

## **Return to rice research investments and poverty alleviation in Sri Lanka : a welfare analysis 1959-1999**

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Research intensity in Sri Lanka (Agricultural research investment as a proportion of the agricultural GDP), as in the other developing countries, has been low with hardly any increase over the past 25 years. So far no study has been conducted to evaluate the impact of rice research investments on rice production and poverty alleviation in Sri Lanka. The aim of this study is to analyse the impact of research investments on rice production in the Sri Lankan rice sector from 1959 – 1999, that is, over the last 50 years. The objectives of the study are to: (a) estimate the impact of rice research investments on rice production, (b) simulate distributional returns to rice research and development investments and (c) examine the relationships between rice research and development investment on paddy production and poverty. Results revealed that rice research investments in Sri Lanka have taken 8 years to show any positive change in rice production. Production of rice increased gradually after the 8<sup>th</sup> year upto the 12<sup>th</sup> year and then decreased gradually. Supply elasticity with respect to rice research investment was 0.37. A one percent increase in rice research investment increased rice production by 0.37 percent. The returns to rice R & D investments were discussed under two different scenarios. In the base analysis (social discount rate of 6%), Net Research Benefit (NRB) simulated was Rs. mn. 61,189, total cost was Rs. mn. 18, Benefit Cost Ratio (BCR) was 2,311 and Internal Rate of Return (IRR) was 174 in the tariff protection regime. NRB and BCR were higher by 31

percent under a trade protection regime than under free trade. IRR was higher by 7% in the free trade regime than in the trade protection regime. The magnitude of the benefit gain due to tariff will be the cost resulting from government intervention policies to protect the rice farmers. The use of protectionist policies imposed due to political, social and economic reasons have increased the rate at which the gains from technological change have been passed on to rice producers by about 31 percent. The NRB is mainly distributed to the dry zone amounting to about Rs.mn. 26,504 and to about Rs. mn. 5,121 to the wet zone at 6% discount rate in the trade protection regime. District-wise analysis was carried out to analyze the rice yields and poverty status in 1980 and 2000. Ambiguous impacts were observed on net paddy consumers and net sellers (net producers) depending on the economic policies. Although income decreases from paddy, the available rural non-farm activities help increase the total income of paddy producers, inferring a reduction of income poverty. However, that income increase has not been actively utilized to increase rice consumption, but perhaps used to increase the expenditures on non-food items and intake of protein foods. As a result, actual calorie intake has not increased, perhaps leading to an increase in food poverty or consumption poverty among paddy producers.