



Cyprus  
University of  
Technology

Department of Civil  
Engineering and  
Geomatics

**Master's Thesis**

**Remote Sensing and Sustainable Water Resources  
Management**

**Agriculture and Irrigation**

**Panayiota Papafingou**

**Limassol, September 2022**



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# Approval Form

Master's Thesis

## **Remote Sensing and Sustainable Water Resources Management**

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The approval of the thesis by the Department of Civil Engineering and Geomatics does not imply necessarily the approval by the Department of the views of the writer.

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## **ABSTRACT**

The pressure of water resources around the world is the biggest challenge that must be faced by all countries today. In particular, given that the higher water recruitment rate per year is available to agriculture, it makes the need for rational water management, more difficult and urgent. To this end, new approaches to water should be based on long-term strategic goals to ensure the sustainability of water resources and introduce new policies and practices that expand the use of technology in the process.

The objective of this essay is to prove that Remote Sensing creates new opportunity for global agricultural monitoring and has the ability to play a major role in water management. Monitoring of soil properties and water moisture, crop conditions and predict harvest, gives the ability to the authorities to estimate and predict water demand as well as to evaluate and improve land productivity.

The area selected for the Project is one of the biggest irrigated areas of Limassol District, located in Trachoni-Asomatos area. The Project deals with a selection of five different type of crops in an attempt to evaluate the spectral signature of this type of vegetation during their stem circle. Additionally, the vegetation indices, NDVI and NDWI are graphically presented in order to evaluate the vegetation density of the area in an attempt to connect it with water demand.

**Key Words:** Remote Sensing; Satellite Images; Water resources; Agriculture; Irrigation.