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## Water management in agriculture in southern Portugal

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### Abstract

Climate change is a reality that increasingly affects our daily lives. The last six years have been the hottest on record since 1880, with 2016, 2019, and 2020 being the top three, according to a press release from the World Meteorological Organization (WMO). "The rate at which temperatures are rising is alarming," says Pascal Peduzzi, director of GRID-Geneva, the United Nations Environment Programme (UNEP).

On the other hand, the amount of fresh water available on our planet is only 2.5%, of which the majority (1.8%) is trapped in ice in Antarctica, making it unavailable for human use. About 75% of the water is used in agriculture in Portugal. According to the National Efficient Water Use Plan (2012 – 2020), the agricultural sector registered the greatest water wastage, reaching 37.5% of total consumption in 2009.

The projections by the World Resources Institute for 2040, Portugal is classified as being at high risk of water scarcity, indicating a significant likelihood of facing a shortage of quality water to meet the country's needs. This reality is not uniform across the national territory, with the southern region proving to be more susceptible to scarcity.

The aim is to study water management in agricultural fields in the Alentejo using tools in the area of optimal control, according with [1], [2] and [3].

## References

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