

Making connections: agricultural extension in northern Laos

The purpose of agricultural extension is often seen as ‘technology transfer’ or, more broadly, to provide technical training and advice to farmers. A Swiss-funded project in South East Asia is discovering that helping farmers to make new connections may be just as important as new technology. Emerging from years of isolation, these farmers are benefiting from connections with local government, with research and education institutions, with markets and sources of credit, with civil society and the media, and - above all else – with other farmers. Supported by the Laos Extension for Agriculture Project (LEAP), extension workers who previously saw themselves as ‘solution givers’ are now playing important roles as process helpers and resource linkers.

1. from ‘land-locked’ to ‘land-linked’

Life is changing in the mountains of Northern Laos. For many years this remote corner of South East Asia was cut off from the developments in neighbouring China, Vietnam and Thailand. Scattered communities from different ethnic groups depended on subsistence farming and had very little access to government services. Now the area is becoming a cross-roads at the centre of a fast-growing economic zone, sometimes called *the Greater Mekong Subregion* (GMS), home to more than 300 million people

Sitting outside his small wooden house in Oudomxay Province, Mr Mayxay explains some of the changes he has experienced. “When I was a young man it took 2 days to walk to the Chinese border, now I can reach there by bus in 2 hours”.



Nathong village with typical housing

Mr Mayxay is the head of Nathong village in Namo District. He goes on to say that it used to be illegal to cross into China, but now there is a rapidly expanding trade in both directions. In the past the villager used to sell small quantities of broom grass or mulberry bark to Chinese traders, in return for which they might buy a ‘chicken

brand’ bicycle and a few bars of soap. But now, thousands of tonnes of rubber, maize, sugar and cassava are being exported to China, while motorbikes, TV sets, clothes, chemicals, plastics, processed foods - and so much more - are flooding into Laos.

Nathong village is located near the northern end of Route 13, where it crosses the Veun river. Route 13 is a two-lane road that runs the entire length of the country, a distance of more than 1,000 km.



Route 13 – the longest road in Laos

Approximately 7 hours to the south of Nathong, the road passes through Luang Prabang, former capital of the ancient kingdom of Lan Xang and now a popular tourist attraction. A further 10 hours to the south the road reaches Vientiane, the modern capital of the Lao People’s Democratic Republic .

Mr Mayxay has never travelled to Vientiane, but he can now contact relatives in the capital by phone. It is only in the past three months that coverage of the mobile phone system was extended to Nathong, soon after the arrival of electricity. The road, the phone system and electricity are likely to make a big difference to the lives of the residents of Nathong, although

nobody knows precisely what those differences will be.

Nathong village, like many others in this part of Laos, is made up of a number of ethnic groups, in this case: Lao, Hmong, Khmu and Punoi. This mixture is a consequence of the Government policy of resettlement and consolidation that aims to create 'viable' communities. The rationale and benefits of this policy have been disputed by outside observers, but in Nathong it has created a village of 132 households who now have closer interaction with government organisations.

One of the organisations that is in contact with the residents of Nathong and nearby villages is the District Agriculture and Forestry Office (DAFO). With the support of the Swiss-funded *Laos Extension for Agriculture Project (LEAP)*, the staff of DAFO have recently conducted training for farmers in the area.

2. basic training

In the nearby village of Paknamtong, a group of women have gathered to discuss the results of the training they received from DAFO. Head of the group is Mrs Khonesavanh, a Hmong woman aged 52 with two children.



Head of training group – Mrs Khonesavanh

Although she is not a typical farmer, having worked for Women's Union when she was younger, Mrs Khonesavanh and her family now depends on rice cultivation and livestock rearing.

She explains why all the members of this training group are women. One year ago, the staff of DAFO organised a meeting in the village to assess the training needs. "The men were more interested in rice production but the women wanted to learn about pig raising". After discussing the problems and opportunities, the community agreed to focus on pigs and created

a group consisting of women from 10 households.



Training needs assessment, Oudomxay

DAFO staff in Namo District, and in 40 other Districts across the country, have been trained in extension methods by the National Agriculture and Extension Service (NAFES). These methods – known as the *Laos Extension Approach* - involve a high level of participation by the local community, with farmers deciding the topics for training.

Until recently, however, the number of female participants was far less than the number of men, even though women do at least half of the farm work. With support from LEAP, the importance of involving women farmers has gained greater recognition and the number of female participants is starting to improve.

The training group in Paknamtong includes women who are Hmong, Lao, and Tai Dam. Originally the site of a Lanten minority village, Paknamtong now consists of 82 households with a population of 457 people from 6 different ethnic groups.

After the formation of the group, the woman participated in 5 training sessions conducted by extension workers from DAFO. The women learned how to make pig houses from local materials, how to select breeding stock, how to produce supplementary feed, how to recognise diseases and the importance of vaccination. The training programme involves 'learning-by-doing', with the result that most members of the group now have their own pig houses.

In addition to the practical training from the DAFO, the villagers also played host to two female students from the National University who were carrying out a study on 'input chains'. The students – also supported by LEAP - interviewed the farmers in Paknamtong to find out where they got their breeding animals, what sources of credit were available, the costs of vaccines, and so on.

The outcome of these interviews was a thesis that earned top marks at the University. So, while the farmers were learning from DAFO, the students were also learning from the farmers: two generations of women, both contributing to the development of their country.



Traditional work for women in the uplands

3. positive results

The women on Paknamtong happily explain the outcome of the training they received from DAFO. Firstly, the survival rate of the piglets is much higher; previously many of the young animal would die of unknown illnesses. Secondly, the pigs are ready for slaughter at 6 months of age whereas in the past it would take one - or even two - years for the animals to reach the desired weight.

The villagers slaughter the pigs at about 40kg. If they don't need the meat themselves, the pigs can be sold in the local market at 14,000 kip per kg. That is more than half a million kip (\$60) per animal. Demand is high, so traders are frequently visiting the village to buy pigs.

While the women discuss possible topics for future training, the village headman says he is keen for the women to train other households. The village would be a lot cleaner if everybody kept their pigs in houses like members of the group, and it would avoid the problem of free-range pigs destroying other crops such as vegetables and sugar cane.

The extension worker from DAFO, Mr Houndaeng, has another idea. He wants to help the pig producers get credit so they can expand their production. Mr Houndaeng tells the women about the Nayoby Bank, established by the Government in 2007 to provide credit to people living in the poorest part of the country. There is no lower limit of the amount that can be

borrowed from the Bank, and repayment can be made over a period of 3 years at 8% per year. Some of the women are clearly interested while others are more cautious; they have little prior experience with borrowing money, having spent most of their lives in a subsistence society in relatively remote locations.

Another possibility for future activities emerges during a visit to the pig houses, situated on the edge of the village. It is apparent that most of the pig dung is currently being wasted. How about using the dung to grow fruit or vegetables? A Chinese company is already encouraging the farmers of Paknamtong to grow passion fruit. Maybe there is potential for growing other crops that could make use the manure. During this discussion, somebody mentions the activities in Nathong and suggests it might be useful to organise an exchange visit so that the farmers from the two villages can learn from each other.



Group members with new pig houses

4. adding value

Back in Nathong village, Mrs Sengnuan is distilling rice whiskey while her friend is spinning cotton.

Mrs Sengnuan is a 49-year old widow with 3 children, two of whom have left home while the other – a married daughter – lives with her mother. Mrs Sengnuan is unable to cultivate the fields in which her husband used to grow rice. Instead, she works close to her house, where she can also look after her grandchildren.

The whiskey still is Mrs Sengnuan's main source of income, but she also produces pigs and vegetables. The waste from one enterprise is an input into another; this is something that the farmers of Paknamtong could learn from her.



Mrs Sengnuan and her alcohol 'factory'

In Laos, as in many other parts of the developing world, there are two competing models of agricultural development: one model involves foreign investment, large plantations, industrial production methods, and 'value chains' that stretch all the way to supermarkets in Europe and America. The other model focuses on small farmers, environmentally-friendly methods and local markets.

Some people in Laos are benefiting from the large-scale model, but farmers like Mrs Sengnuan and her neighbours are unlikely to get jobs on one of the rubber plantations that are spreading across northern Laos. The DAFO staff in Namong District realise that if the farmers of Paknamtong are to achieve food security and reliable incomes, small-scale farming is their only option. Fortunately, there are many low-cost opportunities for improving local farming systems.



Rubber plantations are expanding fast

Mrs Sengnuan produces between 600 and 800 litres of alcohol per month, which she sells for between 4,000 and 5,000 kip per litre (approximately 50 US cents). Significantly, the distillation process also produces more than 1

tonne of waste rice per month, a product known locally as 'sa lao'.

Currently, Mrs Sengnuan sells most of her sa lao at 300 kip (less than 4 cents) per kg, but it can also be used for feeding pigs. After attending training organised by DAFO, Mrs Sengnuan has constructed a pig house and now plans to expand her production. She recently sold one of her two sows, an animal weighing 88 kg, and replaced it with a younger, healthier animal.

By expanding her pig production, Mr Sengnuan will also be able to increase her vegetable production. The vegetable plot is situated next to the pig house, and already produces a good crop of onions and mustard leaf. The leafy vegetables can be fed to the pigs, but Mrs Sengnuan is keen to make sure that her grandchildren also have a healthy diet!

During the discussion about pig feeding, a question is raised about who is the best pig farmer in the village. Everybody knows the answer: it is Mr Saijing. He was one of the most active participants of the training attended by Mrs Sengnuan, adding his own expertise to that of DAFO staff.

5. the village entrepreneur

Mr Saijing is 36 years old from the Punoi ethnic group. He moved to Nathong from Phongsaly Province in 1992 because there was not enough food for his family. He says that his home village was "so remote that we never used to see government official from one year to the next". He never went to school, and still cannot read or write.

In Nathong, Mr Saijing started working as a labourer, but soon borrowed enough money to buy a buffalo with which he provided ploughing services for other farmers. With his earnings, he invested in a small brick-making machine, and with the profits from this enterprise he bought a plot of land for 2 million kip (\$200 at the time) and started various farming activities: rice, vegetables and fish raising.

Mr Saijing also started producing 'stic-lac' (used for making lacquer ware) under contract to a Chinese company and, more recently, has begun experimenting with orange trees. When asked to explain why he was able to make this extraordinary progress, his answer is simple: 'I was poor, and therefore had to try harder than other farmers'.

Saijing's pork enterprise began in 1996 when he purchased his first two pigs. Soon after, he

started growing maize and realised that he could earn more money by using the crop to fatten his pigs rather than selling it to traders. When other farmers started to copy him, Saijing bought a small mill and began selling maize feed. And as local pig production started to increase, Saijing took on the role of slaughterer and butcher, earning more money by selling cuts of meat rather than live animals.



Mr Saijing and the source of his profits

The latest addition to Mr Saijing's farm is a brick and cement piggery, which appears to be constructed to a higher standard than his own house. He borrowed 5 million to construct the building, but says he can repay the money with the sale of only 5 animals. Those would need to be very large pigs, well over 100 kg, but Saijing points to a pen containing local pigs and says that he will soon be replacing them with breeding stock from China. Once again, he will be ahead of the other farmers in the area.

Why then, would this enterprising farmer want to join the training organised by DAFO staff? It seems that the answer is animal health. Mr Saijing explains that he had not mastered the problem of pig diseases, and DAFO staff have a good reputation in this field as a result of their vaccination service.

The learning between DAFO and Saijing is a two-way process. In October 2009 he was selected to participate in the documentation of 'good farmer practices', organised jointly by NAFES and the National Agriculture and Forestry Research Institute (NAFRI). With support from LEAP and a Swedish project at NAFRI, researchers visited Saijing's farm and produced a case study of his feeding practices. Consequently, his recipes for pig feed have been shared with farmers from other villages in the District.



The entrepreneur and the extension worker

Since the first phase of LEAP, farmer-to-farmer learning has been part of the vision for extension in Laos. Until recently, however, this type of activity has received less attention because NAFES was still introducing the basic training process across the country. Now that the Lao Extension Approach has been introduced into all 17 Provinces, there are greater opportunities for facilitating the sharing of knowledge among farmers.

6. farmer-to-farmer training

Another group of enterprising farmers can be found in Khoun District of Xieng Khuang Province, less than 300 km - as the crow flies - from Namo District in Oudomxay, but a journey that would take two days by road.

Mr Yerveu is a 36 year old Hmong man who grows rice and raises fish in the village of Dongdan. In 2005 he participated in training activities supported from LEAP. The process began with data collection by DAFO staff including Ms Souliphan, one of the youngest extension workers in the District. Village meetings were held and two groups were formed: one to study rice production and the other to learn about pig-raising. Mr Yerveu joined the rice group and over the next 6 months he attended the sessions organised by Ms Souliphan. He learnt about seed selection, crop spacing and the use of chemical fertilizer.

These techniques helped to improve the yield of Mr Yerveu's traditional rice variety from 3.0 tonne per hectare to 3.3 t/ha, but the additional cost was considerable. Each hectare required two bags of fertilizer with a total cost of 300,000 kip (\$35). Mr Yerveu and his neighbours also noticed that the soil became harder and therefore more difficult to cultivate. Finally, the chemical fertilizer

prevented him from raising fish in his fields during the dry season. Consequently, in 2007, Mr Yerveu decided to stop using chemical fertilizer.

Fortunately, there are alternatives to chemical fertilizer. A civil society organisation called the Sustainable Agriculture and Environmental Development Association (SAEDA) has also been working in Khoum District. In 2008, Mr Yerveu participated in training conducted by SAEDA and learned how to make compost and other types of 'bio-fertilizer'. He started testing various recipes that include a wide range of locally available materials: cow manure, rice bran, wild plants, molasses and even snail shells.



Compost training, Xieng Khuang

Mr Yerveu conducted his own experiment by dividing a field into two parts. In one half he used chemical fertilizer and in the other he used bio-fertilizer. The rice grown with chemical fertilizer was greener and grew taller, but it had fewer shoots, shallower roots and produced less grain. According to Mr Yerveu, the yield of his rice using bio-fertilizer is now 3.5 tonne per hectare.

In view of the positive response to the SAEDA training, LEAP formed a partnership with the Association in 2008. A key activity under the partnership has been support for farmer-to-farmer extension. Early in 2009, a one-week workshop was conducted for a group of 'expert farmers'. These were men and women who had already completed previous training supported by SAEDA and LEAP, and who were recognised for their farming skills. All of them were keen to learn more *and* to share what they learned with other farmers. The aim of the workshop was to prepare these local experts for the role of 'farmer trainers'. During the space of 5 days, they upgraded their knowledge of sustainable agriculture techniques, plus they planned and

practiced the sessions they would conduct back in their own villages.



A qualified farmer-trainer: Mr Yerveu receives his certificate from the District Governor

Since he attended this workshop for farmer trainers, Mr Yerveu has trained 24 other households in his community. This work is completely voluntary, with no payment being made to either Mr Yerveu or the farmers who learn from him. His original target was to train 14 families, but another 10 requested assistance after seeing the results. Mr Yerveu says he will continue conducting training "until all households are using sustainable techniques". He talks enthusiastically about the benefits, not only in terms of crop yields, but also from the perspective of human health and the environment. His confidence as a trainer is obviously based on his own experience as a farmer.

7. support from local government

Another person who has recently become convinced of the benefits of sustainable techniques is Ms Souliphan, the District extension worker who was responsible for introducing Mr Yerveu to chemical fertilizers in 2005.

When the training of farmer trainers took place in 2009, Ms Souliphan also joined the workshop conducted by SAEDA. This enabled her to develop a common understanding with the other participants and, subsequently, she has been able to provide advice to the farmer trainers.

Ms Souliphan takes us to another village in Khoum District where she carried out training in 2005 with support from LEAP. This is Korsy village, well-known for the success of its chicken group.

A case study of Korsy village was published in 2006 in 'Rural Development News', the journal of the Swiss Centre for Developing Agriculture and Rural Areas (AGRIDEA)¹. The case describes how members of the chicken group were able to earn up to 800,000 kip per month (\$80 at the time the case was written) as a result of the training they received from DAFO.

Ms Souliphan explains that the development process in Korsy went further than just the chicken group. During the initial assessment of training needs, the villagers had identified three priorities for learning: chickens, pigs and cattle. Training on the first two topics was supported by LEAP in the period 2005 to 2008, after which Ms Souliphan and her colleagues prepared a proposal that was submitted to the Provincial authorities.



Ms Souliphan (left) facilitates a discussion

The Planning Department at the provincial level has been testing new procedures for allocating budget as part of a governance project supported by UNDP and the Swiss Government. Using these procedures, the Province is able to respond to needs such as those identified by Ms Souliphan and the farmers of Korsy village.

With the additional budget, Ms Souliphan was able to provide training to the cattle group in Korsy, teaching them how to select breeding animals, carry out rotational grazing, grow fodder grasses such as 'stylo', and follow the correct schedule of vaccinations.

The head of the cattle group in Korsy is Mr Ounkham. He has also taken on the role of 'Village Veterinary Worker', vaccinating animals for a small fee. When we visit the village, he is

busy constructing a new brick house for his family. Most of the cost for the house was covered by the sale of 12 cattle that he sold for 1.6 million kip each (a total of \$2,260). He has 4 remaining cattle and intends to increase his stock as soon as the house is finished.



A new house for Mr Ounkham

It would be easy to view Mr Ounkham as a satisfied customer of the extension service, but it may be more accurate to see him and Ms Souliphan as partners in the development of the community. Both are learning, both are applying what they learn, and both are sharing their knowledge with others.

8. spreading the word

Another means for sharing knowledge among farmers can be found in the District town of Khoun. The 'town' is not much larger than a village, and it is still recovering from the bombing that took place in 1968-69 when every building was destroyed, leaving a single Buddha statue sitting in the remains of the local temple.

One of the most recent additions to the reconstruction of the town is a Community Radio Station, built with support from UNDP and which started broadcasting in 2006.

The station operates 8 hours per day, broadcasting on 94.5 MHz to villages in radius of approximately 40 km. Broadcasts are in three languages – Lao, Hmong and Khmu – and the content covers a wide range of topics. Agricultural programmes are aired four times a week at different times on Monday, Tuesday, Wednesday and Friday.

When we visited the radio station, Mr Vanphone Bouthuvong, the station manager, shows us the

¹ Andrea Schroeter (2006) *LEA – Learning for Equitable Agriculture: further developments in the Lao Extension Approach*. Rural Development News, 2/2006, Agridea, Lindau

'wisdom bag': a portable library of agricultural reference materials that is hanging on a wall next to the meeting room. The wisdom bag, one of hundreds distributed throughout the country by LEAP, is an important source of information for the agricultural broadcasts. Equally important are farmers themselves.



Mr Vanphone with 'wisdom bag'

On the day of our visit, Mrs Bounma is in recording room. A 48-year old farmer from Xang village, this is not her first encounter with the radio station. With encouragement from both SAEDA and DAFO, she has been interviewed three times about her sustainable agriculture practices. And, like 80% of farmers in the area, she is a regular listening to Khoun radio.

Mrs Bounma was one of the participants of the farmer trainers workshop held in 2009. She has since trained 20 households, not only in her own village but also in the neighbouring cluster. Like, Mr Yerveu, she is a strong believer in the use of bio-fertilizer, which she applies on her rice fields and a vegetable plot where she grows garlic and chillies.

In addition to growing these crops, Mrs Bounma is also processing them and selling the products in the local community. Her *'jeo bong'*, a type of chilli paste, is served at most of the small restaurants in Khoun town. She manages to sell about 75 kg of the paste per month, at 30,000 kip per kg (\$3.5). Also popular is her *'khao khiap'*, a crispy snack made from rice flour and sugar; she can produce up to 250 snacks per day which sell for 500 kip each (a total of \$15), but it takes a full 12 hours to make that many.

Despite the time she spends on food processing, Mrs Bounma is keen to continue learning new techniques. Following a recent visit to Thailand arranged by SAEDA, she is now experimenting with a new method of seed selection that she hopes will allow her to get even higher yields from local varieties.



Mrs Bounma in the radio studio

This method of seed selection is one of the things she wants to share with other farmers through the Community Radio Station. Mrs Bounma has also been invited to share her experience at a forthcoming meeting at the Provincial Agriculture and Forestry Office.

The Provincial authorities have recently been approached by a Chinese company that wants to promote hybrid rice varieties. These varieties will undoubtedly produce higher yields than local varieties, but only if grown in combination with large amounts of chemical fertilizer and pesticides. Farmers like Mrs Bounma and Mr Yerveu, and extension staff like Ms Soulipphan, believe they can work together to promote a more natural form of agriculture, that will produce sufficient food in a healthy and sustainable manner.

The Provincial authorities have a difficult decision to make, but organisations like SAEDA, and projects like LEAP, are ready to support farmers and field staff to achieve their goal of sustainable agriculture.

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An introduction to LEAP

The Laos Extension for Agriculture Project (LEAP) is funded by the Swiss Agency for Development and Cooperation (SDC) and implemented by the National Agriculture and Forestry Extension Service (NAFES) with technical assistance from Helvetas, a Swiss NGO.

The objective of the project is *"to contribute to the development of a decentralised, participatory, pluralistic and sustainable agricultural extension system that is capable of benefiting poorer households and communities, and reaches male and female farmers equally"*.

In **Phase I (2001-2004)**, the project studied the experience of previous extension efforts in Laos, and put together a package of 'best practices' that was successfully tested in 3 Provinces.

At the start of **Phase II (2005-2007)**, the practices tested by LEAP were endorsed by the Ministry of Agriculture and Forestry (MAF), and given a new name: the 'Lao Extension Approach' (LEA).



During this phase the LEA was introduced into the remaining 14 Provinces of the country. The approach has also been adopted by a number of other agricultural projects with the result that approximately 20,000 farmers had been reached by the end of 2007.

The approved budget of the project between September 2001 and December 2007 was 7.3 million Swiss Francs.

Between January and June 2008, an **Alignment Phase** was implemented with the aim of adjusting the project design to match new organisational strategies and structures introduced by MAF in the later half of 2007.

Farmers trained using the Lao Extension Approach have been able to increase the value of their rice production by an average of more than US\$150 per hectare, while the value of chicken production has often increased by US\$200 per farmer. These benefits are achieved within one year of starting training, and can be compared to a training cost of less than US\$ 30 per person.



In **Phase IV (2008-2012)** the project is giving more attention to the quality of service delivery, thereby complementing the attention given to increasing geographical coverage in earlier phases.

The project continues to support activities across the country, under five components:

1. Strengthening Management
2. Strengthening Technical Services
3. Strengthening Training Services
4. Strengthening Information Services
5. Capitalisation of Experience

The budget for Phase IV is 4.8 million Swiss Francs.

In addition to funding training activities carried out through the Government Extension Service, LEAP has formed partnerships with a number of NGOs and non-profit associations in the current Phase.

LEAP also acts as Secretariat to the Government-Donor Working Group on Farmers and Agribusiness. In this role, the project provides information services such as the LaoFAB discussion forum and online library.

