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#### 4. Agriculture

This is gradually becoming the main thrust of our work. In this sphere of our activities, we work almost entirely within our status of membership in a network of NGOs based in 11 districts of West Bengal, and some even outside. Our goal is to find an economically and ecologically sustainable model of agriculture, and we have taken up a detailed and wide-ranging schedule of theoretical trainings, practical experiments, and exchange of ideas and information.

The main thing is to spread the message. Our job should be easy, one is apt to say, because the farmer must be knowing how he is going up a blind alley by practising the present-day methods of chemical-based agriculture. But it is one thing to feel the pinch, and quite another to systematically formulate the circumstances -that lead to the pinching, and yet another to persuade the small farmer that if he takes to new ways, he will not be changing something for nothing. There are various ways in which we try to reach him.

Discussions are arranged in villages where our workers meet a number, of farmers, between 10 and 25 of them usually, for an hour or two. These are somewhat formal affairs-and thus we call them "study circles"-where the agenda, may be a reasonably detailed discussion of a specific theme, or it could be a general survey of problems, ways of tackling them, the success and failure of various options, etc. We have found that better results are achieved when men and women sit separately and so risking the opprobrium of being branded sexual segregationists, we hold these study circles with an either all'-male or all-female participation. Our representatives may, however, be a mixed team. During the year we held 22 such meetings with men in five villages, with 330 participants, and 19 meetings in five villages with altogether 807 women joining in.

Awareness camps are longer affairs and cover more ground Our workers go to a village where a sizable number of people have expressed interest in our work and a day's programme of training can be for anything between four and eight hours, with breaks. There is no fixed syllabus as such; we take note of the composition of the trainees, and of what their demands are, and of how much time they can give, and then adapt our schedule to all this. Three such camps were held for men in three villages, with 169 participants, and for women there were two camps in two villages, with 77 of them attending.

We meet farmers in their own villages, but also encourage them to come to Andharmanik for various trainings. When the trainees are from different villages, this is obviously the most

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suitable site and this offers the added advantage of access to our model plots, of which later. Among these trainings given by us at Swanirvar were two three-day courses on kitchen gardens, cultivation of herbs, and use of herbal medicine. Altogether 57 people attended these. There was one training for local farmers on soil testing, with 12 participants.

Perhaps the most important part of our extension work is a four-day programme we call -the introductory training. This comprises an intensive exposition of the principles and practices of sustainable agriculture through classroom lectures, practical training, site visits, discussions, audiovisual shows, etc. The outlines of the syllabus remain the same but the details may vary a little from training to training depending on whether the trainees are going to do mainly field-based or home-based agriculture: We conducted two such trainings at Andharmanik this year, with 92 participants from five districts.

We have tried to bring in experts from outside to talk to our workers and local farmers. When a scientist from the State Oils and Pulses Research Station at Berhampore in Murshidabad district came to give an overview on oilseeds and pulses cultivation there were 31 farmers from three districts to listen to him. On another occasion a faculty member from the Bidhan Chandra Agricultural University came for a day but this time only our workers were present to exchange ideas with him.

We also send our staff outside for training and exposure trips. Altogether 41 people this means some went on more than one trip. People went on 10 such trips to learn about subjects that included communication skills, photography, integrated pest management, agroforestry, pulses, herbal medicine, and general advanced training.

Our agricultural supervisor made four trips to four districts to act as a resource person at workshops held there by local NGOs.

Apart from these predominantly theoretical trainings we have involved farmers in some practical work also. Almost no farmer will agree to switch over to our methods at one go, so we are asking them to adopt at least one SA (=sustainable agriculture) technique in their existing system. Once the first step is found to be helpful, the pace must grow. Among the various such techniques are the following, and we start with bio- or natural fertilizers.

We carried out an intensive publicity campaign to exhort people to use Dhaincha, a green

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manure, especially ideal for the monsoon rice crop. We held meetings, distributed leaflets, pasted posters. We collected seeds and subsidized the price for the farmer. Forty-two farmers planted Dhaincha over 15 acres in five villages.

Another nitrogen-fixer, the fern azolla. Is an excellent green manure for low lying rice fields. After two years of erratic results, this year we were more certain about how to ensure its multiplication in fields, and 33 farmers used it in 8.5 acres of land in five villages.

We got rock phosphate from Purulia through a trading concern. We bore the transport costs ourselves and sold it at cost price to 25 farmers in four villages who used it in 5 acres of land. We introduced two biological fertilizers, rhizobium and azotobacter, in the area. The first was used by 19 farmers in two acres of land in five villages, while the second was used by 18 farmers in five acres in five villages.

A type of liquid compost, which can be made by almost anyone on a small scale in a matter of three weeks, is called compost tea because its colour resembles that of the beverage. We had actually planned to use this mainly in the kitchen gardens, but farmers found it of use in the fields also. Some are using it quite regularly, with the result that it was applied on 125 occasions in 14 acres of land in six villages.

Some botanical pesticides, using, among other things, jute seed extracts, garlic, chilli, custard apple leaves, neem and "bhat" leaves, and ash, were tried, with generally encouraging results, in four villages, when growing five vegetables and rice.

A major constraint in our work in the previous years was our failure to get hold of the right kind and quantity of seeds at the proper time. So we went in for the preparation of a comprehensive catalogue of the seeds available in our area, and to set up nurseries, to supply from our own source seedlings of vegetables, fruit trees and other multipurpose trees for kitchen gardens, alley cropping, green manure, fodder, green leaf manure, cover crop, etc. This is all the more necessary as the Government's efforts at seed multiplication have a narrow focus and the private nurseries naturally grow and sell what is of the greatest commercial viability. We are engaged in collection and preservation of quality seeds and hope to set up seed banks which will have regular exchange facilities locally, inter-district and even interstate. We have this year supplied 27 varieties of seeds to kitchen gardens and five crop seeds to fields.

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Our betelnut nurseries in four villages grew and sold 6,810 saplings, and the vegetable nurseries in three villages grew four kinds of seed in each village.

Ours is an area of intensive year-round cultivation with a set pattern. Yet some crops are even now unsustainable, and some others will soon become so. It is thus essential to change to new crops. Diversification is also good as a safety measure. A new crop, if it catches on, may also prove to be more profitable. With all these things in mind, we persuaded a sizable number of farmers to grow

Kusum, a sesame-like oilseed, and a lesser number to try Rajma (kidney beans), and some others "Khero", a dryland vegetable.

We had our own experimental plots in three villages. The leased ones at Fatullyapur and Chandalati were used in various ways but we did not renew their lease as we thought it is time we went in for systems trials with collaborative farmers. In the previous two years there was little interaction with farmers on a proselytising basis as we were not sure that our controlled experiments had yielded enough results to ask others to replicate them. Local farmers did show an interest in what we were doing and in what we told them, but they were often sceptical of our successes, implying that these were the result of special, hidden inputs.

So this year we began systems trials with collaborative farmers. Eleven farmers in three villages agreed to set aside a part of their land to use all available SA techniques there in close consultation with us. Among the crops thus grown were aman and boro rice, wheat, mustard, jute, sesame (Til), coriander (Dhania), Masur dal, Kusum. Since small farmers cannot afford any margin for risks, various incentive measures have had to be offered, mainly to act as a sort of insurance. The results have been generally encouraging and this generates more enthusiasm and interest among their fellow farmers than the results achieved in our own plots. Also, we now have feedbacks from 11 individuals. However, there is a debit side to all this. The "insurance incentive" has made for a certain amount of disinterestedness among certain of the farmers. Also; our workers are not sure whether to push for a gradual switch or for a total changeover to non-chemical agriculture. This is only natural, as we do not know what an ideal system should look like in these days, and we shall never know enough even to pretend that we do.

At Andharmanik we have our own land, which consists of one low plot for field crops, and two medium plots for crops and vegetables. We have used a variety of SA techniques here to grow

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rice, various dais and oilseeds. We have gone in for alley cropping, which is an integral part of SA but which is proving very difficult to popularise. We also have a mixed three-tier fruit orchard, vegetable plots, nursery for timber trees; compost pits, etc. We have grown fish in our large pond without using any synthetic input and the results have been profitable.

Our kitchen garden programme is very impressive numerically-we helped set up 154 in seven villages-but how effective they have been will not be known until later. This is because these homestead gardens are, meant to be a revolving source of supply for chemical-free, nutritious vegetables, fruits, fodder, fuel, and herbal medicines (all or at least a majority of these) for a family, throughout the year: This is a very important part of our work, as this centres on women's active participation, follows basic SA techniques in that it uses household waste water and other solid waste as much as is possible, and requires little by way of inputs. But a good kitchen garden needs a great deal of careful planning initially, and this is difficult to get people to do, so used are they to not taking vegetables seriously. But even after one season its efficacy has been demonstrated, and also that of its herbal medicinal plants 'component. We intend to expand the programme to its widest possible limits, so that landless people have a steady source of nutrition and food.

Our cultural troupe for adults has been very effective in carrying the SA message to villages where we have no foothold. The kitchen garden theme is popularised by our children's troupe. The adults held 9 workshops this year, with 128 participants. The scripts have to be constantly modified, to neutralise the heavy turnover 'of the cast, and to respect e feedbacks. This year there were 10 performances in eight villages, with three plays being produced.

We have regular staff meetings, to review our work and to plan for the future, and the agriculture department held 15 such meetings this year, with 196 participants.