

Thesis Title	Water Management Strategies to Resolve Drought Problems for Non-Irrigated Area, Case Study: Suphanburi Province
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Abstract

Drought is mostly related to climate conditions and amount of rainfall. It is a key issue, especially in non-irrigated areas where agriculture and water consumption rely solely on rainfall. Drought can occur occasionally and, sometimes, the situation is so severe that it causes shortage of water for consumption. Research on water management to solve the problem of drought in these non-irrigated areas is one way to prevent water shortage. This research focuses on Amphor Don Chedi, Amphor U Thong and Amphor Nong Ya Sai in Suphan Buri province where droughts occur almost every year. The water balance model, MIKE BASIN, was applied to investigate the sufficiency of retention storage in the area. The data input contained the geographic, meteorological and hydrological data, water usage in each activity, and the retention pond as well as its management. The procedure in the study consists of selecting representative rain gauge stations of the studied areas, analyzing and filling the missing rain information with the HEC-4 (Monthly Streamflow Simulation) model, and preparing data using Geographic Information System (GIS). These were done by dividing the study areas into sub-basins depending on the directions of flow and analyzing monthly water balance of the sub-basins via the use of water in all activities. For the months in which there was some excess water, the remaining water was assumed to be stored in the retention pond in each area. For the months when the amount of water was insufficient, the water in the pond was assumed to be released as a supplement. The study showed that there was shortage of water at certain times in certain areas. However, most of the areas had

sufficient amount of water in the pond for domestic consumption. As a guideline for managing the problem of water shortage, the excess amount of water can be diverted from the neighboring areas into the retention ponds in the areas, or more ponds can be constructed to allow additional collection of rainwater.

Keywords: Drought/ Non – irrigated area/ MIKE BASIN/ Water Management