A Report on

Workshop on Identifying Potential Research Areas for Ecosystem-based Adaptation (EbA) in Urban Areas of Nepal

Nepal Climate Change Knowledge Management Centre (NCCKMC)
Science and Technology Information Centre (STISC)
Nepal Academy of Science and Technology (NAST), Lalitpur, Nepal

25 February, 2025

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Report Prepared by:

Dr. Bimala Devkota, Chief Scientific Officer, NAST

Mr. Pawan Kumar Neupane, Senior Scientific Officer, NAST

Mr. Suman Poudel, Assistant Research Fellow, NAST

1. Background

The Nepal Academy of Science and Technology (NAST) in collaboration with Kathmandu Valley Development Authority (KVDA) is undertaking *Implementation of Urban EbA Research Activities Project* aiming to strengthen knowledge and awareness on Nature-based Solutions (NbS) and Ecosystem-based Adaptation (EbA) strategies in urban areas of Nepal, particularly the Kathmandu Valley. The project is a part of (Output 2.1) "Urban Ecosystem-based Adaptation for Climate-resilient Development in the Kathmandu Valley, Nepal" (Kathmandu Urban EbA Project), approved by the Global Environment Facility (GEF) in 2019 with Least Developed Countries Fund (LDCF) climate grant. The project will support 43 research projects, for research scholars and practitioners across multiple academic levels—PhD, M.Phil., Master's, Bachelor's students, and research practitioners affiliated to academies/research institutions. Among them, 30 research projects will focus on the urban context in the Kathmandu Valley while remaining 13 research projects on the urban context outside the Kathmandu Valley. An amount of USD 55,550.00 has been solely allocated for the research grants. The allocated number of scholars for each of the five categories is subject to adjustment to reach the target in the event of having received low entries in any specified category.

In line with this, NAST has formed a Research Grants Selection Committee (RGSC) mandated to develop a Research Grants Manual including the themes, eligibility, criteria and evaluation process. RGSC through its Grants Manual Drafting Team has drafted a Research Grants Manual as a comprehensive guide to outline the procedures, grants policy, guidelines, and requirements for fair and impartial management of the research grants. Along with different thematic research areas, the manual has incorporated detailed instructions for researchers, institutions, or organizations on application procedures, eligibility criteria and proposal format. The manual has been revisited by three expert reviewers and provided suggestions for further improvements in its content. Recognizing the importance of collaboration and inclusivity in the development of urban EbA research grants manual and identifying pressing urban EbA research areas, NAST targets to take inputs from a range of relevant stakeholders, including academic institutions, government ministries, research organizations, local and provincial governments, and professionals working on climate adaptation.

As part of this effort, NAST in collaboration with KVDA organized a half-day consultative workshop on Identifying Potential Research Areas for Ecosystem-based Adaptation (EbA) in Urban Areas of Nepal on 25 February 2025 in Kathmandu. The consultative workshop was designed to provide platform to a wide range of stakeholders for discussing the priority research areas and finalizing the research

grants manual and contribute to fostering a collaborative approach to addressing the pressing urban climate challenges in Nepal.

2. Objectives of the Workshop

The workshop was intended to gather feedback from stakeholders on urban research themes and research topics, as well as to fine-tune the research grants manual. The objectives of the workshop were to:

1. **Discuss the Draft Preliminary Research Areas**
    - Present and review a preliminary list of research areas related to urban EbA in the context of climate change adaptation in urban areas of Nepal.
    - Identify additional relevant research topics that should be prioritized to address urban climate challenges, especially in Kathmandu Valley and beyond.
2. **Seek Feedback on the Grants Making Process**
    - Gather feedback and suggestions from stakeholders regarding the research grants process, ensuring that it is efficient, transparent, and aligned with the national and local priorities for urban climate adaptation.
    - Discuss potential improvements to the Research Grants Manual, including eligibility criteria, application procedures, and any additional guidelines that can support a more effective grant-making process.
3. **Information Sharing on Research Grants**
    - Share information about the research grants available under the project and the application process to a wide range of stakeholders.
    - Encourage potential researchers and institutions to apply by outlining the expected impact of the research in enhancing urban resilience to climate change.

3. Workshop Approach

The workshop adopted an interactive and participatory approach to ensure a broad exchange of ideas and feedback from the stakeholders. It included two sessions:

i. Inaugural Session

ii. Presentation, Group Work and Discussion Session

i. Inaugural Session

The workshop started with a welcome address by Dr. Rabindra Prasad Dhakal, Secretary of the Nepal Academy of Science and Technology (NAST). In his remarks, Dr. Dhakal highlighted that the Ecosystem-based Adaptation (EbA) approach is increasingly taking center stage in adaptation efforts and has already proven successful in various parts of the world.

Picture 1: Welcome remarks by Dr. Rabindra P. Dhakal, Secretary, NAST

Picture 2: Inauguration of the program by Prof. Dr. Dilip Subba, Vice Chancellor, NAST and Ms. Januka Dhakal, Development Commissioner, KVDA

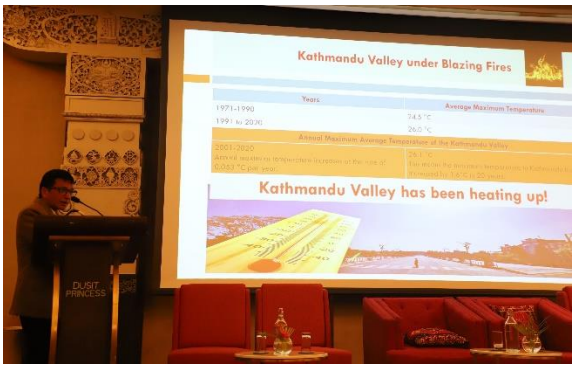
Prof. Dr. Pramod Kumar Jha, Academician, NAST and Chairman of the Research Grants Selection Committee illustred the objectives of organizing the workshop and highlighted the critical importance of EbA strategies in urban areas to combat the growing challenges posed by climate change. He emphasized the need for comprehensive research and collaboration to enhance climate resilience in Nepal's urban centers. Mr. Nava Raj Pyakurel, Deputy Development Commissioner of Kathmandu Valley Development Authority (KVDA) and National Director for the Urban EbA project expressed concern over the timely implementation of urban EbA project activities. He stressed the importance of good governance in ensuring timely achievements of all the activities of the project. Ms. Januka Dhakal, Development Commissioner, KVDA, echoed the urban climate change concerns and reiterated the urgent need of scientific findings for formulating urban policies in Nepal. She opined that the 43 research grants will be helpful in bringing out the evidences imperative for solving urban challenges posed by the climate change. Prof. Dr. Dilip Subba, Vice Chancellor of NAST, delivered the closing remarks, reiterating the importance of research in advancing EbA initiatives. He outlined the goal of attracting researchers from all academic levels, from bachelor's students to PhD scholars, to contribute to research focused on EbA in Nepal's urban contexts. His remarks underscored the need for collaboration in research to develop and implement effective nature-based adaptation strategies. The workshop was formally inaugurated by watering a plant by

Prof. Dr. Dilip Subba, Vice Chancellor, NAST and Ms. Januka Dhakal, Development Commissioner, KVDA.

ii. Technical and Group Discussions Sessions

The technical and group discussions session was chaired by Prof. Dr. Rejina Maskey. Dr. Bimala Devkota, Chief Scientific Officer, and Mr. Pawan Kumar Neupane, Senior Scientific Officer, NAST, facilitated the discussions. Mr. Durga Prasad Upadhyaya, National Project Manager of the Urban EbA Project at KVDA, presented his findings on the Kathmandu Urban EbA Project and Nature-based Solutions (NbS) for Climate Resilient Urban Development. His presentation focused on the progress and outcomes of the EbA projects in the Kathmandu Valley, outlining key challenges and successes. Dr. Bimala Devkota and Mr. Pawan Kumar Neupane also discussed the key research themes and areas under the Research Grants program. These discussions helped to outline new avenues for research and fostered collaboration among participants.

Picture 3: Workshop technical presentation by Dr. Bimala Devkota, Chief Scientific Officer, NAST



Picture 4: Highlighting urban issues of Kathmandu Valley by Mr. Durga Pd. Upadhyaya Urban EbA National Project Manager, KVDA

Picture 5: Presenting research grants manual scopes by Mr. Pawan K. Neupane, Senior Scientific Officer, NAST

Picture 6: RGSC Chair Prof. Dr. Pramod K. Jha providing workshop objectives and expectations

For Group Discussion, participants were divided into 9 groups based on the research themes viz. Agriculture and Food security, Forests, Biodiversity and Watershed Conservation, Water Resources and Energy, Industry, Transport and Physical Infrastructures, Health, Drinking Water and Sanitation, Tourism and Natural and Cultural Heritage, Disaster Risk Reduction (DRR) and Management, Gender Equality and Social Inclusion, Livelihood and Good Governance, EbA Economics and Climate Finance Management. Most of group members were represented by the experts of thematic areas. The group members were provided with the list of thematic areas and identified research areas. Group discussions focused on identifying potential research topics, and how the research grants can better support urban EbA.


Picture 7: Group discussions among stakeholders to identify and prioritize research areas

After thorough discussion on the list, the participants added more research areas and specific topics highlighting the priority of research areas in the urban areas of Nepal. A member from each group presented the group works while other participants further provided feedback and suggestions. After the group work, various experts contributed valuable insights on both the research and policy dimensions of EbA. Dr. Deepak Kumar Khadka, Senior Research Fellow at the Policy Research Institute of the Government of Nepal, presented research focused on policy-level interventions. He emphasized the need for policy reforms to integrate EbA strategies at the national and local levels. Dr. Sunil Babu Shrestha, Academician and former Vice Chancellor, NAST shared his experiences with EbA planning at the National Planning Commission. He highlighted the importance of integrating EbA into national and local development planning processes and ensuring that local representatives are well-versed in these strategies. Mr. Batu Krishna Upreti, Technical Advisor the Urban EbA Project highlighted the difference between EbA and Community-based Adaptation (CbA) practices and urged researchers to focus on EbA while doing research. He also emphasized on the sustainability of EbA research grants. Finally, thanking all the presenters and participants, the session was summed up by Prof. Dr. Rejina Maskey, the session chair.

The workshop concluded with the vote of thanks form Prof. Dr. Pramod Kumar Jha. In the concluding remarks, he expressed gratitude to all participants for their valuable contributions. He emphasized the significance of the workshop in advancing understanding of EbA and hoped that it would attract more researchers to the field. Prof. Jha also expressed optimism that the outcomes of the workshop would lead to a stronger understanding of EbA's role in climate adaptation and contribute to policy and community-level impacts in Nepal. There is a need for stronger partnerships between academia, government, and civil society and more financial resources to ensure the research activities in urban EbA.

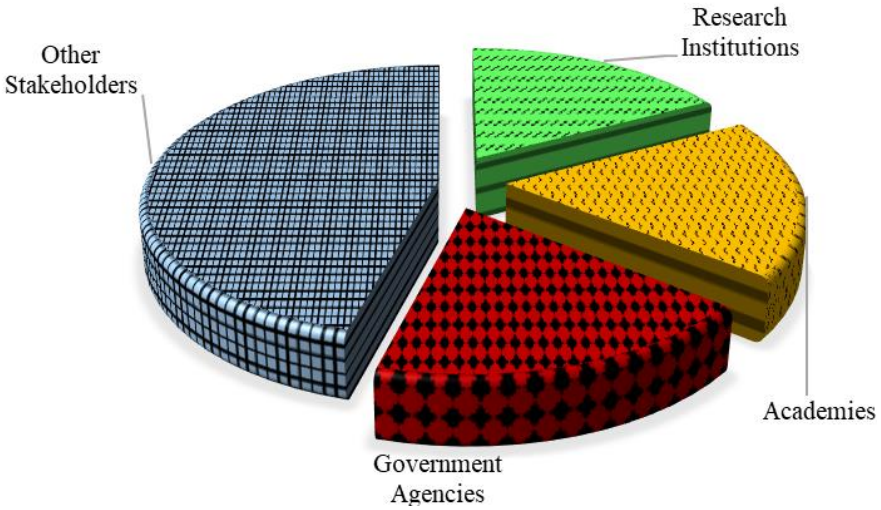


Fig 1: Representation of participants in the technical session of the workshop

Suggestions from the participants for probable research focus areas and priority for urban areas of Nepal are mentioned in the table below.

SN	Research Themes and Areas	Potential Research Focus Areas
Agriculture and food security		
Urban farming		Vertical farming; Hydroponic systems; Roof-top farming and gardening; Aquaponics (Agriculture +Aquaculture); Circular bio-economy and resource management
Agro-ecology and traditional farming methods		Neglected and Under-utilized crop species farming practices; Crop diversity (Intercropping, multiple cropping, mixed cropping etc.) and climate resilient crops; Seed preservation and conservation of landraces; Pollinators preservation; Indigenous varieties conservation;
Climate Smart agriculture		Water efficient irrigation system; IoT based agriculture; Low cost protected agriculture structure; Ecosystem based disease and pest management
Traditional food, preservation		Indigenous post-harvest management; Local food

techniques and Value addition	processing techniques; Indigenous food diversification practices and prospects
Soil Management	Organic waste to compost; Indigenous soil microorganisms as a bio-fertilizer; Utilization of bio-char; Soil contamination and pollution management
Religion, culture and agriculture	Medicinal and nutritional value of crops and animal products; Agricultural products to religion and culture
Forests, biodiversity and watershed conservation	
Restoring fragmented habitats	Potential plantation sites identification; Habitat suitability assessment; Riverbank land reclamation; Habitat restoration and modelling
Remnant vegetation	Historical/Baseline data (richness, abundance); Conservation values of remnant vegetation
Human-wildlife conflict in urban areas	Human carnivores/herbivores/ primates conflict; Animal behavior in urban areas/Spatial locations of wildlife; Zoonotic diseases
Green Corridors and Blue corridors	Potential area assessment; River corridor wildlife study; Connection between wetlands, protected areas, forests etc.
Urban forests management	Identification of potential indigenous ornamental plants for open space and road sides; Spatial distribution of urban trees and open spaces; Selection of climate-resilient urban tree species; Impacts of urban trees in micro climate regulation; Impact of urban forestry in air pollution reduction; Survival status of roadside plantation; Impact of linear infrastructure on biodiversity; Turf grass management
Biological invasion	Identification of exotic species in the urban areas; Impact assessment; Management recommendations; Identification of usage of invasive species; Control measures of invasive species
Climate and biodiversity modelling	Climate and biodiversity relations and their impacts specially on the proliferation of invasive species; Impact of urban forestry in micro-climate change
Ecosystem health and biodiversity assessment	Urban Gardens/Micro-ecosystem assessment; Spatial distribution; Species selection/impact; Vegetative and riparian zones; Conversion of ecosystems into urban areas and loss of ecosystem goods and services (with time series data)
Wetlands	Water quality; Biodiversity assessment; Functions; Wetland health report card; Urban watershed and hydrological modelling
Water resources and energy	
Water conservation through ecosystem restoration	Water recharge; Improving water quality and supply
Stream water quality	Upstream area management; watershed management; Sedimentation and pollution management- point source control
Urban river and stream	Stakeholder mapping and analysis; Revive water resource.

restoration	Ponds, *dhunge-dhara*, well;
Constructed dams and ecological impacts	Critical study -Pros and Cons: flood management, freshwater
Artificial ground water recharge	Rain water harvesting and underground water recharge; Exploration of artificial water recharge measures; Rooftop in urban areas;
Sustainable groundwater management	Develop model for creating sustainable ground water management
Groundwater and contamination modelling	Modelling and projection;
Nature-based water purification technologies	Exploration and measurement
Urban waste to energy	Sustainable solid waste management; Recycling and upcycling for energy generation; solid waste to energy
Green infrastructures for energy distribution	Integration of EBA in energy distribution system
Energy and ecosystem restoration	Forest waste; Watershed for hydropower; Scientific ways to improve ecosystem functions, goods and services; Loss of ecosystem goods and services from extreme weather events and ways to reduce water-induced disasters (aquatic/river ecosystem)
Vulnerability assessment of urban water systems	Mapping and assessment; Prioritization of vulnerable water systems
Revitalization of traditional water supply system	Mapping, status assessment (issues) and recommendations in historic urban centers
Industry, Transport and Physical Infrastructures	
Public private partnership for sustainable urban infrastructure development	Possible approaches to integrate EbA into the urban planning process and/or to encourage EbA-based urban planning
Low cost technologies	Low cost and long-term solutions to adapt to climate change impacts in the urban areas
Tourism and natural and cultural heritage	
Cultural landscape for climate adaptation	Sahari gram (Urban village); Remote eco-village; Design of cultural homes; edible green city;
Migration impacts on heritage sites	Cultural erosion, western influence, modernization
Cultural village and tourism	Documentation of local heritage settlements, preservation and enhancement;
Health, Drinking water and Sanitation	
Urban heat stress and health	Impact of heat stress on human health;
Heat and health vulnerability mapping	Vulnerability mapping of health care facilities; Microbial diversity as indicators of ecosystem based adaptation;
Vector and water borne diseases	Vector and vector borne diseases (e.g. Dengue); Water borne pathogens and transmission dynamics; Mitigation of water borne pathogens; Circulation of human pathogens in wastewater and broader environment;
Biomaterials	Application of biomaterials in mitigation of water pollution
Air quality and health	Chemical and microbial air quality (indoor & outdoor air);

	Impact of air quality on human health;
Bioremediation	Wastewater (municipal, industrial); Plastic degradation;
Disaster risk reduction (DRR) and management	
Role of different ecosystems (forests, wetlands, , etc.) in reducing vulnerabilities to climate-related risks such as flooding, drought, and heat waves	Status of urban forest of Kathmandu Valley; Status of wetland and its restoration management; Status and role of open spaces and parks; Forests types and cooling capacity, water storage, flood controlling; Contribution of EbA in reducing climate vulnerability, enhancing adaptive capacity and building climate resilience of the climate vulnerable communities of the urban areas (case study approach)
Mainstreaming EbA with Disaster Risk Reduction (DRR)	Policy and Governance barriers and gaps to mainstream EbA in DRR; Role of actors and institutions for mainstreaming EbA; Existing good practices on EbA in addressing climate change impacts in the municipalities;
Integrated watershed management	Conservation ponds in East, North, South of KV; Impact of Land use land cover change (housing, road construction); Impact of municipal waste in exacerbating disasters
Wetland restoration	Assessment of existing scenario of wetland (ponds) in urban areas; Ecology assessment; Restoration of ponds and rivers (e.g. *Saptapatal Pokhari* in Lalitpur, Bagmati river, etc.) Community engagement; Best practices and technologies (including indigenous knowledge)
Green infrastructure for controlling flood	Green roof design and effectiveness in reducing drainage; Bioswales, Raingardens feasibility and effectiveness; Feasibility of the green belt and its effectiveness; Roadside plantation design and species selection; Effectiveness of current roadside plantation and design
Bioengineering	Controlling soil erosion; Species selection (Veltiver plantation) in peri-urban area;
Economic cost of disasters	Loss and damage study of disasters; Socio-economic impact on informal settlements due to urban flooding and other disasters; Comparative study of business as usual and EbA implementation; Ecosystem Accounting under SEEA framework; Ecosystem services studies; Loss and damage due to climate induced disasters and potential its mitigating strategies
Eco-designs and Heat Resilient urban design	Types of green buildings for Urban Heat minimization; Energy use and HVAC system of building;
Role of Green walls, Open spaces and parks in urban ecosystem	Green walls designs, Status of green spaces, Design of parks and open space; Impacts of green roofs, gardens, or roadside/riverbank plantation or urban green infrastructure in reducing temperature rise, air and water pollution and conserving biodiversity; Contribution of gardens or parks or permeable pavements in reducing storm water runoff and flood risks
Digital monitoring and early warning systems	Vulnerability and risk Mapping; Modelling; Effectiveness of EWS; Rainfall, flood monitoring; River discharge monitoring

EbA Economics and climate finance management	
Environmental sustainability and economic benefits against other adaptation methods	Identifying potential funding mechanism and economic incentives to promote the adaptation of urban EbA practices; Economic and social benefits of implementing EbA interventions to urban dwellers as compared to traditional engineering approaches or hybrid approaches;
Ecosystem-services valuation	Estimating the economic value of ecosystem services provided by urban green spaces; Ecosystem-valuation methodologies; Refinement on data collection and analytical methodologies
Payment to Ecosystem Services (PES)	Assessing the cost effectiveness of different urban EbA interventions compared to traditional engineering approaches
Conservation based tourism	Cost benefit analysis of urban restoration and conservation
Green jobs, Green Bond	Nature based enterprises and its livelihood upliftment; Sustainable income-generating infrastructures (e.g. Hot Bazar, Startup business spaces, etc.)

4. Outputs

This workshop marked a significant step in the advancement of EbA in Nepal's urban areas, with a clear commitment to future research, policy development, and implementation by bringing together the policymakers, researchers, and experts to identify the key Urban Research Areas. A finalized list of priority research areas related to urban EbA has been developed, based on the inputs from the workshop which are incorporated in the Research Grants Manual for EbA Research Grants. These research areas are also expected to inform future research directions, aligning with national climate change policies, planning and urban resilience goals. Also some participants' suggestions on eligibility criteria, proposal formats, and evaluation procedures were taken into account to ensure the grants making process impartial and fair. The workshop also informed wider group of stakeholder engagement about the available research grants and the importance of urban EbA research while serving as an initiative to create a network of experts and practitioners focused on Nature-based Solutions in urban areas. This network will also play a key role in developing a long-term EbA (Ecosystem-based Adaptation) research strategy and establishing permanent EbA research plots in near future encouraging collaboration among researchers, from students to senior scholars, to enhance the EbA research in urban areas.

The specific outputs of the program include:

1. **Awareness and Enrollment**: Over 55 institutions and relevant stakeholders were informed and enrolled in the urban EbA research design process ranging from research institutions, academic scholars and implementing bodies.

2. **Platform for Sharing Concerns**: A common platform was created for practicing institutions to raise and share local issues and concerns related to climate change impacts on biodiversity and livelihoods of urban residents of Nepal.
3. **Identification of Research Topics**: Potential research topics and objectives were identified, which can help student researchers focus their studies, thereby narrowing down the scope of research and increasing the likelihood of effective outcomes.
4. **Informed Grant Implementation Process**: Participants were informed about the transparency of the grant selection process and how the project would be implemented through the Nepal Academy of Science and Technology (NAST).

Annex I: Program Schedule

Workshop on Identifying Potential Research Areas for Ecosystem-based Adaptation (EbA) in Urban Areas of Nepal

13 Falgun 2081 (25 February 2025)

Venue: Hotel Dusit Princess, Lazimpat, Kathmandu

Organized by

Nepal Academy of Science and Technology (NAST), Khumaltar, Lalitpur

In collaboration with

Kathmandu Valley Development Authority (KVDA), Anamnagar, Kathmandu

Program Schedule

Time	Activities	Responsibilities
8:30 - 9:30 am	Registration and Breakfast	Ms. Tara Upadhaya, Mr. Srawan Giri, Mr. Ajit Dhungana
Opening Session **Chair:** Prof. Dr. Dilip Subba, Vice Chancellor, NAST		
9:30 - 9:40 am	Welcome Address	Dr. Rabindra P. Dhakal, Secretary, NAST
9:40 - 9:50 am	Highlights of Workshop Purpose and Goals	Prof. Dr. Pramod K. Jha, Academician, NAST/ Chairperson, Research Grants Selection Committee (RGSC)
9:50 - 10:05 am	Remarks from Invited Dignitaries	Mr. Nava Raj Pyakurel, Deputy Development Commissioner, KVDA/ National Project Director, Urban EbA Project, KVDA Ms. Januka Dhakal, Development Commissioner, KVDA
10:05 - 10:10 am	Closing Remarks	Prof. Dr. Dilip Subba, Vice Chancellor, NAST
Group Photo		
Technical Session and Group Discussion **Chair:** Prof. Dr. Rejina Maskey, TU; Member, RGSC, NAST **Facilitator**: Dr. Bimala Devkota, Chief Scientific Officer/Mr. Pawan K. Neupane, Senior Scientific Officer, NAST		
10:15 - 10:35 am	Kathmandu Urban EbA project/NbS for Climate Resilient Urban Development	Mr. Durga P. Upadhyaya, National Project Manager, Urban EbA Project, KVDA
10:35 - 11:00 am	Research Grants: Highlighting Key Research Themes and Areas	Dr. Bimala Devkota, Chief Scientific Officer, NAST / Mr. Pawan K. Neupane, Senior

		Scientific Officer, NAST
Tea Break		
11:00 am - 12:30 pm	Group Work and Discussion	Facilitator, Moderators and Participants
	Arranging thematic areas group and moderators	
	Introducing the already identified areas	
	Identifying additional areas	
	Suggesting possible research topics	
12:30 - 1:00 pm	**Group Presentations and Recommendations**	Moderators/member from each groups
Closing Session		
1:00 - 1:10 pm	Technical Session Sum up	Prof. Dr. Rejina Maskey, TU; Member, RGSC, NAST
1:10 - 1:30 pm	Vote of Thanks and Closing Remarks	Prof. Dr. Pramod K. Jha, Academician, NAST
1:30 - 2:30 pm	Networking Session **Lunch**	

Annex II: Group Exercise Worksheet Format

Workshop on Identifying Potential Research Areas for Ecosystem-based Adaptation (EbA) in Urban Areas of Nepal

Group 2

THEME: FORESTS, BIODIVERSITY AND WATERSHED CONSERVATION

Group Tasks

1. Please prioritize the research areas/topics listed in the table and add potential research focus areas, specifically focusing on the national and city needs of the Kathmandu Valley.

SN	Research Areas	Priority Level	Research Focus (any specific)
1.	Restoring fragmented habitats		
2.	Human-wildlife conflict in urban areas		
3.	Wildlife underpasses and green corridors		
4.	Blue corridors		
5.	Urban forests management		
6.	Biological invasion		
7.	Remnant vegetation		
8.	Land degradation and management		
9.	Climate and biodiversity modelling		
10.	Ecosystem health and biodiversity assessment		
11.	Vegetative and riparian zones		
12.	Habitat restoration and modelling		
13.	Wetlands		
14.	Urban watershed and hydrological modelling		

15.			
16.			

2. Please suggest specific topics/sites and research questions (if any) that young researchers should focus on.

   (Your suggestions will be valuable in narrowing down the research focus in urban areas of Nepal.)

Annex III: List of Participants

S.N.	Name	Designation	Organization
1	Prof. Dr. Dilip Subba	Vice Chancellor	NAST
2	Ms. Januka Dhakal	Development Commissioner	KVDA
3	Prof. Dr. Pramod K Jha	Academician	NAST
4	Dr. Rabindra P. Dhakal	Secretary	NAST
5	Nava Raj Pyakurel	Deputy Development Commissioner	KVDA
6	Prof. Dr. Rejina Maskey	Professor	CDES-TU
7	Dr. Suresh Kumar Dhungel	Senior Technical Officer	NAST
8	Neesha Rana	Chief Scientific Officer	NAST
9	Pawan K. Neupane	Senior Scientific Officer	NAST
10	Bimala Devi Devkota	Chief Scientific Officer	NAST
11	Suman Poudel	Assistant Research Fellow	NAST
12	Om Kumar Baral	Office staff	NAST
13	Ajit Dhungana	Office Assistant	NAST
14	Manoj Kumar Shah	Technical Officer	NAST
15	Tara Upadhyaya	Officer	NAST
16	Rahis Khan	Research Assistant	NAST
17	Lipika Karmacharya	Scientific Officer	NAST
18	Dr. Rijan Bhakta Kayastha	Professor	Kathmandu University
19	Top Bahadur Khatri	National Project Manager	EbA- MOFE
20	Dr. Babu Ram Tiwari	Assistant Professor	IOE, Pulchowk
21	Dr. Narayan Gaire	Associate Professor	PMC-TU
22	Amjeet Maharjan	Engineer	MoUD
23	Dr. Kumod Raj Kafle	Professor	Kathmandu University
24	Dr. Shankar P. Khanal	Dean, IOST	TU
25	Meena Rajbhandari	RECAST	TU
26	Dr. Dev Raj Joshi	Associate Professor	TU- Microbiology
27	Kedar Kumar Khadka	Senior Officer	Budhanilakantha M.
28	Rachana Shah	Program Manager	NTNC
29	Niraj Dhital	Research Director	University Grant Commission
30	Nani Maiya Sujakhu	Research Fellow	RHF
31	Srawan Giri	Office Assistant	NAST
32	Kamal Datta Acharya	Chemist	DHM
33	Kul Prakash Neupane	Statistics Officer	NSO
34	Dr. Kumar Lama	Head, Agriculture Department	Kathmandu University
35	Dr. Madan Lall Shrestha	Academician	NAST
36	Karuna Nakarmi	Archaeological Officer	DoA
37	Purusottam Mahat	Environmental Expert	KMC
38	Dr. Meghnath Dhital	Chief Research Officer	NHRC
39	Dr. Ramji Bogati	Program Coordinator	Nepal Open University
40	Sabina Chapagain	Researcher	Friends of Nature

41	Mausham Shah	Sub-editor	The Himalayan Times
42	Tirtha Raj Thapa Magar	Senior Section Officer	Tarakeshwor MP
43	Yadav Uprety	Assistant Professor	TU - Botany
44	Dr. Rashila Deshar	Assistant Professor	TU-CDES
45	Keshav Raj Pokharel	Program Officer	CEN
46	Dr. Deepak K Khadka	Senior Research Fellow	Policy Research Institute
47	Safal Shrestha	District Commissioner	KVDA
48	Dr. Sunil Babu Shrestha	Academician	NAST
49	Praveen Kumar Regmi	Assistant. Professor	SCHEMS
50	Manish Shrestha	Program Officer	Forest Action, Nepal
51	Kanchan Mani Dixit	Executive Director	ISET-Nepal
52	Dr. Naresh Rimal	Senior Research Fellow	ISET
53	Dr. Biraj Adhikari	Senior Researcher	Practical Action
54	Bimala Lama	Research Officer	Forest Research and Training Center
55	Hari Pd. Sharma	Associate Professor	TU-CDZ
56	Dr. Pradeep Shah	Scientist	NARC
57	Dr. Sunil Acharya	Assistant Professor	TU-CDHM
58	Tika Regmi	Environmental Inspector	Department of Environment, MoFE
59	Saurab Dhakal	Engineer	KVDA
60	Huma Neupane	Director	IAAS
61	Durga Prasad Upadhaya	National Project Manager	KVDA/Urban EbA
62	Dr. Narendra Pradhan	Country Representative	IUCN
63	Arati Khadki	Head-climate & Energy	WWF Nepal
64	Pradeep Amatya	Environmental Engineer	LMC
65	Anusha Sharma	Engineer	Tokha Municipality
66	Chetana Khanal	Scientific Officer	DPR
67	Swoyambhu Man Amatya	Sub-committee Member	NAST
68	Suchita Shrestha	Deputy Director	The Small Earth Nepal
69	Batu Uprety	Technical Advisor	Urban EBA project
70	Bibhuti Pokhrel	Senior Divisional Meteorologist	DHM
71	Nisha Koirala	Senior Engineer	KMC

Annex IV: Some Glimpses of the Workshop

Picture 8: NAST team with speakers for the Closing Ceremony

Picture 9: Participants of of the inauguration session of program group photo

Picture 10: Stakeholders representing from different institutions in workshop in technical session

Annex V: Presentations Slides