

# INSIGHTS

The following insights and lessons on technology transfer involving the technology generators, adopters or beneficiaries, donors and implementers were drawn from the various PTRI engagements as described in the preceding case stories. Environmental factors crucial to technology transfer are identified as well. When properly combined and practiced, these ideas and techniques will lead to better transfer approaches that will ultimately provide more meaningful alternative sources of livelihood.

## Technology Generator

- *Providing appropriate technology*

Although considered simple, inexpensive, and less sophisticated, the technologies presented in the case stories offer significantly higher scope in increasing productivity and efficiency, as well as upgrading skills. Consequently, these enabled MSMEs to produce globally competitive products. Thus, it is necessary that technology generators endeavor to develop processes and products suited to local conditions. This would mean crafting of solutions suitable to the needs, capabilities, and culture of the majority of the people.

- *Competent and capable trainer*

It is important that the technology generator himself/herself or somebody immersed with the developed technology be the one to transfer and provide training. Since he/she is familiar with the rudiments involved with the innovation, he/she could easily provide solutions to problems that may be encountered in the course of technology transfer. This will facilitate skills upgrading.

Moreover, the trainer must possess the social skills needed to establish rapport between him/her and the trainees. This condition would be crucial in the process, wherein the trainees would ultimately accept the technology handed to them. In addition, these social skills will not only remove the barriers to effective communication, but also enrich the learning process and make it an enjoyable activity at the same time.

- *Sensitivity to social and cultural norms of a community*

Since the country is made up of a variety of cultural backgrounds with clearly defined ethnic and social distinctions in language and other cultural elements, it is necessary that the trainer integrates existing practices and develops the discernment as to the approach more suitable to his/her audience. In so doing, he/she could abide by the method that would maximize the delivery of results vis-à-vis the effort exerted in the process. The cultural dimension of existing and prevalent practices has to be properly acknowledged. This would mean that the introduction of the proposed technology would not deliberately or totally

rule out the merits of traditional methods and practices. Rather, emphasis should be given on the merits of the intervention as a means of “building on” and progressing from what their customary methods offered, thereby rendering the transition process “more palatable” for the technology adoptors. In so doing, the trainer could better demonstrate the value of the technology and emphasize the advantages and benefits that will be derived from the innovation over the existing and often outdated practice.

- *Personalized technology monitoring*

The casual manner of monitoring the impacts of an introduced technology fared better than the formal method of using structured questionnaires and formal interviews. Casual inquiry for updates encourages the adopter to bring out and discuss technological problems and other relevant information, which would not have been captured using the formal method of monitoring. Corresponding remedies and plans could then be worked out by both the technology generator or service provider and the adopter.

- *Ladder-type approach*

In many instances, firms or groups provided with assistance were based in the countryside where the majority of members are ordinary folk with low levels of educational exposure. In such cases, a step-by-step method of introducing the S&T intervention, starting from the basics, would be more effective. This would give the trainees ample hands-on experiences, allowing them to have enough feel and appreciation of the initial process or processes. Interest in proceeding to the next step will thus correspondingly build up.

In some cases a duration of four to six months is afforded to participants to engage and practice simple product development activities, before the trainer returns to present more complicated innovations.

### **Adopter/Beneficiary/Recipient**

- *Awareness of their needs and priorities*

People and communities will support a project perceived to reduce the constraints in their individual and collective life pursuits for satisfactory existence. It is largely their determination that will ultimately sustain any undertaking.

It is necessary, therefore, that the adopters, beneficiaries, or recipients participate in the process of identifying their needs, designing and conceptualizing appropriate interventions that they feel would meet their requirements. These proposed interventions should consider addressing their economic, social, political, and environmental concerns.

During the inception stages of a project, soliciting the active participation of the affected community will assume wider acceptance and further internalization of its proposed developmental strategies. The beneficiaries, being highly motivated to see their ideas in action, will consequently have a greater chance of developing in themselves a sense of ownership over the technology given them. Moreover, this would dispel the recipient's notion of constant dependence over "dole-outs" from the government or donors.

- *Formal and informal leaders*

The elective president or owner of an enterprise is the formal leader of an organization. However, these formal leaders do not necessarily act as the driving force for a given undertaking. This is where the informal leaders come in to play. The informal leader sends the battle cry by which the entire organization is most likely to follow. They are the individuals who stand in a crowd and could command their attention and support through sheer persuasion.

These two primary players have to be identified at the onset of the project undertaking and soliciting support from both of them. It is essential that both are open to the idea of acquiring new knowledge, are strong believers in the technology, and have the required technical skills. It is also significant that they be able to provide moral and spiritual direction to their members and workers. They must know the value of being responsible and accountable to clients.

Leaders who are committed, resourceful, creative, disciplined, and persevering will always have a positive influence over his workforce. Consequently, the preceding conditions would effect a positive outcome for the project.

A workforce with the right attitude will definitely have a significant impact on the ability of an organization to adopt and apply new technology for achieving sustainable gains. Employees are better motivated in an environment where they are treated as members of one family and where a sense of belonging and pride in one's work exists.

### **Sponsor/Donor**

- Aside from deciding what projects to support and how much funding to give, sponsors or donors must clearly define the scope of the project which should be in harmony with the people's and communities' needs and concerns.
- Donors must have very good linkages with the technology generators, adopters, markets, and raw material sources to help facilitate addressing the different concerns of people and communities.
- They must be able to assist regularly in the monitoring and evaluation of projects so as to ensure that implementation is in accordance with workplan.

## **Environmental factors**

- The choice of technology depends on the endowments of a certain community or environment. Resource considerations such as raw material availability and accessibility, assurance of a reliable supply of highly trainable manpower, available capital, and infrastructure play crucial roles in the success of technology-based livelihood development projects. The flexibility afforded by social and cultural norms and traditions, as well as political support and potential markets, are also important considerations.

*It is said that the ultimate triumph of a technology transfer is the empowerment of people and communities. Donors, implementing agencies, government and nongovernment organizations, and local government units are interlocking players of development. Each serves as a force for integrating the diverse needs of people and communities who are the subjects and objects of livelihood development.*

*PTRI has been a witness to and active participant in this empowerment in various instances. Seeing individuals and MSMEs develop and grow is more than enough inspiration for the committed men and women of PTRI to continue with their relentless effort of bringing the fruits of their researches to those who need them.*