

## NATURAL DAMAGE AND CROP LOSS IN RUBBER PLANTATIONS: A CASE STUDY OF THE ESTATE SECTOR IN INDIA

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The extent of natural damage and crop loss in rubber plantations in the estate sector was studied and the economic loss was estimated based on a life cycle approach. The results highlighted the contradictions between popular perceptions and field-level data on the nature of natural damage which was dominated by wind (66%) across different age groups and regions. The dominance of weather-related damage (79%) indicates limited role of policy interventions targeted towards preventive mechanisms. However, identification of phase-wise sources of damage during the entire life cycle assumes significance since the generation of reliable annual database on the natural damage in rubber plantations is an essential prerequisite for the adoption of policy initiatives for minimising loss through the coverage of comprehensive insurance schemes.

**Keywords:** Crop loss, Discounted value of economic loss, Life cycle approach, Natural damage

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### INTRODUCTION

Throughout the human history, natural disasters have caused immense financial loss and loss of life with long-term implications on the development and survival of the affected regions and countries. As agricultural production is highly dependent on weather, water availability and other weather-related parameters, natural disasters will have serious impact on the performance of the agricultural sector. Agricultural production can vary widely from year to year due to unforeseen weather and disease/pest infestations, causing wide swings in yields and thereby affecting commodity prices. These wide swings in yields and output prices generate high variability in farm income. At the farm level, yield risk is generally greater than price risk.

Given that revenue is the product of price and yield, the volatility in yield will generally contribute more to income risks than price volatility. Clearly, yield output risks in agricultural production process have important implications for farm profitability and survival and this also bears serious repercussions for the dependant industries and communities (Farwood *et al.*, 1999; Martin *et al.*, 2001; Skees *et al.*, 2006).

In India, agricultural production has been highly prone to uncertainties originating mainly from on-farm risks due to natural calamities such as wind, fire, flood, drought, *etc.* and off-farm risks occurring from price movements, market uncertainties and government policies. The impact of such damage will be more serious in the case of