

II. Some Implications of the TIP Model

1. Technology innovation is a "natural" or autonomous process that has been going on throughout history, driven by an innate human desire to improve things. Research and extension have been organized to accelerate the process, not to replace it. Research and extension will likely function best if they understand the process and collaborate with it.

No part of the process can be ignored. If research and extension (or other mechanisms for accelerating innovation) ignore a function, then it will have to be accomplished by farmers themselves--and the process will be delayed, at best.

2. The model puts Farming Systems Research and Extension in context. FSR/E deals specifically with testing (in the farming system), adaptation, and integration. It is through these functions that research and extension begin to come to terms with the farmer and to take advantage of the farmer dynamic. If the R/E system does not address these functions, then farmers are on their own.

3. The TIP model presents no clear line by which research and extension can be separated. As technology becomes "tested and adapted," the "on-farm" trial becomes virtually a "demonstration," and as "demonstrations" turn up new data on performance of the technology or even confirm old data over a wide area and several years, they are "on-farm" trials. Thus, the research process shades into the extension process. Extension is probably most effective when it is helping farmers solve their technology problems than when it is merely instructing them from what it knows.

4. The TIP model implies that a country can rely on the international technology network for science and new technology alternatives. It implies even more strongly that the ITN has little to contribute from the function of testing onward.

5. The model also shows that FSR/E probably has reduced potential if left completely on its own. In other words it is heavily dependent on the processes of technology generation and science, just as science and technology must depend on it for the fruition of their efforts. FSR/E completes the research process (i.e. finishes the new technology) and initiates the extension process, giving extension a tested farmer-ready technology. FSR/E also has the potential for sending signals to the technology generation function on needs. Thus, FSR/E may have its greatest value in its capacity to condition the entire technology innovation process, perhaps greater than its own direct contribution. Management needs to reflect this.