Report

on

2-Day Workshop on "Integrated Water Management and Flood Risk Reduction"

organized

by

Centre for Disaster Risk Reduction,

Department of Environment, Sustainability and Climate Change,

and

Department of Planning and Geomatics

Islamic University of Science and Technology,
Awantipora, Kashmir-192122 (J&K)

In collaboration with

Department of Disaster Management, Relief, Rehabilitation, and Reconstruction, Govt. of Jammu and Kashmir

VENUE: Conference Hall, Rumi Library, IUST, Kashmir

10^{th} – 11^{th}, September 2025

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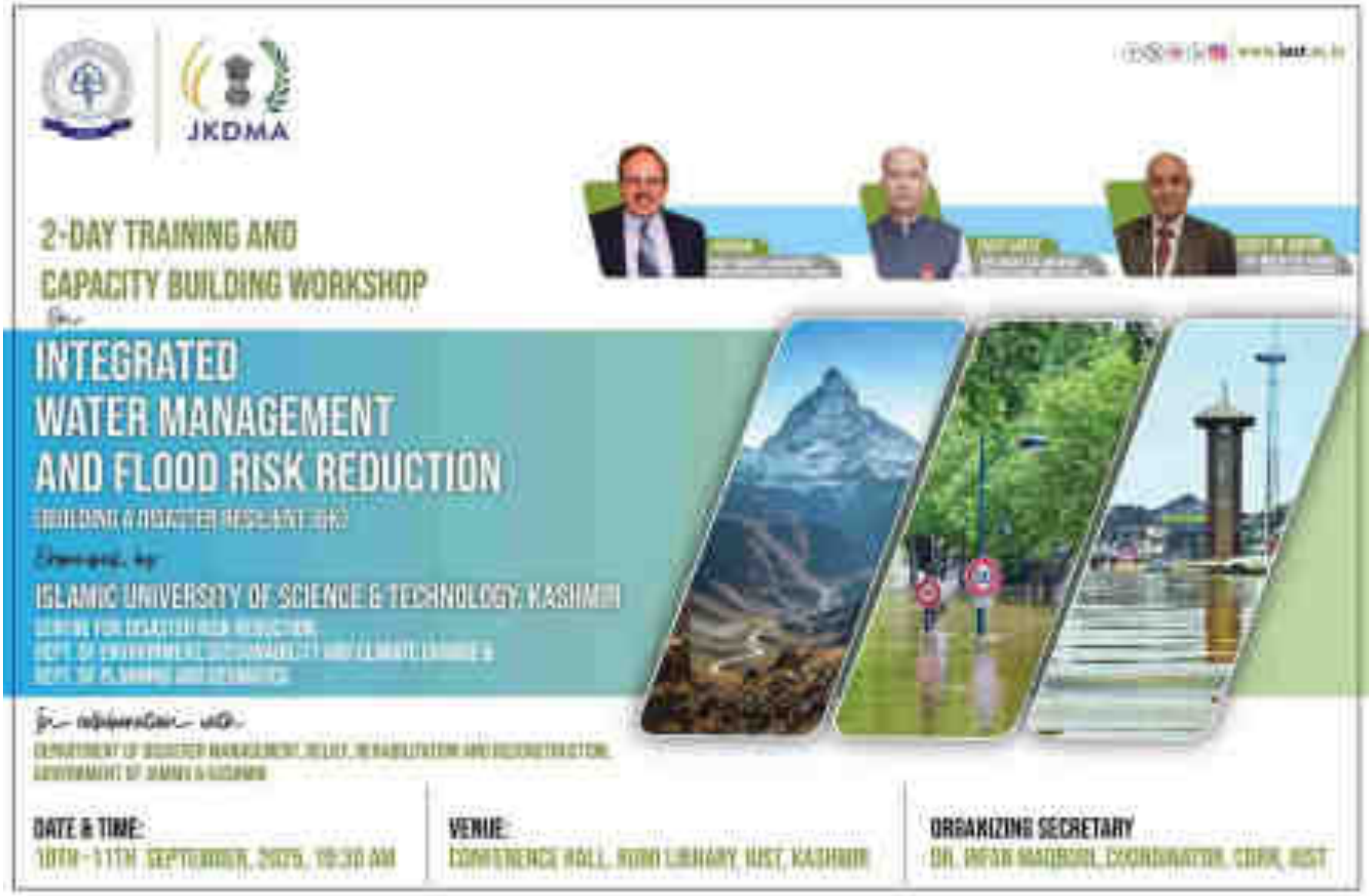

JKDMA
2-DAY TRAINING AND
CAPACITY BUILDING WORKSHOP
INTEGRATED
WATER MANAGEMENT
AND FLOOD RISK REDUCTION
ISLAMIC UNIVERSITY OF SCIENCE & TECHNOLOGY, KASHMIR
DATE & TIME:
VENUE:
ORGANIZING SECRETARY

1. About IUST

The Islamic University of Science and Technology (IUST), located in Awantipora, Kashmir, is a premier higher education institution established with the aim of advancing knowledge and fostering innovation in science, technology, and other academic disciplines. Founded in 2005, the university has become a hub for academic excellence, research, and professional development in the region, playing a pivotal role in addressing local and global challenges. IUST offers a wide range of undergraduate, postgraduate, and doctoral programs across various disciplines, including engineering, technology, social sciences, business, humanities, and architecture. The university emphasizes a multidisciplinary approach to education, integrating modern research and teaching methodologies to enhance students' knowledge and skill sets. The university is deeply committed to promoting research and innovation. It has established several research centers and initiatives to tackle emerging issues, including the Centre for Disaster Risk Reduction (CDRR), which focuses on disaster preparedness, mitigation, and resilience-building—an increasingly vital area of study for the region. IUST prioritizes student engagement and development, offering numerous co-curricular activities, workshops, and seminars to enhance students' leadership skills, critical thinking, and professional growth. The university fosters a dynamic campus culture, encouraging students to participate in debates, sports, and other extracurricular activities. IUST maintains strong collaborations with national and international universities, research institutions, and industries. These partnerships aim to foster academic exchange, joint research projects, and knowledge-sharing in sustainable development, climate change, disaster risk reduction, and technological advancements. IUST envisions becoming a leader in higher education and research, not just within Jammu & Kashmir but also on the global stage. It is committed to empowering students to meet the needs of the modern world, with a strong emphasis on innovation, sustainability, and community service. The university's growing reputation as a center of learning is reflected in its expanding academic programs, world-class faculty, and cutting-edge research facilities, all contributing to its goal of shaping the future of education and development in the region.

2. About JKDMRRR

The Jammu & Kashmir Department of Disaster Management, Relief, Rehabilitation & Reconstruction (JKDMRRR) came into effect on 30 December 2016 vide Cabinet Decision of the J&K govt. The mission of the Department of DMRRR is to ensure the safety of communities by promoting a community-based approach to Disaster Risk Reduction (DRR). This involves reducing vulnerabilities and enhancing effective disaster response through awareness programs and capacity-building initiatives. The department is dedicated to implementing appropriate measures to prevent danger and mitigate risks, ensuring that both natural and man-made disasters are addressed comprehensively. In times of disaster, the DMRRR provides timely assistance to those in distress, helping them recover and rebuild. Additionally, the department plays a key role in resolving issues related to displaced communities, including Kashmiri/Jammu migrants, those displaced in 1947, Chhamb displaced persons (1965/1971), and West Pakistani refugees. It aims to bridge the gap in identifying sufferers of natural calamities, ensuring that all affected individuals receive the support they need. The DMRRR envisions a future where Disaster Risk Reduction (DRR) is fully integrated into all developmental initiatives, ensuring the sustainability of investments and creating a disaster-resilient Jammu & Kashmir. By enhancing the capacity of all stakeholders—governments, communities, and institutions—the department seeks to respond to disasters in a planned and effective manner, minimizing the loss of lives, livelihoods, and critical infrastructure. This includes protecting essential services like healthcare, education, and social and cultural assets from the impacts of disasters. Moreover, the department is committed to providing rapid and appropriate assistance to disaster victims, facilitating their recovery process efficiently. Alongside disaster management efforts, DMRRR continues to support Kashmiri/Jammu migrants, displaced persons of 1947, Chhamb displaced persons (1965/1971), and West Pakistani refugees, ensuring their issues are addressed and their rehabilitation needs met. The overarching goal is to make Jammu & Kashmir a safer, more resilient region, prepared to face any disaster.

3. Approval order

ISLAMIC UNIVERSITY OF SCIENCE & TECHNOLOGY, KASHMIR (IUST)

Office Order No.:- 079 of 2025
Dated:- 08-09-2025

Sanction is hereby accorded to the following:

(i) Organizing of 2-day Training and Capacity Building Workshop on **Integrated Water Management and Flood Risk Reduction** from **10-11 September, 2025**, by Centre for Disaster Risk Reduction.

(ii) Constitution of Committees, as reflected in Annexure-A to this order (printed overleaf), to carry out various activities regarding the smooth conduct of the above referred programme.

By Order,

Assistant Registrar
(Establishment)

No. IUST/Reg/Adm/25/3996
Dated: 08-09-2025

Copy to:

- All Officers/Deans/Directors of the University.
- All HoDs/I/c HoDs/Centres/Sections/Principals of Colleges.
- All concerned.
- All Deputy Registrars/Deputy Finance Officer/Executive Engineer.
- Sr. Proctor.
- SMC for kind information of Hon'ble Vice Chancellor.
- Coordinator CDRR for necessary action.
- Asstt. Librarian/AEE/All Asstt. Registrars/Asstt. Director Physical Education & Sports.
- File.

4. Organizing and other committees

ISLAMIC UNIVERSITY OF SCIENCE & TECHNOLOGY, KASHMIR [IUST]

Annexure A to O.O.   Dated:

S.No.	Name	Designation	Position
		Organizing Committee	
1.	Prof. Shakil Ahmad Romshoo	Vice Chancellor	Chairperson
2.	Prof. Abdul Wahid	Registrar	Member
3.	Prof. Shakeel Ahmad	Consultant, School of Sciences	Member
4.	Prof. Mansoor Rashid	Professor of Practice	Member
5.	Dr. Aabid Hussain Shalla	I/c Dean, School of Sciences	Member
6.	Dr. S. Iqbal Qureshi	I/c Registrar, Exams	Member
7.	Dr. Sumaira Nazir Zaz	Coordinator, Dept. of ES&CC	Member
8.	Dr. Tariq Abdullah	I/c Head, Dept. of FMD	Member
9.	Dr. Yasir Altaf	Asstt. Professor, Dept. of ES&CC	Member
10.	Dr. Irfan Maqbool Bhat	Coordinator, CDRR	Org. Secretary
11.	Mr. Waseem Qadir	Assistant Professor, CDRR	Co-Org. Secretary
		Technical Committee	
1.	Dr. Sumaira Nazir Zaz	Coordinator, Dept. of ES&CC	Chairperson
2.	Dr. Irfan Maqbool Bhat	Coordinator, CDRR	Member
3.	Dr. Tariq Abdullah	I/c Head, Dept. of FMD	Member
4.	Dr. Dharam Chand	Asstt. Prof., Dept. of ES&CC	Member
5.	Dr. Insha Bashir	Asstt. Prof. Dept. of FMD	Member
6.	Dr. Yasir Altaf	Asstt. Prof. Dept. of ES&CC	Member
7.	Mr. Waseem Qadir	Assistant Professor, CDRR	Member
		Transport Committee	
1.	Mr. Mohammad Salim	Asstt. Prof. Dept. of FMD	Chairperson
2.	Mr. Waseem Qadir	Asstt. Prof., CDRR	Member
		Food and Catering Committee	
3.	Dr. Yasir Altaf	Asstt. Prof., Dept. of ES&CC	Chairperson
4.	Dr. Insha Bashir	Asstt. Prof., Dept. of FMD	Member
5.	Dr. Zubair Ahmad Dar	Asstt. Prof., Dept. of ES&CC	Member
		Finance Committee	
1.	Dr. Irfan Maqbool Bhat	Coordinator, CDRR	Chairperson
2.	Dr. Sumaira Nazir Zaz	Coordinator, Dept. of ES&CC	Member
3.	Dr. Tariq Abdullah	I/c Head, Dept. of FMD	Member
		Print and Media Committee	
1.	Dr. [illegible] Qadir	Asstt. Prof., Dept. of [illegible]	Chairperson
2.	Dr. Dharam Chand	AP, Dept. of ES&CC	Member
3.	Dr. Sajad Ahmad Wani	Asstt. Prof (C), Dept. of [illegible]	Member
4.	Mr. Zubair Ahmad [illegible]	Jr. Technical Assistant, CDRR	Member

5. PROGRAMME SCHEDULE

2-Day Training and Capacity Building Workshop On
"Integrated Water Management and Flood Risk Reduction"
September 10-11, 2025
Venue: Conference Hall, Rumi Library, IUST, Kashmir

Day & Date	Activities		TIME (IST)
Day-1 (Wednesday) 10-09-2025	Registration of Participants/ Documentary on 2014 Kashmir Floods	**Venue:** Outside the Conference Hall, Rumi Library	10:00 am–10:30 am
	Inaugural Session (Anchor: Dr. Jasia Bashir, AP, P&G, IUST)		
	Welcome Address	**Dr. Sumira Nazir Zaz** Coordinator, ES&CC, IUST	10:30 am–10:32 am
	Opening Remarks	**Prof. Abdul Wahid** Registrar, IUST	10:33 am–10:36 am
	Remarks by Special Guest	**Ms. Snober Jameel, JKAS** Deputy Secretary to the Government, Dept. of DMRRR, Govt. of J&K	10:37 am–10:40 am
	Address by Guest of Honour	**Prof. Muzaffar Ahmad** Former Member, NDMA	10:41 am–10:46 am
	Address by HVC, IUST	**Prof. Shakil Ahmad Romshoo**	10:47 am–10:52 am
	Address by the Chief Guest	**Mr. Nasir Aslam Wani** Advisor to the Hon'ble Chief Minister, UT of J&K	10:53 am–11:00 am
	Felicitation of Guests		11:01 am–11:03 am
	Vote of Thanks	**Dr. Irfan Maqbool Bhat** Coordinator, CDRR, IUST	11:03 am–11:05 am
	Tea Break (Venue: Outside the Conference Hall, Rumi Library)		11:05 am–11:15 am
	Technical Session-1 (Chairperson: **Prof. A. H. Moon**, Dean Academic Affairs; Rapporteur: **Dr. Yasir Altaf**, AP, ES&CC, IUST)		
	TOPIC/ACTIVITY	**RESOURCE PERSON/ EXPERTS**	**TIME (IST)**
	Talk-1: Recalling the Fury: Reflections, Response, and Lessons from the 2014 Kashmir Floods	**Er. Javed Jaffer** Former Chief Engineer, I&FC Kashmir	11:16 am–12:00 pm
	Q&A Session		12:01 pm–12:15 pm
	Talk-2:	**Er. Tasaduq Kaul**	12:16 pm–12:45

	Flood Forecasting Systems for the Jhelum River: Architecture, Functionality, and Operational Insights	Assistant Executive Engineer, Head Technical Section I&FC Kashmir	pm
	Q&A Session		12:46 pm–01:00 pm
	Lunch Break (Venue: CIED, IUST)		01:00 pm–02:00 pm
	Technical Session-2 (Chairperson: **Dr. Aabid Hussain Shalla**, Dean Research; Rapporteur: **Dr. Dharam Chand**, AP, ES&CC, IUST)		
	Talk-3: Tectono-geomorphic Evolution of Kashmir Valley: Special Emphasis on River Jhelum	**Dr. Reyaz Ahmad Dar** Senior Assistant Professor, University of Kashmir	02:00 pm–02:45 pm
	Q&A Session		02:46 pm–03:00 pm
	Tea Break (Venue: Outside the Conference Hall, Rumi Library)		03:01 pm–03:15 pm
	Talk-4: Hydrometrological Infrastructure in J&K: Current Status, Gaps, and the Road Ahead	**Dr. Mukhtar Ahmad** Director of the Meteorological Centre Srinagar	03:15 pm–03:45 pm
	Q&A Session		03:46 pm–04:00 pm
	Open House Discussion: Why does Kashmir Keep Facing Flood Scares?	**Coordinated by: Prof. Shakeel Ahmed**, Consultant, & **Dr. Sumira Nazir Zaz**, Coordinator, ES&CC, IUST	04:01 pm–04:30 pm
Day-2 (Thursday) 11-09-2025	**Technical Session-3** (Chairperson: **Dr. Ruheela Hassan**, Dean Outreach; Rapporteur: **Dr. Tariq Abdullah**, Head, P&G, IUST)		
	Talk-5: Historical Overview of Floods in Kashmir Valley	**Dr. Yasir Altaf**, Assistant Professor, Dept. of ES&CC, IUST	10:30 am–11:00 am
	Q&A Session		11:01 am–11:15 am
	Tea Break (Venue: Outside the Conference Hall, Rumi Library)		11:15 am–11:25 am
	Group Brainstorming Chairperson: **Prof. Shakil Ahmad Romshoo,** HVC, IUST		11:25 am–11:35 am
	Group-1: Urban Flooding in Kashmir Valley	**Coordinated by: Prof. Javed Hussain Mir** Professor of Practice, IUST	11:36 pm–12:15 pm
	Group-2: Community Preparedness and Coordination for Flood Response	**Coordinated by: Dr. G. N. Qasba, IAS** Former Commissioner SMC	
	Group-3: Wetland and their Potential for Flood Mitigation and Ground-water Recharge	**Coordinated by: Prof. Humayun Rashid** Professor of Practice, IUST	
	Group-4: Gaps and Challenges in Preparedness and future planning for Flood	**Coordinated by: Prof. Muzaffar Ahmad**	

	Management	Former Member, NDMA	
	Presentation by Group Coordinators (7 minutes for each)		12:16 pm–12:45 pm
	Q&A Session		12:46 pm–01:00 pm
	Lunch Break (Venue: CIED, IUST)		01:00 pm–02:00 pm
	Technical Session-4 (Chairperson: **Prof. Shakil Ahmad Romshoo**, HVC, IUST; Rapporteur: **Dr. Yasir Altaf**, AP, ES&CC, IUST)		
	Sharing of Ideas and Thoughts by Participants: Prospectives and Retrospectives of 2014 Kashmir Flooding – An Introspection	**Chair: Prof. Shakil Ahmad Romshoo** HVC, IUST	02:00 pm–02:45 pm
	Panel Discussion (Chairperson: **Prof. Shakil Ahmad Romshoo**, HVC, IUST)		
	Discussion Topic: "Strategies and Solutions for Flood Resilience in the Kashmir Valley" **Panellists:** Prof. Muzaffar Ahmad; Er. Iftekhar Kakroo; Prof. Shakeel Ahmed; Prof. Humayun Rashid; Prof. Javed Hussain Mir; Ms. Snober Jameel		02:46 pm–04:00 pm
	Valedictory Session (Anchor: Dr. Jasia Bashir, AP, P&G, IUST)		
	Welcome Address	**Prof. Humayun Rashid** Professor of Practice, IUST	04:00 pm–04:03 pm
	Summary of the Workshop	**Dr. Irfan Maqbool Bhat** Coordinator, CDRR, IUST	04:03 pm–04:10 pm
	Certificate Distribution	**By HVC and the Chief Guest**	04:10 pm–04:20 pm
	Remarks of the Dean Academic Affairs, IUST	**Prof. A. H. Moon**	04:20 pm–04:25 pm
	Closing Remarks of the Chief Guest	**Ms. Snober Jameel, JKAS** Deputy Secretary to the Govt, Dept. of DMRRR	04:25 pm–04:30 pm
	Presidential Address	**Prof. Shakil Ahmad Romshoo** HVC, IUST	04:30 pm–04:40 pm
	Vote of Thanks	**Dr. Tariq Abdullah** Head, P&G, IUST	04:40 pm–04:42 pm
	High Tea and End of the Workshop		04:42 pm–05:00 pm

6. List of registered/nominated participants

S.No.	Name	Designation
1. Participants from DMRR&R, Government of J&K		
1.	Ms. Snober Jameel, JKAS	Deputy Secretary to the Government, DMRR&R
2.	Arvind Raina	Asst. Programmer, DMRR&R
3.	Irfan Mehmood	Head Assistant, DMRR&R
4.	Iqra Yousuf	Junior Assistant, DMRR&R
2. Participants from Srinagar Development Authority (SDA)		
5.	Tariq Hussain Shamas	I/C Assistant Town Planner
6.	Mrs. Arvin Gull	Assistant Engineer
7.	Mr. Gh. Nabi Najar	Junior Engineer
8.	Ateeb-Bin-Rashid	Junior Engineer
9.	Mushtaq Ahmad Mir	I/C Draftsman
3. List of Participants from Urban Local Bodies Kashmir		
10.	Mirza Asif Ali	Executive Officer, MC Anantnag
11.	Tariq Hassan Lone	Executive Officer, MC Awantipora
12.	Mohammad Ismail Mir	Executive Officer, MC Pampore
4. Participants from J&K Lake Conservation and Management Authority (JKLCMA), Srinagar		
13.	Er. Mueed Rasool	Executive Engineer (Civil)

14.	**Mr. Manzoor Ahmad Bhat**	**Project Officer**
15.	**Er. Mohd. Tariq Dar**	**Assistant Executive Engineer (Mech.)**
16.	**Er. Parveez Salim**	**Assistant Executive Engineer (Civil)**
17.	**Er. Younis Majid**	**Assistant Executive Engineer (Civil)**
18.	**Er. Zahoor Ahmad Khan**	**Assistant Executive Engineer (Civil)**
19.	**Er. Aamir Farooq Kutay**	**Assistant Engineer (Civil)**
20.	**Ms. Neelofar Naz**	**Scientist-A**
21.	**Ms. Nayara Taban**	**Scientist-A**
5. Participants from Irrigation and Flood Control (I&FC) Department, Rajbagh, Srinagar		
22.	**Er. Aasiya Mir**	**Assistant Executive Engineer, ID Pulwama**
23.	**Er. Arshid Ahmad Paul**	**Assistant Engineer, ID Pulwama**
24.	**Er. Bilal Ahmad Malla**	**Assistant Engineer, ID Pulwama**
25.	**Er. Towseef Ahmad Dar**	**Junior Engineer, ID Pulwama**
26.	**Er. Mehnaz-ul Amin**	**Assistant Engineer, FCD, Anantnag**
27.	**Er. Mehraj din Haroon**	**Junior Engineer, FCD, Anantnag**
28.	**Er. Zeeshan Hussain Bhat**	**Assistant Engineer, FCD, Kakapora**
29.	**Er. Khalid Nazir**	**Assistant Engineer, FCD, Kakapora**
30.	**Er. Umer Ayoub**	**Junior Engineer, FCD, Kakapora**
31.	**Er. Mohsin Manzoor Parray**	**Assistant Engineer, ID, Anantnag**
32.	**Er. Javaid Ahmad Lone**	**Junior Engineer, ID, Anantnag**

6. Participants from Srinagar Municipal Corporation (SMC), Central Office, Karan Nagar, Srinagar		
33.	**Er. Sajad Ahmad Kawoosa**	**I/C Superintending Engineer, Drainage Circle, SMC**
34.	**Er. Raise Maqbool Masoodi**	**Executive Engineer, Mechanical City Drainage Division, SMC**
35.	**Er. Mehboob Ali Wazir**	**Executive Engineer, Sewerage & Drainage, SMC**
36.	**Er. Sohaib Yousuf**	**Executive Engineer, City Drainage Civil Division, SMC**
37.	**Er. Firdous Ahad Bhat**	**AEE, Mechanical City Drainage Division, SMC**
38.	**Er. Danish Shah**	**I/C AEE, City Drainage Civil Division, SMC**
39.	**Er. Tabish Beg**	**Assistant Engineer, Sewerage & Drainage Division-10, SMC**
40.	**Mr. Suhail Nabi**	**I/C Chief Revenue Officer, SMC**
41.	**Mr. Shahid Israr Ali**	**I/C Chief Transport Officer, SMC**
42.	**Er. Aqib Jan**	**I/C Junior Engineer, LRWD, SMC**
7. Participants from District Disaster Management Officer Budgam		
43.	**Mr. Umar Manzoor Shah**	**Naib Tehsildar (Consolidation) Chadoora**
44.	**Mr. Janbaz Shakeel u Rahman**	**Naib Tehsildar (Defence)**
8. Participants from the Office of the Deputy Commissioner Ganderbal		
45.	**Mr. Umar Farooq**	**Tehsildar Wakura**
46.	**Mr. Iftikhar Nadeem**	**Executive Engineer I&FC, Ganderbal**
9. Participants from Jal Shakti (I&FC) Department Kashmir		
47.	**Afaq Rashid Mir**	**Junior Engineer**

48.	**Amir Gul**	**Junior Engineer**
49.	**Asif Iqbal**	**Junior Engineer**
50.	**Mohd Shafi Khan**	**Junior Engineer**
51.	**Syed Amjad Ali**	**Junior Engineer**
52.	**Sheikh Javaid**	**Junior Engineer**
53.	**Arshid Ahmad Dar**	**Junior Engineer**
54.	**Abid Bashir**	**Junior Engineer**
55.	**Altaf Gowhar Rather**	**Junior Engineer**
56.	**Shoaib Ahmad Lone**	**Junior Engineer**
10. Participants from Jal Shakti (I&FC) Department Jammu		
57.	**Rajiv Sharma**	**Assistant Engineer**
58.	**Manglesh Angurana**	**Assistant Engineer**
59.	**Javid Iqbal**	**Assistant Engineer**
60.	**Vikalp Bharti**	**Assistant Engineer**
61.	**Anish Sarotra**	**Assistant Engineer**
62.	**Archit Sharma**	**Assistant Engineer**
63.	**Ashi Sharma**	**Assistant Engineer**
11. Participants from Jal Shakti (RTIC) Department Jammu		
64.	**Arif Malik**	**Assistant Engineer**
65.	**Ashwani Kumar**	**Assistant Engineer**

66.	**Vishal Gupta**	**Assistant Engineer**
12. Participants from IUST, Kashmir		
67.	**Dr. Irfan Maqbool Bhat**	**AP, CDRR, IUST**
68.	**Mr. Waseem Qader**	**AP, CDRR, IUST**
69.	**Dr. Sumira Nazir**	**AP, ES&CC, IUST**
70.	**Dr. Yasir Altaf**	**AP, ES&CC, IUST**
71.	**Dr. Dharam Chand**	**AP, ES&CC, IUST**
72.	**Dr. Zubair Ahmad**	**AP, ES&CC, IUST**
73.	**Dr. Tariq Abdullah**	**AP, P&G, IUST**
74.	**Dr. Jasia Bashir**	**AP, P&G, IUST**
75.	**Mr. Mohammad Saleem**	**AP, P&G, IUST**
76.	**Dr. Monisa Qadiri**	**AP, J&MC, IUST**
77.	**Dr. Sayar Ahmad Mir**	**AP, J&MC, IUST**

7. Summary of the workshop

7.1. Introduction

Floods constitute one of the most recurrent and destructive hazards in the Union Territory of Jammu and Kashmir, with the 2014 Kashmir floods representing a defining disaster event in the region's recent history. The unique geomorphic setting of the Kashmir Valley, coupled with high sediment loads, constrained river channels, extensive wetland loss, rapid urbanisation, and changing climatic patterns, has significantly increased flood vulnerability. In recent years, recurrent flood scares, urban waterlogging, and drainage congestion have underscored the urgent need for a scientifically grounded, integrated, and proactive approach to flood risk reduction.

In this context, the Centre for Disaster Risk Reduction (CDRR), Islamic University of Science and Technology (IUST), in collaboration with the Department of Environmental Sciences & Climate Change (ES&CC), and Department of Geomatics, IUST, organised a 2-Day Training and Capacity Building Workshop on "Integrated Water Management and Flood Risk Reduction" on 10–11 September 2025 at the Rumi Library, IUST. The workshop was conceived as a strategic platform to reflect on the lessons of the 2014 floods, assess current preparedness levels, identify systemic gaps in flood management, and develop a forward-looking roadmap for flood resilience in Jammu and Kashmir.

The workshop was honoured by the presence of Mr. Nasir Aslam Wani, Advisor to the Hon'ble Chief Minister, UT of J&K, as the Chief Guest. Prof. Muzaffar Ahmad, Former Member, NDMA, was the Guest of Honour, and Ms. Snober Jameel, JKAS, Deputy Secretary to the Government, Department of DMRRR, was the Special Guest. The leadership of IUST, including Prof. Shakil Ahmad Romshoo, Hon'ble Vice Chancellor, Prof. Abdul Wahid, Registrar, and Prof. A. H. Moon, Dean Academic Affairs, also attended the event.

The workshop brought together administrators, engineers from the Irrigation & Flood Control Department, meteorologists, urban planners, academicians, researchers, and students. The initiative marked a significant step towards strengthening institutional, technical, and community capacities for flood risk reduction in Jammu and Kashmir through research–policy–practice integration.

7.2. Proceedings of Day 1

The workshop commenced on 10th September 2025 with an inaugural function at the Lal Ded Auditorium, IUST, bringing together a diverse audience of stakeholders. Dr. Sumaira Nazir Zaz, Coordinator, ES&CC, IUST, welcomed the guests and participants and highlighted that

floods in Kashmir are no longer episodic events but recurring systemic risks driven by climatic variability, geomorphic constraints, and human interventions. She emphasised the need for integrated water management approaches that combine science, policy, and community participation.

In his opening remarks, Prof. Abdul Wahid, Registrar, IUST, underlined the responsibility of academic institutions in generating actionable knowledge for disaster risk reduction. He stressed that universities must function as knowledge hubs, providing evidence-based inputs to government departments for flood-resilient planning and infrastructure development.

Ms. Snober Jameel, Deputy Secretary, Department of DMRRR, Government of J&K, spoke about the government's initiatives aimed at mass awareness, stakeholder engagement, and institutional capacity building. She highlighted the paradigm shift from reactive flood response to proactive flood risk reduction, aligned with national frameworks such as the National Disaster Management Plan and the Prime Minister's 10-Point Agenda on DRR. She emphasised that wetlands, drainage networks, and natural waterways must be treated as critical infrastructure assets.

Prof. Muzaffar Ahmad, Former Member, NDMA, drew on scientific data and global examples to underscore the urgent need for enhanced preparedness in Jammu and Kashmir. He noted that while scientific understanding of floods has improved, institutional coordination, enforcement of land-use regulations, and community preparedness remain weak. He cautioned that without systemic reforms, flood losses would continue to escalate.

In his address, Hon'ble Vice Chancellor, Prof. Shakil Ahmad Romshoo, highlighted the importance of introspection for flood risk reduction within Kashmir's unique geomorphic and hydrological setting. He stressed that the 2014 floods were not merely a natural disaster but the outcome of cumulative planning failures, wetland degradation, river encroachment, and drainage mismanagement. He emphasised the need to integrate geomorphology, hydrology, climate science, and land-use planning into flood management strategies.

The Chief Guest, Mr. Nasir Aslam Wani, Advisor to the Hon'ble Chief Minister, UT of J&K, underlined the urgency of effective water management and flood preparedness. He stated that workshops like these are extremely relevant and timely, given the increasing frequency of flood scares in the Valley, and commended IUST for taking the lead in sensitising stakeholders. The session concluded with a formal vote of thanks.

In the subsequent Technical Session 1, Er. Javed Jaffer, Former Chief Engineer, I&FC Kashmir, recalled the extreme nature of the 2014 rainfall event, noting that nearly 400 mm of

rainfall occurred within just four days, far exceeding the design capacity of existing infrastructure. He highlighted the limited carrying capacity of the River Jhelum and its spill channel and pointed out that the project to raise the river's capacity and dredge outfall channels remains incomplete. He characterised the 2014 floods as a "disaster slowly building up", indicating missed opportunities for early warning and response. He stressed the importance of both long-term structural measures and short-term non-structural interventions to mitigate future flood threats.

This was followed by a lecture by Er. Tasaduq Kaul, Assistant Executive Engineer and Head, Technical Section, I&FC Kashmir, who elaborated on the Jhelum River Flood Forecasting System. He explained its integration of gauging data, meteorological inputs, and hydrological–hydraulic models. He acknowledged challenges due to data scarcity and spatial gaps but noted that data assimilation has significantly improved forecast reliability. He emphasised the need for expanding sensor networks and improving real-time data integration.

After lunch, Technical Session 2 began with a presentation by Dr. Reyaz Ahmad Dar, Senior Assistant Professor, University of Kashmir, on the tectono-geomorphic evolution of the Kashmir Valley. He traced the valley's evolution from the Satisar lake stage to the present Jhelum drainage system and emphasised that tectonic control strongly influences channel morphology, width, depth, and gradient, directly affecting carrying capacity and flood behaviour.

This was followed by Dr. Mukhtar Ahmad, Director, Meteorological Centre Srinagar, who outlined the status of hydrometeorological infrastructure in J&K and its integration with national forecasting systems. He highlighted key gaps, including data scarcity in remote areas, limited radar coverage, and challenges in capturing complex rainfall patterns, which are intensifying due to climate change. He detailed plans to expand automated weather stations, improve forecasting models, build local expertise, and strengthen public communication.

The day concluded with an Open House Discussion titled "Why does Kashmir Keep Facing Flood Scares?", coordinated by Prof. Shakeel Ahmed and Dr. Sumaira Nazir Zaz, which identified wetland loss, floodplain encroachment, drainage blockage, and unplanned urbanisation as major contributors to recurring flood risk.

7.3. Proceedings of Day 2

The second day of the workshop on 11th September 2025 began with Technical Session 3, in which Dr. Yasir Altaf, Assistant Professor, ES&CC, IUST, presented a historical overview of floods in the Kashmir Valley. He reviewed past flood events and highlighted that flood threats have persisted and, in many areas, intensified since the 2014 disaster. He stressed that without addressing structural, ecological, and governance failures, future flood risks will continue to rise.

The highlight of Day 2 was the group brainstorming session chaired by Prof. Shakil Ahmad Romshoo, Hon'ble Vice Chancellor, IUST. Four thematic groups deliberated on critical dimensions of flood risk:

- Group 1: Urban Flooding in the Kashmir Valley (Prof. Javed Hussain Mir) examined drainage congestion, unplanned urban growth, encroachment of natural channels, and increasing impervious surfaces.

- Group 2: Community Preparedness and Coordination for Flood Response (Dr. G. N. Qasba, IAS) focused on gaps in awareness, early warning dissemination, evacuation planning, and inter-agency coordination.

- Group 3: Wetlands and their Potential for Flood Mitigation and Groundwater Recharge (Prof. Humayun Rashid) highlighted the role of wetlands as natural flood buffers and recharge zones, stressing urgent restoration and protection.

- Group 4: Gaps and Challenges in Preparedness and Future Planning for Flood Management (Prof. Muzaffar Ahmad) examined institutional fragmentation, weak enforcement, and lack of long-term planning.

Each group presented its findings and recommendations, followed by discussion and feedback.

The final technical session provided a platform for participants to share ideas and reflections on the 2014 Kashmir floods, chaired by Prof. Shakil Ahmad Romshoo. The discussion focused on both retrospective analysis of past failures and prospective strategies for improved flood management.

This was followed by a panel discussion led by Prof. Shakil Ahmad Romshoo, which emphasised the need for a multi-faceted and integrated approach to flood risk reduction, combining scientific research, flood-resilient infrastructure, policy reforms, ecosystem-based solutions, and strong community engagement.

The workshop concluded with a formal valedictory session. Dr. Irfan Maqbool Bhat, Coordinator, CDRR, IUST, presented a concise summary of the workshop proceedings and key outcomes. Certificates were distributed to all participants. Prof. A. H. Moon, Dean Academic Affairs, highlighted the academic relevance of the workshop and its importance for applied learning. Ms. Snober Jameel delivered the closing remarks, and Prof. Shakil Ahmad Romshoo

gave the presidential address, reaffirming IUST's commitment to supporting flood risk reduction initiatives in Jammu and Kashmir. The session ended with a vote of thanks by Dr. Tariq Abdullah.

7.5. Key Recommendations

Based on expert lectures, technical sessions, group discussions, and panel deliberations, the following specific and actionable recommendations are proposed to advance flood risk reduction and integrated water management in Jammu & Kashmir:

1. **Restore and legally protect all remaining wetlands as primary flood retention zones:** Wetlands act as natural sponges that absorb, store, and slowly release floodwaters, thereby reducing peak discharge during high rainfall events. The large-scale loss and encroachment of wetlands in the Kashmir Valley have significantly reduced its flood buffering capacity. Immediate legal protection, demarcation, and ecological restoration of wetlands must be undertaken to reinstate their role in flood mitigation and groundwater recharge.
2. **Enforce strict floodplain zoning and prohibit construction in active flood zones:** Unregulated construction within floodplains and historical inundation zones has increased exposure and amplified flood damage. Floodplain zoning regulations must be strictly enforced, and no new residential, commercial, or public infrastructure should be permitted in active flood zones. Existing high-risk settlements should be gradually relocated through planned resettlement programmes.
3. **Upgrade hydrometeorological infrastructure and increase monitoring density:** Effective flood forecasting and early warning depend on dense, reliable networks of rain gauges, river level sensors, and weather stations. J&K currently suffers from sparse coverage, especially in remote and high-altitude areas. The monitoring network must be expanded and modernised to capture spatial variability in rainfall and runoff.
4. **Modernise the Jhelum flood forecasting system with real-time data integration:** The Jhelum flood forecasting system must be strengthened through real-time integration of hydrological, meteorological, and satellite data. Advanced hydrological and hydraulic models, supported by data assimilation techniques, should be used to improve accuracy and lead time, enabling timely decision-making and evacuation.
5. **Desilt and rehabilitate river channels and outfall drains:** Sedimentation, encroachment, and lack of maintenance have reduced the carrying capacity of the Jhelum and its outfall channels. Regular desilting, dredging, and rehabilitation must be institutionalised to restore channel depth and flow efficiency, particularly in critical urban stretches.
6. **Integrate flood hazard maps into urban master plans:** Urban planning in the Kashmir

Valley has largely ignored flood hazard information. Flood hazard and inundation maps must be mandatory planning tools for all master plans, zoning regulations, and development approvals to prevent risk accumulation in vulnerable areas.

7. **Adopt basin-level integrated water management for the Jhelum system:** Flood management should be planned at the river basin scale rather than administrative boundaries. Integrated basin management will ensure coordinated management of upstream catchments, wetlands, tributaries, and downstream floodplains, reducing peak flows and enhancing system-wide resilience.
8. **Redesign urban stormwater networks based on hydrological modelling:** Existing urban drainage systems are undersized and poorly aligned with natural flow paths. Stormwater networks must be redesigned using hydrological and hydraulic modelling that considers rainfall intensity, runoff coefficients, topography, and climate change projections to prevent urban waterlogging.
9. **Mandate flood risk assessment in all infrastructure projects:** No infrastructure project—roads, bridges, housing, or public buildings—should be approved without a formal flood risk and drainage impact assessment. This will ensure that new developments do not obstruct natural flow paths or increase downstream flood risk.
10. **Strengthen community-based early warning dissemination mechanisms:** Early warnings are effective only if they reach communities in time. Multi-channel dissemination systems using mobile alerts, local volunteers, mosques, community centres, and social networks must be institutionalised to ensure last-mile connectivity, especially in rural and peri-urban areas.
11. **Conduct regular flood mock drills in vulnerable settlements:** Communities must be trained to respond effectively during flood emergencies. Regular mock drills should be conducted in flood-prone villages and urban localities to familiarise residents with evacuation routes, shelters, and emergency procedures.
12. **Remove encroachments from river channels, wetlands, and drainage corridors:** Encroachments have severely restricted flow paths and storage areas. A time-bound programme must be initiated to remove illegal constructions from riverbanks, floodplains, wetlands, and natural drainage channels to restore hydraulic connectivity.
13. **Promote permeable surfaces and green infrastructure in urban areas:** Increasing impervious surfaces have accelerated runoff and reduced infiltration. Urban design must promote permeable pavements, green roofs, rain gardens, and urban green spaces to

enhance infiltration and reduce surface runoff.

14. **Restore traditional water channels (khuls and nallahs):** Traditional irrigation and drainage channels have historically played a key role in managing excess water. Many of these have been blocked, encroached upon, or converted into roads. Their restoration will improve local drainage and reduce flood intensity.
15. **Establish a Flood Resilience Coordination Cell under JKDMRRR:** Flood management involves multiple departments, leading to fragmentation and coordination gaps. A dedicated Flood Resilience Coordination Cell under JKDMRRR should be created to integrate planning, implementation, and monitoring across departments.
16. **Institutionalise training for engineers and planners in flood-resilient design:** Engineers, town planners, and architects must be trained in flood-resilient design principles, hydrological analysis, and drainage planning. Mandatory capacity-building programmes should be institutionalised through government training institutes and universities.
17. **Integrate climate change projections into flood planning:** Climate change is increasing rainfall variability and the frequency of extreme events. Flood planning must incorporate climate projections to avoid under-designing infrastructure and to prepare for future risk scenarios.
18. **Strengthen Emergency Operation Centres (EOCs) for flood response coordination:** District and state-level EOCs must be equipped with real-time data access, communication systems, and trained personnel to coordinate flood response, rescue, relief, and infrastructure management.
19. **Fix accountability for drainage failures and encroachments:** Clear institutional responsibility must be assigned for drainage maintenance, encroachment control, and flood mitigation works. Accountability mechanisms should be strengthened to prevent negligence and ad-hocism.
20. **Apply "Build Back Better" principles in flood recovery and reconstruction:** Post-flood reconstruction should not merely restore damaged structures but structurally upgrade them for higher resilience. Flood-resilient design, elevated plinths, improved drainage, and safer materials must be mandatory in all reconstruction projects.

8. Feedback

Feedback was collected from participants using structured evaluation forms on both Day-1 and Day-2 of the workshop on "Integrated Water Management and Flood Risk Reduction". The responses provide valuable insights into the effectiveness of content delivery, relevance, interaction quality, and overall learning outcomes.

Section 1: Content & Delivery

Aspect	Avg. Rating	Insights
Objectives clarity	4.4	Participants clearly understood the purpose of the workshop and appreciated its focus on the 2014 floods and current flood challenges in J&K.
Content relevance	4.3	Topics were strongly aligned with field realities in Kashmir, especially urban flooding, wetlands, and river management.
Quality of expert talks & presentations	4.5	Experts were highly appreciated for their depth of knowledge, practical experience, and use of real flood case studies.
Organisation & time management	4.0	Overall structure was appreciated, though some technical sessions ran longer than scheduled.
Facilitators & resource persons	4.6	Speakers were rated very highly for domain expertise and ability to link science with policy and practice.
Opportunity for Q&A and interaction	4.1	Interactive components were valued; participants requested longer Q&A sessions for technical discussions.
Open house discussion (Day-1)	4.2	Considered highly useful for sharing ground realities and institutional challenges.
Group brainstorming sessions (Day-2)	4.5	One of the strongest components; encouraged cross-sectoral learning and problem-solving.
Panel discussion usefulness	4.4	Participants appreciated the multi-disciplinary perspectives and policy relevance.
Overall learning experience	4.4	Most participants reported significant learning and increased understanding of flood risk in Kashmir.
Coordination & logistical support	4.5	Tea, lunch, registration, and session coordination were widely appreciated.

Section 2: Participant Insights

1. Skills & Knowledge Gained

Participants reported gaining substantial conceptual and practical understanding in the following areas:

- Flood forecasting systems and early warning mechanisms, particularly the Jhelum River Flood Forecasting framework.
- Tectono-geomorphic controls on flooding and their implications for river behaviour and carrying capacity.
- Role of wetlands in flood mitigation and groundwater recharge.
- Hydrometeorological monitoring systems and challenges in mountainous terrain.
- Urban flood dynamics, including drainage congestion, impervious surfaces, and encroachments.
- Integrated basin management approaches for flood risk reduction.
- Community preparedness and coordination mechanisms.
- Policy and institutional frameworks governing flood management in J&K.

Participants particularly valued sessions that connected scientific understanding with real operational challenges, such as the 2014 flood analysis and forecasting system demonstrations.

2. Most Useful / Engaging Sessions Identified

Based on feedback forms and open comments, the following were repeatedly highlighted:

- "Recalling the Fury: Reflections and Lessons from the 2014 Kashmir Floods" – Er. Javed Jaffer
- Flood Forecasting Systems for the Jhelum – Er. Tasaduq Kaul
- Tectono-geomorphic evolution of Kashmir Valley – Dr. Reyaz Ahmad Dar
- Hydrometeorological Infrastructure in J&K – Dr. Mukhtar Ahmad
- Group Brainstorming Sessions (Urban Flooding, Community Preparedness, Wetlands, Gaps in Planning)
- Panel Discussion on Strategies for Flood Resilience

These sessions were valued for their local relevance, technical depth, and applicability to field conditions.

3. Suggestions for Improvement

Participants suggested the following enhancements for future workshops:

- Increase hands-on and practical components, including field visits to flood-prone sites, wetlands, and drainage systems.

- More time for technical Q&A sessions, especially after expert lectures.
- Use of more visual aids, maps, and simulations to explain flood dynamics and urban drainage behaviour.
- Inclusion of district-level officials and municipal engineers for stronger implementation linkages.
- Dedicated sessions on urban stormwater design and drainage engineering.

4. Identified Field Challenges

Participants highlighted several persistent challenges in the field:

- Encroachment of wetlands, floodplains, and drainage channels.
- Inadequate carrying capacity of the Jhelum and outfall channels.
- Poor maintenance and desilting of drainage networks.
- Unplanned urban expansion and conversion of natural channels into roads.
- Weak coordination among departments involved in flood management.
- Limited community awareness and preparedness.

These challenges were repeatedly cited as major contributors to the recurring flood scares in the Valley.

5. Key Gaps & Risks

From the feedback, the following systemic gaps and risks were identified:

- Flood risk integration in urban planning is weak, leading to accumulation of assets in high-risk zones.
- Hydromet monitoring density is inadequate, especially in upstream catchments.
- Institutional fragmentation across departments leads to delayed and uncoordinated responses.
- Wetland degradation continues unchecked, severely reducing natural flood buffering capacity.
- Community-level preparedness remains low, particularly in vulnerable settlements.

Overall, participants rated the current flood preparedness status in J&K as moderate to poor, with an urgent need for institutional strengthening and infrastructure upgrading.

6. Recommended Actions

Based on feedback forms and group discussions, participants strongly recommended:

- Develop J&K-specific Flood Risk Reduction training modules for engineers, planners, and administrators.

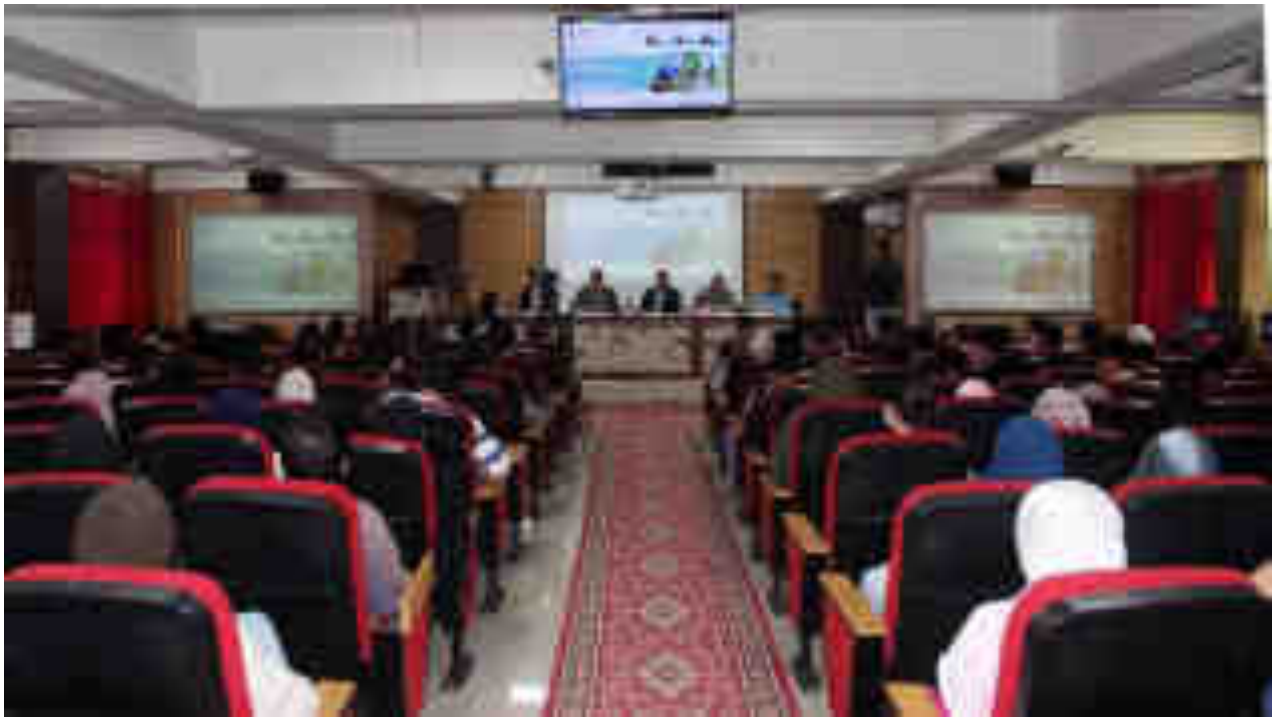
- Institutionalise regular flood management training and refresher programmes.
- Strengthen hydrometeorological and river monitoring infrastructure.
- Make flood risk assessment mandatory for all urban development projects.
- Restore and protect wetlands as core flood mitigation infrastructure.
- Conduct community-based flood drills and awareness programmes.
- Create inter-departmental coordination mechanisms under JKDMRRR.
- Develop practical field manuals on flood-resilient urban design and drainage planning.

Section 3: Overall Experience

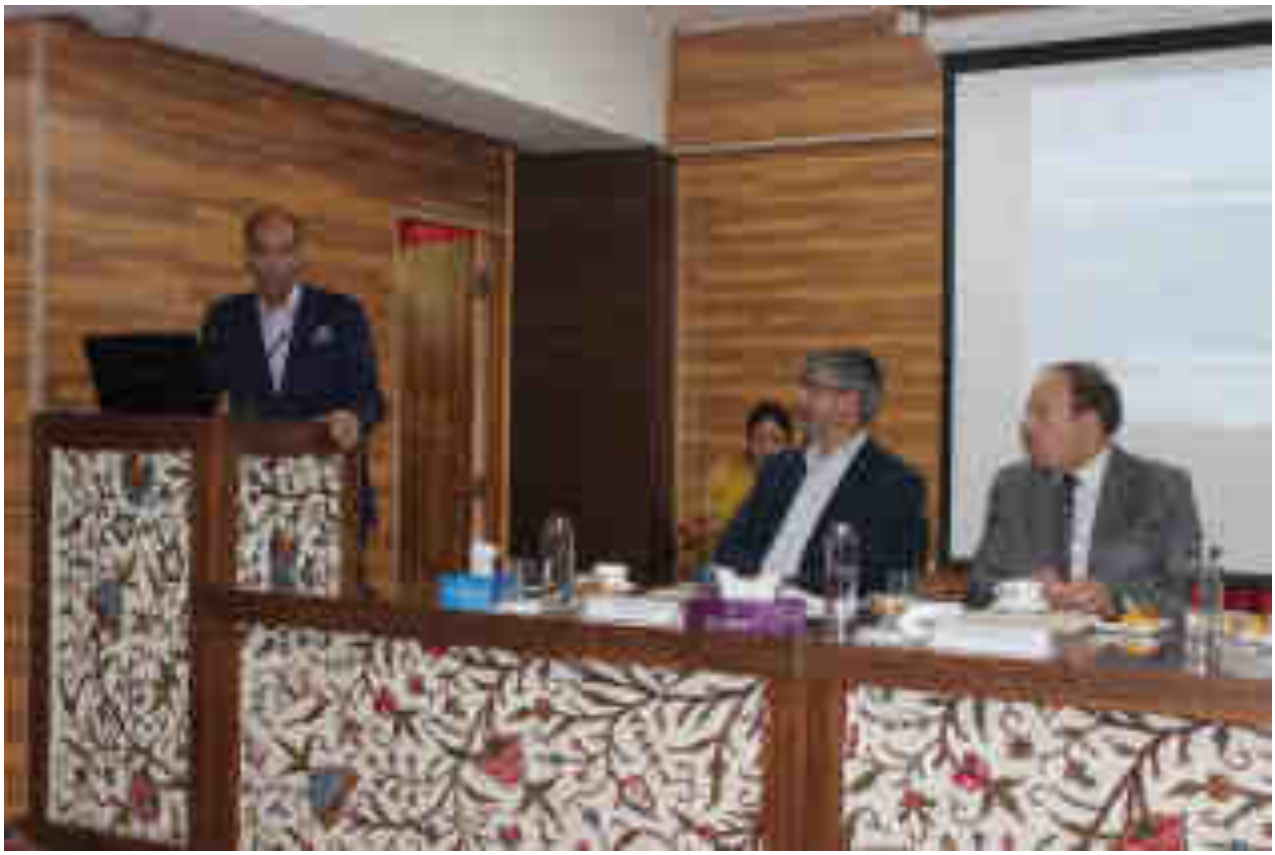
- A large majority of participants rated their overall experience as "Very Good" to "Excellent."
- Most respondents indicated that they would strongly recommend similar workshops to colleagues and departments.
- Participants appreciated the balance between science, policy, and practical field realities, and expressed interest in advanced, topic-specific follow-up workshops on urban flooding, drainage engineering, and wetland restoration.

Overall, the workshop was widely perceived as highly relevant, timely, and impactful. Participants valued the strong focus on local flood realities, scientific explanation of causes, and policy–practice linkages. The group brainstorming sessions and panel discussions were particularly appreciated for enabling cross-sectoral dialogue and solution-oriented thinking.
The feedback clearly indicates a strong demand for continued capacity building, deeper technical training, and field-oriented programmes to strengthen flood resilience in Jammu and Kashmir.

PHOTO GALLERY



Inaugural Session at Lal Ded Auditorium, IUST



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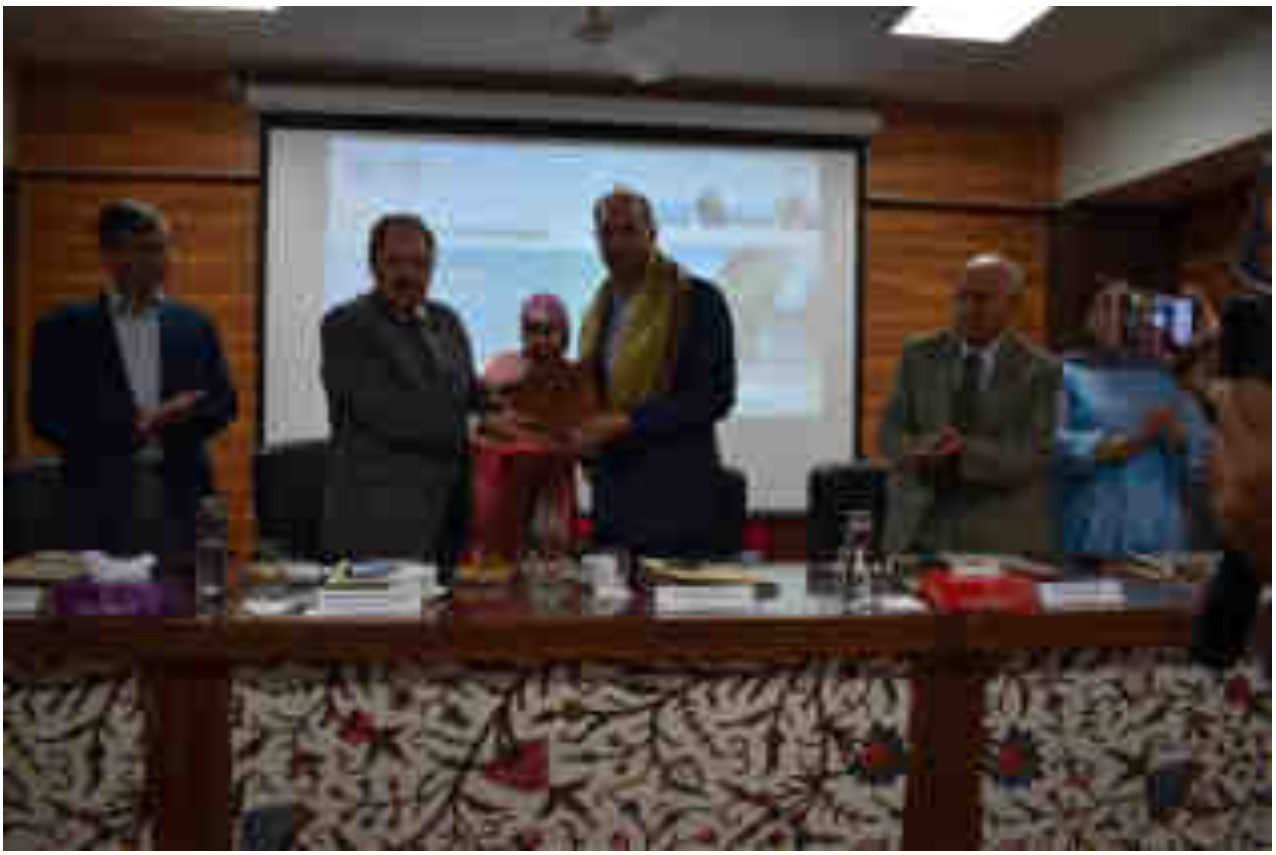
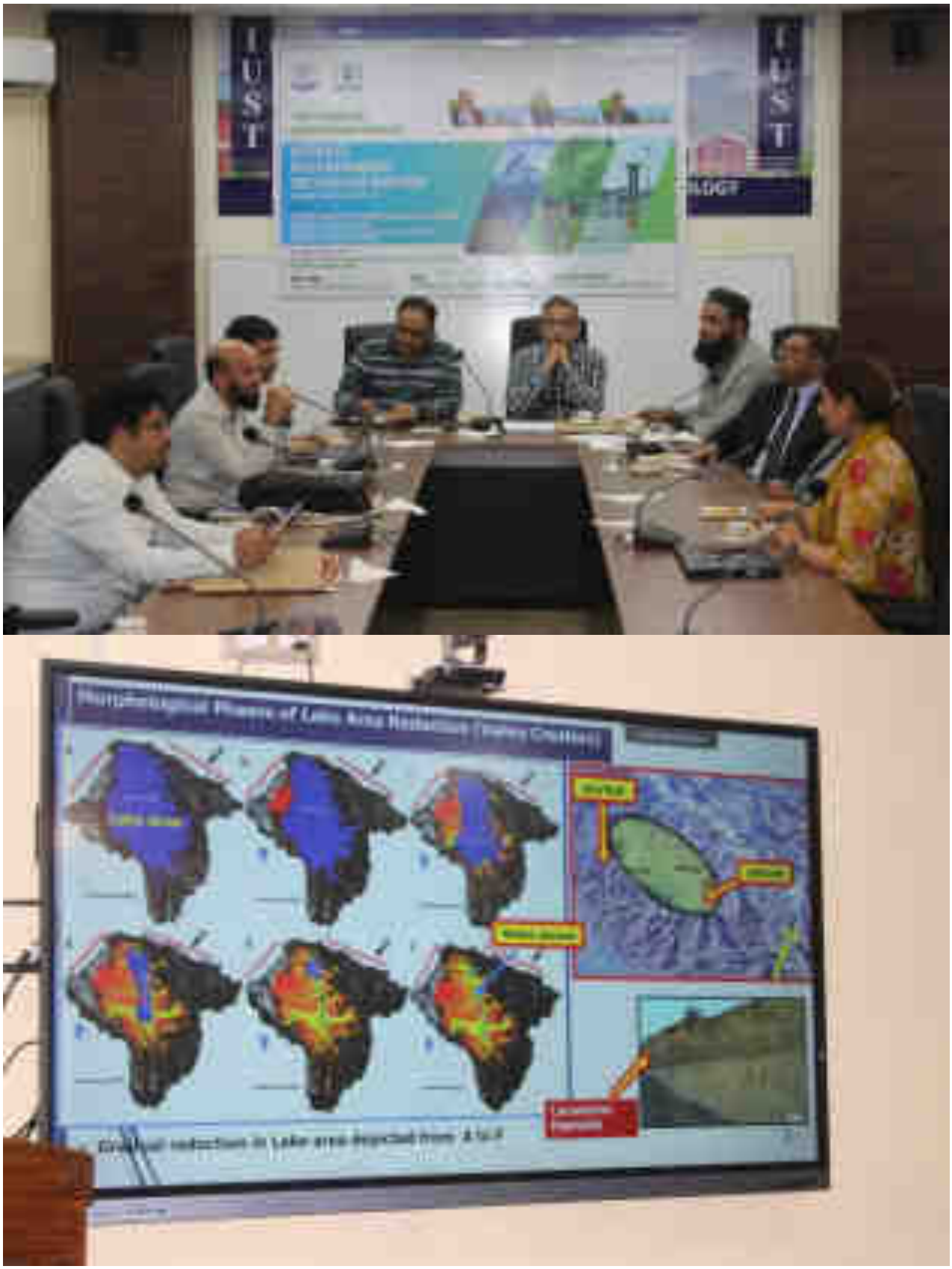
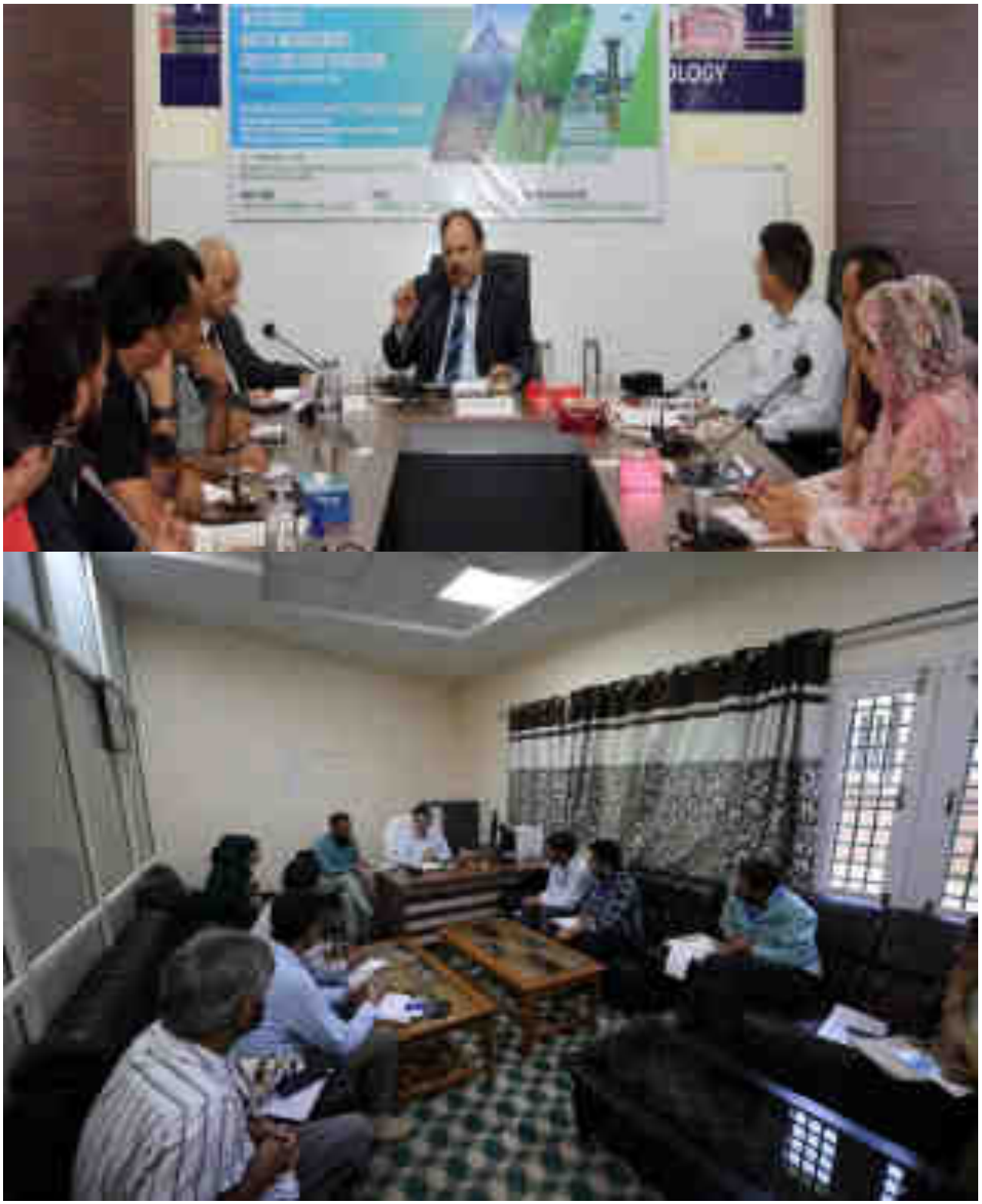
Address by HVC, IUST, Prof. Shakil Ahmad Romshoo



Felicitation of the Chief Guest



Technical sessions, Day 1



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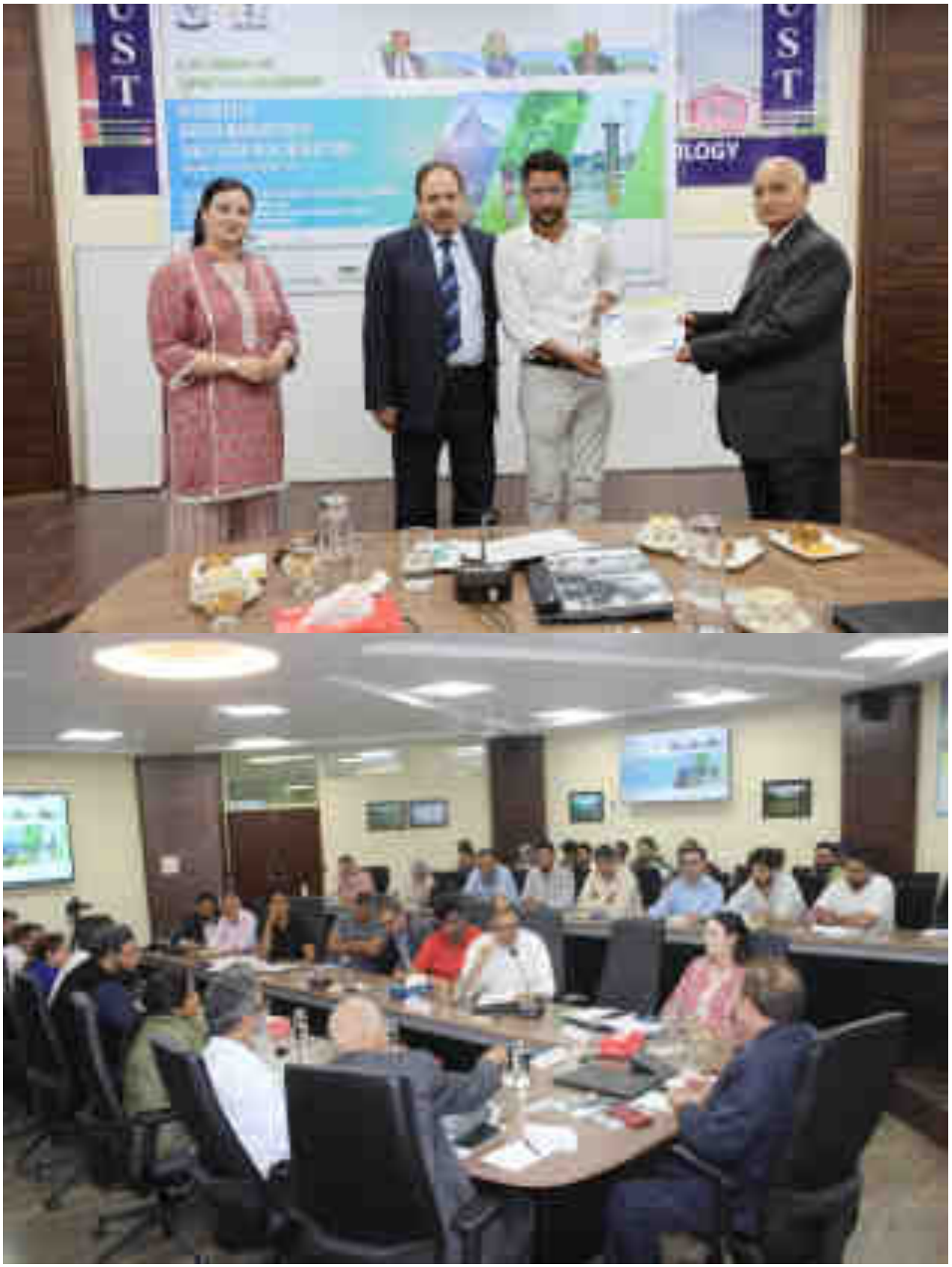

Valedictory Session and Certificate Distribution

Group Photograph