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## Participatory modelling for Nature Based Solutions implementation

Eulalia Gomez Martin

*Climate Service Center Germany, eulalia.gomez@hzg.de*

Maria Mañez Costa

*Climate Service Centre Germany, maria.manez@hzg.de*

David Samuel Williams

*Climate Service Centre Germany, david.williams@hzg.de*

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## Participatory Modelling for Nature Based Solutions Implementation

Eulalia Gomez Martin <sup>a</sup>; María Mañez Costa <sup>b</sup>; David Samuel Williams <sup>c</sup>

*a* Climate Service Centre Germany (GERICS). [Eulalia.gomez@hzg.de](mailto:Eulalia.gomez@hzg.de)

*b* Climate Service Centre Germany (GERICS). [María.Mañez@hzg.de](mailto:María.Mañez@hzg.de)

*c* Climate Service Centre Germany (GERICS). [David.Williams@hzg.de](mailto:David.Williams@hzg.de)

**Abstract:** Nature based solutions are being implemented across Europe to reduce the economic and human cost of natural hazards. Climate change and the destruction of ecosystems, which provide key ecosystem services, are worsening the impact of these events further. The majority of the studies have focused on the reduction of impacts of flooding in urban areas. However, Mediterranean regions in Europe are facing an increase in heat extremes and droughts. There is little information on how to use NBS to mitigate the effects of droughts in rural areas. In this study, existing information will be reviewed to understand how NBS can be implemented to face a possible increase of droughts in areas in which the uses of water are increasing. We suggest a knowledge integration approach to incorporate new and existing knowledge into a more efficient framework for the implementation of NBS. We will use a system dynamics approach starting with a participatory modelling phase as our framework for analysis. We will present first results from the case study of the Medina del Campo groundwater body of the Duero River in central Spain.

**Keywords:** Nature Based Solutions; System Dynamics; Knowledge integration; Droughts