Background

CHALLENGES

- Regional knowledge gap on EO & GIT
- Emerging EO and GIT techniques
- Large capacity gap
  (shortfall of professionals and trained specialists)
- Lack of women participation
- Monitoring and evaluation
- Others
  (Communication, Customization)

OPPORTUNITIES

- Collaboration with stakeholders
- Acquiring cutting-edge expert knowledge
  (Engaging SMEs)
- High demands of capacity development
  (systemic capacity building pathways)
- Women-focused capacity building programs
- Effective impact tracing
  (Short/long term)
- Interaction with diverse group
  (Understanding best practices)

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Agriculture and food security

Land cover and land use change and ecosystems

Water resources and hydro–climatic disasters

Weather and climate

Air quality

Major focus

- **Science and technology innovations**/advances to solve development challenges
- **Build capacity** of people and institutions to integrate EO science and technology
- **Foster strategic collaborations** across scales and sectors to achieve sustainable solutions

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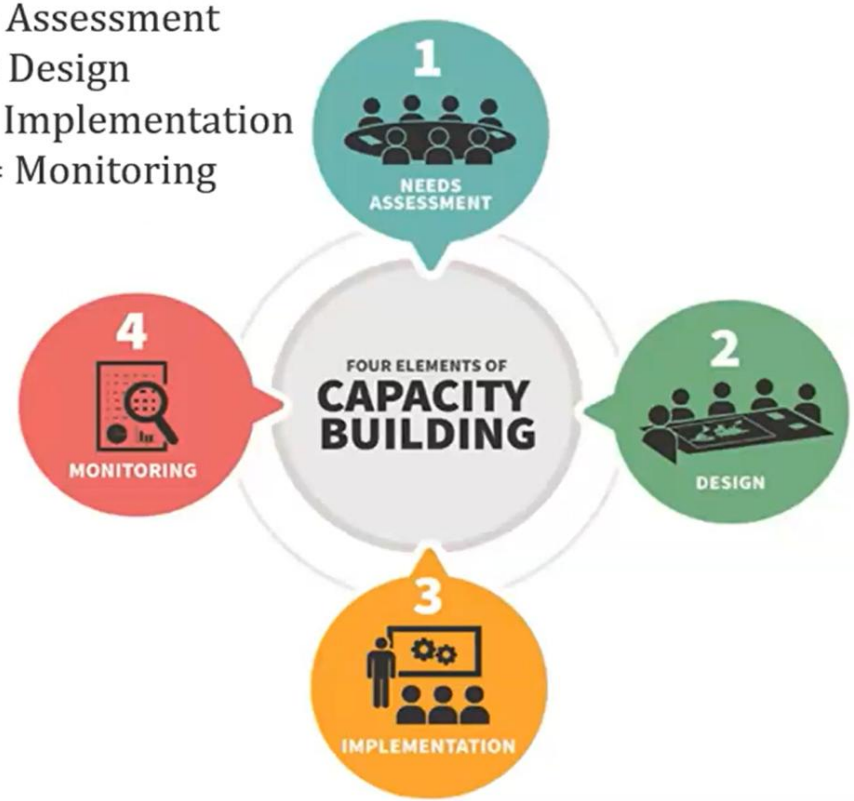
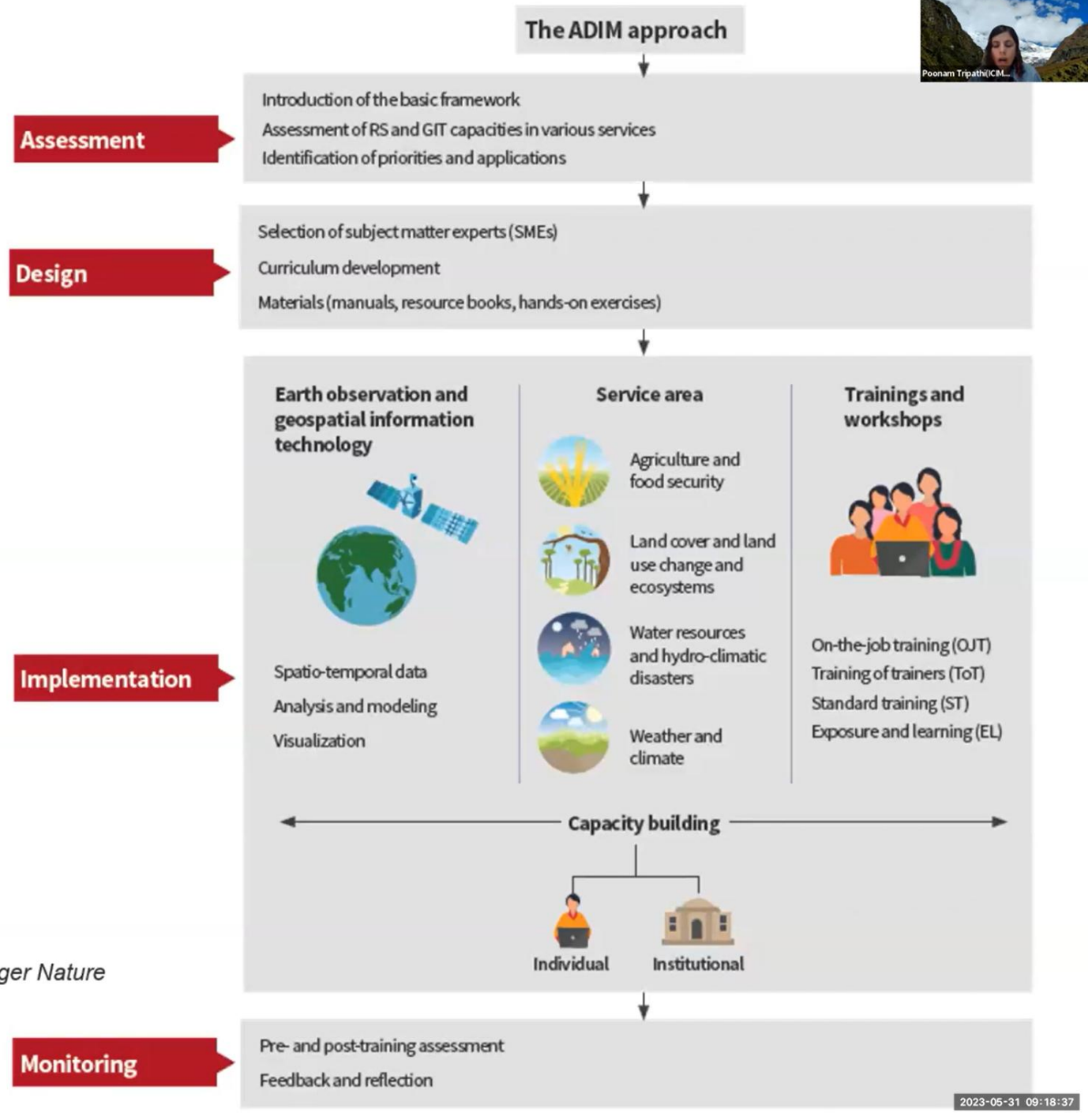
Pathways to impact – continue innovative approach

Elements of Capacity building (CB)

A = Assessment
D = Design
I = Implementation
M = Monitoring



*Thapa et al. (2019), Frontiers; Thapa R.B.T., **Tripathi** et al., (2021), Book Chapter Springer Nature*



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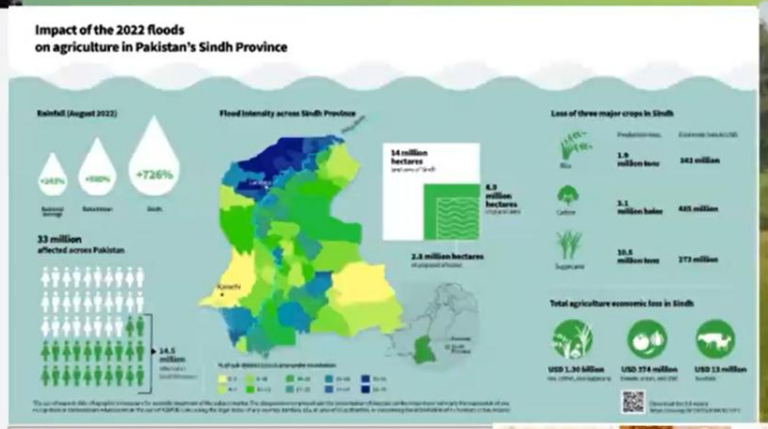
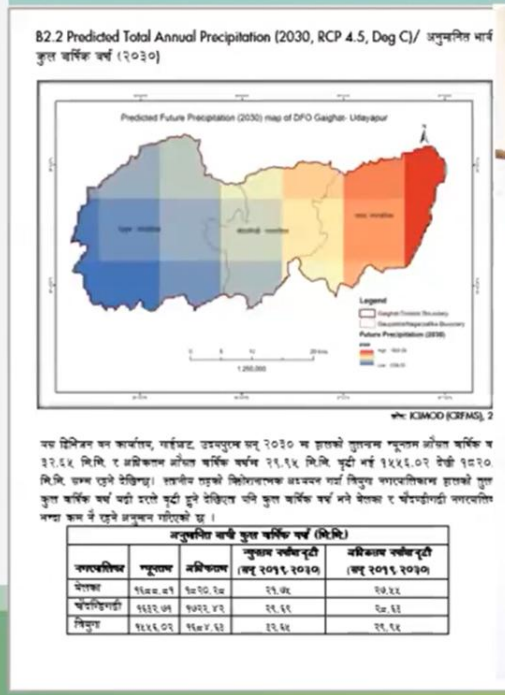
Pathways to impact

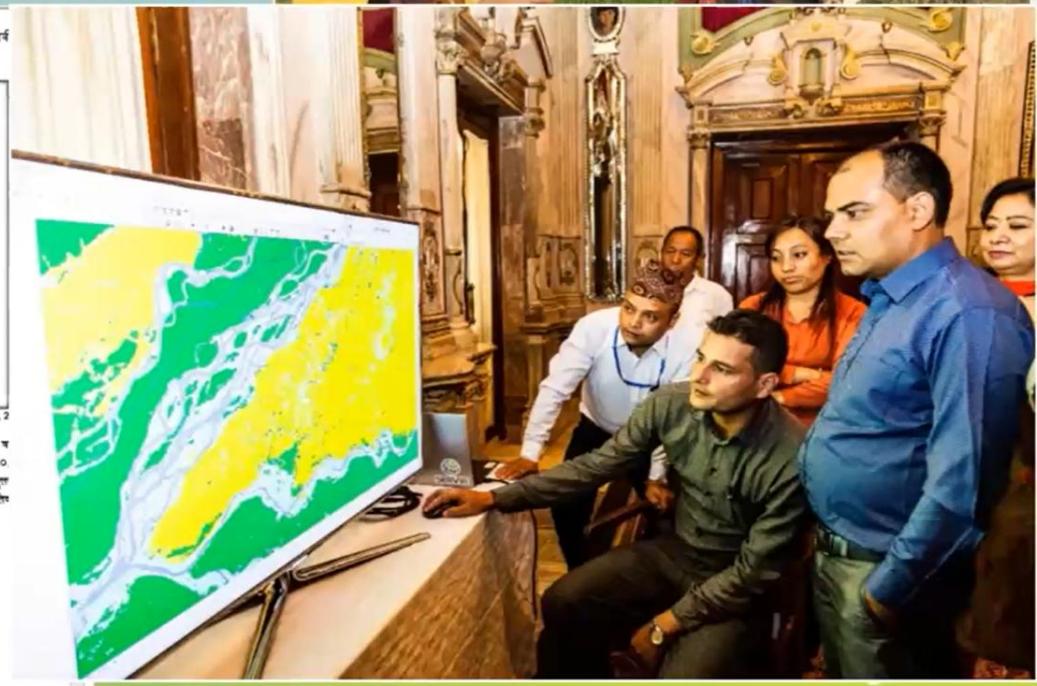
1. Science and technology innovation

EO data for

- Land cover mapping and monitoring
- In season rice crop mapping
- Drought monitoring
- Flood inundation mapping
- Weather forecasting
- Flash flood prediction
- Forest fire monitoring
- Landslide monitoring
- Application and tools development
- and so on.....

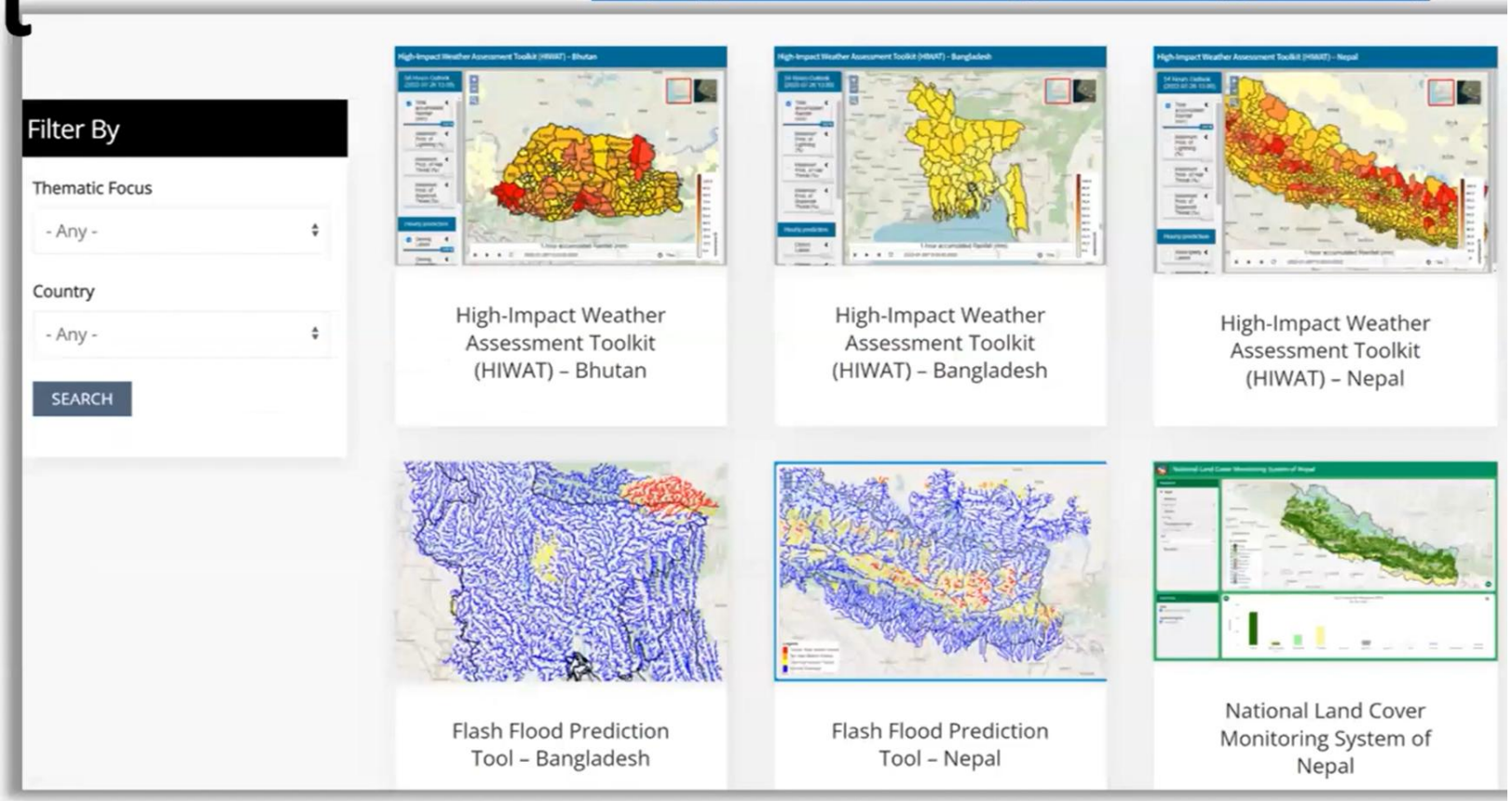






Pathways to impact

https://servir.icimod.org/science-applications/



Science applications (functional)
Users can filter by **thematic focus** or **Country**

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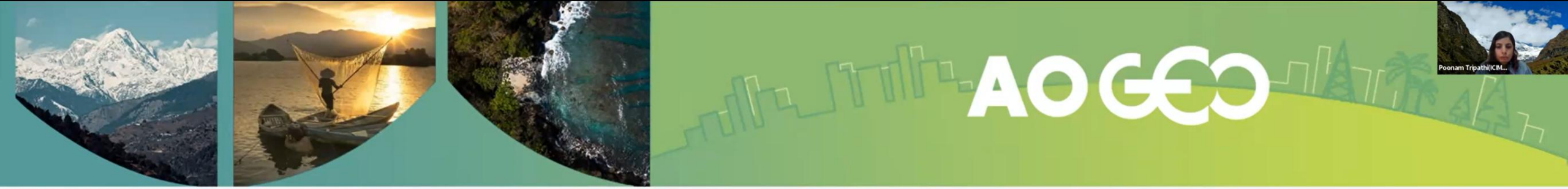
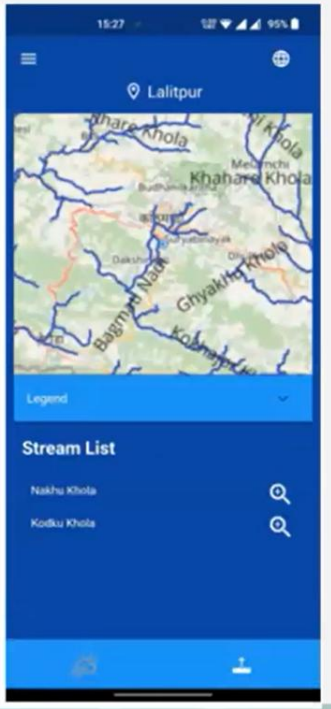


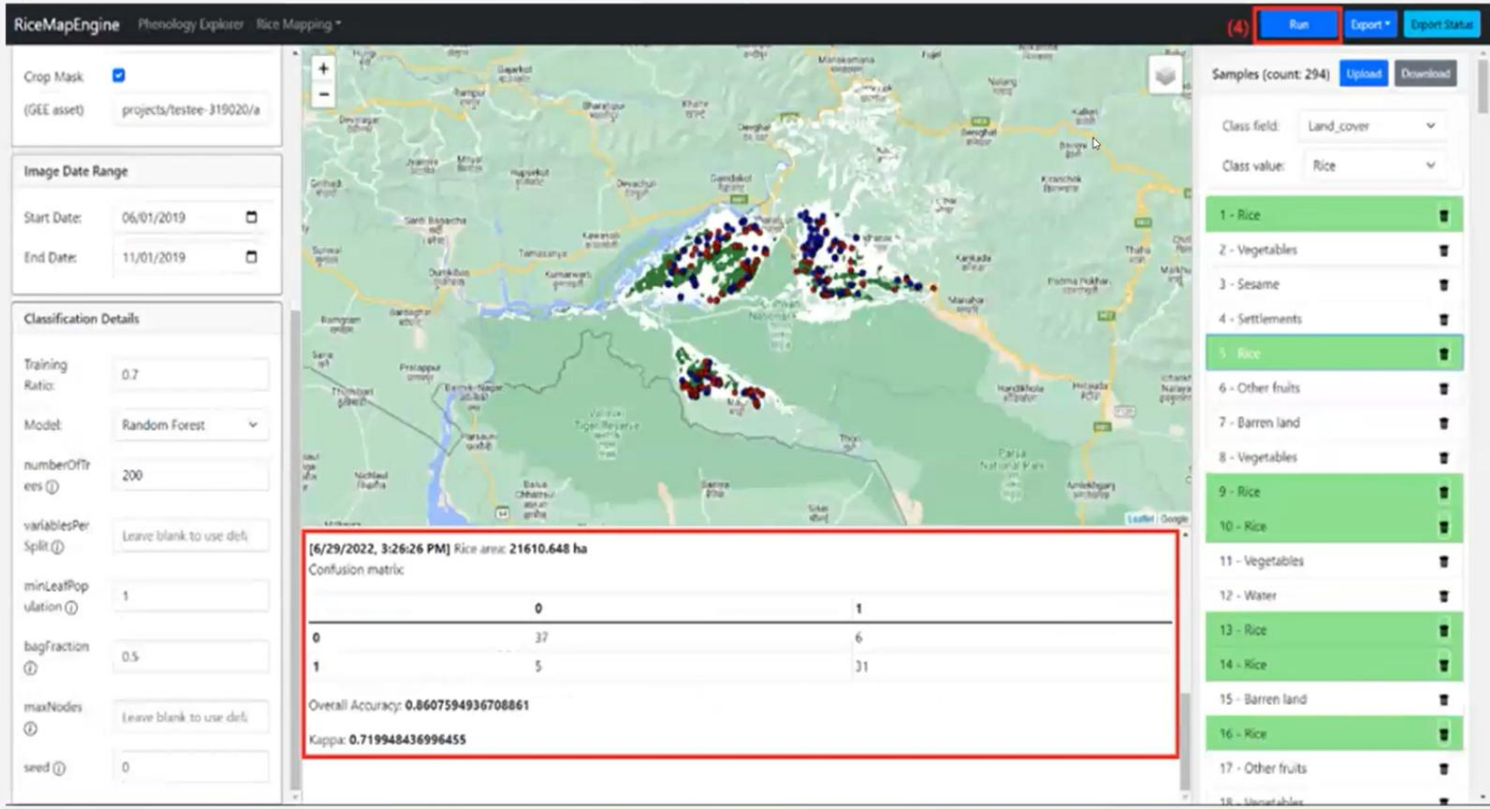
Pathways to impact

Science applications (under development)

HiWAT weather mobile app



RiceMapEngine



Pathways to impact

2. Capacity Building (till May 2023)

Total 189 participants

Title	Thematic area	Training Type	Total
Forest carbon stock measurement using Earth observation data	LULC&E	OJT	2
Forest carbon assessment using EO and GIT	LULC&E	ST	41
In-season Crop Mapping and Damage Assessment using Open-access EO data	AFS	ST	24
In-season Crop Mapping and Damage Assessment using Open-access EO data	AFS	ST	30
Use of SERVIR-HKH science applications for disaster preparedness in Nepal	AFS	ST	30
Enhancing disaster preparedness in Nepal's Bagmati Province	AFS	ST	22
Forest fire information system management in Nepal	LULC&E	ST	24
Forest monitoring and carbon Mapping	LULC&E	ST	16

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Pathways to impact (Institutional capacity)

Disaster preparedness in Nepal, Nepal Red Cross Society

For provincial and local governments to improve and localise flood early warning systems

In-season Crop Mapping, DAE, Bangladesh

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Pathways to impact

- Focus on youth and women
- Closing gender gap in STEM

Empowering women in geospatial information technology – 2023 edition

Date	13 Jun 2023 to 16 Jun 2023
Venue	Zoom
Contact Persons	servirhkh@icimod.org
Type	Training
Programmes	SERVIR-HKH

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Pathways to impact

Global network, partnerships and policy influence

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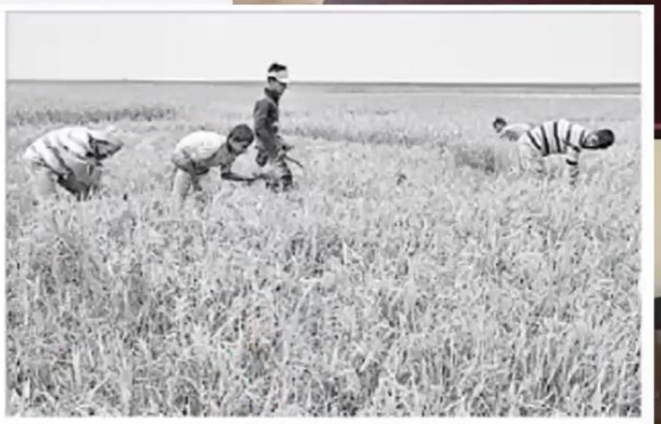
Pathways to impact

3. Strategic collaborations

Localization of early warning system

Partnership with

- Practical Action – EWS strategies for Karnali and Far West provinces; customization of HIWAT and Streamflow applications
- Red Cross (Danish, Finnish and Nepal) for adoption at municipal levels
- APF Disaster Training Centre for adoption in regular curriculum
- Local level awareness with FFWC, Bangladesh



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Pathways to impact

Adoption by national partner

Bangladesh Meteorological Department (BMD) launched HIWAT at their campus on 29 March 2022

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NLCMS formally launched as national system for Nepal

- Partnership between SERVIR hubs (Mekong) and global network (USFS, UMD, FAO) to bring sate of the art methods and technologies
- Co-development with national partners (including contributions in field work)
- Adoption by national government
- Contribution to all national reporting requirements

Conclusions

- Simple approach to cater the needs in the region.
- Promotes GESI, adopts frontier technology, engages SMEs and provides sustainable solutions, focuses on partners' priorities.
- The OJT and ToT type of capacity building activities play a very important role in institutional capacity building.
- The standard training type of activities are powerful in building individual capacity and improving the GESI balance in the technical professional workforce.
- The exposure learning visit brings young people together and provides a competitive environment of learning wherein they gain and share knowledge among themselves and others.
- Large number of unique organizations and communities worldwide were benefitted in past.
- Our efforts in region help promoting the Himalayan GEO activities (AOGEO Tasks), on capacity building on utilization of EO data.

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