

Rejuvenating soils with innovative farming approaches

Farmers have been using chemical fertilizers and pesticides since the Green Revolution arrived in Paseh village in Central Java. Over time, however, they became aware that their soil was becoming harder and more infertile. With increasing costs of chemical inputs, farmers began to think more carefully about their soil fertility practices. One farmers' group started experimenting with Natural Farming methods, with successful results.

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The Bakti Lestari-Banjarnegara Organic Farming Group was born in February 2004. Its members, all from Banjarmangu sub-district, in Central Java, exchange resources and knowledge among themselves and also conduct some experiments. They realised that there was a link between using agro-chemicals and the start of their problems with soil deterioration and water scarcity. The biodiversity of the paddy field ecosystem – eels, birds, and snakes – was also decreasing. Together they decided that they had to stop using chemical pesticides and fertilizers, and look for a better way of farming. In September 2005, in co-operation with Bina Desa Sekretariat-Jakarta, a training course on Natural Farming was organised. This method, which originated in Korea in the 1960s, pays attention to soil management, such as using cover crops and organic mulches, while respecting natural processes. The group thought this would be a useful way to help solve the soil problems they faced.

Concepts and practices

During the training, farmers learned the concept of “living soil” – that the soil lives and can become sick, or get well, just like human beings, depending on how it is treated. Methods discussed emphasised the proper use of the right material, at the right stage, in the right quantity.

After learning these ideas, farmers in Paseh village agreed to start the practices on their land within months. They considered that the simple, cheap yet productive farming methods were very suitable for them, having only limited land and resources. Below follow some practices which farmers in Paseh have recently been using. Many differ greatly from the conventional methods that farmers had been using for a long time:

- using leftover rice fermented near bamboo stakes as material to reintroduce local micro-organisms to their farms;
- applying fermented plant juice – made by fermenting plant parts in palm sugar. Any plant with strong vigour can be used;
- using oriental herbal nutrient mixtures, made from herbs valued in oriental medicine, for pest control and to provide soluble nutrients;
- treating weeds as friends, not enemies: wild grass or clover which grows in between the crops can be used for mulching;
- practising minimum tillage, to keep grass seeds deep in the soil, and have fewer weed problems;
- valuing worms, the amazing digger: farmers now realise that earthworms (and other small animals which live in the soil) help them to build a better soil; and
- using organic household waste such as vegetable peels, egg shells, fish and bones for compost.

Farmers' observations

Since taking up these methods, members of the farmers' group have noticed some changes on their land. The soil texture is better now, it is more crumbly and full of worms. It is also easier to work with, and to weed. Farmers now also find it possible to plant crops in the dry season, and the soils crack less than before. There is less soil erosion and fewer pest attacks. Farmers feel healthier, and they find that their rice and vegetables taste better. Yields have increased as well – for example, cardamom has gone up from 30 kg to 45 kg per plot. They have had rice yields of 70-75 kg, compared to a maximum of 60 kg regularly obtained with conventional methods. Farmers believe that these methods have revived the balance of the local ecosystem in their paddy fields, which is a good base for producing a healthy crop and a good harvest.

The news of these results has spread – the farmers have had several visitors from outside their district, some media coverage, and requests from NGOs and other groups to be resource persons. Other farmers have heard about their success, and have come to talk with them, interested to join their group. The farmers who want to join state that they suffer from poor soils, and many pests, and that they would like to learn about these methods which they understand to be cheaper, relatively easy and more environmentally friendly. They realise that they must be more patient as they will be working with nature and not with the chemical inputs which give instant results.

The thirty members of the farmers group now want to expand activities. They will produce organic fertilizer (compost and manure) and sell it to the Agricultural Agency of Banjarnegara district that wants to promote organic agriculture in their area. They want to develop their cattle production, and produce organic fertilizer to sell. These are some of many ideas the Bakti Lestari-Banjarnegara Organic Farming Group has for building on its current success and looking to the future.

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Growing living soils.