

Appendix H

International Technology Network

No team or entity, even country, is self-sufficient in technology innovation. It must depend on others, either in-country or in another country, for certain inputs. National research and extension systems must be organized so that the referral-response function can be implemented effectively and efficiently. See Figure 1.

Figure 1 shows the international resources to which needs can be referred. It also shows an organization of national entities (the national system) that is needed and feasible to link the farmer to the world's technology innovation resources through a series of referral-response relationships. With the proper national referral-response structure, national systems can become functional members of the international technology innovation network. They do not have to catch up, if they can catch on.

There are some elements of the national system that are essential for an effective referral-response structure.

Two of these are structural.

1. The national research entity must have an adaptive or on-farm research capacity and program. (This may be known as farming systems research.) This capacity is needed so that the research entity can understand the technological needs and alternatives of the nation's agriculture.

2. The national extension entity must have a capacity to deal with technology and technology innovation virtually on a par with the on-farm research personnel of research. It must also have a program that (a) links with research and (b) provides technical support to the field agents. These two functions are essential response and referral functions.

The third essential element is (a) knowledge of the international science and technology resources available and (b) capacity for linking with them. This requires not only skill but a management system. The country needs to be able to manage its contacts with international entities so that national interests can be served. Without this system and skill, the national system can only re-act to initiatives from the external sources. This places the national interests completely in the hands of the external agencies who have no alternative but to serve their own interests. In some cases their interests and national interests will coincide, but in many cases external interests will be of only marginal value to national interests. On the other hand, it is perfectly feasible for the national system to take charge of these relations and more completely serve its own agriculture.