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Is Space R&D Truly Fostering A Better World For Our Future? (2)

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FLOOD MODELING IN A PERUVIAN CITY AS A DECISION-MAKING TOOL

Abstract

A flood is a temporary coverage by the water of a surface where usually it is not. It can have negative or positive effects, but more are studied and analyzed when it has adverse effects. Floods are older than the man himself. Water has an urban cycle described by the following stages: collection, supply, sanitation, and reuse. When a flood happens, or a disaster in general, it is essential to know how risk management worked. Risk management has the following stages: planning and prevention, preparation, response, and recovery. Everything mentioned above serves to make a better decision. In the planning and prevention stage, modeling and simulations can be applied to see how a natural disaster would behave. In this paper, we propose the simulation of a flood in a Peruvian city using data collected on rainfall, elevation models, and satellite images. This simulation will make it possible to predict which streets, fields of crops, or carts; the water will be advancing; and until what levels the rivers would grow. As a result, a prevention analysis will be obtained that will allow better decision making by local authorities. In this way, there will be a better future for vulnerable populations in the face of this type of natural disaster.