Organizing production of village chickens for the market

Michael Zoebisch and Theerachai Haitook

Pong Chanuan village is located in the western upper reaches of the Lam Phra Phloeng watershed, Nakhon Ratchasima Province, north eastern Thailand, and borders the Khao Yai National Park. The area is generally hilly with only a few flat areas near the river courses. The village was founded in 1949 by three families, who came from the forest area that later became the National Park. During the 1960s and 1970s large numbers of landless people from other parts of the province settled in the village. They clear-cut patches of government forest for upland rice, cotton, peas, beans, and vegetables for home consumption. The development of agriculture in the area was very slow at that time. However, due to the increasing population (mainly from in-migration), more land was cleared to grow crops and large parts of the natural forest gradually deteriorated. The development of a simple dirt-road network opened market opportunities and encouraged the farmers to produce crops for sale. Upland rice for home consumption – a highly labour-demanding crop – was increasingly replaced with maize that could be sold to feed mills, and oil-extraction and starch factories.

Around 1970, maize had become the overwhelmingly dominant crop in the area and the farmers now depend almost exclusively on maize. Over the years, the monocropping of maize has led to a loss of soil fertility and the farmers have to apply more inputs to maintain high yields. This creates increased requirements for cash to buy inputs.

Photo: M. Zoebisch

One of the farmers in the network shows one of her local chickens.

The changes in land use also brought along changes in crop and land husbandry practices. More intensive cultivation of larger areas led to a higher degree in mechanization, especially soil tillage. Expectations for higher crop productivity led to the introduction of hybrid maize varieties together with chemical (commercial) fertilizers and pesticides. These developments again increased the level of inputs needed to produce a crop. Thus investment costs increased beyond the capacity of most farmers leading to an increasing lack of savings and a continuous need for credit.

Almost all the agricultural land belongs to the government, and without full land ownership the farmers cannot use their land as security in order to get loans from the agricultural or cooperative banks. As most small farmers depend on credit to grow their crops, they face significant difficulty in obtaining the capital needed for inputs (e.g., machinery hire, seeds, fertilizers, pesticides). They therefore have to borrow from private money-lenders with interest rates of around 5 percent per month (i.e., 60 percent per year). This means that most farmers have debts, only about 10 percent of the farmers are debt free, and about 50 percent have debts of more than 50 000 Thai Baht (US$1 220). The smallest farmers are the most heavily indebted. In most cases, the moneylenders are also the middlemen who provide the inputs on loan and who take back the produce after harvest.

The farmers, therefore, have no control over the sale of their produce. They have to deliver their harvest to the creditors to pay back their loans “in kind”. The moneylenders also determine the price for the produce, taking advantage of the high interest rates as well as the low prices of the crops immediately after harvest. This creates a permanent dependency on the moneylenders and the farmers effectively become contract workers for the creditors, leaving them hardly any profit and virtually no room for long-term investment in the development of their farms.

The farmers are aware that, in the long term, the fertility of their soils will decrease because of the lack of soil-fertility maintenance measures and inappropriate soil-tillage practices that enhance soil degradation and erosion. They are aware of the need for improvements but are not in a position to make investments beyond what is required to produce the next crop. There is little prospect in the short term for effective changes in the general economic and institutional frameworks within which the farmers operate. Their options are therefore limited to measures that economize inputs and changes in practices that do not require additional investments (of either labour or cash).

This does leave an opportunity for the integration of small animals, such as chickens, which can provide a small extra income without the need for external inputs. Maize and other farm produce and crop residues can be used as feed and their manure can also help to improve soil fertility.

A farmer group initiative

Five farmers in Pong Chanuan village took the initiative and set up a small network for fattening local chickens in the village. With assistance from the Asian Institute of Technology (AIT), the farmers had identified local chickens as an untapped niche market in the district and provincial capitals. Fattening the chickens is straightforward as the farmers can use their own feed

resources, mainly broken maize, mungbean, vegetable leftovers and small amounts of dried fish and herbs, the latter of which they collect from around their homesteads. Local traders have agreed to purchase the chickens, provided the farmers can ensure a regular and reliable supply of birds of a marketable-size - and this is the major bottleneck. In a typical small-farm scenario, individual farmers will have difficulty in ensuring continuous production of a sufficient number of chicks at predetermined times. Therefore, the farmers in Pong Chanuan joined hands. They started an informal village network in order to supply each other with fertilized eggs from their breeding stock. This would mean that the fattening of the chickens could be co-ordinated, but it also meant the farmers stopped consuming and selling eggs individually. The aim of the group is therefore to coordinate and streamline the production of local chickens from within the village, from the collection of eggs for hatching to the slaughtering of the birds for sale in batches.

As day-old local chicks are not available from commercial breeders, the farmers have to produce their own supply of chicks from fertilized eggs. Hatchability of the eggs is not a problem, but the number of eggs per hen is rather low and local chickens do not lay eggs continuously, but tend to produce eggs in clutches; typically 2 to 4 clutches per year with a total number of between 30 - 92 eggs. This requires that enough hens – and cocks – are kept as reproductive stock to provide a year round supply of enough chicks. It also requires the introduction of simple incubators to reduce the relatively high losses that normally occur with natural hatching, and to ensure that sufficient numbers of chicks hatch simultaneously.

The setting up of producer networks requires careful planning. The two most important factors are the number of slaughter chickens to be sold and the capacity to produce enough day-old chicks for fattening. To secure the supply of fertilized eggs for hatching, each participating farmer maintains her/his own breeding stock. The five farmers of the group each keep one flock of breeder chickens (10 females and 1 male). The animals are kept in simple shaded pens with resting perches and laying nests. The fertilized eggs are collected daily, delivered to the hatchery and stored for hatching.

Hatching is done in batches of about 50 eggs per week with a simple electrical-bulb-incubator controlled by a thermostat, with a capacity of 200 eggs. One member of the group operates the incubator (i.e. the hatchery) and plays a key role in supplying the day-old chicks to members of the group. Because of the irregular egg-laying habits of local chickens, the group members pool the eggs from their breeding flocks so that there is a constant supply of enough eggs to supply chicks for the fattening flocks. This is essential in order to achieve a regular supply of slaughter chickens to the market.

The hatchery produces and distributes the chicks to the group members according to an agreed schedule. Each member has to supply at least enough fertilized eggs to the hatchery to meet at least his own needs for chicks. The members do not necessarily receive chicks hatched from their own supply of eggs.

The relatively slow growth of local chickens – compared to commercial hybrids – means that the production scheme can be more elastic. If need arises, the chickens can be either sold earlier or their sale can be delayed by a few days or even weeks without major changes in weight and condition. This provides some flexibility compared to commercial hybrids, for which a strict adherence to pre-determined production schedules is more critical.

Local chickens or hybrids?

There is a growing domestic demand for local chickens in Thailand, especially in the urban centres. Consumers are increasingly willing to pay higher prices for high-quality food and local chicken meat is preferred because of its better taste and firmer texture, which suits the traditional dishes. However, most of the chicken meat on the market is from hybrid (broiler) chickens produced by large companies and contract farmers. The price per kilo of local chicken meat is about 5 - 15 Baht (US$0.12 - 0.37) higher than for commercially produced broiler meat. Broiler chickens reach the marketable live weight of 1.2 - 1.4 kg after 7 - 12 weeks, whereas native chickens need 16 weeks to reach the same weight. Even with the use of commercial feed, native chickens have significantly slower weight gains than improved breeds.

However, the local chicken is not widely available on the market and demand exceeds supply. Local chickens present a typical "niche" market that is not attractive to large agribusinesses, which prefer to target the mass consumer market. This creates an opportunity for small farmers to increase their income. Improving the efficiency of local chicken production could therefore benefit large numbers of small farmers in the country.

Most small farmers in Thailand raise local chickens, almost exclusively for home consumption. Typically, a family keeps around 10 - 20 birds. The animals are allowed to scavenge during the day; and are only confined at night, usually under the farmhouse or in simple sheds. The feed consists of local materials, such as broken rice, bran, fruits, kitchen leftovers, grasses, weeds and occasionally insects, earthworms, aquatic snails, crabs and small fish. Local chickens are well adapted to the conditions of typical small farmers. Their tolerance of the hot climate and their resistance to diseases is considerably higher than that of high-performance breeds. It is therefore widely accepted that the raising of indigenous chickens has a high potential for rural areas, although the weight gains, compared to commercial breeds, are low.

The network has operated since 2004. There have been a few setbacks, mainly related to electricity failures that affected hatching of the eggs. The network has created strong interdependencies between the farmers and their growing mutual trust has been the main factor that has kept the group working despite the setbacks.

Conclusions

This community-driven small-scale farm enterprise provides a small, but reliable, additional income using on-farm resources, and employing ecological principles of farming. The network is characterized by a high degree of interdependency in the form of resource and risk sharing. Only farmer groups that have a high degree mutual trust in each other can succeed with an enterprise of this nature. A positive side effect of this informal cooperation was that the existence of the farmer group proved to be a strong bargaining partner for the middlemen, who have access to the urban markets. Their ability to provide a reliable supply of local chickens is a key in strengthening their future bargaining position with the middlemen.

A weak point of the network is the incubator. Even with rare electricity failures, the possible losses can be significant. The insulation of the incubator needs to be improved to bridge short periods without electricity for heating. ■

Michael Zoebisch. Birkenweg 5, D-37217 Witzenhausen, Germany. Email: m.zoebisch@gmx.net
Theerachai Haitook. Asian Institute of Technology, P.O. Box 4, Klong Luang, Pathumthani 12120, Thailand. Email: theerachai@ait.ac.th