

Kittipitch Sriheras 2009: Application of Geographic Information System on Water Management Planning in Huai Krabouk Watershed, Thaisamakhi Subdistrict, Wang Num Khiao District, Nakhon Ratchasima Province. Master of Science (Land Use and Sustainable Management of Natural Resources), Major Field: Land Use and Sustainable Management of Natural Resources, Interdisciplinary Graduate Program. Thesis Advisor: Assistant Professor Kankhajane Chuchip, Dr.rer.nat 138 pages.

The aims of the study were to find out the quantity of water demand in the Huai Krabouk Watershed area and to create a GIS database as a tool for formulating guidelines for water resource planning in the watershed. Information relevant to topography, land use, rainfall, water surface run off, water demand of vegetation and household animals were adopted as key factors used in the study. Regarding to the objectives of the study, technique of GIS overlay was used to analyze the data and to present the results.

In the study, 8 map layers have been created in form of GIS data. Water consumption of each land use types of the study area was estimated. The results of the study revealed that the water consumption for the whole area was 17.448 million cubic meters in raining season and 17.576 million cubic meters in dry season whereas the water runoff was 23.929 mil. Cu. M. in the raining season and 7.287 mil. Cu. M. in the dry season. The concept of water management used in this study was based on the use of both some selected physical factors and the guidelines for soil and water conservation in the watershed class. The results showed that an amount of 0.29 mil. Cu. M. or around 4 percent of the water runoff in dry season could be adopted to manage in the Huai Krabouk watershed, in particular for supplying to agricultural areas. The results can be beneficial for use in water management planning in the watershed. In addition, the methodological concept used in the study may be applied in other watershed areas.

Student's signature

Thesis Advisor's signature

____ / ____ / ____