

合理灌溉用水量推估於地理空間資訊之應用

Application of Reasonable Irrigation Requirement Estimation in Geospatial Information

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摘 要

本研究區域坐落於行政院農業委員會農田水利署新竹管理處街頭水利小組，計畫灌溉面積約 76 公頃。研究採用目前經濟部水利署核發農業用水水權之灌溉率，考慮每日用水時間、輸水損失率、灌溉面積與不同作物灌溉率，依據調查之各農地現況作物種植情形逐一推估合理灌溉用水量，可快速掌握區域每日平均灌溉用水量。

結合現行農田水利地理資訊系統，視覺空間呈現合理推估之各農地灌溉用水量數值及灌溉渠道流向分布，依據逐條灌溉渠道供灌控制範圍，搭配掌水操作與水閘設施等管理調控，助益農田水利機關於枯旱時期，排程用水供配順序，精進灌溉效能。

關鍵詞：農田水利，灌溉用水量，地理空間資訊

Abstract

The research area is located in Jietou irrigation system of Hsinchu Hsinchu Management Office, Irrigation Agency, Council of Agriculture, Executive Yuan, with a planned irrigation area of about 76 hectares. The research adopts the current irrigation rate of agricultural water rights issued by the Water Resources Agency, Ministry of Economic Affairs. Considering the daily water use time, water loss rate, irrigation area and irrigation rate of different crops, the reasonable Irrigation requirement shall be estimated one by one according to the current crop planting situation of each farmland under investigation. The daily average irrigation requirement in the area can be quickly grasped.

Combined with the current Irrigation geographic information system, the visual space presents a reasonable estimate of the irrigation requirement value of each farmland and the distribution of the irrigation channel flow direction. It might be helpful for Irrigation Agency to schedule the water supply and distribution sequence during drought to improve irrigation efficiency.

Keywords: Farmland Irrigation, Irrigation Requirement, Geospatial Information