

CHAPTER TWO

DIFFUSION OF AGRICULTURAL INNOVATION THROUGH TRAINING AND VISIT SYSTEM: SOME FINDINGS FROM EARLIER STUDIES

This chapter provides an account of findings of some earlier studies in diffusion of agricultural innovations through T & V system. At the outset it is to be noted that there are not much empirical studies on this particular topic. However on the basis of their approach of enquiry they may be broadly classified into following four types:

- i. Identification of field problem and their communication,
- ii. Constraints in the T & V system,
- iii. Status reports of the T & V project,
- iv. Extension contact and extent of knowledge and adoption.

(i) Identification of Field Problem and their Communication

The main aim of T & V system is to raise crop production through transfer of technology. Technology transfer relates to communication of crucial inputs to farmers for effective utilization of the available resources. Rogers (1960) in a study on communication behaviour of county extension agents found that three elements are involved in communication process viz, (i) Agricultural scientist, (ii) County extension agents, and (iii) Farm people. Ambastha (1977) in the context communication pattern of farm scientists in Bihar state noticed that researcher in general had comparatively higher contact with farmers and farmers visiting *Kishan Mela*.

Rajgopal (1978) observed that the farmers firstly used to discuss their problems related to agricultural technology among themselves and later approached the village extension workers and Agricultural Extension Officers

(AEO) for getting necessary advice to redress their agricultural problems. The majority of AEOs were found advising the farmers to follow the recommended practices of improved agricultural technology. The village extension workers were also found involved in educating the farmers in the matter of cultivation of crops.

According to Sridhar (1978) the farm and home visit discussion and group meeting were the most important communication links of the farmer for identification of problems of the client system and communication of the same to the extension personnel. Rao (1983) noted that the organized system of extension was designed not only to deliver the messages to the farming population but also to identify the farm level problems and feed back the same to senior extension officers and researchers.

Mathur (1985) described that a diagnostic team consisting of the research scientists and agriculture officials having considerable field experience and knowledge about the field problems, their views were found quite useful and subsequently incorporated in the subject matters discussed during the workshop. Kher and Bapna (1988) reported that with regard to research support the farmer's problems that were identified during the monthly workshops training had been communicated to the research scientist for inclusion in the further research. Mehrotra (1989) observed that research -extension linkages were promoted through training of extension staff by research staff, by their collaboration in farm trials and through visits of research staff to farmer's field and extension staff to research facilities.

(ii) Constraints in the T and V system

This section briefly reviews the problems associated with agricultural extension in general and T and V system in particular.

Dwarkinath and Channeyoda (1974) identified three deficiencies in the T and V system of extension. Firstly not all the available technologies were

transmitted in the field. It was selective and only those elements which had direct impact on application were taken care of. Secondly not all the potential adopters got exposed to the new information to the same degree. Thirdly, even among the adopters of new technology all the elements of technology were not adopted.

Jaiswal et al (1978) reported that under the new extension system (T and V) all the recommendations that were given in the training session were found not profitable and practicable in the farmers' field. Pandey (1979) stated that Village Agricultural Workers (VAWs) cited inadequate vehicular facilities, lack of required and up to date information and undefined jurisdiction of District Agricultural Officer (DAO) as major hindrances for effective implementation of the extension work through T and V system.

Dudhani (1980) in a study conducted in Karnataka found that none of linking roles formulated according to job chart of Assistant Director of Agriculture with clients were perceived in a highly satisfactory way, even when the Deputy Director of Agriculture recognized the importance of various specific linking role functions in an adequate way.

Jaiswal and Arya (1981) have identified certain no effective link between the research and extension system that are detrimental to the effectiveness of both. Referring a study conducted by National Institute of Rural Development (NIRD) in Rajasthan and Madhya Pradesh they pointed out that the lack of effective linkage between the research stations and the subject matter specialists (SMSs) is one of the greatest weaknesses of T and V system of agricultural extension. Bharali (1982) observed that input supply position was not taken into serious consideration in the discussing of most of the training sessions.

Epstein (1983) talked about a major difficulty faced by the T & V system. According to Epstein, the village level workers (VLWs) were men and so were their contact farmers as well as the whole extension structure. The female contact

farmers constituted not more than one or two per cent of all contact farmers. The male VLWs fail to convey their messages properly to the women folk engaged in farming.

Jaiswal et al (1986) reported that the basic problems faced by the village level extension worker are (i) non availability of farmers in their field, (ii) untimely supply of input, (iii) greater number of farmers under their jurisdiction and lack of transport facilities to contact them properly. Sharma (1986) has identified the following major problems faced by the T and V system in eastern states: i) technological, (ii) supply and infrastructural development, (iii) budget and finance, and (iv) administration.

According to Mehrotra (1988) the non-adoption of some farm practices was, to some extent, due to certain gap in the ideal condition under which demonstration were carried out by the functionaries of the programme and the actual conditions under which the farmers do their operations. The extension programme had other shortcomings like irregular visit by VLWs to farmers. Mehrotra (1989) further said that there was mutual lack of appreciation on each others role on the part of departmental and the university personnel resulting in waste of resources, lack of cooperation and orientation to a common goal. It had also been pointed out that research is still oriented to solve only basic research problems and the extension agency is not coming forth continuously with the feedback to research.

Joshi et al (1991) found that even after five years of operation of T and V system in an area, 10 per cent of the contact farmers and 35 per cent of fellow farmers were not even make out their VLWs. Hardly 37 per cent of the contact farmers were found contacted regularly by VLWs. The diffusion of technology thus took place at a slow space and dissemination of information among fellow farmers was poor.

Rao's study (1991) indicates that in Orissa the VLWs evaluate the existing T and V system as more effective than previous extension services. However, the major constraints of present T and V system were lack of residential accommodation to the extension personnel, and limited mobility due to improper support system.

Neog and Bezborra (1993) have suggested that for desirable implementation of the T and V system in Assam, there is (a) need to gear up quantity and quality of extension contacts, and (b) input supply system has to be undertaken into serious consideration so that unavailability of input does not remain as major problem of technology adoption in the state.

iii) Status Reports of the Training and Visit Project

In India, re-organised agricultural extension network i.e. Training and Visit system was introduced during 1974 as a component of three command area development projects in Rajasthan and Madhya Pradesh. In mid 1975, it was introduced in six districts of West-Bengal. Since then the system has been in operation in almost all major states in India. This section briefly reviews how the re-organised T & V extension system is functioning in the major states from the findings of selected evaluation studies.

From a study of the attitude of the farmers towards T and V system in the command area of Rajasthan, Kulhari (1980) pointed out that the attitude scores of the 'contact farmers' were higher than that of the 'non-contact farmers'.

Benor and Baxter (1984) observed that in India where the Training and Visit system has been well established it continues to bring about significant changes in agricultural practices and production, be it the introduction of new crops (Soya bean in Madhya Pradesh, summer pulse in Orissa) or the adoption of new practices. Where previously wheat was scarcely known, paddy was cultivated haphazardly or large areas were entirely left as fallow fields, are now well tended and highly productive. Farmers were proud of their achievements

145606 - 6 DEC 2001

and were continuously asking the extension services for more assistants. Extension workers who previously had poor morale were regarded by many farmers as useless, were now proud of their work and were respected by the farmers they assisted. In many of areas a more general prosperity was evident as farmers used their high income to construct better houses and to purchase a variety of goods and services. To understand the potential of Training and visit system of extension one has to visit areas where it operates, see the fields and talk with the farmers and extension personnel.

A survey report from Gujrat, (Kharif, 1988 - 89) indicates that majority of contact and non-contact farmers knew their VEWs. However the exact day of VEW's visit among aforesaid categories of farmers was not satisfactory. So it was suggested to pay proper attention to this aspect by extension management.

Mishra's (1990) study does not lend support to the low performance image of village level extension workers. On the contrary, it reveals that the majority of village extension workers were performing their role well. The study further shows that the performance of VEWs could be further enhanced if they are allowed to concentrate mainly on work relating to T and V system of extension.

Thakkar and others (1990) observed that about two thirds of the farmers had favourable attitude towards the Training and Visit programme. And the attitude of the contact farmers towards the training and visit programme was dependent on size of the land holding, social participation, socio-economic status and extension contact. Chaudhury and others (1991) study reveals that contact farmers with better media exposure had highest information utilization. The utilization of information was considerably affected by economic motivation of the farmers. It was further suggested that the contact farmers who utilised information substantially should always be kept in touch by the T and V

personnel. They can also be involved in transfer of technology as key communicator.

A report on impact of T and V project in the state of Andhra Pradesh and Maharashtra (1991) shows positive influence of T and V system with regard to introduction of new varieties of crops, changes in cropping pattern compatible to agro-economic conditions and systematizing of research - extension linkages. Impact of T and V projects was quite effective in Rajasthan, and Karnataka (1991) where extension is well established. Here the presence and role of the VEWs were much appreciated by most of the farmers. Through T and V system notable advance had been made in seed planning which was previously one of the major agricultural constraints in the State. The overall impact of extension was encouraging.

Bhople and others (1992) are in opinion that the training of extension workers is an inbuilt mechanism in Training and Visit system. So through regular training the professional competency of the extension workers should be enhanced. An overwhelming majority of the Agricultural Officers (AOs) who attended the training felt that communication through audio-visual aids and other trainings had definitely enhanced their knowledge, improved their skill and made them more confident about the use of various audio-visual aids in extension programme.

Jain (1992) reported about the effect of Training and Visit system of extension in the five districts of Madhya Pradesh. The project was launched mainly to establish better contacts of agricultural scientists with extension field workers and farmers to provide them with latest technology for agricultural development. Jain's study reveals that there was a definite increase in the yield level of wheat and gram showing the positive impact of T and V programme. Here about 76 per cent of sampled farmers reported about the usefulness of T and V system. Reviewing the situation he further recommended that the T and V

programme should be concentrated in a specific area instead of the scattered approach, which resulted in the dilution of efforts and low performance.

Kopper and Shah (1992) observed that VLWs and AEOs were required to transfer technology through extension in various fronts for the overall agricultural development. They could be treated as general extension agents for agriculture. Survey method and performance appraisal were recommended by them to assess the training needs of VLWs and AEOs, SMSs at subdivisional level.

Report of Interdisciplinary Team on T and V extension services and Agriculture Development Project in Tamil Nadu (1992) indicates that the T and V extension services were operating in the state with full tempo. The staff strength under T and V extension was full, monthly workshops of scientist and extension personnel were being regularly held and field visits were also taking place. Frequency and fortnightly training of VEWs and AEOs had however been made monthly which does not appear to have had any adverse impact on the extension services. The extension services in the state had remarkably well in promoting adoption of improved agricultural practices.

Rao and Reddy (1993) have pointed out that with the introduction of Training and Visit system of agricultural extension in Andhra Pradesh, the coordination and linkages between the state department and the university has changed significantly from mere coordination committees and meetings to several functional linkages and which has been developed right from the state to the operational level.

Singh and Sandhu (1993) stated that impact of the T and V system could be measured in terms of changes in human behaviour, improvement in the quality of living of the people or increase in productivity, etc. However, in the referred study, it had been measured in terms of increase in the use of fertilizer for crop production.

Dwarakinath's (1997) study shows that the T and V system has emerged out of an improvement of the extension approaches practised before the green revolution. The T and V system, which is serving the larger segment of small farmers, constitutes a part of social service and a public funded general extension system. This particular extension service may help farmers move slowly from one level of efficiency to another by achieving incremental improvements in technology adoption and managerial practices.

(iv) Extension Contact and Extent of Knowledge and Adoption

Training and Visit system aims at providing overall guidance including development of knowledge of farmers and extension contact of field level functionaries with farmers in respect of the improved technology. Knowledge, skills and extension contact are the crucial attributes that lead the farmers to adoption. The level of adoption of farmers is supposed to reflect the recommendation transferred through the re-organised agricultural extension network i.e. Training and Visit system. It has been observed that the new farm techniques have been adopted by the progressive farmers to a great extent but the common farmers could not do so because of the limited resources at their command, which stood in the way for perfect adoption. In some earlier studies attempts had been made to find out the practices that are not adopted by the farmers and the underlying reasons of such non- adoption.

Hussain (1982) and Mahanta (1989) talked about low adoption of recommended practices in the case of rice cultivation. Hussain found only 20.90 per cent of farmers who had adopted recommendations partially and that was too limited to three practices such as nursery bed preparation, chemical fertilizer use, and transplantation of high yielding variety. The study carried by Mahanta (1989) on tribal farmer indicates that 26.88 per cent of the farmers had adopted recommendations on seed selection, followed by nursery bed preparation (22.50

per cent), plant protection measures (21.90 per cent), and transplantation of H.Y.V. seedlings (9.40 per cent).

The studies by Borpujari (1987), Bornah (1989), Gogoi (1989), Phookan (1990), and Bora (1990) reveal the adoption levels of improved farm practices as medium or low to medium. Borpujari (1987) for example reported about medium to high level of adoption in the techniques of weed control, harvesting, threshing, and storage practices of wheat crop. While in respect of seed selection and fertilizer application he observed low level of adoption.

Bora's (1990) study reveals low to middle level of adoption in the matter of five selected recommended practices of rice cultivation. He has observed medium level of adoption relating to selection of H.Y.V., preliminary agronomic practices and fertilizer application, and low level of adoption in case of pesticide application and post-harvest technology. The extent of knowledge regarding the practices was found to be similar to that of extent of adoption. Highly significant association was there between extent of adoption and extent of knowledge.

Phookan (1990) reported that out of 100 non-contact farmers 82 farmers adopted H.Y.V. and 56 farmers adopted gap-filling practices. Non-contact farmers were not adopting root dip treatment, fertilizer application, disease control, and weed control measures. More than 70 per cent of the farmers did not adopt seed treatment, pest control measures, nursery bed, husbandry practices and intercultural operations. He however recorded a slightly better score of adoption of recommended practices among the contact farmers. The overall adoption rate of both the groups of farmers was found to be at medium level. He also identified significant difference between knowledge level of contact and non-contact farmers.

Hussain (1982) and Mahanta (1989) found low level of extension contact of the farmers they studied. Gogoi (1989), Phookan (1990), Bora (1990) have identified medium level of extension contact. Phookans' study was on quality of

VLEW's visits in which he determined that VLEW was known to 100 per cent contact farmers followed by 71 per cent non-contact farmers. He also depicted that none of the contact and non-contact farmers was paid 100 per cent visits by VLEWs. In one fortnight VLEWs paid four visits to 22 per cent farmers, three visits to 26 per cent and two visits to 46 per cent farmers.

From above review some of the salient issues, which have been emerged, need further and careful examination. From some studies it appears that re-organized agricultural extension system was designed to provide information about farm problems and feed back the same to extension officers and researchers. However, in some cases there were lack of effective linkage between the research station and extension. In most of the cases, research-extension linkages were promoted through training of extension functionaries and extension workers were provided with up-to-date information on latest technology. With the introduction of T and V system of agricultural extension farmers were delivered selected and updated technology. All the potential adopters including small and marginal farmers thus got exposed to the new information. The extension services have been able to motivate the farmers in favour of improved farming though all the recommended practices were not adopted. Before the initiation of the T & V system, the common farmers were using only nitrogenous fertilizer but now they are somewhat aware about the balance use of fertilizer. The re-organized extension system gives more emphasis on the spread of low cost technology and to meet the need based requirement of the farmers. However the programme is not free from certain shortcomings, of which the most vivid one is the irregular visits by VLWs to farmers. Inadequate mobility of extension worker often leads to poor extension contact between functionaries and farmers.