

2.28 Changes in amphibian and reptile species living around tank environments due to renovation of small tanks in the dry zone of Sri Lanka – A case study from Galgamuwa D.S Division

K.P.L Nishantha, M.M.M Najim, N.K Dangalla
Department of Social Sciences, Sabaragamuwa University of Sri Lanka, Belihuloya
Department of Zoology, University of Kelaniya
Department of Geography, University of Kelniya

ABSTRACT

Small tank renovation programs were implemented in Sri Lanka to increase the land area under cultivation. The renovation activities could have positive and negative impacts. The environmental impacts due to tank renovation have not been studied in Sri Lanka. Therefore, a study was conducted to assess the changes that took place in amphibian and reptile species living in and around the tanks due to tank renovation. Twelve small tanks from Galgamuwa D.S. Division were selected using stratified random sampling technique. Randomly selected 150 farmers responded to the questionnaire survey while 400 farmers were engaged in the 12 Participatory Rural Appraisal (PRA) surveys conducted to cover the 12 study tanks. Results from questionnaire and PRA surveys were used to assess the presence and abundance of amphibians and reptiles before and after tank renovation.

Some amphibians and reptiles lived in the tank environment have either reduced in population or disappeared after the renovation. Significance testing at 95% confidence level revealed that tortoise and water monitor populations have reduced after the tank renovation. Eighty seven percent (87%) and 72% of the farmers responded that tortoises and monitors were abundant before the tank renovation, respectively in the tank environment while only 47% and 42% agree to it, respectively after the tank renovation. According to the PRA analysis, before the tank renovation, the monitor was the second abundant but it has reduced to the sixth most abundant species after the tank renovation. Bulnawa tank was identified as the tank with the highest population of reptile species before the renovation process but after the renovation Medawachchiya and Mahagalkadawala showed higher populations. This study showed a decrease in the population of reptiles after the renovation but the amphibians do not show any variation in population