

## Irrigation Efficiency and Water Productivity in Sandy Regosol areas of Batticaloa District

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### Abstract

Kaluthavalai is one of the villages in Batticaloa District where groundwater extraction for intensive agriculture has been practiced excessively for commercial farming in Sandy Regosols. This study focused on the effective use of Irrigation water and productive performance in terms of Irrigation Efficiency and Water Productivity in Kaluthavalai Farming Village in Batticaloa district. They practice surface irrigation method to irrigate their crops. The primary data were collected through a questionnaire survey from a stratified random sample of 50 farmers. Secondary data were collected from the Department of Agrarian Services and other relevant authorities. Irrigation efficiency and irrigation productivity in the production of chillie and brinjal crops were analyzed.

The average calculated irrigation efficiency for chillie and brinjal were 30.97% and 30.44% respectively. This low efficiency was due to excessive irrigation and faulty irrigation methods practiced by the farmers. Farmers reported that they adopted these inappropriate methods due to climatic and soil conditions. The average Water Productivity for chillie was 0.077 kg/m<sup>3</sup> and 9.18 Rs/m<sup>3</sup>. Accordingly, the Water Productivity for brinjal was 0.194 kg/m<sup>3</sup> and 15.51 Rs/m<sup>3</sup>. This indicates the excessive use of water for cultivation. This could be reduced substantially through adopting better soil and water conservation methods. These values were very low compared to the research level estimates in the Sandy Regosol areas. In order to increase the irrigation productivity, yield should be increased or applied water should be reduced. Since increasing yield is a limited task, decreasing applied quantity of water is the only possible way to increase the water productivity. Further, the attention to soil conservation and organic fertilizer usage was very poor among the farmers. Irrigation with small but frequent doses of water is the most suitable system for this area. Given the potential of agriculture in this area and the concerns on the environment, improving irrigation efficiency is deemed to be the utmost importance for sustainable agriculture.

**Keywords:** Irrigation efficiency, water productivity