SRI LANKA — A LABORATORY

In Sri Lanka for the past 2000 years farmers have worked the land to provide food for their families, sometimes even enough to store away for the bad year.

But times have changed. In the past 100 years most of the best land has gone to cash crop plantations producing valuable exports such as tea, rubber and coconut. Sri Lanka's population has grown too and so the land can no longer provide enough food to meet the people's needs.

One of the things that is being done to help feed the people in Sri Lanka is a research programme called "cropping systems research" or "multi-cropping". The agricultural scientists work alongside the farmers in the fields. The farmer becomes a partner in the research, he supplies the land and most of the labour, and he can say whether he feels an idea will be of no use to him, and make his own suggestions. Systems that work only in the laboratory are of no use to the farmer. The emphasis is on crops and the goal is to make the most of the farmer's total resources — land, animals, water and people. Sometimes this involves growing additional crops, either together or in sequence, sometimes increasing the yield of existing crops.

This approach has a practical value, and also has an important psychological effect on the farmer. Sri Lanka has a "wet zone" in the south where 6350 mm fall, and a "dry zone" in the north, which receives only 635 mm. The dry zone farmer has come to be seen as a "poor miserable human being living in misery". He therefore felt that he should get away from the land to be socially accepted. As Mr Medajama, an extension officer with the Ministry of Agriculture, says "The technology we preach and want them to adopt should be developed from within the resources available ... with what resources the farmer is capable of acquiring and using". So the researchers work alongside the farmers, who regain their self-respect and are encouraged to try new methods. An example of a new method is the dry planting of rice before the monsoon, instead of waiting until the rains have filled the ancient irrigation tanks to overflowing.

These tanks are the remnants of a remarkable irrigation system that once kept the northern part (dry zone) green and prosperous. Years of war and successive colonial administrations led to neglect and today many of the tanks need repair. By speeding up the paddy cultivation, and making better use of the rains, the water that collects in the tanks can be used for a 2nd, perhaps even a 3rd crop.

Careful records are kept of all the participating farmers' activities, and the researchers can then compare these results

with those of a number of farmers in the same area using the age old traditional methods.

On the research stations the scientists can experiment with different varieties and various combinations of crops to follow the rice harvest, such as chillies with soybean, black gram or groundnuts. Plant breeders, agronomists, physiologists, climatologists, soil scientists combine their efforts to form a complete team approach.

One of the factors that make Sri Lanka a good place to adopt a team approach, is that is a "living laboratory" from the scientists' point of view. Sri Lanka has uniquely varied soil and climate conditions. Scientists have classified the world's soils into 10 major types; nine of these occur in Sri Lanka. The rainfall varies greatly between the north and the south. Unlike most Asian countries, Sri Lanka experiences not one but two monsoons, the "Maha" from October to January, and the "Yala" from March to May. Finally, there is the land itself, with coastal plains at sea level contrasting with mountains that peak at 2 438 m. The wide variety of conditions found in Sri Lanka means that the results of the research may be applicable in other countries.

Shifting cultivation in Sri Lanka has been practised for thousands of years. It is called there "chena". Population pressures are making "chena" impractical. If there are too many people the fallow period becomes shorter. Under this traditional system mung bean, cowpea, black gram and sorghum are the common crops. A food grain improvement project aims at developing varieties of these crops that can be rotated with a rice crop. In these ways scientists and farmers work together in Sri Lanka to reduce the amount of food that must be imported and so improve the standard of living for everyone.

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