requirements. Others such as improved irrigation systems or mechanized farming methods may well be considered as substitutable. There is a need for a more rigorous analysis to understand the true effects of agricultural research. In this regard, the consumer-producer surplus approach is ill-equipped to deal with the complex agricultural production and marketing system in Korea. The results of an analysis using this approach would be sensitive to different specification of supply and demand functions and the nature of the supply function shifts. There are virtually no reliable estimates of agricultural demand and supply elasticities for Korea. It is suggested, therefore, that in the case of Korean agriculture the production function approach would be more appropriate for measuring the net benefits from agricultural research.5/ The clear advantage of this approach is that it provides a method of statistically isolating the influences of research programs from these other factors expected to affect observed yields. It also provides an estimate of the marginal return to research investment, which is a more useful indicator to decision-makers concerned with the merits of agricultural research projects.6/

5/ For a pioneering article on this topic, see Z. Griliches' "Research Expenditures, Education, and the Aggregate Agricultural Production Function." American Economic Review 54: 96-174, 1969. For a review of cited developments, see World Bank Staff Papers Nos. 360 and 361, 1979.

6/ The time-constraints prevented this team from delving into the calculations of rates of return to research investment. However, basic data required for an aggregate analysis on social returns seem available for Korea.