Integrating Geospatial Technologies in Climate-Smart Agriculture Planning and Management in South Asia - CBA2020-13MY-Thakuri

2021-2023

Inception Meeting

Date: Monday, 04 October 2021
Time: 12:00 (NPT); 12:15 (BTT); 11:15 (PKT)

Agenda:

1. Welcome and introduction - *All Participants*
2. Sharing of the approved APN Project – *Dr. Sudeep Thakuri*
3. Discussion and plan for the project – *All Participants*

Participants:
- Dr. Sudeep Thakuri, Nepal
- Dr. Madan Lall Shrestha, Nepal
- Dr. Pashupati Chaudhary, Nepal
- Ms. Kalpana Shahi, Nepal
- Dr. Shaukat Ali, Pakistan
- Dr. Shah Fahad, Pakistan
- Dr. Sonam Tashi, Bhutan
- Dr. Karma Sherub, Bhutan

Platform: Zoom
Meeting ID: ████████████
Passcode: ████████

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- o Dr. Karma Sherub, Bhutan
- ▪ Mr. Panch Dev Bhatta, IT Expert

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Introduction

- Agriculture - one-third of the national GDP in Nepal (CBS, 2016), 23% in Pakistan (Plecher, 2019), and 17% in Bhutan (NSB, 2018).
- Employs 65%, 60%, and 44% of the population in Nepal (CBS, 2016), Bhutan, and Pakistan (FAO, 2019), respectively.
- Agriculture is immensely affected by climate change (CC) in these countries.
- Climate-Smart Agriculture (CSA) has been identified as a sustainable solution to CC challenges in agriculture; however current efforts in CSA limit to conventional planning, extension, and dissemination approaches.
- Aims **to integrate geospatial technologies in the CSA planning and management in Bhutan, Nepal, and Pakistan** with the ultimate goal of mainstreaming this technology in the local and national planning process.

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Objectives

To strengthen the capacity of local government and stakeholders on the application of geospatial technologies in CSA planning and management for promoting sustainable agriculture in Bhutan, Nepal, and Pakistan.

Specific objectives
1. Assess the potential application of geospatial tools for CSA management in the selected watershed in Nepal, Bhutan, and Pakistan;
2. Enhance capacity for application of geospatial techniques for the best/innovative CSA planning and management in the collaborating countries;
3. Establish working stations in the selected places to bring together stakeholders for discussions, knowledge sharing, leading to the adoption of best CSA technologies and practices

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Site Selection

- Representative sites will be selected for the field study.
- East Rapti River basin (3,222 km^2) in central Nepal, Peshawar basin (15,270 km^2) in northern Pakistan, and Ngera Amarichu basin (2,348 km^2) in the eastern part of Bhutan.

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Project Methodology

- Review the potential application of the geospatial tools and techniques in agriculture planning and management, which will be followed by a field assessment. Annual agricultural practices and all types of agricultural crops.
- Detailed cropping patterns, along with existing climate change challenges and practices adopted to address them, will be assessed during field assessment.
- Field-based information will be combined with the information obtained from the literature review to develop a detailed assessment report for each country.
- Using the assessment report and expertise of the resource person (s), a training module on the application of geospatial technologies will be developed.

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Training Activities

- A joint intensive training programme will be conducted by International Expert and selected members of our team.
- About 15-20 participants
- After a joint training, the trained trainees from each country will organize training sessions in their home country for the local government units
- Application of geospatial technologies in agriculture, including agricultural resource management and dynamic monitoring, estimation of crop yield, assessment of land suitability, prediction and integrated management of plant diseases and insects, and precision input application will be part of the training module.

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- 70 persons (10 from each province) in Nepal and 40 persons in each Bhutan and Pakistan
- three in the first year and four in the second year
- representatives of the local government bodies of the province.
- During the training, the focus will be given to the application and upscaling of the geospatial analysis-based agriculture management plan of the local bodies.

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Expected Deliverables/Outputs

- Document the field assessment-based application of the geospatial tools in CSA which will help design the course and develop a training package.
- 150 persons from local government and stakeholder organizations will have the required skill on the application of geospatial tools and techniques in CSA management and planning which will improve local adaption to climate change impacts.
- The trainee will become capable of producing a geospatial dataset for CSA which will be useful for local planners and policymakers for strategy and policy formulation.

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- A geospatial solution workstation - help archive, analyze and disseminate information to farmers and CSA practitioners.
- Publication of research articles using project outcomes in peer-reviewed journals at the end of the project
- Strengthen regional and local linkages of professionals and local government staff, and farmers for the application of geospatial CSA planning and management practices in South Asia.

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Project Work Plan and Timeline

- The project will have the span across 2020 and 2022 as shown below:
- Year 1: August 2021 – July 2022
  Year 2: August 2022 – July 2023

Communication and Publications

- **Organizational website**: news and events, digital fact sheets, draft reports, final reports
- **Publications**: at least one scientific article in a peer-reviewed journal
- **Seminar and scientific conferences**: A final result-sharing workshop
- Field experience, stories, and pictures will be shared with APN.

Coordination & Budget

- Managed by the Faculty of Science and Technology, Mid-West University in Nepal
- An international expert from the United States will contribute to the joint training. The Expert Teams will work closely with relevant stakeholders to ensure the development of adequate capacity that addresses current barriers.
- Pakistan and Bhutan partners will coordinate and conduct training in their respective countries.
- Fund will be managed by the Nepal team and the appropriate amount will be transferred to the other countries for which letter of agreements (LoA) will be signed.

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Total project cost for two years: USD 69,950
Contribution from MU: USD 9,950
APN Contribution: USD 60,000

- Travels
- Basic field costs
- Trainings costs

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Technical Collaborators

SN	Name	Affiliation	Country	Role
1	Sudeep Thakuri	Mid-West University,	Nepal	PI
2	Pashupati Chaudhary	ADPC		Collaborator
3	Madan Lall Shrestha	Nepal Academy of Science and Technology		Collaborator
4	Shaukat Ali	Global Change Impact Studies Centre	Pakistan	Collaborator
5	Shah Fahad	University of Swabi		Collaborator
6	Sonam Tashi	Royal Bhutan University	Bhutan	Collaborator
7	Karma Sherub	Royal Bhutan University		Collaborator

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