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An interdisciplinary project using Ecotrons to assess the effects of climate change on heathland ecosystem functioning

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Heathland ecosystems provide society with important services like regulation of climate, purification of water and recreation. Climate change will impact on heathland ecosystems by affecting plant- and soil-associated communities, which, in turn, might impact on the functions and services provided by the ecosystem. In order to assess these changes holistically an interdisciplinary effort is required, integrating biogeochemistry, plant physiology, microbial ecology, economics and other disciplines. Here, we describe how an interdisciplinary consortium of scientists will study the effects of climate change on heathland ecosystem services using the state-of-the art UHasselt ecotron facility: how the consortium has been structured, how the 12 lysimeters have been taken from the field, how the climate parameters will be altered, which parameters will be measured (soil biogeochemistry, soil communities, vegetation. . .) and by which methods, which changes in ecosystem services will be quantified (and which ones cannot), and how we plan to measure societal impact of the changes in ecosystem functions and services. Moreover, the experimental setup is to a large extent constrained by i) the internal variation between ecosystem replicates, and ii) how accurately we reproduce climatic conditions. Hence we also present the first months of pre-treatment ecotron data, to assess variability between lysimeters, on one hand; and to check how accurately it reproduces field conditions, on the other hand.