

URGENT research framework for a partner institution

The name of the partner organisation:

Jawaharlal Nehru University

Contact person and e-mail address:

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Departments or other academic units at your organisation concerned with URGENT-related topics:

- 1 School of Environmental Sciences
- 2 Special Centre for Disaster Research

Current and past projects implemented at your institution and concerned with URGENT topics:

Project title	Funding agency	Project topics concerned (2-3 keywords)	Type of the project (research, education, mobility, capacity for the organization or external stakeholders building, promotion etc)	Possible links to URGENT (joint activities, agreements, ...)
Satellite based analysis for assessing status of urban ecosystems and urban heat island phenomena in metropolitan cities of India	DST, Gol	Urban ecosystems, Urban Heat Island, Satellite Remote Sensing	research	The experiences are useful
Just ecosystem management: Linking	NERC, UK	Ecosystem services,	Research and promotion	Learning will be useful

ecosystem services with poverty alleviation		urbanisation, justice		
SUNRAISE -- Sustainable Natural Resources Use in Artic and High Mountainous Areas	Erasmus Mundus	Sustainable Development Goals, Himalaya, Capacity Building	mobility, capacity for the organization	Learnings will be taken forward
Risks and responses to Urban futures: Understanding peri-urban dynamics for enhanced ecosystem service benefits	ESPA-ESRC-UK	Urban area, ecosystem services benefit	Research and promotion	
SUBURBIN Urbanisation in India 2011-2014	French National Agency (ANR)	Urbanisation, ecosystem services, planning	Research and promotion	
Spatial aspects of Governance of Decentralised Rural Local Bodies (Panchayati Raj Institutions) in Rajasthan 2009-2012	ICSSR, GoI	Rural-Urban, Governance, Panchayati Raj	Research and promotion	

PhD Programs available

PhD – Environmental Sciences

PhD – Disaster Studies

Topics of PhD thesis (or other graduate works if you do not have a PhD program)

PhD Thesis

1. Regulating ecosystem services in urbanising landscapes of Western Himalaya (ongoing)
2. Characterizing ecological effects of fire on forested landscape of Odisha (ongoing)

3. Farmers' resilience for flood disaster management in border areas of Uttar Pradesh, India
4. Impact of green and blue infrastructure on the thermal environment of urban landscape (proposed)

In the next academic session two more PhD students will be given topic around the scope of URGENT Project.

MSc Thesis

1. Hydrological appraisal of high-altitude Ramsar wetland of Himalayan region.
2. Measuring land use /cover change and revival of city infrastructure due to Mahakumb in Prayagraj
3. Assessing heat vulnerability and extreme heat risk using adaptive capacity cycle at district level of India

In the next academic session two more MSc students will be given topic around the scope of URGENT Project.

PostDoc Research

1. Thermal environmental monitoring of National Capital Region (NCR) of India – causes, effects and mitigation strategies.

Key personalities at your organisation publishing on URGENT -related topics:

Name	Key words (2-3) describing research interests	Personal webpage, if applicable
P K Joshi	Remote sensing, GIS, urban ecosystem	https://www.jnu.ac.in/content/pkjoshi
Deep Narayan Pandey	Disaster management, urban floods, community based disaster management	https://www.jnu.ac.in/content/dnpandey
JK Tripathi	Environmental geology	https://www.jnu.ac.in/content/jktripathi
Milap Punia	GIS, regional development, spatial planning	https://www.jnu.ac.in/content/punia
Dipendra Nath Das	Urbanisation and Migration, remote sensing GIS	https://www.jnu.ac.in/content/dipendas

Current research profile of the organization in relation to URGENT topics:

The School of Environmental Sciences has wide range of research areas. Among all the areas focussing on ecological studies primarily relate to the URGENT Project topics. The courses for the MSc and PhD students encompass ecosystem processes, ecosystem dynamics and environment

issues. These course broadly touches upon ecosystem approach, landscape ecology and importance of green and blue infrastructure in general and in certain cases around the urban ecosystems.

The Special Centre for Disaster Research primarily focuses on disaster studies. In the MA and PhD programmes it also focuses on ecosystem approach for disaster risk reduction and remote sensing and GIS inputs in emergency. These courses primarily takes the benifict of convention on biodiversity, ecosystem services, ecosystem/landscape approaches including nature based solutions for disaster risk reduction. Through the URGENT project we are also trying to build on Urban Disaster and Environmental Well-being.

Ambitions of the organization (in terms of research topics) or aspired activities in relation to URGENT topics (i.e. research collaboration agreements, phd supervision, internships for phd students to Eu partners)

Urban Ecosystems are of prime focus globally and particularly in India. With the challenges of climate change and included disasters along with the commitment for Sustainable Development Goals, the process of urbanisation and insights in urban planning has become very important. Herein ecosystem approaches and the Nature Based Solutions (both green and blue infrastructure) seems to be the primary. The country has also envisioned Smart Cities, and as environmentalist having NBSs and focus on green and blue infrastructure will be of importance. SES and SCDR will be interested to have research collaborations and also joint PhD supervisions for the coming research students in these areas. It will be great to have capacity building workshops for the students and researchers interested in these areas. One of the ambitions will be having capacities for long term research in this area and also develop short-term courses to ensure this goes to employability and sensitisation of planners.

Obstacles and barriers hampering the aspired developments

The team here including the research students at the JNU are highly motivated to carry out the work. Primarily the research ideas are being discussed and detailed planning is in progress. The only challenge we can anticipate is the mobility of the students and/or experts in the uncertain scenarios of pandemic.

Enabling conditions and positive factor behind your current successes in relation to URGENT -related research developments, and/or making you hopeful about your ambitions:

We are experienced in the academic and research programs. The research students are motivated and there are plenty of challenges in urban ecosystems which ca help us in identifying research agenda. In addition to these the support from the university and the respective centres is overwhelming for such type of collaborative research and capacity building program. These all will add value to the efforts being made within the scope of URGENT Project and the related research activities.

Specific capacities you want to develop to reach you aspired URGENT-related research goals, such as equipment, training for academic or technical staff, access to international databases, external experts support or PhD supervision etc etc

The institution has three aspirations from the project – (a) training of doctoral research students on the research topics within scope of the project, (b) interactive research and capacity building interactions with the external expert support (including joint PhD supervision) and (c) access international database and best practices suited to developing tropical countries like India wherein Nature Based Solutions (both green and blue infrastructure) could be implemented and be seen beyond academic research.

Are there any national research or development policy objectives that support your current or aspired URGENT-related research developments? Please expand on this, if so

The country is aspiring for better urban planning. The following are few of the missions which are of key importance of the national research and/or development of policy objectives.

1. *Smart cities mission*
2. *Pradhan Mantri Awas Yojana (PMAY) (Urban) Housing for All*
3. *Atal Mission for Rejuvenation and Urban Transformation (AMRUT)*
4. *National Urban Sanitation Policy (NUSP)*

A few of other policies and guidelines of similar importance are

1. *Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines, 2014*
2. *National Urban Policy Framework (NUPF), 2020*
3. *Urban Greening Guidelines, 2014*

As a research institution and seat of higher learning, we are interested to have impact on such missions and support to policies and guidelines. Having capacity building programs and research frameworks strengthening these will of great value to the URGENT Project and the institutions involved.

What are specific enabling conditions or obstacles for the development of research training at your organization – in general, and in URGENT-related fields

Given the new proposed National Education Policy 2020, there are multiple entry points to the development of research training and formal capacity building programs. We are trying the take the benefit of this to revise our course curricula. Herein many of the URGENT project related field will be specifically placed.