

anticipated were generally made prior to the project. Farmer yields may well reach their objectives by 1984, but the AID project was only a beneficial increment to Korean agricultural research. It supplemented an existing, competent system, but offered little that was innovative.

The concentration on rice led to a lack of emphasis on other crops, an inattention caused by national concerns as well as social and economic factors the project ignored. Although there have been increases in crop yields, hectarage of the other crops has consistently been falling, even before the project began. Thus, national targets will not be met even if a relatively few farmers benefit. The choice of some of the crops covered by the project such as wheat, soybeans and potatoes seems questionable, as does the emphasis on increased fertilizer responsiveness.

Critical to a developmentally effective agricultural research program is the transference of experimental results to the farmers. Through a widespread extension service, a farmer training program that includes almost all families annually, demonstration plots, and the Sae-maul Movement, Korea has developed an authoritarian but effective means of disseminating research results.

Thus, beginning in 1972 the spread of the high-yielding varieties of rice was pushed with alacrity by the Korean bureaucracy in response to a national command structure. The effort was effective, making Korea self-sufficient in rice by 1975. Yet there were two inherent problems in this comprehensive effort: these varieties were sensitive to cold, and new races of the fungal disease called blast normally develop after a few years if large areas are planted to a single variety.

The crisis developed first in 1979 with a drop in production caused by blast followed by a disastrous 1980 crop due to cold temperatures. The rice crop fell by one-third, creating a crisis of confidence in the government and in the guidance service.

Ironically, the failures of 1979 and 1980 can be attributed to the strengths of the Korean guidance service. Thus its weakness is based on the omnipresent bureaucratic hierarchy that, in contrast to most developing societies, can transform research into production. In singleminded pursuit of its political goals, it neglected elemental precautions that might have avoided the problems of the last two years.

Agricultural research was an appropriate intervention for AID at the time. It assisted a well-established, agricultural research network, but did not materially transform it. It created no new institutions.

Agricultural research will continue in Korea but replication abroad will be difficult. Any successful adaptive agricultural research project will be dependent upon a positive pricing policy, an effective extension service, rural infrastructure, and continuous contact with international research centers, among other factors. Political will is required for its success, but too strong an emphasis on political objectives can undercut its effectiveness.