

## Impacts of Genetic Technology on Vegetable Cultivation: A Case Study of the Eravur Region, Sri Lanka

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### Abstract

Genetic technology, which involves altering the genetic makeup of organisms to introduce desirable traits, has become a pivotal tool in modern agriculture. In the context of vegetable cultivation, this technology enables the production of crops such as onions, tomatoes, carrots, potatoes, pumpkins, and beets with improved characteristics. The Eravur region in Sri Lanka's Batticaloa district is particularly well-suited for vegetable farming due to its favourable climate, fertile land, and strategic connectivity via the east-west Eravur railway line. This study aims to: (a) Examine the transformations in vegetable cultivation brought about by the adoption of genetic technology in Eravur; (b) Identify the constraints faced by farmers in implementing these technologies. (c) Propose alternative strategies and action plans to overcome existing barriers. The research methodology combines primary data collected through discussions and observations with secondary data from published sources, employing both structured and informal techniques, including statistical analysis and interviews. The findings highlight the benefits of genetic technology, such as accelerated crop growth, increased yields, enhanced climate resilience, and reduced disease incidence. However, the study also identifies significant environmental, social, and economic challenges that hinder the widespread adoption of these technologies. Recommendations include the introduction of awareness programs, policy interventions, and alternative approaches to address these barriers and support sustainable development in vegetable cultivation.

**Keywords:** genetic technology, vegetable cultivation, Eravur region, barriers, agricultural innovation.