# Monitoring Intense Thunderstorms in the Hindu-Kush Himalayan Region

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SERVIR

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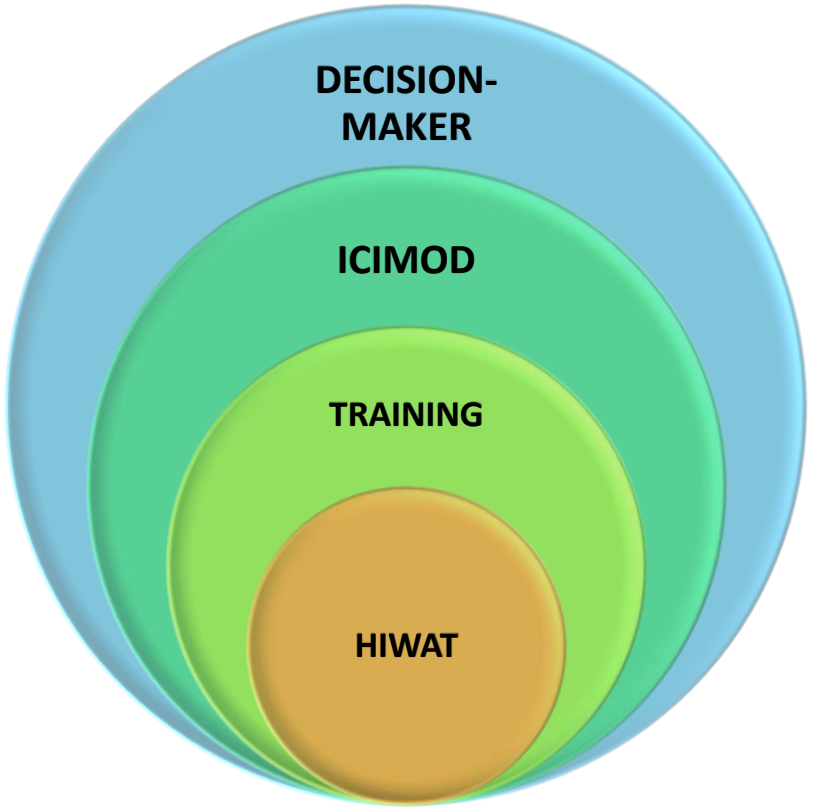
# 1. Project Objectives

**Goal**: Use NASA EOS assets to build early warning capabilities and facilitate timely disaster response for high impact weather events in the HKH region

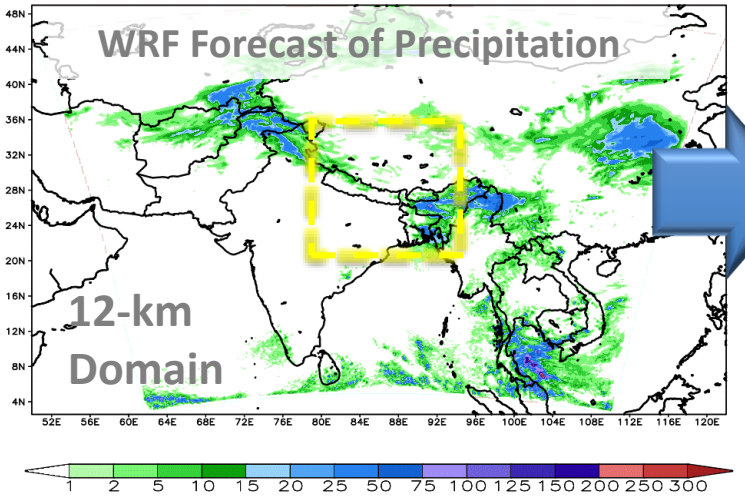
**Objectives**:

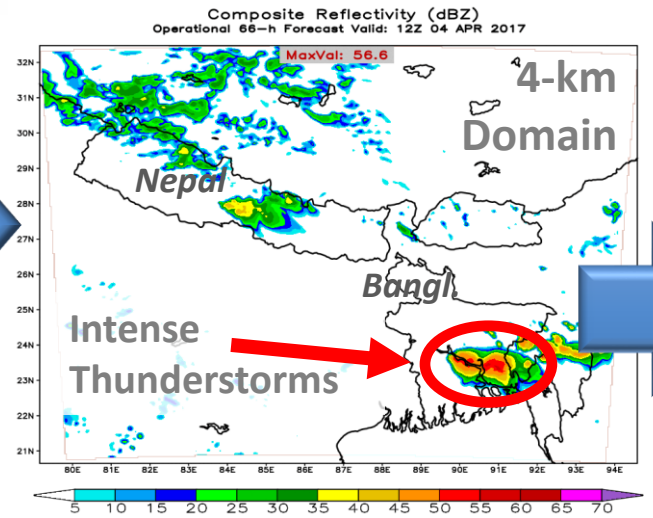
1. High Impact Weather Assessment Toolkit (HIWAT) for the HKH region
2. Jointly develop HIWAT capabilities/training with ICIMOD
3. Demonstrate capability in end-user environment
4. Transition HIWAT to ICIMOD

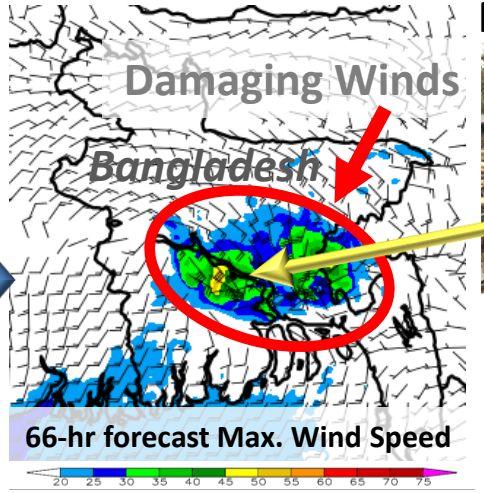


# 2. Progress in AST Year 1

## *Thunderstorm Forecasting System*



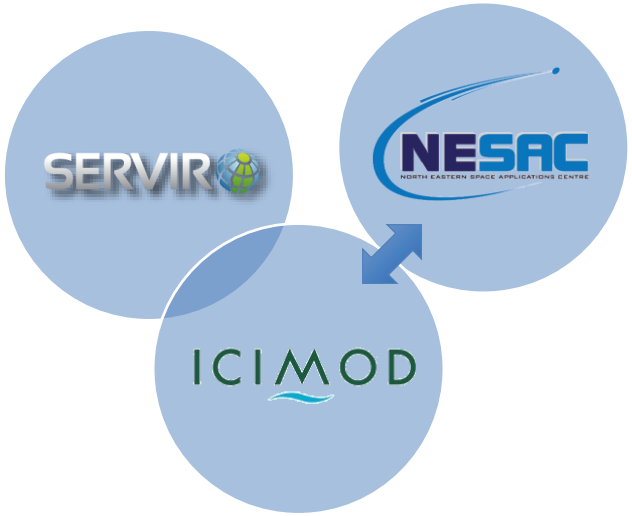



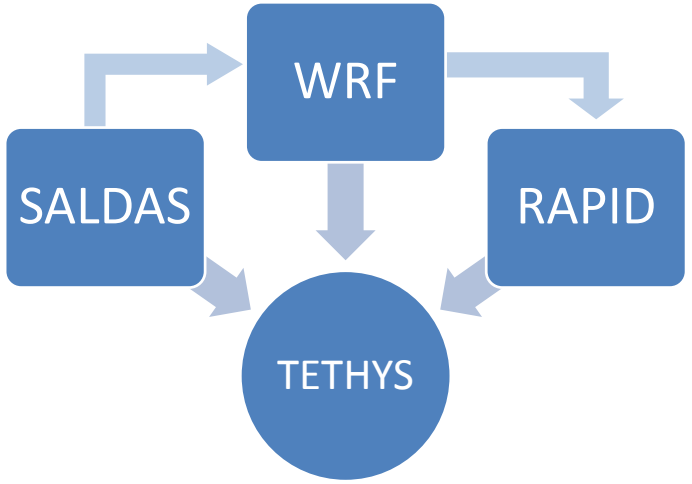

## Model Validation

Nor'wester/tornado event that damaged ~400 houses and injured 150 in Central Bangladesh

## *Facilitated New Collaboration*




## *Enhancing Capabilities amongst HKH AST Projects*




## *Initiated Cross-hub Collaboration*

# 3. Looking Forward


**PY2**

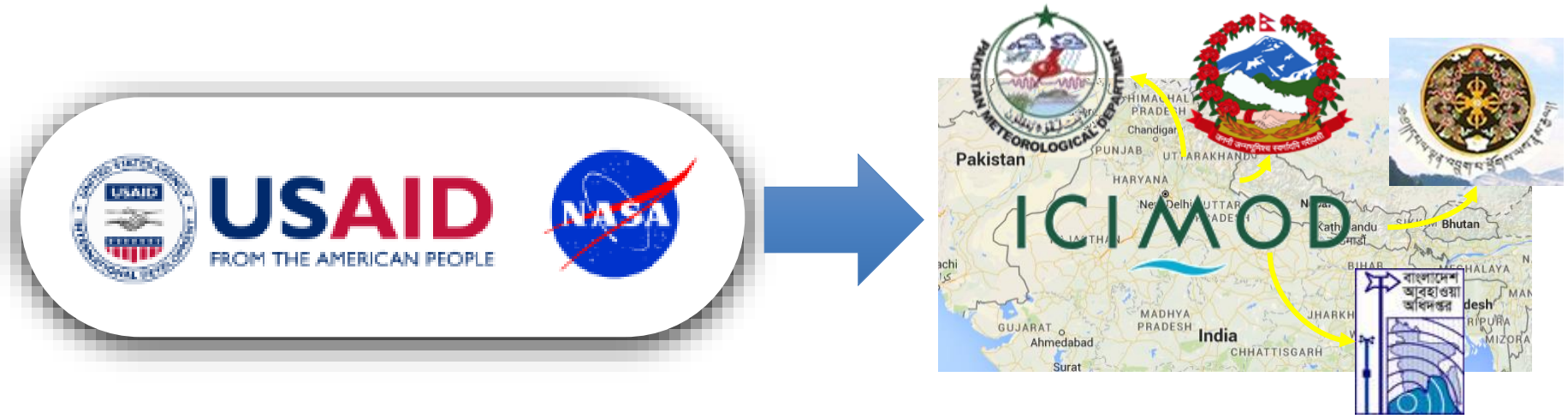
- High Impact Weather Assessment Toolkit (HIWAT) facilitates service to monitor extreme weather in the HKH region
  - Satellite-based thunderstorm assessment from GPM Constellation
  - Implement ensemble-based t-storm forecasting system on SERVIR cluster
  - Integrate HIWAT components and demonstrate during 2018 pre-monsoon
- Provide 0-72-hr WRF-based precipitation forecast to FEWS pilot project with ICIMOD/DHM-Nepal/MercyCorps
- Collaboration with NESAC
- Train the hub advocate

**PY3**

- Transition HIWAT to ICIMOD
- Training and outreach
- Trial period at DHM-Nepal (or other end-user)

# 4. Summary (Expectations)

1. ICIMOD has capacity to address high impact weather needs of its stakeholders (e.g., early warning service, disaster response)
2. HIWAT capabilities to enrich decision-making have been confirmed by DHM-Nepal (or similar end-user)
3. SERVIR portfolio contains high impact weather modeling and related satellite-based assessment capabilities



# A view from above

*From the International Space Station as it crossed a thunderstorm over Nepal on April 13, 2016 (taken by Astronaut Tim Peake, courtesy NASA)*