

# SUSTAINABLE COMMUNITY DEVELOPMENT IN THAILAND

Sustainable Community Development in Northeastern Thailand: The Inpaeng

Istvan Rado,

Department of Political Science, University of Vienna (Austria)

## Author Note

Istvan Rado, Department of Political Science, University of Vienna (Austria)

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Correspondence concerning this chapter should be addressed to Istvan Rado, University of Vienna. Email: [istvan.rado@yahoo.com](mailto:istvan.rado@yahoo.com)

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### Sustainable Community Development in Northeastern Thailand: The Inpaeng Network

This paper discusses the Inpaeng Network in Northeastern Thailand, which has originated from a collaboration of local scholars and farmers since the mid-1980s in the village of Ban Bua, in the province of Sakon Nakhon. The main objective of the network has been to find ways to improve the lives of farming households in the area. Northeastern Thailand, commonly referred to as “Isan”, is the largest rice producing region among all five regions (Bangkok, Central Region, North, Northeast, and South) of the country. However, the problems faced by Northeastern farmers are characteristic of most rural areas in Thailand: rising household debts, loss of biodiversity, and loss of communal cohesion (See UNDP, 2010).

Over the years, Inpaeng has sought various solutions in confronting these problems; these involve upgrading the skills and knowledge of local farmers both in terms of traditional knowledge and modern processing techniques. The network has established enterprises for example, which process local fruits and herbs into value-added products. Another feature of the Inpaeng network is to share acquired knowledge among network members and non-members alike. Today it offers training for interested farmers about integrated farming techniques, herbal medicine, the production of organic fertilizer, shampoo and dish liquid.

From its humble beginnings almost 3 decades ago the network has grown over the years both in terms of membership and in scope (currently 58 community enterprises producing a variety of products). According to the Thai Agricultural Land Reform Office (ALRO), which assists

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individual farmers and communities in 69 provinces, the Inpaeng Network is by far the largest and most successful farmers' network in Thailand (personal interview on 21 Jan 2012).

The paper demonstrates how past and present activities of the Inpaeng network are intended to maintain economic, social, and environmental sustainability in the region. Each activity referred to in this chapter responds to the vulnerabilities of typical northeastern farmers: reforestation efforts and the emphasis on integrated farming are promoted to maintain sources of local and healthy food. Household items are produced within the network in order to reduce main household expenditures. Current challenges for the network are also explained in the context of rural livelihood strategies in the region.

Together with secondary data about the network, the paper illustrates the above points through primary on-site findings. The data has been collected over a two week period in January 2012, and includes 50 random household interviews in the village of Ban Bua, 11 expert interviews with Inpaeng leaders from four provinces, and participatory observation. This chapter will first give an overview of the situation of Thai small-scale farmers in general with an emphasis on the situation in the Northeastern region. Since the Inpaeng Network operates in five provinces of the remote Northeast - namely Kalasin, Mukdahan, Nakhon Phanom, Sakon Nakhon, and Udonthani - the main focus of this section will be on the situation of the farming households in the sub-region. Most of the data is derived from the household interviews conducted in Ban Bua, Sakon Nakhon. Section 2 will give a short overview of the effects of development strategies of Thai governments on the rural sector in the past fifty years. The main part of this paper (section 3) is about the

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development initiatives of the Inpaeng Network. In the final part, the challenges that Inpaeng is currently faced with are highlighted.

### **Contemporary Challenges in Rural Northeastern Thailand**

Agriculture has often been termed the backbone of the Thai economy (Rigg & Nattapoolwat, 2001, p. 953; see also National Economic Development Board, 1964, p. 10): Two thirds of the population qualifies as rural-based with small-scale farms of 2 to 6 hectares dominating the sector (UNDP, 2010, p. 69). Historically, the most important farming activity has consisted of growing rice, which at the same time is the main staple food for Thai people. Thailand is largely self-sufficient in food and annually exports almost half of the domestically produced rice. The production of other crops and fruits, such as cassava, maize and pineapple, likewise outstrips domestic demand and these are for the most part cultivated for exports. Cassava is currently the most important cash crop being cultivated throughout Thailand.

Despite its important role in the Thai economy, the agricultural sector is facing a number of problems (National Statistical Office, 2011): data from 2009 reveals an average monthly net return from farming of 2,028 Baht (about 66 USD) per household. Low agricultural prices, limited access to land (especially in Thailand's Northern region), and increasing rural debt are for many years threatening the viability of small-scale farming. In Thailand's Northeastern region for instance, where the returns from farming are below the national average, around 78 per cent of all

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households are indebted. The same source indicates that most of this debt is used for consumption goods rather than for investments in business, farming, or education. Farmers have adopted a number of strategies in order to raise their income levels and reduce debt. During the past decades they have diversified their sources of income beyond agriculture, e.g. by seeking employment in Bangkok or abroad. Working-age members of many rural households thus take advantage of higher income levels outside the region in order to support their families back home by sending money on a regular basis. Almost 10 per cent of the total monetary income of rural households consisted of remittances in 2007; in the Northeast, the poorest province, the share was 18 per cent (National Statistical Office, 2007). Correspondingly, a 2001 survey found that around a quarter of all 15 to 49-year-olds of the Northeast lived outside the region (UNDP, 2010, p. 70).

A strategy used in many parts of Isan to avoid debt has been to shift away from capital-intensive cash-cropping and to satisfy most subsistence needs by planting rice and vegetables instead (see Blake & Pitakthepsombut, 2006, p. 69 and Keyes, 2012, pp. 223/24). A case in point for this development is the farmers in the village of Ban Bua, located about 600 kilometres northeast of Bangkok, near the Phuphan mountain range in the province of Sakon Nakhon. Most households in Ban Bua had been engaged in the cultivation of government-sponsored cassava since the 1970s. Interviews as well as secondary data (see Tosakul et al., 2005, pp. 12-15; UNDP, 2007, pp. 38/39) reveal that for the following decade most farmers devoted most of their land to the production of cash crops. Since forest land was not yet protected by the state, forest cover decreased dramatically due to expanding cash crop cultivation. Chemical fertilizers were used to further increase the yield. At the same time, household expenses rose, partly due to the loss in biodiversity accompanied by diminishing sources of subsistence goods, as well as rising

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consumption needs, such as TV sets, refrigerators and other visible signs of wealth. Such increased reliance on cash coupled with rapidly declining cassava prices led many farmers into debt. Average household debt in Ban Bua in the early 1980s was reportedly between 30,000 and 40,000 Baht (Tosakul et al., 2005, p. 12).<sup>1</sup>

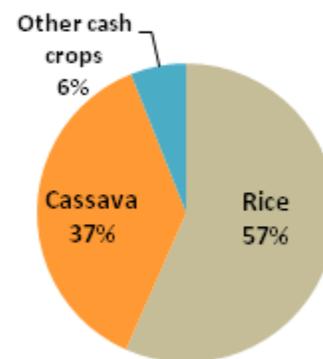
Since the 1990s most farming households in Ban Bua have made a shift away from the cultivation of cassava and have since tried to satisfy their annual rice demand from their own produce: According to the fieldwork data the average farmer in Ban Bua allocates almost 60 per cent of his plot for rice, and the rest for cash crops, mainly cassava

(see diagram 1). Rubber, pumpkin, sugarcane, and eucalyptus, are sometimes planted in addition and in much smaller quantity. Cash crops are sold for the income needed to satisfy household needs beyond food. Cassava is a very undemanding crop, which can be grown and harvested at any time of year. The

downside is its low selling price per kilo, as well as daily price fluctuations: farmers can sell a kilo of cassava for a price between 1.4 to more than 3 Baht to the local middleman. According to the fieldwork data 0.48 ha of a median landholding of 1.28 ha are used for cassava, which may yield an estimated annual return of 24,000 Baht (about 780 USD).

A third of the households interviewed pursue other, often more rewarding income opportunities in addition. Especially self-employed and contract labor, such as construction, weaving, operating a

**Diagram 1:**  
**Average Land Use in Ban Bua**



<sup>1</sup> Calculation based on changes in the consumer price index from January 1980 to January 2011 suggests that the value of these debt figures in 2011 is at least three times as much, approximately 102,000 to 136,500 Baht (see the Bank of Thailand website [http://www.indexpr.moc.go.th/price\\_present/tableIndexCpi\\_bot.asp](http://www.indexpr.moc.go.th/price_present/tableIndexCpi_bot.asp)). This generally corresponds with current debt levels in Northeastern Thailand.

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shop and other forms of occupation, is in these cases, often regarded as the dominant livelihood activity. For the less entrepreneurially-minded farmers, which constitute the majority, income generating options in addition to cash crop cultivation are casual labor on someone else's field for 200 Baht (about 6.5 USD) a day, sale of vegetables from the garden, or outside employment. In almost half of the households interviewed at least one family member has left the village for work in Bangkok or another province, and sends home remittances on a more or less regular basis. Typical jobs in these cases are unskilled labor in factories, construction, or sales. A female respondent indicated that her husband works as a security guard in Bangkok earning 10,000 Baht per month, from which he sends 3,000 Baht back home (household interview, 20 January 2012).

Although relying on low incomes, the debt levels surveyed in Ban Bua are far below the regional average of 118,308 Baht (2009) at around 19,175 Baht (in 2012; see diagram 2). The reason for this is the continued importance of the subsistence sector in this part of Isan. Apart from on-farm produce subsistence goods include fish and frogs from the seasonally inundated rice fields, as well as ants, mushrooms, and vegetables from the forest. Since about 75 per cent of the households interviewed produce sufficient rice in at least some years, the purchase of food is therefore often limited to ingredients such as MSG and fish sauce. At the same time existing debt is mostly used to finance farming inputs (fertilizer, gas, hiring labor), and household expenses (mainly clothes and food). Hand tractors have replaced buffaloes for plowing a few years ago and this has since meant an additional financial burden to the villagers. The fact that many households are unable to finance the corresponding costs from agricultural returns shows how vulnerable they are to external financial pressures. Financially the more they rely on the market, the more vulnerable they are. In many cases the returns from the sale of cassava is only sufficient to cover

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basic living expenses. Too little rainfall in a given year resulting in a bad rice harvest can make a family resort to credit. In some cases households manage to compensate for the risks by relying more on sources of subsistence (fields and forest), by thrift (e.g. foregoing the purchase of fertilizer and hired labor), or by migrating to find employment.

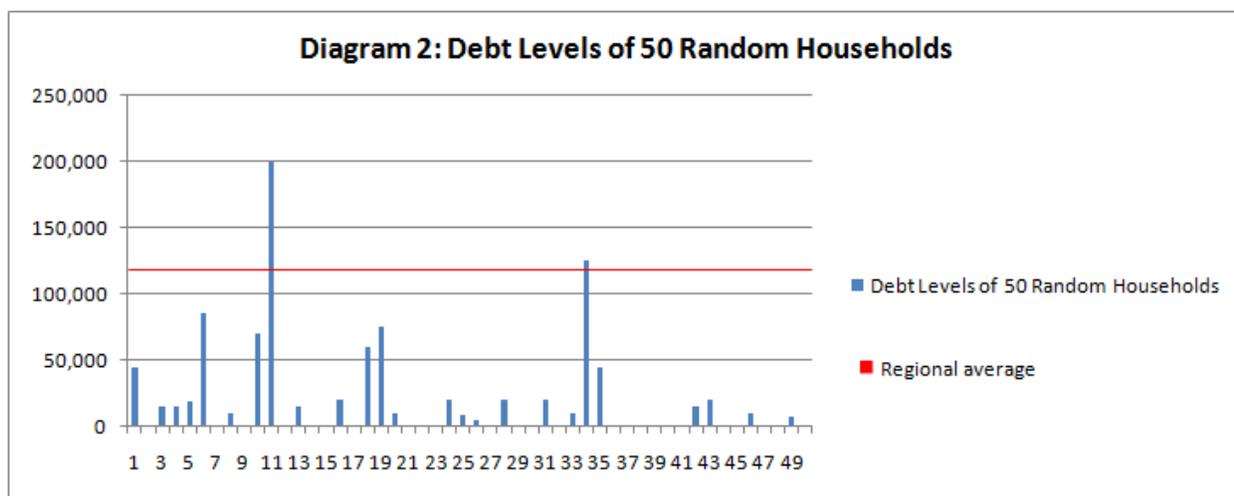


Figure 1. Debt levels of 50 random households (in Baht)

### Thailand's Development Strategy since the 1960s

Since the establishment of the National Economic and Social Development Board (NESDB) in 1959, Thailand puts down its macro-economic development strategy in consecutive five-year plans. Starting with the first plan (1961-66) until the seventh plan (1992-96) Thai governments have pursued an industrialization strategy, in which the rural sector provided primary inputs in the form of cash crops and cheap labor power for the country's emergent industries, including agro-industries (Phongpaichit & Baker, 1995, p. 82). For farmers the focus on the production of cash crops meant rising expenditures for seeds, fertilizer, pesticides, and agricultural machinery.

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Government policies further squeezed the profitability of farming by keeping food prices artificially low to subsidize wage rates in the industrial sector. These developments made agriculture profitable only for farmers with large landholdings, whereas small-scale farmers have had to supplement their agricultural income with off-farm work as indicated above.

Thai academics and NGO activists have since the 1970s criticized Thai governments for failing to support rural producers so that they could benefit from modernization and economic development. Some of these, such as Seri Phongphit from the “Village Foundation”, have advocated alternative development approaches for rural communities with an emphasis on mobilizing local skills and products (see Phongphit, 2001). The case study described in the following section is in part inspired by the development project of the Village Foundation. Such initiatives have since the late 1990s increasingly gained support from government institutions due to a shift from a growth oriented strategy to a people-centered strategy including communal empowerment and development (see National Economic and Social Development Board, 1997).

### **The Activities of the Inpaeng Network**

In 1987 Thawatchai Khunwong from the Village Foundation – an NGO established by the academic Seri Phongphit – came to join the villagers in Ban Bua in order to study communal life and explore possible development alternatives (see Suksudaj, 2010, p. 22; Phongphit, 2001). Together with the village elders Pho Lek and Pho Serm he aimed at identifying unique local products and skills, which could provide a stronger foundation for the local economy in terms of socio-economic and environmental sustainability. They moreover wanted to decrease the strong dependency of the villagers on market relations as was typical at that time. Instead, the group

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promoted a strong foundation of self-reliance coining the phrase “grow what we eat, and eat what we grow” (UNDP, 2007, p. 39). Since forest products have constituted an essential part of local food, reforestation has from the beginning been a core activity of Inpaeng.

Initially, they managed to form a community forestry group of thirteen villagers. They undertook excursions to nearby districts in order to collect seeds, and to collect data about the varieties of edible animals and plants in the region. They visited alternative farmers, from whom they learned about the use of tree species for herbal medicine and integrated farm systems. From one of these farmers in a nearby district the group learned about the cultivation of rattan trees, for instance. Rattan can be used both for food and braiding material. They then recreated small forests of rattan trees, which provide a habitat for those plants, animals, and mushrooms, which are typical subsistence goods of communities in the area. Thus, this practice combines environmental rehabilitation with the provision of subsistence goods. The group implemented this and other techniques by joining together working on each others' fields. In addition to putting the acquired integrated farming techniques into practice they exchanged seed varieties and farm animals. They increasingly diversified their products by cultivating a variety of vegetables and fruits, and dug ponds to raise fish and frogs.

The group soon grew in terms of membership. In 1988 they bought up some farmland in Ban Bua and established the first network center, which was meant to serve as a training site and a place for exchanging knowledge (Suksudaj, 2010, p. 23). A few years later the network acquired its current name “Inpaeng”, meaning “God Indra’s creation”; accordingly the center was named “Inpaeng Center”. Today it is the location of a small herb factory and Makmao processing

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facility. By processing local fruits into value-added products the network wants to show that locally available resources can successfully be put to commercial use. In addition, the network's aim is for people in the region to regain confidence in their own capabilities, instead of focusing on the things they lack (Pho Lek, personal interview on 17 January 2012). Having such knowledge and confidence, people will be able to distinguish between external know-how, which improves their lives on the one hand, and expertise, which merely reproduces and discounts locally available resources.

### **Network expansion**

From the early 1990s onwards, the Inpaeng Network expanded in terms of membership first to other districts in Sakon Nakhon province, and later to neighboring provinces. Today Inpaeng is present in five northeastern provinces and encompasses around 30,000 members (as of 2009; see Suksudaj, 2010, p. 23). In all cases farmers are drawn to the network by word of mouth, by government projects, or both. One of the first members in Kalasin province for instance had advocated community forest protection before he heard of the network from a relative living in Ban Bua. He later told Sawan, the leader of a farmers' group (Thai-Bru Network) in Mukdahan province, about Inpaeng. The Thai-Bru Network later became part of Inpaeng through a mutual biodiversity project to maintain local tree species. From the government side the Agricultural Land Reform Office (ALRO) supported the project by providing knowledge and tools, including plastic bags for the collection of seeds.

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Government organizations promoting sustainable agricultural techniques, such as ALRO, often involve network leaders due to their expertise about the management and use of natural resources. When invited to a certain village, Inpaeng leaders usually conduct a study about the specific weaknesses and strengths in the area. For example, farm use, annual household expenses, and resources available.<sup>2</sup> By doing so possible avenues for development are sought within the local context; e.g. if it is found that households of a community spend large amounts of money on fertilizer, Inpaeng experts may assist the local leaders in producing organic fertilizer from local inputs. If in another case fishing is a dominant livelihood activity, the experts may assist the community in processing fish into value-added products.

As the network expands to other areas in this manner, the number of new members in a certain district often declines rapidly after a short time: according to Sawan from Mukdahan there were more than forty people in his district joining the network in 2004. Until today membership has decreased to less than half of the original number. Those who left are commercially oriented farmers disinterested in strategies of self-reliance. Thus, in no case does membership extend to all households in a village. Even in Ban Bua, the place of origin, only a minority of people declare themselves Inpaeng members: During the fifty random household interviews seven respondents (14 per cent) indicated to be members. Interviews with Inpaeng leaders have moreover revealed that they seek to spread a certain way of life based on self-reliance and integrated farming, more than formal membership.

During the household interviews in January 2012 it turned out that it is hard to make a clear distinction between Inpaeng members and non-members: whereas many formal members follow

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<sup>2</sup> See the example in Wangsammo district, province of Udonthani in section "Community enterprises".

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similar livelihood patterns as others in the village, some of those stating not to be involved in the network exhibited views close to the Inpaeng philosophy or entertain relationships with the network. One respondent for instance sells Makmao berries to the Inpaeng processing plant. During the interview she declared: “Are we rich? – We will never be rich, but we have peaceful lives.” Inpaeng leaders frequently make similar statements (Tosakul et al., 2005, p. 28)

### **Community Forestry and Integrated Farming**

Maintaining and increasing forest land has from the beginning been a primary concern for the members of Inpaeng, since it is the source of healthy food and medicinal herbs. Local varieties of forest vegetables, such as phak waan (a leaf-like vegetable) and takhop paa (a plum species), moreover can be sold for a high price in nearby markets. As mentioned above, virtually every household in Ban Bua is to some degree dependent on food from the forest. With the forest disappearing villagers increasingly have to buy food, which in turn increases the cost of living. Apart from deforestation the overexploitation of forest goods for commercial reasons is another factor exacerbating scarcity (Household interview on 23 January 2012). According to an Inpaeng leader reforestation efforts near the Phuphan mountain range near Ban Bua have met with little success in the past, which is why some members have created seed banks in their garden, or recreated small forests on their fields.

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*(SEED BANK OF A NETWORK MEMBER IN BAN BUA)*

Integrated farming activities include not only the cultivation of fruit trees and herbal trees, but the securing of most consumption needs within the household. In order to manage the farmland to cover household needs farmers must be able to divide the land for the cultivation of rice, other food crops, vegetables and fruits, and farm animals accordingly. This includes taking into account the possibilities and limitations provided by farm size, soil conditions, and weather. A number of Inpaeng members train farmers in land management either on the instructor's field or at a network center. An innovative way of increasing the yields is the use of renewable energy for irrigation

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purposes. As is the case in Ban Bua, many farming households in Isan rely on sufficient rain for good harvests. Alternative energy experts, such as Mr. Praphat in a northern district of Sakon Nakhon, use wind energy and photovoltaic energy for irrigation and electricity generation. Praphat teaches farmers how to install small-scale windmills used to operate a water pump for irrigation. According to Praphat a turbine can generate 1,000 liters of water per hour when in motion (Praphat, interview on 28 January 2012). When the air is still, the water pumps can also be operated by electricity charged through the solar panels or by hand.



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*MAP SHOWING PRAPHAT'S FARM DIVIDED ACCORDING TO HOUSEHOLD NEEDS  
(LEFT) & WINDMILL FOR IRRIGATION, BANMUANG DISTRICT, SAKON NAKHON  
(RIGHT))*

Inpaeng encourages farmers to produce for home consumption and to sell only the surplus. Network leaders stress that local vegetables, fruits (such as Makmao berries, which are unique to the Phuphan mountain range) and herbs can yield high prices in outside markets compared to mainstream fruits such as pumpkin, mango and pomelo. Since recently, the Inpaeng Network provides a platform for the circulation of information about the products that can be sold profitably, as well as the buyer markets including restaurants in the region. The information also includes price differentials that particular products yield in different markets. A few years before

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my research visit in 2012, Inpaeng members in the Phuphan district have started to supply the regional wholesale vegetable market in Kalasin province, supplying rattan, chili, Makmao and other vegetables on a weekly basis.

### **Community Enterprises**

Since the mid-1990s Inpaeng has started to set up community enterprises. These either process local resources typical of a region (such as Makmao) into value-added products, or aim at lowering the expenses of local farmers by offering household and farm items (such as fertilizer) more cheaply. Inpaeng members often acquire the skills for product processing from government and research institutes, such as from provincial branches of the Rajamangala University of Technology. The herb and Makmao factories at the Inpaeng Center in Ban Bua were the first such ventures. The first processes herbs into medicine according to traditional knowledge about their effects. Makmao is being processed into juice and wine. The harvesting season for Makmao takes place from July to September each year. According to the manager the factory buys Makmao berries from local farmers and offers seasonal employment for a maximum of 12 staff members, who receive their salary from a government institution. In one season Ban Bua produces around 30,000 bottles of Makmao juice, as well as some wine in addition. These products are sold locally in a small store also located at the Inpaeng Center (personal interview on 17 January 2012).

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*(PRODUCTS OF THE FRUIT PROCESSING ENTERPRISE IN PHUPHAN DISTRICT, SAKON NAKHON)*

Whereas the Makmao factory in Ban Bua limits its operations to satisfy local demand, Inpaeng members elsewhere manage community enterprises more commercially. After having acquired the processing techniques from the Inpaeng Center in Ban Bua, members in the neighboring district of Phuphan have themselves successfully produced juice from Makmao, Makkho, and Samo. Since the mountainous area in the district does not support the cultivation of rice, the Phuphan community grows the fruit trees on large self-owned plantations. In contrast to the Ban

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Bua factory, where the seasonal labor is financed by a government institution, the Phuphan factory is financially viable exporting Makmao juice and wine to outside regions including Bangkok. It produces not only juices from a variety of local fruits, but also a wider range of Makmao products, such as tea made of its leaves and sugar-free Makmao juice. Because of this larger variety of products, the Phuphan factory employs a permanent staff of thirty, as well as three officers, each responsible for accountancy, sales, and security.

In contrast to the above example, the community product in Wangsammo district in the province of Udonthani responds to local vulnerabilities rather than unique resources (Chamnan, interview on 22 January 2012): A study carried out by Inpaeng in one of the sub-districts found that approximately 12 per cent of household expenditure is used for fertilizers. The group thus came to the conclusion that by producing organic fertilizer on a non-profit basis they could significantly reduce household expenditures within the sub-district. Out of the 1,700 households in the sub-district 200 families joined together in a cooperative savings group contributing shares for cooperative fertilizer production. In 2002 the group received financial support of one million Baht from the provincial governor's fund for the purchase of machines and equipment. The people running the enterprise get no salary apart from fixed returns on their shares. The cost of production is therefore much lower than in commercial enterprises and the product sells for a quarter of the conventional retail price. In field experiments the community organic fertilizer has proven to effect the same quantity of sugarcane – which is the main cash crop in the area – as the use of conventional fertilizer.

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Out of the 58 community enterprises currently operated by the Inpaeng Network about 16 are commercially successful according to Thawatchai<sup>3</sup>, such as the two examples cited above. Community enterprises currently produce a wide range of products, including fermented fish, organic rice, shampoo and detergents and herbal medicine. All enterprises are small scale. In some cases they employ less than ten people and in most cases are financed through a share system. Depending on the enterprise only ten to fifty percent of profits is reinvested in the businesses. The rest is divided among the local Inpaeng committee, payments to shareholders, and community welfare activities. In each community enterprise the exact amount for each use is split according to a particular formula, such as 30:30:30:10 for example.



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<sup>3</sup> The network leader mentioned this during a presentation for staff of the Agricultural Land Reform Office on 21 January 2012 at the Inpaeng Center in Ban Bua.

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*(HERBAL MIX TO REPLACE MSG FROM A COMMUNITY ENTERPRISE IN PHUPHAN DISTRICT, SAKON NAKHON (LEFT). THE LOGO OF AN ENTERPRISE PRODUCING FERTILIZER IN BANMUANG DISTRICT, SAKON NAKHON (RIGHT))*

Interviews with network members from different communities revealed that the design of the share system also differs from one enterprise to the other; in some cases shareholders may get 10 per cent per year for their investment, in other cases more. An upper limit on the maximum amount held ensures relative equality among shareholders of an enterprise. At the same time this limit equalizes the maximum return per year from one enterprise to the other: whereas in one case shareholders receive 10 per cent on a maximum investment of 10,000 Baht, shareholders in another case receive 20 per cent on a maximum investment of 5,000 Baht, for example. Thus, in both cases shareholders receive a maximum annual return of 1,000 Baht.

Not all Inpaeng leaders are taken with the share system, however. Sawan, the leader of the Thai-Bru Network in Mukdahan, for instance, fears that the system encourages people to be passive shareholders, not contributing anything within the enterprise but money. The members in his district have not yet set up an enterprise; when they do, Sawan prefers inputs and payments in kind over monetary investments and returns. This would involve stakeholders more actively. They would need to supply raw materials instead of money, process them together, and share part of the output among themselves. At the same time, Sawan does not mean to convince other network leaders about his idea: the share system and his non-monetary model “should exist side by side” (Sawan, interview on 21 January 2012).

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### **Inpaeng Savings Group**

Savings groups constitute another widespread project among Inpaeng communities; a central aim here is to manage financial risks among the villagers. These groups are open to network members and non-members alike. In Ban Bua, every participant must contribute 10 Baht per month and receives interest on deposits every year. The interest for loans is 1 per cent according to local respondents. There are no specific requirements for obtaining a loan, except for a debt limit depending on the deposits of the debtor: if one has savings worth thousand Baht, for instance, the maximum loan is set at 3,000 Baht. At the end of each year part of the interest payments on debts are divided among the depositors; the interest on deposits thus changes each year. Another part of the funds is used for member welfare expenditures, which cover the costs of hospitalization, and cremation. The interest payments thus stay within the group and benefit the members – including debtors - through welfare payments.

### **The Inpaeng way: Empowering Villagers**

As mentioned above, debt levels in Ban Bua are very low compared to those in other parts of the region. This is due to the fact that most farmers rely largely on the subsistence sector with minimal expenses. The more farmers rely on cash crops the greater is their exposure to economic risks. Farmers do not have the know-how to process cassava into animal fodder, or to convert sugarcane into sugar for example. They do not have the bargaining power vis-à-vis middlemen to influence the prices, which are highly volatile in many cases. The measures employed by Inpaeng are each designed to address these vulnerabilities: The network encourages farming households in the region to further reduce cash crop cultivation in favor of self-reliance in foodstuff. By

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developing appropriate technologies – such as the water-pumping windmill – and efficient farm management techniques Inpaeng aims to increase the capacity of small-scale farms to meet this objective. Reforestation activities are moreover promoted in order to maintain local biodiversity. The forest is the source of additional subsistence goods, without which households would be more dependent on monetary income and thus on cash crops. More than cash crops, which often yield small profits due to a large supply by many individual farmers, surplus products from integrated farming and agro-forestry systems can be profitably sold in regional markets by the farmers themselves. Especially products unique to the area yield higher prices in more remote markets.

The objectives of empowerment and economic self-determination are also expressed in the operations of community enterprises. Most household debt consists either of farm inputs, such as fertilizer and gas, or consumption goods. By manufacturing these goods in community enterprises, Inpaeng creates new income generating opportunities for local farmers. Due to lower prices the enterprises at the same time help to reduce household expenditure and debt. In order to further heighten farmers' self-determination, these enterprises reduce the reliance on middlemen and factory prices by taking over their operations. During our interview, Chamnan from Udonthani province revealed that his community is planning to set up a community rice mill and to take over all operations ranging from buying unmilled rice from farmers to exporting white rice. The profits originally made by intermediaries could be passed on to the farmers (Chamnan, interview on 22 January 2012).

The processing of local products has the additional benefit of revaluing homegrown fruits and herbs, as well as local techniques. The herbal factory at the Inpaeng Center for instance used to

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sell medicine primarily to outside visitors in the past, since local villagers regarded it as outdated compared to modern medicine, according to the manager (personal interview, 25 January 2012). Nowadays, the majority of customers comes from the village and nearby areas. Yet, herbal medicine is not meant to entirely replace modern health care. In 2010 an observer commented that:

“From the observations, people could identify the level of healing or health service that matches the severity of the diseases. For minor illness such as rash or food poisoning, people usually use the herbal medicine for first aid treatment. However for a more serious condition such as fever in small children or joint pain, people switch their mode of service into local health centre or community hospital. It can be assumed that, in their perception, there is no categorization of health services. People utilized all available service, either western or traditional ones, according to their severity of illness and their trust to the practitioners.”

(Suksudaj, 2010, p. 42)

Lastly, the savings group schemes are meant to manage farmers' deposits and debt within the community. Until today the Inpaeng savings group in Ban Bua could only provide a fraction of the loans needed by most households due to limited deposits. The group does not operate like a business venture however, but uses the interest payments for a welfare fund to provide financial security in cases of illness or death. The savings group thus has the potential to utilize the widespread demand for loans in the village for purposes of communal welfare.

### **Lessons and Challenges for the Future**

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The nature of the network activities, as well as the mode of its expansion reveals that its members want to make visible possible and viable alternatives by setting examples. Instead of “teaching people by using a blackboard” (Pho Lek, 17 January 2012), Inpaeng leaders lead by example and hope to convince others by their own experience and success. Only this way would other farmers be convinced to follow the Inpaeng lifestyle. According to Seri Phongphit, who as an academic has over the years accompanied Inpaeng projects from the beginning, an important underlying condition for such initiatives as the Inpaeng project is that villagers recognize their own capabilities and the value of their knowledge. Modern education and modern medicine have in the past led to a neglect of traditional knowledge (Phongphit, 2001). This has led rural communities to discount their skills as obsolete. To realize their own strengths and to become conscious agents of their development is to him a process of regaining self-confidence.

This attitude directs the attention of farmers towards formerly untapped resources and – as the initiative in Udonthani described by Chamnan shows - even supposed weaknesses as possible sources for self-determined development. The example provided by Inpaeng reveals certain broad elements throughout the process, in which constant learning plays a crucial role, illustrating that development is an ongoing project, never fully complete:

- **Adding to an inventory of local knowledge and resources:** Techniques used – both traditional and acquired - are geared to the specificities of local climatic conditions and to the maintenance of natural resources. These moreover enhance capacities for self-determined development and reduce the need for outside solutions, which perpetuate dependence putting the economic sustainability of the project at risk.

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- **The role of model farmers:** Inpaeng members prefer to expose their community to the concept of self-reliance and integrated farming through successful practice. The fact that they share the culture and values of the local community, and face the same economic challenges, they are more likely to influence ways of life within their village. This practice differs from state development initiatives with ready-made solutions, which often fail since they do not respond to local ways of life and needs as perceived by the “target group”.<sup>4</sup>
- **Free sharing of knowledge:** The community in Ban Bua did not view network members in Phuphan district as competitors, as they acquired their processing techniques. Today, if the Makmao factory in Phuphan produces an oversupply of juice, the Ban Bua community assists in selling the remaining bottles to local villagers (personal interview with the manager of the enterprise in Ban Bua, 17 January 2012). Praphat, who is training villagers in integrated farming techniques in Banmuang district, mentioned that many of his former ‘pupils’ have since surpassed him in terms of efficient farm use. Sharing knowledge and techniques helps to accelerate learning effects from each other’s example. Underlying this practice is an understanding that sustainable development implies recognizing mutual interdependence. This notion does not only encompass people, but also natural resources: the emphasis on subsistence agriculture over commercial interests fosters a sustainable use of natural resources.
- **The supportive role of outside institutions:** Although the involvement of Thawatchai gave a decisive impetus to the development of Inpaeng, he had spent a year learning from

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<sup>4</sup> This resonates with insights of NGOs following a practice associated with postdevelopment thinking (McKinnon, 2007; see also Matthews, 2009).

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the Ban Bua community and then approached the village elders Pho Lek and Pho Serm, who had already applied integrated farming methods. Ever since, NGOs, as well as state and research institutions have played a supporting role by facilitating existing development dynamics: they have provided processing skills as Inpaeng communities sought to enhance their know-how, provided information on markets, and established linkages between formerly isolated movements. ALRO is moreover using Inpaeng experts on integrated farming as resource persons in agricultural training (personal interview, 21 January 2012).

The 25-year history of Inpaeng shows that such community initiatives need time to develop and that setbacks are common along the way. Not all community enterprises are showcases of success: among the 58 enterprises operating in January 2012, 22 are yet considered unsuccessful according to Thawatchai's account. Some activities, such as the supply of agricultural produce to regional markets, have taken place since only recently and network members in Sakon Nakhon yet have to increase their production capacity to meet existing demand in these markets. During the time of research, a group has for the first time left to visit Bangkok's biggest wholesale market in order to explore the possibilities of selling lemongrass there. These activities respond in part to the network philosophy to sell the surplus of the produce of individual farmers. At the same time it also marks a trade-off between Inpaeng objectives and the mentality of younger generation farmers, who are often more commercially oriented.

Network members regard the objective to pass on their way of life to the young as by far the most important challenge of all. According to Thawatchai among the 450 young farmers that have

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received training from Inpaeng in integrated farming methods, about 50 (ca. 11 per cent) are currently putting their knowledge into practice (Thawatchai, 21 January 2012). The Inpaeng community operating the fertilizer manufacture in Udonthani province is currently exclusively run by elders. In order to motivate others to join the community enterprise, they are planning to subcontract the fertilizer production to young farmers, who are allowed to make a profit, but must contribute an annual sum to support Inpaeng.

By accommodating the profit-motive in their operations the network members want to ensure that their sustainable community project will carry on in the future. Their entrepreneurial activities, including the innovative mix of traditional knowledge and acquired know-how, have proved to allow for successful business ventures. The emergence of commercially oriented competitors producing Makmao juice in Sakon Nakhon is indicative of this potential. More crucial for Inpaeng's continuation in the future is a set of cultural priorities: namely the sense of responsibility towards the community, the free sharing of know-how and information, and the protection of local biodiversity.

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