

Saleable Seeds

The seed literally is vegetable seed. So is the harvest, a potential replacement for the 30 percent of their seed requirements that Thai farmers now import.

But the real targets of the efforts to grow vegetable seeds in isolated mountain valleys are not lowland farmers, but the hilltribes, whose traditional lifestyles have been disrupted in recent years. The dozen or so ethnic groups that inhabit not only the hills around Chiang Mai in northern Thailand, but also neighbouring Burma and Laos, came to the region in recent centuries.

Traditionally, they practiced slash-and-burn or other "swidden" farming methods, which involved clearing a field out of the forest and farming it for a certain time before shifting to another area. In addition to food crops, some of the tribes planted opium—originally just for their own consumption and then more and more as a cash crop.

As the Thai population and economy expanded, so did pressure on agricultural land. Lowland Thais who have been pushed off their land now constitute the largest group practicing swidden cultivation.

CAMPAIGN AGAINST SHIFTING CULTIVATION

The need to bring more land under permanent cultivation, in conjunction with the growing problems of deforestation and soil erosion caused by swidden agriculture, has

resulted in attempts by the Thai government to stop shifting cultivation by all groups. The government also wants the hilltribes to settle as part of its campaign to secure its borders with Laos and Burma. Another part of that campaign has been an effort to stamp out opium cash cropping.

Over the years, there have been several attempts, often under the patronage of the Thai king, to introduce new crops in hilltribe regions. Nuts, bamboo, spices, cereals, and medicinal plants have all been tested for suitability. The reason vegetable seed production may catch on is that, like opium, it has a high value per unit weight or volume. This is important in the many hilltribe areas inaccessible by road.

The four-year-old vegetable seed project, which is funded by IDRC, is associated with the Royal King's Project. It is directed by Chiang Mai University horticulturalist Dr Manee Wivutvongvana. She is assisted by her colleague at the university, plant pathologist Pipob Lumyong.

Dr Manee is a busy woman. Her work is constantly interrupted by calls on the two telephones on her desk about an international conference she is organizing or about her own private project to get volunteer doctors and nurses to visit the hilltribes.

"If you tell them (the hilltribes) that today we will teach you some agriculture, maybe 20 will come," Dr Manee said. "If you tell them the doctor will come, there will be hundreds and hundreds."

The vegetable seed project involves a study of growing conditions, screening trials for both local and introduced vegetable varieties, and training of the local Karen and Hmong people in crop management and extension work.

The project has two research stations. One is at Hoay Luk, a 90-minute drive north of Chiang Mai. The station is in a government land estate which has been divided up among local Karen, Hmong, and Thais who had no land.

Dr Manee selected the Hoay Luk site to test the performance of crops at an elevation of 600 m. The area is actually well serviced by roads, but there are other areas at the same elevation that are very isolated.

The second research station is 1300 m up Doi Inthanon mountain, a two-hour automobile ride southwest of Chiang Mai. The road passes first through villages of typical wooden Thai homes on stilts and along paddy fields dotted with groves of palms. Water buffalo graze on tender shoots of grass or wallow in the cool, muddy waters of the irrigation canals.

Eventually, the flat plain rises into the rolling foothills surrounding Doi Inthanon. Forest

Growing vegetable seed could put cash in the pockets of Thai farmers and help to undermine the opium trade.

By MARK TIMM

On the slopes of Doi Inthanon, Thailand's highest mountain, scientists are planting the seed of an improved way of life for the tribal peoples who dwell in the surrounding forested hills.



Left, a group of farmers prepare the soil for planting. Right, station chief Hoay Haeng and project officer Manee Wivutvongvana overlook the hilly Thailand site.



replaces fields; banana trees and coconut palms give way to pines.

On either side of the road are little clusters of Hmong or Karen huts surrounded by terraced and occasional swidden fields. Finally, one comes to Krung Klang village, tucked against a sheer cliff that climbs to the peak of Doi Inthanon. In the background is the soft music of the Siriporn waterfall which feeds both the mountain streams and the research station fields.

The Doi Inthanon station is divided into two sites. One is at Krung Klang village. The other is called Hoay Haeng, which means dry brook, an apt name given the condition of the dirt road that one travels to get there.

There are currently three cropping practices used by the hill farmers. Some cultivate corn from May to September, opium from October to December, and vegetables from January to February. Others grow paddy rice from May to December. Still others grow upland (non-irrigated) rice and vegetables during the same months.

OPIUM SUBSTITUTE

Vegetable seed production can fit into this cropping system in two ways. In upland areas, the best time to start growing seed crops is in October, the very month when the corn growers traditionally plant opium. Secondly, because the paddy fields are fertile and irrigated, researchers on the vegetable seed project are experimenting with early maturing paddy rice varieties in the hope that vegetable seeds can be planted after the rice crop, as early as October.

Above all, the researchers are trying not to disrupt existing rice cultivation because, even now, the hilltribe farmers grow only 60 percent of their rice requirement themselves.

The project has had some setbacks. In one instance, birds ate the seeds the first year that Chinese radish was planted. In another case, an attempt to intercrop leaf mustard with opium failed: mustard yields were insignificant.

Problems of a cultural nature have also arisen. The first attempts to teach the hilltribes about the project failed because the lessons were in the form of complex lectures given in Thai, a language many of the farmers didn't understand.

Another challenge has involved the roles of men and women in the project. Dr Manee expects the project to be most successful in areas with high female populations since Hmong and Karen women are more skilled at intensive agriculture than the men. Yet it is the men who come for training—but not because the women are uninterested. "The men don't like to send the women because they want them to stay at home to do the

cooking and look after the children," Dr Manee explained.

The general pattern of the project has been one of progress. Both cabbage and tomatoes have been grown successfully, although the latter are still being tested for disease resistance. A foundation seed farm for Chinese radish was started in 1986. Its harvests will be given to hilltribe farmers who will produce from it certified seed for commercial sale. Leaf mustard is also being test grown on fallow paddy fields.

FARMERS KNOW TEST VARIETIES

There have not yet been formal surveys of the hilltribe farmers to see whether vegetable seed production appeals to them. However, Dr Chantaboon Sutthi, an agriculturalist at the Tribal Research Institute in Chiang Mai, said the crops Dr Manee is testing have the best chance of acceptance. "The hilltribes are familiar with these kinds of plants, so it's not a problem for them," he said. "The problem is with the crops they don't know." (Attempts to introduce flower breeding to the hilltribes have been a failure largely for this reason.)

Ultimately, the commercial viability of vegetable seed production in the remote hills of northern Thailand will have to be proved. There is currently no large-scale seed production in Thailand for any of the crops being tested by Dr Manee. However, she says there is a proven market for "thousands of tonnes" of leaf mustard, Chinese radish, cabbage, and other seed.

Dr Manee has begun to consult seed companies for market advice and for donations of parental seed lines for field testing. Because she thinks highland seed production may even have export potential, she has also begun approaching American and European seed companies in an effort to interest them in the low labour costs the hill tribes can offer.

In Thailand, Dr Manee has been consulting for the past two years with the Chia Tai Co., Ltd. "Dr Manee knows her varieties; we know the potential of the market," said Manas Chiarabanond, the company's Bangkok-based general manager.

"Now we are testing her seed to see if it meets the needs of the market. In return, we could be the marketing arm for the product. It's good for everybody. It's good for the country." □

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