

Approaches in Transfer of Technology for Agricultural Development

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Adoption of technologies by large number of farmers pave way for agricultural development of an area. Various approaches are followed by extension agencies for transmitting new ideas and motivating farmers to adopt them. In the District of Thanjavur, a predominantly rice growing area, the production of rice was stepped up from 0.92 million tonnes to 10.6 million tonnes between 1968 and 1971. Three major approaches used by the extension agency of the department of agriculture which, among other things, enabled substantial gains in agricultural production in a short time are explained briefly in this article.

Adaptive Research: Success in extension depends largely upon selection of technologies suited to overcome identified problems and reach desired goals of change. Many times the extension agent has no say in selection of the technology but acts just as a spokesman for the scientist to sell the ideas generated in the research centres. No wonder when such technologies do not work and produce the acclaimed results due to environmental factors, the extension worker is blamed and the trust which is essential in bringing the exten-

sion worker and the farmer closer, is eroded. Repetition of such failures makes the extension worker a passive agent in transfer of technology and makes him inefficient in his profession over a period of time. A person with no confidence in his merchandise, often bitten by failures cannot motivate people and generate rapid agricultural development, but can function as a poor salesman relying mainly on chance factors for success. To overcome this malady, which is commonly seen in Government operated extension agencies, the concept of adaptive research was introduced and practiced on a large scale in Thanjavur district.

Annually the research scientists of the Agricultural Research Station, Aduthurai, located within the District, and the subject matter specialist of the District under the leadership of the Project Director, the Intensive Agricultural Development Programme as a team analysed the various constraints for agricultural production, performance of earlier innovations etc, and chose a few areas of immediate concern for production increases for the current year. Research information available from various sour-

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ces within the state and outside, were then assembled and examined for their suitability to overcome the problems listed. If more than one approach or innovation was available, then methods to test verify their utility in local environment and to select the best among them for large scale adoption were worked out. This preliminary process of planning to identify problems or constraints, marshal facts on innovation available to overcome the problems and to formulate programmes to verify the suitable innovations for their location-worthiness was done with great care and thought.

Having finalised the programme of field verification, the agricultural officers working at the Panchayat Unions who are the grass-root qualified extension agents, were assembled in the agricultural research station in small groups for providing them intensive training on how to conduct field research. During the training sessions the agricultural officers were encouraged to identify field problems, analyse the innovations available and accept the field testing programme with a sense of commitment as a very purposeful and essential activity. Full details on the innovations to be tested were furnished to them by the scientists. Details on field plot lay out and biometrical observations to be recorded were also explained to them through class room teaching and practical lessons conducted in the field. At the end of the training which lasted just for three days, the extension worker used to feel proud that an important task of selecting a suitable innovation to the area had been entrusted to him and that he was a full partner in the planning process for agricultural development,

Innovations were tested in a large number of locations in the holdings of the farmers. Progressive farmers were selected for conducting these trials and the chosen farmers who enjoyed agricultural leadership position in their area felt proud that their holdings had been chosen for conducting a research activity. There was a wave of expectations and intense involvement among the progressive farmers in this large scale scientific testing of innovation for location specificity. The subject matter specialists of the project organised supply of required inputs in time for the testing and guided the work of the agricultural officers.

Evaluation of the innovation was done at the end of the season by carefully analysing the data gathered by the field workers. Certain number of experiments which failed due to extraneous factors like want of irrigation, flood, grazing by cattle or severe pest or disease incidence in patches were rejected and the field workers were encouraged to avoid such pitfalls in the next season. The opinion of the farmers in whose holdings the experiments were conducted and that of the agricultural officers were ascertained in joint meetings. In most of the cases these opinions confirmed the results of the statistical analysis of the biometric observations. In cases, where the opinion differed from the statistical analysis, reasons for the difference were analysed. By combining this process of consultation and statistical analysis, useful innovations were selected every year for popularising them among farmers in the succeeding year. Having tested the innovation for one season, the agricultural officer had tremendous amount of confidence in the innovation and organised his promo-

tional efforts in a more aggressive manner in the next season. The progressive farmers also played a dominant role in popularising the chosen innovation. A closer linkage was established between the scientists, the subject matter specialists, the extension officers and progressive farmers. A large number of rice varieties obtained from different sources were screened and best performers were made available to the farmers in a short time. Even new chemicals for pests and disease control were tested and the cheapest but most efficient were selected quickly and popularised among farmers. A new era in scientific extension work started with the introduction of this new concept of adaptive research.

Compact Block Demonstration :

Another approach which paid rich dividends in popularising innovation was compact block demonstration. In any extension work method and / or result demonstration will be very generously pressed into service to prove the effectiveness of the technology. Tanjore approach in demonstration slightly differed from the conventional approach in that a group of farmers who owned a contiguous block of land of about 25 acres were chosen to demonstrate the land and water use to achieve a higher productivity over a period of one year. Group action was the essence in this approach. Research Cost analysis for adoption of various innovations was done by the group before the commencement of the agricultural season and the extension officers enabled the farmers to adopt the chosen practices by providing the scientific know-how. Farm plans including accounting were maintained by the farmers and at the end of the

year cost-benefit analysis was done. Large number of farmers in the neighbourhood were shown round the demonstration plots and field days were organised with lot of publicity. The largeness of the demonstration, group action for development, the scatter of these plots in strategic locations throughout the district, the stress on economic benefits, farm planning and book-keeping etc., helped in a very large measure to bridge the time gap between selection of innovation through Adaptive Research approach and adoption by farmers on a large scale. Success of this approach largely depended upon the training provided to the extension personnel in methods of conducting demonstrations and procedures to be followed to mobilise farmers for social action.

Campaign and Village Meetings :

To create awareness among all farmers, large or small, rich or poor, at the beginning of each agricultural season, the extension personnel organised village meetings almost on the scale of village festivals but with a very definite purpose of disseminating scientific information. Innovations to be popularised were selected by the scientists and extension personnel. Single crop management procedures were worked out incorporating the selected innovations. Exhibits to bring home to the minds of people the inputs required, their quantity, cost etc., to implement the advocated recommendations and the benefits likely to accrue in monetary terms were designed. Key points for stressing in a talk during the village meetings were written down and the extension personnel were trained to talk to the village audience by using the local dialect on the innovation and crop management techniques with a

heavy stress on the key points in organising village exhibitions.

After this detailed preparation and training, village meetings were organised twice in a year throughout the district for a period of 15 days just before the commencement of the agricultural season to make the farmers to become aware of the technologies available and motivate them to adopt by taking right decisions. Progressive farmers and village leaders were associated in conduct of these meetings. All India Radio Station, Trichy gave a tremendous support to this programme. The local dailies during the campaign used to bring out every day details on crop management technique. Throughout the campaign period the farmers were induced to talk and discuss among themselves about the various crop manage-

ment technique. The awakening on agricultural technologies for higher productivity unleashed by the campaign approach was tremendous. Equally, local problems which deterred the farmers adopting new ideas in farming were also very forcibly brought out in these meetings. Solving of these problems had a tremendous influence in building faith in the district. Success of the campaign approach largely depended upon the detailed planning, intensive training and the support provided by other developmental agencies and mass media.

Time gap between development of innovation and large scale adoption by farmers leading to economic growth can be considerably narrowed if proper tools are used in extension. What we need today is leadership and scientific extension approach in serving the cause of agricultural development.