

Abstract

Highlands are important natural resources and sources of water in Thailand. However, many communities in highland still have been poorly managed the solid waste and waste water from living activity so partial waste released into the environment. This project aims to study the appropriate solid waste and wastewater management systems for households and communities in the highlands and to study the capability of solid waste management by public participation. The results of the study are as follows: 1) all communities collected the four solid waste groups after knowing a good sanitation practices. However, it is necessary to improve the process and increase the number of households to comply the community agreements. The solid waste disposal methods are consist of the collecting waste into landfill and burning, collecting and burning in incinerator and sending to the sub-district administrative organization. Similarly, the treating wastewater from sink and kitchens must be increased the number of households by installing a grease trap connected to the artificial pond before discharging or discharging into the pond or the tree around household. The quantitatively of solid waste and carbon dioxide (CO₂) emissions before treatment were random accessed. The results show up there are maximum solid waste 418.50 kilograms (kg.)/day in Ban Kob Dong. Most of all are bottle of glass in 46.64 percentages, and the amount of carbon dioxide emissions is 546.41 kgCO₂e/day. On the other hand, there is minimum solid waste 12.27 kg kg.Co₂e/day in Ban Huay Kao leep. Most of all are food scraps in 42.55 percentages, and the amount of carbon dioxide emissions is 1.39 kg.Co₂e /day. After solid waste was treated, the results found that Ban Lao and Ban Huay Nam Kleaun have the highest differential of carbon dioxide between their pre and post-management at 96 and 80 percentage respectively. In the case of preliminary waste water treatment, installations of grease trap are connected to the wetland system easily (*Canna indica* L.) are proper options to remove oil and grease, Total Protein (Nitrogen), Biochemical Oxygen Demand (BOD), and Suspended Solids (SS) of wastewater from household 70.70, 43.00, 54.40 and 75.3 percentage respectively. 2) Encouraging the establishment of community-driven group, resulting in many communities began to adjust to solid waste management and waste water, such as Ban Huai Nam Kuan, Ban Lao and Ban Pa gia Noi.

Keywords: Solid Waste, Wastewater, Environmental Management, Wastewater Treatment, Highland