

Glomed-Land: a research project to study the effect of global change in contrasted mediterranean landscapes and future scenarios

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The Global Change is referred to the occurrence of great environmental changes associated to climatic fluctuations and human activity as well (Vitousek et al., 1997; Steffen et al., 2004; Dearing et al., 2006). García-Ruiz et al. (2015) indicated that the relief varies very slowly in time while the changes in vegetation, overland flow generation and erosion occurred very rapidly and conditioned by their interactions and the climate variability as well.

The GLOMED-LAND Project has its bases and scientific justification on the combination of the experience of the members of the research team, from one side, in the analysis of the dynamics and eco-geomorphological and climatic processes in Mediterranean environments of southern Spain, in the context of current Global change, and from another, in the study, development and application of new tools for simulation and modelling of future scenarios, and finally, in the analysis of the impact that society exercises the broadcast media related to the problem derived from the awareness and adaptation to Global change.

Climate change (CC), directly affects the elements that compose the landscape. Both in the analysis of future climate scenarios raised by the IPCC (2013), such as the regionalisation carried out by AEMET, the Mediterranean region and, especially, the South of Spain, - with its defined longitudinal pluviometric gradient - configured as one of the areas of greatest uncertainty, reflected in a higher concentration of temporal rainfall, and even a reduction in the rainfall.

Faced with this situation, the CC can modify the current landscape setting, with all the environmental impacts that this would entail for the terrestrial ecosystems and the systemic services rendered to the society.

The combination of different work scales allows the analysis of the dynamics of the landscape and the consequence of its modifications on, hydro-geomorphological processes, closely related to degradation processes that can affect the abiotic, biotic, and human elements of the landscape (soil, plant cover, crops, water resources, etc.).

Simulation and modelling is now an essential tool in the study of landscape and of the effects of Climate Change, not only towards the future through scenarios and simulation modelling, also to the past, to better understand what causes have led to effects, and to what extent.

In this work we aim to create a set of software tools for analysis, modelling and simulation of the effects of Global change on two Mediterranean catchments: the middle and upper basin of the Grande River and the high Benamargosa River, both of them in the Province of Málaga (South of Spain). This will allow a full analysis, monitor, and predict those effects at local scale. Finally, we analyse the role that the impact of Global Change issues has had from the media point of view and what tendency can follow.

References

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