

## Extent and Costs of Environmental Degradation in Sriramsagar Project Command Area: Integration with Cost Benefit Analysis

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*This paper focuses to assess the costs of degradation due to salinity and waterlogging by loss of production method in the Sriramsagar Project (SRSP) command area of Andhra Pradesh. The loss of production method is used at the aggregate level to find out the per hectare loss of productivity of crops in this command area. The major findings of the study show that the Benefit Cost Ratio (BCR) is reduced to 2.15 from earlier estimated BCR of 2.39 after integration of the effects of waterlogging and salinity into the Cost-Benefit Analysis (CBA). Secondly, the total value of agricultural output decreased up to a maximum of 5 per cent, when the total cost of land degradation due to salinity and waterlogging are included. It is feared that when the impacts of other forms of land degradation are integrated with the CBA, the BCR may come down below the minimum required ratio.*

### I Introduction

Environmental degradation in most of the developing countries is becoming a major threat to future development. According to Tata Energy Research Institute (TERI) (1998), environmental degradation covers water, soil, forest and air. The soil degradation is an important determinant of environmental degradation, which covers 57 per cent of the total area of the country. It occurs mainly due to two factors, viz., physical and chemical. The physical factor affects the fertility of the top-soil through wind and water, whereas the chemical factor affects the nutrients of the soil due to deforestation, poor cultivation practices and intensive/repeated irrigation. According to National Remote Sensing Agency (NRSA) (1995), there are eight important types of land degradation (non-forest). These include gullied or ravenous land, upland with or without scrub, waterlogged and marshy land, salinity and alkalinity land, shifting cultivation area, degraded pastures and grazing lands, degraded land under plantation crop, mining and industrial wastelands. Moreover, both salinity and waterlogging account for 11 per cent of the total area affected by soil degradation and cause a loss up to 30 per cent of the total costs of degradation (TERI, 1998). Another study revealed that countries in the arid and semi-arid regions ranking high in irrigation investments have extensively salinity problems (Umali, 1993). It is estimated that the world is losing at least three hectares of arable land every minute because of salinity (Sengupta, 2002). The real cost of salinity and waterlogging are increasingly felt in terms of declining productivity, income and

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