E. The Macro-Environment

The technology innovation system is but one system serving the larger purpose of agricultural development, and performance of the "other" systems has a great influence on the potential impacts of Research and Extension interventions.

Three "other" systems are of particlar relevance.

1. The policy structure is one. Among the relevant policy issues are price ceilings and supports, exchange rates, import-export policies, land tenure, and Research and Extension investment.

2. The commercial system is another. There must be a demand for the farmer's product and facilities and institutions to handle it. On the other hand certain vital inputs in which much of technology is embodied must be available.

3. The third is the infrastructure system, internal transportation, plus irrigation, ports, processing and storage facilities, and others. The effectiveness of research and extension is considerably reduced beyond the area served by a minimum infrastructure.

While of extreme importance to FSR/E, the potential of FSR/E managers in correcting defects in these systems is limited. Donors in "extra-project" activity have some potential.

Here are some actions FSR/E management can take.

1. It must concern itself with policies regarding investment in research and extension.

2. It can communicate with other systems regarding farmer needs. The need for inputs involved in technology adoption can be communicated to the market, as can needs for certain imports.

3. Knowledge and understanding of the farmer can be communicated. If national production goals are to be met, they must be translatable, and translated, into farmer goals, and they must accomodate farmer constraints. FSR/E can help with this task.

4. Knowledge of opportunities made possible by technology innovation can be communicated and explained. New technology often creates policy options as well as production options.

5. Where nothing can be done to correct defects, R/E strategy must adapt to the macro-environment, both in the short and long run.