

# Infrastructure Vulnerability to Slope Instabilities and Floods in Phuentsholing, Pasakha, and Gelephug (Bhutan)

MILESTONE 1 – Delivery of satellite data covering the pilot area of interest

# Project

- A solution to enhance the understanding of infrastructure vulnerability to climatic related disaster, including rockfall, debris flow, landslide, and flood.
- Identify hot spots where critical infrastructures are the most vulnerable to develop appropriate mitigation and monitoring measures to reduce the impact on those infrastructure and the people affected.

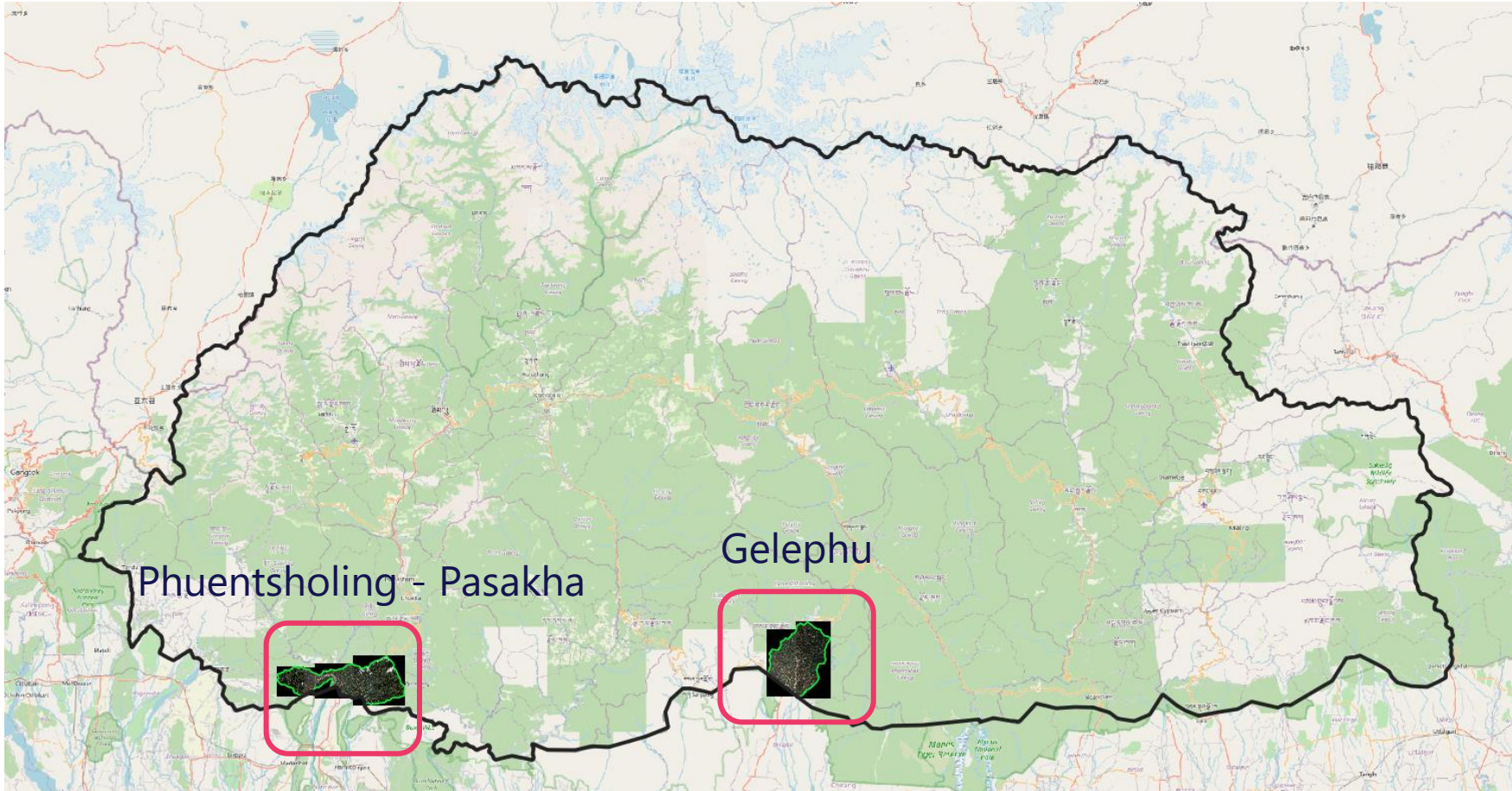
# Key Milestones

Milestone	Output
January 2022	Delivery of satellite data covering the pilot area of interest
March 2022	Delivery of infrastructure model in a QGIS Project
May 2022	Delivery of rockfall, debris flow and dynamic flood susceptibility maps, and landslide inventory map in a QGIS Project
July 2022	Delivery of infrastructure exposure and vulnerability map in a QGIS project and a technical report summarizing methodology, results, and recommendations

# Output Summary – Milestone 1

- Satellite imagery (8-band, 30-50cm resolution) was acquired covering both areas of interest Phuentsholing – Pasakha and Gelephu.
- The satellite data were delivered in a QGIS Project with all imagery georeferenced and corrected in the EPSG-5266 coordinate system.
- Unfortunately, there were only sporadic satellite data acquisitions covering Bhutan. However, we managed to find good quality data obtained from MAXAR. Following figures show the date of each data acquisition.
- Next Milestone will be to prepare an infrastructure model.

# Areas of Interest



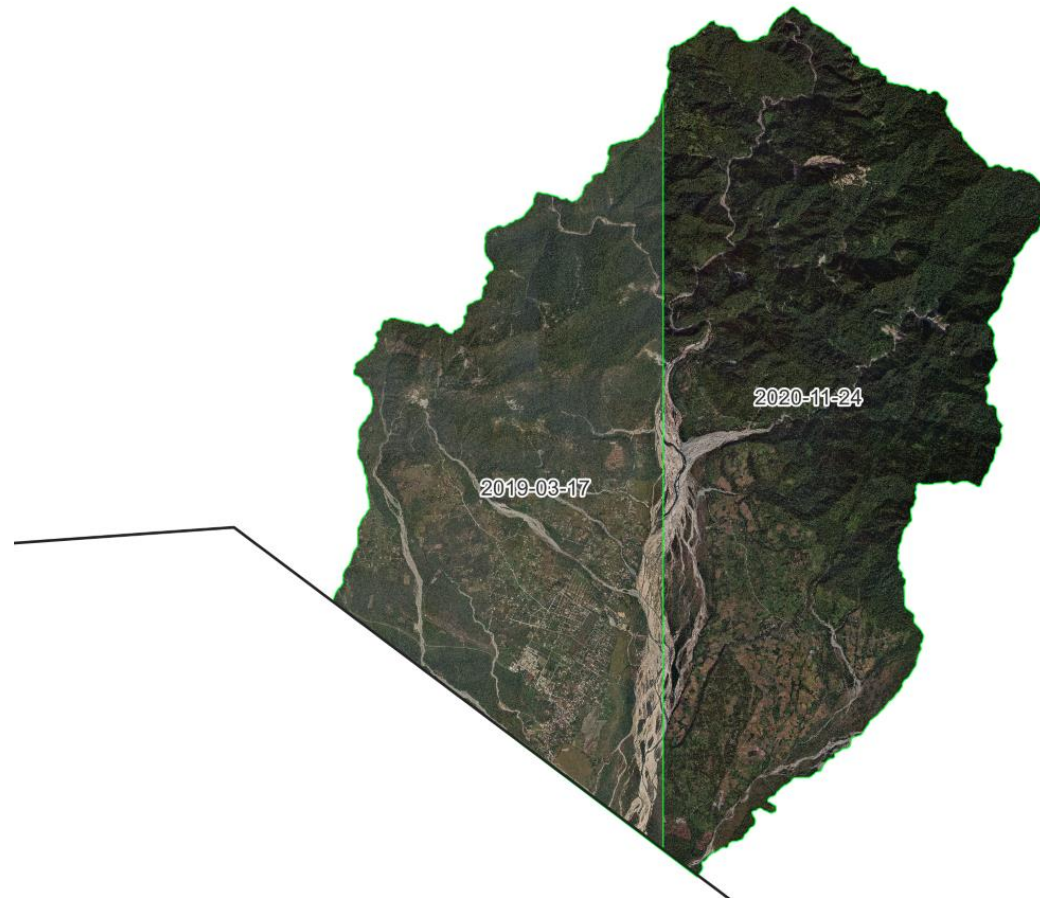


# Phuentsholing - Pasakha

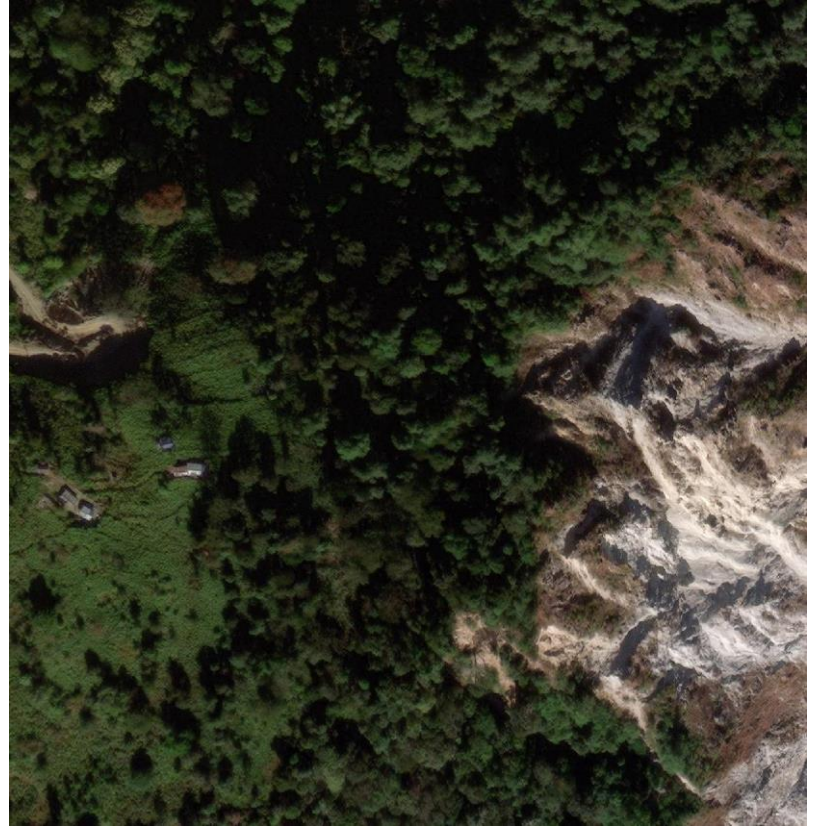
Date of acquisition



# Gelephu







# Imagery Examples

---