

ONE EARTH

A UNDP-IMPLEMENTED PROJECT



Growing traditional rice varieties anew

by Sonia Randhawa

Based on the so-called "green revolution", agrochemical pesticides, fertilisers and herbicides are supposed to help farmers increase their crop yields. But they come at a big cost to farmers, economically, socially, environmentally, genetically, and to human health.

In Sarawak, however, a group of innovative rice farmers are experimenting with natural methods of increasing rice yields through integrated rice farming. These methods simultaneously contribute towards the conservation and sustainable use of rice agrobiodiversity.

The United Nations Development Programme - Global Environment Facility (UNDP-GEF) Small Grants Programme is working with a local NGO, called Ecofare, on a project which aims to enhance the income of subsistence rice farmers in Sarawak, while protecting their environment, natural resources and ecosystems; safeguarding their human health; and promoting rice agrobiodiversity.

Rice farmers in the Sekeduk district were facing a vicious cycle. Their fields didn't give them high rice yields. As there wasn't much rice around, there was only one rice mill in the area. And with lots of farmers being forced to rely on the one mill, it could buy the rice at much lower prices than the market average.

Worse still, because some of the farmers were growing traditional varieties of rice, the mill was not able to handle them properly, leading to the production of low quality milled rice. The farmers therefore had to seek employment outside their farms to make ends meet.

ABOVE: A local farmer checking on his fields of traditional rice varieties, surrounded by some ducks.



RIGHT: A duck house standing among fields of traditional rice varieties, with the ducks' manure also serving as natural fertiliser.

ABOVE, RIGHT: Ducks feeding on succulent weeds in the waterways between fields of traditional rice varieties.

This was when Ecofare, with the help of the UNDP-GEF SGP, stepped in.

Its first stage was to collaborate with the Rice Division of the Agricultural Research Centre of Sarawak to optimise the distance between the planting of rice seedlings, and so doubling or tripling the rice yield per hectare with few, if any, additional inputs.

The next stage was to introduce ducks. The farmers were initially sceptical. Ducks eat plants and they were concerned that the ducks would eat the rice plants. When the ducks were first introduced, Ecofare had to guarantee to replace the rice crop if it was damaged. But fortunately the ducks were not fond of eating the rice leaves. To the surprise of the rice farmers, the duck plan worked as expected.

The ducks nibbled on the rice plants, before quickly moving onto the more succulent weeds, and in the process, also picking bugs off the rice plants, without damaging them. At the same time, duck manure provided a fertiliser for the crop.

This meant three things. The ducks were acting as herbicide, pesticide and fertiliser in one, increasing the rice yield and spatial planting by 40%. Further, the ducks also provided additional income in themselves. Over the three-month rice crop cycle, the ducks matured, fetching a total of around RM1,500 in the market, for an initial outlay of around RM300 for 100 ducks.

Another aspect of the project was to heighten awareness of the significance of traditional rice varieties, which have dwindled partly because of the massive push of the Green Revolution. Ahamad Kamari, one of the members of Ecofare, is enthusiastic about the possibilities. "In conjunction with the Convention on Biological Diversity (CBD) Conference of the Parties (COP) 7, 120



UNDP/PIX BY MARTIN ABRAHAM

GEF delegates were taken on a mission to Sabah, where seven traditional rice varieties were served at an official luncheon. They were so impressed that the hotel where the luncheon was held is now considering buying and serving the traditional varieties of rice as part of their regular menu."

The farmers of Sekeduk are now part and parcel of a living seed bank for traditional varieties of rice that were in danger of disappearing from the agricultural scene. With more than 50 traditional rice varieties covered in the project, each with a different aroma, flavour and sometimes even colour, their niche marketing options look both promising and viable. So much so that Ecofare's interventions on the agrobiodiversity of rice are now being targeted by other countries in the region where rice is also a staple diet, with a view towards replication.

The project stands as an example of building capacities of communities towards sustainable livelihoods for the conservation of agrobiodiversity.

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It pays to be diverse

BIODIVERSITY is important in agriculture. Not only does diversity help us to improve the biology of the existing varieties, it also can help to protect rice crops from devastation by disease or changing conditions.

Despite increases in hybrid rice yields, rice quality can still be improved, from nutritional value and flavour to tolerance of heat and cold. By mixing hybrid and traditional varieties, hybrid rice can be further improved.

Nature, however, never stays still. If the same few rice varieties were grown the world over, they would be more prone to diseases, putting the world's food supply at risk. Thus, it is important to maintain a 'seed bank' of traditional varieties. At present there are over 100,000 varieties being stored across the world.

There is, also, the intrinsic value of diversity. More rice varieties in the market means more flavours, more textures and more choice.



Fertilising the fields

DUCK droppings help to fertilise the rice fields, but they're helped by two nitrogen-fixing plants. The first is a legume with yellow flowers, called Sesbania. The second is a water fern, Azolla.

Sesbania is grown on the bunds of the fields, and Ecofare is currently investigating their use for dry rice farmers. Azolla grows in the fields, and provides food for the ducks and any fish kept in the wet rice fields. When the padi is harvested, the Azolla dies, dries up and helps fertilise the fields once more.

The beauty of these plants is that they help to replace urea-based chemical fertilisers at practically no cost. The project bought the first round of seeds for the farmers. In subsequent seasons, they could use seeds saved from the previous season's 'harvest'.

How you can help the farmers

Help the farmers, and your family, by buying traditional rice varieties. If your local market or supermarket doesn't stock them, ask them if they will.

Ecofare hopes to make traditional rice varieties a regular feature on the Malaysian dining table. "They aren't going to replace hybrid rice," explained Kamari. "They will remain a niche market. But if Malaysian families served traditional rice once a week, it would mean a massive boost for these farmers." He insists that we're losing out by confining ourselves to the hybrid rice we've grown accustomed to. "Each variety has its own aroma, its own flavour and nutritional value. We need to rediscover these."

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