn down chemical farming entirely, because he did not want his patients and his customers to take the chemical residues in his herbal medicine and fruits and vegetable from his farm. He also turned his farmland into learning place for everyone in organic farming and herbal plants of more than 600 kinds. He named his place *Baan Samoonprai Thai* or “the house of herbal plants that set life free”. He explained that the word “Thai” that he used was not the same word that mean “Thai” as a nation, but a word with same pronunciation, and a little different in spelling that meant “independent”.

He continued that knowing about herbal plants was vital to live on a basis of self-dependence in every aspect. He and his family grow their own food. Some are sent to local market to bring in cash. From food to medicine, they get them all from their farmland. He has also sought modern knowledge from modern academic institution in producing organic fertilizers, and insecticides. His wide and profound knowledge in herbal plants enables him to identify strong characteristics of each herb and integrate his knowledge and the modern one to work together resulting in unique formulas of his own. Raw materials from herbal plants are from his own ground.

He has given up using chemical entirely since 1999. He has as many as 7 organic formulas of homemade protection (from insects and diseases) and nourishing solutions for different kinds of plants. For example, his herbal insect repellants come in 3 formulas. Each formula has many kinds of herbs, unlike the market organic insect repellent that uses mainly neem and citronella. The market formula is said to be not so effective, maybe because insects are familiar with it and could develop resistance.

His method of organic farming is also unique. From the entrance of his farmland to his house, rice is grown among citronella, big trees are giving smaller ones underneath some shadows, rows after rows of vegetables is waiting to be daily picked up for the market. Fishes are swimming in the pond not far from vegetable plots. Bushes of herbal plants are here and there. Everything is green and healthy in his land. He explained that he let herbs thrive in his garden freely. “I want to create a natural ecological system. I grow many kinds of herbal plants to confuse the noses of insects. When the insects’ noses cannot identify the smell, so they don’t come to disturb trees and plants in my land,” Damrongsak proudly told his visitors.

Changing from chemical agriculture and monocrop practice to organic and integrated farming practice is not an easy task. First it requires thinking out of the square, daring to be different, as many scholars working with community development have said. But doing this also requires that the new perspective could allow them to make a (good) living. Most mainstream farmers who do not want to change to this new possibility are afraid of 3 main obstacles. First, they do not want to appear as a black sheep. Secondly, they think that organic/integrated farming give low yields and cannot provide a good living condition (higher product = more income). And lastly, they are afraid that if they are the only one to practice organic farming in the area, it would be the weak ground which invites pests from the neighbors to attack their crops. They believe that organic insect repellants are not strong enough to keep their crops in control.

Damrongsak expressed his opinion about these concerns and questions. He revealed that the problems as such never occurred to him. With a kind smile he talked about these issues, "...I don't have any problem. I changed to integrated and organic farming because I was so fed up with the systems (business and government). To be self-dependent is very important. I didn't pay any attention to how others would think about me. My first lot of organic vegetables to the market was so profitable because I knew how to prepare the soil before planting. So I got good quality product in high quantity too. And I studied the market situation. It is important to study relevant factors in what you are doing." And for the last question about if pests from other farms would come to attack his crops he said, "My different formulas to repel insects are very efficient. The strategy is, never use the same formula for a long continued period. The insects will get familiar and build their resistance to it. I use different formula each week, together with the herbal plants I grow among other trees and plants help to confuse the bad insects," he explained.

Once, a big group of about 100 young students¹⁰ was visiting him, and he gave a lively talk and demonstration of how to make organic insect repellants, then let them walk and run to enjoy variety of trees and plants in his land. He said that it was very important to cultivate the right concept to take care of the environment and ourselves. The children were enthusiastic to see that simple plants they did not usually pay attention to could be useful. And they asked a lot of questions.

¹⁰ Author's visit to his house on 25 September 2004

His house always has visitors. Diversity of herbal cool drinks is offered to visitors from the products of his farmland. For example, a beautiful pink drink from boiling certain herbal bark that is good for blood the system, and a drink from tamarind juice that is rich in vitamin C. If sometimes lunch is required, rice, fish and vegetables will be from his own farm. It is said by local people and visitors that fruits and vegetables from his land look and taste much better than those from the market. When asked what he has done to make them taste so good, he humbly replied, “I just mimic the forest.” It cannot be any better answer than this. “Because organic farming is all about learning from nature. There is always diversity in nature that can be useful and harmful. We have to observe well in order to adapt it to use in our farming,” he said. It is always a visit that gives food for the mind and body, most of his visitors thought.

Damrongsak has never been tired of sharing his knowledge and experiences with others, from young school children to practitioners in nursing, officials from public health organizations, universities, and even visitors from abroad such as from Japan and Taiwan. Mainly the knowledge he has shared is basic knowledge to use herbs, herbs for curing poisonous snake bites, herbs for holistic health nourishment and curing, herbal uses for integrated and organic farming. Now he puts more focus on herbal uses for integrated and organic farming. He also opens his house for a home-stay learning and training with a minimal cost for food and accommodation. But if one has time to stay and learn, with no money, one can help with routine work in his farmland and learn the trade at the same time.

His outstanding determination and contribution to his community and society has earned him a number of awards:

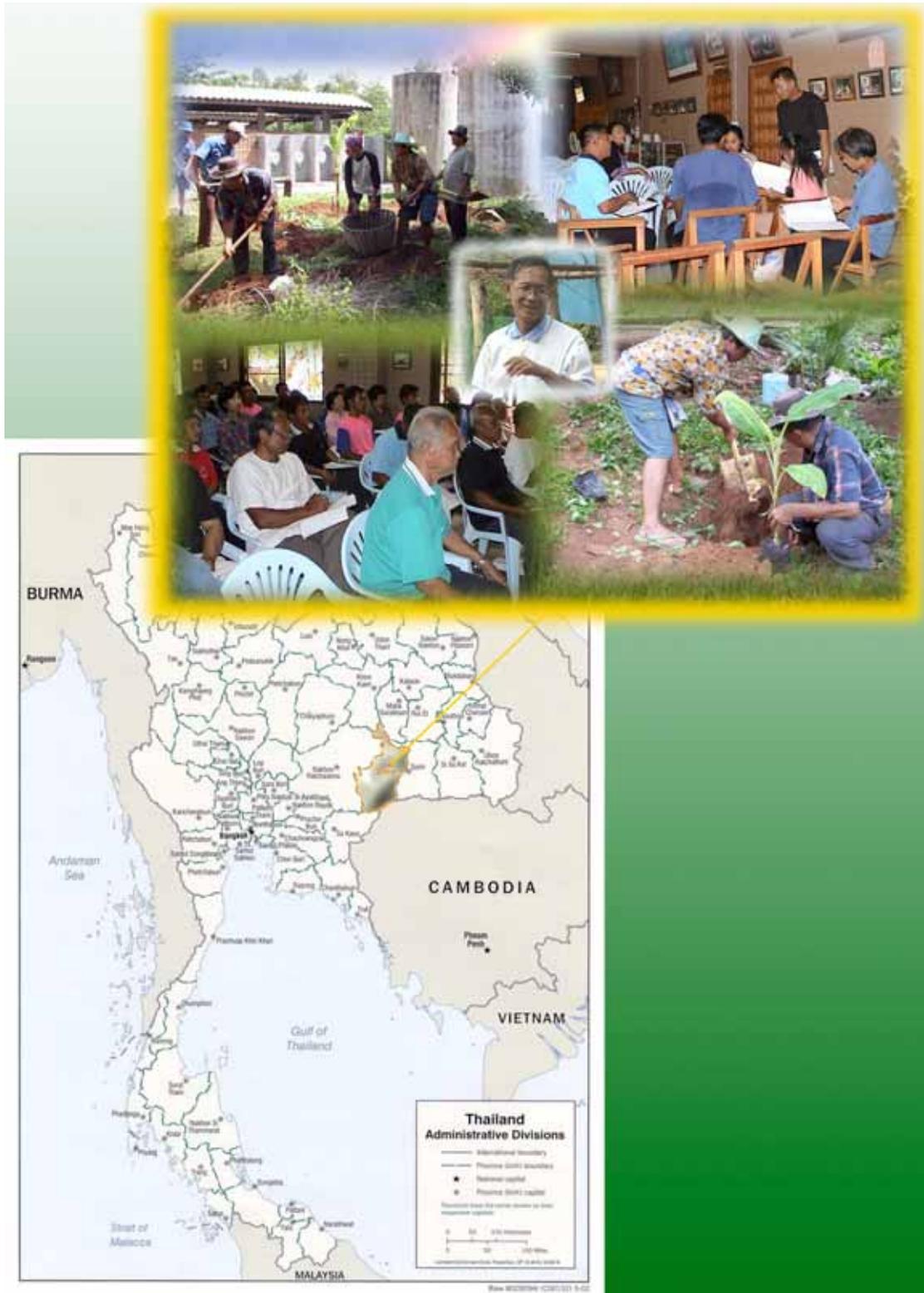
- 2001 Two awards on Thai Herbs Quality Certification from the Department of Medical Sciences
- 2002 Six awards on Thai Herbs Quality Certification from the Department of Medical Sciences
- 2002 Certification on “Products from Thai districts , the Pride of Our Land”
from Agriculture and Cooperative Bank
- 2003 Official recognition as a “Thai Local Wisdom Teacher in Thai Traditional Medicine”, awarded by the Office of the National Education Council, the Ministry of Education

He concluded that to know what was sufficient for life and not greedy was the foundation. Sufficiency means having something to share with

everyone. It is the Buddhist way. Everybody is welcome at his place. “Waytee Chaow Baan” or “Stage for Villagers” is always open for anybody to come, share and learn together.

4. Soil Replenishing: From Sky to Earth Project

Location: Satuk Village, Burirum Province / Northeastern



Contact: Mr. Sutthinan Prachayaprut, Founder,
Local Wisdom and Northeastern Community Institute,
34 Baan Pakchong Village, Sanamchai Sub-district, Satuk, Burirum
31150
Tel. 66-44-782313
Fax. 66-44-681220

Professor Vijarn Panich, Director,
Knowledge Management Institute 23rd Floor S.M. Tower, 979
Phaholyothin Road, Phayathai Bangkok 10400
Tel. 66-2-298 0455, Fax. 66-2- 298 1009
<http://www.kmi.or.th>

Time / Duration of Data Collection: 2004

Aspect(s) of Local Wisdom: Agriculture

Aspect(s) of Modern Science and Technology: Agriculture/ Soil

Initiator(s): Cruba (teacher) Sutthinan Prachayaprut (56 years old)

Main/current occupation of the initiator: Agriculturist within the practices of agroforestry and integrated farming since 1977. He has been recognized for his good practices and his virtue. Villagers call him “cruba” or “teacher” to acknowledge and honor his contributions to rural communities. And he has been awarded national and international recognitions since 1991. For example, as a National Outstanding Agriculturist in Agroforestry in 1991, an award from FAO in Outstanding Accomplishments in Tree Farming in 1992 and in 2001, an award from the Office of National Education Council, as Thai Local Wisdom Teacher in Agriculture (adaptation of Appropriate Technology).

Previous occupation of the initiator: After his secondary school education, he had to leave formal schooling to help his parents in farming (rice and short-life crops) for awhile. Then, due to his health he moved to another province to open a pharmacy for a few years. And finally in 1977, he moved back with his family to his hometown in Satuk, Burirum practicing agro-forestry and integrated farming.

Disruptive moment(s): Cruba Sutthinan is a non-stop learner and highly creative. He is quite successful in his integrated farming in a total area of 700 rai (about 280 acres). He shares what he knows to other villagers everywhere without withholding anything. In 2003, the Knowledge

Management Institute (KMI) provided him with a grant and advice to run a development project focusing on knowledge management for sustainable development. Cruba Sutthinan, as initiator/coordinator and facilitator of the project, looked around and thought about “soil”. In the northeastern area it is known that land is so dry and losing fertility to the point that it is not sufficiently productive to make a good living. Mostly young generation would leave for jobs in factories in big cities. He discussed with the informal village wise-men network about problems of the communities in terms of farming and quality of life to be self-reliant and free from debts. They concluded that they had to work on two main problems of *infertile soil*, to revive its fertility; and *not enough land*, to make a living. Hence, the mission of “From Sky to Earth Project”.

Facilitator(s): Cruba Sutthinan and KMI

Other main actors:

Northeastern “Kreu Khai Praad Chao Baan” or village intellectual (wise men) network,

About 100 families/villagers in Satuk who participated in the project,
Governmental units such as the Department of Agricultural Technical Information, Department of Land Development, Department of Agricultural Promotion, and

Dr. Sawang Rauysoongnern, the technical consultant on soil development from Khonkaen University (regional university)

Story:

One Year of “From Heaven to Earth” has proved fruitful:

The farmers in northeastern part of Thailand have been facing low productivity of their crops and low market prices for many decades. These are main problems they have to cope with against all odds such as drought and soil infertility. Cruba Sutthinan pointed out that mono cropping that came with modern development did not contribute any better standard or quality of life to rural communities. He found that with mono cropping, at the end of the year there was almost nothing left, not worth doing. Even worse, the sizes of the plants grown were getting smaller and smaller. “When the crops we used to grow are getting smaller so is our future”, Cruba Sutthinan thought. When he foresaw the doom future, he asked himself, “How can we deal with these problems?”

When he discussed the problems with friends and people he knew from an informal village wise men network, they agreed that these problems

were also the questions for the whole community. They even considered them the questions of all northeastern communities. The next question was, “What do we have to know to survive and to live well too?” Many meetings and dialogues among village intellectuals network reached the conclusion that *it was vital for the community to solve problem of deteriorating and infertile soil*. If the soil is not in good condition for agriculture, it is the end of everything. Good earth enables good farming, rendering a good living. “To live well, and to live with dignity, we must have knowledge of soil as a foundation,” they stressed.

First, they began with seeking knowledge from older people in the villages. Visiting and meeting face to face, they asked questions such as what kind of plants they used to grow, how they grew them, how to make them productive and in good quality, etc. This allowed access to tacit knowledge embedded within elderly persons. The sharing of space and time brought stronger sense of community, and re-created relationship among villagers to have something in common to talk about, to exchange and to share with each other. They said that normally they rarely visited nor talked to each other because they did not know what to talk about.

Then, they met in informal meetings to tell and talk among themselves about their farming, earning and economic condition of their families, problems with land, how they tackled the problems by themselves, and what problems that needed outside help. This was a learning organization. Participants were learners. Through meeting and sharing they formed a learning network. They talked, listened, observed, and got their hands dirty learning by doing it themselves. Working together, they found experts of many kinds within their villages who could be “teachers” to others. For example, a ‘duck teacher’ who was expert on duck, and a ‘corn teacher’ who was expert on corn growing, etc. Cruba Sutthinan asserted, “Knowledge from experiences has flavors, lively and interesting. And people are proud that they have something to share with others.”

And in response to the question raised by villagers in common that, “*We don’t have (enough) land to make a living*”, he wanted to demonstrate that it was not the matter of size of the land, but rather the knowledge that would help make a good use of the land. Minimally, a village family would have at least a piece of 5 *rai* land for farming. So he designed a land plot of only one *rai* or about .40 acre to prove his concept that anybody could do. He called this plot “*Plaeng tam kaset praneet*” or a plot for a fine and well-thought-of farming. It was a plot that provided multi crops using organic farming methods. He could plant 50 kinds of

trees, rotating vegetables more than 25 varieties that gave fresh vegetables to the kitchen to feed at least 200 visitors each month the whole year round. And there were some left that they could sell at the market or make processed food. This plot was used as training and group learning site.

“From Sky to Earth Project” focused on soil knowledge management and relevant issues on sufficient economy and organic farming such as animal husbandry, production of farm animal food, herbal insect repellants, and making processed food from agricultural produces. The project had 5 learning bases in 5 villages within Satuk district. Each learning base would have twenty participants, including a group leader. Members of each learning base would set aside a plot of one *rai* for “*plang tam kaset praneet*” in their land as an experimental site to find ways and means to given or problematic issue (arisen from the group meeting). Members would experiment in their own land and brought the processes and results to be discussed in learning base meeting at the group leaders’ place before entering the central meeting at Cruba Sutthinan’s place.

Cruba Sutthinan said that the project allowed the participants to tackle the issue of soil in all dimensions. Within one year they used different processes to acquire bodies of knowledge in all forms from observing nature, finding local wisdom from older people, discussion and sharing of experiences among participants, organizing open forums for academics from governmental agricultural units to give lectures, asking researchers to run laboratory tests for soil, leaves and rice qualities, collecting existing documents, arranging study visits to outside locations, providing training sessions for additional income generating vocation, promoting information searching from the internet, and keeping on seeking foreign advice and assistance.

At the monthly meeting, each member was encouraged to talk not only about what they knew, did not know, and wanted to know but also their *feelings* and *opinions* towards knowledge they had and lack. They had to talk about their experiences in soil improvement in each stage – before, during and after the action was taken. Cruba Sutthinan would guide them on what activity was needed to be carried out. For example, to collect soil and leave samples from each one’s land to send it for a soil test in the laboratory, to interview each member (by the base leader) of what they needed and felt, and to run a contest or experiment from each one’s land on given issues such as a contest on growing Thai melon, or an experiment on how to create fertile top soil. Dr. Sawang Ruaysoongnern from the Faculty of Agriculture, Khonkaen University would provide

relevant academic knowledge and scientific process for each activity for them to be able to explain also their local knowledge into academic system and dimension.

Cruba Sutthinan realized the limitations of the mainstream agricultural system. It responds to capitalism and consumerism to promote monocrops of high quantity production in a fast way. It is a paradox in itself – to produce a lot in a fast way means damage to the soil and environment as chemical fertilizers and pesticides are required. Then, the land will become less and less productive which is called “dead soil” by the villagers. “It is like a corpse, more severe condition requires more chemicals to pump its life up again, but only for a short re-live,” Dr. Sawang made an analogy in talking with villagers. Most villagers also felt that the mainstream system also led them to nowhere but deep into a big debt each year. Ironically, Cruba Sutthinan talked from his experience that alternative agricultural practices such as integrated farming, sustainable agriculture, or anything else in those perspectives other than modern monocropping deemed difficult to sustain themselves. They (alternative agricultural practices) needed a management system to be sustainable.

Cruba Sutthinan advised and enabled all members to create natural capital from agriculture that promoted self-reliance and sustainable environment. Then they could continue searching for additional vocations. For example, for household industries, members would learn to make compressed bricks of clay and cement, and skills in construction, or for animal husbandry. Or they would learn how to select animals, how they could be raised, how to produce animal food. They gave importance to learning about marketing and how to make processed food from agricultural produces. With regard cultivating their own crops, they would learn how to acquire and magnify knowledge in making *plaeng tam kaset praneet* into bigger space. They can learn new techniques in plant improvement. Or they can learn how to use herbal plants for traditional medicine, or for cosmetics and toiletries productions. Regarding herbal plants, there is a joint research between villagers and Department of Agricultural Information and Department of Agricultural Promotion on growing prime quality herbal plants.

“From Sky to Earth Project” received a large media and public attention. Their sites became study visit attractions from people all over the country. Exchange learning through visits allowed a transfer of knowledge, and sometimes learning materials. For example, a group of visitors from the north sent them a package after they went back. It was an exchange of

the seeds of maize, gourd, cucumber, indigenous vegetables of northern highlands, and mountain rice. They had grown them in the demonstration plot to learn together. There are no other ways, except learning by doing. It also offered an opportunity for young people in the villages to participate by monitoring the experiments, and making record for project report.

From this case study, we can see that a simple down-to-earth beginning to study “soil” the basis for farmers’ life has grown and branched out into diversified activities. It is a very good example of “integrating knowledge for better knowledge”. And it is also an outstanding example of LW and MST in action. In this project, academics and researchers were invited to participate in their meetings that made possible the exchange and sharing, and creating what Cruba Sutthinan called the “knowledge bridge”, between them. This dynamic activity offered a new perspective for academic professions to change from doing R&D between academic units to between academic units and villagers for a real mutual learning and mutual benefit reflecting on and resulting in real life of the community.

Cruba Sutthinan commended, “We can learn both from what we have done right and what we have done wrong. Knowledge in traditional farming has virtually been lost. We don’t really master new knowledge that is pouring in. We don’t have a profound understanding, nor don’t know the whole truth, just a half of it. We are in the stage of adjusting our old set of knowledge to newly imported one. Actually, we should develop both our own knowledge and somebody else’s knowledge, working on them, adapting, and developing them until they become a new, unique knowledge of our own.”

Within one year, this project proved that the impact of knowledge creation/management in community activities allowed villagers to re-think what had happened and used it as a lesson learned. Learning was done upon previous experiences keeping in mind the “sufficient economy” concept initiated by His Majesty the King.

Here are some examples that resulted from experiments within 5 learning bases of “*plang tam kaset praneet*” (Knowledge Management Institute, 2003). The issue given was *how to improve infertile soil*. As many as a hundred methods were brainstormed and put to actual tests in each one’s “*plang tam kaset praneet*” at home. The methods were different among one hundred participants. However, members of all 5 bases would

discuss strength and weakness of each method to exchange and share their experiences monthly. Finally, there were many sets of knowledge about soil in all dimensions which had sprung out of just one question. The results are desirable as diversity is encouraged.

Putting in all wastes for making good earth: It was the method to revive the land by Por Sompong. (Por literally means father but also an honorary language to call elderly man) Por Sompong was a member of the learning base at Ban Somkob village. He imitated nature's way by letting everything rotten back into earth. He collected leaves, all kinds of weeds, including cows and buffaloes' wastes to put in his farm land. As he had no cattle of his own, he had to collect them from the village road at dusk after all neighbors took their cattle home. He was given name as "the garbage collector" of the village and was insulted as a weird person. He never gave up but turned insults into inspiration to prove his ideas by his achievement.

Por Sompong said that he found the tips of checking soil condition by accident. It happened while he was walking in the plot to see how things were going at the end of the day. He had put his heart into replenishing his plot for quite some time. As he walked, he felt his legs were dampened. He bent down to touch the ground and found that it was cool (damp). Then he tried touching on unnourished plot, it was hot (dry). A comparison was, thus, made on both grounds. And cool ground yielded high productive crops. Now, his land has become a rich cotton field partly filled with some big trees as well as home-grown vegetables – all in a symphony. Today, he earns daily income from his farm produces.

Soil from 5 powers: This was a formula for soil replenishment that was developed by members of Ban Nongdum village learning base. Teacher Prasong Art-han, the group leader, together with his members, told his story that this land was dug from a pond and was improved by adding *leaves, husk, manure, mud and water hyacinth*, and let the compost stand. This method can be used to improve even the most infertile soil.

Simple top soil re-creation: It would be too long to let the nature recover itself. All members of all 5 learning bases have tried to re-create top soil by simply imitating the nature. They laid the foundation with dry small branches and barks, and covered it with manure and straw and put dry leaves on top. Microorganism may be added to speed up the decomposing process. Leave it for 3 months. The pile will be crumbled when degrading. Home-grown vegetables could be very well grown on this soil. All

learning bases have succeeded in using this method in their own plots. They brought their produces to share among themselves every month.

Deep ditches and big trees: At Ban Saeng Chan learning base, with Pairat Chuensri, a teacher in local school as the base leader, together with his members had a different method. They dug the earth a long row of one meter's depth. Then, they put dry branches, dry leaves, manure and weeds in the bottom of the ditch, finally covered it with soil. All these organic wastes would soon decompose underneath. Pairat said that soil prepared with this method would allow the roots of the plants to easily grow and absorb nutrients at their best.

Also at Ban Saeng Chan learning base, members discovered that planting big trees at the first stage of soil replenishing was an efficient method. They used big trees that were drought resistance to plant first in the plot. The leaves would fall onto the ground beneath and accumulate nutrients from the leaves within the soil. Pairat indicated that even though the north eastern land is too dry and not suitable for planting, it could still be revived by letting the nature healing itself. First, trees must not be cut down. Then, he suggested that as many trees as possible be planted in order that the fallen leaves would be accumulated as soil nutrients.

Dr. Sawaeng, the project consultant, concluded that these experiments by the villagers showed a strong evidence of sustainable soil management. He added that it was important to use different kinds of trees as the core system to revive and retain soil fertility in a short and long term. Remarkably, the actual learning by doing let the villagers to see by themselves that their future is in their own hands. From malnourished land that almost nothing could cultivate it turned into fertile ground on which anything could be planted. Baan Saeng Chan village was an outstanding example. Today, anyone could see that there are peas and fishes in the rice paddies, big trees on paddies' dykes, big red ants also abundant on the trees (villagers collect their eggs for cooking and selling as delicacy). Even under the shade of the trees there are many kinds of vegetables to be picked up everyday. This villagers' masterpiece is indeed the research for real life.

Today, the participants in this project have practical knowledge that enables them to help themselves to be self-dependent. The peaceful environment has come back and so has the dignity of the villagers.

CHAPTER 9

Case Studies (2): Traditional Medicine

Introduction:

Traditional medicine refers to health practices, approaches, knowledge and beliefs incorporating plant, animal and mineral based medicines, spiritual therapies, manual techniques and exercises, applied singularly or in combination to treat, diagnose and prevent illness or maintain physical and spiritual well-being.

Countries in Africa, Asia, and Latin America use traditional medicine (TM) to help meet some of their primary health care needs. In industrialized countries, adaptations of traditional medicine are termed “Complementary” or “Alternative”. (WHO Fact sheet N#134)¹¹

Traditional medicine has been practiced in every corner of the world since dawn of humankind. It has maintained its popularity in all regions of the developing world and its use is rapidly spreading in industrialized countries. However, traditional medicine is based on a different philosophy from modern medicine and has a different cultural background.

Historically, from existing evidence on drug usage by various ethnic tribes, it may be inferred that the inhabitants of the Indochinese

¹¹ <http://www.who.int/mediacentre/factsheets> Retrieved 2 November 2004

Peninsula must have developed their own systems of traditional medicine long before the advent of Sukhothai Kingdom – the first establishment of the Thai nation in 1238. More historical evidence from the Ayutthaya Period (1350-1767) pointed toward an integrated system of medicine incorporating the Indian derived Ayurvedic system and the Chinese system amalgamated with a deep-rooted belief in the supernatural, mystique and cosmology (Saralamp et al 1996).

In recent decade, Thai traditional medicine has gained increasing attention through attempts to find alternatives to modern medicine to cure diseases without side effects. It also represents a meaningful linkage of the past and the present stemming from the natural resources of the locality and wisdom of self-reliance of ancestors.

People in Thailand have been relying on traditional medicine through the practice of various groups of traditional medicine practitioners and their efforts to conserve these traditional practices from becoming extinct. After being outlawed and neglected for almost a century, a traditional, especially folk or indigenous medicine has been recently revived. An overdependence on imported medicine and medical technologies has also been a factor contributing to the fading of traditional medicine from Thai society. The government has also tried to frame policies and laws to promote and encourage local knowledge related to traditional medicine which has been passed on through generations.

Presently, Thai traditional medicine has regained a momentum and been officially acknowledged through institutionalization, the Department of Thai Traditional and Alternative Medicine Development, in 2002. Through studies and research and development efforts, better understanding of its validity, efficacy and safety has

been acquired. It is recognized as a “system”, not just the knowledge of herbal remedies. However, modern science and technology have made it possible to develop herbal plants into various products. It is also widely popular and becoming big business, especially those used in “spa” treatments and combined with traditional knowledge of massage.

Two case studies have been selected within the area of public health, traditional and herbal medicine.

5. Folk/ Traditional Medicine and Local Healers of Lanna (Northern Region), Chiang Rai Province/ North: The case study shows the revival of the ancient knowledge of the Northern folk medicine by the revision effort for the first time after almost a thousand year of its existence in the region. The revision not only provides understanding of the folk medicine system of the North but also opens the way for traditional medicine and local healers to be a part of the National Health Reform Act.

6. Alternative Medicine and Herbal Products Development of Chaophya Abhaibhubejhr Hospital, Prachinburi Province/ Central: Herbal medicine and herbal products have been increasingly accepted by the public. This case study offers insights into how knowledge of herbal plants has been put to use in modern forms while still respecting local people, “the owner” of the knowledge. Modern science and technology allow wide ranging development of herbal products and more knowledge of its efficacy and safety enabling the traditional/ alternative medicine system to co-exist with the modern

medicine in the public service system for the true benefit of local people.

Contact: Dr. Yingyong Taoprasert

Director, School of Traditional Medicine and Alternative
Medicine

Rajabhat Chiang Rai University, Chiang Rai, THAILAND

Email : STM@ricr.ac.th Phone : 66-53-703 388

www.Lannadoctor.com

Time/ Duration of the Investigation: 2003-2004

Aspect(s) of Local Wisdom: Traditional/Folk medicine

Aspect(s) of Modern science and technology (MST): scientific procedure in how knowledge is created and documented, medicine and pharmacology, and plant taxonomy

Initiator(s): Dr. Yingyong Taoprasert

Main/current occupation of initiator: professor and researcher

Previous occupation of initiator: academic/ researcher in various national and international projects. For example, the Royal Project on Agriculture for Poor students' Lunch in remote areas, ASEAN Food Habits, a project with UNESCO on Culture and Health, etc.

Disruptive moment(s): From working with rural communities through various projects, Dr. Yingyong, a scientist by profession, saw many aspects of local wisdom within each community, from the issue on food to health and medicine. And it gave him a different perspective from before. He found that Thai traditional medicine, especially-northern folk medicine, despite its high potential for primary health care, was not well developed and was instead marginalized by contemporary society. And the knowledge has almost lost. He was born in the North. And he has some background training in Chinese medicine and high-land tribal medicine. So, he felt that it was his duty to take the problem into serious attention.

When he investigated the issue of folk medicine of the North, he found two main problems. First, the knowledge was scattered, deteriorating, and some of it has been lost. Older people who practiced traditional medicine were very old now, the condition that might result in a loss of the knowledge forever. It was an urgent need to collect and revise before it would be too late. And secondly, folk medicine was the local community health care system for the poor, but the status of the healers was not acknowledged as legal profession.

Facilitator(s): Dr. Yingyong Taoprasert

Other main actors: Local healers of Lanna,
Regional Thailand Research Fund Unit,
Provincial Public Health Office,
Rajabhat Chiang Rai University,
Ministry of Public Health, and
Chiang Mai University

Story:

Like traditional medicine in any place of the country, the body of knowledge of folk/traditional medicine systems of the North has not been studied, validated nor systematized in order to make it available as common reference in written text and ensure its safety. It has never been revised for over a thousand years. Until 2000, the School of Traditional Medicine and Alternative Medicine of Rajabhat Chiang Rai University has been funded by the Thailand Research Fund to run a research program in response to the need of the country and the national policy on public health that modern medicine system cannot accommodate.

Professor Yingyong Taoprasert, a medical anthropologist and Director of the School of Traditional Medicine and Alternative Medicine, has assumed an important role in initiating and coordinating this research program. It consists of a series of 15 research projects within the northern region which is called “*Lanna*” or the *land of million rice fields*. His innovative concept, leadership and hard-working in operating the program has contributed to the success of the program.

The Government has set the direction and policy on a national health reform that opens more space for Traditional Thai Medicine (of the Central), Folk Medicine (of local communities in every region) and Alternative medicine. It aimed to modify as well as combine traditional medicine to modern knowledge of Western medicine. This research program is the unique first step to develop local tacit knowledge of folk/traditional medicine systems into a systematic academic and explicit perspective to make it scientifically verifiable, legally acceptable and transferable to the future generations.

Usually, traditional medicine is criticized for its lack of theoretical development. And when development took traditional medicine in its

path, the stress is mostly on the technical aspects and the herbal uses for curing diseases only. Modern development rarely considers the holistic approach which is the core philosophy and practice of traditional medicine on multi-dimensional aspects of human life, community and nature. When theoretical explanation is needed, it has to use scientific ones, which are based on different principles or theoretical frameworks. Hence, focusing merely on the technical aspects was the obstacle to the progress of traditional medicine development.

The revision of local healers' knowledge has taken into account the participation of about 60 local healers of the North in 8 upper northern provinces and relevant actors from modern knowledge approach such as doctors, public health personnel, distinguished social opinion leaders, researchers, and experts. It was to collect and streamline the body of knowledge and experiences of local healers. There were more than 50 workshops arranged for local healers to come to share their experiences, examine, discuss and compare their knowledge among themselves. The ancient texts containing herbal drug recipes in Lanna language were also re-examined.

Por Mor (Father healer) Surachart Rakmanoot, Por Mor Som Chantarit, Por Mor Samran Mafoo, and Por Mor Chan Tamakaew were the core leaders within the revision activity. (And they continue to work with Dr. Yingyong after this program ended.) They said that the revision had not been done for almost a thousand year. And they were proud to have a role in this effort. They stressed that traditional medicine was more like an elixir which promotes health and prevent diseases. It was integrated in all aspects of life. Wellness of body and mind was from harmony and being good to others and nature. Modern medicine, on the other hand, was more focused on repairing and suppressing the illness and it was business oriented. This was the point that also set these two systems apart.

“Traditional medicine focuses on balancing health. It tries to get rid of excessive things in the body, re-create what is lacking and detoxify the body system,” said Por Mor Surachart who seemed to be the most senior in the team. A local healer is respected as the mediator of this present world and his/her ancestral great teachers. So, it is highly important that he/she is a good person and respectable in the eyes of others to deserve the honor. Money given to a local healer is minimal. It is not supposed to be the curing fees, but rather a way to pay the “teacher(s)” of that local healer.

To many modern people in big cities, traditional medicine seems a hocus pocus thing or things for rural and uneducated people who live in remote areas. During personal communication with the author, Dr. Yingyong expressed his opinion on this issue that it was like in other professions where you could find good people as well as crooks. As a trained scientist and insider of the local communities, he knew how to identify the good people to be selected to work within this research program.

Finally, the tacit knowledge within local healers and explicit knowledge from the ancient texts were synthesized into a system that could be compared to modern knowledge and translated into Central Thai language. This systematized knowledge of Lanna folk/traditional medicine offered the philosophy, concepts, theories to explain health condition, causes of diseases, their diagnosis, disease systems known to local healers, and processes in caring. Therapy did not only stress physical aspects but also the ritual one, as well as the uses of herbal medicine, food and diet. Moral behavior was an indispensable element in this perspective of folk/traditional medicine.

When local communities were aware of the importance of folk/traditional medicine, they were also concerned about the loss of herbal plant resources. So, local resources of medicinal plants are revived, and conserved for a sustainable use. This would not happen without engagement of local community in the research process. The movement in two villages of Pa Dad district, Chiang Rai province was a good example. There are public hill slopes at Roeng Chang and Pa Ngae village. There, in the past, abundance and variety of herbal plants were for community uses. The villagers called it “*Mon Ya*” (*Mon* = hill, *ya* = medicine) or “Medicine Hill”. The findings from research data collection showed that the types and quantity of herbal plants were decreasing at an alarming rate. Some important herbal plants had long disappeared and some began to disappear. Since they were aware of the importance of folk medicine and herbal plants they wanted to do something together to revive their treasure to be communities’ herbal resources. They received financial support from local authorities and learned some modern knowledge of the medicinal plants from provincial health care officials. They also wanted to establish a community learning center to educate their young people about these herbal plants and to enable the villagers to propagate herbal plants for communities’ business in the future.

Por Mors or local healers were asked why the knowledge must be kept secret from people outside the family. Usually, the passing down of knowledge will only be within the family. They clarified that it was kept secret because some knowledge, for example, knowledge on the use of herbal plants, could be dangerous since the plants could be poisonous and could be used in a wrong or bad way. And in the old days when there were wars with neighboring countries, some knowledge could fall into the hands of the enemies. It was for good reasons to restrict the transfer of this traditional medicine knowledge. So, the knowledge of traditional medicine will only be passed on to good persons or persons that are known to be good and trustworthy. The learner or the student has to prove that he or she deserves to inherit the knowledge.

Dr. Yingyong pointed out that health caring in Thai society was a culture-bound perspective. It is composed of attitudes, beliefs and values within the Thai culture. This norm for taking care of health is called the “health culture”. Traditional medicine takes the “Good health approach” while modern one looks to “Sick health approach”. The “Good health approach” holds the cultural dimension in the way people live their life from birth till death. Healthcare and cure focus more on people than the disease. Hence, good health physically and mentally is promoted to prevent sickness. In case of falling ill, curing is a matter of attainment and of maintaining for the equilibrium of body and mind, while the modern one focuses more on providing treatment to cure the disease only.

Folk/traditional medicine has still continued to be the system that has important role in health caring at local community level. The research program also arranged collaborative work between local healers and mentor researchers. Groups of local healers were classified by their specialization and expertise to work on 10 case studies. Researcher mentors worked closely as assistants to observe and record data and information in these in-depth studies as a way to verify the knowledge of folk medicine.

Knowledge acquired from this research program has been integrated into communal texts to be used as references in 4 volumes :

1. *Theory of Lanna folk medicine* : This communal text focuses on beliefs and concepts in explaining human health from birth to death, and from the results of actions from the previous-present and to the next life. There is explanation on causes of illness, the systems of

diseases. This holistic approach takes health care as an interconnectedness of physical health, mental health, social and spiritual health.

2. *Lanna Folk Pharmacology*: This communal text is about health care by way of food and herbal medicine. For example, Lanna herbal plants of more than 400 kinds, principles and methods of Lanna pharmacology of local healers, including a large number of drug recipes.
3. *Lanna Folk medicine/Physical therapy*: There are as many as 23 methods for physical therapy collected in this communal text, including the famous Thai traditional massage.
4. *Lanna Folk medicine/Ritual and Spiritual Therapy*: This volume talks about health care by way of mind, society and spirituality. There are about 35 methods specified in this communal text.

The revision of this body of knowledge on folk/traditional medicine was multilateral active participatory processes. Especially, the collaboration with the National Health System Reform Bureau, together with different levels of health congresses, and the strong public trend in the resurgence of local wisdom and a view of health with natural approach, all these factors have led to a remarkable impact. Dr. Yingyong specified that this process of revision of Lanna folk/traditional medicine assumed the role of ‘actor’ as well as ‘receiver’, so the impact at the policy level and its implications have been adopted far and wide beyond expectation. He raised three main points of the impact and its implications as follows:

The revision of the body of knowledge in folk/traditional medicine helps clarify the systems of Local Wisdom. Thus, it opens space for society to accept the diversity of health care systems. This movement establishes folk medicine as one of the alternatives to national health care systems as declared in National Health Declaration. In responding to this declaration, the Ministry of Public Health revised its structure and established a new department, the Department of Thai Traditional Medicine and Alternative Medicines Development. The policy and strategies of integrating Thai traditional medicine into the public health care services at all levels from sub-district to provincial hospitals are implemented. And a mechanism and system to legally endorse the right and status of local healers have

been established. The government has also worked on mechanism for uses and protection of this knowledge.

The preventive and holistic approach of traditional medicine for primary healthcare allows independence from the old way of using only Western medicine that costs more. Gaining more knowledge of traditional medicine and combining it with modern technology will also enable the improvisation of herbal medicine for more usability in many forms that have potential for a larger market in the country and also for export.

The revision of the body of knowledge in folk/traditional medicine provides a systematic and academic perspective on this ancient knowledge. This encourages higher educational institutions to adapt the knowledge into curriculum at the bachelor and graduate degree levels. Especially, at Rajabhat Chiang Rai University, where Dr. Yingyong is the Director of School of Traditional Medicine and Alternative Medicine, study programs at the bachelor and graduate levels on Thai Traditional Medicine, Lanna (Northern)Folk Medicine, and Tribal Medicine since 2003 are offered. Local schools at the primary and secondary levels also include the study of traditional medicine in their local curriculum.

The revision of the body of knowledge in folk/traditional medicine gave rise to a common platform for local healers from every region to meet, exchange and share their knowledge and experiences. It has given birth to local healers networks: northern local healers' network, and other region network including tribal local healers' network. This raises the awareness of lowland and highland communities to conserve, to continue and to transfer the use of folk/traditional medicine to the future generations. A more integrated society in term of relationship is created. Traditional medicine is encouraged for public uses nation-wide. Sharing of this knowledge is formally organized within educational institutions at primary, secondary, and higher education levels. Different actors are aware of their roles in these important activities.

A sense of pride on the national and cultural heritage helps raise the status and popularity of traditional medicine systems and better understanding of local knowledge systems.

This is one of the research programs/projects supported by Thailand Research Fund under its research mission in "Research for Local

Community”. It encourages local community to involve in research project and action that is relevant to their context in various issues.

6. Traditional Medicine and Herbal Product Development of Chaophya Abhaibhubejhr Hospital

Location : Prachinburi province/Central

The collage features several key elements:

- MOMORDICA CHARANTIA (ขมิ้นชัน)**: A product box showing the plant and a bottle of capsules. Text includes "ตำรับสมุนไพรพื้นบ้าน" (Traditional Herbal Recipe), "สมุนไพร" (Herbal), "สมุนไพรพื้นบ้าน" (Traditional Herbal), and "ขมิ้นชัน" (Moringa).
- MORINDA CITRIFOLIA (ยอ)**: A product box showing the fruit and a bottle of capsules. Text includes "ตำรับสมุนไพรพื้นบ้าน" (Traditional Herbal Recipe) and "ยอ" (Morinda).
- Herbal Products**: A central image displaying various bottles, jars, and containers of traditional medicine products.
- Microscopy**: A photograph of a person in a white lab coat operating a microscope.
- Field Work**: A photograph of people in a field, likely engaged in agricultural or medicinal activities.
- Map of Thailand**: A detailed map of Thailand showing administrative divisions. A yellow line highlights the location of Prachinburi province in the central region. The map includes labels for neighboring countries (Burma, Laos, Cambodia, Vietnam, Malaysia) and bodies of water (Andaman Sea, Gulf of Thailand, Strait of Malacca). A legend titled "Thailand Administrative Divisions" explains the symbols used for international, province, and national boundaries, as well as national and provincial capitals. A scale bar indicates distances up to 200 kilometers.

Contact: Pharmacist Supaporn Pitiporn, Chaophya Abhaibhubejhr Hospital

Tel. 66-37-213 610

Fax.66-37-212 170

<http://www.abhaibhubejhr.org>

Time/Duration of data collection: 2004

Aspect(s) of Local Wisdom: Traditional/herbal medicine

Aspect(s) of Modern science and technology-MST: pharmacy, GMP standard for herbal medicine production

Initiator(s) : Supaporn Pitiporn , Pharmacist and Chief of Herbal Product Development Demonstration Project

Main/current occupation of initiator(s): Pharmacist

Previous occupation of initiator(s): Pharmacist

Disruptive moment(s):

In adopting the mission to promote primary health care through the use of herbal medicine in responding to the World Health Organization's international policy in 1983, the encounter with the villagers in the training sessions on self-dependence with herbal medicine made Supaporn aware that the villagers knew better than her in this area. So, she decided to go to them to learn instead of to teach.

When the need arose in the hospital to develop a drug for child herpes, she thought of traditional/herbal medicine and sought for villagers' advice on medicinal plants to be used. And when Thailand faced economic crisis in the late 1990's, the hospital wanted to promote herbal medicine among villagers to reduce the use of imported drugs on primary health care. And at the same time they wanted to demonstrate to the villagers the added value of herbal plants by turning them into modern products for more convenient uses. They believed that the hospital could be a learning center on this.

Facilitator(s): Supaporn Pitiporn

Other main actors: Faculty of Pharmacy, Mahidol University
Department of Medical Science, the Ministry of Public Health

Local people of Prachinburi to grow herbal plants for the production unit of the hospital

Story:

Through history, herbal/traditional medicine has been used for over a thousand years. However, its popularity was began to decline when western style medicine was first introduced into the kingdom for the first time by Portuguese merchants in 1504 in Ayutthaya Period

After the fall of Ayutthaya in 1767 and the new establishment in Bangkok the revival of the nation's economic, cultural and public health systems began to take place. A royal dispensary in the royal palace similar to the one in Ayutthaya was established. Under royal guidance there was an attempt to mix together a number of drug recipes to replace those that were lost during the war with the Burmese. In 1816, a Royal Decree governing the roles of royal drug dispensers was promulgated, thus emphasizing the importance placed on drug dispensing as a highly sophisticated art.

The reign of King Rama 4th saw many changes towards the adoption of various aspects of western civilization through trade. During King Rama 5th, Siriraj Hospital and a medical school were established in 1888, combining both western and traditional medical practices. Later, the Department of Health opened two drug pavilions in Bangkok, the first one sold western drug style, and the other one only dispensed Thai medicine. And more drug stores and clinics were opened around the country.

In 1902, the first government pharmaceutical operation was set up to manufacture drugs for the general public. At first, only western drugs were produced but they were not well received by the people. Therefore, a number of Thai drug formulae were also included. During King Ram 6th, many changes were forthcoming. Firstly, in 1913, the teaching on traditional Thai medicine was discontinued in the medical school since the two doctrines were considered incompatible and, therefore, tended to confuse the students.

Adding a harder blow to traditional medicine, in 1912 the law was introduced to separate the medical practice into modern medicine and traditional medicine. After that, the development on Thai medicinal plants was directed entirely toward modern medicine. In 1942, serious

attempts were made to examine the attributes of indigenous herbal drugs in order to transform them into modern drugs.

During the Second World War, there was a shortage of modern medicine, hence the resurgence of Thai medicine and medicinal plants. After the situation regarding the scarcity of modern drugs somewhat eased, the interest in medicinal plants also diminished. Somehow, sporadic research activities on Thai medicinal plants still took place in some governmental departments and academic institutions over the years.

In 1979, the Ministry of Public Health, in response to the World Health Organization – WHO's call for the revival of indigenous medicines in the announcement of Alma Ata, recommended a strategy on the development of primary health care to be included in the Fourth National Economic and Social Development Plan (1977-1981)

Established since 1941, Chaophya Abhaibhubejhr Hospital in Prachinburi province provides the public with all aspects of health service. But the hospital's interest in herbal medicine started in 1983 to meet the policy of basic public health issued by the Ministry of Public Health. It was also coincided with the international campaign announced by the World Health Organization on "Good Health For All Toward 2000". The strategies called for participation from local community, development of appropriate technology, and local resource development. All of these were in accordance with traditional or folk medicine practices and herbal uses of the local community. So, the hospital integrated folk and herbal medicine into its practice in primary health care. Also community health care was promoted for self-dependence.

At that time, hospital staff (doctors, nurses and pharmacists) helped with training and providing knowledge to local community for *Volunteers of the Village Public Health* and *Public Health Reporters* on the issues of primary health care. In doing this, Supaporn Pitiporn, a pharmacist from the Chaophya Abhaibhubejhr hospital realized that *their knowledge was far less than those of the trainee villagers'* in terms of minor symptoms remedies, and herbal plants. Knowledge provided by hospital staff was a memorized knowledge from texts with no real or direct experiences in actual uses and results. It was so different from knowledge of villagers who used to collect their own herbs and had experience from collective knowledge passed down from many generations.

This moment of truth inspired her to get closer to local healers within Prachinburi. She spent time, "...as their child who is enthusiastic to

learn,” in her own words, and explored the forests together with local healers. She was then aware of the richness of biodiversity of Thailand and invaluable knowledge about herbal plants of these people. She said she had learned from the “living bible” as the knowledge was not written down or recorded in any form. She felt the urgent need to restore Local Wisdom in herbal medicine from this local community because these resource persons were very old and was dying one by one as time passed. *This gathering and collecting of knowledge on herbal medicine together with local community participation was the important foundation for the development of herbal products by the Chaophya Abhaibhubejhr Hospital later on.*

As legal control, there are only 2 alternatives in using herbal medicine in the hospital. The first alternative is to use as “ancient medicine recipes”. There are many regulations which govern this alternative. Only traditional methods to prepare the medicine are allowed, for example, fluid extracts by boiling, infusion of shredded ingredients with hot water, pills from powdered ingredients with binding agents such as honey, and alcoholic macerate. The other alternative is to use extract pure active ingredient from medicinal plants. It must be studied in laboratory through experimentations to obtain formula and bio-chemical structure. Methods for identification and analysis must be specified. And importantly, a complete clinical test is required before using any herbal medicine in this form.

From Supaporn’s comment, it was evident that though there were many scientific research institutes, Thailand had never succeeded in any single herbal study. This was one of the reasons that Thailand had to spend a lot of money on imported drugs and health related products.

With the awareness of all these limitation and opportunities in using herbal medicine in the hospital, in 1986 the Pharmaceutical Department of the hospital set up a working scheme on “Making Leaves into Medicine” to promote and develop herbal medicine and products for public services. Its core principles maintained that the selected herbal medicine must accommodate the needs and eradicate health troubles of the public. Herbs must be carefully selected for prime quality and efficacy. Selected herbs must be easy to find, and easy to grow locally in order to promote self reliance at the community and national levels. Knowledge about selected medicinal plants must be gathered exhaustively from Thai ancient medicinal texts, research studies in the country and from abroad, and also experiences of villagers as users. The hospital tried to integrate knowledge from the community with modern

pharmaceutical knowledge and use modern technology in the production process. They worked with relevant organizations in the government sector, non-governmental organizations (NGOs), and community-based organizations (CBOs).

This movement was the turning point in bringing herbal medicine to be used at public hospital service level for the first time.

For over 20 years, the hospital has pioneered the development of many herbal medicine and health-related products. It also offers dual treatments of modern medicine and alternative – traditional medicine that people can choose from the hospital's service systems.

Supaporn was one of the first initiators to realize the great resource of knowledge in herbal medicine within local healers. After she became aware of this truth, she decided to do something. Her initial effort in collecting local wisdom by spending time with villagers marked an important step for the hospital to pursue the path to herbal medicine public services.

She began by organizing a seminar among colleagues, persuading friends and young people to volunteer in collecting information of herbal medicine and plants from local community.

The first herbal plant selected within the “Making Leaves into Medicines” scheme was *Clinacanthus nutans* Lindau. This herbal plant is very well-known and almost recognized as a legend for its quality in anti-snake poisons and anti-insect bites. However, the hospital has used it for curing of skin-diseases.

It was selected out of the immediate need of the hospital to find a way to cure child herpes. Dr. Uraiwan Chotikiat, a pediatrician saw that child oral herpes has no specific medication to cure. A child who suffered from it was always in great pain for weeks. He or she could not or did not want to eat and then lost weight, a pitiful condition to witness. This doctor consulted with the pharmacy department where Supaporn held the leading position. Supaporn knew that it was a good beginning. She was well aware that the herb to be used must be highly safe for children. And at the same time it must have the property to kill virus that causes the inflammation. She talked with the villagers and asked them about knowledge to cure this kind of disease. There were quite a few herbal plants they used. But the most popular was this one.

She found that villagers used it to cure wide range of skin diseases from poisonous insect stings and bites, burns, to viral infection/inflammation. In the north, villagers cook it as vegetable. She nevertheless found no scientific study on it, either in Thailand or abroad. There was only one unpublished research from the Faculty of Pharmacy, Mahidol University, Bangkok. The research found that it had anti inflammatory property. On the toxicity aspect, no toxic was found, except high dose could cause ulcers in guinea pig. With confidence, she went on to develop medication for curing child oral herpes from this herb in cream. And later the forms of ointment, lotion, and balm of this herb were developed for other skin diseases.

The hospital kept surveillance on its patients who used this medication. It worked effectively. And it increasingly gained the confidence and popularity of the public. Having heard of the success, community hospitals nationwide were interested in this new extracted herbal medicine. And the hospital was willing to share the knowledge and offered training for pharmacists of community hospitals to produce the same medication in their own hospitals.

At present, this “*Clinacanthus nutans Lindau*” is the first champion herb of Thailand. Many studies have been done to re-confirm the efficacy in curing herpes, even though the active ingredients have not been totally identified yet. Apart from using it to kill a group of virus that causes disease in humans, it is also used to kill virus in shrimp farming. Later on, the hospital looked at a few other herbal plants that have already been studied but still had limited use and remained unpopular. It then, developed them into herbal medicine. And they are as well welcome among the public.

During the year 1997-1998, when Thailand was in the beginning of economic crisis, the Director of the hospital- Dr. Prem Chinwantananon discussed with Supaporn’s team to find a way to add value to local herbal plants to help local community earn more income in this hard time. And at least, it would be a good way to demonstrate the benefit of herbal plants in primary health care and daily life as for cosmetics. The most successful herbal cosmetic is Tamarind Facial Cleansing Cream. This knowledge of using tamarind for facial cleansing is from the villagers. With modern production process and safety study from the hospital staff a simple herb (widely used even in Thai daily cooking) has turned into an easy to use product available for women all over the country.

Since the economic crisis, the Ministry of Public Health issued a policy for public hospitals to help local community to earn more income by buying raw materials of herbal plants from villagers. The Chaophya Abhaibhubejhr Hospital has started its program on development of raw materials from herbal plants to generate villagers' income for over 5 years. The hospital engaged 31 families within local community of Dongkheelek Village to participate in its development program of raw materials. The herbal plants to be sold to the hospital must be organically grown. So, the villagers learned how to manage their crops with health and environmental concerns. Cultural practice of the community was also revived as seen in their collaboration to get rid of weeds by hands in their herb gardens since chemical to kill the weeds was forbidden. This gathering of manpower to work in each one's land without pay is a traditional practice called '*long khag*', rarely seen in this modern world. Elderly persons can also participate in this production process. In average, each family earns extra income by feeding raw materials of herbal plants to the production unit of the hospital at 3,000-4,000 baht per month. The hospital is extending the same practice to other villages in the province.

From the first herbal medication, now the hospital has developed herbal medicine for more complicated ailments, for example, diarrhea, muscle pain, coughing, etc. Apart from drugs, herbal dietary supplements, cosmetics and beverages are also produced that revive the immense benefits of Thai ancestral wisdom used in combination with modern knowledge of science and technology. Presently, the list of products having been developed so far include 8 herbal medicine, 10 dietary supplements, 21 cosmetics and 8 beverages. In addition to presenting herbal products in various forms, the hospital stresses the importance of quality raw materials from organic farming that meet Good Agricultural Practices (GAP) and production under Good Manufacturing Practices (GMP) all in packaging responsive to market taste.

Supaporn stressed "This project to let the villagers learn that herbal plants and herbal medicine are **not** aimed at profit making. We, as a public hospital, don't have the role of making money. We are here to help people to have good health, to cure them when they are sick. And we hope that it is a learning place or demonstration center for the community. So, they will use herbal medicine for themselves, as well as will know from growing herbal plants, production processes, to marketing and sales to earn some money."

“Though we are quite successful that the public accept our herbal products and the economic value comes along, I think that herbal medicine is a kind of social development tool. When people can earn their living decently and have security in life as well as have social life and network, they will be in a less stressful condition and can be happy. And when they know how to take care of their health by themselves with the homegrown herbs, they don’t have to spend money on transportation, medication, and waste the time coming and waiting for the doctor. It is the good health approach with low cost. Herb farmers in our project also help save the environment from toxic chemical as only organic herbal farming is allowed,” said Supaporn.

The Chaophya Abhaibhubejhr Hospital acts like a bridge that connects local wisdom to modern knowledge of science and technology in order to link rural and urban communities together with mutual effort to promote health, society , economy and environment for a quality life of the public. This is the conclusion Supaporn made in her book “*Abhaibhubejhr Herbs Products: Striving of Thai Local Wisdom*”.

CHAPTER 10

Case Studies (3): Handicrafts

Introduction

Thailand has a uniquely long tradition of arts and crafts. Unlike most of its neighbors, it has never been colonized by a foreign power. And it has enjoyed a relatively peaceful development since ancient time. Patronized by the court and the temples, the designs and craftsmanship of Thai artisans have flourished (Warren and Tettoni 1994).

Historically, the migration southwards (believed to be from the southern China) of the Thai race is supposed to be the factor adding a new ingredient to the mixture of races and cultures. Crafts in the early days were reflected in religious and royal ceremonial arts with Hinduism and Buddhism influences. Around the fourteenth century, with more contact with other neighbors and as well as Indian, Arab, and Chinese traders, Thailand produced crafts such as ceramics for export. It was also influenced by China and other countries in many kinds of handicrafts, for example, Lacquer ware and Mother-of-pearl inlay from China, and Nielloware from the Portuguese (some believed that it was acquired from Persia by way of India). However, these crafts were developed to have Thai designs and motifs by native artisans.

Thai arts and crafts range from royal and ceremonial crafts to those of village life, from small accessories to architecture and from the softness of cotton and silk to the solid crafts of silver and gold as well as other metal works. Thailand is not only rich in almost all kinds of raw materials to produce such crafts, but the Thai craftsmanship is also very famous for its elaborated works. For example, the goldsmiths of early Ayutthaya possessed very high skills. Evidences that remain show the finely wrought gold creations intended not merely – or perhaps even primarily – to satisfy a desire for personal adornment and luxurious household accessories. Instead, they were intended to demonstrate their religious value for merit making. Or they were at the same time symbols of status showing authority of the users.

Women have an important role in handicraft production. Though some of the handicraft works are done only by men such as Buddha casting, mostly there is no discrimination between both sexes. However, weaving textile was done exclusively by women. It was usually regarded as a part-time activity for female family members. It was generally to fulfill the basic needs of clothing and merit-making offerings to monasteries, or to be used in religious ceremonies taking place the whole year round. In village communities, young ladies would attract young men through the beauty of hand woven clothes they made which they wore to the temple. In certain regions young ladies were supposed to weave their own wedding clothes and also for the future husbands. Or in certain area old ladies would prepare ceremonial textile to be used in their funeral¹².

¹² According to Buddhism, death is not looked at as the end. It is a part of the cycle of life. Death is just a change of place from this world to another world.

Modern Thai crafts have experienced the impacts and influences of Western ideas and styles which had been poring into Siam since the nineteenth century, chiefly in the reign of King Rama V. This caused the decline of many more refined traditional crafts for which the elites or the upper class were their prime customers. However, the skills needed to produce such crafts did not disappear. They were kept alive even in the cities in the continuing requirements of ancient ceremonies. Or the artisans lived in the village by isolation and a deeply rooted conservatism kept them continuing the practices. And these crafts were available when fresh demands for them arose from a variety of directions in more recent times. Contemporarily, they followed the techniques developed centuries ago, though often altering them in various ways. Thai craftsmen have continued to create a wide array of products blending old and new in unique ways out of an increasing demand for unusual decorative items and individual initiatives on the part of artisans and profit-minded businessmen.

This chapter offers two case studies on contemporary handicraft practices and their development that show the traditional knowledge from the old days and the inheritance of manual skills and creativity of the Thais in utilizing raw materials. The Thais can find abundance and diversity of raw materials in nature; and even though some of these materials maybe harmful to the environment, amazingly turned into innovative products. Not only do rural people turn them into small craft items for everyday uses, but they also do this with good senses and designs. The crafts are made appealing for modern use for both local and international markets. It is not an overstatement that modern science and technology have had an important role in co-

intelligently making it possible for these crafts to suit modern demands and reach wider markets while contributing to the world agenda of sustainable development.

Case Studies

7. Indigo Dyed Textile of Mae Theeta/ Sakon Nakorn, Northeast

History of the indigo dyed Textile: Up to today, Asian wealth has been concentrated and reflected in temples, ornaments, clothing and textiles – not in land, houses, cars and financial investments. People from the West could witness that there are poor villages which have great temples and local villagers who are wearing exquisite handmade clothing.

“The King of Dye” – indigo is among the oldest dyes to be used for textile dyeing and printing in many Asian countries for centuries such as India¹³, China and Japan, as well as Thailand. This dye was also known to ancient civilizations in Mesopotamia, Egypt, Greece, Rome, Britain, Peru and Africa. From the Tuareg nomads of the Sahara to the grassland kingdoms of Cameroon, indigo signified wealth, abundance and fertility.¹⁴ In Thailand, though it does not have evidence showing

¹³ India is believed to be the oldest center of indigo dyeing in the Old World. It was a primary supplier of indigo to Europe as early as the Greco-Roman era. The association of India with indigo is reflected in the Greek word for the dye, which was *indikon*. The Romans used the term *indicum*, which passed into Italian dialect and eventually into English as the word *indigo*. In temperate climates indigo can also be obtained from *woad* (*Isatis tinctoria*) and *dyer's knotweed* (*Polygonum tinctorum*), although the *Indigofera* species yield more dye. Indigo dye was a luxury. It was imported from India to the Mediterranean by Arab merchants. Indigo remained a rare commodity in Europe throughout the Middle Ages, so *woad* was used instead.
http://www.apparesearch.com/Definitions/Dye/indigo_dye_definition.htm Retrieved 2 February 2005.

¹⁴ <http://www.adire.clara.net/indigo-introduction.htm> Retrieved 5 January 2005.
Some examples of indigo dyeing in the pre-industrial time are: in Europe, was to dissolve the indigo in stale urine, in Japan was to dissolve the dye in a heated vat in which a culture of certain bacteria was maintained. Around 1880, synthetic indigo was invented in Germany. Then, it was manufactured for commercial use in 1913. After that natural indigo had been almost entirely replaced by synthetic indigo.

such value, the villagers like to use indigo dyed textile because its color on the textile is durable. They use the textile to make everything they use – from everyday clothes, towel, to pillows. The dye could be locally obtained and processed from raw materials in their land, no boiling is required, and the remains of the dyeing process can be used in many ways. For example, it can be thrown in the rice field to repel crabs. And it can be the nest for cultivating an edible and gourmet ‘indigo mushroom’.

A variety of plants can yield indigo dyes, but most natural indigo is obtained from those in the genus *Indigofera*, which are native to the tropics. The primary commercial indigo species in Asia was true indigo – *Indigofera tinctoria*.

Mostly all natural dyes from plants use heat in obtaining the colors. And it has to be done while the dyeing solution is still hot. Indigo dye is one of the two natural dyes from plants that use vat dye technique (fermented), and the other is ebony plant. The fermented cold solution gives the color to attach to the fiber of the textile. The process of indigo dyeing is rather challenging and complicated¹⁵. Because the indigo dye itself is not soluble in water, to be dissolved, it must undergo chemical change. When submerged fabric is removed from the dye solution, the indigo quickly combines with oxygen in the air and reverts to its insoluble form. And it can be washed away (it tires). Nonetheless, traditionally in Thailand¹⁶, special formulas can make the

¹⁵ When indigo dye first became available in Europe in the sixteenth century, European dyers and printers struggled with indigo because of this distinctive property.

¹⁶ From Wikipedia, the free encyclopedia (http://en.wikipedia.org/wiki/Indigo_dye) 11/09/04, it is stated that “*Indigo does not bond strongly to the fiber, and wear and repeated washing may slowly remove the dye.*” This contrasts with the information that Thai villager artisans claim that indigo dye attaches strongly or the color lasts until the life of the textile. And the Thai research findings also confirm that the process makes the dye attach strongly. And since, the dye is insoluble; it will not go away with washing.

dye fixed on the fiber of the textile using no synthetic chemical. Then, the more repeatedly the textile is put in the solution, the deeper is the color.

This case can be considered as a sequel to the scientific study of indigo dyeing process in Nawa, Nakhon Panom Province where a Buddhist monk initiated the revival of this craft in the village since he saw people were suffering from poverty (see Chapter 5, Monk Developers And he encouraged people to participate in the practice of the craft, using the temple as the demonstration site. Moreover, he also demanded that people should wear indigo dyed clothes when they came to the temple.). At that time, the National Science and Technology Development Agency came in later after the villagers and the monk tried to gather the knowledge from old people in the village in their own way. One of the local coordinators of the NSTDA program who happened to be from Nawa told NSTDA about the need to study the process in a more systematic and scientific way as it had never been done before. Consequently, a research project called “The Development of Learning Package in Textiles from Thai Yor Wisdom.” was operated during 2000-2002.

The project aimed at codifying and collecting the local knowledge of the Thai- Yor minority group in Nawa District, Nakhon Panom Province in the northeast of Thailand in producing indigo dyed ‘mudmee’¹⁷ textile in order to make the dyeing process more efficient in terms of time and labor uses. A learning package¹⁸ was developed to disseminate the knowledge acquired to other villages in the

¹⁷ Mudmee is the special kind of traditional Thai motif. ‘Mud’ means *to tie*, and ‘mee’ means *tiny noodle*. The word ‘mudmee’ describes the way of designing the pattern by binding silk or cotton thread using tiny rope. After dyeing, the tiny robes will be taken off and the designed pattern appears. In Indonesia, it is called ‘ikat’. And in Japan, it is called ‘shibori’.

¹⁸ The learning package is in the form of video, CD-ROM, posters, and handbook.

northeastern area that also practice this craft. A researcher from Rajabhat Sakon Nakhon University carried out the project as the head of the research team with the research grant from NSTDA. At the end of the project the researcher also designed and produced equipment that would help decrease the time and labor consumed in the process of preparing the dye solution.

The study finds that the main problem of indigo dyed mudmee production is in the preparation of the indigo dye. And the research findings have helped the villagers improve their production process. This research activity received public attention widely. Considered from the economic viewpoint, indigo dyed mudmee is becoming famous both within Thailand and in countries such as Canada, Japan and United States, as well as in Europe. The price of indigo dyed textile is about five times higher than those of other naturally dyed products. Improvement in production processes that leads to a decrease in time consumed and in the labor used would be highly beneficial for the village communities.

In Thailand nowadays, not many villagers practice traditional indigo dyed textile. Most people in the younger generations in rural area usually leave their hometown to work in big cities. And they prefer mass production clothes. The migration to big cities also results in the lack of family labor to help with the practice, since the dyeing process is rather labor intensive. The craftsmanship of indigo dyed textile, then, is less visible. What is left is the knowledge possessed by older people above sixty years old¹⁹. Or in the memory of people of younger

¹⁹ The research in Nawa found that the average age of a very few old women in the Thai-Yor group is around seventy years old (Sornampon, 2004).

generations who used to see their mothers or grandmothers do it for household and ceremonial uses.

Indigo dyed textile is increasingly appealing in the era when people turn to “green” and environmentally friendly products. The craft is common in the rural northeastern part of Thailand. People in this area use the same technique of fermenting indigo fresh leaves with some ashes from certain plants. Formulas differ from village to village.

At present, indigo dyed textile is popular and on demand for domestic and international markets. Good quality indigo dyed textile must have a bright or clear and clean color no matter how in deep or light hue it is. And its color should be long-lasting (due to the property of indigo that is water insoluble). This is a sophisticated craft that requires a high degree of skill²⁰, expertise, and quality raw materials to produce a piece of art. As it is the ‘cold’ or vat dye, the dyeing techniques are different from other natural dyes. The artisan must know the right age of indigo leaves to collect. The freshness of the leaves is highly important. The moment to collect the leaves is at dawn before the morning dews evaporate. The fresh leaves must be immersed in water immediately after picking. And the length to keep the leaves in water must be just right, not too long or too short.

²⁰ The preparation of the indigo dye starts from soaking fresh indigo leaves for one day. Then separate the leaves from the water when its color is bluish-green, and the bubbles will have no color. Add some lime water into it, and the solution will change to yellow. Slowly stirring this yellow water for a few minutes, the bubbles become blue. Fast stirring it until the bubbles disappear, the water becomes dark blue. Left overnight, and with brown liquid on the top, poured out, remains is the indigo paste at the bottom of the vat. The paste is kept in a clay pot. It can be kept for two to three years by adding some ash water to keep it moist.

The preparation of the indigo bath starts from mixing indigo paste with ash water, and stirring it twice a day in the morning and evening for fifteen to twenty days until the indigo bath becomes yellow. Then start dyeing. After the first dyeing, the indigo bath can be reused by adding more indigo paste and ash water. Leave it at least six hours until the indigo bath become yellow again, and the dyeing process can begin again. If the indigo bath is green, artisans will wait until it become yellow. Sometimes we need to wait for it could take more than three days. And sometimes the indigo bath does not change the color, which means the preparation of indigo bath fails (personal communication with Prapaiphan, 2003).

The objective of soaking the leaves is not for obtaining the color solution. It is rather the process to allow two chemical substances in the leaves themselves to interact with each other and become soluble in the water. However, this blue solution when it is oxidized or exposed to the air will become insoluble and cannot be absorbed by the fiber of the textile. So, experienced artisans know that the blue indigo solution is NOT for dyeing. It needs to go through fermentation process using ash solution. At this stage the artisans have to adjust the acidity and alkaline condition of the solution using their own expertise and observation (without scientific equipment). Then, the solution will turn from blue to yellow. The yellow solution is the right condition for dyeing. When the textile is immersed in this yellow solution and lifted up, the oxidation will turn from yellow to blue color. Chemically, the property of the indigo is returned to insoluble, and it will attach strongly to the fiber. For a deep blue textile it would need at least repeatedly 6-20 times of this cold dye process.

Inexperienced producers of indigo dyed textile usually do not understand these processes. Some would use the blue indigo solution which makes the textile lose the color every time it is washed because the color has not attached to the fiber just clinging loosely to the surface of the fiber. And this way, they will produce low quality indigo dyed textile to the market. Making indigo dyed textile is an art as much as a science. The dye vat needs almost a month to obtain the right condition for dyeing color. There is a say that “Taking care of the indigo dye vat is more than taking care of one’s husband and children.” It takes lots of time, and love and care is needed in tending the vat.

A good quality piece of indigo dyed textile would need the expertise of the producer, the right process of the dyeing, the quality materials of the raw materials of the indigo dye and the textile, and last but not least, the ethical and value-driven framework to guide the artisans along these production processes. Due to the high price of the indigo dyed textile, many unethical producers just want to produce a large quantity of the products to meet the market demands by not going through time and labor consuming natural dyeing processes as specified. So, it is important for users to be able to distinguish a genuine and high quality indigo dyed textile from the imitation or average quality products in the market.

This case study of Indigo Dyed Textile of Mae Theeta provides scenario of a strong will of an old lady and her daughter to revive this almost lost art of indigo dyed mudmee. They strive for maintaining their craftsmanship and improving dyeing process; at the same time sharing the knowledge and caring for other villagers.

8. From A Weed to Innovative Furniture/ Pathumthani, Central

History of the Water Hyacinth: A fast duplicating floating tropical plant of *Eichhornia crassipes*, or commonly known as “water hyacinth” is a deceptive plant. It looks innocuous, even beautiful for its green leaves and lavender flowers. Botanists have called it “the world’s worst aquatic plant” or “one of the world’s worst weeds” (www.iisgcp.org/EXOTICSP/water_hyacinth.thm), it is even called an “environmental disaster”, and “a floating nightmare”.

Water hyacinth is actually a native of the Amazon River Basin. The colonial European horticulturists took it to the Dutch colony in Java, in the 19th century. Its growth rate is among the highest of any plant

known. A hectare of water hyacinth can double its size in just eight to twelve days. This plant grows densely in clumps of some 8-10 stems, each an average of 60-80 centimeters in length.

Now this waterweed is commonly found in the rivers and lakes of Southeast Asia. It blocks boats and fishing nets. It steals sunlight and oxygen, menacing native aquatic plants and fish. It has become so abundant in Thailand that a large amount of public money was spent on its removal.

In the Amazon, certain herbivorous fish and annual floods keep it under control. But in more than fifty other countries, this invading alien plant has no natural predators. Many strategies have been used to eradicate it at great expenses. In the United States, after the weed carpeted waterways in the South, officials built huge mechanical crushers the size of the house. Fire was also tried there, with little success. So were explosives, but bombing the plant simply blew them and allowed them to multiply even faster and further. Chemicals were used against the weed. Biological controls by using natural enemies were studied. All these ways were costly and often ineffective.

Around a hundred years ago water hyacinth was brought to Thailand by the royal entourage visiting Java. Hence, the name of this plant in Thai “pak tob java” or java water grass. It was used in garden decoration. Beginning in a garden pool or water pot as a decorative plant, later water hyacinth escaped to the Thai waterways. After having been brought to Thailand, the damage was already done.

The disaster caused by this plant pest was serious and the government had to start a long fight against it. As Thailand relies heavily on water transport, fishing, and the irrigation of fields by way of network of waterways, it was disastrous when this plant started to

clog waterways and prevent the circulation of oxygen in the water. Huge mats paralyzed areas, at times preventing even large boats from leaving the harbor. This problem was soon out of control. The army and the navy and other authorities were called in to clear the canals and waterways. Biological solution was sought such as insects that feed on the water hyacinth were imported. All efforts were however without much success (Persson 2003).

The fiber of water hyacinth is strong, tenacious, and durable. Several government agencies had started training programs for rural women to weave baskets, hats, slippers and other small items using water hyacinth as raw material. However, those programs did not offer any assistance in design or marketing and these women had difficulty to conceive new idea and to market their products.²¹

A philanthropist organization realized a strong potential that water hyacinth could be developed and manufactured into a more useful and higher priced products. Their marketing study showed that the water hyacinth fiber is a suitable material for making furniture. And the low income group in rural areas would greatly benefit by acting as the suppliers of raw material to the furniture factory. The method for preparing the fiber also did not require special skill or equipment which gave opportunity to a wide range of suppliers.

With Thai artistic skill in weaving, combined with modern knowledge of science and technology and the sense of design, the weed has been turned into innovative furniture for both domestic and export markets (Mertens, 2003). Thailand is the world's first producer of furniture from water hyacinth.

²¹ "Water Hyacinth Development Project", a proposal to CIDA in 1986.

7. Indigo Dyed Textile of Mae Theeta/ Sakon Nakhon, Norhteast

Location: Panna Nikom Sub-district, Sakon Nakhon



Contacts: Professor Chanchai Limpiyakorn
Director, Science and Technology for Rural Community and Sustainable Development Program, National Science and Technology Development Agency
Tel. 66-2-564 7000

Dr. Anurat Saithong
Faculty of Science, Rajabhat Sakon Nakhon University
Sakon Nakorn
Tel. 66- 42- 716 751

Prapaiphan Dangjai, Mae Theeta Indigo Dyed Textile Group
Tel. 66-6- 974 6002

Time / Duration of Data Collection: 2001-2004

Aspect(s) of Local Wisdom: Handicraft –indigo dyed cotton mudmee textile

Aspect(s) of Modern Science and Technology: research on chemical process of the indigo dye.

Initiator(s): Mae (or Mother) Theeta and Praphaiphon Dangjai (daughter)

Main/current occupation of initiator(s): artisans of indigo textile

Previous occupation of initiator(s): Mae Theeta used to be a teacher in the local school. And Praphaiphon used to run business on handicraft retailing.

Disruptive moment(s): Mae Theeta wanted to have her daughter, together with the whole family, to come back and live in their hometown. Indigo dyed textile was revived as a means to earn their living. Upon years and years of trial-and-error, they were quite successful with their premium quality and artistic products. But they were still faced with easily rotten indigo dye solution. With a market demand for more of their work, they needed to improve the dyeing process.

Facilitators: Science and Technology for Rural Community and Sustainable Development Program, National Science and Technology Development Agency (NSTDA)

Other main actor(s): Rajabhat Sakon Nakhon University,
villagers of Panna Nikom ,
governmental (local) organizations

Story:

The story of this case study began in late 1980's when Mae (Mother) Theeta who was then around 53 years old, began her quest to re-live craftsmanship of indigo dyed cotton mudmee. This effort was made out of the desire to bring her daughter, Praphaiphon back home. Praphaiphon or Jiew, (the nickname now widely known among producers and customers of high quality textile), had lived with her family in Bangkok after she graduated from a university.

Jiew had gone through a few jobs in Bangkok. Jiew also used to run a small business of selling handicrafts, mostly textile, from various regions of the country. So, she had quite knowledgeable about handicraft products and markets. But she had never been a producer of any kind.

Mae Theeta knew that living in Bangkok was a hard life. And since she had just lost her husband, she thought that it would be good for everybody to live in their own land with a better quality of life. She knew that she needed to create something by which they could earn their living sufficiently. She thought of many things. And mudmee indigo dyed textile came to her mind. She used to see her mother and grandmothers make mudmee indigo dyed textile when she was young. In her village, in the old days, there were abundant of indigo plants and people who produced indigo dyed textile. But now, there were only few indigo plants at the foothills and nobody in her village was doing this craft. And for herself, since the processes of preparation, and dyeing were so complicated, and she did not like the blue residue of indigo to stick in her fingernails, she never learned how to do it. Then, what could she do now that she needed to make this handicraft but had no knowledge or experience?

Mae Theeta traveled within and out of the province of Sakon Nakhon to seek knowledge from older people who knew how to do mudmee indigo dyed textile. With bits and pieces of knowledge she acquired, she started the trial and doing it at her home. And her daughter came home from time to time to take part in this trial-and-error process. The first six years was a real struggle because the indigo vat was getting rotten so easily. And it took time to prepare a new one. But she never gave up because sometimes when the process succeeded and she combined it with her

designs of mudmee. Then, she could produce artistic pieces. Mae Theeta is a born artist²² in this trade. And she is happy when she can create pieces of art. In the seventh year it was getting better for her. Anyhow, she still had the same problem, though not so frequently as before. Jiew still kept her career as a handicraft seller based in Bangkok. She introduced the products of Mae Theeta to her clients. And they were attracted to the charm of her products.

Traditionally, the indigo dyed textile is not considered just a way to earn a living, or just a tool to meet their needs for clothes. Village people attach a spiritual value to anything around them, including to everything they do. Traditions of respect for nature, of paying attention to their relationships with other members in the family, in the community and with nature and supernatural beings, plus Buddhist beliefs²³ always form the quintessential part of their life. Knowledge in indigo dyeing textile is considered the treasure given to them from previous generations. The indigo plant is the gift from nature. Indigo dyeing processes are imbued with rituals reflecting these attitudes and beliefs. The dye vat is treated with respect. It is believed that each dye vat has a spirit to take care of the dye solution. In some areas there are even ancient songs to sing to show respect for, and to please this spirit. Villagers believe that if they do not treat the pot properly, the spirit will leave and the dye solution will be rotten which is said as “the indigo vat died”.

In 1995, Jiew and her family came back to Panna Nikom to live with Mae Theeta. They were striving to produce high quality indigo textile, though limited in quantity. Their products soon became well known and could be sold at good prices in big cities, especially in Bangkok. Their products were of high quality while mostly others’ in the market were of lower quality. Still faced with some problems in the dyeing process, they realized that they needed technical help in order to meet the market demand in and out of the country.

In 2000, the Science and Technology for Rural and Sustainable Development Program, National Science and Technology Development Agency (NSTDA) had funded the research project on “Development for Knowledge of Thai-Yor Textile” in Nawaa district, Nakhon Panom Province. Thai-Yor is a minority group living in certain areas in

²² She told the author of this study that she wished to have come back to this handicraft much earlier in life, not when she was rather very old and just discovered her gifted ability.

²³ See more how Buddhist principles take the role of guiding framework or work ethics of the Buddhist followers in Chapter 5.

Northeastern Thailand. Their knowledge of weaving and natural dyeing is outstanding, especially in indigo dyeing from preparing fresh indigo leaves. NSTDA commissioned this research project to Rajabhat Sakon Nakhon University. Jiew was selected as the assistant researcher of the project by Dr. Anurat Saithong, head of the research team.

It is important to note that the site of the project was in Nakhon Panom Province, and the research team was based in Sakon Nokhon Province. (It is just a couple of hours' drive from Sakon Nakhon to Nakhon Panom.) NSTDA program director explained that Nawa could be considered as the actual site to codify and collect data including working with the villagers to identify the problems and finding solution to the problems. And Panna Nikom was the implementation stage to expand the economic value of the research findings. Actually, Jiew and Mae Theeta had been doing indigo dyed mudmee textile long before the activity or the research project in Nawa took place.

The researcher herself is fascinated by this craft. She has known Jiew and Mae Theeta for quite a few years so she selected Jiew to be her research assistant in this research project. And many times she used Mae Theeta's working place to run her experiments for the Nawa project too.

Jiew and Mae Theeta participated in the research project at this implementation stage and had great determination and patience to make use of research findings. They invited other villagers in her area and also from other villages to participate in the research study. They wanted those villagers to work together with them in creating high quality products for the markets. But no one wanted to at the beginning. They did not believe that such a high priced product could be appealing to the market.

This was the eleventh year of their practice in mudmee indigo dyed textile. The research findings helped them improve the process of dyeing greatly. They became more well-known of their unique and quality products. And, when the success story of Nawa was in the media, other villagers began to see this and asked Jiew to be the leader of the group to work on indigo dyed mudmee.

In 2001, Jiew organized a meeting for eighty villagers from other eight villages in her area (after they asked her to be the leader). Most of them were women over 40 years old. The meeting was held in a community center. Jiew spoke of how she and Mae Theeta had gone through and the way everybody could work together. A Buddhist monk was invited to talk about ethical issue and how to run a sustainable, profitable and ethical job.

The researcher spoke of her findings. She revealed that she took the inspiration to study about indigo dyed textile from her personal interest. She was fascinated with the fact that the leaves of indigo plant, which are green, when soaked in water become blue. And when it is mixed with ash water, yellow it turns. Finally, when a textile is submerged in this yellow solution, the oxidation amazingly turns it into blue. As a chemist, she believed that scientific experimentation could explain the chemical reaction. She started to do research about indigo dyeing even before NSTDA provided her research grant.

It was very interesting to see this young and modern scientist, Dr. Anurat Saithong dressed in indigo dyed textile and spoke with genuine respect through the language style villagers could relate to. For example, she explained the process using the word “transformation of the body” to signify each changing stage (and color). The villagers were proud that people “from big city and educated” appreciate their knowledge and wore their textile.

The success of the studies draws interests from many actors in the region. And it coincided with the government national project of One Tambon (sub-district), One Product – OTOP to promote handicrafts and community products for domestic and international market as an alternative source to generate income for the poor. It also went along well with the national trend on promoting Thai culture and Local Wisdom. The Provincial schools in Sakon Nakorn asked all teachers and students to wear their traditional dress of indigo dyed mudmee every Friday. Now since Sakon Nakhon Province is getting more well-known for this traditional handicraft, more schools follow the same practice. Most recently, provincial government offices ask their officials and workers to join in the practice too. The head of a local school where the meeting took place was interested in making indigo dyed textile tradition a part of the local curriculum²⁴. Rajabhat Sakon Nokorn University where the research was done has opened Indigo Dyeing Learning Center for all villagers from everywhere who want to better the production.

In 2003, Jiew organized another villagers’ meeting in Panna Nikom to involve different players in the indigo dyed textile production and marketing. Officials from Provincial Chamber of Commerce, Provincial Commerce Office, Chief of the District, university researchers, NGO

²⁴ Local schools are able to conduct local curriculum due to the current National Education Act of B.E. 2542 (1999). Formerly, the curriculum was decided and planned from the central authority in Bangkok.

workers working in handicraft in Chiang Mai (the North) were in this seminar with villagers. The same monk was also invited to give a speech.

Since the first meeting, the more villagers of this group have been exposed to more outsiders and known of possible markets, they tried to create new motifs and designs or adapt their designs to market taste. Jew felt responsible to help them find the market. It was interesting to see these producers of handicrafts exchange their experiences and expertise through the products they brought with them. They were interested in different motifs from other villages and exchange ideas and share information of certain motifs techniques. They did not withhold their knowledge. Making indigo dyed textile was not a competition of who would make more money. They are confident that they have more than enough to share. They think that knowledge of this handicraft is so simple, and just there. Anyone who is interested in can come and learn. The artistic dimension is something unique to each person that one has to find and create it oneself through action.

Jiew explains how important Buddhist principles and traditional values are to the work of indigo dyed textile. And it is the reason why she includes a religious talk from the monk who the villagers highly respect. She sees that the work must be done out of love to share, to help each other, not to be greedy, and not just to seek for fame. To work is to practice Dhamma. Jiew is a strong religious person since she was a university student. She likes to spend time talking with her clients, not just wanting to sell her products. (She even gives a discount when knowing that the client is interested in practicing Dhamma.)

There was a Japanese lady who was a guest at Mae Theeta's house for many times within a few years. She visited and stayed at her house and even learned how to grow rice and worked with the villagers. Mae Theeta taught her about indigo dyed textile processes. This Japanese lady runs a business of Asian handicrafts. She travels to many countries to find high quality handicrafts to sell in Japan. She talked in the meeting that she just fell in love with indigo textile of Mae Theeta at once because it was so unique. Her Japanese customers also agreed on this. They told her that among indigo textiles from many places, Mae Theeta's products were standing out with great color, character and charm.

It is intriguing to see that people from Bangkok or big cities criticize the sharing of community knowledge with a foreigner. Especially, Japan is a big market for natural dyed textile of both silk and cotton. And Japan has also indigo dyed textile, though very expensive. However, to the villagers,

they do not mind as they think that they will teach anyone who wants to learn. The knowledge learned will not be useful if that person does not actually do it. And they do not think a foreigner can do it for the same character or quality because of differences in raw materials and weather.

On this second meeting, it seemed that most local officials did not understand at all the essence of handicrafts. They were rather ignorant. Many villagers smiled, a kind of smile showing they knew that these officials from the city did not know anything about their life and the handicraft. These local officials were supposed to talk about how the villagers could sell more of the products or expand the market. They told the villagers to make the fabric smoother like the one produced by the factory. They asked them to make the same quality of color in every lot of the products to have 'standard' like industrial goods.

Mostly, officials or development workers from the government sectors have the same attitude on rural people. They think that rural people have to be "modernized" up to modern standard – "*the same as people in the city do*". Anything that is not in conformity with modern standards is considered backward and needs to be improved.

It never occurred to them that the defects of unevenness or color that differs from lot to lot of production were the 'memory' of the process, for example, the weather, the moisture in the air, the rhythm of village life, the creativity of the artisan to experiment a new ingredient, etc. It never occurs to them that hand woven cotton would have uneven texture as its nature. This was rather a charm of the hand-made craft, rather than weakness. And the natural dye, especially indigo dye from fresh leaves, would be slightly different in each lot of products due to the temperature, and the raw materials. Each piece of a handicraft tells a story.

The device that the research team has invented, the research findings to shorten production process and technique for indigo solution preservation has tremendous impacts on their productions both in quality and quantity. Dr. Anurat said that the study also inspired her to do more research on biological aspect of the indigo dye solution. Though the knowledge of the processes and techniques has been codified, one cannot do this with motifs. These are too complicated to codify. It can be transferred by practice only. It is amazing how the villagers can repeatedly create such complex motifs without written reference. And they can even improvise or integrate new designs into their textiles.

NGO people from Chiang Mai who were specialized in working with local communities and handicrafts business also shared their experience about working together in team. They pointed that trust and confidence in the leader was important for the success and sustainability of the teamwork. Patrons of Thai textiles usually appreciate the unique touches of handmade textiles. The uneven texture or sometimes problems of color was just the very nature of handmade products. People who love “green or natural environmental-friendly products” understand this.

So, to expand the market to people who are not familiar with handmade textiles, maybe education or orientation to the creation of handicrafts should be given to them so that they could appreciate it as quality, and do not perceive it as the defect. In addition, they could learn about the tradition and cultural value attached to certain handicrafts. For economic reasons, when customers understand these facts and know about the process of making one piece of this handicraft they would also understand why the price of handmade textile is rather high. The cultural aspect of the production will add more value to the handicraft and at the same time makes the artisans proud and confident in their self-reliant living including the contribution they can make to development of the country through their work of art.

Now Jiew is the natural leader who helps any producers in the villages. Members of the group usually produce textile to be sold by their own. And they will send some products to Jiew as she will gather all goods to sell in events in big cities. At the moments there are always trade fairs for OTOP nationwide. Through these events, the villagers’ products are available to outside markets.

Jiew is not only helping them with technical advice on production improvement but she always thinks of other relevant aspects that could make this handicraft more visible and appealing to market taste. She seeks for advice from the Department of Industrial Promotion on marketing and product design development. “Mae Theeta” has become the brand name of their products. And Jiew takes a leading role in this family business while Mae Theeta is now getting older with some health problems.

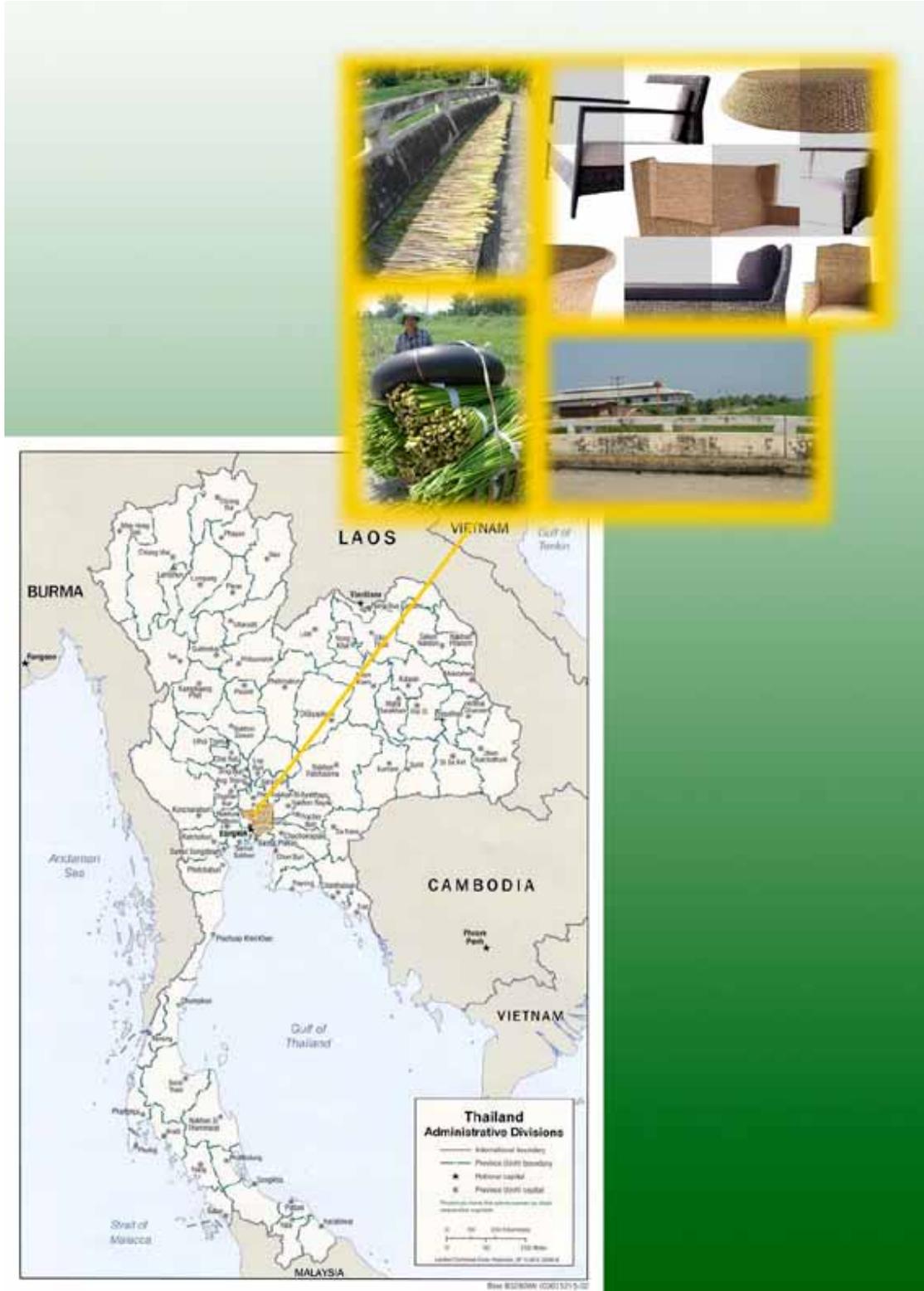
Their indigo textile has received more recognition in this couple of years. Jiew has been sponsored by different governmental offices to show her products in exhibitions and fairs in other countries. And just in July 2004, her work won the Prime Ministry’s Award as one of the best quality and outstanding handicraft. In October 2004, she was sponsored by the

Department of Export Promotion to fly to Italy to participate in Europe International Textile Exhibition and discussed with Italian designers for fashion designs using her textile.

The most recent conversation between the author and Jiew, she told that last year she sent her indigo dyed textile to participate in the OTOP Stars Awards, but it did not get selected as a five-star product. It seems that different government units do not co-ordinate their work well and there is too much redundancy. However, “The contests or the awards are not real. It does not matter if my products get five-star rating or not. The most important fact is that we have to know what we are doing. Doing our best to receive trust and confidence from our clients by making the quality product is real. My clients buy my products because they trust me, because they trust this face. They look for my face, not the stars.”

8. From A Weed to Innovative Furniture

Location: Pathumthani province /Central



Contact: M.L.Pawinee Santisiri and Mr. Suwan Kongkhunthian
Yothaka International Co.,ltd.
1028/5 (3rd Floor) Pong Amorn Bldg.
Rama 4 Rd., Sathorn, Bangkok 10120
Tel. 66-2- 679 8631
Fax. 66-2- 679 8965

Time / Duration of Data Collection: 2003-2004

Aspect(s) of Local Wisdom: Handicraft/weaving of natural fiber

Aspect(s) of Modern Science and Technology: research in chemistry to deal with problems from mould, and research on fiber strength for furniture manufacturing

Initiator(s): Khunying (Lady) Chinda Charungchareonvejj, Former Senior Vice President of Bangkok Bank and President of the Friends of Women's World Banking Association in Thailand (FWWBT) had an initiative to develop water hyacinth ordinary small crafts into something bigger and better – that was to make furniture. This inspiration moved the FWWT to ask for a grant from Canadian International Development Agency – CIDA²⁵ in 1986 to work on “Water Hyacinth Development Project”. And M.L.Pawinee was invited to be the volunteer working as an assistant operator and designer of the project. She was asked to help in finding a way on how to use the water hyacinth stem as raw material for furniture manufacturing. She has continued to work on water hyacinth furniture manufacturing ever since. This case study will take M.L. Pawinee as the main and active initiator²⁶ because she worked closely with the villagers and was involved directly in the project operation.

Main/current occupation of initiator(s): interior designer

Previous occupation of initiator(s): interior designer

²⁵ Canadian International Development Agency is a Canadian government-supported agency.

²⁶ The original idea to use water hyacinth for making furniture came from a marketing consultant of Her Majesty the Queen Sirikit's SUPPORT Foundation (The Foundation for the Promotion of Supplementary Occupations and Related Techniques). Upon hearing the comment that making water hyacinth into furniture could be a good idea because it would consume a lot of material, FWWT thought that it could be a good way of making use of this material. It wanted to find out what could be done with the material to make something big instead of small things like boxes, baskets and slippers (Persson 2003). M.L. Pawinee was intrigued and gave a lot of thinking and efforts working with FWWT to find the solution.

Disruptive moment(s): Problem of the fast multiplication of water hyacinth blocking waterways posed an urgent need for Thailand to find an economic solution than just destroying it. Handicraft from water hyacinth could be a good solution. Making furniture seemed to be the best way in order to exploit a large amount of this free and problematic raw material from nature. But the length of water hyacinth when dried is too short to create big items. This conception was the first effort ever in history to make water hyacinth into furniture. Knowledge of this plant in all aspects concerning manufacturing of furniture – the strength, the suitable length of water hyacinth robe, and the fungus treatment was crucial to make possible this innovative idea.

Facilitator(s): M.L.Pawinee Santisiri and
Mr. Suwan Kongkhunthian (her designer friend and
business partner)

Other main actors: Kasetsart University, Bangkok,
Farmers and villagers of Pathumthani Province

Story: Faced with the invasion of this destructive water hyacinth plants, the Thais, however, fought back with creativity. Various solutions had been tried. Pig farmers turned it into pig feed. But for the weed that can double its amount in a week, even pigs eat too little to ease the problem. Eventually, a Thai resolution based on innate handicraft skills emerged. The villagers discovered that the stems could be dried in the sun and woven into simple baskets, hats and other small handicrafts. There are some problems with mould and durability. However, since they are small items for household uses with limitless raw materials, these problems were not taken seriously. Villagers can make more for their uses. Or customers can buy a new item again with new design each time. But the water hyacinth continued to be a big problem for Thai waterways and the environment. It would need a more innovative way to deal with this problem.

In 1985, the executives of Friends of Women's World Banking Association in Thailand (FWWBT) and a group of Thai designers saw a promising future of developing water hyacinth crafts into something bigger and better. They especially wanted to make furniture, which would use enough weeds to help clear the waterways and turn it into an income generating material

Pawinee talked in an interview with Joakim Persson in the Scandinavian Bulletin, on the origin of the water hyacinth furniture project. She

recalled, “They (FWWBT) wanted to help the villagers in the Pha Yao²⁷ Province to create more incomes by producing some kind of objects that consume a lot of water hyacinth. Normally, what they did at that time was just weaving the baskets, for example for use in collecting.”

Usually villagers wove water hyacinth in the kind of thin thread for small baskets or hand bags. Thai people love to do very delicate things. And they had never tried to do big objects before. At just around 50 centimeters long when dried, the stems were too short to make anything bigger than baskets. So, M.L. Pawinee had to find a way to use water hyacinth in making furniture which required tying it into big and long robes. She worked with the government sector in training villagers how to make it into about thirty meters long. She worked with weavers to develop a process for braiding the stubby stems into strands long and sturdy enough to make furniture. They, then, had to be taught and trained technically how to tie it together. And she had to find the money to buy this material to convince the villagers to make samples for them.

For this first project, the Swedish International Development Agency gave support to pay and train the villagers how to collect and treat the material. The method of preparing the fiber also does not require special skill or equipment which gives a wide range of suppliers, e.g. housewives, children, old people who are still in good health, and handicaps who still can use their hands and eyesight.

The marketing consultant of FWWBT foresaw that if the water hyacinth furniture was well received by the public, the commercial sector would be encouraged to invest in larger scale projects. The need for water hyacinth as raw material would then be in demand on a commercial level. Their objective was to promote employment or generate income for low income group and the country would also indirectly benefit from eradicating this unfavorable plant.

They tapped a grant for the “Water Hyacinth Development Project” from the Canadian International Development Agency – CIDA in 1986 and funded a scientific research at Bangkok’s Kasetsart University in 1987. The research focused on the study of material quality to be sure that it would be suitable to make furniture out of dried water hyacinth stems. And they wanted to find the best way to dry and to give chemical

²⁷ Pha Yao Province is in the north. This province had a serious problem of young girls being sold or voluntarily went for prostitution in Bangkok. Helping women to earn a living decently in their villages would be a way to help them stay in their hometowns. So, government and foreign donors created many projects to tackle the problem.

treatment for fungus to preserve raw material, so that the quality of the raw material would be reasonably consistent. The study showed that the material possesses a superb quality for furniture production. This scientific study could also identify the best way for drying and preserving the stems using. No harmful chemicals are used to process the raw material. They use just a substance that helps prevent mould. It is the same stuff that is used in frozen food manufacturing. So, it is quite safe. Fusing the bankers' initiative with their interest and expertise, the group of interior designers worked on this project.

She created a collection of chairs and other items, and got her design-school classmate and friend – Mr. Suwan Kongkhunthian to come from Singapore and have a look. This friend of hers was at that time working in Singapore. When he saw the work, he was interested and intrigued by its attractive texture and color. “We finished the project with an exhibition at the Shangrila Hotel, consisting of more than 20 pieces of furniture in different sets, such as living room, bedroom set, to show to the public that this is what you can do with the water hyacinth,” said Pawinee.

Soon after in 1989, he move back to Bangkok, together with M.L.Pawinee set up a small company named Yothaka, to produce the world's first water hyacinth furniture. Finally water hyacinth has been transformed into a usable resource, ideal for creative furniture, which is extremely attractive, offering both simplicity and an exquisitely natural look. Their designs caught on in France and other countries in Europe. This company alone consumes more than 8,000 kilometers of water hyacinth braid a year, almost enough to stretch from its workshop to Paris. Thousand more kilometers are used by another two dozen smaller firms. “We export (water hyacinth furniture) about thirteen to fourteen containers or more each year,” said Suwan.

The company's first factory was set up with only five workers in a small retail and rural premises in Pathumthani Province. But nowadays the operation has expanded to over two hundred staff with production facilities over 1,500 square meters. Plus, more than three hundred villagers who harvest and dry the plants and weave them into braid. Yothaka manufacturing facility is located in the countryside and in easy access for the villagers to bring their braided robes of water hyacinth to the factory. Just less than an hour's drive from Bangkok, the factory is standing amidst the sun and breezes and stunning views of rice fields dotted with palm trees. Villagers collect the plants in the canals nearby and the stems are laid out along the walkways to let them dry in the sun.

Some villagers can work at home while keeping an eye on their children or work together with friends.

Braiding water hyacinth helps farmer families earn better income without having to leave for big cities. Some villagers still mainly work in rice farming and do the braiding as a supplementary income after the harvest season. Mostly this braiding is done by women. And they compete among themselves and against other villages to see who can work fastest. One of the women, Prapai Saelee, 42, is the local champion, pumping out 300 meters a day – almost twice the typical rate. Her 67 years old mother helps by gathering the plants. With just a fourth- grade education, Prapai says she wouldn't know what to do without water hyacinth (Mertens 2003).

Suwan stresses that their company encourages the farmers to continue their main profession in agriculture. The braiding of water hyacinth dried stems should be a part time job. However, sometimes this part-time job can provide higher income more than their annual income of rice farming. Suwan is impressed by the villagers's work. He said that "With just a short training, villagers can be very good. They are fast learners". The craftsmanship is precise – weaving that is tight and even. He states that Thai people are gifted for craftsmanship – anything that must be done by handiwork, they are very good at that – it is something the Thais are born with.

Water hyacinth is light in weight and durable. It has a texture that absorbs light, makes it look soft and touchable. The designers say that the thick braiding gives it masculine feel, yet, it's quite sensual. M.L. Pawinee adds that rattan cracks after a few years' use, but water hyacinth absorbs moisture and breathes. She has been using her first furniture sample products for 10 years "They are still all right and still looking good", she told.

In the 1990's several utilization projects were started and the water hyacinth were found environmentally useful for biogas production (for cooking in kitchens for schools or restaurants), as cooking wood for producing energy, as a low cost organic fertilizer and used as a mulch as the base of fiber board construction, and over all in providing employment and income. The real success must be with wickerwork fashion and high quality furniture.

In the world of design, Suwan expresses his view, it is rare and exciting that a new material is introduced, and rarer is how a certain new material is received widely and successfully as water hyacinth has been. Every year Pawinee²⁸ would find new techniques. And she sends personnel from the company to train the villagers of these new techniques. She combines the knowledge of design with handicraft that is nearly one hundred percent done by hand. Any part of the production process that is too difficult and no villagers can produce will be finalized in their workshop.

Suwan reveals that the only problem the company always has is the copying of designs from other companies both in Thailand and abroad. At the beginning of their work, he used to apply for the patent for using water hyacinth robes in making furniture at the Department of Intellectual Property. But his application was turned down. He expresses that the officials are not catching up with what is going on in the world. And now, there is water hyacinth furniture everywhere and they even copy the Thai designs. Nothing they can do about it now, and only thing they can do is to patent the design which the villagers have no share of this benefit.

Pawinee answers the interview question with Persson (2004) on the bigger demand over the available quantity. She tells that there is a big demand and *“...because from what I heard there’s a competition in supplying and they cheated each other, and tried to control the market. We created business for others and for the suppliers of the raw material and also for the producer.”* Europe is the main market. It started to like the material after five years so now water hyacinth is a known material from Thailand. Now there are more than ten producers which consume a lot of material.

The situation of today is very different when the water hyacinth is considered versatile and in high demand as raw material. From being considered as something useless, now it is on the contrary, even a lack of the water hyacinth in various parts of the country. With her and her colleague’s creativity coupled with several development projects with foreign aid, water hyacinth products contribute to the improvement of

²⁸ In 1995, Pawinee founded another company, Ayodhaya, to produce and export home accessories and furniture, based on variety of natural fibers found in the local eco-system, and to operate local shops. Still today Ayodhaya is using the sources from the early days. “Now Pha Yao people have to buy material from Pathumthani province because it is very good business for them,” says Pawinee. The villagers grow it themselves and they travel to other parts of a town or even another province to collect it.

Thailand's river environment and provide a better living to the Thai community.

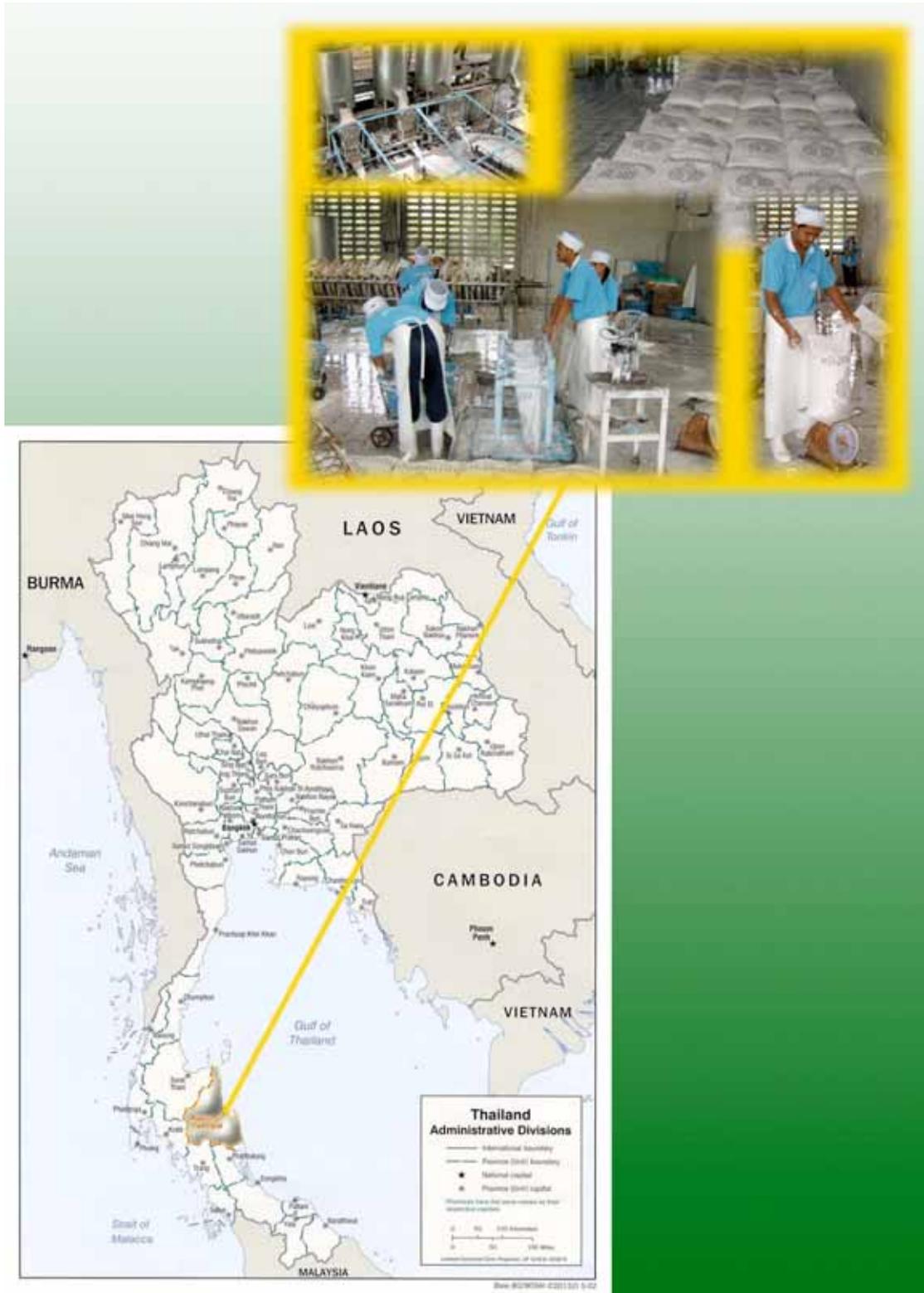
CHAPTER 11

Case Studies (4): Community Micro Enterprise

Seri Phongphit, a prominent social thinker who has been working as an NGO for more than twenty years, gives the definition of Small and Micro Community Enterprise as “a community business that is managed by the local community using their own *capital*”, this capital being far more than mere money. It is a local business that is originated by the community and for the community with the use of local knowledge or Local Wisdom combined with modern knowledge. It is an innovative way for the community to discover its own *capitals*. Self dependability and inter-dependability of the community is the main aim of this business, not getting rich. It is a case worth exploring as the trend of Micro Community Enterprise has proved remarkably successful in many places. The government has recognized the importance of these enterprises and is drafting a legislation to give them a legal status as well as to promote their activity.

9. “*Kanom Jeen*” Noodle Dough: A Community Micro-Enterprise

Location: Garaw sub-district, Nobpitam, Nakhon Srithammarat/ South



Contact: Mr. Viroj Kongpanya, Manager of Food Products Network Co.,ltd.

276 Moo 6, Garaw, Nobpitam, Nakhon Srithammarat
Tel. 66-75-394 337
Fax.66-75- 394 041

Time/ duration of the investigation: 2003-2004

Aspect(s) of Local Wisdom: Kanom jeen or traditional noodle production process

Aspect(s) of Modern science and technology-MST: food science, food manufacturing, food factory management, sewage management

Initiator: Mr. Viroj Kongpanya, the community leader and the company manager

Main/current occupation of initiator(s): a community leader and manager of Network Food Products Co.,ltd.

Previous occupation of initiator(s): a community leader

Disruptive moment(s): In 1992, a Southern Regional Community Leaders Meeting was held in Songkla to re-consider the situation of communities in the southern provinces in order to raise the quality of living of grassroots people. After the meeting the community leaders of Nakhon Sri Thammarat came back to their province and held a meeting among them to take the initiative in developing their province at community level, not just waiting for government to come and help.

Viroj was assigned by the group to take charge of developing local agricultural produces into processed products as community business. At first Viroj and his team, altogether nine persons, did not know what kind of agricultural produce they should work on. They decided to travel inside the province and to other provinces to get ideas.

After many study visits to different processed food business sites, they came across ‘*Kanom jeen*’ or traditional rice noodle that used local rice as raw material. This certain kind of noodle is consumed in every region. But each region will have their unique recipes and ways to prepare the noodle and the curries to go with it. “People in Nakhon Sri Thammarat alone consume this noodle as much as the quantity of the whole northeastern area do.”, said Prayong Ronnarong, President of the

company. So, they thought that it could be a good business. But, Viroj and his team knew nothing at all about noodle production processes nor running the production as community business.

Facilitator(s): Viroj Kongpanya

Other main actors: Rural Villages Foundation,
Walailak University (local university),
National Science and Technology Development Agency,
Provincial Industry Office,
villagers who became members or shareholders of the factory

Story: Even before the Asian economic crisis and the devaluation or the baht crisis hit Thailand in the late 1990's, local communities of the south sensed something wrong within their communities at the grassroots. They found that modern way of development had put them and their communities into profound debt. That was the reason they took action for their future in their own hands. After the regional meeting of community leaders of the south in 1992, Viroj and others came back to Nakorn Sri Thammarat and was determined to make a difference for their hometown.

“We had a very small beginning, only about 9 people who have strong commitment to the communities,” talked Viroj about the beginning of the noodle-‘*Kanom jeen*’ dough production business. They had to connect and integrate human resource, local wisdom, and capital to embody their idea. They stated that they did not expect it to be a grand project, just something to allow them to be self-reliant and able to live with dignity. “If it starts from the government initiative, mostly, rural people will have to be subservient forever. So, we have to take the initiative for our own life and make it sustained,” said Viroj.

They began with considering the geographical makeup of Nakhon Sri Thammarat from the sea shores to the inner land and the problems of each geographical area on the basis of the socio-economic context:

From the seashore: people living by the sea used to make a living on fishery. But today fishermen have turned to be employees in the capitalist system.

Moving in a little further inland to rice farmers: farmers always have the same old problems on and on, though, rice farming is the career practiced for a thousand years in this country.

A little up higher to growing fruits and rubber trees by fruits/ rubber farmers: they are faced with endless problems for a long time. Especially, rubber production is one of the major jobs of southern people. Though, they have done this business for about a hundred years, there are still endless problems for them to solve.

And another group was people living in shanty towns near the urban: The size of slum areas was increasing by the time. This group of people should have lived with dignity and not being marginalized. They should have a chance to stand on their feet and not waiting for help.

The community leaders realized all these problems and wanted to solve them. They divided areas of responsibility into four categories and assigned responsible persons as team leaders. Each team had to study the problem and work on it to find the best way to deal with it.

- *Fishery – an Islamic villager was in charge
- Rice farming – Mr. Viroj
- Rubber resin production and relevant business – Mr. Prayong Ronnarong was in charge
- Cold storage of fruits for off-seasonal market – Mr. Siriwoot
- Community business in processed food from agricultural produce to generate income fell onto Viroj Kongpanya's shoulders.

Viroj proudly stated that his strategy was rather different from other groups in that they did not ask nor did not have any budget from the government. But they used power from people. They tried to pull together people and the investment followed. Presently, this community business has 122 community (natural or informal) leaders and members including 5 rural community organizations, each with a large number of members, to collaborate as shareholders. Totally, no less than 7,000 people benefit from this investment. But the path was not carpeted with rose petals. Viroj is always enthusiastic to share their remarkable experiences.

He continued that in the beginning they had no knowledge, experience, idea nor money. So, they had to start from the basis. First, they must decide what kind of business organization whether it should be – a co-operative, a company, a company limited, or something else. So, they studied legal aspects and the structures to find the most suitable one for community business. Finally, they decided to go for a “company limited” kind of organization. Because it was rather open for the community to participate.

But what to do? They started from visiting different food processed businesses in fruits, herbs, rice, rubber to other natural resources. They also tried to gather information of what the communities in the south had been doing in a hundred years, what they still were practicing and what resources they still had. “We must find raw materials to turn them into ‘natural resource capital’, and bring local wisdom to turn it into a career for the community and to develop it and to excel on it,” Viroj stressed.

After many trips everywhere, they found just in their province the processed food from rice into different kinds of noodles, especially traditional noodle- ‘kanom jeen’ was very interesting. This ‘kanom jeen’ has a 150-year-history. Its origin has quite a number of versions. But Viroj was inclined to believe that it came from an ancient minority around the border of Thailand and Myanmar. So, they began to make a feasibility study in their own way. They gather data and information on local wisdom in the making of traditional noodle as a career and raw material to be used in all 14 southern provinces from the old days to present. They had to know about producers, consumers, equipments used and weakness and strength of the traditional production.

They had to use their own money (from 9 persons in the team) in hiring students to do marketing research on the quantity of ‘*kanom jeen*’ consumption in big cities of the south. In Surat Thani the amount (in 1993) was 12,000 kilograms, Songkla 32,000 kilograms, and Nakorn Sri Thammarat 8,000 kilograms. They calculated the cost, and profit including market possibility and saw that it was a promising business. However they wanted to know more about the big producers who made a profit over a million bath per year (in order to learn about market). They agreed to do business on making dough for this kind of traditional noodle. They planned that the producers could buy the prepared dough from their factory to make the noodle instead of starting from grinding the rice. The study told that there were about 25 producers who made around 1.5-2 millions net profit from the business. So, they had to consider if this could really be a good business for the community.

After the decision had been made to make ‘*kanom jeen*’ dough as community business, they move to the next step- to do legal registration for the establishment of the company. They had to study all aspects of the legal registration, location of the office and the factory, the law and regulations concerning food production business issued by relevant government agencies, for example, the Ministry of Natural Resources and

Environment, the Ministry of Industry, the Ministry of Public Health, the Food and Drug Administration.

And they needed to present their concept as a project to raise money from local communities. They invited a purchase of shares in this “Food Products Network Company Limited” for 100 baht a share. Through thousands of meeting among the villagers to sell the shares, “Where or when we met, no matter what the topic of the meeting was, I had to talk about this project every time. And we even had to prepare handmade booklets by ourselves to give them out to people to raise the fund,” Viroj recalled. Viroj was a well-respected and well-trusted person from his previous work in community saving fund activity. So, villagers trusted him, though not so sure about the profitability of the project. They could raise three million baths. However, when the factory was actually built, the fund which they thought was much, was in fact inadequate. Five million baths was in fact needed. They had to apply for a bank loan and raised additional fund until the factory was completed. The factory became fully operative in mid 1996.

They made many trips to see ‘*kanom jeen*’ factories in every region, from north to northeastern and to the central part. And before their factory was to operate they asked the factory in Srisaket province in the northeastern to train a few workers from the south for a couple of months to learn the trade in important aspects from management to production processes. The factory in Srisaket was kind enough to help them. This factory was a big enterprise making flour for ‘*kanom jeen*’ with over 50 million baht net profit per year.

Viroj continued that at first they used the northeastern method of *kanom jeen* dough making from Srisaket, where their workers had learned the recipe and know-how. The production did not get a good welcome from the southern market. So, they had to re-study of the formula to make the dough. They learned that different regions had different methods of preparing the dough which affected the taste of noodle. The northeastern uses the fermentation method, while the east and central regions use the heating process, and the method for the south is soaking. The southern method is called “fresh dough”. So, the factory had to change the method of production to make it palatable for southern people.

Once again, they had to look for local wisdom of traditional noodle production. They tried to find elderly people in local communities who carried on making ‘*kanom jeen*’ for generations. Not only did they want to have the knowledge of southern formula or method but they also

wanted to find out the weakness that made ‘*kanom jeen*’ production in the south not a lucrative or big business. They found that the process of making the dough took 24 hours and the noodle could be kept only within 24 hours. So, the selling cycle was short and the market was limited within small areas which made it impossible to produce in big amount. But the weakest point was in the hygienic aspect since it was a small family business with no system of quality control. This was where they found how to pitch for the producer market to buy the dough from them to save time in grinding rice and make it easier to sustain cleaner and quality noodle production.

Viroj explained the production process of “*kanom jeen*’ dough. The factory uses only the rice from the Pakpanang Basin where farmers still grow a certain variety of indigenous rice that is very hard when cooked and not easily rotten. The rice grain will be soaked overnight, ground and sifted. Then, it will be soaked in a container for another night while salt will be added to increase the yeast amount and keep fresh. The water is, then, drained. The mixture will be compressed to drain off excessive water until it turns into dough. The dough will be weighed and packed to be sold at 20 kilograms per pack at 180 baht. The dough can be kept for about 5-7 days. The factory produces about 7 tons of dough daily.

From rice to ‘*kanom jeen*’ noodle is a process of creating jobs and adding value to the indigenous rice for the community. The rice they use as raw material for making the dough is from Pak-panang where the poorest community lives. And they produce certain indigenous rice variety (considered low quality and low price) that is perfect for this dough business.

One hundred kilograms of rice/ 7.80 baht per kg.	780	baht
This amount can produce 135 kg. of dough/9 baht per kg..	1,215	baht
This amount can produce 235 kg of noodle/10baht per kg...	2,350	baht

The factory started the operation since mid 1996. In the first year, they made a small deficit due to the lack of experience and to managing this new knowledge and innovative product to be welcome by producers of ‘*kanom jeen*’. As well, they had to make the consumers believe in the quality of the noodle made from this dough with different market strategies. So, they did not consider that the business lost the profit. They learned from the failure and started to gain profit in 1997 when their sale amount to 4-5 million (net profit). From then on, they have profited at no less than 1 million baht each month.

Viroj talked about an important test to the whole team since the beginning. A giant company came and asked to buy the factory at 20 million baht while it was initially founded at merely 3 million baht. That company also was a very good offer to the management team. But they turned down the offer without hesitation. They said that if they had accepted the offer, it would have been a big embarrassment. They could not have even their dignity to face the community because it would destroy the process of strengthening their community. Creating this community enterprise allowed the community to learn together and tighten social fabric.

“People did not have confidence in the beginning if the factory would be successful. We could not raise fund at full steam. But if you ask me now, if we would have enough fund to build a new factory, we are no longer afraid. Because people now believe in us. They trust in whatever business we want to create. This is purely built on their trust and confidence. But if you think as a capitalist investor, this community business may not consider worth doing. You will think of the maximum return at the shortest period, how much the interests are, or if it is worth investing. But if you think of the creation and acquisition of knowledge or the community’s research experiences by actually doing the job, we know that it is enormous. And I believe that if given the same 10 million baht to invest in any business to us and the investor, the typical investor would fall first. Because the learning process will not be created the way we have done. We continuously learn pros and cons, weak points and strong points. We learn them all,” asserted Viroj.

This community business did not focus on job and profit dimension. It was born with local wisdom initiative to survive and live a life with dignity as a part of the community, the country and the world. Its value in having a concern and respecting for nature could be seen when sewage system was planned. The provincial industrial office and the construction office gave them the costly model to treat sewage that would send the treated water down to the river a kilometer away from the factory. This point annoyed Viroj and the team very much.

He argued with them that if the system were that expensive, the water should not be flushed to the river. They felt that whether cheap or expensive the system should not risk causing problem to the river which everybody had to use. Then, he had to find another solution and model. He searched for knowledge and met with a famous business man who gave him advice and assistance on studying of micro-bacterial organism from chicken waste that could eat the sludge in the used water from the production processes.

Now the factory uses an open 6-pond-system that has no problem of odor, color, deteriorated soil or insect (fly) disturbance. Viroj and his team never stop learning everything around them with their heart. It is very successful and even the factory in Srisaket has been interested and has asked them to share this knowledge of sewage bio-treatment.

Although the factory has operated satisfactorily with 20 staff, the team never stops improving their knowledge and bettering the production processes. For example, they examined the loss within production processes and worked closely with research institutes like National Science and Technology Development Agency and Food Research and Development Institute, Kasetsart University to reduce the loss from 19 % in the first year to 12% on the following years and they set the target at 0.5 %. There is a research cooperation project with Walailuk University on an add-up to the dough production to produce Chinese rice vermicelli which is much preferred in the export market, or use of the water from soaking process to produce vinegar. And they have been studying on a new product of semi-instant herbal noodle for health conscious consumers.

However, Viroj stressed that the highest goal of this community enterprise is not to make the community rich but to aim at the ability of common villagers to sufficiently earn their living from local natural resource capitals which are abundant within the community. And it would help raise the sense of ownership so that they would do their best and make it a sustainable community business. It is also a community learning center on community enterprise. Their business sets an example or a prototype for other provinces, especially in the south. Now there are factories of the same type in Surat Thani, Songkla, Krabi, and Trang. The small producer who used to produce 200 kilograms of noodle could now increase the production to over 3,000 kilograms which creates jobs for the community.

Not only is this community enterprise an exemplary case, interesting and beneficial to the Thais, many foreign visitors such as from China, Japan and France also were also interested in the initiative and operational strategies. Viroj concluded that their success was possible because their local wisdom was like a young plant and technical knowledge came in to make this young plant growing into a big tree.
