

Over the past decade there has been a highly significant drop in hectarage under cultivation of the crops aforementioned. The area planted in barley declined from 730,000 ha in 1970 to 473,000 in 1979; area in wheat from 97,000 to 13,000 ha over the same period; the area in soybeans from 295,000 to 207,000 ha; and the area in potatoes from 54,111 to 34,000 ha. Thus, even with increases in yields per hectare, aggregate production, and consequently national objectives, are not being met. For example:

- Barley production in the decade beginning in 1970 basically remained constant [1,591 million metric tons (MMT) in 1970, 1,508 MMT in 1979], although per hectare yields rose from 2.18 to 3.19 MT.
- Wheat production dropped from 219,000 to 42,000 MT over the same decade, while yields increased one-third (from 2.26 to 3.21 MT/ha).
- Soybean production rose slightly from 232,000 to 257,000 MT and yields rose from .79 to 1.3 MT/ha.
- Potato production dropped from 605,000 to 356,000 MT but yields also dropped from 11.31 to 10.58 MT/ha between 1970 and 1979.

With good weather and a continuing research program, it is possible that the targets may be obtained on all crops ten years after the initiation of the project, if government policy were to emphasize all crops. This seems unlikely, however, in the case of wheat, potatoes, and soybeans. Even if per hectare targets are reached, it is unlikely that any aggregate increases can be expected. Thus, individual farmers may well benefit but the nation as a whole may find its goals unfulfilled.

Rice represents a special case. The modern technological package on which Tongil depends and the sophisticated management required in cultivation has had a salutary effect on the traditional varieties as well as the higher-yielding ones. Thus Tongil production per hectare increased from 3.86 MT in 1972 to 4.63 in 1979 but the traditional varieties also rose from 3.32 to 4.37 over the same period. Given the private market premium for the traditional varieties and their greater resistance to cold and blast now, it may be as economic to grow the improved japonica as the newer Tongil varieties.^{6/}

Other questions must be asked of the project design, the most important of which is whether the choice of subjects for research was the most appropriate. Rice obviously was critical both from a national and farmer viewpoint. Barley seemed necessary even though trends indicated that although it was a government priority, it was unlikely to remain one of the farmers'. Wheat, at any time given land use in Korea, was highly questionable. Soybeans were of less importance and potatoes were unimportant in terms of national needs. Researchers at ORD indicate that

^{6/}See Appendix E, "Profitability, Costs and Revenue of Five Crops" by Kwan S. Kim and Appendix C, "The Korean Experience in Increased Rice Production" by Robert I. Jackson. The figures are taken from Table C-2.