

How Punjab Doubled Its Yield

A REVOLUTION IN INPUTS

Many people think that the Green Revolution was achieved the easy way. Plant Mexican wheat over a few acres. And, behold, in a few weeks there is a rich harvest before you. It is not so simple. To yield a bumper harvest good seeds need scientific treatment of the soil, careful irrigation and use of proper insecticides.

WE asked M. S. Gill, Registrar of Co-operative Societies, Punjab, how his State achieved the Green Revolution.

Gill gives credit to our agricultural universities and institutes for their research work. Dr Borlaug developed his hybrids after 25 years of experiments in the laboratory and the field. Our scientists have been inspired by his example and are doing excellent work.

But, points out Gill, the Green Revolution would not have been possible but for the initiative and enterprise of the administrative set-up, particularly the cooperatives.

In late 1966, C. Subramaniam, the then Union Minister for Food and Agriculture, took the bold decision to import 18,000 tonnes of Mexican wheat seeds (Lerma Rojo). Punjab decided to go ahead with planting them, though the agricultural scientists were then opposed to the idea. The results are known to everybody. Wheat production increased from 19.16 lakh tonnes in 1965-66 to 46 lakh tonnes in 1970-71. (The agricultural institutes have played a part in the selection of seeds later.)

Crop Loans

The efficient distribution of seeds itself implied a wide-awake administrative set-up. Success of the new varieties depended on large inputs. They could not be used without greatly increased quantities of fertilisers and water. Pesticides were also required. The kisan needed credit to buy the fertilisers, to install diesel engines. This job was done by the cooperatives—there are 10,931 agricultural service societies in Punjab, with funds totalling Rs 14.65 crores and with a working capital of Rs 61.24 crores.

In order to ensure adequate credit to each farmer, the crop loan system was introduced in 1967. The key point of this system is that the grower is given credit not in relation to the ownership of land but in proportion to the acreage of the particular crop he is going to sow. In this way every farmer, tenant or owner, was enabled to use fertilisers. The loan was made six-monthly—in time for the Rabi and Kharif crops—the credit limit for a member being raised from Rs 1,000 to Rs 5,000. To ensure that the money was productively spent, the

credit was divided into cash and kind components.

In 1965-66, Rs 15.62 crores was given as short-term loans, in 1969-70 the figure was Rs 61 crores. There was a dramatic rise in the fertiliser component of these loans; in 1966-67, Rs 11.67 crores; in 1968-69, Rs 35.46 crores. Not only was credit to be given for fertilisers, they had to be procured from various sources and distributed to farmers at the right time. The State's Cooperative Supply and Marketing Federation (MARKFED) has played a vital role in this. It has a network of 4,000 depots, run by village service societies. No kisan has to travel more than a few miles for his supplies.

The consumption of fertilisers which was 2.58 lakh tonnes in 1966-67 rose to 8.74 lakh tonnes in 1969-70.

Water is of course another major input. Punjab has a very good network of canals. But it is not always dependable. There are 100,000 tube-wells. With the help of the Co-operative Land Mortgage Bank and the Agriculture Refinance Corporation funds have been made available for the sinking of tube-wells: the loans advanced have risen from Rs 1.65 crores in 1966-67 to Rs 15.82 crores in 1969-70. The number of tube-wells "energised" up till 1965-66 was about 25,000; by March 1970, the figure was 78,000. There are also 90,000 diesel-operated tube-wells.

One point M. S. Gill emphasises is that the recovery of the loans given to farmers is 100 per cent.

Storage, Marketing

Increased production has created storage and marketing problems. It is here that MARKFED comes in. Last year it procured 8 lakh tonnes on behalf of the State Government—this meant quick disposal, and fair prices to the farmer. The storage capacity is still not adequate. Service societies in every village are being assisted in the construction of their own godowns. MARKFED has built godowns with a capacity of 1½ lakh tonnes in the major markets.

Long-term loans are given to buy tractors. According to a World Bank Scheme, the Government of India will get credit to the extent of Rs 30 crores to import 8,000 tractors in 1970, 1971 and 1972. The Punjab cooperatives used 10 harvesting combines last year with success. This year they hope to import 100 combines. A thresher has been made locally.

MARKFED has an annual business turnover of Rs 250 crores. It has bought two helicopters for aerial spraying. Two more have been ordered. MARKFED is going to process agricultural products. It has plans for: (1) a solvent extraction plant and vanaspati factory; (2) a vegetable and fruit dehydration and canning factory with Bulgarian collaboration; (3) grape processing for wines, etc.; (4) a fertiliser mixing plant.

Gill warns that further improvements in production will be only marginal. The



PUNJAB COOPERATIVES have now ten harvesting combines. They plan to import 100 this year. The agricultural service societies (there are more than 10,000) are behind the Green Revolution in this State.



AERIAL SPRAYING of cotton crop. The Cooperative Supply and Marketing Federation plays a vital role in Punjab's agricultural prosperity. It has bought two helicopters—two more have been ordered.

yield this year was not as good as last year's. One reason: every three years you must rotate the seeds.

The need of the day is an efficient seeds certificate organisation. As for fertilisers, nitrogen is not enough—there must be adequate supplies of phosphorus and potash. A major obstacle in the way of increased production is non-availability of adequate electricity. Without power, the tube-wells will not work and there will not be enough water.

Gill has a surprise up his sleeve. "We will beat Andhra," he says. "We plan to produce rice on a massive scale—IR8 and other varieties."