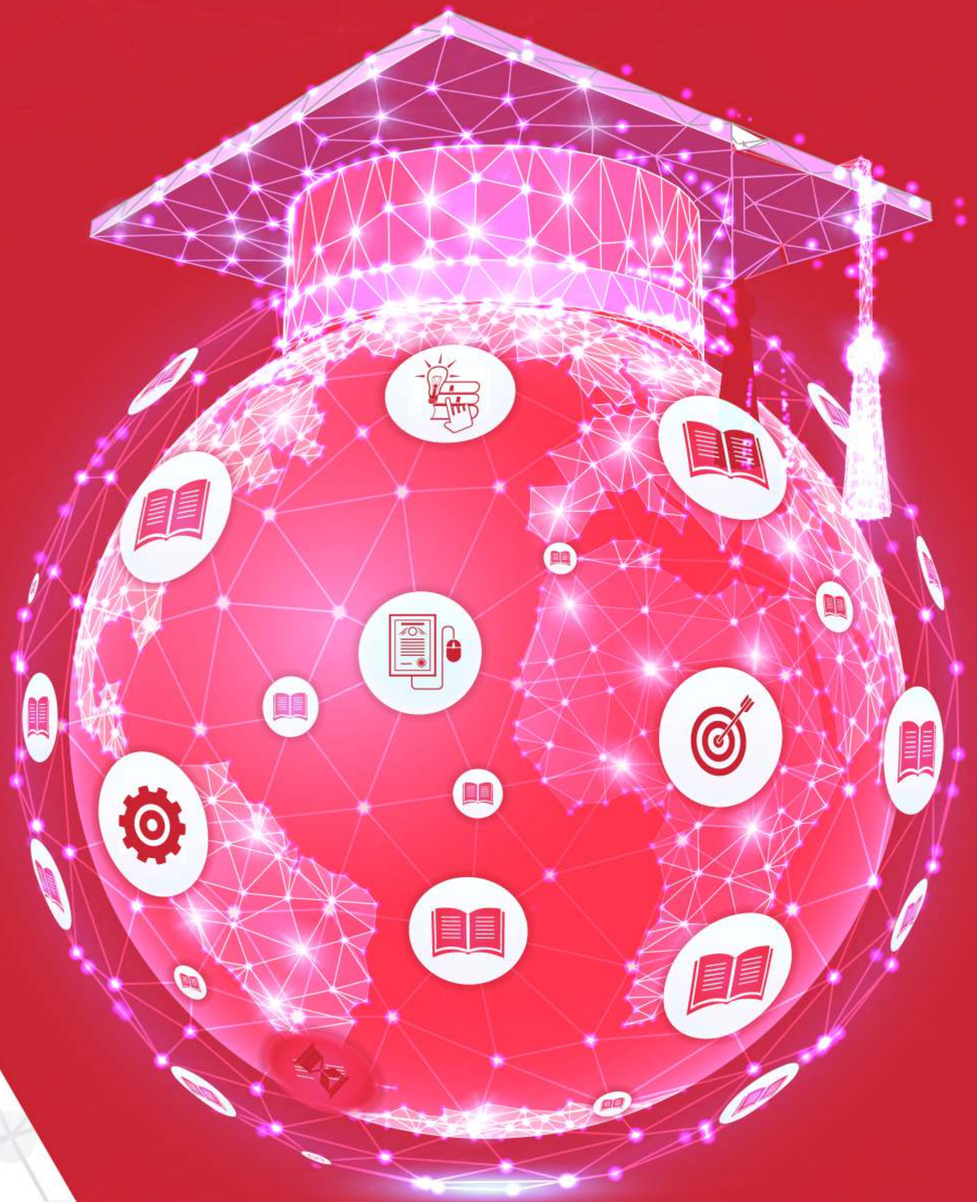
CDRI

Coalition for Disaster Resilient Infrastructure

FELLOWS 2021



Country
India

Endorsing Institute
TU Delft, The Netherlands

Application ID
20102017

The Future Ground: Urban Planning for Infrastructure Resilience (Case: Mumbai)

Supriya Krishnan
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The world is witnessing the largest cumulative urban expansion in history - against the backdrop of climate change and disasters. This anticipated growth requires extensive construction and renewal of reliable infrastructure systems that form the backbone of resilient urban development. The challenge is that infrastructure systems will be exposed to a range of hazards, that are changing with a fair degree of uncertainty. Infrastructure decisions that are not made mindfully to adapt and respond to these uncertainties can lock-in risks and face higher vulnerabilities than what they were designed for. Through the CDRI Fellowship, we propose the development of a risk-informed urban planning framework which will form the basis for informing resilience of multiple infrastructure systems. This will fill an important knowledge gap by helping planners identify: (1) the range of climate/disaster variables that impact infrastructure; (2) socio-economic/environmental variables; and (3) connect them with long-term planning actions.

Country
India

Endorsing Institute
MNIT Jaipur, India

Application ID
201103203

Amateur Radio Station in District EOC, Jaipur

Communication failures in disasters cause avoidable mortality, morbidity, and infrastructure losses. To mitigate this vulnerability, Indian district EOCs should establish fail-proof frugal amateur radio stations (ARS) that provide variety of voice, text, image, and data communication modes. In US, I and other hams have used ARS in EOCs as club station and for disaster drills. Policy and regulation changes are required in India to establish ARS at district EOCs. This research aims to establish a demonstration ARS in district EOC at Jaipur for later widespread scale up. This will give maximum social benefit return compared to any other DRI investment.

Dr Kailash Chandra Gupta
kailashgupta@my.unt.edu

Country
India

Endorsing Institute
National Maritime Foundation, Delhi, India

Application ID
201104207

Incorporating Infrastructure Resilience in India's Port-led Development Model

The Government of India has taken a slew of measures to enhance the capacity and capability of the maritime sector for the overall growth of the country and to facilitate the transition to a 'Blue Economy'. In order to ensure long-term security and sustainability of the proposed and existing maritime infrastructure, we must address the growing climate-change-induced threats of sea-level rise and intensifying extreme weather events. This study will create a climate-resilience-centred policy-framework comprising exhaustive guidelines and tools to make our port infrastructure, including support infrastructure and critical supply chains, more resilient in the face of future uncertainties.

Dr Pushp Bajaj
climatechange2.nmf@gmail.com

3A

Country
India

Endorsing Institute
National Maritime Foundation, Delhi, India

Application ID
201104207

Incorporating Infrastructure Resilience in India's Port-led Development Model

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Mr. Saurabh Thakur
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3B

Country
India

Endorsing Institute
National Maritime Foundation, Delhi, India

Application ID
201104207

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Ms. Chime Youdon
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3C

Country
Peru

Endorsing Institute
Universidad de Piura, Peru

Application ID
201112257

Intertwined Natures Adaptation to Climate Change Using Green & Blue Infrastructure in Lambayeque, Peru

Intertwined Natures aims to create a regional identity and awareness as well as achieving a new equilibrium in Lambayeque, Peru by exploring the innovative method of interlinking theoretical principles, design interventions and hands-on workshops. Navigating from academic hypothesis to solving challenges in the real world. The re–shaping of the territory through green and blue infrastructure not only enables the retrofitting of nature into urbanised areas, –or rural towns where nature is disappearing–, but it holds the potential to mitigate and manage flood/stormwater resulting from natural disasters, thus allowing nature to perform as resilient infrastructure.

Ms. Luisa Cristina Wong Lent
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Country
India

Endorsing Institute
IIT Bombay
India

Application ID
201112260

Disaster Resilience of Bridges Exposed to Climate Change and Growing Traffic load during Design Life

Dr Swagata Banerjee Basu
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A major challenge associated with the development of disaster resilient bridge infrastructure (DRBI) is to account for bridge health degradation and transient nature of disasters over bridge service life. This research will address the issue through life-cycle resilience assessment of degrading bridges under earthquakes and floods, while accounting for the evolving natures of traffic load demand and flood hazard. Performance of bridges on surface and water will be evaluated through an integrated numerical and probability analyses framework. Research will yield time-variant seismic vulnerability of bridges, evolution of bridge seismic risk, life-cycle disaster resilience, and uncertainties associated with final outcomes.

Country
India

Endorsing Institute
IIT Roorkee, India

Application ID
201115293

Thermal Stress testing of residential building using reference weather data

Ms Shweta Lall
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The research aims at developing a procedure to perform thermal stress testing of a mid-size residential building layout under thermal extremes conditions. This methodology aims to identify and quantify 'thermal stress' due to the extreme climate in building energy performances. To represent the impact of climate change on building resilience a better representation of extreme climatic data in weatherfiles is required. In this procedure, extreme climate data will also includes Urban heat island effect, heat waves and cold-snaps, which are significant contributors in mortality and morbidity due to thermal extremes. Further, the extreme and typical are compared statistically for analyzing and ranking levels of thermal stress.

Country
Nepal

Endorsing Institute
Tribhuvan University, Nepal

Application ID
201118276

Managing landslides and road construction in Chure Hill Region (CHR), Nepal

Mr Yogendra Subedi
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Local road construction in Nepal's hill area triggers landslides as they are non-engineered. The contractors and the local government seek easy solutions leading to disruption of ecosystem. The study uses the Resilient Framework (RF) applicable to climate and non-climate stresses. The study assures road builders for their accountability. The study will take case studies of the vulnerable areas and provide recommendations. Local stakeholders will directly benefit from the study along with central government and policy makers. Practical solutions will be specifically local. Only few such researches in Nepal have conducted, and this will be significant one.

7A

Country
Nepal

Endorsing Institute
Tribhuvan University, Nepal

Application ID
201118276

Managing landslides and road construction in Chure Hill Region (CHR), Nepal

Ms Anustha Shrestha
anusthashrestha@gmail.com

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7B

Country
UK

Endorsing Institute
University of Glasgow, UK

Application ID
201128342

InfraRivChange-a web-based application to monitor river migration at sites of critical bridge infrastructure in the Philippines

Dr Richard Boothroyd
richard.boothroyd@glasgow.ac.uk

River bridges are vulnerable nodes in transport and utility networks; exposed to hydrometeorological hazards more than other forms of infrastructure and associated with high socio-economic costs when damaged or destroyed. We will develop a web-based application ("InfraRivChange") to monitor river channel change in the vicinity of large bridges in the Philippines. Using the cloud-based computing platform Google Earth Engine, "InfraRivChange" will leverage thousands of satellite images to assess the relative risk of river migration. Working alongside the Department of Public Works and Highways, "InfraRivChange" will be implemented into bridge monitoring investigations and inform the strategic placement of resilient infrastructure.

8A

Country
UK

Endorsing Institute
University of Glasgow, UK

Application ID
201128342

InfraRivChange-a web-based application to monitor river migration at sites of critical bridge infrastructure in the Philippines

Dr Richard Williams
richard.williams@glasgow.ac.uk

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8B

Country
India

Endorsing Institute
NAFED, Delhi, India

Application ID
201228367

Monitoring and Evaluation in Drought-Proofing Plans: Exploring the Potential of a Social Audit Framework

We propose to create a framework for Monitoring and Evaluation (M&E) of drought proofing plans using social audits. The aim is to measure resilience, via a community-led approach, of protective irrigation and water consumption infrastructure built in regions susceptible to droughts and consequent out-migration. Using the case study of Bundelkhand, a drought prone region in Madhya Pradesh, India, the framework will identify the mechanism through which the established structure of social audits for NREGA can be leveraged to conduct social audits for measuring resilience of drought-proof infrastructure.

Ms. Akanksha Vardani
akanksha.vardani@columbia.edu

9A

Country
India

Endorsing Institute
NAFED, Delhi, India

Application ID
201228367

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Mrs Srishti Singh
singhh.srishti@gmail.com

9B

Country
India

Endorsing Institute
NAFED, Delhi, India

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201228367

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Ms Meghna
meghnay95@gmail.com

9C

Country
India

Endorsing Institute
NAFED, Delhi, India

Application ID
201228367

Monitoring and Evaluation in Drought-Proofing Plans: Exploring the Potential of a Social Audit Framework

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Ms Ananya Goyal
goyalananyaa@gmail.com

9
D

Country
India

Endorsing Institute
IIT Palakkad, India

Application ID
210110405

Regional Road Resilience using Landslide Susceptibility model

Mr K Nitheesh
102004004@smail.iitpkd.ac.in

The study overrides the limitation of existing zoning strategies that lead to disastrous calamities in recent years in Kerala alongside Western Ghats. Macro-level landslide susceptibility mapping fails to consider the geotechnical characteristics of overlying soil because of the high cost and labour-intensive testing procedures. The study introduces a framework to improve susceptibility mapping by incorporating geotechnical characteristics, along with prioritizing the location of optimal probe points in a feasible manner. Thus, the model would improve road recovery to enhance resilience, prioritize roads in the network based on impact, restoration time, mitigation plans and evacuation strategies.

10 A

Country
India

Endorsing Institute
IIT Palakkad, India

Application ID
210110405

Regional Road Resilience using Landslide Susceptibility model

Mr Abhijith. A
102014004@smail.iitpkd.ac.in

The study overrides the limitation of existing zoning strategies that lead to disastrous calamities in recent years in Kerala alongside Western Ghats. Macro-level landslide susceptibility mapping fails to consider the geotechnical characteristics of overlying soil because of the high cost and labour-intensive testing procedures. The study introduces a framework to improve susceptibility mapping by incorporating geotechnical characteristics, along with prioritizing the location of optimal probe points in a feasible manner. Thus, the model would improve road recovery to enhance resilience, prioritize roads in the network based on impact, restoration time, mitigation plans and evacuation strategies.

10
B

Country
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Endorsing Institute
IIT Palakkad, India

Application ID
210110405

Regional Road Resilience using Landslide Susceptibility model

Dr. Rakesh J. Pillai
rakeshpilla@iitpkd.ac.in

The study overrides the limitation of existing zoning strategies that lead to disastrous calamities in recent years in Kerala alongside Western Ghats. Macro-level landslide susceptibility mapping fails to consider the geotechnical characteristics of overlying soil because of the high cost and labour-intensive testing procedures. The study introduces a framework to improve susceptibility mapping by incorporating geotechnical characteristics, along with prioritizing the location of optimal probe points in a feasible manner. Thus, the model would improve road recovery to enhance resilience, prioritize roads in the network based on impact, restoration time, mitigation plans and evacuation strategies.

10 C

Country

Afghanistan

Endorsing Institute

Bamyan University, Afghanistan

Application ID

210111409

Landslide hazard and risk assessment for Bamyan province

Mohd Jawed Nabizada

jawid.nabizada22@gmail.com

A landslide is the movement of mass of rock, debris or earth down a slope. They result from the failure of the materials which fall down the slope due to force of gravity.Every year, small landslides destroy homes and farmland. Occasionally, an enormous landslide buries a town or city, killing thousands of people. Landslides cause billions of dollars in damage every year, about equal to the damage caused by earthquakes in 20 years. In many instances, losses occur because people do not recognize dangers that are obvious to a geologist.Landslide is natural phenomena that can be regarded as either natural hazard or human induced hazard or both. This research conducted to identify those coherent factors which help landslide to damage infrastructures.

11 A

Country

Afghanistan

Endorsing Institute

Bamyan University, Afghanistan

Application ID

210111409

Landslide hazard and risk assessment for Bamyan province

Mr Ali Nikzad

nikzadali56@gmail.com

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11 B

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Endorsing Institute

Bamyan University, Afghanistan

Application ID

210111409

Landslide hazard and risk assessment for Bamyan province

Ms Hazina Nasiri

hazina.nasiri@gmail.com

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11 C

Country
India

Endorsing Institute
RTC, Coimbatore, India

Application ID
210111410

Decision Support Tool for Climate Risk Management in Manufacturing Industries.

Mr. Barath Mahadevan
bmahadevan07@outlook.com

Climate-B Ventures seeks to develop a software product that serves as a Decision Support Tool to strengthen the adaptive capacity and resilience of manufacturing SME industries in India towards physical climate risks such as floods, water scarcity, cyclones and heat waves.The product will help organizations quantify the expected financial loss due to these risks, simulate the efficacy of various adaptation projects which can reduce the financial loss, enable multi-criterial optimization of the most suitable set of projects, and manage their implementation through a project management dashboard, through a cloud-based web application.

12
A

Country
India

Endorsing Institute
RTC, Coimbatore, India

Application ID
210111410

Decision Support Tool for Climate Risk Management in Manufacturing Industries.

Mr. Adithya Subramanian
subramanian.adithya07@gmail.com

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12
B

Country

Nepal

Endorsing Institute

Himalayan Risk Research Institute, Nepal

Application ID

210113422

National scale landslide database and landslide susceptibility map of Nepal

Mr Kaushal Raj Gnyawali

gnyawalikr@gmail.com

Landslides cause significant loss of life, property and environmental damage in Nepal. The underlying reason is unmanaged land-use planning and infrastructure construction on landslide-prone slopes, which is driven by haphazard explosion of settlement areas. Creating a database of historical landslides can help us predict future landslide locations by susceptibility mapping, via a machine learning approach. There is an urgent need for a national-scale landslide susceptibility map in Nepal that is accurate enough for the federal units and municipalities to apply in regional planning. We aim to create the national landslides database and susceptibility map of Nepal from cloud computing and machine learning.

13 A

Country

Nepal

Endorsing Institute

Himalayan Risk Research Institute, Nepal

Application ID

210113422

National scale landslide database and landslide susceptibility map of Nepal

Mr Suman Chapagain

sumanchapagain@hri.org.np

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13 B

Country

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Endorsing Institute

Himalayan Risk Research Institute, Nepal

Application ID

210113422

National scale landslide database and landslide susceptibility map of Nepal

Mr Kshitij Dahal

geokshitij@hri.org.np

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13 C

Country
Australia

Endorsing Institute
University of New South Wales, Australia

Application ID
210114423

Machine Learning for Infrastructure Defect Detection Through Employing Rule-Based Verification on Aerial Imagery

Dr Ahmed WA Hammad
a.hammad@unsw.edu.au

Infrastructure components can be severely damaged during floods, jeopardising their structural integrity, and resulting in fatalities and economic loss. Manual detection of such defects is not feasible as it will require human resources and extended periods of time to thoroughly check each component. This may also result in some defects going undetected. This calls for the need to perform automatic defect detection to ensure reliability and precision. The aim of this project is to use image processing and machine learning techniques, on captured or scanned images of the infrastructure, to identify and classify defects.

14
A

Country
Australia

Endorsing Institute
University of New South Wales, Australia

Application ID
210114423

Machine Learning for Infrastructure Defect Detection Through Employing Rule-Based Verification on Aerial Imagery

Dr Riza Yosia Sunindijo
m.nordstrom@unsw.edu.au

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14
B

Country
Australia

Endorsing Institute
University of New South Wales, Australia

Application ID
210114423

Machine Learning for Infrastructure Defect Detection Through Employing Rule-Based Verification on Aerial Imagery

Mr Hafiz Suliman Munawar
ada.rgc@unsw.edu.au

Infrastructure components can be severely damaged during floods, jeopardising their structural integrity, and resulting in fatalities and economic loss. Manual detection of such defects is not feasible as it will require human resources and extended periods of time to thoroughly check each component. This may also result in some defects going undetected. This calls for the need to perform automatic defect detection to ensure reliability and precision. The aim of this project is to use image processing and machine learning techniques, on captured or scanned images of the infrastructure, to identify and classify defects.

14
C

Country
India

Endorsing Institute
Texas A&M USA

Application ID
210115447

Inventory of High-Altitude Wetlands for Disaster Risk Reduction in Transboundary Himalayan Region (InHAW)

Dr Santosh Subhash Palmate
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The InHAW proposal aims to an inventory of high-altitude wetlands, i.e., natural infrastructures located at an altitude above 3000 m, important for ecosystem services and disaster risk reduction in the transboundary Himalayan region. This research focuses on finding out probable wetlands that can reduce the impact of landslides and flood events. The proposed maximum entropy algorithm considering present and future extreme climatic changes fosters future wetland inventory modeling innovation. The inventory approach can build-up research capacity and promote research excellence in nature-based solutions for the regions where wetland systems are less focused due to the data-scarcity and international disputes.

Country
USA

Endorsing Institute
Fantail Tech., India

Application ID
210116431

Integrating Plans and Strengthening Communications Through Artificial Intelligence and Machine Learning

Many planning documents exist within a jurisdictional planning framework, and there may be contradictions or gaps between documents. Plan integration is currently performed manually and is met with several challenges. Our research problem addresses the inadequacy of the current manual plan integration process, including poor communications between different departments. Our proposed innovative concept to help solve these problems focus on using AI and ML for the integrated planning of hazard mitigation and risk reduction principles into existing jurisdictional planning frameworks and plans. Automating the plan review and integration processes will successfully and effectively enable community plans to strengthen build on one another.

Mr Andrew Estrain
aestrain@vision-pc.net

16
A

Country
USA

Endorsing Institute
Fantail Tech., India

Application ID
210116431

Integrating Plans and Strengthening Communications Through Artificial Intelligence and Machine Learning

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Ms Deepa Srinivasan
dsrinivasan@vision-pc.net

16
B

Country
Bhutan

Endorsing Institute
College of Science and Tech., Bhutan

Application ID
210116459

Disaster Resilience Building Construction Practices on Hilly Slopes of Bhutan-A research Compliance and Recommendation for National Adaptation

Ms Monika Thapa
monikathapa.cst@rub.edu.bt

Bhutan being a hilly region is susceptible to various hazard. Lack of developmental area and rapid urbanization have forced the construction along slopes. Despite of high risk to landslides, major urban development and expansion are taking a troll towards. A better building constructional practices before and after construction on hilly slopes of Bhutan needs a major study to tackle the recurrent hazard that costs live and properties during monsoon, which needs to be regulated through research and policies.Urban density is projected to increase from 37.8% in 2017 to 56.8% in 2047 (BUPN, 2020) regions of Bhutan.

17
A

Country
Bhutan

Endorsing Institute
College of Science and Tech., Bhutan

Application ID
210116459

Disaster Resilience Building Construction Practices on Hilly Slopes of Bhutan-A research Compliance and Recommendation for National Adaptation

Mr Kirtan Adhikari
adhikari.cst@rub.edu.bt

Bhutan being a hilly region is susceptible to various hazard. Lack of developmental area and rapid urbanization have forced the construction along slopes. Despite of high risk to landslides, major urban development and expansion are taking a troll towards.A better building constructional practices before and after construction on hilly slopes of Bhutan needs a major study to tackle the recurrent hazard that costs live and properties during monsoon, which needs to be regulated through research and policies. Urban density is projected to increase from 37.8% in 2017 to 56.8% in 2047 (BUPN, 2020) regions of Bhutan.

17
B

Country
Bhutan

Endorsing Institute
College of Science and Tech., Bhutan

Application ID
210116459

Disaster Resilience Building Construction Practices on Hilly Slopes of Bhutan-A research Compliance and Recommendation for National Adaptation

Ms Sonam Choden
sonamchoden@nhdcl.bt

Bhutan being a hilly region is susceptible to various hazard. Lack of developmental area and rapid urbanization have forced the construction along slopes. Despite of high risk to landslides, major urban development and expansion are taking a troll towards.A better building constructional practices before and after construction on hilly slopes of Bhutan needs a major study to tackle the recurrent hazard that costs live and properties during monsoon, which needs to be regulated through research and policies. Urban density is projected to increase from 37.8% in 2017 to 56.8% in 2047 (BUPN, 2020) regions of Bhutan.

17 C

Country
India

Endorsing Institute
College of Science and Tech., Bhutan

Application ID
210116459

Disaster Resilience Building Construction Practices on Hilly Slopes of Bhutan-A research Compliance and Recommendation for National Adaptation

Dr K.S. Babu Narayan
shrilalisuta@gmail.com

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17
D

Country
India

Endorsing Institute
College of Science and Tech., Bhutan

Application ID
210116459

Disaster Resilience Building Construction Practices on Hilly Slopes of Bhutan-A research Compliance and Recommendation for National Adaptation

Dr Sunil B. M.
bmsunil@gmail.com

Bhutan being a hilly region is susceptible to various hazard. Lack of developmental area and rapid urbanization have forced the construction along slopes. Despite of high risk to landslides, major urban development and expansion are taking a troll towards. A better building constructional practices before and after construction on hilly slopes of Bhutan needs a major study to tackle the recurrent hazard that costs live and properties during monsoon, which needs to be regulated through research and policies. Urban density is projected to increase from 37.8% in 2017 to 56.8% in 2047 (BUPN, 2020) regions of Bhutan.

17
E

Country
India

Endorsing Institute
IIT Delhi, India

Application ID
210117472

Innovative Structural Protection System for Resilient Community against Multiple Hazards

Dr Vasant Matsagar
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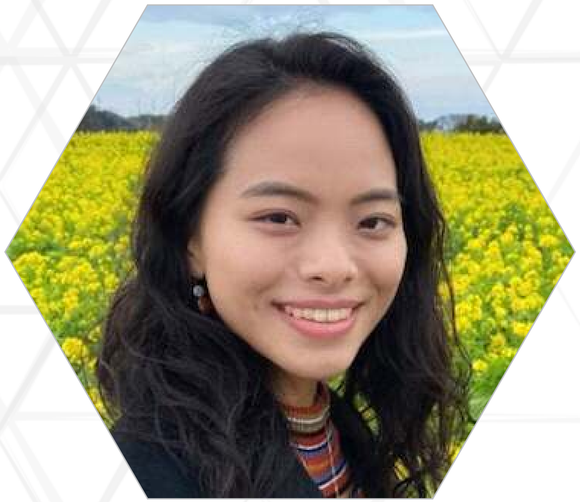
Hospital buildings are lifeline structures, which must remain functional during and after any natural/ accidental (manmade) disaster. Some major hospital buildings in India have experienced aging, hampering their earthquake and wind resilience. Also, hospital buildings must have higher fire rating. However, several earthquake-triggered collapse of hospital buildings and fatalities due to fire accidents are reported. Hence, developing novel lightweight and fire-resistant fiber-reinforced bearings (FRBs) for retrofitting of hospital buildings under multi-hazard scenarios is proposed. Technology development and translational research proposed herein will lead to patentable end-products of two variants of tri-axially braided functionally-graded natural FRB devices and retrofit processes for immediate field applications in real-life hospital buildings.

Country
Japan

Endorsing Institute
RIKA, India

Application ID
210117475

Risk-Informed School Evaluation Tool (RISE Tool)



Ms Hanae Soma
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Schools are critical infrastructure and safe schools are crucial for building resilient cities. Schools are the second home to children necessitating its safety is of utmost importance. The National School Safety Policy (2016) of India points out a huge disconnect between the education program and disaster response and preparedness. The study aims to create a composite risk index of schools - 'risk-informed school evaluation' tool (RISE Tool) - based on various school safety parameters. Thus, giving parents/guardians a decision-making tool that is not only based on the excellence of education but also on the effective disaster risk reduction measures.

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Country
India

Endorsing Institute
RIKA, India

Application ID
210117475

Risk-Informed School Evaluation Tool (RISE Tool)

Mr Vipul Kumar Nakum
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Country
Japan

Endorsing Institute
RIKA, India

Application ID
210117475

Risk-Informed School Evaluation Tool (RISE Tool)

Ms. Saki Isetani
t18513si@sfc.keio.ac.jp

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19 C

Country
India

Endorsing Institute
AIT, Thailand

Application ID
210117487

Multi-Hazard Risk Indexing of Coastal Critical Infrastructure: A Case Study of Thailand

Dr Indrajit Pal
indrajit-pal@ait.ac.th

The project aims to study impacts of multiple hazards and cascading effects on key coastal critical infrastructures of Thailand. It intends to define risk and sensitivity of the existing critical infrastructures in the eastern and western coast of Thailand considering systemic risk. The project will be able to deliver a Coastal Critical Infrastructure Risk Assessment Matrix (CCIRAM), and related knowledge products and tools.

20 A

Country
India

Endorsing Institute
AIT, Thailand

Application ID
210117487

Multi-Hazard Risk Indexing of Coastal Critical Infrastructure: A Case Study of Thailand

Prof. Joyashree Roy
joyashree@ait.asia

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Country
India

Endorsing Institute
AIT, Thailand

Application ID
210117487

Multi-Hazard Risk Indexing of Coastal Critical Infrastructure: A Case Study of Thailand

Mr Anil Kumar
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20 C

Country
India

Endorsing Institute
Waterstudio.nl, The Netherlands

Application ID
210117493

Food Resilient Floating Community Housing

Mr Shuja Rehman
ar.shujarehman@gmail.com

The architectural floating solution for floods is proposed in the research which will be energy neutral, self-sufficient and self-reliant. These houses will float when the floods come as per the water level and will remain intact at the same place. The material for these prototype houses will light in weight and vernacular with modern technology. These houses will be able to produce their own energy, harvest their own water and maintain sanitation facilities. Such houses in a community level will become disaster resilient floating communities and will be able to withstand the natural calamities & be able to suffice the human needs. In addition to the architecture and infrastructure planning, the research will also focus on the energy and food production, the purpose being better acceptance and living. The adaptation planning is not only limited to the field of architecture but is a Multi-Disciplinary forum. This work will encourage to celebrate water and use it to the best potential for a sustainable future.

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Country
India

Endorsing Institute
Waterstudio.nl, The Netherlands

Application ID
210117493

Food Resilient Floating Community Housing

Mr Sridhar S
sridhar.svjs@gmail.com

The architectural floating solution for floods is proposed in the research which will be energy neutral, self-sufficient and self-reliant. These houses will float when the floods come as per the water level and will remain intact at the same place. The material for these prototype houses will light in weight and vernacular with modern technology. These houses will be able to produce their own energy, harvest their own water and maintain sanitation facilities. Such houses in a community level will become disaster resilient floating communities and will be able to withstand the natural calamities & be able to suffice the human needs. In addition to the architecture and infrastructure planning, the research will also focus on the energy and food production, the purpose being better acceptance and living. The adaptation planning is not only limited to the field of architecture but is a Multi-Disciplinary forum. This work will encourage to celebrate water and use it to the best potential for a sustainable future.

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