

Geohazards: Enhancing Preparedness for a Changing World

The recent devastating floods and landslides caused by heavy rains in Eastern Africa, along with the ongoing drought in Southern Africa, disastrous floods in Brazil highlight the urgent need to address the evolving challenges of geohazards.



Rufiji river, Tanzania, floods, ESA

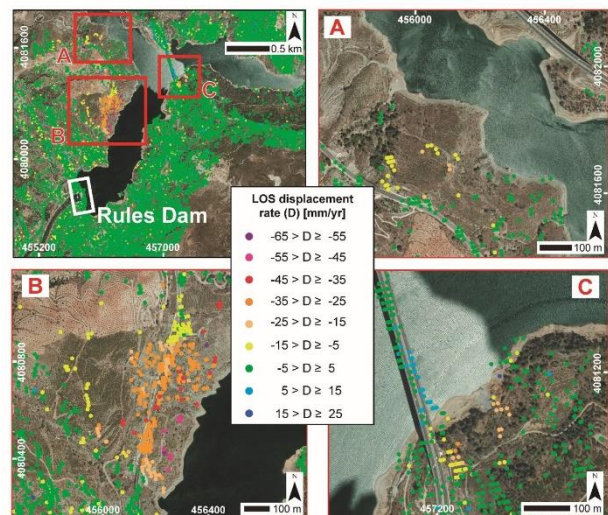
While natural disasters have occurred throughout history, the global patterns are now shifting due to both cyclical and anthropogenic factors, such as climate change. This changing environment calls for improved preparedness measures, especially in areas that have not traditionally been affected. By leveraging advanced monitoring and predictive tools and methods, we can enhance our resilience and mitigate the impact of geohazards. It is crucial to bridge the gap between the availability of technology and its practical implementation, as current monitoring and safety control practices often remain

reactive and outdated, relying heavily on visual observations.

In regions with limited budgets, the lack of monitoring systems for many geohazards exacerbates the risks.

Remote sensing is a powerful solution for effective geohazard monitoring. By utilizing technologies such as **Synthetic Aperture Radar (SAR)** and **Interferometric SAR (InSAR)**, we can gather comprehensive information over large areas, enabling early risk detection without significant upfront investments or operating costs. These tools not only identify potential risks but also monitor their development and assess the potential impact on neighbouring areas and infrastructures.

Although **SAR/InSAR** technologies are gaining traction, their utilization still falls short of the magnitude of the threats posed by climate change and geohazards to global sustainability. It is imperative to prioritize the adoption and integration of these technologies into our preparedness strategies, ensuring a proactive and comprehensive approach to safeguarding our communities and environment.



Rules, Spain, InSAR analysis of a water reservoir and the area with a slowly moving landslide