



Climate Change and Water in Vulnerable Agriculture: Impacts – Mitigation – Adaptation

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Agriculture highly depends on climate and is adversely affected by climate extremes caused mainly by anthropogenic climate change and increasing climate variability. Moreover, agricultural production risks and vulnerability of agriculture may become an issue in several regions around the world, since they are likely to increase the incidence of crop failure. The aim of this paper is to present the water availability and requirements in Southern Europe and specifically in the Mediterranean region, which is characterized by vulnerable agriculture. Indeed, the climatic trend in the 21st century for this region indicates temperature increase, precipitation decrease combined with an increase in the frequency of climate extremes, such as droughts, heat waves and forest fires. The three major components of climate change are examined, namely impacts, mitigation and adaptation. In particular, precipitation frequency analysis has already indicated a reduction in the precipitation amounts and a shift towards more intense rainstorms. Moreover, time series of drought indices are presented in affected areas. The importance of climate change mitigation measures is also highlighted. Finally, an adaptation scheme for agriculture from climate change in vulnerable and water scarce areas is presented.