

be attained with only a modest contribution from the project itself. Project targets calling for heightened crop responsiveness to fertilizer consumption seem inappropriate in light of the petroleum crisis of 1973 and the increase in prices and Korean import requirements. Rather, increased yields with less fertilizer or attention to green manure crops might have been a more logical goal.

The responsiveness of the Office of Rural Development to national and thus political goals of heightened rice production was both its strength and weakness. It moved with alacrity against the advice of some researchers, to expand the Tongil varieties to satisfy bureaucratic requirements in the Korean hierarchical political culture. The choice of the name "Tongil" ("unification") is indicative of its political importance. It reacted too quickly, however, especially in light of the knowledge that cold weather can potentially damage Tongil rice and new races of blast fungus normally develop after a few years if a single strain is spread too extensively. It would have been more prudent to release Tongil gradually, supplementing it with other new and traditional varieties whose production also could be increased because of technological innovations and improved cultivation. This approach in the long-term might have been more successful, but the command system of the Korean Government demanding short-term gains and statistical manipulation to reach a political objective was given priority over longer-term research and production needs.

It might have been possible to avoid the decrease in rice production in 1979 due to blast and to mitigate the disastrous fall in rice yields in 1980 had the researchers been able to control dissemination and diversify production. Thus, the strengths of the Korean agricultural research and guidance system, its integration and political importance, proved also to be its elemental weakness.

V. LESSONS LEARNED

The Korean experience in rural development may be close to unique for there are few, if any, countries that are able to mobilize the variety and quality of resources that are required for the rural sector to prosper and agricultural research projects to succeed. Yet if Korea cannot be readily emulated and its agricultural research and rural development model exported, as are so many Korean manufactured products, there are generalizations that can be drawn from the Korean experience.

A. A successful agricultural research program requires a major national commitment.

This commitment not only takes the form of allocation of public resources for the support of the project; it also includes that indistinct quality that is sometimes referred to as political will. A successful adaptive research program requires an understanding that such research is a matter of high national policy. Thus it requires normally more than single-line support by a ministry of agriculture, but should involve other relevant cabinet level officials. The corollary to this lesson is: