

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

MILESTONE 2 – Delivery of infrastructure model in a QGIS Project

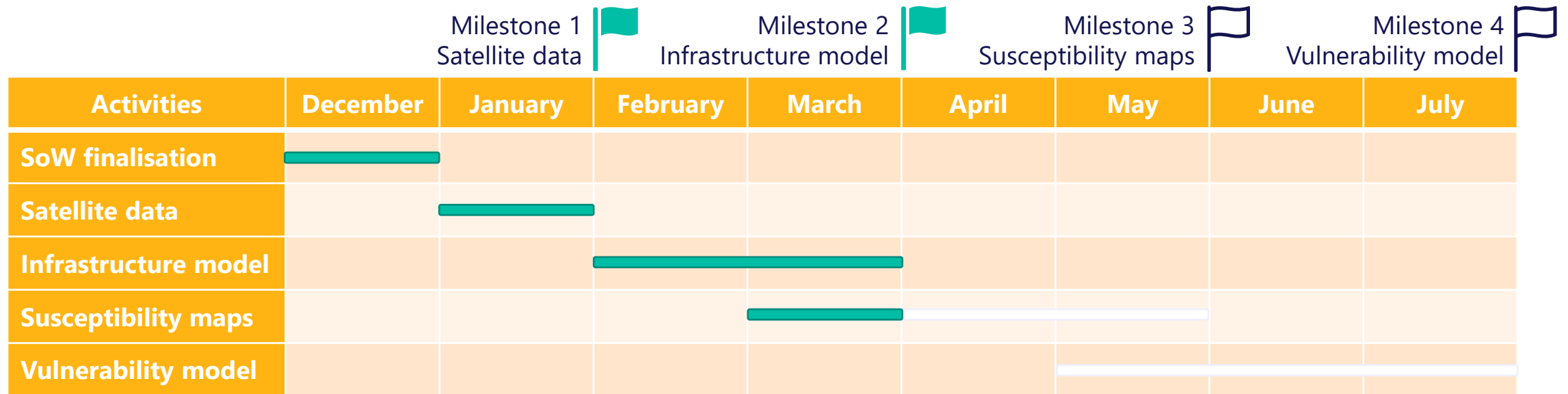
Project

- 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

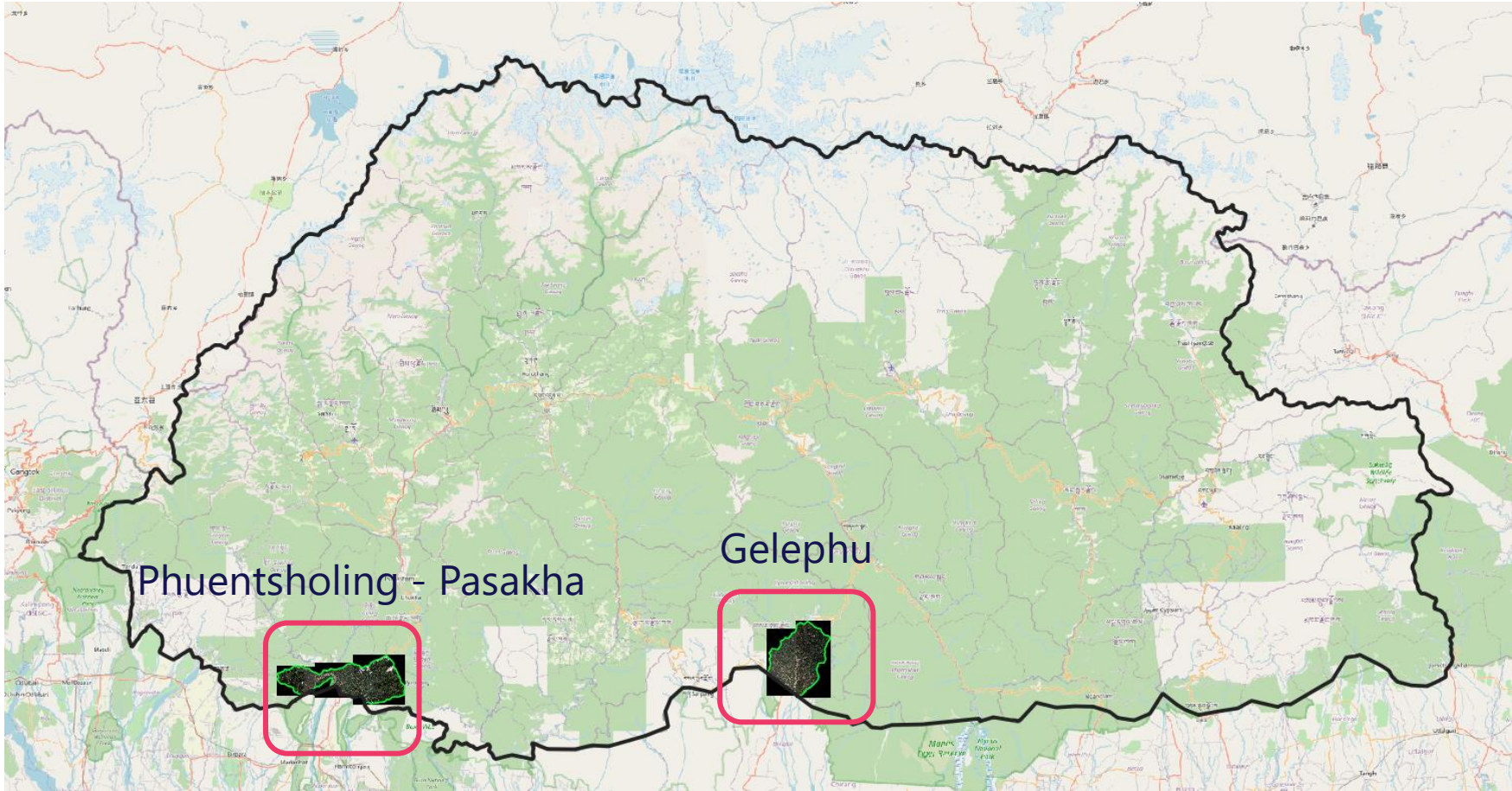
Progress



Output Summary – Milestone 2

- Buildings, roads, bridges, transmission towers were provided by DDM database and complemented either by using Open Street Map, or manual mapping, or using deep-learning segmentation on satellite imagery.
- Replacement value were attributed to each infrastructure type and a 30m by 30m infrastructure models were computed for both areas of interest.
- The infrastructure models were delivered in a QGIS Project in the EPSG-5266 coordinate system with initial symbologies that can be modified as required by DDM Bhutan.
- Next Milestone will be to prepare the hazard susceptibility maps.

Areas of Interest



Gelephu – Infrastructure Model



Phuentsholing – Infrastructure Model

