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A systematic review on how climate change influences natural ecosystems?

Global climate change continues to harm the society and ecosystems (EEA, 2016), which need urgent actions for reducing greenhouse gas emissions and for implementing adaptation measures, highlighted by the thirteenth goal of the United Nations Sustainable Development Goal to combat climate change and its impacts. This climatic challenge is going to be disrupting for the economic development and ecosystem processes, because of the expected 2.3 billion World population increase by 2050, the demand for food will continue to grow (FAO, 2009; Baldos and Hertel 2015). The IPCC (2018) report highlights numerous climate change impacts (sea level rise, declining of coral reefs, heavy precipitations) that could be avoided by limiting global warming to 1.5°C compared to 2°C, or more. The aim of this study is to review the climate factors, which may influence the Hungarian agricultural ecosystem services. We apply a systemic review of the relevant literature to synthetize the climate change effects on ecosystems on the different cascade levels. The cascade model shows the connection between biodiversity, ecosystem function and human well-being (Haines-Young and Potschin, 2010). Based on agricultural results we expect that relationship between climatic variables and ecosystem services meets with our priori results. While, a comprehensive research on changing ecosystem services in Hungarian context is missing. We aim to investigate to which climatic changes may be captured in the ecosystem services of agricultural outputs in a net exporter of European agriculture, Hungary.

Keywords: ecosystem services, climate change, systemic review