

# Opportunities for farmers: “safe” vegetables for Hanoi

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When Vietnamese farmers returned to their family-based farming systems in the 1980s after long years of working in a centrally planned economy, their farming practices changed dramatically. Responding to market demand rather than planning orders from the government, the area under vegetable production has increased from an estimated 274 000 hectares to almost 600 000 hectares.

Today, vegetables provide small-scale farmers with a higher income than rice. Farmers, whose land holding averages 0.25 hectares, rely on cheap and accessible but often hazardous chemical pesticides to maintain intensive vegetable production. In 2002, a twelve-month study by the VEGSYS project amongst 64 farmers in two villages close to Hanoi showed that they had used 152 different pesticide formulations, three percent of which were highly hazardous, 33 percent moderately hazardous and 20 percent slightly hazardous.

## Food safety and the environment

Toxic pesticides have caused many food poisoning scandals in Vietnam. Consumers are becoming increasingly aware of food safety problems and the damage caused by pesticide residues. However, although interest in buying safer vegetables is growing, little is known among the public about the environmental effects of agro-chemicals. At present, a team of VEGSYS researchers from Wageningen University and Research Centre and Hanoi Agriculture University is carrying out risk assessments to establish the effect of using combinations of pesticides on irrigated crops. Translating these studies into economic impacts will hopefully make stakeholders more aware of the hidden costs of pesticide use.

The Vietnamese government, as well as many other organizations, are working to make vegetable production less harmful to consumers and the environment. Initiatives such as FAO's *Regional Asian Vegetable IPM programme* and a similar initiative by the Hanoi Farmer Union have focused on increasing farmers' knowledge about the use and effects of chemical pesticides. In 1996, Hanoi's Department of Science, Technology and Environment (DOSTE) developed a protocol for “safe” vegetable production and set up a “safe vegetable” certification programme which allowed farmers and cooperatives to supply state-run “safe” vegetable shops and supermarkets. A “safe” vegetable is still produced using agro-chemicals, but farmers take care not to use forbidden pesticides and to follow pre-harvest interval prescriptions of the pesticides. “Safe” vegetables should also be produced with ground water and not with irrigation water. However, DOSTE did not monitor whether the “safe” vegetable cooperatives followed the protocol and consumers did not have much confidence in these so-called safe but very expensive products. The DOSTE programme ended in 2003 and has been replaced by a new certification scheme supervised by the Vietnamese Plant Protection Department (PPD). The Plant Protection Department is responsible for checking and improving vegetable safety levels. It has the equipment to carry out pest residue tests and can certify producers of “safe” vegetables.

## “Safe” vegetable cooperatives

One of the most interesting reactions to these developments has been the formation of farmers' cooperative groups and New-Style farmers' Cooperatives (NSC) known in Hanoi as *To Hop Tac*. These developments have been made possible by the introduction of new legislation that allows farmers to establish their own cooperatives and provides for the transformation of old state cooperatives into Transformed Cooperatives (TC). There are examples of each of these three types of cooperatives in the villages where the VEGSYS team have been carrying out their research.

### *New-Style farmers' Cooperative*

The most successful cooperative is Phuc Tinh, a NSC cooperative established in 2002 by a female farmer who took the initiative to invite the farmers in her village to form a “safe” vegetable cooperative. Twelve farmers, mostly relatives or good friends, got together and applied for official registration. They presented their management plan and regulations to the local Commune and the Department of Agriculture. Once approval had been received, they registered their cooperative with the tax office and were issued with official business documents. Each member of the cooperative pays an annual fee and five percent of the turnover is used to pay a very small salary to the cooperative's management team and to service a fund that members can use in cases of personal emergency.

The Phuc Tinh cooperative advertises itself as a producer of “safe” vegetables. It follows IPM principles, does not use banned pesticides and adheres to the pre-harvest intervals prescribed for any agro-chemicals it does apply. Farmers who have been unable to cultivate according to these principles do not sell their vegetables through the cooperative.

The cooperative's chairperson is responsible for finding new clients, making production plans and deciding which vegetables member should produce. The “assembler” of vegetables collects vegetables from members, processes them and delivers them to the cooperative's clients. For this he receives transport and processing costs. Currently, the cooperative has five institutional clients who buy 700 kg of vegetables daily for their canteens. This assures cooperative members of a steady turnover, and on average members sell 50 - 80 percent of all their vegetables this way. Any extra produce is sold through normal market channels, although usually for a lower price.

The cooperative does not have an official monitoring or internal control system to ensure that members produce according to the regulations, but there is a strong social control as farmers do not want to get the cooperative into trouble. Although no problems of bad quality or other complaints have occurred, the cooperative would be legally responsible if something did happen. The institutional customers store samples of the supplied vegetables so they can get them tested if there are problems. In general, everybody assumes that quality is good until someone gets ill. If this happens, action is taken to find out who was responsible. The disadvantage of this system is that small quantities of pesticide residues, which may cause health problems in the long term, are left undetected.

### *A Transformed Cooperative*

A transformed cooperative in another local village – formerly a service cooperative supplying inputs to farmers – has also been registered as a “safe” vegetable cooperative. All 600 households in the village automatically became members and no fees were required. Today, although most members use and pay for cooperative services, only 50 farmers have committed themselves to “safe” vegetable production. Social control in this large organization is low and the TC is not registered at the tax office, which means it cannot operate as a business.

The active members sell about 600 kg of fresh vegetables per day to three clients: two state companies that supply vegetables to supermarkets, shops, schools and companies in Hanoi, and a privately owned “safe” vegetable shop. One of the companies has provided the TC with a detailed production protocol. It also supplies the TC with “safe” pesticides and takes samples of the produce for pesticide analysis.

So far, the quality supplied by the TC has always been good. Like the Phuc Tinh cooperative, the TC has no complete internal quality control system to monitor whether the members follow the “safe” vegetable production protocol. However, the TC has developed a simple tracking and tracing system. When farmers pack their vegetables for market at the designated post-harvest centre, they enclose a paper with their name, date of packaging and the name of the product.

### *Farmers' Cooperative Groups*

In addition to the TC, the village also has three “safe” vegetable farmers groups supported by the *HFU/ADDA Vegetable IPM programme*. They work within the TC but unlike TC farmers, group members pay an annual fee. Because the groups have only about ten members each, social control is strong – an important safety guarantee for existing and potential clients.

### **Conclusion**

New and profitable markets are the incentive most farmers need to convert to safer more sustainable vegetable production. The

present marketing system in Vietnam makes it difficult to develop a 100 percent watertight “safe” vegetable supply chain but the efforts being made in this direction are clearly benefiting some small-scale vegetable producers. Farmers who work through the newer marketing channels of “safe” vegetable cooperatives and sell to canteens, restaurants, shops and supermarkets, stand a good chance of getting a higher price for their products. This provides an incentive for farmers to be more careful with the use of agro-chemicals.

Currently, most of the safe vegetables are sold through direct contacts between cooperatives and large institutions or company canteens. Much more coordination and cooperation between farmers, assemblers, wholesalers and retailers is needed to increase the demand for safe vegetables at all levels in society. An increase in demand from supermarkets, for example, might provide a strong incentive for farmers to produce high-quality and “safe” vegetables. This is already happening in neighbouring Thailand and China, where supermarket chains concerned about their image and brand are increasingly demanding food products free of pesticide residues. In order to win the confidence of consumers and retailers, however, contracts accompanied by strict protocols, internal control systems, input record keeping and simple tracing systems, as well as strict social control within the cooperatives themselves, will be needed. ■

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## Termite mounds as fertilizer

### **John Andrew Siame**

Farmers in Zambia have traditionally used soil from termite mounds as fertilizer, but this practice was abandoned when subsidized inorganic fertilizers became available in the country. However, when – as part of the liberalization of the Zambian economy – all subsidies for agricultural inputs were removed and prices increased sharply, many small-scale farmers resumed traditional crop fertilization practices including the use of termite mounds.

In Southern Zambia, farmers select suitable termite mounds and clear them of vegetation. The soil is cut off taking care to leave the base of the mound intact so that the termite colony is not destroyed. This soil is then transported to the field by wheel barrow or oxen and, before the rains begin, farmers use ploughs, hoes or shovels to work it into the top soil. In areas where conservation farming is practiced, soil from termite mounds is put into planting basins.

Farmers apply termite mound soil to the field where they plant maize, soybeans, cowpeas and other local cereals and

legumes. They do this once every three years. Field staff found that where termite mound soil had been incorporated, maize harvests were 33 percent higher than they had been when inorganic fertilizers were used and the positive effects were long lasting.

Literature indicates that termite mound soils generally have high clay content, enhancing water storage capacity. In the Southern Province of Zambia soils with low water retention capacity are common, so when termite mound soil is spread on these soils it results in a higher soil moisture content and improved crop growth. Literature also shows that termite mound soils have high levels of calcium, phosphorus and organic matter, which also contribute to better crop development, especially on the poor soils in the area. Plants also take up nutrients very easily from termite mound soil. Termite soil is proving a viable option to local farmers who can not afford to buy expensive inorganic fertilizers. ■

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