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**Machine Learning Based Paddy Yield Prediction Using Remote
Sensing Data**

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Abstract

Due to the rapid growth of population, the demand for food has been increasing day by day. Ensuring food security of a nation is one of the most important factors the authorities are responsible for. Enhancing the crop yield in a particular agricultural area is very important as the farming area of a geographically small country is limited with increase in the population. The ability to predict the future crop yield accurately using a reliable prediction model is useful for farmers as they can be aware of when to grow and what to expect. Paddy is one of the most important crops worldwide as well as is the staple food of the majority of developing countries like Sri Lanka. Paddy has become the livelihood of more than 1.8 million farmers in Sri Lanka. Achieving maximum paddy yield with the minimum of cost is the ultimate goal of these farmers. This research evaluates the prediction of paddy yield production using Sri Lankan data sources with machine learning algorithms considering publicly available data such as remote sensing data and paddy statistics.

This research includes climate and soil data which are collected from top paddy producing districts of Sri Lanka with yield statistics to develop a paddy yield prediction system using machine learning algorithms. The climate and soil data used in this research are remotely sensed data which are available publicly. Using combination of climate data and soil data increases the accuracy of the system.

Keywords: Paddy yield prediction, Machine learning, Remote sensing data, Time series data