Building Capacity to Use Earth Observations in Addressing Environmental Challenges in Bhutan

May 13, 14, 15, & 16, 2024

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Thimphu Tech Park, Bhutan

This in-person training is in collaboration with Druk Holdings and Investments (Bhutan). It will cover acquisition and analysis of satellite and modeled data; methodologies on how to generate land-, water-, and disaster-related products from satellite data; and how to utilize relevant existing products for assessing land use change, natural resource management, and climate change impacts. This training will be tailored to case studies in Bhutan with the goal of improving capacity to use remote sensing data to better manage natural resources, improve land use planning, and monitor disasters experienced in the Kingdom of Bhutan.

**Day 1 – Monday, May 13 – 8:00am - 5:00pm**

- Session I: Introduction and Overview of Earth Observations and Earth System Models (8:00am - 10:30am)
  - Training Outline and Expectations
  - Fundamentals of Remote Sensing
  - Overview of Data Products from Earth Observations and Earth System Models for Environmental Monitoring
- Session II: Climate Change Projections and Risk Assessment (10:45am - 5:00pm)
  - Introduction and Background to Climate Change Projections and Analysis (Anomalies & Trends)
  - Introduction to Google Earth Engine (GEE)
  - Assessing Regional Climate Change & Impacts in Bhutan

Day 2 – Tuesday, May 14 – 8:30am - 5:00pm

- Session III: Disasters – Floods, Landslides (8:30am - 12:30pm)
  - Monitoring Landslides
  - Extreme Weather and Flood Monitoring
  - Surface Inundation Monitoring
- Session III: Disasters – Fires (1:30pm - 5:00pm)
  - Pre-Fire Risk Assessment
  - Active Fire & Post-Fire Assessment
  - Monitoring Pre- and Post-Fire Conditions

ARSET empowers the global community through remote sensing training.
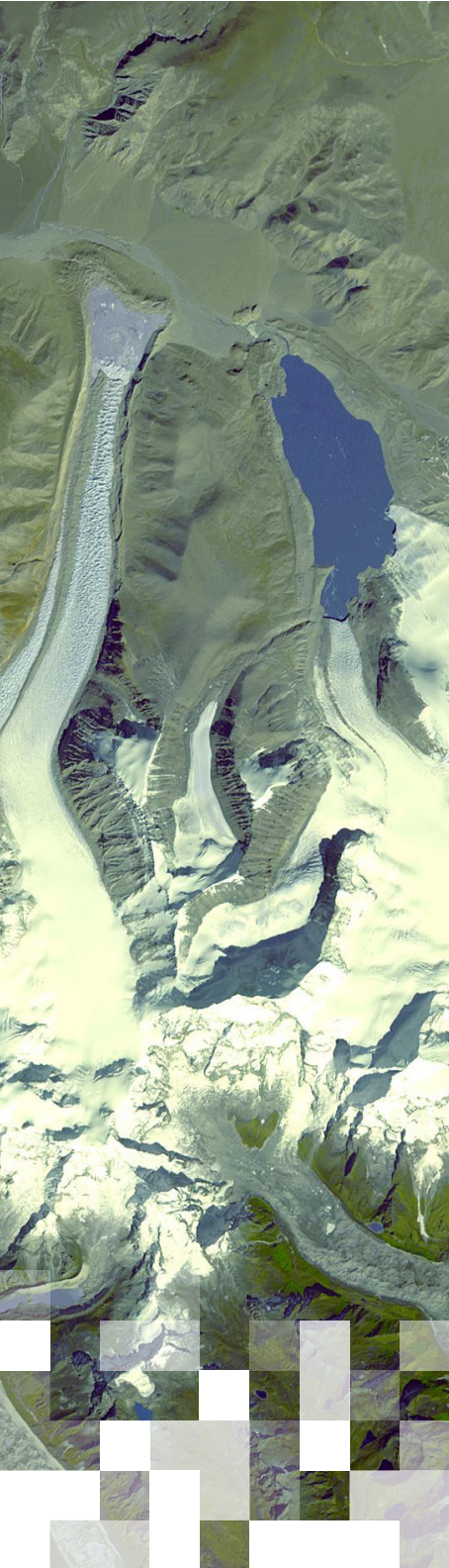
Day 3 – Wednesday, May 15 – 8:30am - 5:00pm

- Session IV: Land Cover Mapping and Monitoring (8:30am - 5:00pm)
    - Overview of Land Cover Products
    - Land Cover Mapping and Monitoring (Optical & Radar) – Forestry
    - Land Cover Mapping and Monitoring – Urban Growth

Day 4 – Thursday, May 16 – 8:30am - 5:00pm

- Session V: Satellite Remote Sensing for Agricultural Applications (8:30am - 12:00pm)
    - Best Practices for Collecting Field-Based Training Data
    - Crop Mapping using a Time Series of Radar and Optical Imagery
- Session VI: Exercises and Participant Presentations (1:00pm - 5:00pm)
    - Case Study in Participant's Area of Interest
    - Group Presentations
    - Closing Ceremony

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