

Silk Project Set to Remould Farming Life

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A Phetchabun company is introducing new silk raising techniques to small-scale farmers in Chaiyaphum

In many ways Mr Khemthong is a very ordinary Chaiyaphum farmer. He owns 33 rai (5 hectares) of land, mixed between wet paddy land and an area for upland crops which till recently was entirely given over to sugar cane. His family helps him on the farm, and when you visit you can see a few chickens, a pair of fighting cocks squawking at each other and a buffalo being led off into a field by one of Khemthong's two sons.

There is also a new concrete building, 18 meters long and covered on each side with voluminous blue plastic sheeting. It is a rearing house for silk worms, and is rapidly becoming the centre of Khemthong's farming life. A sign outside says, threateningly, "No admittance without permission". Khemthong laughs about it, but he wouldn't let his friends or his visitors come close while they are smoking. He has just completed an entry porch with two doors, to stop flies getting in. And he won't let anyone inside the rearing house unless they have been properly trained and unless they wash their hands first.

Khemthong is one of 78 Chaiyaphum farmers who decided a year ago to join a silk project promoted jointly by the Chul Thai silk company and the state-enterprise Bank for Agriculture and Agricultural Cooperatives (BAAC). Funds for the project's credit component came from the EC as part of its cassava diversification programme for the Northeast.

The project is a "high-tech" approach to silk production, based on bivoltine worms instead of the polyvoltine worms which Northeastern farmers have traditionally raised. Polyvoltine worms are native to tropical areas, breed through many generations each year without a dormant period and are relatively tolerant to disease.

Bivoltine worms are native to temperate climate zones and under natural conditions cycle through only two generations each year. With care and modern technology they can be raised in tropical areas and can be induced to yield multiple generations each year.

The advantage of bivoltine worms is that they produce better quality yarn, partly because each filament which makes up the cocoons is three or four times longer than those of polyvoltine worms. Consequently bivoltine cocoons command a higher price, and the returns to the farmers should be higher. But the bivoltine worms are more sensitive to disease and other risks, including cigarette smoke, and much greater skill and care are needed, together with a more tightly controlled support system to supply the farmers with their inputs for each production cycle.

The difference between polyvoltine and bivoltine silk production is like the difference between upland farming of bulk commodities like cassava and maize, till now the hallmark of Northeastern



agriculture, and the controlled production of high-quality horticultural crops. Can Isan farmers make the switch?

The company and the BAAC insist that farmers wanting to join the project attend a 35 day training course at the company's headquarters in the neighbouring province of Phetchabun. The training facilities were set up with assistance from a 1987 grant from the Dutch government. The company also provides the farmers with chemical fertilizer, an unusual formula designed specifically for mulberry; and 5-day old silk worms. Chul Thai has an office with two extension workers in the project area, and in the first year the extension workers visit each farmer before each production cycle to make sure they have enough mulberry and have cleaned and prepared the rearing house properly.

The farmers undertake to devote at least 12 rai (2 hectares) to mulberry. They raise the worms for 14 days and agree to sell their cocoons only to Chul Thai, at a price guaranteed to be at



least as high as the prevailing market price. The enterprise is financed by loans from the BAAC to each selected farmer. The farmers can borrow up to 146,000 Baht, which covers the cost of the training course, the construction of the rearing house and the cost of various minor pieces of equipment and supplies. Loans are given in installments during the first year of the project, carry an interest charge of 9% per year and will be repaid within ten years.

Most of the farmers who have been lucky enough to join the project have done well in their first year. Khemthong, for example, has completed 4 production cycles and achieved yields higher than the level assumed when the project was planned. His gross silk income in the first year has been 45,000 Baht, 60 percent higher than expected. Not only is he getting more than he would have by using the land for sugar instead of mulberry; the income from silk is more regular, and comes at the end of each production cycle instead of once a year.

Khemthong's family has to work more or less continually during each production cycle. Three or four times each day for 17 days someone in the family has to pick the mulberry, prepare the leaves and feed the worms and check for any signs of disease. Thorough cleaning at the start and end of each cycle is vital in order to control disease. But the work is not hard, and it is spread out over the year, with no need to hire workers outside the family for the highly labour-intensive harvest period associated with sugar growing.

When Khemthong's silkworm enterprise reaches full-production a year or so from now, he can expect to make a profit of at least 30,000 Baht per year after meeting his production and debt service costs. More important, he will have acquired skills and experience and an entirely new outlook on farming which will be permanent assets for him and his family.

"I've tried a lot of crops over the years", he says, "maize, soybeans, sugar. But with mulberry and silkworms we get a lot of help from the company and we know we can do well if we follow their advice and work hard. For the first time I feel in control of our prospects, instead of being able to do nothing but pray for rain."

How typical is Khemthong, and is his optimism justified?

Compared to the other 77 project farmers his performance has been slightly above average. Like most of the others, the biggest problem which he has encountered has been the lack of water to keep his mulberry production going during Chaiyaphum's long dry season. Without water there will be no fresh mulberry leaves, and the company will not provide the silkworms. Several project farmers have had to skip one or two production cycles because of this problem.

The farmers are solving the water problem by digging shallow or deep wells, depending on where the ground water is under their farms. Khemthong was able to borrow some drilling equipment free, so his 35 meter tubewell cost him only 6,000 Baht. Some of his friends had to take another BAAC loan of 10,000 or 20,000 to make a well. It is an unexpected extra cost, but it will allow year-round production and according to the bank the farmers will still benefit substantially from the project.

Mrs Phisamai is a hard working and intelligent 25 year old who has worked for Chul Thai for six years. She and her husband work as a team to guide and support the farmers in the project. In this first year they visit each farm three times during each production cycle. And their house in Phu Khiaw district serves also as an office which they encourage farmers to visit if they run into difficulties. Phisamai is from Udonthani and has no difficulties with the Chaiyaphum dialect. She has a gentle but firm farmyard manner and the farmers are clearly pleased to see her and readily acknowledge the key role

which she and her husband play.

According to Phisamai, one potential problem is that the household heads do not normally attend the company's training course themselves but prefer to send one of their children. Khemthong is an example: he sent his son. But while Khemthong is content to respect his son's newly learned skills and follow his advice, some parents have been less acquiescent.

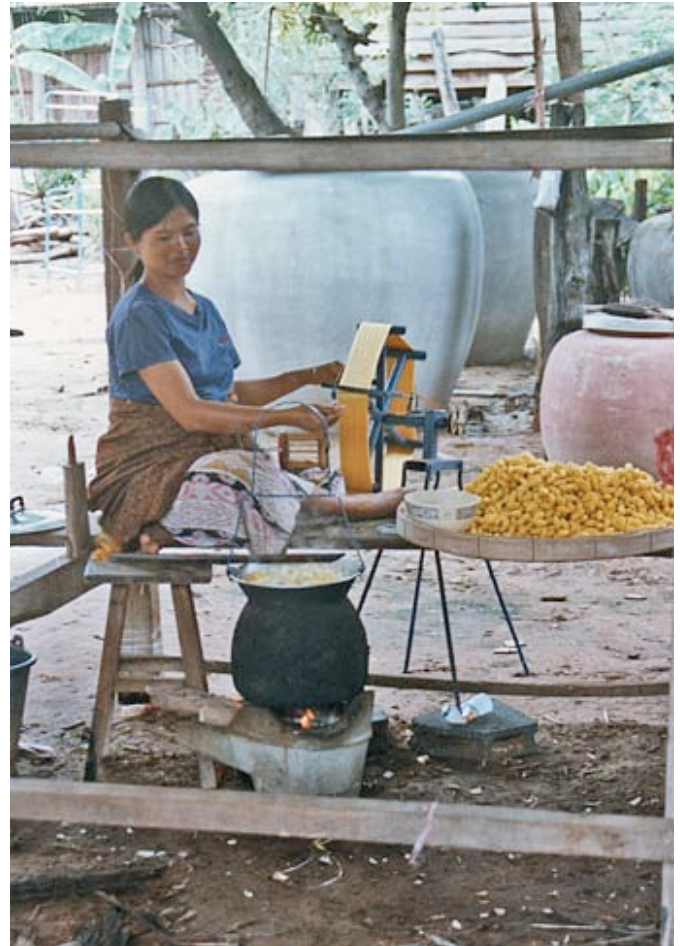
"They will say they should use the old mulberry leaves first so as not to waste them," Phisamai says. "We teach our trainees that silkworms need tender new leaves, especially for the first few days. This kind of detail is important, but sometimes children 18 or 19 years old have to do what their parents say, even though they know it is wrong."

This is why Phisamai's role is so important. She and her husband find themselves having to teach the parents as well as following up on their own trainees.

Like any progressive project which introduces new technology, this one is demanding. Farmers won't get the promised high returns if they treat it as a minor activity which can take second place to what they are used to doing. So the household has to be involved as a whole, and has to be ready to respect whoever went for training.

Mr Somsak, long-term loan officer of BAAC's Chaiyaphum branch, ran the recruitment campaign and says this is not a "big farmer" project. It is true that the loan is large, about ten times larger than BAAC's average loan size. But because of the technical support provided by Chul Thai the bank has confidence in the project and does not require farmers to secure their loans with a mortgage. They use the "joint-liability" loan security system, where farmers who know and trust each other and who are engaged in similar types of enterprises accept responsibility not only for their own loans but also for loans taken by other group members. This system is normally reserved for seasonal loans, but has been extended to these long term loans under the special circumstances of this project. So farmers can get involved even if they have no valid land document, and without having large farms.

Demand for the project is strong, and the BAAC made an initial screening of applicants from among those of its normal clients who responded



to the recruitment campaign. BAAC's list was further screened by Chul Thai to take account of the suitability of each farmer's soil, their apparent aptitude for this kind of advanced farming and their proximity to a road. They also have to watch for what other crops are being grown nearby. Mr Wirat of Chul Thai won't accept a farmer if his neighbours are growing crops like tobacco which require heavy doses of insecticide which will drift into the rearing houses and kill the silkworms.

The market for bivoltine silk is good and Chul Thai sees little danger of oversupply or falling prices within the foreseeable future. The capacity of the company's training facility is the biggest constraint on expanding this project and similar projects in other provinces. For the company, the training is crucial. Wirat points out that in China silk producers train for a full year before they are expected to start commercial production. So Chul Thai will not compromise either by reducing the time required or by increasing the size of each class. At present a further 116 Chaiyaphum farmers have been accepted for the project in 1990. This is the maximum which Chul Thai will accept.

Although so far the signs are good, there are no grounds for complacency. Disease is the biggest threat to the silkworms, which is why there is so

much stress on cleanliness. One project farmer takes this so seriously that she not only scrubs her hands before going into the rearing house but will not touch the worms or their mulberry unless she is wearing surgical gloves which she will throw away afterwards.

In other silk projects in the Northeast the disease problem has developed in the second or third year as dirt has invisibly accumulated. So even though the farmers improved their skills they found themselves facing greater unseen disease risks and consequently achieving declining yields.

So far disease has not been a serious problem either in Chaiyaphum or in Phetchabun where a similar project was introduced in 1987. If the Phetchabun project is a guide then the prospects for Khemthong and other Chaiyaphum farmers are good. Of the 320 project farmers in Phetchabun only three have failed; for the rest the average silk income in the second year, after deducting production costs and debt service, has been about 40,000 Baht. Many of them have started to expand their operations by planting more than 12 rai of mulberry and building extra rearing houses to increase the number of worms they can handle in each cycle.

The project is not cheap for the participants, and not without risk. Key elements in the project are sound and appropriate technology

supporting a product with good market prospects, and a flexible source of inexpensive and easily accessible credit. The bank also plays an important role in monitoring the relationship between the company and the bank's farmer-clients. The initial Dutch grant was a crucial input, and it is doubtful whether outgrower projects like those in Chaiyaphum and Phetchabun would have been considered commercially viable without that stimulus.

But what marks this project out in comparison with many others is that a private company is building a long-run relationship with farmers, with a high level of training and a comprehensive programme of farm visits by specialised and committed project staff. It may be a model for other companies and other products.

