

## Agriculture

### *Experimental farm*

The districts of South Bengal surrounding Calcutta are very fertile; they get plenty of rainfall and also have sufficient ground and surface water for irrigation in the dry months. Their links with Calcutta are fairly strong and the marketing infrastructure is well developed. These districts also have the highest density of population in rural India. . The inevitable result of all this has been that all available land here undergoes double to triple cropping. An essential feature of this is the total dependence on chemical fertilizer and pesticides, and on diesel pump sets. As everyone knows by now, this technology, is ecologically harmful and economically also it cannot be sustainable in the long run.

Carrying out experiments in low external input sustainable agriculture (LEISA) has to be one of our major thrusts. We sent two of our workers, Tarun Ghosh and Zeaul Haque, to Pondicherry for three weeks of training with Ardhendu S. Chatterjee, a leading exponent of permaculture, in November 1991.

Since we do not have any land of our own we have taken some on a three-year lease in three villages. The lease began in November 1991 and the land is distributed as follows

Village	Plot	Size	Level
Andharmanik	A	0.2 acre	Low
	B	0.2 acre	Medium
Chandalati	C	0.17 acre	High
	D	0.17 acre	High
Fatullyapur	E	0.13 acre	Medium
	F	0.17 acre	High

We would like to carry out a variety of experiments and as we see signs of success we plan to get local- farmers involved. As a starter we have the following practices in mind-mixed cropping; proper crop rotation; use of farm manure; trying out new bio-fertilizers like azolla, blue green algae, rhizobium; using natural pesticides; encouraging proper and controlled, use of chemicals; integrated pest manage, meat; vermiculture; soil testing; pedal pump; setting up a seed bank; tree plantation on boundaries.

Some of these were once standard practice but have been lost in the race for new technology ;

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some are improvements on current practices. Eventually we would like to move towards natural farming which has five cardinal principles—no tilling ; no fertilizer, chemical or biological ; no pesticide ; no weeding ; no pruning.

The status of our experiments on 31 March was as follows.

Plot A—Boro crop was being grown. using poultry litter, and 20% of the usual amount of chemical fertilizer: Irrigation has been provided by a pump, operated by arid not a diesel engine, When a part of the crop was affected by a blast, we successfully 4,804 a natural agent, a combination of Bhat.and Neem leaves and garlic juice.

Plot B, on high land, has not been farmed so far.

Plots C and D - Musur Dal, a leguminous crop, was grown so that the soil might get back some of the nitrogen the paddy crop that came before had taken away. It has been harvested. After this; mixed vegetables are being grown on Plot C on beds that will remain permanent for three years. No chemical fertilizer or pesticide will be used. So far, there has been mulching with water hyacinth. On Plot D Til (sesame) is being grown without any chemical input

Plot E - Mustard and Musur Dal- were grown together here; both have been harvested. After that Til (sesame) was sown, and for fertilizer we have used cow dung, poultry litter and some chemicals.

Plot F—'This still has 'Patal', sown before the lease came into effect, and so is no part of our experiments. We have joined a network of five organizations in the districts of North and South 24 Parganas, Midnapore, and Calcutta, to pool our knowledge and resources. Our agricultural workers attended two workshops organized by this network, at Jirat in Hooghly in February 92, and at Kajla in Midnapore in March. From now on, the pace of experiments, interactions and discussions is going to increase considerably.

In March we had a daylong discussion with 16 farmers from six villages to catalogue the present cropping patterns, methods, problems; costs, profits, etc. We are also hoping to hold regular demonstrations and trainings for farmers in our plots by the end of 1992.

Compost pits

Two compost pits were dug at Andharmanik and Chandalati with cow dung, water hyacinth,

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Musur stalks, and rice straw. The cow dung was not available locally at either village as most households use up as cooking fuel the little dung that their few cows produce; so for the pits the dung had to be brought from Ashoknagar, where there is a large dairy farm. The compost will be ready for use from October 1992.

#### Pedal pump

We obtained two kinds of pedal pump from , Mennonite Central Committee, Calcutta. These cost 20% of the price of a diesel set and require no fossil fuel to run. They are quite convenient for small and marginal farmers. We carried out publicity and demonstration at three local 'haats' (markets). The one for surface water was used in the winter of 91-92 by 16 farmers of Fatullyapur and six of Bajitpur for their small vegetable plots. The other one, for ground water, was used for our own Boro rice cultivation on Plot A. We feel that in the coming winter there would be considerable demand for these pumps.

#### Fruit, trees

In July 91, five people were trained at Fatullyapur village in grafting techniques: They then did the following work.

Fruit trees	No. of buds
Lichee	59
Guava	20
Jamrul	20
Lime	40
Batabi Lebu	7

Later these 145 buddings/ cuttings were distributed among 49 households in the village.

#### Nursery

A nursery for 1000 supari (betel nut) trees, which are in great demand, is coming up at Andharmanik.

Our experiments in agriculture will have to be continued for long. We shall require at least five years to confirm any success and then five years more to demonstrate that they are sustainable. For this it is essential that we have some land of our own. This we have not been able to do so far because we do not have the money.