समयुक्ति Newsletter

ICARS

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Integrated Centre for Adaptation, DRR and Sustainability (ICARS)

समयुक्ति ICARSS

IIT Roorkee - Gr. Noida Campus (NCR), India

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Highlights

LoI Sign Indo-Australian Collaboration on Resilience Leadership



Editorial Team

Patron: Prof. K.K. Pant, Director, IIT Roorkee

Editor: Prof. Anil K. Gupta, Professor- WRDM, PI- ICARS, IITR

Associate Editor: Ms. Pritha Acharya, Project Scientist

Assistant Editor: Mr. Gursimran Singh, Project Associate

Editorial

The Antifragile Imperative: Forging Transformative Climate Governance

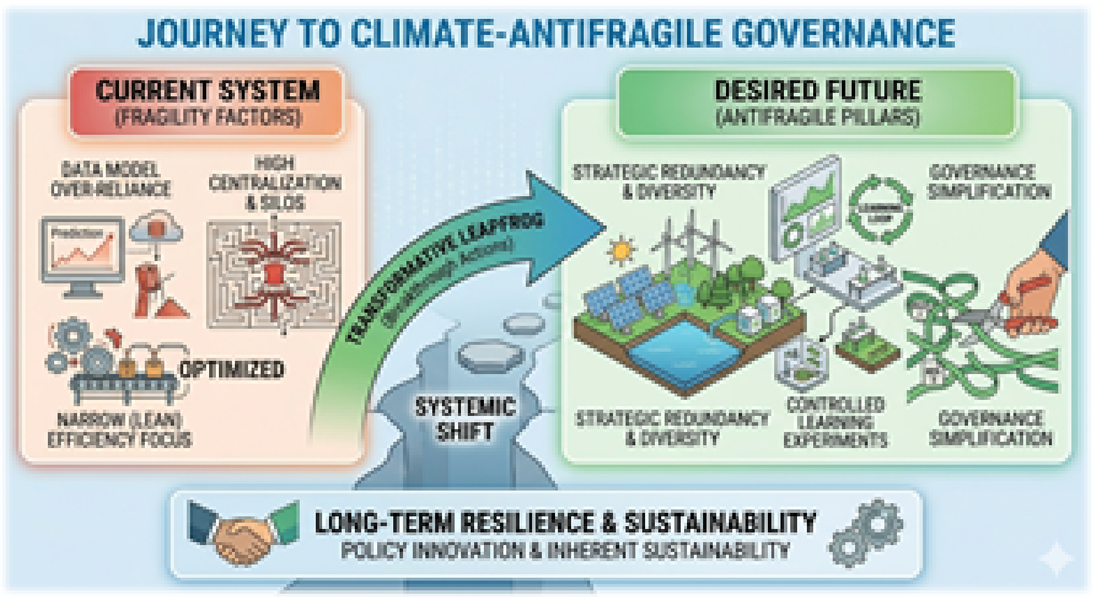
- Prof. Anil Kumar Gupta

As we analyze the closing quarter of year 2025, the limitations of "resilience" the desire to merely recover to a prior state - have never been more apparent. In an era of ‘polycrises’, we need to imperatively pivot toward antifragility: designing systems that not only withstand disorder but evolve and improve because of it. Decades of prioritizing narrow optimization have stripped away essential buffers. We must reframe "redundancy" not as waste, but as a vital investment in survivability. Strategic surpluses in power, transport, and water retention are the shock absorbers of the 21st century. Policies must mandate these buffers to ensure that our infrastructure remains functional even when the primary system is compromised.

Redefining Public-Private Partnerships is a pre-condition. In India and beyond, current contract models often leave private actors exposed, dampening investment in climate-resilient infrastructure. We must move beyond vague "force majeure" clauses. By implementing standardized, quantitative hazard criteria in contracts and transitioning to output-based agreements that reward rapid restoration and ingenuity, we align private profit with public safety. Climate risk must be integrated into the core financial architecture, turning "disaster-inclusive" business models into the new market standard.

It is high time countries of developing and transitioning world like India demonstrate the ‘Decentralized Governance and Via Negativa’ as core strategy. True adaptive capacity is fostered through via negativa the removal of rigid, centralized micromanagement that stifles local agility. Disaster Risk Reduction (DRR) is most effective when it empowers local institutions to execute "safe-to-fail" experiments. By blending frontier technological modeling with local and traditional wisdom, we enable context-specific solutions that are far more robust than top-down mandates.

Turning ‘Pulses into Progress’ is the critical but most promising way out. We must stop viewing reconstruction as mere restoration. Every disaster is a diagnostic of system failure; we must treat it as a design brief for transformation. For policymakers, the mandate is clear: embrace uncertainty as a driver of innovation, and ensure that every recovery is a leap forward toward a more evolved, antifragile future.



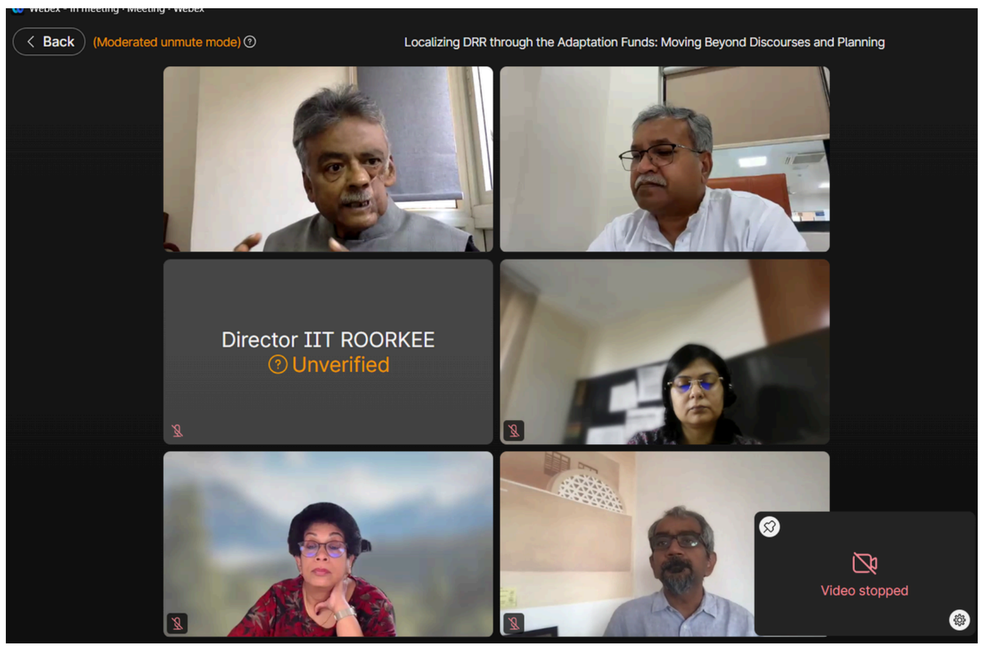
Dr. Anil Kumar Gupta *is presently with IIT Roorkee as Professor and Leading ICARS (CoE of Govt. of India DST at IITR Greater Noida Campus NCR), founding Professor and Head of NIDM India, is a globally known disaster resilience and climate actions thought leader.*

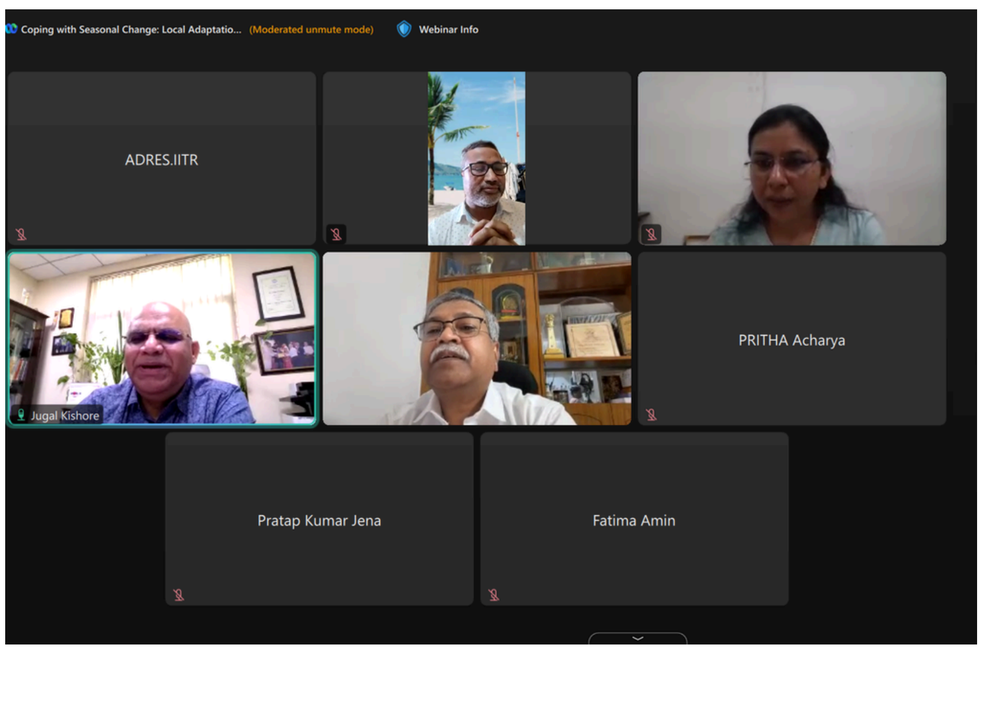
Events

Virtual Showcase : Localizing DRR through the Adaptation Funds: Moving Beyond Discourses and Planning

15 October 2025, Virtual

On the occasion of the International Day for Disaster Risk Reduction (IDDRR) 2025, ICARS, IIT Roorkee (Greater Noida Campus) organized a virtual showcase on “Localizing DRR through the Adaptation Funds: Moving Beyond Discourses and Planning.” The event highlighted practical pathways, success stories, and innovative financing approaches for strengthening local resilience through Adaptation Funds. Policymakers, practitioners, and researchers discussed how localized action and climate finance can translate planning into on-ground impact.





Webinar: Adapt-DMIR Series Webinar: Coping with Seasonal Change – Local Adaptation Strategies

21 October 2025, Virtual

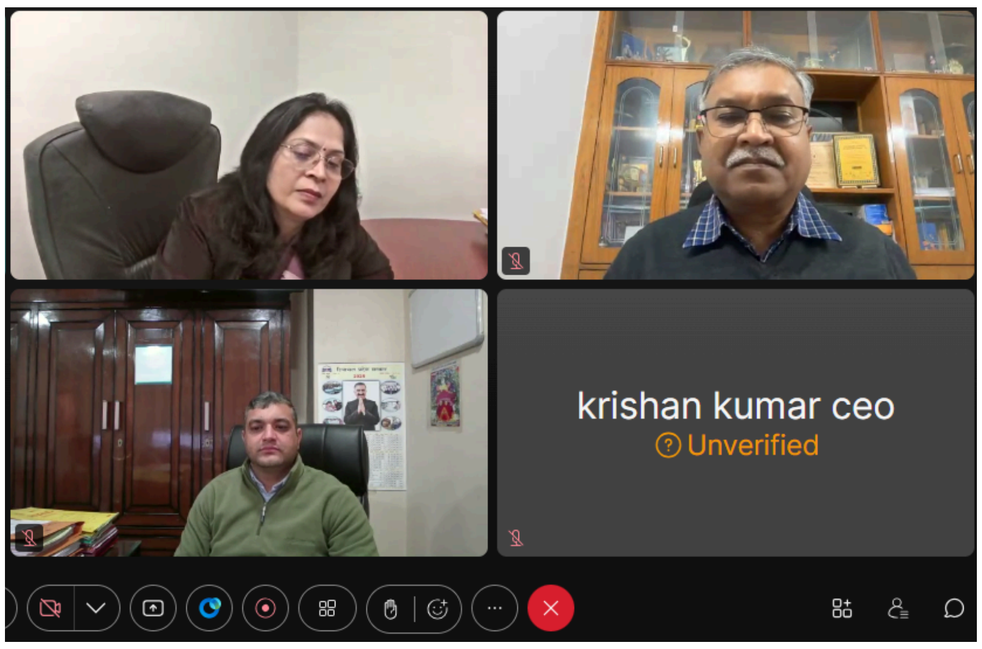
ICARS, IIT Roorkee organized the Adapt-DMIR Series Webinar on “Coping with Seasonal Change: Local Adaptation Strategies.” The webinar focused on challenges arising from seasonal variability and emphasized community-based adaptation strategies to enhance resilience and sustainability. Experts shared experiences and local solutions for addressing climate-induced seasonal risks.

Workshop High-Level Policy Dialogue on Safe and Sustainable Mountain Development

10 November 2025, INSA, New Delhi

IIT Roorkee, ICARS, DST–CoE Roorkee organized a High-Level Policy Dialogue on “Safe and Sustainable Mountain Development in a Changing Climate” at INSA, New Delhi, as an Ignite Pre-Event of the World Summit on Disaster Management (WSDM) 2025. The dialogue aimed to co-develop a roadmap towards “Safer and Sustainable Himalaya 2047,” anchored in science, technology, ecological integrity, and community resilience.





Webinar: Adapt-DMIR Webinar Series – Cold Waves: Preparedness & Adaptation Strategies

04 December 2025, Virtual

ICARS–IIT Roorkee organized the second session of the Adapt-DMIR Webinar Series on “Cold Waves: Preparedness & Adaptation Strategies – Protecting Health & Wellbeing.” The webinar brought together experts from disaster management, meteorology, public health, and academia to discuss cold wave risks, adaptation measures, early warning systems, and strategies for strengthening community resilience against this emerging seasonal hazard.

Recognition & Rewards

LoI Sign Indo-Australian Collaboration on Resilience Leadership

08 December 2025, Delhi

IIT Roorkee and Deakin University, Australia signed a Letter of Intent to establish a Centre of Excellence on Resilience Leadership at IIT Roorkee's Greater Noida Campus. The initiative aims to strengthen professional training, research, and leadership in disaster management, humanitarian response, and climate resilience.



Collaborative Visit



Visit of GIZ India Delegation to ICARS, IIT Roorkee

30 October 2025, ICARS-IITR

ICARS-IIT Roorkee hosted the senior delegation from the GIZ India led by Dr. Gerald Guskowski, Programme Director & Cluster Coordinator, GIZ India to explore opportunities for strategic collaboration under a broad MoU focused on advancing the green economy agenda. Discussions highlighted potential partnerships in organizing joint events, supporting summer school programmes to strengthen youth engagement, and promoting initiatives centred on climate adaptation and resilience. The interaction laid the foundation for future collaborative efforts in capacity building and sustainable development.

Meeting with The Asia Foundation

26 November 2025 ICARS-IITR

ICARS–IIT Roorkee, Greater Noida Campus hosted representatives from The Asia Foundation, including Ms. Nandita Baruah (Country Representative, India), Ms. Shipra, and Ms. Athiya, to discuss potential collaborations in environment, climate resilience, and disaster risk reduction. The meeting explored opportunities for joint work on gender-responsive DRR, pollution and ecological disaster impacts, and the development of knowledge products, research outputs, and policy briefs, strengthening partnerships for resilience and sustainable development.





Strategic Meeting with Bal Raksha Bharat

25 November 2025, ICARS-IITR

ICARS–IIT Roorkee hosted the Bal Raksha Bharat (BRB) team for a strategic meeting focused on strengthening collaboration in child-centric disaster preparedness, climate resilience, and humanitarian action. The meeting emphasized joint preparedness initiatives, capacity building, and knowledge sharing.

Collaborative Meeting with IUCN Asia Pacific and India Experts

02 December 2025, ICARS-IITR

ICARS–IIT Roorkee hosted a delegation from the International Union for Conservation of Nature (IUCN) Asia, comprising Dr. Niladri Gupta, Dr. Vishwa Ranjan Sinha, Dr. Archana Chatterjee, and Mr. Jaidev Joshi. The delegation interacted with Prof. Anil Kumar Gupta and the ICARS scientific team to explore opportunities for collaboration in advancing Nature-based Solutions (NbS) and Ecosystem-based Disaster Risk Reduction (Eco-DRR) across India and the Asia region. The discussions laid the foundation for the first joint intervention on NbS for Adaptive Disaster Risk Reduction (DRR) in India, marking a significant step toward enhancing climate resilience and promoting sustainable development.





Academic & International Collaboration Meeting

03 December 2025, ICARS-IITR

ICARS–IIT Roorkee hosted Prof. Vimal Chandra Srivastava, Prof. Vimal Kumar, Dr. Indra Prasad Acharya, and Dr. Sanjaya Uprety for discussions on strengthening academic and research collaboration. The meeting focused on enhancing research integration, training and policy linkages, and exploring collaborative certificate programmes in chemical and industrial safety and disaster management.

Skill Enhancement

Water & Climate Academy on Nature-based Solutions & Ecosystem-based Disaster Risk Reduction

15–18 December 2025, Bhubaneswar

Ms. Alpna, Junior Research Fellow, ICARS-IITR, participated in the Water & Climate Academy 2025 on Nature-based Solutions (NbS) and Eco-DRR for Climate Resilience at XIM University, Bhubaneswar (15–18 December 2025). The programme offered rich insights into water risk-resilience nexus, ecosystem restoration, river basin governance and management, NELD and gender inclusivity, through expert lectures, interactive discussions & community voices. The learnings from this programme contributed to ongoing research and capacity-building initiatives at ICARS.



Participation at International & National Forum



Himalayan conclave 2025- Indian Himalayan Region–2047: Environmental Conservation & Sustainable Socio-Economic

13–15 November 2025, Almora

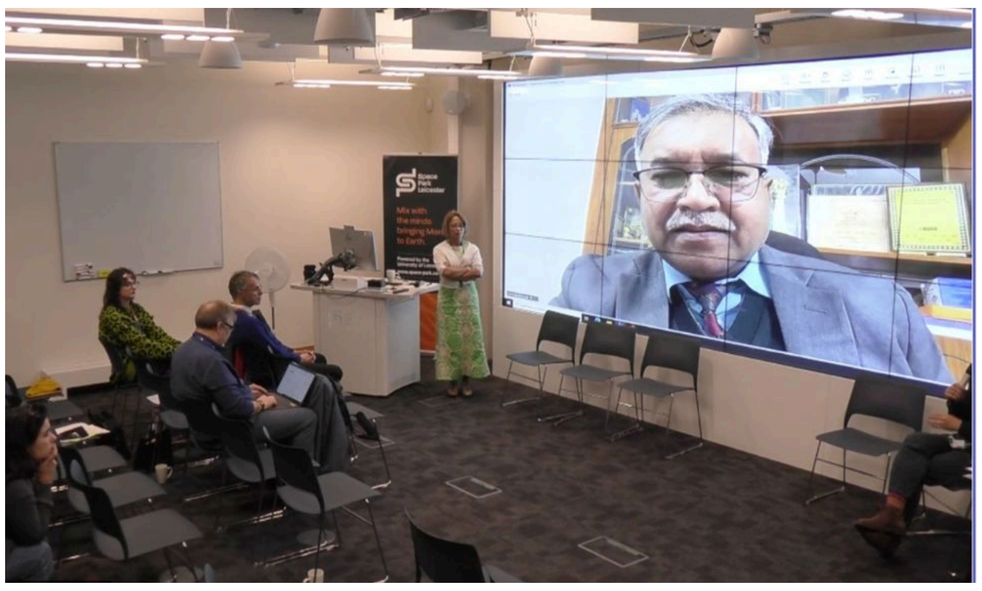
ICARS–IIT Roorkee participated in the Himalayan Conclave 2025 as a knowledge Partner, held at GBP-NIHE, Kosi-Katarmal, Almora. ICARS contributed to the thematic session on “Environmental Vulnerability – Urban Growth and Infrastructure,” focusing on climate risks, carrying capacity, and the need for ecologically sensitive and climate-resilient urban planning in the Indian Himalayan Region.

GEAG Golden Jubilee Celebration

15–16 November 2025, Gorakhpur

ICARS–IIT Roorkee joined The Gorakhpur Environment Action Group (GEAG) in celebrating its Golden Jubilee. Prof. Anil Kumar Gupta, PI–ICARS, presented the Harit Samman (Green Awards) to leading environmentalists and felicitated key functionaries for their contributions. He also addressed the gathering on climate-resilient livelihood strategies in Northern India.





Panel Participation at Environmental Futures Symposium, UK

02 December 2025, Virtual

Prof. Anil Kumar Gupta was invited as a panelist at the Environmental Futures Symposium organized by the University of Leicester (UK). He spoke on non-climatic drivers of risk, gaps in last-mile connectivity and early warning systems in mountain regions, and emerging perspectives on Loss and Damage

The Intergenerational Future Forum: Priorities for a Resilient Himalayan Horizon

11 December 2025, New Delhi

ICARS participated in the Intergenerational Future Forum: Priorities for a Resilient Himalayan Horizon, organized by the International Union for Conservation of Nature during the Himalayan Futures Forum on 11 December 2025 in New Delhi. Chaired by Dr. Anil K. Gupta, the session focused on resilience, inclusive development, and sustainable planning for the Himalayan region. Discussions emphasized the importance of collaboration across policy, finance, research, and grassroots action to build equitable and climate-resilient future pathways.





Water & Climate Academy on Nature-based Solutions & Ecosystem-based Disaster Risk Reduction

15–18 December 2025, Bhubaneswar

Prof. Anil Kumar Gupta participated as a distinguished speaker at the Water & Climate Academy 2025 held at XIM University, Bhubaneswar. He delivered a lecture on “India’s Hydro-Future,” emphasizing risk-informed water governance, early warning systems, and integrated river basin management for long-term climate resilience.

HKH DRR Hub Meeting, Bangkok

18 December 2025, Bangkok

The HKH DRR Hub Meeting was held in Bangkok with a focus on accelerating inclusive resilience and risk-informed investment in the Hindu Kush Himalaya region. Following the inaugural session, Prof. Anil Kumar Gupta chaired the Plenary Session, guiding regional discussions on disaster resilience and collaboration.



Publications

Research Papers

1. Misra, V., Chakraborty, A., & Gupta, A. K. (2026). The evolution of the moisture flux with the onset and retreat isochrones of the Indian summer monsoon. Meteorology and Atmospheric Physics, 138(1), 7.
2. Dhupper, R., Kumari, M., Gupta, A. K., & Kumar, D. (2025). Multi-dimensional assessment of drought vulnerability with composite drought index and principal component analysis for socioeconomic development in Semi-Arid regions. Discover Applied Sciences.
3. Shalwee, Dhupper, R., Kumari, M., Gupta, A. K., & Kumar, D. (2025). Drought vulnerability assessment with meteorological drought indices for ensuring environmental justice. Discover Sustainability, 6(1), 1181.
4. Shalwee, Dhupper, R., Kumari, M., Gupta, A. K., & Kumar, D. (2025). Implementing multi-criteria decision-making approaches to evaluate and map drought vulnerability with Geospatial Artificial Intelligence (Geo-AI) based investigations. Discover Applied Sciences, 7(10), 1185.

Book Chapters

1. Amin, F., Katyal, D., & Gupta, A. K. (2025). Disaster Risk Reduction in the Indian Himalayas: Strategies for Mitigating Impacts of Natural Disasters. In Ecosystem-based Approaches for Resilience Building in Himalayan Landscapes: Insights for Climate Change and Disaster Risk Reduction (pp. 363-375). Singapore: Springer Nature Singapore.



Quarterly Feature

Fund Resilience, Not Disasters

Every year, the observance of the International Day for Disaster Risk Reduction reminds us of the urgent need to strengthen resilience in the face of growing environmental and climate-related challenges. As disasters become more frequent and intense due to changing climate patterns, the need for proactive preparedness, community awareness, and sustainable risk reduction strategies has never been greater. This day highlights the importance of empowering communities, promoting early warning systems, and investing in disaster-resilient infrastructure to reduce vulnerabilities and safeguard lives.

The final quarter of 2025 also marks significant global attention toward climate action through COP30, where nations will come together to address pressing concerns related to climate adaptation, mitigation, and resilience-building. Climate change continues to intensify disaster risks, making it essential for countries to integrate disaster risk reduction into development planning. Discussions around climate finance, technology transfer, and collaborative global action will play a crucial role in shaping a safer and more sustainable future. India, with its diverse geography and exposure to multiple hazards, has consistently demonstrated the importance of community-based disaster preparedness and local resilience-building initiatives. From strengthening early warning mechanisms to conducting capacity-building programs and promoting sustainable development practices, collective action at every level remains key.

As we reflect on our shared responsibility, let us renew our commitment to preparedness, resilience, and climate-conscious action. By working together—individuals, communities, institutions, and policymakers—we can build a future that is not only safer from disasters but also stronger in the face of uncertainty.



Integrated Centre for Adaptation, Disaster Risk Resilience and Sustainability (ICARS) is the recent establishment of Department of Science and Technology (DST), Govt. of India jointly with IIT Roorkee at Greater Noida campus, with strategic and knowledge integration mandates. The centre aims to promote “Capacities and Public-Policy for Resilience and Sustainability (CAPP-RES) in Multi-Hazard Environment” through policy-linked research, action research and knowledge integration under the broad mandates of the National Mission on Strategic Knowledge for Climate Change (NMSKCC), facilitated through Department of Water Resources Development and Management, IIT Roorkee. This is an unique institution established on integrated and holistic coverage of DRR and Adaptation. ICARS promotes professional advances, leadership, and supports policy-planning, capacity building and localization of resilience agenda. ICARS is a National Anchoring Institute of MoEFCC for National Adaptation Plan for Disaster Management and Resilient Infrastructure. ICARS is designated as a India Focal Point for Hindu Kush Himalaya DRR Knowledge Hub, and also a selected professional member of UNDRR's Santiago Network for L&D through ADN.

