



APRACA FinServAccess Programme

Thailand Experiences from the Grassroots: Value Chain Finance Best Practices, Initiatives, Strategies and Trends in Agriculture



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the International Fund for Agricultural Development (IFAD)

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Thailand Experiences from the Grassroots:
Value Chain Finance Best Practices,
Initiatives, Strategies and Trends in
Agriculture

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Preface

Agricultural value chain finance (AVCF) has been considered a very important aspect in rural finance. This is commonly observed in different agricultural production, processing, post production and marketing systems of various commodities and other agri-related activities. Because of this, the Asia-Pacific Rural and Agricultural Credit Association (APRACA) through the IFAD-supported FinServAccess Project started to document best practices on agricultural value chain finance of its member countries.

Presently, India, South Korea, Thailand, and the Philippines agricultural value chain finance best practices, initiatives, strategies and trends were documented to showcase how financial institutions and other interest groups supported the productivity, profitability and sustainability of agricultural commodities through appropriate and timely financial activities of their clients.

The different country documentations will be published in a series which is meant to serve as a learning tool for key players and stakeholders in rural and agricultural finance and development. We hope that this will encourage exchange of ideas and insights between and among the APRACA members and its partners as well as other individuals engaged in rural finance.

The series will be presented as follows:

- India AVCF Experiences
- South Korea AVCF Experiences
- Thailand AVCF Experiences
- Philippine AVCF Experiences

We acknowledge the contribution of the country researchers/writers and their partners in describing the experiences of their countries that are relevant to rural and agricultural development.

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CHAPTER 1

Introduction

1. Importance of rural finance services to agricultural production and food security

Agriculture continues to be a fundamental instrument for sustainable development and poverty reduction. Those who live in rural areas are important as producers and suppliers of food while rural and agricultural finance have a role to facilitate production. However, financing in agriculture is costly and remains inadequate, thus limiting the ability of small-scale farmers to compete. Many incidents affect the agricultural sector, one of those being the dramatic changes in food prices, which have exposed the vulnerability of food production in meeting global demand while the world population is growing over the years, expecting to reach nine billion in 2042 compared with seven billion in 2011. Therefore, the call for increased agricultural finance has intensified at all levels, along with the necessity to go beyond conventional financial approaches to address these challenges. The international agency FAO has tackled this issue with its policy pertaining to agriculture and rural development for prioritizing food security, improving rural food production, especially by small-scale farmers, and reviving rural financial systems and access to credit systems and savings mechanisms, among others.

2. The Thai agricultural sector and the role of the Bank for Agriculture and Agricultural Cooperatives (BAAC)

The Thai agricultural sector has played an important role in supplying food, driving economic growth and generating employment, thus occupying a prominent global position in many primary agricultural commodities and food items such as rice, rubber, pineapple, cassava, chicken and shrimp. The share of agriculture in the GDP in 2012 was 8.4%. Although its share of the GDP has declined continuously from 9.8% in 2009, there has been an increase in the total volume of agricultural products, particularly rice, rubber, cassava and oil palm. Traditionally, Thailand rarely experiences food shortages because most of the country's consumption demand can be met through domestic production.

Using rice as an example, Thailand produced a total of 20.4 million metric tonnes of milled rice in the 2011/12 crop year, consuming some 50% and using the rest for other purposes and export. Thailand is well acknowledged as a top rice exporter in the world; its export volume was a total of 10.7 million metric tonnes in 2010. However, the floods in 2011 devastated major agricultural areas of Thailand, wiped out significant rice crops in the Central Plains, forced millions to leave their homes and destroyed numerous rural assets and properties. Though the natural disaster hampered agricultural production, Thailand still has a milled rice surplus to supply to the world.

Rural finance has facilitated agricultural production. It is in this aspect that the Bank for Agriculture and Agricultural Cooperatives (BAAC), now the leading rural development bank in the country, has gained prominence. In 1966, the government established BAAC as a state enterprise under the jurisdiction of the Ministry of Finance. Now close to its golden (50th) anniversary, the Bank aims at becoming the premier rural development bank by concentrating on the uplifting of the quality of life for small-scale farmers. Recognizing the significance of the food chain, the bank has also adapted itself to facilitate the chain at all levels, providing necessary services and support to all relevant actors.

Along with the financial products that BAAC has provided to its clients, BAAC has also provided other services in response to clients' needs. These include personal accident insurance, health insurance and

funeral aid. The Bank also enhances liquidity in the rural community, assists in improving farm production efficiency and reducing costs, establishes village funds and sufficiency economy funds, and designs model community development applying the concept of His Majesty the King's Sufficiency Economy Philosophy, which encompasses the concept of moderation, reasonableness and resilience for all and helps the bank to change its ways of doing banking business. BAAC has gone beyond savings and loans to reach sustainable development. A concept of credit plus technical assistance has been implemented by BAAC to promote value addition activities together with knowledge dissemination. To ascertain that rural financial services are fully provided at grass-roots level, BAAC now has a total of 19,989 officers and staff in 77 provincial offices and 1,139 branches throughout Thailand. Thus, BAAC has been and will remain a key player in rural finance in Thailand.

3. Rural finance development: the evolution of BAAC financial services – laying the foundation of rural financial development

The shift of agriculture from subsistence to commercial farming brought about higher demands for capitalization for agricultural production and improvement of well-being. Prior to the establishment of BAAC in 1966, farmers were more dependent on capitalists' financial support, leading to exploitation and a state of indebtedness. Then, after establishment and commencing its business operations, BAAC became a new source of financial assistance either directly to farmers as individuals or through farmers' associations and farmers' institutions. Mr. Chamnian Saranaga, BAAC's first president, exerted great efforts in laying a solid foundation for BAAC's operations and he pioneered many development areas to secure and sustain equitable growth up to now.

Establishing the rural financial direction: 1966-1976

The evolution can be divided into five eras, starting with the first era, the establishment of rural financial direction, from 1966 until 1976, when BAAC provided short-term and medium-term loans to registered client-farmers to cover crop production expenses and investments to improve production efficiency, respectively. The second era, the creation of a financial management system, lasted from 1977 until 1986, when it extended its services by introducing credit in kind, crop insurance projects for maize and cotton, establishing agricultural central markets in four pilot provinces and taking savings as guarantee for loans, together with the establishment of Funeral Aid Associations among farmer-clients by giving financial support to family members in the event of death of the breadwinner. The third era, strengthening and enhancement initiatives, lasted from 1987 until 1996, when it operated in collaboration with national and international public- and private-sector organizations through its project loan operations providing farm tools, equipment and relevant farming technologies to its farmer-clients. It also promoted a public savings system, which was considered as the beginning of self-reliance funds for business operations. Because individual farmers were always at a serious disadvantage when selling their agricultural produce, BAAC, in collaboration with the Cooperative Promotion Department, took the initiative to encourage farmers to establish Agricultural Marketing Cooperatives (AMCs) in order to gain more bargaining power through the collective purchasing of farm inputs and equipment and selling of agricultural produce. The fourth era, financial intensification and modernization, lasted from 1997 to 2006, when it responded to financial competitiveness, resulting in major changes in its roles and operational strategies through the use of modern information technologies such as a Financial Management Information System (FMIS), Human Resource Information System (HRIS) and Core Banking System (CBS). The Philosophy of Sufficiency Economy was adopted by the Bank, its employees and its customers, leading to strengthened communities and an improvement in services provided by bank employees to customers. BAAC has instituted the "Concept of Truth of Life" based on the philosophy mentioned, provided farmers with knowledge on how to do household accounting and encouraged them to form community groups. The fifth era, responsiveness and institutional transformation, began in 2007 and continues until now. It is determined to uplift the quality of life of farmers by enhancing farming capacity; promoting the learning process among staff, community leaders and farmers; and

establishing guidelines for farmers' income generation, thus creating opportunities and reducing costs. BAAC is focusing on caring for, securing and sustaining a well-balanced society and environment for national development.

At present, BAAC is focusing more on providing a variety of financial assistance through value-added chains of agriculture-related activities, starting from agricultural production and moving upstream, through processing midstream to consumers' consumption downstream – in other words, from farm to fork.

CHAPTER 2

Value Chain Finance and BAAC's Adoption

1. The concept and rationale of value chain finance

The value chain is a series of actors and adding-value activities needed to bring an agricultural product from production to the final consumer, beginning with production, continuing with the processing or elaborating of the final product and ending with the marketing and sale to the consumer or end user. Each step or activity in the chain is composed of processes undertaken by consecutive enterprises, thus adding value to the product.

Although value chain finance includes the flow of financial services through actors along these chains, it may or may not include support from formal financial institutions. The value chain provides an assured market for produce; therefore, it is easier for chain actors to obtain financing from banks and other formal sources. Efficient value chain financing is critical in agriculture since it enables small to medium-scale farmers, traders and processors along the chain to optimize financial investment, resource allocation and capacity expansion.

Because of the perceived risks in agriculture and the high costs of providing financial services for small-scale farmers, many rural financial institutions have been looking for new approaches with higher efficiency to fulfill their mandate of rural development. In view of this, the value chain approach has recently been gaining ground as the preferred method for mitigating risk, reducing the costs of lending to agriculture and eventually getting formal finance to flow to the sector. It is also a means of empowering farmers and small producers by making credit available to them, reducing price risks and ensuring that they get their fair share of value added along the chain. *(This concept comes from Calvin Miller's book of AVCF.)*

2. Value chain finance in Thailand

Thailand has been practicing the concept of value chain financing in its agricultural programmes. The Thai government has been supporting this with the active participation of BAAC and other government agencies. In particular, the Paddy Pledging Scheme and "packing credit" are two programmes that benefit farm producers and exporters and millers, respectively. Although BAAC implements the Paddy Pledging Scheme, the Bank of Thailand (BoT), in cooperation with commercial banks, provides loans to the target beneficiaries at reasonable rates. The Export-Import Bank of Thailand (Exim Bank) implemented an enhanced packing credit programme that includes an insurance package to protect its clients from non-payment by the clients' foreign customers. In addition to the loans obtained from the formal institutions, farmers have also availed themselves of fast and timely credit and other services from cooperatives and traders/millers for various inputs.

3. The value chain, a necessary tool for financing

In the age of globalization in which competition has become fierce, small, isolated and unorganized players are left with no other option but to "shape up or ship out." This is particularly true in the case of poor, marginalized farmers in developing countries who are often left unprepared for the onslaught of foreign competition. However, it is not only the small producers who are affected by this, but

agri-businesses are also threatened by global competition. The value chain approach offers a practical recourse to this threat by getting independent producers, agri-businesses and other actors involved in agricultural production to work together in a concerted and organized effort to lower costs and raise the value of their produce, thereby enabling them to compete globally.

4. Value chain approaches and some innovative financing models of BAAC

Agriculture remains an important part of the Thai economy and involves a large number of small-scale farmers who rely on farming for their living. Nowadays, agriculture is evolving toward a more challenging market environment, requiring higher quality, competitive products, a well-organized structure of the parties involved and consciousness of the environment. BAAC, as a rural development bank, has been adapting itself over the years to address some of the challenges met by small-scale farmers and to help them overcome such obstacles. For example, the Bank amended its charter to widen its scope of operations to cover as many target groups of farm and farm-related activities as possible and has been trying different approaches for rural finance. It aims to go beyond savings and loans to reach sustainable development by adopting the concept of credit plus technical and marketing assistance, and the promotion of farmers and community resilience, and the latest development is the adoption of value chain finance.

5. Reasons for the move into value chain finance

- To enhance the Bank's mandate of rural development by increasing the scope of its operations and potential target groups
- To strengthen its role as a public bank to facilitate sustainable rural finance and agricultural development through the provision of suitable financial services and technical assistance
- To make the value chain more inclusive by making resources available for small-scale farmers in order to offer an opportunity for them to add value to their produce, improve their income and reduce costs and risk
- To ensure that all actors in the value chain are integrated with others and into higher-value market opportunities
- To foster public interest and awareness in environmental conservation through innovative rural finance programmes such as "green credit" for activities of chain actors

The value chain concept provides an opportunity for a comprehensive look at the models, tools and approaches used by industry in many parts of the world. There are lessons and applications that can be adapted to the BAAC situation. The strength of value chain finance is the inclusion of all parties linked together. This is especially true for the small-scale farmers who are marginalized and the Bank's main target group and concern. The adoption of value chain finance promotes the involvement of all actors in the chain and the opportunity to benefit from chain activities. It is a common interest of all chain actors, internal and external alike: producers, processors, traders and financial institutions. It is a truly win-win situation.

CHAPTER 3

Case Presentations

Case 1: Value chain financing: the case of Wangnamyen Dairy Cow Cooperative Ltd.

Background

Wangnamyen Dairy Cow Cooperative Limited was founded to promote dairy farming activities by the initiative of Mr. Aumnuy Tongkok, who gathered a group of agriculturalists who faced problems of low prices for produce and exploitation by middlemen and who wanted to become dairy farmers. Later they established a cooperative on 22 July 1987 under the name “Wangnamyen Dairy Cooperative Limited” with 200 members, 1,000 cows and THB 60,000 as share capital.

After the establishment of the cooperative, Mr. Tongkok, on behalf of Wangnamyen Dairy Cooperative Ltd., signed a sale contract for raw milk with Foremost West Friesland (Thailand) Ltd., witnessed by Mr. Sanor Theinthong, the Deputy Minister of Agriculture.

Later, Mr. Tongkok gave his own land (an area of 0.15 hectare) to Wangnamyen Dairy Cooperative Limited for the construction of a cooperative office and a raw milk storage unit for stocking milk from members. Nonetheless, with an inadequate THB 40 million for operations, the cooperative has coordinated in an integrated system to acquire more assistance. Mr. Tongkok requested support from government agencies and the private sector as follows:

1. Cooperatives Promotion Department: To support in terms of personnel, land, capital, control regulations, technical advice, suggestions and recommendations for solutions, cooperation and coordination with relevant agencies.
2. Department of Livestock Development: To approve farmers applying for dairy farming, to provide knowledge and veterinary services, to provide a monitoring system to maintain and upgrade raw milk quality to a higher standard and to promote cooperation and coordination with the relevant agencies.
3. Bank for Agriculture and Agricultural Cooperatives (BAAC): To provide working capital and investment loans for dairy activities and infrastructure for both qualified farmers and the cooperative, to follow up on the loan use and ensure financial discipline among dairy farmers, and to promote cooperation and coordination with relevant agencies.
4. Office of Agricultural Economics: To provide economic research.
5. Department of Cooperative Auditing: To audit and provide advice on operations.
6. Agricultural Land Reform Office: To issue the landholding license, to manage to cope with problems of water shortages, and the like.
7. Thaidanskimilk Cooperation Limited: To provide training on dairy cattle raising and caring and dairy farm management.
8. Foremost West Friesland (Thailand) Ltd.: To purchase raw milk, provide training in milk production and help in the coordination among involved organizations.

Wangnamyen Dairy Cow Cooperative Ltd. (WDCC) was established under the Cooperative Act in 1987. It is located at 669 Moo (village), 1 Wangmai, Wangsomboon District, Sa-Kaeo Province. At present, it has 948 members whose main activity is dairy farming. The members have a total of 22,719 dairy cows, with

an average of 24 cows per household, and WDCC also owns 1,534 cows. It has 15 committee members, 632 staff, THB 368.7 million in capital and THB 73.89 million in net profit. Its main activities are farm input procurement and sales, raw milk processing, powdered milk processing, a rice mill, animal feed, product delivery, breeding services and a gasoline station. Both WDCC and its members have accessed the BAAC Wangsomboon Branch for financial services. For WDCC, BAAC has provided credit support to a total amount of THB 1,414.5 million, including long-term investment loans and a short-term revolving fund for working capital, both of which have a good recovery rate (Table 1).

Table 1. Credit limit for Wangnamyen Dairy Cow Cooperative Ltd. with BAAC support

Type	Objectives	Credit limit (THB)*	Outstanding (THB)*
1. Long-term loan	Construction of raw milk processing factory and procurement of processing machine	260 million	260 million
2. Long-term loan	Investment in expansion of warehouse and relevant operations	4.5 million	4.5 million
3. Short-term loan (cash credit line for product selling)	Revolving fund	300 million	300 million
4. Short-term loan (cash credit line for farm inputs)	Revolving fund	670 million	570 million
5. Long-term loan	Construction of powdered milk factory	400 million	380 million
Total outstanding: THB 1,414.5 million			

Source: BAAC; * to convert to US\$, use an exchange rate of THB 32 = US\$1.

WDCC has a vision to be Thailand's dairy hub and its goal is to be a leader in dairy production and continuously improve our dairy product quality, to use technology and innovation to develop products and services with maximum competitiveness, to provide good service to our members and our customers, to provide our staff and their families with a better quality of life through rewards and benefits, and to build a learning organization culture.

The promotion of dairy business operations

In 1987, WDCC began a settlement in the area of Wangnamyen District with 1,000 cows and 200 farmers. In 1992, the province planned to develop regional and local financial support in farmers' interest but at that time it still lacked funds; nonetheless, it invested in Aprhitr, Wangnamyen, with 30 farmers and 90 cows. In 1993, it invested in Ban Khlong Wai Moo 6, Tambon Wang, with 10 dairy farmers and 50 cows. In 1994, it invested in Ban Wangnamyen Pi, Wangnamyen. The complex houses a large terrace. Sub Lime Khlong Hat dairy has 10 farmers and 50 cows. Through the years, WDCC has consistently grown in terms of business and diversified its lines of business. For example, in 1996, it planned to include manufacturing and agriculture, by operating in areas where crops can have high quality and low prices. Wangnamyen District, Wang Khao Chakan District and 100 farmers and 500 cows (**Does this mean Wangnamyen District and Wang Khao Chakan District have 100 farmers and 500 cows?**). Later on, the number of dairy farmers and cows increased. At present, the cooperative has 1,198 members, with production capacity of fresh milk manufacturing of around 140 tonnes per day.

Performance of the dairy business promotion project

1. Project area: eight districts in Sa-Kaeo and Prachinburi Provinces
2. 1,198 dairy farming households
3. 140 tonnes of milk production daily
4. Total of 30,000 cows

As a result of business expansion, there is a need to expand and improve infrastructure to support operations, to maintain and upgrade quality standards and to be recognized by various organizations and individuals. The number of dairy farmers, cows and quantity of raw milk increased; hence, existing centers' facilities were inadequate to handle and store raw milk; moreover, they are far away and difficult for farmers to deliver their produce to. Mr. Tongkok, as president of the cooperative at the moment, has initiated more centers, and now there are five raw milk centers as follows:

1. **Wangmai site:** located at Wangnamyen Dairy Cooperative Limited, 669 Moo 2, Chanthaburi-Sa-Kaeo Road, T. Wangmai, A. Wangsomboon, Sa-Kaeo 27250, Thailand
2. **Praijit site:** located at Bansiyakpraijit, T. Wangmai, A. Wangsomboon, Sa-Kaeo 27250, Thailand
3. **Kloonghinpoon site:** located at Wangnamyen Dairy Cooperative Limited (Kloonghinpoon branch), T. Kloonghinpoon, A. Wangnamyen, Sa-Kaeo 27250, Thailand
4. **Wattanakorn site:** located at T. Nongtakinbon A. Wattana-Nakorn, Sa-Kaeo 27250, Thailand
5. **Latakin site:** located at Banlatakin, A. Kabinburi, Prachinburi 2500, Thailand



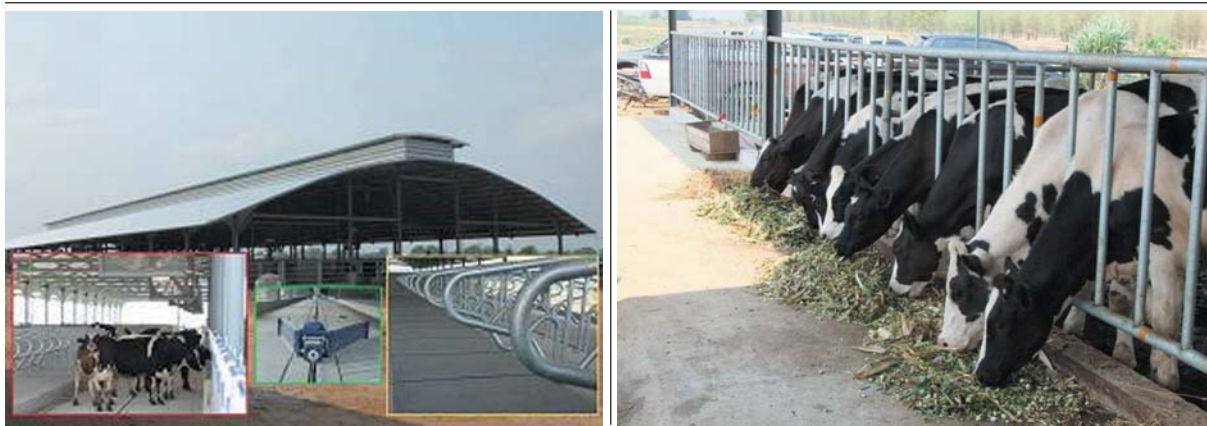
As a result of the increase in the number of cows, demand increased for animal feed, which is inadequate to distribute to its members, and its quality is not as good as it should be. In order to optimize the volume of milk and milk production, Mr. Tongkok convened a committee meeting to discuss these issues. Finally, the cooperative and its members agreed to construct a feeding factory in 1997, which was completed in 1998. Most of the raw materials used in milk production are produced locally, which reduces production costs substantially. This operation has generated revenue of more than THB 100 million for the cooperative in recent years.

To reduce overflows of raw milk in the market and add value to raw milk, the cooperative, led by Mr. Tongkok, has studied and thought of constructing a processing plant using Denmark's dairy industry as a model, which includes processing plants, dairy milk, pasteurized milk, UHT milk and others. Not long after that, in 1999, the cooperative started constructing a processing plant worth THB 342 million, which was completed in 2000. It has a production capacity of 60 tonnes daily under its brand "Wangnamyen Milk."

Business

1. Dairy farm

WDCC has used this as a dairy farm training center for its members and non-members to learn dairy cattle raising and caring for dairy cattle and dairy farm management both in the lab and onsite.



2. Milk powder factory

WDCC has planned to build its first milk powder factory in Thailand, which will help its members to add value to their product and cope with the price problem through the use of a transforming process. It expects to use a THB 500 million budget, with an estimated capacity of 200 tonnes of raw milk processing daily.



3. Products

WDCC is a manufacturer and distributor of fresh milk and milk products, both plain and flavored milk, under the logo "Wangnamyen" and "Q Life" yogurt drink. Its products are made from 100% fresh milk from its members.

3.1 Milk and dairy products

3.1.1 UHT-treated milk



Fresh milk



Sweet milk



Chocolate milk

3.1.2 School milk



School milk in bags



School milk in cartons

3.2 Milk yogurt



Blueberry milk



Natural-flavor milk



Orange milk



Mixed fruit

4. Raw milk collection and storage centers

WDCC has five raw milk collection and storage centers as mentioned above.

5. Dairy feed factory

WDCC built a dairy feed factory in 1998. Because of the increase in number of cows, it is therefore necessary to supplement their intake with concentrate feed. The production capacity of the manufacturing plant is now around 2,250 tonnes per day, generating THB 275 million in profit per year.



6. Cooperative store

WDCC has non-profit-oriented merchandise for sale for its members in a cooperative store. It has procured for its members household goods and medicines for their cows in the shop, which is open daily.



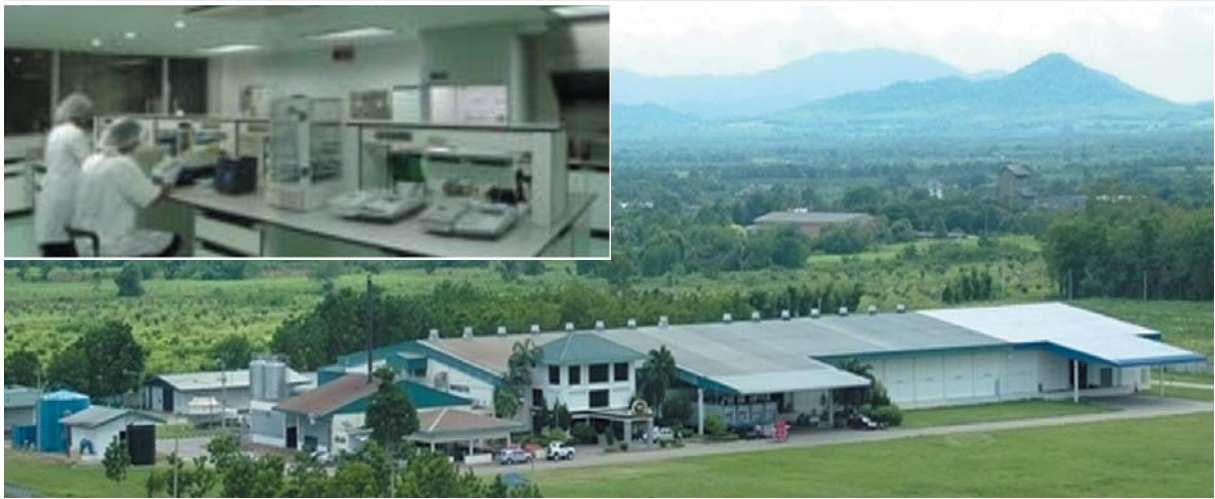
7. Rice mill

To reduce consumption costs, the cooperative built a Thai rice mill with current production capacity of 200 tonnes per day, with the brand Wangnamyen.



8. Milk products factory

WDCC's milk products factory was planned for construction in 1997 and completed in 2000. This factory aims to manufacture milk products, both UHT and pasteurized milk, under its logo "Wangnamyen." Its milk products are 100% made from fresh milk. It has paid attention in every milk processing plant to producing the safest products of highest quality for its customers, including school kids, under the project "Nomrongrean" (school milk), and some government agencies in the central, northeastern and eastern regions.



9. Gas station

WDCC's gas station is open daily to members and customers with various products such as gasoline and LPG, a convenience store, coffee and steak shop, food court, ATM and bank.



10. The coffee shop is open daily from 7.00 to 22.00 with food and beverages such as steak, a bakery, coffee, fruit juice, spaghetti, etc.

What is well known among its facilities are clean and comfortable toilets and a sensor system to open the doors and turn the lights on and off automatically.



Figure a. Wangnamyen Dairy Cow Cooperative Ltd.'s value chain financing: production-processing-marketing

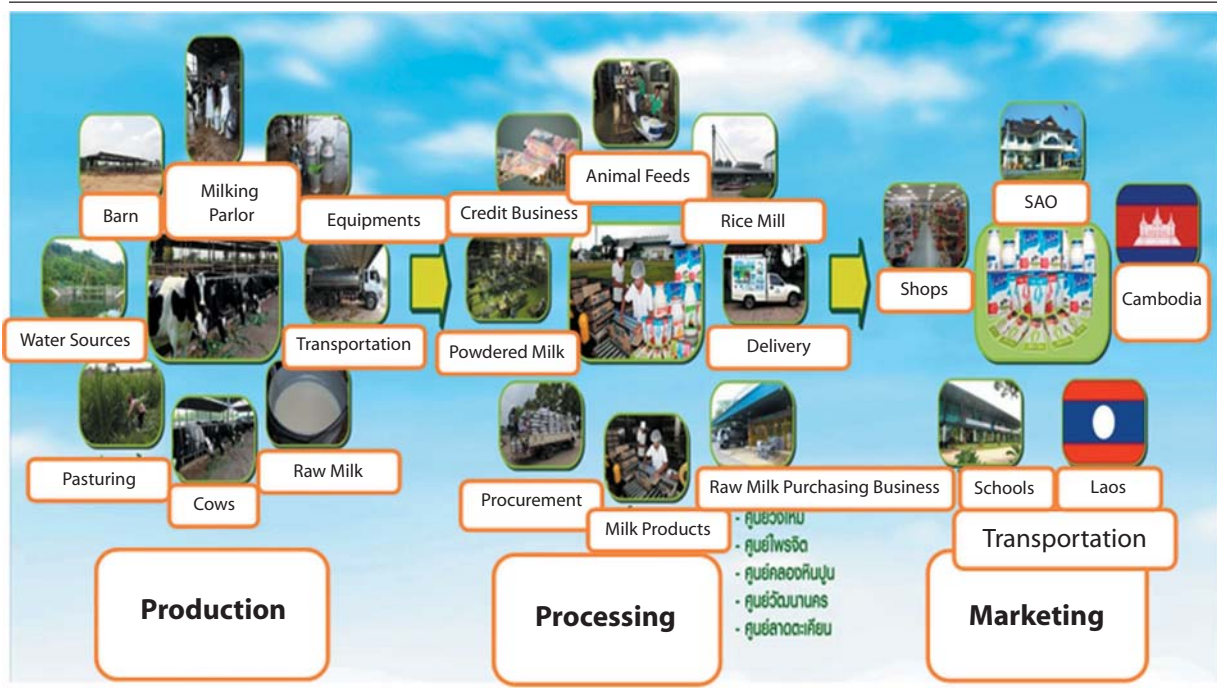


Figure b. Wangnamyen Dairy Cow Cooperative Ltd.'s value chain financing: production



Figure c. Wangnamyen Dairy Cow Cooperative Ltd.'s value chain financing: processing

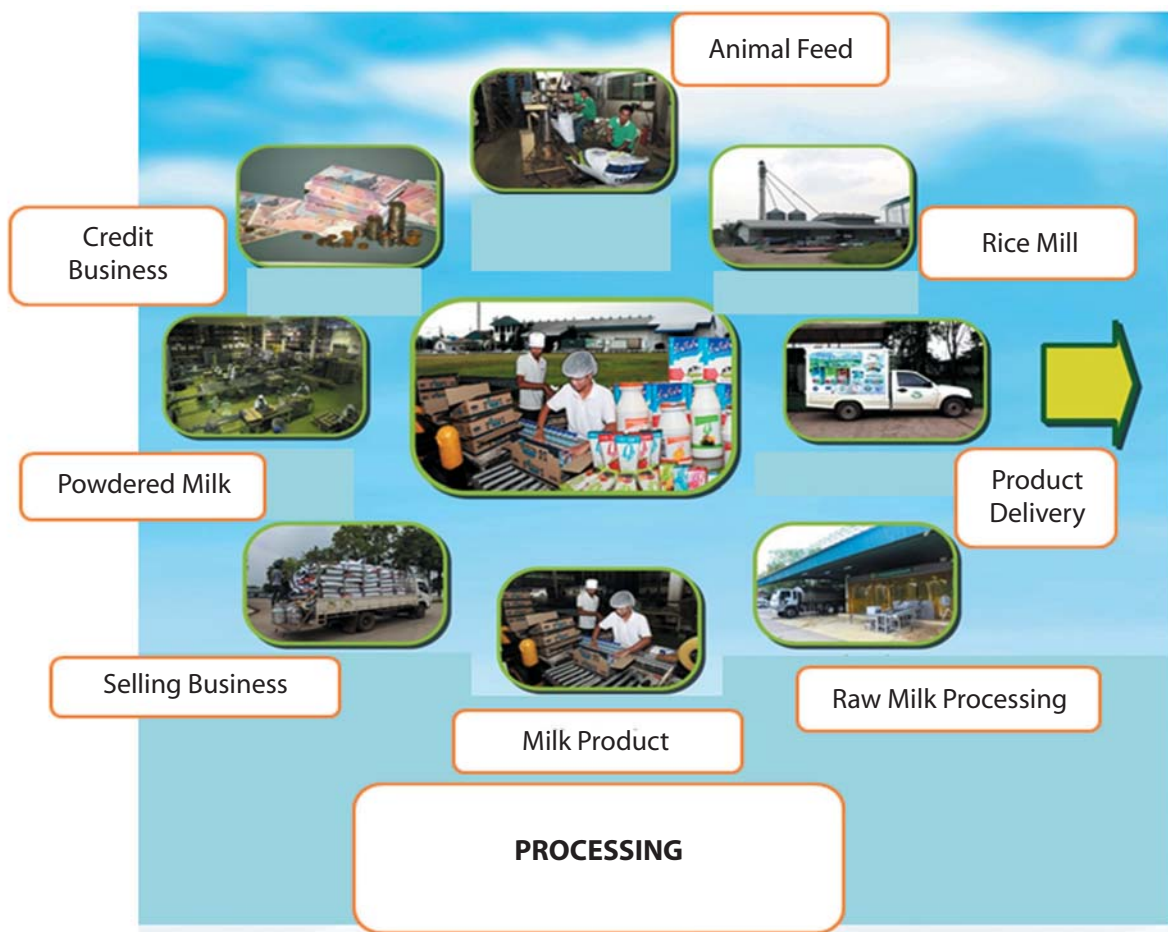


Figure d. Wangnamyen Dairy Cow Cooperative Ltd.'s value chain financing: marketing



Value chain finance experience

The Wangnamyen Dairy Cow Cooperatives Ltd. value chain finance has a lot of beneficiaries:

1. **The Wangnamyen Dairy Cow Cooperatives Ltd.** BAAC's long-term investment loan financed the cooperative, which enhances and strengthens its business. The loans are used for investment in a standardized, high-technology and qualified factory, such as construction of a raw milk processing factory, and procurement of a processing machine, which creates better and more product variety. Through this, the cooperative can gain more competitiveness in the market. Although short-term, working capital and a low-interest-rate loan can help improve the liquidity of the business with adequate funds.
2. **The cooperative members.** Almost all members are able to reduce their dairy production costs remarkably from the availability of warehouses and a powdered milk factory; thus, more services can be provided to its members, such as the provision of production inputs, the convenient delivery of raw milk, etc., without additional cost. Moreover, members have a permanent market since all of their products can be absorbed by WDCC at a fair price. Therefore, they have the stability of their business and are satisfied with their daily income and annual dividend from WDCC.
3. **The society.** The cooperative is the best supporter in helping solve the raw milk oversupply problem in Sa-Kaeo Province and other provinces. People in the local community can consume high-quality milk products with a fair price, while they also enjoy more employment

and earn more income from working in their hometown. This reduces the problem of workers' migration from rural to urban areas. An amount of money from WDCC's annual business net profit is returned back to the community for social activities such as public welfare and education. Moreover, BAAC's value chain finance, which is in line with the integrated rural development policy, can support WDCC to be the centre of the dairy business in the Asian Economic Community (AEC) region.

Lesson learned

What BAAC has learned from dairy value chain finance via the Wangnamyen Dairy Cow Cooperatives Ltd. is as follows;

1. In order to enhance any business, sufficient support is needed. Each business component must be strengthened so that others can have a good impact. In the case of WDCC, varieties of financing can help each activity of the dairy business to become stronger and more beneficial.
2. Both short-term working capital loans and long-term investment loans need to be analyzed carefully and thoroughly to be sure that their amount and timing are appropriate for the business.
3. Data input in the project feasibility study must be reliable, complete and adequate; therefore, analyzers need to be prudent and use enough facts for credit analysis.
4. BAAC's "beyond credit service" policy, which BAAC staff need to be aware of, can support the success of agricultural value chain finance. After loan disbursement, follow-up and advice to borrowers are crucial, along with cooperation with other agencies to provide knowledge to borrowers.

Application to specific areas with similar conditions

The model of agricultural value chain finance can be applied to any business in any part of the country, especially in cooperative businesses. In accordance with BAAC policy, value chain financing is currently the main mechanism of the BAAC branch for active credit business. Each BAAC branch has been strongly supported and equipped by the Personal Loan Department and Institutional Loan Department with many tools and assistance to operate this important mission and to render integrated credit services to enhance farmers' opportunity for effectively improved productivity.

Additional information

Address: Wangnamyen Dairy Cooperative Limited, 669 Moo 1, Chanthaburi-Sa-Kaeo Road,
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Email: it2010sk@gmail.com

Website: www.dairyhub.asia

Case 2: Value chain financing: the case of Doi Chaang coffee

Introduction

Coffee, one of the world's economic crops, was first found in the Ethiopian province of Kaffa. It was first cultivated in Yemen in the fifteenth century. In 1616, the Dutch brought live coffee plants back to the Netherlands to grow in greenhouses. By the late 1600s, the Dutch were growing coffee in Malabar in India and in 1699 they took some plants to Batavia in Java, which is now Indonesia. Within a few years, the Dutch colonies had become the main suppliers of coffee to Europe, where coffee had first been brought by Venetian traders in 1615.

Coffee growing and drinking now take place throughout the world. In 2012, total coffee production was 8.71 million tonnes. The major producers are Brazil and Vietnam, which produced 4.37 million tonnes of coffee, accounting for 50% of global production. Total coffee consumption was 8.68 million tonnes (ICO, 2012).

Coffee production in Thailand

Two varieties of coffee are cultivated in Thailand, Robusta and Arabica. Robusta is cultivated mainly in the southern provinces such as Chumphon, Ranong and Surat Thani. The production of Robusta accounts for 98% of the country's total production. Most of this variety is consumed domestically. Arabica is cultivated mainly in the northern provinces such as Chiang Mai, Chiang Rai, Mae Hong Son and Lampang. Nearly 10 billion tonnes of Robusta coffee are produced, indicating that the land and climate are favourable for coffee cultivation. Before 1977, Thailand was a coffee-importing country. After 1977, the country became an exporter of coffee. Sixty thousand tonnes of coffee were exported in 1997 (Office of Agricultural Economics, 1998). Thailand is a member of the International Coffee Organization (ICO), aiming to be granted a quota for the export of coffee. However, the global market encountered problems of oversupply and strong competition, which lowered the price of coffee. In response to that situation, the Thai government issued a policy to decrease coffee cultivation in the south in 1989 in order to limit the supply of coffee and ease the burden of the government budget in the intervention scheme.

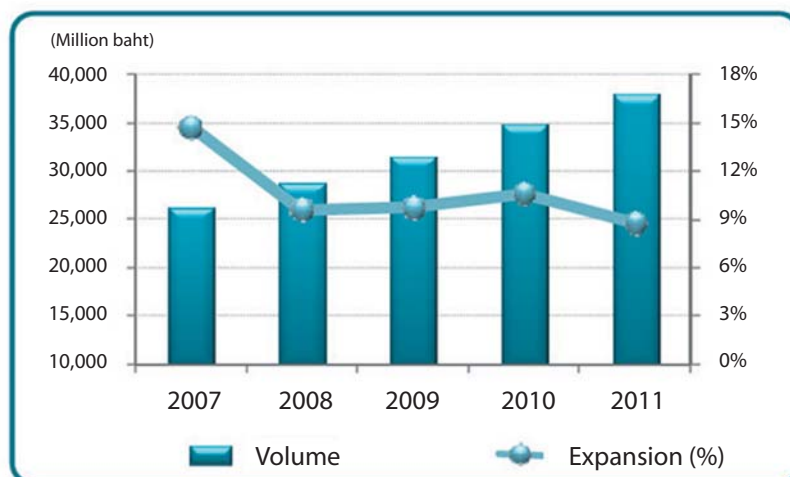
Production demand and export of coffee in Thailand

Quantity (tonnes/year)	2007	2008	2009	2010	2011
Production	55,660	50,442	56,315	48,955	42,394
Demand	52,000	53,479	53,803	58,000	61,480
Surplus	3,660	-3,037	2,512	-9,045	-19,086
Import	11,138	1,539	234	320	720
Export	374	14,542	6,214	14,268	34,374

Source: Office of Agricultural Economics

The cultivation of Arabica coffee in Doi Chaang, Chiang Rai Province of Thailand, was first introduced by the Hill Tribe Development Centre in 1983 in order to replace the cultivation of opium. Doi Chaang is the name of a village situated in the mountain of the same name. With favourable climate and altitude, coffee grows well in this area. However, in 1983-1993, the production of coffee was low because of the lack of capital, know-how, proper facilities and capital as well as low prices. The poor roads and poor transportation system were great barriers to coffee growers for selling their coffee. During that period, Doi Chaang farmers also cultivated tomatoes and cabbages, which gave them higher income. In 1995, most of the coffee trees were cut down to grow more tomatoes and cabbages. These crops became the main sources of income. Nonetheless, a few years later, cultivation of those crops also brought farmers mounting debt. Their earnings could not cover their expenses because of the increased volume and

Domestic Coffee Market and Expansion Year 2007-2011



Source: Euromonitor International, April 2010

prices of their inputs such as chemical fertilizers and pesticides together with the fluctuating prices of their crops.

In 1994, BAAC established the Wa Wi Branch in Wa Wi Subdistrict, Chiang Rai. It is the only branch operating in the highland. It was designed as a special type of branch and it operates with special targets. The bank aims at improving the standard of living of the highland population on a sufficiency basis, without being involved in opium production and slash-and-burn farming. Farmers are encouraged to contribute to the conservation of natural resources and the environment for a sustainable future. BAAC has provided those highlanders with the financial services needed for their agricultural livelihood. The Bank also relaxed its lending regulations to include those who had not been granted Thai citizenship but possessed a highlander’s identification card.

Having been affected by marketing constraints for two decades, the coffee growers decided to establish Doi Chaang Fresh Roasted Coffee Company Ltd. as their own company in 2003. This was the start of a complete supply chain of coffee from production and processing to marketing. The major problem is financial constraints. Since the company’s factory and facilities were built on high mountain land, they were not granted a land title deed and possessed no other assets to secure their loans. Consolidating and processing a large amount of coffee required a large amount of capital. As such, BAAC’s financing is an important source that the growers can access.



The key factor driving farmers' interest in expanding their farms, scaling up their production and paying more attention to the quality of their coffee is the test results of coffee conducted by international agencies showing that Doi Chaang coffee was ranked among the top three of best coffees in the world. This significantly attracted the coffee market and coffee lovers from across the globe. Consequently, Doi Chaang coffee has been produced mainly for export. Coffee prices (green beans) per kilogram increased significantly from US\$ 1-1.50 to \$ 2-3 in 2007 and rose to \$ 5-6 in 2011. Today, the green coffee beans' price surpasses \$ 7.

Following the world recognition and the rising prices of their coffee, the farmers expanded their farms. The total cultivated area increased from 500 to 1,500 hectares in 2007.

Total cultivated area is now approximately 4,000 hectares. More than 90% of the total number of coffee growers are BAAC's client-farmers. They receive credit service in terms of short-term loans for working capital and medium- or long-term loans for investment in coffee plantations, housing, infrastructure, machinery and processing facilities.

The Doi Chaang coffee company collectively buys coffee cherries from farmers, processes coffee cherries into roasted coffee and sells the processed coffee mainly to overseas markets, for instance, Canada, the United States, England, Switzerland, Germany, Republic of Korea, Japan, Australia, Singapore, etc.

Arabica coffee grows well in the highlands in the northern part of the country. Arabica production is 2,000 to 2,500 tonnes per year. With its superb aroma and taste, it became popular among tourists. This popularity has been extended worldwide, thus inducing the expansion of the coffee business.

Roles of BAAC

Before the operations of BAAC in the Doi Chaang area, those hill tribes lived their life from subsistence agriculture. They grew opium for cash and practiced slash-and-burn farming. In 1983, coffee cultivation was introduced to replace the cultivation of opium. Subsequently, cabbages and tomatoes were cultivated. During that period, underprivileged farmers of Doi Chaang could not access any formal financial services because they were poor and possessed no land title deed or any other assets to secure a loan. The land they lived on is in the high mountain, which cannot be granted any title deed or certificate. Some were able to borrow from local moneylenders that usually charged them very high interest rates.

After BAAC established its branch in Wa Wi, which covers Doi Chaang, the first loan extended to Doi Chaang farmers was a short-term loan for the main crop. A joint liability group was used to secure the loan. This type of loan facilitated BAAC lending in terms of scale and speed. The maximum amount of this loan is THB 150,000 or approximately US\$ 5,000 for each farmer. At least five client-farmers are required to co-sign each loan contract. The loan is payable within 12 months or in some special cases not beyond 18 months.

Investment loans are also offered for investing in new plantations; infrastructure; purchases of machinery, livestock or other processing facilities; housing; etc. The maximum investment loan is THB 25 million (approximately US\$ 830,000). However, in the case of using at least two persons as guarantors, the maximum loan is THB 150,000 (approximately \$ 5,000).

This type of loan provides farmers an opportunity to start or top off their business or investment in order to earn income or secure their livelihood in the long run.

Value chain financing

Value chain finance is not new. It has existed for more than 100 years. In the past, farmer producers might be financed by other players in the chain such as consolidators, input suppliers, buyers, processors or exporters. In traditional lending, banks focus on the characteristics of borrowers, whether they are capable, industrious, honest, physically and mentally healthy and possess a good credit record. Banks also assess their project, whether it is feasible or not. The real world is so complicated. Many factors affect the repayment of loans or the quality of lending. In most cases, farmer producers or smallholders have inequitably benefited from the added value along the value chain. The big portion of benefit goes to the rich, the few, who almost always have advantages over smallholders.

Realizing this fact, BAAC designed tools and methods to ensure that farmers would be given a fair share of benefit from added value. Agricultural Marketing Cooperatives (AMCs) have been established as a tool or marketing arm of BAAC in every province across the country. Their main functions are (1) to market their members' products, (2) to supply their members with good-quality farm inputs at reasonable prices, and (3) to provide other services such as plowing, harvesting and transporting. Without AMCs, farmers are at risk in marketing their produce. Private merchants or traders tend to exploit farmers by offering relatively low prices or cheating when weighing farmers' produce.

In 2012, BAAC extended a short-term loan amount of THB 100 million (US\$ 34 million) for the purchasing and processing of coffee cherries. AMC offered THB 18-20 per kilogram, an increase of 400% over the past 10 years.

In addition to individual loans and farmer institutional loans, BAAC introduced community enterprise loans to support income-generating activities such as processing of farm produce to create added value. The simple processing or consolidating of coffee cherries can also create added value. In response to the marketing constraint in the case of Doi Chaang, BAAC facilitated the establishment of community enterprises and provided them with loans for consolidating and processing coffee. As a result, small farmers could sell their cherries at reasonable prices, probably much higher than average prices.

Coffee production

In order to maintain its world-class-standard coffee, the farmers of Doi Chaang established an Academy of Coffee. The theme of the academy is education, environment and creation of wealth. Farmers are being educated not only on how to cultivate and harvest coffee but also on processing, and expenses and money management. Farmers are being further educated on the benefits of cultivating their coffee under the canopy of shade trees. Farmers were encouraged to practice organic farming. The pulp and



peel of coffee cherries discharged from a factory can be best used as organic fertilizer. It is given to farmers for free. This allows coffee cultivation to expand without any impact on the environment. So far, more than 500 farmers have been educated and the benefit is already reflected in improved productivity.

Doi Chang coffee plantation



Organic practice and certification

In the decade of cultivation of tomatoes and cabbages, farmers and their family members were exposed to the intensive use of agro-chemicals. Farmers negatively experienced the threat of agro-chemicals. The leader of Doi Chang Village revealed blood test results showing that more than 80% of the test samples were contaminated with toxic chemicals. A campaign took place to inform villagers to be aware of this threat. The shift from those crops to coffee cultivation positively responded to the health and environmental issues. Organic farming techniques were extended to and by coffee growers through the Academy of Coffee. Growers adopted them and practiced them enthusiastically. Comprehensive care at all stages from planting to nurturing, picking, cleaning, sorting, processing, testing and packaging has significantly contributed to the quality and value of this premium coffee. Consequently, Doi Chang coffee was certified as an "Organic product" by USDA Organic and Bioagricert. It has been globally recognized as a specialty coffee.

Today, the quality of life of the farmers in Doi Chang Village has improved significantly. Those who sought employment opportunities in big cities have returned home to work happily with their families, and their children have a better education in both domestic and international academies. The environment also revived strongly as trees and forests grew and wildlife returned.



Cherry skin and pulp (waste from processing plant)

Coffee processing

In the past, coffee processing was manually conducted by a simple method. Coffee cherries were picked and brought to a simple container. Subsequently, they were manually cleaned and crushed to separate the peel and pulp of cherries. The coffee bean was then sun-dried for 5 days and was ready to be sold.

Doi Chang coffee is now processed by wet processing, using modern processing facilities as shown in the pictures below. Nevertheless, hand sorting is still used in order to ensure the quality of coffee and promote local employment. AMC Chiang Rai collectively bought coffee cherries from farmers and community enterprises. AMC then hired Doi Chang Company to process those cherries, transforming them into coffee beans. Coffee beans were periodically sold to Doi Chang Company to further process them by hulling, using its own mill. The raw beans were exported to Canadian Group. Some beans were roasted and packaged mainly for overseas export and some for domestic markets.



Organic processing plant



Organic processing plant



Quality control (hand sorting of coffee beans)



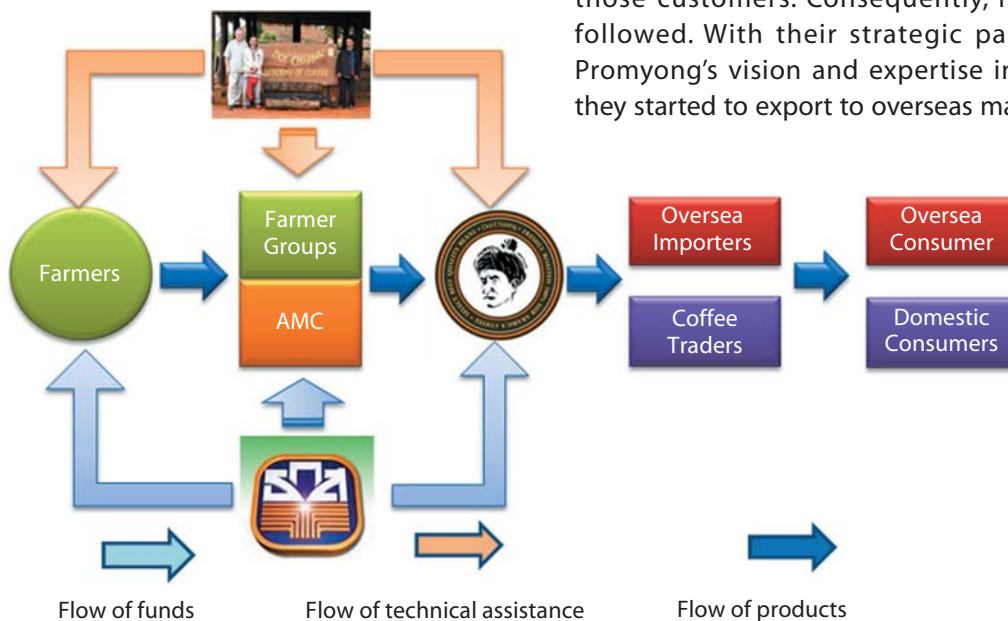
Coffee drying field (solar drying)



Coffee marketing

In the past, the farmers of Doi Chaang sold their coffee beans in Chiang Mai, more than 100 kilometers away on a very rough road. Chiang Mai was the only coffee market where the prices were relatively higher than those of the local traders in Chiang Rai. However, the farmers were exploited by the buyers in Chiang Mai, who broke their verbal agreement to buy Doi Chaang coffee at agreed prices, forcing those farmers to sell it at lower prices demanded by the buyers because the farmers could not afford the cost of transportation back to their home.

The farmers have strived to find their way out of the wilderness, poverty and exploitation of traders. They learned that the gap between the coffee bean prices for buyers and sellers was big and the added value was huge but the farmers gained the smallest portion of the added value. Finally, with the assistance of Wicha Promyong, a lowland man who loved nature and adventure, they decided to run a coffee house in the city of Chiang Rai. They began to roast, grind and make finished coffee for sale to coffee drinkers, mainly overseas tourists. The exclusive taste and aroma of Doi Chaang coffee satisfied those customers. Consequently, many orders followed. With their strategic partner Wicha Promyong's vision and expertise in marketing, they started to export to overseas markets.

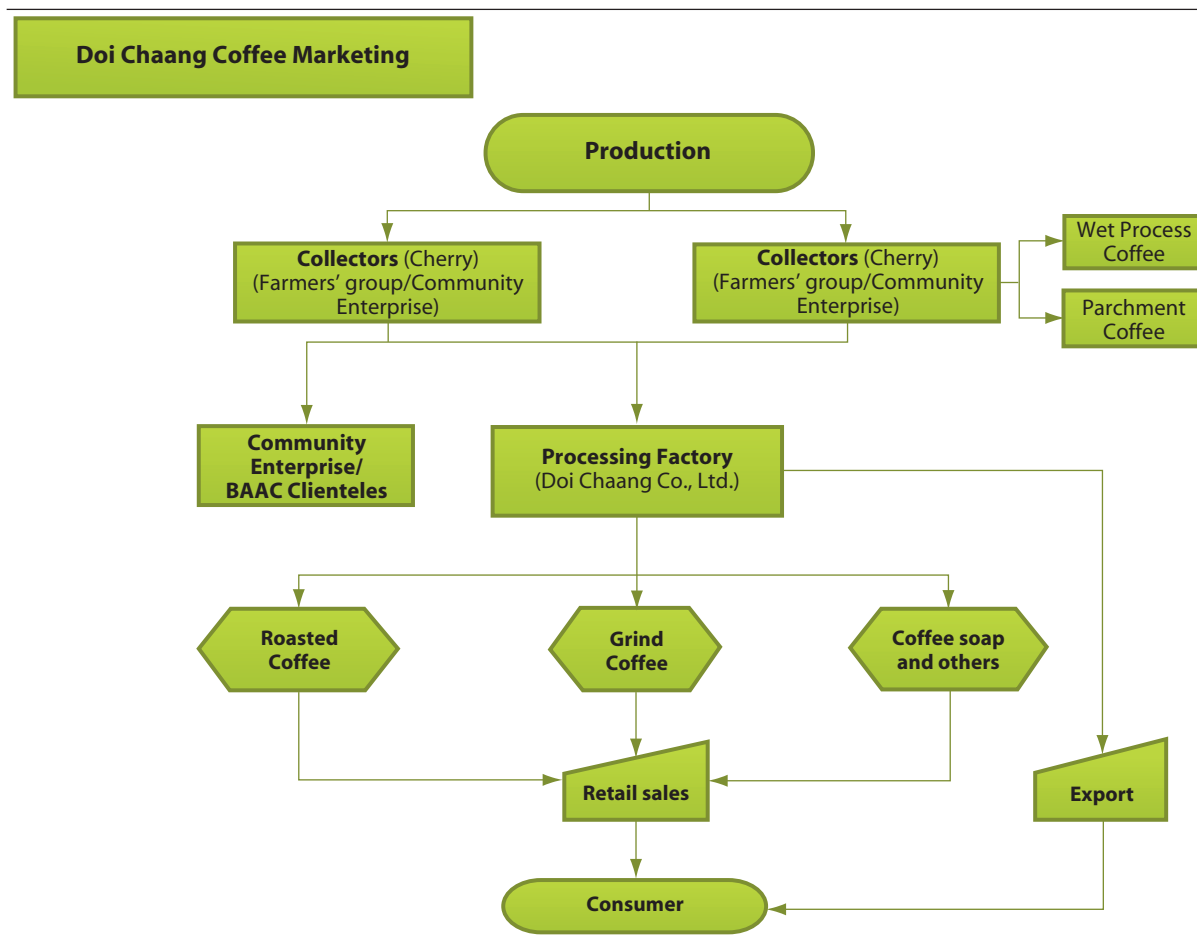


Farmers sold their coffee cherries to either Doi Chang Company on behalf of AMC or to community enterprises. The processing of cherries into coffee beans was conducted by Doi Chang on behalf of AMC. Then, AMC periodically sold coffee beans to Doi Chang Company according to the purchase order of customers. Next, Doi Chang Company conducted milling or hulling, roasting, packaging and exporting. A limited volume was sold domestically.

Doi Chang Coffee value chain financing

During the early years of Doi Chang, it was financed by a commercial bank, using the stock of coffee as collateral for packing credit. In an effort to widen the scope of lending to assist farmers and farmer institutions, BAAC developed various types of credit services. Packing credit and trade finance were recently introduced, thus enabling BAAC to extend comprehensive credit services to Doi Chang Company, which is owned by hill tribe farmers.

The success of integrated value chain financing in the case of Doi Chang has brought increased income and improved quality of life. Families are happy when all family members live together. The community is healthy when most people enjoy living and cultivating coffee and caring for their natural resources and environment. The children have received a better education, both in-country and abroad.





Doi Chaang coffee house



Doi Chaang Academy of Coffee

Products of Doi Chang coffee

1. Doi Chang Peaberry

Peaberry, the single-seed coffee or pea berry, is recognized as super-quality coffee. Because of its sole seed, it can fully accumulate nutrient in its seed. It features a mild taste and a combination of cherry, flower and honey-like aroma.

2. Doi Chang Premium

This organic coffee has been certified by USDA and EU organic certifiers. Its production and processing fully comply with organic standards. It is permitted to be sold at Sun Opta, the well-known organic product shop with more than 1,500 branches throughout North America.

3. Doi Chang Premium AA

The finest coffee with a large size of coffee seed over 7 millimeters, it was roasted at a “Dark level.” It has a strong taste and macadamia- and caramel-like aroma.

4. Doi Chang Premium A

It measures 6 millimeters and it features a floral aroma and light fruity taste, which is exclusively fine Doi Chang.

5. Doi Chang Ego

As a B grade coffee, it is still full of fine aroma and memorable taste.



Statistical highlights of Doi Chang Village

Population	5,000
Number of households	1,200
Composition of tribes	Akha, Lisu, Yunnan and Hui

Area

- Horticulture 1,732 hectares
- Forest cultivation 1,088 hectares

– Agricultural cultivation	476 hectares
– Village common	80 hectares
– Village rite place	320 hectares
– Reserved and community forest	2,034 hectares
Number of BAAC client-farmers	500
Number of community enterprises	24
Total loans outstanding	THB 69 million
Coffee-growing area	20,000 hectares (2012, estimated)
Coffee production	15,000 tonnes of cherries

Additional information: Doi Chaang Coffee Original Co., Ltd.

President:	Wicha Promyong
Managing director:	Panachai Pisilert
Production:	15,000 metric tonnes of cherries
Member-farmers:	600
Marketing:	Export of coffee beans, 300 tonnes, whereas domestic sales are a maximum of 300 tonnes
Major overseas markets:	Canada, Republic of Korea and Japan
Distinctive specialty:	93 points for cup quality from Coffee Review, world’s leading coffee-buying guide, which is beyond Fair Trade Certified.

Doi Chaang Academy

Doi Chaang Foundation

Case 3: Value chain financing: the case of Thasae Palm Oil Land Settlement Cooperative

1. Background

The Thasae Land Settlement Cooperative is located in Thasae District, Chumphon Province. It was established in 1963 by gathering the populace that was underprivileged and did not own land and had to live their lives on allocated government land. In 1971, the cooperative was registered under the Cooperative Act with 439 members.

The cooperative is 40 kilometers away from the city center. Its operation covers six subdistricts of Thasae (Thasae, Thakarm, Rab ro, Kuring, Hongcharoen and Sab-anan). Recently, the cooperative had approximately 3,700 members and 256,770 rai (approx. 41,000 hectares) of cultivated land, with yield of 522,000 metric tonnes a year.

1.1 The cooperative businesses

The cooperative operates five businesses worth THB 1,950.80 million (US\$ 61 million) as follows:

1.1.1 Loan provision worth THB 180 million (\$ 5.6 million), with an aim to provide members with accessibility to funds in order to assist and strengthen their career, for instance, a loan for farm improvement, a loan to buy land, a vehicle, etc.

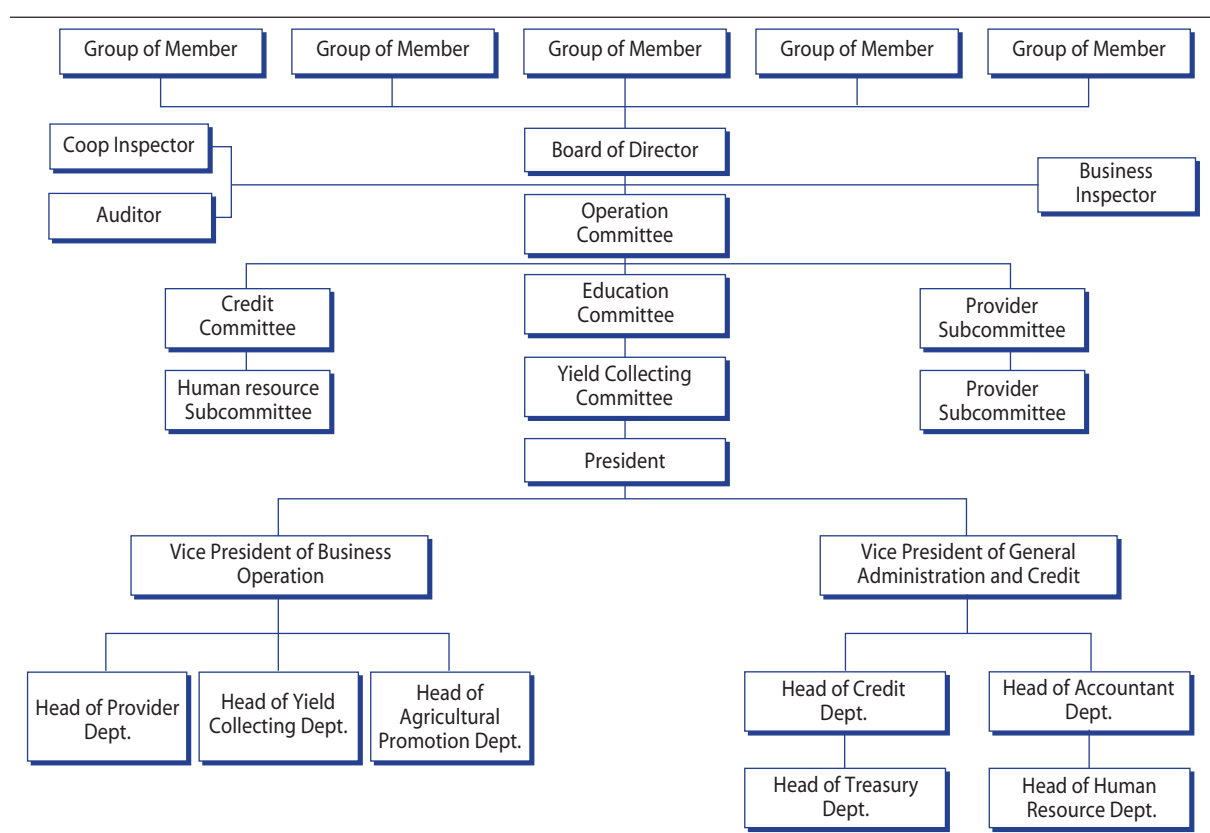
1.1.2 Deposit mobilization worth THB 231 million (\$ 7.2 million). The cooperative offers different kinds of deposits to its members, ranging from savings to special savings, special deposit projects and time deposits.

1.1.3 Collection of fresh fruit bunches (FFB) and oil palm processing into crude palm oil (CPO) worth THB 1,503 million (\$ 46.8 million).

1.1.4 A community store worth THB 331 million (\$ 10.34 million). The cooperative provides both agricultural inputs and consumer goods, including computers and electronic equipment.

1.1.5 Agricultural promotion and technical services worth THB 3.8 million (\$ 0.12 million). These include selling quality young palm trees, seeds, fertilizers and pesticides as well as services such as pruning and weeding, etc.

1.2 The cooperative structure



2. BAAC contribution to the cooperative

BAAC aims to go beyond savings and loans to pursue sustainable development; therefore, it has carried out a concept of credit plus technical assistance in order to promote value addition activities together with knowledge dissemination. BAAC contributes four areas of support to the cooperative, ranging from credit provision to training, marketing and farm management.

2.1 Credit provision

As BAAC deems it important to have a flow of funds among various links within the value chain to ensure that actors involved could obtain financial access, it provides a total credit of THB 623.60 million (US\$ 19.5 million) to the cooperative to lend to its members as well as to operate its businesses, focusing on three businesses: collecting FFB, building a crushing mill and building a power plant.

2.1.1 Credit provision for FFB collecting

Chumphon is the third-largest oil palm producer in Thailand after Surat Thani and Krabi. Its palm fields occupy an area of 794,450 rai (127,112 hectares), accounting for 50.3% of the province's land. Thasae District has 257,747 rai (41,239 hectares) of palm fields or 32.4% of the land. Primary products are produced by small and medium farm holders.

BAAC has provided THB 100 million (\$ 3.2 million) to the cooperative to collect FFB from its members and network through its nine collecting ramps by using its own facilities. The cooperative pays those farmers in cash and 800 to 1,500 metric tonnes of FFB are sold daily as a crushing mill input.

2.1.2 Credit provision for the establishment of a crushing mill

In the past few years, the cooperative faced difficulty in selling its members' FFB as most of the crushing mills in the province had their own oil palm produce, causing an oversupply as those crushing mills could not buy all the FFB from the cooperative. As a result, the cooperative had to take those FFB to sell to other crushing mills in nearby provinces, causing a rise in transportation cost while quality and weight declined. There were about 380 metric tonnes of weight lost each year, thus losing THB 0.9 million (\$ 28,125), and transportation cost THB 2 million (\$ 62,500).

In 2008, the cooperative decided to establish its own oil palm crushing mill to counteract the oversupply and fluctuating market price. This allows its members to fully participate and avail themselves of the benefit of value-added activities as well as adequate quality assurance and specific arrangements.

BAAC supported the investment loan of THB 373.60 million (\$ 12 million) for setting up an oil palm crushing mill, which is now operating with a crushing capacity of 45 metric tonnes per hour.

The process of the cooperative's palm oil crushing is essentially a zero-waste production system as waste and by-products are recycled and either used for inputs in other processes or sold. For example, shells and fibres are used for boiling in the crushing process, ash and treated waste water are used as organic fertilizer to reduce the use of chemicals, while empty bunches are sold to mushroom growers and kernels are sold to a refinery to produce oil used in the cosmetic industry.

2.1.3 Credit provision for the establishment of a power plant

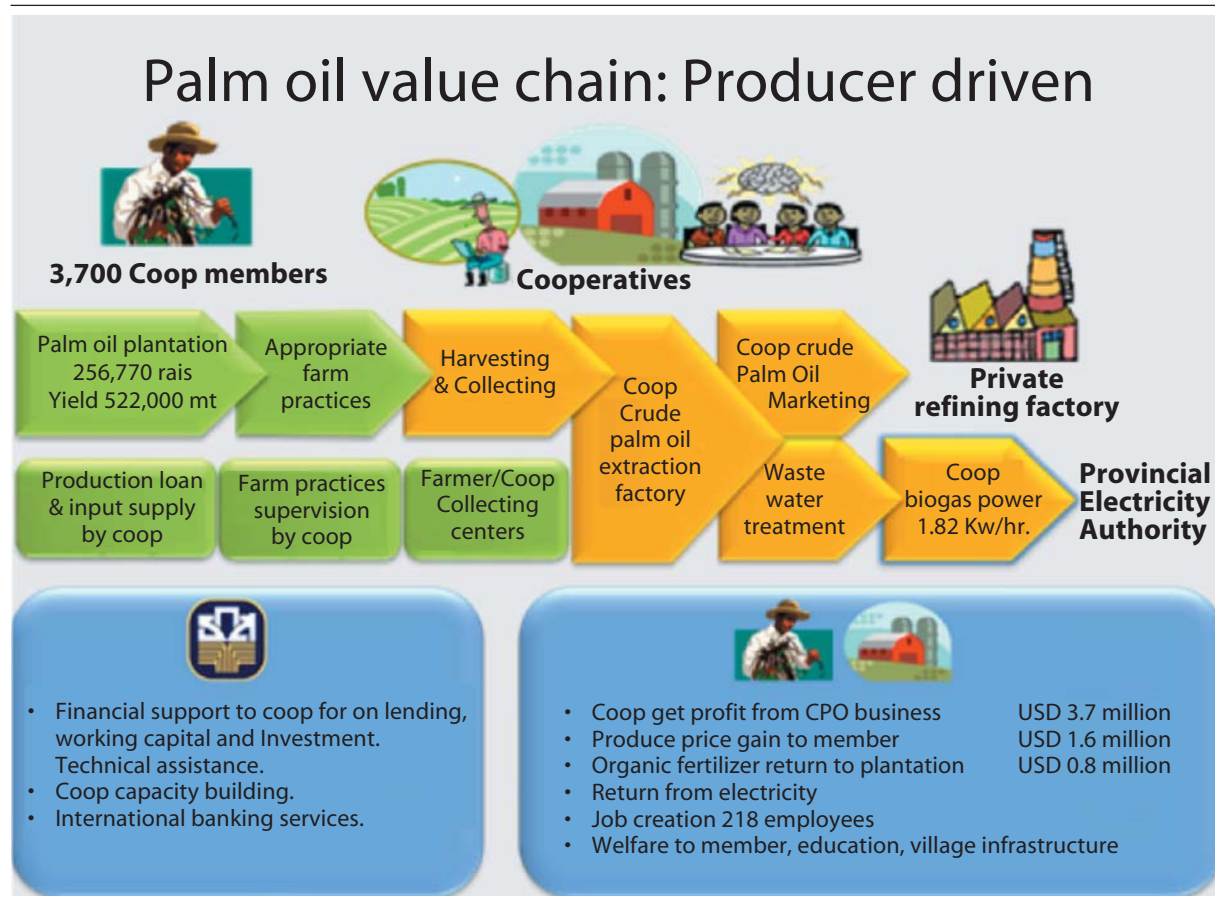
The crushing process consumes a large amount of water, starting from boiling, separating kernels and crushing, which produces 225 cubic metres of waste per day. This waste is likely to have an effect on the environment if the management system is poor.

Before building the power plant, waste from the crushing process was kept in the pond, which is in the crushing mill area. To store waste in the pond seems not to pollute the surrounding environment; nonetheless, in the long term, this waste is likely to seep out of the storing pond and into the nearby natural water and it pollutes the air.

To cope with pollution from waste as well as make use of it, in 2013, the cooperative established a 2-MW biogas power plant with THB 150 million (\$ 4.7 million) of financial support from BAAC. Electricity generated from the power plant is used in a crushing mill factory and the surplus is sold to the regional electricity authority.

Figure a shows the business model of the cooperative, in which BAAC acts as a financial service provider for the operation of the crushing mill and power plant.

Figure a. Thasae Land Settlement Cooperative value chain model



2.2 Training/seminar for cooperative personnel

Apart from credit provision, BAAC has tried to strengthen the skills and knowledge of cooperative personnel through several activities, ranging from training to seminars and study visits. Those activities are as follows:

- Arranging study visits to the biogas power plant in Malaysia in order to broaden knowledge and derive some ideas to develop their own business.
- Conducting a knowledge-sharing panel with other cooperatives in order to allow members from each cooperative to learn from the others' success.
- Organizing a new generation of cooperative leader training courses in order to build up necessary skills and knowledge for business leaders, which will allow them to deal with changes in the business environment properly.
- Organizing a cooperative inspector training course to provide useful knowledge and skills in examining the cooperative business.
- Adopting the accounting standard of the Department of Cooperative Auditing, which allows the cooperative to apply an effective accounting system.
- Organizing a cooperatives business management seminar in order to strengthen managerial skills in doing cooperative business for the cooperative's management team.

2.3 Marketing

To address the needs and obstacles among actors along the value chain from upstream to downstream (plantations, CPO production and refinery), the specific needs of those different actors should be considered.

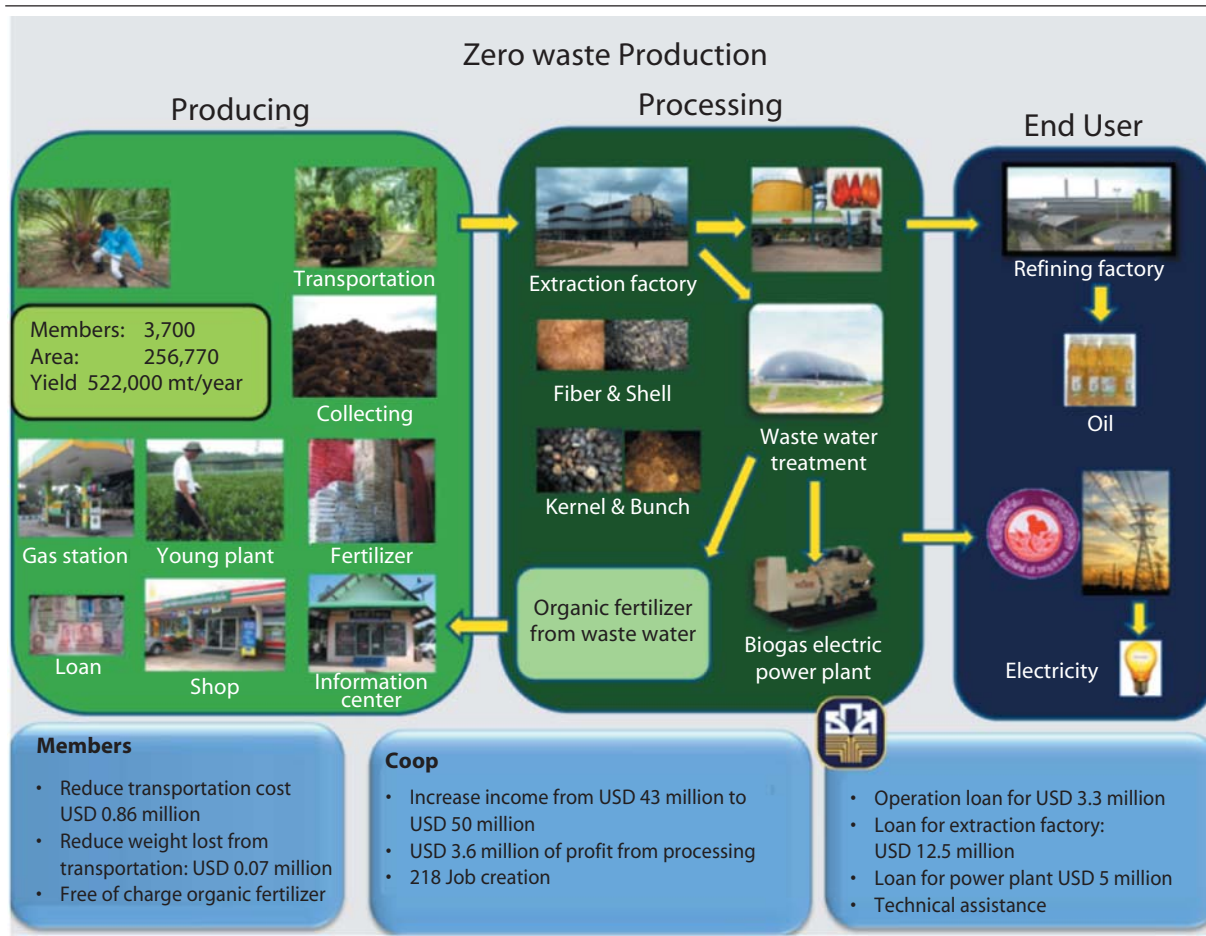
Obtaining access to markets is one of the main issues that stakeholders in the value chain need to deal with. Therefore, BAAC tries to strengthen a network of FFB collection, which not only allows farmers to have a certain market but also helps them in transporting the yield to the cooperative crushing mill.

In addition, BAAC has attempted to contribute to cooperative sustainability through the following activities:

2.3.1 Youth cooperative project

Its members are getting older and the new generation is likely to leave their farmland to work in the city, causing a decline in the agricultural workforce. Therefore, BAAC has initiated a youth cooperative project to build up youths' value awareness of their parents' career. High school students are invited to participate in the project in order to learn about local wisdom in oil palm plantation, including cultivation and farm management. In addition, knowledge of cooperatives is provided to the participating youth, which is in line with the government policy to adopt cooperatives as a national concern. The final goal of the project is to encourage youth to inherit their parents' career as well as the cooperative business and eventually obtain sustainability of the cooperative and its members.

Figure b. Zero-waste production



2.3.2 Community knowledge centre

To strengthen the members' knowledge of farm management practices is another intention of BAAC to contribute to the cooperative's sustainability. For years, BAAC has made an effort to develop the community as a knowledge centre to disseminate farm management practices with an aim to double productivity while reducing production costs. The practice starts by using quality seedlings that produce a higher percentage of oil and a better knowledge of farm practices, including planting techniques, weeding, pruning, fertilizing and replanting old trees. These practices include harvesting only the ripe FFB and sending them to the crushing mill within 24 hours in order to retain FFB quality.

Figure b, c. Preparation of good breeds



Figure d. Crushing mill



3. Mutual benefits from BAAC support

3.1 Members

BAAC operations have contributed greatly to cost reductions in management and transportation and allowed farmers to enjoy the highest possible prices paid by the cooperative. This also motivates farmers to sell their produce to the cooperative mill, although the farmers are not tied to the mill by contracts. Those benefits can be summarized as follows:

- Reduction in transportation cost from farm to crushing mill of approximately THB 26 million (US\$ 812,500) a year
- Decrease in weight loss from transportation of THB 2.2 million (\$ 68 750) a year
- Use of waste from a crushing mill as an organic fertilizer
- Creating jobs in the community
- Selling palm produce at a reasonable price

3.2 The cooperative

The benefit of the oil palm value chain activities of the cooperative is evident. In 2012, apart from its business income of THB 1,280 million (US\$ 42.6 million), it generated an additional income of THB 223 million (\$ 7.4 million) from waste and by-products to reach a total income of THB 1,500 million (\$ 50 million) and total net profit reached almost THB 120 million (\$ 4 million).

Given that net income of the cooperative increased 17% and the net profit on the CPO business improved, the cooperative's engagement in oil palm value-added activity and BAAC's role of facilitation not only benefit the 3,700 farmer-members but also society as a whole due to the contributions to a friendly environment and job creation in the community. The cooperative and its members now have a stronger position within a reliable and competitive market.

3.3 FFB collecting network

BAAC assistance resulting in an increase in the cooperative's FFB collecting ramps increased from three to nine ramps. The production that exceeds the cooperative mill capacity will be delivered to its network mills in the province and to nearby provinces such as Krabi.

3.4 Sustainability network

BAAC contributes sustainability to the palm oil plantation by collaborating with other organizations as follows:

- To cooperate with four schools in Thasae District in order to organize a youth cooperative project in which approximately 100 students have participated.
- To collaborate with the cooperative in order to strengthen the FFB collecting network.
- To cooperate with a university in Chumphon Province to obtain technical assistance in providing knowledge on farm management practices.

4. Success factors

The cooperative is a good example of successful producer-driven value chain financing. Several significant factors contribute to the success of the cooperative. Primarily it is the well-engaged and organized farmers – the main actors and members of the cooperative who have been able to adapt themselves and use better farm practices, together with the vision and management skills of the

cooperative staff coupled with technical assistance from related agencies in capacity building, value added and marketing activities and, finally, BAAC's financial support in facilitating the investment and operations.

5. Suggestions

To continue enjoying its competitiveness, the cooperative needs to engage in sustainable oil palm cultivation practices. Members must pay attention to sound practices in connection with continuing improvements in production efficiency and quality at both the farm and mill level as well as product development. The cooperative can further develop its business at the other end of the chain to cover the refining of CPO to supply to end users.

BAAC as a financial intermediary and technical supporter should diversify credit vital to business expansion in order to help the cooperative to meet the expectations of immediate customers and future end users in a more complex market.

CHAPTER 4

Conclusions and Recommendations

As a rural development bank, BAAC has provided major credit programmes and other services beyond credit for small farmers in different formats – as individuals, farmer associations, cooperatives, village funds, community enterprises, etc. The Bank has been highly successful from the beginning in overcoming the problems of the poor financial access of the rural population and has achieved high outreach surpassing 90% of the total farm households in Thailand. The enhancement of access to rural finance with other support from BAAC has greatly contributed to agricultural production efficiency and well-being in terms of better income of rural people and ultimately to the sound rural economy that has safeguarded Thailand in times of difficulty.

All this has been achieved through BAAC's innovative rural finance with other support, financial and non-financial in nature, along with technical and marketing assistance.

In social aspects, BAAC recognizes the importance of the farmer community as it is considered the driving force of rural development and the centre of application of the concept of a self-sufficiency economy (SSE) at the community level. SSE, the milestone for sustainable development, is the key concept of self-reliance, moderation and reasonableness that can be applied to our daily life and business cycle alike. BAAC's role is to introduce the concept and educate and train farmers with the necessary knowledge and skill in farming, business and financial management to move forward through the three steps of rural development. A well-organized community is also the strength of agricultural value chain integration. It is a starting point in getting other partners of the chain to fully integrate and avail themselves of the benefits of market and quality standards and to work to meet such requirements.

BAAC's future challenges are not only the improved income of farmers but also their living standards and the careful management of natural resources and the environment. BAAC has recently deployed integrated approaches to provide a good balance to address the challenges of rural finance and a friendly environment by issuing a policy of "green credit" in its joint effort with government agencies and the private sector to help facilitate production and other social activities with health and environment in mind – among them the promotion of organic produce and the Tree Bank project.

The adoption of value chain finance as a tool for widening the service coverage of farm and non-farm activities is clearly needed to help farmers to avail themselves of the opportunity for value creation, for establishing businesses to generate more income from value-added activities and to help rural enterprises. This includes assisting SMEs at the upper level of the chain to grow as they are considered the key players in sustaining Thailand's rural economy.

Rural financial institutions have a key role to play by providing the right support to promote and facilitate agricultural chain actors' actions. Since all activities in the chain could add value and business expansion opportunities and niches, it is in this context that rural financial institutions enter into contact with all partners to establish clear frameworks and new financial mechanisms to facilitate a healthy flow of produce from farm to table.

The development of new products to suit new target groups and their operations requires a strong organizational format, effective methodology and high-calibre technical expertise. Although BAAC is strong in the provision of loans to small-scale farmers for crop production, there are perceived constraints and gaps in providing either corporate or agribusiness loans for larger-scale farmers and

businesses. External resources are required to help establish a sound system to work on with capacity building for its staff with regard to the effective provision of value chain financing in a more sustainable manner.

BAAC needs to be capable of creating financing schemes that can be enjoyed by all actors in the chain, such as establishing rural banks, improving the capacity of banks to conduct proper credit assessments of potential borrowers from SMEs, improving the availability of credit risk information and further developing and empowering farmer institutions.

A financial service provider needs to be highly responsive to farmers' needs and well connected with them in order to leverage the ability to uphold their strength and cooperation in the protection of their interests and to maintain their crucial role as food producers.



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