

Climate mitigation. Is it possible via DSS for agriculture? A case study: Reducing the Environmental Footprint of cotton cultivation

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Cotton is a very important industrial cultivation in Greece and all over the world. The main issue regarding the cultivation of cotton is irrigation because it is strictly water-dependent (Dağdelen *et al.*, 2006). This means that the costs and the environmental footprint are high. However, recent research indicated that the amounts of water that are used for irrigation could be reduced. The technological evolution has made Neural Network based Decision Support Systems, combined with data analysis, to be considered the future of sustainable agriculture. Cotton growers need to adopt new technologies not only to increase production but also to reduce water needs. The development of an innovative cotton production support system was conducted, consisting of five different types of measurements. Data from IoT sensors, weather stations, remote sensing data (Sentinel 2 images), soil analysis and on-site measurements (yield and EM38)

derived from five experimental fields in Greece, creating a dataset of thirteen different inputs. A total of thirteen different algorithms were put into the test and evaluated to find the best one in terms of time and efficiency. In this research, we implemented a Decision Support System to assess the true water need of cotton cultivation (Salinari *et al.*, 2014).

References

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