

# **Influence of small tank renovation on floral diversity around the renovated small tanks – a PRA analysis from the Dry Zone of Sri Lanka**

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## **ABSTRACT**

Small tank renovation programs not only influence agricultural productivity but also influence many other aspects ranging from social to environmental issues. The small tank renovation programs implemented in Sri Lanka have not considered the environmental changes that are associated with the renovation activities. A study was conducted to assess the influence of tank renovation on floral diversity in the renovated tank environments. Twelve small tanks from Galgamuwa D.S. Division were selected using stratified random sampling. A questionnaire survey was conducted among 150 randomly selected farmers while 400 farmers were engaged in 12 PRA surveys that covered each study tank.

This study revealed that there are some significant influences on some of the plant varieties in the tank vicinity due to the tank renovation. *Pongamia pinnata* has shown a positive change due to tank renovation while *Vitex leucoxydon*, *Cerbera manghas* and *Calotropis gigantea* showed a negative change. *Pongamia pinnata* distribution in the tank environment has increased on both sides of the bund, Kattakaduwa, tank shore and in the catchment area, which is confirmed by the Mann-Whitney Test at a 95% significant level. *Pongamia pinnata* which is growing in the tank environment is spread through the tank environment as the seeds are transmitted through water. As this plant is a medicinal plant, the tank community usually does not remove it from the tank environment and showed an increase in abundance after the tank renovation process. *Vitex leucoxydon*, *Cerbera manghas* and *Calotropis gigantea* showed a negative change as those are removed from the tank environment during the tank renovation and seasonal tank maintenance programs as these plants do not offer any specific advantages to the tank community. According to the t-test at 95% significant level, there is a difference (negative change) between the total rank marks of the plant species grown in the tank surroundings before and after the renovation of the tanks. This revealed that the tank renovation has influenced a reduction in the diversity of some plant species available around the tank environments.