

9)

No specific evaluation of work: Evaluation of extension services seems to be an important area that needs to be given due consideration. It is a continuous and systematic process of assessing the worth of any activity or programme. It helps to identify the strengths and weaknesses of the programme to suggest modifications, if needed for further improvement. Thus continuous evaluation is essential to see whether the programme has achieved the desired objectives. The general extension system lacked specific evaluation of work.

10)

Unsatisfactory terms and conditions of service: Perhaps the most important factor contributing to extension effectiveness is the motivation of the extension workers. This can be explained as a function of better and attractive service conditions. An unsatisfied and unhappy field worker is never an effective one (Adam, 1984). The terms and conditions for the workers under the general extension system were not attractive. They were poorly paid and enjoyed low status and consequently took little interest in extension work. They did not have proper housing and transport facilities in the field. They got little or no promotions especially at grassroots level. They had to work and stay in the remote areas under adverse conditions. Thus qualified and competent workers are unlikely to be attracted to work under these conditions. In this context Chaudhri (1990) argued that agricultural extension has historically been perceived as a function of low status, poorly qualified and poorly equipped personnel who deal with poor and frequently illiterate farmers in remote rural areas. Axinn (1985) highlighted the same fact. According to him vigorous, dedicated, competent young men and women are unlikely to stay in remote rural locations doing extension work. Therefore capable persons do not find any attraction in the absence of attractive service package.

2.3. TRAINING AND VISIT (T&V) SYSTEM OF AGRICULTURAL ★ EXTENSION

The T&V system of extension developed by Daniel Benor has its origins in Israel and Turkey. According to Feder *et al.* (1985) the T&V system was first tried in Turkey in the late 1960s and was introduced in most Indian states between the period 1975-85. It has spread rapidly since the mid 1970s through different projects funded by the World Bank in a number of countries of the world. The system has been put into operation in areas where large number of farmers is cultivating mostly small farms using low-level technology and

traditional methods. Under the T&V system, the extension service initially concentrates its efforts on the major crops and on those few aspects of farming, which offer greatest scope for increased income.

T&V system is claimed to be effective by its pioneers. According to Benor and Harrison (1977) it has helped increased agricultural productivity impressively in several areas. For example, in the Sehan Project in Turkey, farmers increased cotton yield from 1.7 tons to over 3 tons per hectare in three years. In Chambal, Rajasthan (India), farmers increased paddy yield from 2.1 tons to over 3 tons per hectare in two years. Similarly combined irrigated and unirrigated wheat yield in Chambal, Madhya Pradesh (India) rose from 1.3 tons to nearly 2 tons per hectare after one season and have since risen higher. A substantial increase in the area under high yielding paddy and wheat varieties in the entire state of West Bengal has been recorded in a single year. Although it is very difficult to isolate the factors responsible for this increase, but it is reasonably certain that a professional agricultural extension service developed under the T&V system in each of these areas was the major force behind these changes. Benor and Harrison (1977) further go on to say that extension workers, who previously had very poor morale and had been regarded by most farmers as almost useless, are now proud of their work and highly respected by those they assist.

Similarly, based on a study conducted in two contiguous areas in India, Feder *et al.* (1985) reported that the T&V extension, when compared to general extension, has led to a noticeable increase in the rate of knowledge diffusion of the selected recommended practices. Both extension workers and farmers indicated that the provision of timely solutions to farmers' problems was an important aspect of the T&V system. On the basis of experience gained from the study results, one can infer that T&V extension must have been more effective than the general extension approach would have been.

In the same context Axinn (1988) reported that the T&V approach in its beginning years, in India, Sri Lanka, Bangladesh and some other countries, produced some success with the provision of simple low-cast information to farmers. Also, it generated a spirit of service and dedication among extension staff. But with the passage of time, its messages tended to become more like those of typical agricultural extension approaches and its staff morale tended to wane for lack of extra rewards associated with extra efforts related to the rigid pattern of activities.

2.3.1. Basic Assumptions

T&V approach assumes that extension field personnel are poorly trained, not up-to-date and professionally incompetent. They tend not to visit farmers, but to stay in their offices instead. It further assumes that management and supervision is inadequate. The two-way flow of information between research and extension is weak.

2.3.2. Programme Planning and Implementation

In this approach, the programme planning is centrally controlled. Decisions about the extension content, the way it should be taught, and when it should be taught tend to be made by the professionals at the top. The same is then delivered down to the farmers through field level extension workers who follow a rigid fortnightly schedule of visits.

2.3.3. Basic Techniques and Main Features

The basic extension techniques used in the T&V system include regular training of EFS combined with their fixed schedule of visits to farmers. This system of extension education has been claimed to have the potential of becoming a powerful communication tool (Benor *et al.*, 1984). Therefore, it has gained a wide recognition throughout the world. The main features of the system as mentioned by Benor and Baxter (1984) include:

- Professionalism at all levels through establishing and maintaining a close contact with research and equipping the workers with relevant scientific developments. Also providing adequate backstopping to the workers for developing a higher level of credibility in the eyes of the farming community with whom they work.
- Single line of technical and administrative command to improve the efficiency of work. Workers, if accountable to different departments, can achieve little in their field.
- Concentration of extension efforts on immediate and important tasks. It makes the progress easily visible and brings about the greatest and earliest possible increases in the production and income of farmers being served.
- Time bound work with fixed schedule of visits to farmers.
- Field and farmer orientation through enabling extension workers to spend most of their time in the field so as to gain adequate understanding of farmers' situations.

- Regular and continuous training of EFS to equip them with something valuable to offer to the farmers on the one hand and gaining adequate information about farmers' problems on the other hand to develop production recommendations that fit into the specific local conditions.
- Close linkage with research through seasonal and monthly workshops and joint field trips. It helps to seek guidance from the researchers about the problems, which are hard to solve at extension workers' level. At the same time it enables researchers to have a close eye on the actual field situation.

2.3.4. Research-Extension Linkage under T&V System

Research and extension can be viewed as mutually dependent and their effectiveness can be associated with strong linkage between them. Under the T&V system, extension workers are supposed to have a close, regular and systematic contact with researchers to ensure an effective two-way-flow of information. According to Benor and Harrison (1977) one step toward more regular contact between researchers and extension personnel can be the establishment of a research and extension committee, chaired by the Director of Agriculture and including relevant representatives from research and extension. This committee will be responsible for developing recommendations for the extension service to transmit to farmers, evaluating post experimental data, and designing a programme of field trails to check out experiments. It will also identify the main problems faced by farmers that need to be solved by research.

It is important to have a committee of this kind at the headquarters level to develop general guidelines and recommendations. It will also be necessary to have a decentralised system to select the recommendations to suit local conditions. Benor and Harrison (1977) suggest that the district would normally be the appropriate level for the establishment of the committee. The membership of the decentralised research and extension committee, to be chaired by the District Extension Officer, would be drawn from the Subject Matter Specialists (SMSs) in that area, and from staff at the nearest research substation. The role of SMSs would be (a) to keep informed of the latest developments in research (b) to bring the practical field problems of the farmers to the attention of the researchers and (c) together with the researchers, to design and carryout, through the Agricultural Extension Officers (AEOs) and Village Extension Workers (VEWs) a program of field trails on farmers' fields. The possible way in which research and extension could be

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administratively and functionally linked at both the headquarters level and decentralised levels is illustrated in Figure 1.

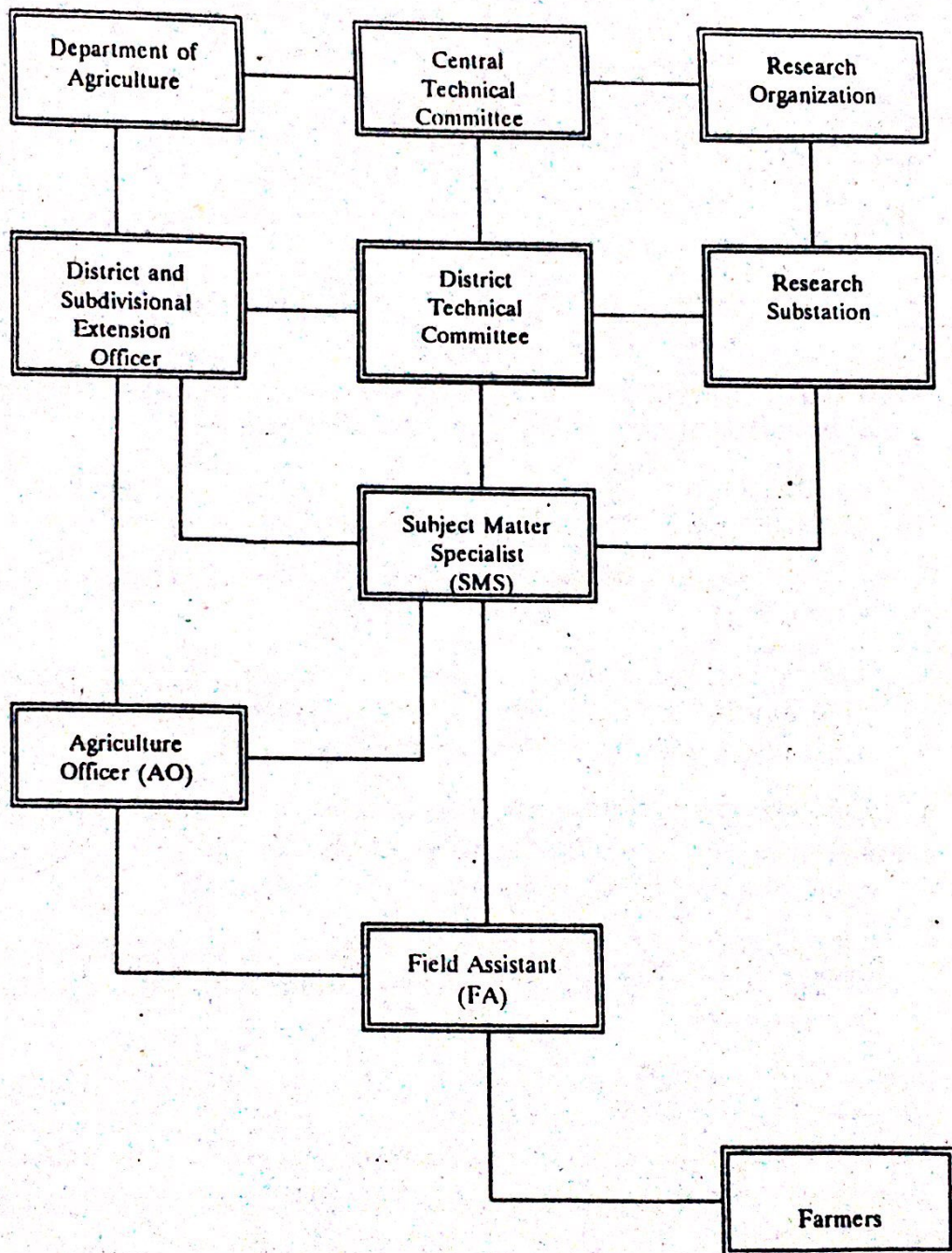


Figure 1. Linkages between extension service and research (Benor & Harrison, 1977)

2.3.5. T&V System with Special Reference to Pakistan

Realising the weaknesses in the traditional or general extension system, the T&V system was introduced initially in 5 districts of the Punjab and Sindh provinces in 1978 and 1979 respectively. In the Punjab, the T&V system was initiated under Punjab Extension and Agricultural Development Project with the financial and technical assistance of International Development Association, World Bank (Govt of the Punjab, 1983). In the Punjab province the project districts included Jhelum, Sargodha, Sheikhpura, Vehari and Rahim Yar Khan. The project aimed at:

- Regular training of the extension staff relevant to local agro-climatic requirements.
- Fortnightly schedule of visits to the contact farmers (CFs) and their associates in each village on fixed days.
- Increasing the efficiency of extension workers through provision of necessary technical and physical facilities.
- Improvement of the ratio between the number of field staff and the farmers.
- Testing the latest research findings through adaptive research programme in order to expedite speedy transfer of the appropriate package of improved technology to farmers.
- Emphasis on better management of the given resources with the objective to raise productivity levels for deriving maximum economic benefits through judicious use of inputs.
- Introducing strict accountability system of extension workers through both internal and external monitoring and evaluation arrangements.

Initially the project was launched for a period of five years. However, the period was extended for another two years until 1985 because being a new project, it was not properly executed in the first two years. Major organisational changes had to be made in reforming the existing extension system of that time. Consequently, during that time, its progress remained somewhat slow and a part of the funds remained unutilised (Khan *et al.*, 1984). In 1987-88 the project was expanded to the entire province. At present this new approach is being used throughout the country.

2.3.6. Organisational Structure under the T&V System

The agricultural extension service in Pakistan has been established on provincial basis (Figure 2). In the Punjab province, the organisational set-up of agricultural extension service is based on the following hierarchical sub-division of the province; 3 regions each having 2–3 divisions, 8 divisions each with 3–6 districts, 34 districts each comprising 1–5 tehsils (sub-districts), 101 tehsils each with 2–7 markazes, 386 markazes each consisting of 5–7 union councils and 2367 union councils each covering 3–8 villages in general (Muhammad, 1994).

The Department of Agricultural Extension and Adaptive Research, at the provincial level, is headed by Director General of Agriculture (DGA) who is responsible for effective implementation of extension programme in the entire province. He mainly supervises field activities on a regional basis. Since the province is sub-divided into 3 major regions i.e. Lahore, Rawalpindi and Multan each having its own Director of Agriculture, Extension (DA, Ext.), he becomes the immediate supervisor of the Directors. In addition, DA headquarter who along with his staff assists DGA; DA, adaptive research, project Director (PD), oil seeds; and DAs/Principals of all the three In-service Agricultural Training Institutes for Field Assistants also fall under his direct supervision. Each DA (Ext.) at regional level has overall responsibility for effective implementation and co-ordination of extension programmes in the district under his jurisdiction.

At district level the official in charge is designated as Deputy Director of Agriculture (DDA), Ext. He is responsible for effective implementation of extension programme in the tehsils under his jurisdiction through effective supervision at all levels. He is also responsible for maintaining up-to-date information on input supply in the district.

At tehsil level, Extra-Assistant Director of Agriculture (EADA), Ext. is the overall in charge of all extension activities undertaken by EFS working both at markaz and village levels. He is mainly responsible for planning, implementation, and supervision of extension activities at all levels in his tehsil. Therefore, he is supposed to spend 15 days in a month in the field supervising EFS to ensure that they are visiting CFs according to the fixed schedule. He is also expected to keep a close eye on the input supply situation or any other problem faced by the farmers of his area.

Agriculture Officer (AO), Ext. who is basically a field worker functions at markaz level. He is supposed to perform two basic functions: the first is to review and assist in the organisational aspects of the job of village extension worker (VEW); the second is to provide technical support to the VEW, which is vital to the success of the system. Benor and Baxter (1984) argue that without an active and effective Agriculture Extension Officer (AEO), it is unlikely that the VEW's work, or the extension service at large will have a lasting and significant impact. AO is also expected to monitor the supply of inputs in his area of jurisdiction. Therefore, his role is critical in the effective functioning of the system at grass roads level.

The VEW, who is designated as Field Assistant (FA) in Pakistan, is posted at union council level. He is the major and real contact between extension and farmers. He has the prime, major, and real contact between extension and farmers. He has the responsibility of teaching and motivating some selected CFs along with some non-contact farmers (NCFs) for the adoption of improved agricultural practices. At the same time he is supposed to feed back farmers' problems to his supervisory officers. He is expected to maintain a close contact with input supply agencies. The responsibility of all other extension staff is ultimately to make this front line worker more effective in his work. Indeed the effectiveness of the T&V system depends to a large extent on the contribution of this front line worker (Benor *et al.*, 1984).

2.3.7. Training Component of the T&V System

Training is one of the basic and important components of the T&V system. It aims to build up and maintain a high level of professionalism among extension workers at all levels through providing technical support in the form of regular training sessions. For this purpose a team of Subject Matter Specialists (SMSs) designated as Deputy Director of Agriculture Subject Specialists (DDASS) covering different disciplines including agronomy, engineering, plant protection, and farm management, has been posted at various adaptive research farms. They are assisted by Research Officers (ROs) and Assistant Research Officers (AROs). They are supposed to play an important role in the formulation of production recommendations and maintaining close contact between research and extension.

In the Punjab province eight adaptive research farms have been established at different agro-ecological zones. All these farms fall under the direct overall administrative control of DA, adaptive

research. These adaptive research farms are used for the confirmation and validation of the research results obtained from basic research, which then give rise to extension messages for fortnightly training of EFS. Fortnightly training messages are generated by DDA (Tr.) in collaboration with the SMSs, DDA (Ext.), and DDA (Tr.). These messages are then passed on to EADA (Tr.) who functions at district level. He is responsible for imparting regular fortnightly training to EFS arranged at tehsil headquarters. At tehsil level AO (Tr.) assists the EADA (Tr.) during the training session.

DAs/Principals of In-service Agricultural Training Institutes are responsible for effective implementation of the training programme in their respective Institutes for newly recruited FAs. Each DA/Principal holds administrative and supervisory control over his training staff comprising DDAs (Tr.), Senior Instructors, and Instructors who are responsible for imparting training to the FAs.

2.3.8. Functioning of the T&V System at Grass-Roots Level

FAs are supported to focus their educational efforts mainly on a small selected number of CFs who constitute about 10% of the farming population (Swanson and Claar, 1984). Under the T&V system a common ratio is one VEW to about 800 operating farm families. However, it may vary depending upon the situation (Benor and Baxter, 1984). Prior to selection of CFs, all the farm families falling in the FA's area of jurisdiction are divided into 8 groups of almost equal size. The important criteria for this grouping as discussed by Benor *et al.* (1984) include geographic considerations, size of village, and ease of communication.

The settlement pattern in Pakistan makes it difficult for the FAs to divide their clients into 8 equal groups. Each worker has 3-8 villages as his area of jurisdiction. So in some villages there are 2 groups of CFs and in some villages only 1 group. However, each worker has 8 groups in total with 8 CFs each. In those villages where there are two groups of CFs, there is no designation of the NCFs with whom the CFs are intended to relate. CFs are supposed to be selected by the concerned FA and AO with the assistance of the local people (Benor *et al.*, 1984). They are supposed to play an important role in propagating extension messages received from FAs among their other fellow farmers i.e. NCFs. There are two mechanisms by which this propagation takes place: first other farmers observe what CFs try in their fields and try to imitate them, and second, each CF deliberately talks about the practices with other farmers (Benor *et al.*, 1984). Therefore, effective functioning of the T&V system greatly

depends upon proper selection of CFs that should be done on some sound basis. The bases for selection discussed by Benor and Baxter (1984) are:

- They should represent proportionately the main socio-economic and farming conditions of their group and be regarded by other farmers as able and worthy of imitation.
- They should be practising farmers.
- They should be willing to adopt relevant recommendations on at least a part of their land, allow other farmers to observe the practices and explain the practices to them.
- As far as size and composition of farmers' groups permits, they should come from different families.
- Their farms should be dispersed throughout the group area.

The FAs spend 4 days a week visiting CFs according to a fixed schedule discussing, explaining, teaching and demonstrating recommendations at their fields. In this way they cover the entire circle of 8 groups in a fortnight. Two of the 4 remaining working days in a fortnight are spent on receiving training, one from EADA (Tr.) and AO (Tr.) at tehsil headquarter and the other from respective AO at his headquarter. The remaining 2 days are meant for office work and conducting extra visits to make up missing visits, if any. A typical fortnightly schedule of visits is shown in Table 1.

Table 1. A typical fortnightly schedule of extension activities of Field Assistants

	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.	Sun.
Week 1	1	2	3	4	Ti	EVIOW	H
Week 2	5	6	7	8	Tii	EVIOW	H

- Ti = Training by EADA (Tr.)
- Tii = Training by AO (Ext.)
- EW = Extra visit
- OW = Office work
- H = Holiday
- 1-8 = Fixed visits to CFs' groups

Apart from fortnightly visits to CFs each FA is supposed to conduct one demonstration plot in his area of jurisdiction under the supervision of AO in each cropping seasons. Necessary inputs and equipment for conducting these demonstrations are provided by the department (Govt. of the Punjab, 1987).

Likewise AO who is the immediate supervisor of FAs is responsible for maintaining the quality of field extension. He also spends 8 days a fortnight in the field supervising and helping FAs. He adjusts his visit schedule in such a way that he could see all his FAs working with different groups of farmers within 8 fortnights (Table 2). He spends 2 days each fortnight in training sessions: one in receiving training from the training staff at tehsil headquarter together with FAs and the other in imparting training to FAs and reviewing the progress with them at his own headquarter. The remaining 2 days are used for extra visits, if needed and other field/office activities.

Recently some modifications have been made in the working of T&V system at grass-roots level. Under the modified system, the AO play a major role of educating farmers by holding regular farmers training meetings in each village. The FAs are supposed to inform the farmers about the meeting schedule and to assist the AOs in conducting such meetings.

Table 2. A typical fortnightly schedule of extension activities of Agriculture Officers

Fortnight	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1	1	2	3	4	Ti	EV/OW	H	5	6	7	8	Tii	EV/OW	H
2	2	3	4	5	Ti	EV/OW	H	6	7	8	1	Tii	EV/OW	H
3	3	4	5	6	Ti	EV/OW	H	7	8	1	2	Tii	EV/OW	H
4	4	5	6	7	Ti	EV/OW	H	8	1	2	3	Tii	EV/OW	H
5	5	6	7	8	Ti	EV/OW	H	1	2	3	4	Tii	EV/OW	H
6	6	7	8	1	Ti	EV/OW	H	2	3	4	5	Tii	EV/OW	H
7	7	8	1	2	Ti	EV/OW	H	3	4	5	6	Tii	EV/OW	H
8	8	1	2	3	Ti	EV/OW	H	4	5	6	7	Tii	EV/OW	H

- Ti = Training by EADA (Tr.)
 Tii = Training by AO (Ext.)
 EW = Extra visit
 OW = Office work
 H = Holiday
 1-8 = Fixed supervisory visits to FAs

2.3.9. Contact Farmers' Selection and their Role under T&V System

The T&V approach is based on a two-step model of communication in which information is first passed on to a few direct CFs who are assumed to set an example for other farmers by adopting recommended new technologies in their own farms. Thus the effectiveness of the T&V system is mainly associated with the role played by CFs as source of information for the masses. This, in turn, could be linked with their appropriate selection by EFS. Thus proper selection would be one step towards improving the T&V system.

Three main selection criteria advocated by the pioneers of the T&V system are their (1) willingness to try out new practices (2) readiness to have other farmers visit their farms and (3) acceptance by other farmers as reliable sources of advice on farming (Benor *et al.*, 1984).

They further suggest that CFs should be practising farmers and represent proportionately the main socio-economic and farming conditions of their respective group. Moreover, they should come from different families and their farms should be scattered throughout the area. In Sri Lanka, for example, the most important criteria used by VEWs were the farming standard and the social acceptance by other farmers followed by the ability to convey messages to other farmers (Blackenburg cited in Howell, 1983; Williams, 1986).

2.3.10. Criteria for CFs' Selection as Considered by EFS

The experience gained through a study conducted in one of the districts of the Punjab province, Muhammad (1994) shows that CFs differed from NCFs in various aspects. These differences may have been due to the conscious or unconscious decisions made by the EFS in the selection of CFs and can be used to infer the criteria actually considered in the selection by the EFS. However, it should be made clear that these may not necessarily be the actual criteria used. If, for example, CFs have more land than NCFs, it may not mean that the EFS consciously selected them because they have more land: EFS may have selected them on other criteria, which happen to be highly correlated with land holding. With this provision, the study results show that the EFS might have preferred educated, old-aged, owner cultivators with formal and informal social positions and having high economic access as CFs. The criteria deliberately considered by the EFS in the selection process were the co-operation of CFs with EFS, and easy approach by/to EFS.

2.3.11. Selection Criteria as Observed in the Field

The observations recorded by Muhammad (1994) show that easy approach and nearness to the main road appeared to be the foremost consideration kept in view while selecting CFs. Almost all CFs, with few exceptions were from those farmers who had their farms in one corner of the village especially at the entrance point. In most cases farmers from three or four adjacent villages were taken as a block ignoring a vast area around the villages. In some villages many CFs were taken from the same families (real brothers) or from the same 'dera' (farm house). Some farmers were found to be residents of other villages instead of the villages for which they were registered as CFs, those villages were either easily accessible to the concerned FAs or were the residential headquarters of the FAs.

In some cases CFs were found absolutely disinterested and having no more link with farming due to very old age. They were just taken as being heads of their respective families by virtue of seniority. Many names of CFs and in most cases fathers' names were found wrongly recorded by the EFS. This implies that the lists of CFs were prepared by EFS without consulting the individuals concerned. Some CFs were even found to be dead, but were still on the contact list of EFS. Their deaths occurred even years ago as disclosed by the fellow farmers.

2.3.12. Role of CFs under the T&V System

Under the T&V system, CFs are supposed to play a key role of propagation of agricultural information received from EFS and other sources among their fellow farmers (NCFs). The performance of CFs has been heavily criticised. Röling (1982) argues that the progressive farms of the past have become the CFs in the T&V system. He regarded it as "old wine in new bottles". Blum and Isaak (1990) argues that the information flow from CFs to other farmers is out side the control of the T&V system. Muhammad (1994) reported that despite the fact that the farmers mainly relied on their neighbour/friend/relatives (NFRs) for their information needs, CFs served as source of information for only 2.6% of the study respondents which means that their contribution as information source for other farmers especially NCFs as expected under T&V system was almost nil. A similar situation has been reported in Bangladesh (Haider *et al.*, 1990) and Thailand (Pickerig, 1983). These findings also coincide with those of Latif (1984) who reported that CF strategy has failed as 80% farmer have no exposure to CFs. Muhammad (1994) further reported the situation regarding the

contribution made by CFs in Pakistan's context that the study respondents were asked whether they knew CFs or not. He found that a vast majority of the farmer respondents did not know any of the CFs. The most interesting thing was that a large majority (above 60%) of the CFs did not know their fellow CFs who are supposed to meet fortnightly on a regular basis. Many CFs were even found unaware of their own status as CF. This leads to a conclusion that such farmers had not been informed about their position and the key role they were expected to play by EFS. They were not contacted by the EFS. This suggests that their names might have been taken in order to have the desired number of CFs just to fulfil the formality. Almost a similar experience has been reported by Ingle *et al.* (1987). They found that majority of CFs were unaware of the roles they were expected to play as CFs.

2.3.13. Effective Strategy for Proper Selection of CFs

The earlier discussion indicates that CFs have failed to play their role effectively for which they were selected. This situation might be, in part, the results of improper selection, suggesting that CFs' selection needs special attention by the EFS. To be effective towards this end, it seems crucial not to put this important responsibility on the shoulders of FAs alone who usually have poor educational background. This job should be done by the higher staff who should follow some sound criteria for the selection. Based on their experience in Bangladesh, Miah and Rolls (1990) suggest that the criteria should include age, education, land holding, annual income, opinion leadership, willingness to demonstrate and disseminate extension messages, and full involvement in farming. It would be wise to select CFs in an open gathering so that every farmer taken as CF may come through mutual agreement of all community members. The CFs selected in this way will also feel some responsibility and they will be known by other farmers in that capacity. An other important consideration is to be sure that their farms are widely scattered all around the area from which they are selected. If the CFs are selected in this way, and their farms are properly maintained, it will illuminate the entire village through 'trickle down' effect (Figure 3). Probably it would be a real reflection of the concept of extension used in the Netherlands 'voorlichting' which means keeping a light in front of some one to allow him or her to find the way (Röling, 1988). Above all, the CFs should be replaced on regular basis as, for instance, in the approach adopted in Haryana State of India, and Italy (Blum & Isaak, 1990). This replacement of CFs seems potentially a very effective approach, provided that they

are thoroughly trained in all aspects of farming because these trained farmers will go on increasing in number every year and they can have a multiplier effect on the masses (Gill, 1991). It will also allow more farmers to get a chance to be in direct contact with EFS.

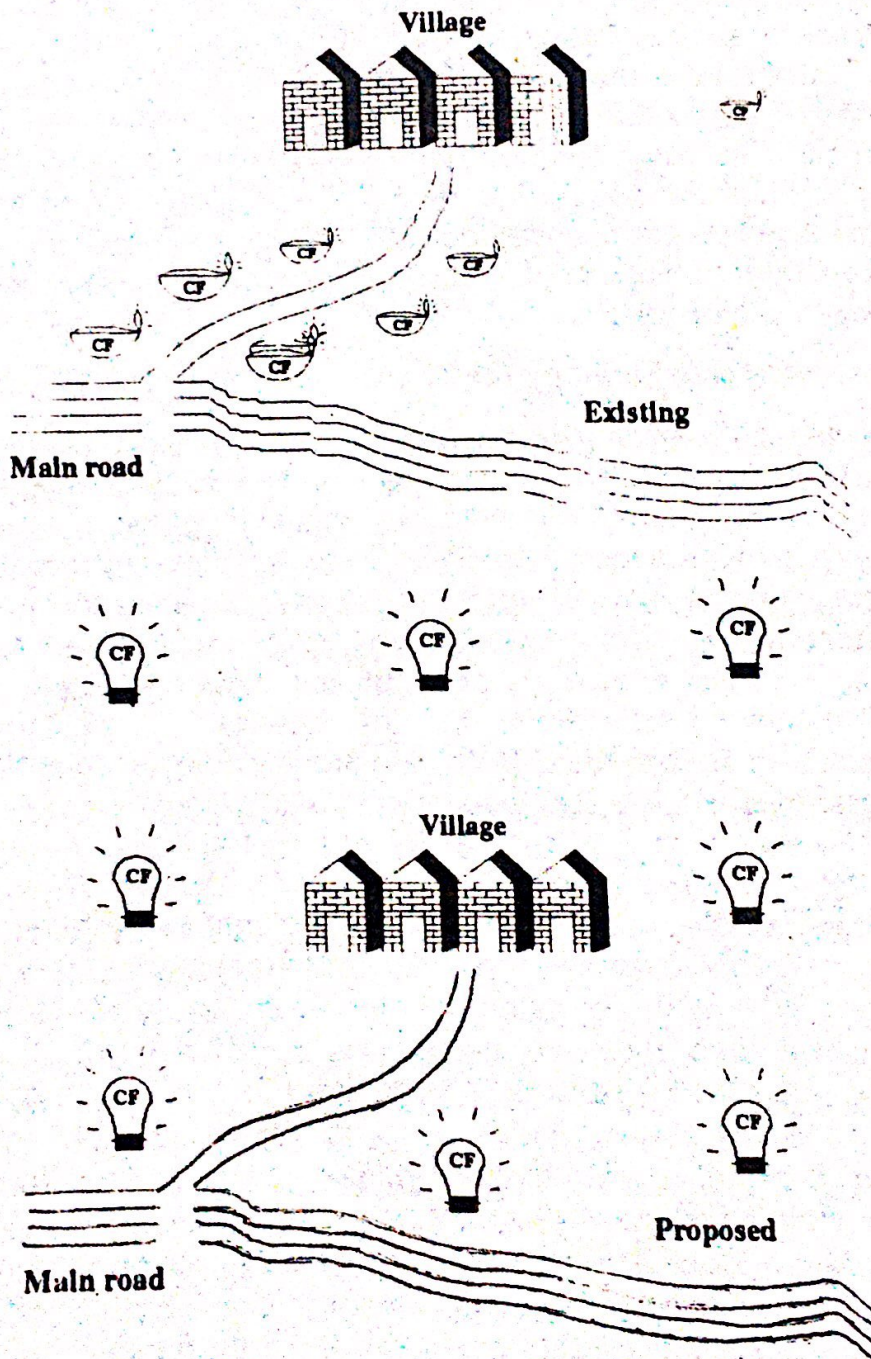


Figure 3. A pictorial view of contact farmer's selection and their impact

2.3.14. Advantages of the T&V System

The T&V system is claimed to have the following advantages:

- The T&V system has provided an effective way for improving knowledge, discipline and efficiency of the extension staff. Their availability to the common farmers has improved and the complaints of the farmers in this regard have therefore, minimised (Jalvi, 1990).
- The extension services have been linked with research through the introduction of adaptive research. This component is primarily concerned with the selection of technologies, which suit a particular farming situation and generation of the most relevant extension messages for the farmers of the area concerned. Thus the message generated in this way is likely to be more situation-specific and farmer-oriented.
- The extension workers had too vast an operational area to give effective coverage under the traditional extension system. In T&V system this area has been reduced. The village level worker is supposed to have regular contact with CFs who constitute about 10% of the total farming community along with some NCFs. In this way they are expected to make contacts with the farming community with increased effectiveness.
- T&V approach involves a fixed schedule of visits to farmers, which facilitates farmers to be in contact with EFS on the one hand and helps the supervisory staff to know the whereabouts of the EFS on the other hand. The role of each extension worker has been defined. CFs are visited and meaningful messages are disseminated each fortnight. Thus the efficiency of the extension workers is most likely to enhance.
- The workers are imparted regular in-service training to update their technical knowledge. This also develops self-confidence in the extension workers. The fortnightly extension message is prepared and disseminated to the EFS through the training staff during fortnightly training sessions. The same is being communicated to the farmers. Therefore, the EFS is expected to have better professional standards than those maintained in the traditional system.
- The T&V system also concentrates on the educational aspect rather than involving the EFS in other non-extension duties. The system assumes that all the needed inputs are available to the

farmers, what they need is only the technical guidance. In this way they are expected to be totally free to perform their basic educational function effectively.

- The system also provides logistic support in terms of housing, mobility etc. The workers are expected to be more satisfied with the improved service conditions with the establishment of various committees at different levels. There is a strong likelihood of strong, effective, and working co-ordination of the nation building departments and organisations.

2.3.15. Criticism of the T&V System

Although T&V system was an attempt to reform and improve upon the effectiveness of the traditional extension system, it has also become a subject of criticism on a number of grounds. According to Pickering (1989) the criticism has generated more heat and less light over the years than most volcanic eruptions.

Top down oriented: The T&V system is often regarded as too top-down oriented allowing information to flow from research organisations to the farming community via EFS without sufficient sensitivity to local conditions (Howell, 1983). However, Howell further clarifies this point with reference to John Russell that T&V, in its true spirit, provides closer interaction with farmers, but it takes time to achieve this. According to Antholt (1990) T&V tends to further institutionalise hierarchical tendencies already existing in top-down, centralised management, ironically in the name of good management. Howell (1982) argues that the basic technical assumptions of T&V are often wrong, that is insufficiency of knowledge as the major constraint to increased production and its appropriateness to a large circle of farmers without major adaptations. The system does not allow enough farmer participation in programme planning. Indeed, a combination of both top-down and bottom-up approaches is essential for a system to be effective (Röling, 1988).

Rigid in terms of fortnightly schedule of visits: The T&V system is also criticised as too rigid in terms of fortnightly schedule of visits especially during the slack seasons (Antholt, 1990; FAO, 1990). Its main focus is on procedural aspects rather than other essential aspects like the message and its dissemination (Hayward, 1989). While explaining the same aspect in Nepal's context, Sen (1992) argued that the fortnightly training has become a mere ritual as after a period of time the teaching materials become exhausted and the

extension workers do not find much to be taught after every two weeks period.

Expensive: It is often regarded as very expensive being too labour intensive involving many more extension workers than needed in the traditional system (Antholt, 1990; FAO, 1990) which a poor country like Pakistan may not be able to afford. The system is not only expensive but also has not made any differential impact on overall agricultural production in many countries (Hayward, 1989; Antholt, 1990). On the contrary, Asian Regional Workshop (ARW) at Chiang Mai, Thailand (1982) recognised that the application of T&V principles had a substantial contribution to make to agricultural development. Although the cost is higher than the traditional system, the output was also higher. Similarly a World Bank paper based on the Kenyan experience also indicates that T&V system is contributing to production, at least in the short run. However, it is hard to say that the difference between pre and post T&V periods is entirely due to T&V (Bindlish and Evenson, 1993). In fact it is very complicated area because of many intervening factors. For the same reason poor performance of the agriculture sector cannot easily be linked directly with extension (Benor *et al.*, 1984).

No use of mass media methods: Another basis of criticism is that the system does not make effective use of mass media methods of communication. By contrast Wilbur Schramm, one of the first to recognise the important role that communication could play in the developing world, argues that expansion of mass media can facilitate development in these countries (Singhal and Rogers, 1989). The T&V system uses personal methods by making direct contacts with few CFs who are supposed to diffuse information to the rest of the farming population.

Bias in CFs' selection: The farmers who have adequate access to production resources are more likely to be selected as CFs. Based on a study conducted in Nepal, Sen (1992) explained a similar experience that the farmers who are used as demonstrators or model farmers happened to be relatively rich, outspoken, and elites of the community. This bias of the system has also been mentioned by Howell (1984) and Feder & Slade (1984). Probably that is why Röling (1982) argued that the progressive farmers of the past have become the CFs in the T&V system. A study conducted in Andhra Pradesh (India) shows a bias of EFS towards big farms, with more irrigation facilities in CFs' selection (Desai & Bidari, 1989). Feder and Slade (1984) also reported a bias in favour of tube-well owners in India. Moore cited in Feder *et al.* (1985) argue that the T&V

extension system is often biased towards wealthy farmers and that they receive a disproportionately large share of extension agents' attention.

Monopolisation of extension advice: The CFs approach under T&V system has also been criticised on the basis of likely selfish behaviour of CFs. They may monopolise the extension advice and not let it go to other farmers (Howell, 1982). Perhaps that is why some critics argue that the system does not allow the opportunity to the small and needy farmers to take advantage of the system (Karmacharya, 1991). Blum and Isaak (1990) argue that the information from CFs to NCFs is out side the control of the T&V system. This situation becomes even more critical when CFs are poorly selected as reported quite often (Muhammad, 1994).

Tendency to select elderly male household as CFs: Another point of criticism is extension contact that is often with elderly male household members whereas in many countries much of the farm work is undertaken by women and young members of the family (Howell, 1982). However, the contact with the elderly male household members seems to be justified when they have adequate say in farm affairs and take keen interest in farming.

More information oriented: The T&V system entirely focuses on the information needs of farmers and takes for granted that all the needed inputs are available to them, which rarely holds true in most cases. Indeed information alone is not sufficient condition for utilisation (Röling, 1983). T&V is also criticised on the ground that it emphasises the communication of messages rather than making farmers understand these messages and improving their technical and managerial skills (Byerlee, 1988; FAO, 1990).

2.4 PARTICIPATORY APPROACH TO AGRICULTURAL EXTENSION

Most of the earlier extension models had a tendency towards top-down policy formulation, centralised planning and decision-making, one-way communication, authoritarian leadership and undemocratic hierarchical organisational structures. Experience has shown that the top-down approaches to development create an increasing dependence of the people on the development agencies and on outside sources. In fact too much dependence on outside sources can easily prevent the emergence of self-reliance. However, the outside assistance is essential to some extent.