

switching to alternative practices: economic factors, production techniques, cultural aspects and market opportunities. Unless these stumbling blocks are removed, a mass AA movement will remain an unattainable dream of farmers and NGOs.

Economic factors

It is well known that one of the farmer's prime concerns is income. In the present context where full-fledged commercialisation is sweeping through the rural sector, sale of cash crops is the only source of income for farmers to rely on to sustain their family's livelihood. The double cost-price squeeze (more use of more expensive inputs; lower prices for produce), not only keeps farmers below the poverty line, but serves as the main mechanism to transfer surplus products from the rural sectors to urban industrial sectors. It is often not feasible for farmers to adopt SA because it requires a certain amount of capital for physical improvement of the land (eg. pond digging, drainage) and for income during the period when for example trees are not productive yet. It is generally believed that farmers need at least three to five years to rehabilitate soil to an extent that enables adequate production. For many indebted farmers, it is not possible to wait that long, as interest and redemption on capital loans must be paid on short-term conditions. Above all, the lack of security of land-ownership makes farmers reluctant to invest in improvements that pay in the long run.

As long as these immediate economic constraints continue to exist, a large number of resource poor farmers feel themselves barred from adopting SA. So, supplementary measures which provide solutions to farmers' immediate problems must accompany SA information, technology transfer and policy advocacy.

Production technology

Production technology in SA is much more complicated than that in chemical-intensive farming; planting trees and "letting nature look after them" is far too simplified a picture of sustainable agriculture. Understanding and making the life cycles of the environment work for the farm is a complex process. Sustainable farming requires serious attention and determination from the farm owners to put abstract principles into practical techniques. As farming environments vary from one place to another (as well as farmers' individual socio-economic circumstances), SA farmers cannot easily copy ready-made techniques from fellow AA farmers: they must still experiment with them before they can successfully apply them on a large scale at their farm.

Mr. Maha Yoo's self-reliance

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Since the beginning of the 1980s, farmers' own perception and knowledge of landuse and farming practices is the principle guideline for NGOs to promote sustainable landuse. "Folk models" serve to demonstrate the advantages of integrated farming. The families providing these models have developed their farms on the basis of their knowledge of traditional farming and their own experiences and observations. They continuously seek to adapt and improve their farm systems. Mr. Yoo Sunthornthai from Surin Province is one of those farmers who inspired NGOs to set up programmes to disseminate their experiences. NGOs believe that folk knowledge like any other knowledge can be learned and adopted, if the network to disseminate it is properly designed. Farmers like Mr. Yoo are often invited as resource persons in seminars for NGOs, farmer leaders and farmers. Frequent visits are made to their farms. Assisted by NGOs, many - especially poor farmers - make the difficult decision to start the process of blending their own knowledge about landuse and farming practices with that of such "model" farmers.



PHOTO TREE

Mr. Yoo selects rice to be planted on his farm. He uses different varieties with varying growth cycles, pest resistance and labour demands

Mr. Yoo's ideas and practices

Mr. Yoo inherited the tradition and knowledge of farming from his parents. In general, this knowledge is identical throughout the Northeast. Mr. Yoo's ideas vary in the sense that they are specific to his local environment. Over time, his ideas have changed depending on the changes in this environment. In their early twenties, Mr. Yoo and his wife realised that the approach of their

parents and other traditional farmers was not viable any more. They looked for alternatives in farming for sustaining their family. Without abandoning the old practices completely they reoriented their farming pattern to the necessity to produce for the market. They found out that in the Northeast, "business-like farming" can be designed without disturbing the ecological balance. The principles of symbiotic interdepen-



PHOTO TREE

Botanical control is alternative for ever increasing need for more expensive chemical pesticides. Preparations are made for a mixture containing galingale and neem leaves.

approach

gency with the bio-physical environment and regeneration of local resources are the underlying concepts for an approach that builds on self-reliance.

This means that various goods and commodities should be produced on the farm to minimize the purchase of expensive consumer goods. By selling only surpluses the household has a greater choice and freedom to make decisions and not to completely depend on the mercy of market forces. This improves their bargaining power. Farmers should rather depend of human and animal labour, organic manure and recycling of wastes instead of external inputs such as agrochemicals and equipment for which cash or expensive credit even is needed.

From mixed to integrated farming

With 43 rai (ca. 6.9 ha) inherited from his parents, Mr. Yoo started. Cultivated were 25 rai while forest covered the remaining part. Farming included rice, vegetables and fruit trees, and ducks, chicken, pigs and fish. He also had non-farming activities like making of and trading in looms, sale of firewood and charcoal. Five years of efforts after the start in 1947 resulted in:

- 13 rai of the original forest land were cultivated;
- four heads of buffalo were bought;
- 50 rai of cultivated land were purchased from his neighbour.

Until 1960 his farm system can be called "mixed farming", i.e. diverse activities were separately performed each on their own piece of land, having little mutual linkage. In 1970 Mr. Yoo visited a farm where pig raising, fish ponds and paddy fields were integrated in one farm system. After seeing how production and reproduction cycles are interdependent and supportive to one another, he decided to upgrade his "mixed farm" into an "integrated farm".

Ponds have been dug to harvest the rainwater. They are used for combined rice and fish culture. Additionally Mr. Yoo also keeps "wild" fish in a separate pond. In order to tune in to the rainfall conditions, Mr. Yoo is recording rainfall data since twelve years. His experience is that under the semi-arid conditions with a four-months growing season, an equal distribution of rain is crucial: it is better to have more days with less rainfall even than to receive more rain but on less days. He uses several rice varieties with differing growth cycles. This enables him to more evenly spread the demand for the scarce labour. Moreover, some varieties are more resistant to pests and diseases whereas others yield more. Also in economic terms the greater variation in varieties is profitable. The various varieties command differing demand and prices. For example small-grain rice attracts a low price but yield is high and it is well suited for use as duck food. So, a basic principle in Mr. Yoo's strategy is one of risk spreading: do not bet on one horse!

At present Mr. Yoo is making great efforts to gain control over marketing. He tries to improve the link between production, processing and marketing. Succeeding on this venture means that his efforts over the last forty years made him reach the goals he set. Success not only means reliable sustenance and economic return, how important they may be. It also means power to influence the market.

This case of a farmer's desire to get organised and to tackle his problems on his own can serve as an example for other farmers. Access to his experiences, so as to avoid unnecessary deceptions, must be encouraged. Then they can develop their individual strategy for resolv-

ing their immediate as well as long-term problems. The number of farmers which converted to "self-reliant integrated farming" is still relatively small. But the combined actions of farmers and NGOs can result in a viable alternative to the conventional model of "modern" but unsustainable farming.

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A schematic map of Mr. Yoo's farm

