

# Earth observation applications for enhanced resilience to climate-induced disasters

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## SUMMARY

We are experiencing more frequent and severe weather events due to climate change. The Hindu Kush Himalaya region is one of the most vulnerable ecosystems in the world with its glaciers, snow and permafrost undergoing irreversible changes. The visible impacts of climate-induced disasters and changing water cycles are threatening the life-support systems for both upstream and downstream communities. Building community resilience to climate change has become urgent to protect lives, livelihoods, and ecosystems. In this regard, the Earth observation technology provides enormous opportunities to support in mapping, analysis, and modelling climate change impacts. SERVIR, a joint initiative of NASA, USAID and leading regional organizations, has been working on leveraging EO and Geoinformation services to address critical challenges in climate change, food security, water and related disasters, land use, and air quality. SERVIR co-develops innovative solutions through a network of regional hubs to improve resilience and sustainable resource management at local, national, and regional scales. SERVIR has been developing EO and model-based services on high impact weather assessment, flash flood prediction in mountainous watersheds, forest fire outlook, land slide situational awareness, and sub-seasonal drought outlook which are targeted to improve our knowledge on upcoming disasters. Integration of information from these different services and timely dissemination to local level disaster responders and communities is believed to improve their preparedness to climate-induced disasters. Furthermore, these information help in better understanding and identification of lands susceptible to increasing multi-hazards and provide support in planning and decision making. Coordination and collaboration at local to national level and capacity building are key to benefit from the existing tools and technologies for enhancing resilience.