



PN-REX-096
95355
FORESTRY PLANNING & DEVELOPMENT PROJECT
Government of Pakistan-USAID

NEED OF THE HOUR - TRANSFER OF TECHNOLOGY



TECHNICAL NOTE NO. 10

December 1992

wi Winrock International

Technical Assistance Team

58, Margalla Road, F-7/2, Islamabad, Pakistan. Tel : 813262 – 813272 Tlx : 54252 WIFPD PK Fax : 824519

NEED OF THE HOUR - TRANSFER OF TECHNOLOGY

by

M.I. Sheikh

Currently, a very hot topic is the way to transfer technology to the clients. It is the common consensus that it is wasteful to fail to use research and education in a practical way. It would be an injustice if the common man does not benefit from the development of new ideas. It means the loss of enormous resource, time and talent. New findings must find their way to the people who are to use them. Publication of results is certainly a scientist's achievement but his responsibility does not end there. These results have to be interpreted and presented in an easily understandable language and form for use by the foresters, wood using industries and farmers. They should also be practicable for if they are not, they will not be accepted.

The important aspect of finding a useful vehicle to transfer technology has sadly been lacking. Without properly planned programs of extension, new technologies are meaningless. The researchers and field workers have to evolve sufficiently elastic and cost-effective technology needed to solve the problems, and extension should package and deliver these technologies to the end user. The delivery system has to be smooth, comprehensive and efficient so that the transfer to the end users is streamlined and is readily acceptable. Transfer has to be self supporting in the long run. This is achieved when techniques are adapted to local conditions.

1. Factors to be considered in the transmission and assimilation of new techniques

While planning transfer of technology to the farmers, majority of which are not well educated, several factors need to be considered before hand. These include: qualification of the agent who has to deliver the message; person/group to whom the message is to be delivered; status of current knowledge of the subject; their interests, resources and potential; the language they easily comprehend and their educational level; and methods and arrangements of delivery such as TV, film, newspaper, workshops, training, seminars, etc.

With the new upsurge of social forestry programs all over the world, particularly in the parts where forests on state land are either shrinking or new areas are not being earmarked for afforestation it has become all the more important that the farmers

Mahmood Iqbal Sheikh is Policy and Management Specialist, Winrock International, Forestry Planning and Development Project

immediately get to know the latest information on tree crop systems of land management. How can we convince a farmer that growing trees in conjunction with agricultural crops is beneficial? To what degree are agricultural crops depressed due to competition for water, nutrient, light, etc.? Do trees attract birds and contribute to crop destruction? What species combinations are the best for special management objectives and what are the economics of tree planting on farmlands. Whether yields are going to increase if the technology provided is faithfully applied? And above all, what are the pricing and marketing structure facilities for the wood they produce often at the cost of annual cash crops. Unless all this information is available to the farmer in a usable package he or she will not be convinced. Even the American tree farmers had to be shown that forestry added to their income before interest spread. People were unwilling to invest in trees until forest industries and government offered stable long-term markets.

1.1 Who is eligible to do the job?

The person who is to apprise the people of what is new should be fully qualified, well versed with the subject and experienced enough to communicate. The person should also be aware of the religious, social and economic back-ground of the people with whom he or she is going to work. The individual should also know that his or her activities will duly be monitored to determine their effectiveness. To become really effective the person has to learn the techniques from a recognized training institution if he or she has not been to one. It has also been established that a woman happens to be a better transfer agent than a man when village women and children are to be trained. It is therefore essential that women be considered as a strong candidate for such jobs.



Women have proved to be excellent extension agents, especially in the rural conservative families where men can not make their mark.

1.2 Identification of target persons/groups

Success depends upon delivering the proper information to the proper target group. The message to be carried has to be understood and in a form that it can be put into practical use. Persons or groups targeted to promote the cause of forestry should carry some influence in their microculture if they are to effectively pass on the message. For instance, a landlord planting trees would be unapproachable to his lesser blessed neighbor and a Hari in Sindh or Balochistan would never have the courage to talk to his "Sardar" on any particular aspect of tree planting. In most of the developing countries, women form half of the total population. They, therefore, are very important audience to be communicated with. Similarly the phrase "Catch them young" still holds true. An informed group of youngsters has to be created when they are in the school or the college.

1.3 The Interests, resources and potential of the identified end users.

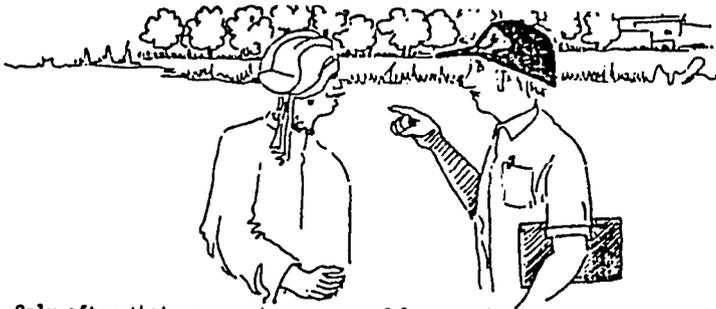
The user is likely to accept only that technology which he or she thinks is going to help him or her financially and socially. It is useless to ask farmers to grow trees without providing proof of much better income from agroforestry as compared to an alternate use of land. There is always a personal bias or preference. If we tell a farmer that the nation needs his or her help to bridge the gap between supply and demand of wood and, therefore, he or she should plant trees, the response is going to be luke warm. However, if the farmer is shown that by planting such and such species he or she would get Rs.100 or so per tree after 5-8 years, they would surely respond. Secondly, farmers have to be persuaded to divert some of their earnings to tree planting and have to be guided as to wherefrom they could get grant, loan, or subsidy. Making marketing arrangements for farmers could be very helpful. In many European countries when trees are planted by the farmer the industry makes an inventory and assures the planter that after a set period, the trees would be purchased at the prevalent market price. This is a very big incentive.

1.4 Current knowledge of the subject

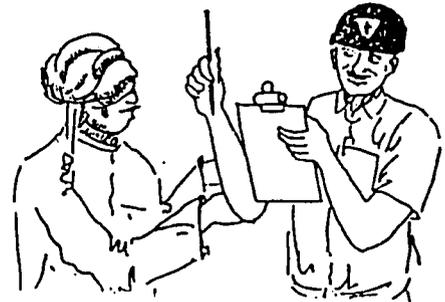
Be sure that people are not being told what they already know. Get acquainted with the audience and listen to their questions to determine the level of their current knowledge. Let them show what they already know, and use this to establish the training/technology needs. Then, deliver the new ideas and techniques when they are ready to have their questions answered. If it is not possible to answer a question immediately, collect the information and details necessary to find the answer, go and find the answer, then return to the group with the solution.



Learn extension techniques and perfect them.



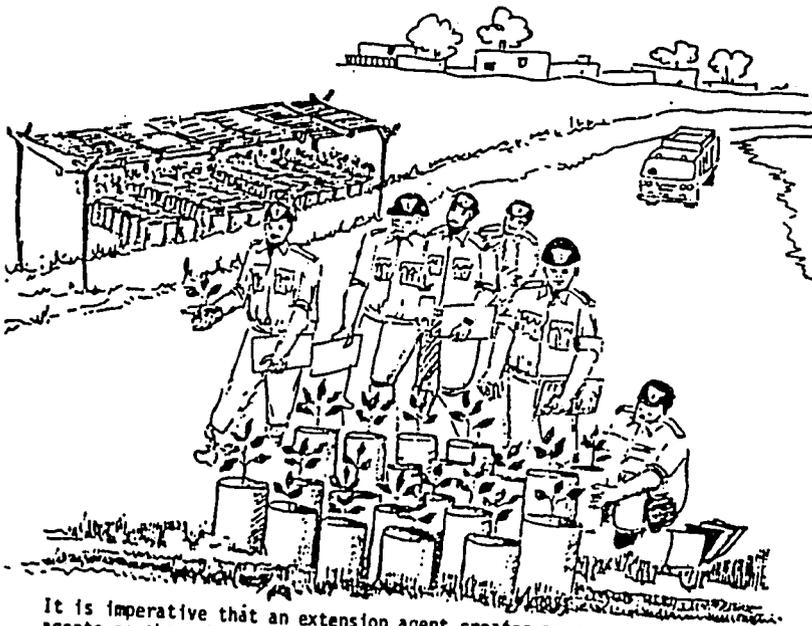
Only after that you can be a successful extension agent.



Try to answer all his questions and satisfy the client. If you can not, go back and do your home work.

1.5 Language/dialect understood by the consumer

In countries where several languages are spoken and scores of dialects exist, delivery of the message in English, which is understood by less than 30% of the population of the country would be unproductive. Putting it across in a local language in a precise manner, easily understood without long narratives, would improve its chances of acceptance.



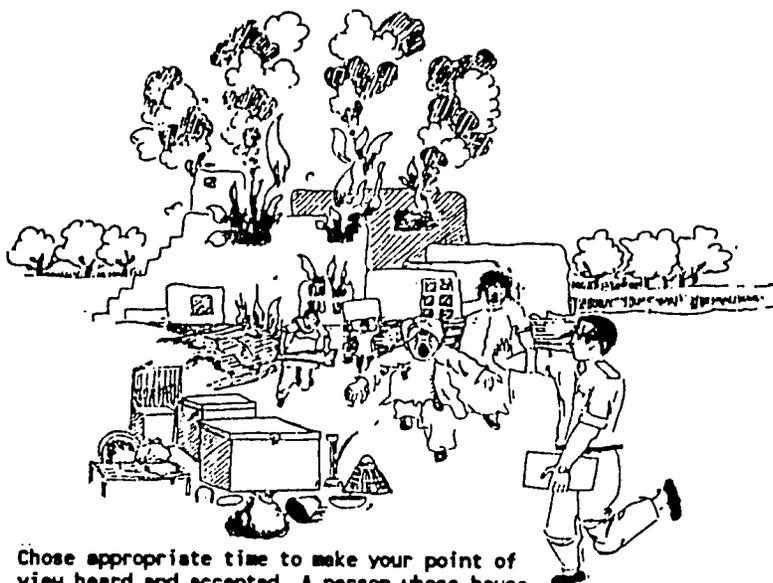
It is imperative that an extension agent creates more extension agents so that the process becomes self-sustaining.



Students could be excellent voluntary groups to promote tree planting.

1.6 Educational and comprehension level of the consumer

In many countries of South-east Asia about 70% of the population live in villages where the literacy rate is minimal. The use of technical terms by extension officers trying transfer technical information will only get luke warm response. It is, therefore, extremely necessary to consider what manner of packaging information is appropriate for a particular group of people. Obviously the same information cannot be packaged in printed form for delivery to and use by illiterate farmers. It has to be done either through person to person conversation or has to be illustrated by charts, posters, cartoons, etc. However, be careful to chose an appropriate time to deliver your message. People preoccupied with their own problems have no time to listen to you.



Chose appropriate time to make your point of view heard and accepted. A person whose house is on fire or who is mentally disturbed will pay scant attention.



When the farmer is in a receptive mood go to the site and explain and demonstrate tree planting.

1.7 Manner of packaging information

The success of extension in getting new ideas adopted depends on the completeness of information to be disseminated to the people. For instance in Pakistan, if an extension worker wants farmers to put marginal land under trees instead of using it only for grazing, some basic information would have to be provided to help them make this decision. The farmers would have to be informed about the sources from where seed or seedling would be available; the method of planting; the species suited to their land; after care; tree crop interface, pest management, different end uses of a particular tree species, for example, use for fuel, charcoal, fodder, tannin, pods and timber; the quantity which they would be able to get after a certain period of time and the expected value in terms of rupees. They would also have to be informed about the

marketing of their produce. If it is a nitrogen fixing tree, they would have to be briefed about the usefulness of planting such trees on their land and how much increase in productivity of land they could expect when trees are harvested. The extension worker may not be able to get all this information in a compact form from just one source. He or she would have to collect it from several people to complete the information and prepare a comprehensive package. The whole package becomes very practicable if the end user and the transfer agents are both involved in choosing, planning and implementing the best package related to local conditions.



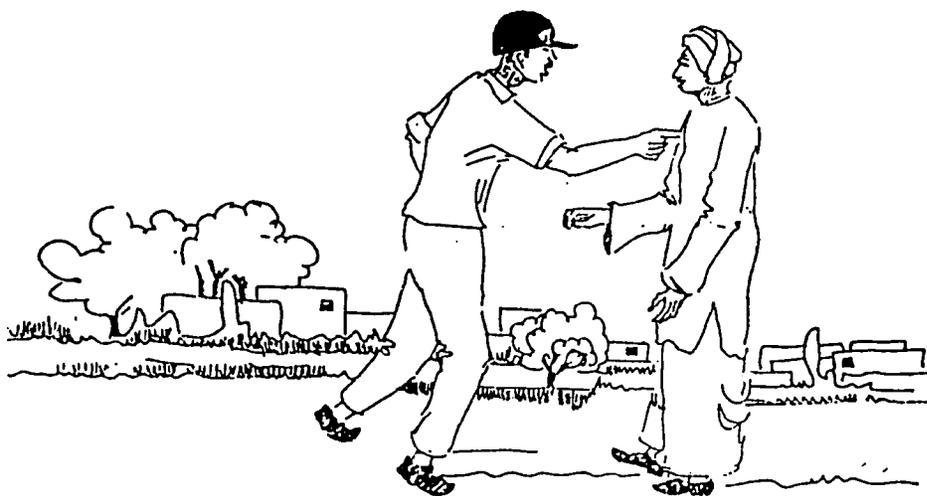
Try to convince the farmer that tree planting would be beneficial.



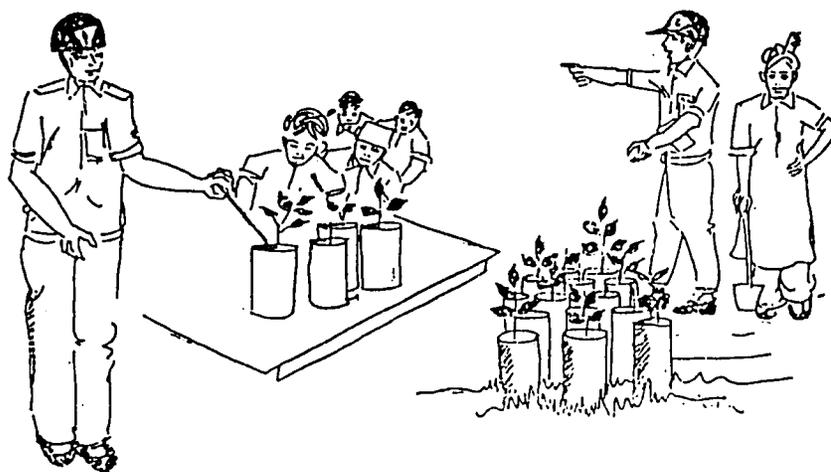
Do not be an unwelcome guest. Make the farmer your friend so that he waits your return visits, which of course are necessary.

1.8 Trust and Confidence

The transfer agent needs to establish himself with the local people as a person who can be trusted to give good information and advice. After trust is established the people will begin to have confidence in the message that is being delivered. No matter how good the information might be, it will only be acceptable to people when they have developed this special relationship of trust and confidence. Social barriers have to be removed for smooth implementations. Be persuasive but never arrogant or authoritative. You are there only to motivate not to coerce.



Do not be tough and authoritative.



Do not try to pose as a scholar. Be simple, polite but at the same time persuasive.

2. Information diffusion Mechanism for transmission

Quite a few alternative means of delivering package information, ideas and knowledge are available. Of course the means of delivery would depend upon the comprehension level and the economic status of the prospective receivers.

2.1 Printed material

The number of people who can make use of printed materials is quite small. It is useful only to literate persons. However, judicious use of printed material is effective in reaching and possible conversion of interest groups, policy makers and administrators to the cause. The information can be printed in the form of brochures, bulletins, leaflets, or given in newspaper and weekly magazines. The material should also be distributed in village gatherings such as fairs and community meetings.



Distribute self-explanatory literature on the occasions of country fairs and rural exhibitions



Use charts and posters to explain importance of trees to support agriculture.

2.2 Radio

If the program is broadcast in the dialect that is spoken and understood by the people, even the illiterate person can be motivated. The use of transistor radio has become very common even in remote areas. One can see people listening to it while driving tractors, trucks, buses, tongas or even while using the country plough. Radio is therefore, a very effective channel for passing on information to the people.

2.3 Film, Television, Video Cassettes

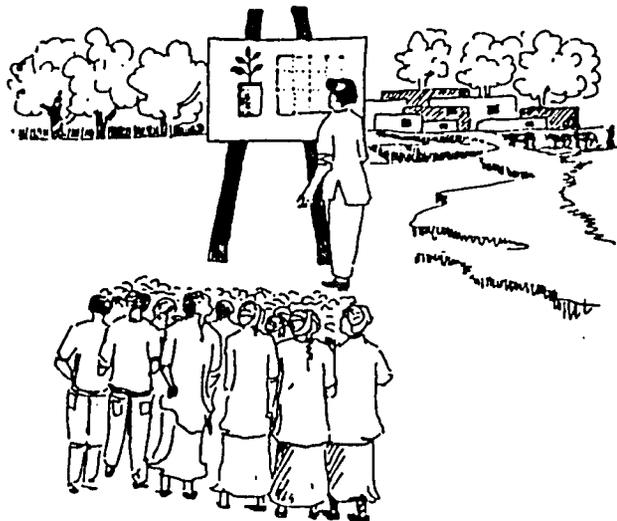
Village populations have always had a strong attraction to films. During World War-II, film was extensively and effectively used by the British to enlist people in the army. With currently available technology, video cassettes can be prepared on the relevant theme. Television of course is a very useful medium but it is not within easy reach of the common man because electricity is not always available.



Radio, television, slides, films and video cassettes are an excellent support material to motivate the farmer.

2.4 Face to face dialogue

Face to face communication with individual groups or a community has long been practiced in the village societies of Pakistan. The tradition of getting together in the "chopal", "Baithak" or "Hujra" in the evenings to exchange ideas has always been very popular.



Use the best available but simple technique to explain your point of view.

A well trained extension worker in possession of good dissemination material with initiative and a persuasive way of talking can easily motivate the non-conformists. The most effective way to transfer technology is direct people to people approach coming from those who have the experience to effectively transmit it. You can use the good offices of the local teacher, village headman or senior citizens.



Try to behave as a knowledgeable leader to induce confidence.



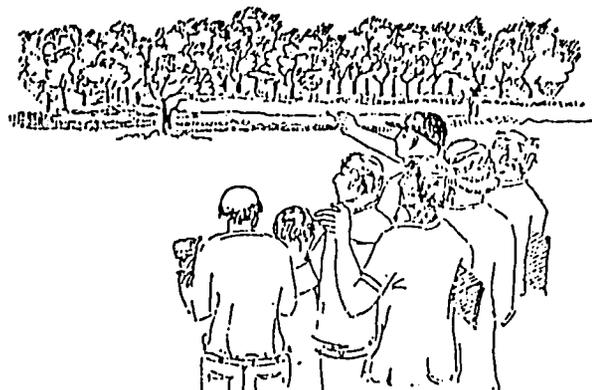
Use the good offices of the village headman, school teacher and religious leaders to motivate.

2.5 Visits to successful sites

Nothing is more effective for convincing and motivating client than practical demonstration of a program on a reasonable scale. The farmer can be easily convinced of an agroforestry package or tree planting technologies on marginal sites if demonstration plots are laid out in different accessible ecological zones preferably on farmer's land. Poplar wood lots in NWFP, eucalyptus windbreaks in Sindh, and agroforestry in irrigated plantations of the Punjab, all have played positive roles to motivate tree farmers and they have been instrumental in establishing a measure of credibility. Farmers with a lot of cattle, sheep and goats may adopt the technology of reseeded of wastelands with useful and nutritious grasses if they see 5-10 hectare duly reseeded successfully by a fellow farmer.

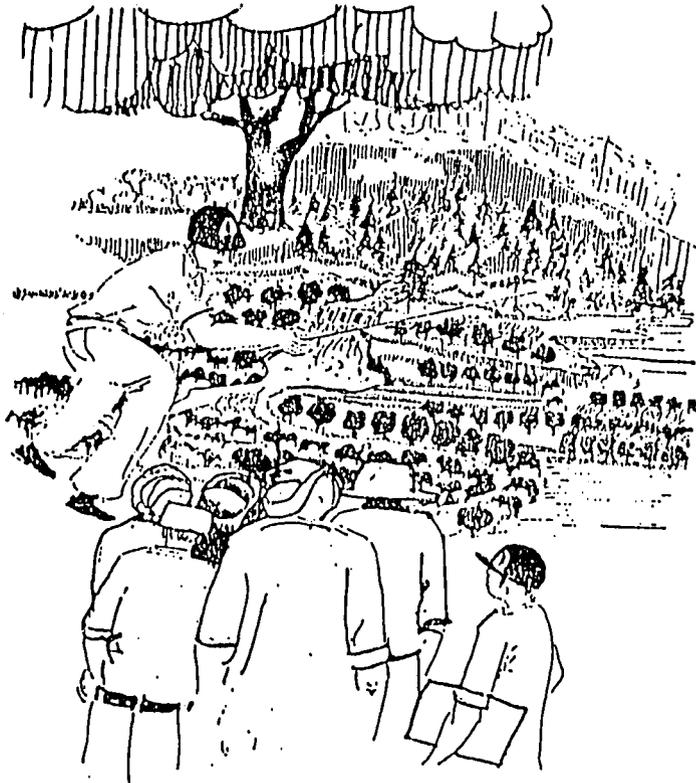


Show to the farmers that tree planting can be successfully integrated with agriculture and livestock production.



Seeing is believing. Take groups of farmers where tree planting by other farmers is a success.

Similarly farmers would be convinced of the use of fertilizers to improve their yield from grassland when such demonstration plots based on grass fertilization research are laid out at several sites or by several persons. It is important that demonstration centers are set up on a variety of sizes of farms belonging to farmers of different social status. People trust or put higher value on the results and opinion of farmers who are of the same homogenous group. A trip to the watersheds which have been rehabilitated on account of reforestation program would make the farmers realize the importance of trees for stable agriculture.



Explain to the farmers the advantages of tree planting in watershed areas. Trees would retard erosion, produce clean water, improve storage capacity of reservoirs, reduce floods and help generate more electricity from dams to boost up agriculture and industry.

3. Extension- a continuous process

New technologies are created every day. Even if the extension worker has followed the right procedure, there can still be certain deficiencies. With a review of extension materials and evaluation of extension activities at home and else where, it would be possible to constantly improve the methodology. Extension workers, therefore, have to be equipped with the latest information, so that they keep on delivering the best information to the end users. The necessity to speed up the transfer of acceptable scientific knowledge is now more important than ever before. It is now a well established fact that advances in farm forestry are to be transmitted to the farmer, appropriate technologies should be developed on farms with the farmer as partner. This would be more convincing to other farmers and they would be more likely to emulate the same on their land.



Motivate the farmer to an extent that he himself becomes a highly dedicated extension agent and people of his village start listening to him. That would be your greatest achievement.