

CENTRE FOR WATER RESEARCH

ANNUAL REPORT 2024-25

Indian Institute of Science Education and Research Pune



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Bejoy Thomas, Radhika Kanade, Radhika Mulay, Science Media Centre (IISER Pune), Sukrit Sen, Uttara Valluri

Front Cover: Bagmati River Basin, Nepal after the Flash Floods of September 2024

Back Cover: Mula-Mutha River at the Confluence, Pune, 2025

Table of Contents

05	FOREWORD
06	ADVISORY GROUP
07	PEOPLE
08	RESEARCH AND TRAINING
09	RESEARCH PROJECTS
10	PUBLICATIONS
11	OUTREACH
17	LIVING WATERS MUSEUM

Foreword

It has been another year of activities and research programmes at the Centre for Water Research in IISER Pune, in keeping with the mission of the centre. The fourth season of Water Talks was focussed on urban environments, and the talks ranged from managing rivers to the economics of water distribution. The series of conversations that have been organised by CWR with the AQUAMUSE project has seen several artists and artistes talk of their engagement with themes related to water. We have hosted several conferences, workshops, and roundtables, including one for journalists.

Beyond hosting various artists, scholars, and speakers, faculty members of CWR have been regularly giving presentations and talks beyond the campus, at various venues, both academic and also community-based. Argha Banerjee, Bejoy Thomas, Radhika Mulay, Sara Ahmed, and Shalini Sharma have been particularly active, representing CWR at various conferences. The Living Waters Museum has also initiated several projects, and successfully curated new chapters. Across the country, from Goa to Kolkata, new initiatives have engaged local communities.

Closer to home, we have embarked on a large-scale Water Audit of the IISER Pune campus, after the successful completion of a pilot project last year. The campus has a sizable resident and floating population and therefore the analysis of water usage and management should result in a significant change in consumption patterns if we can educate and inform the community upon completion of the project.

We look forward to another exciting year, with several ongoing projects and programmes, such as AQUAMUSE and the Water Audit. The Indus Waters Treaty has recently been in the news as a reminder of the strategic and geo-political role water will play in the twenty-first century. Therefore, the stated mission of CWR to understand water comprehensively, in terms of history, heritage, resource management, and sustainable use, remains extremely important.

Pushkar Sohoni
11 May 2025
Pune

Advisory Group

Dr. Himanshu Kulkarni, Executive Director, Advanced Centre for Water Resources Development and Management (ACWADAM), Pune, India.

Dr. Jagdish Krishnaswamy, Dean, School of Environment and Sustainability, Indian Institute for Human Settlements (IIHS), Bengaluru, India.

Prof. James Wescoat, Aga Khan Professor Emeritus of Landscape Architecture and Geography, Massachusetts Institute of Technology (MIT), USA.

Mr. K.J.Joy, Senior Fellow, Society for Promoting Participative Ecosystem Management (SOPPECOM), Pune, India.

Prof. Margreet Zwarteveen, Professor of Water Governance, UN-IHE Delft Institute for Water Education, The Netherlands.

Ms. Shailaja Deshpande, Founder-Director, Jeevitnadi, Living Rivers Foundation, Pune, India.



People

Pushkar Sohoni (Chair, CWR)
Humanities and Social Sciences

Amrita Hazra
Chemistry

Aparna Deshpande (Science Activity Centre)
Physics

Argha Banerjee
Earth and Climate Science

Bejoy Thomas
Humanities and Social Sciences

Deepak Barua
Biology

Gyana Ranjan Tripathy
Earth and Climate Science

Joy Merwin Monteiro
Earth and Climate Science

Sara Ahmed
Humanities and Social Sciences

Shalini Sharma
Humanities and Social Sciences

Sujit Ghosh
Chemistry

Pinaki Talukdar
Chemistry

Radhika Mulay
Project Associate



Research and Training

Details of PhD Theses supervised during 2024-25 by CWR faculty at IISER Pune

NO.	STUDENT	SUPERVISOR	PROJECT TITLE
1	Kalyani Thatte	Bejoy Thomas	Inequity in groundwater access: A study of farm households in Marathwada region, India
2	Ritwika Chatterjee	Shalini Sharma	Research on Andaman & Nicobar and Sundarbans Islands
3	Anisha Ojha	Shalini Sharma	Research on Groundwater Contamination in Uttar Pradesh

Semester Projects Supervised

Bejoy Thomas

1. Progress of WASH initiatives in India, Devesh Ray (visiting student), IISER Pune Summer Project



Pa Sak Cholasit dam on Pa Sak river, Thailand, 2024

Research Projects

Argha Banerjee

Understanding and modelling the interactions between Debris and glacier Ice in a changing Climate (D-ICE), An Indo-Swiss project funded by Ministry of Earth Sciences, (2023-27)

Argha Banerjee, Radhika Mulay, Tresa Mary Thomas

Hydrology and Hydraulics considerations for the Mula-Mutha Riverfront Development Project (2024-25)

Bejoy Thomas

fairSTREAM, a project on Bhima basin in partnership with IIASA, Austria, and SOPPECOM, Pune, (2022-24)

Radhika Mulay, Bejoy Thomas, Argha Banerjee

Water Audit Study of IISER Pune Campus (Instrumentation, Quantitative Data Analysis, and Behavioural Survey)

Radhika Mulay in collaboration with Jenia Mukherjee, IIT Kharagpur

A study of Naik Bet, an urban river island located in the Mula-Mutha River of Western India

Sara Ahmed, Shalini Sharma

AQUAMUSE: Facilitating just and sustainable water futures through water museums, digital media and the arts (2024-26)

Shalini Sharma

'Contamination': Building an archive on groundwater contamination in Bhopal. Supported by IIT Indore's JPNC Environmental Humanities Grant



Publications

The names of authors with CWR affiliation are in all-caps.

PEER-REVIEWED

1.Nair, J; THOMAS, BEJOY; C. S. Bahinipati. 2024. Cropping decisions under water stress: evidence from Cauvery Delta Region, India, *World Water Policy*, 10(3): 711-729.
<https://doi.org/10.1002/wwp2.12177>

2.Martin, J; Kanade, R; Bhadbhade, N; Joy, K.J; THOMAS, BEJOY; Willaarts, B; Hanger-Kopp,S. 2024. Review of the food, water and biodiversity nexus in India, *Environmental Science and Policy*, 159: 103826. <https://doi.org/10.1016/j.envsci.2024.103826>

3.Joy, K. J; THOMAS, BEJOY; Nair, J. 2024. Knowledge and Policy/Practice in the Water Sector: Illustrating Contestations and Disconnectedness, in Das, B. K; Chakraborty,G; Guha, A (eds.) *Knowledge, Power and Ignorance: The Indian Context*, Routledge, 166-180.

4.MULAY, RADHIKA; Gokhale, Pallavee. (in publication). Peshwa Nahar System: a value proposition for sustainable water management from a historic period. *Blue Papers*. Water, Ports and Historic Cities (UNESCO).

5.AHMED, SARA. 2024. Liquid heritage: can water museums facilitate a new gendered water ethics. in Acevedo-Guerrero, T; Bossenbroek, L; Leonardelli, I; Zwarteveen, M; S. Kulkarni eds, *Routledge Handbook of Gender and Water Governance*, London: Earthscan from Routledge.

OTHERS

1.BANERJEE, ARGHA; Krishnanand J; Vijay, Saurabh. 2024. A shrinking Himalayan passage. *The Hindu*.

BEJOY THOMAS:

- Upper Bhima Basin researcher featured in *The Times of India* (19 February 2024) and *The Indian Express* (14 November 2024).
- Quoted by *Question of Cities* (June 28, 2024) on floods in Pune.

Outreach

CWR Season 5: Water in Urban Contexts

Centre for Water Research organized Water Talks on various dimensions of water in urban contexts by guest speakers at IISER Pune. The recordings of the talks are available on the [CWR youtube channel](#).

CWR Season 5: Water in Urban Contexts

1. Flood lines and Urban Flooding: a legal perspective by Sarang Yadwadkar. Date: 24 September 2024
2. Urban Lakes as Social-ecological Systems by Mansee Bal Bhargava. Date: 7 October 2024
3. Urban Water Economics: Cost-Price-Value Dynamics of Urban Water Supply. Speaker: Ashwini Keskar Sardeshmukh. Date: 11 February 2025
4. Sacred Waters: Punaravartan, A Sustainable Model. Speaker: Manisha Sheth, Shama Deo. Date: 11 March 2025
5. From Practice to Policy: Guiding India's Evolving Water Governance. Speakers: Sanya Saroha, Namrata Kabra, The Kubernein Initiative. Date: 27 March 2025

CWR and AQUAMUSE: Water Vidcasts

1. What the Ocean Bestows: Exploring the Role of the Arts in Social Change. A Conversation between Parag Tandel and Sara Ahmed. Date: 9 August 2024
2. Navigating the Interface: Performance as a Laboratory. A Conversation between Radhika Mulay and Nishad Matange. Date: 11 November 2024
3. Aesthetics of Water: a Force for Social Change? A Conversation between Michelle Boyle and Sara Ahmed. Date: 21 November 2024



Outreach

Invited Talks

Argha Banerjee

1. Woman in Cryosphere Sciences: Bridging the Gap, International Conference on Geospatial Technologies and Earth Sciences (InGARSS 2024), NIT Goa. 5 December 2024

Bejoy Thomas

1. National Conference on Operation and Maintenance of Rural Pipe Water Supply Systems, WaterAid, New Delhi, India. 19 February 2025
2. Workshop on Adaptation to Climate Change in the Water Sector, Indian Institute of Technology Delhi, India. 27 January 2025
3. Panel on Role of Riverscapes in Supporting River Sustainability: Research and Policy Concerns, Indian Association of Social Science Institutions, Ranchi, India. 26 October 2024
4. Panel on Sustainable Water Futures: Key Priorities at the Science-Policy-Practice Interface in Asia, International Association for Society and Natural Resources, Cairns, Australia (online). 27 June 2024
5. Mumbai Water Conclave 2024, Mumbai First, Mumbai, India. 22 March 2024
6. Conference on Gender and Climate Change: Issues, Policy implications and the wayforward, Gujarat Institute of Development Research & Christ University, Bangalore, India. 6 March 2024

Radhika Mulay

1. The Heads and Tails of Ganga, Invited Speaker, Friday Waters Book Reading Session, Wednesdays for Water Foundation, WICCI Water Resources Council. 6 December 2024
2. River Flows: Transboundary and Transdisciplinary Interlinkages, Pune Samvaad, Pune. 23 November 2024
3. Navigating the Interface: Performance as a Laboratory, Water Vidcasts, AQUAMUSE & Centre for Water Research, IISER Pune. 11 November, 2024
4. Panelist on AQUAMUSE project, Workshop on Eliciting Needs-based Grassroots Action through Cross-Group Engagement (ENGAGE) for the Sundarbans, Kolkata, IIT Kharagpur, India. 2 September 2024
5. Representation of Water Heritage in Intangible Cultural Heritage - Rights of Rivers in Bharatnatyam, Conference Presentation at ISC Water and Heritage Scientific Symposium 'Bridging Divides and Connecting Past, Present and Future' Pune. 8 August 2024
6. Rights of Rivers through the Lens of Bharatnatyam', Invited Speaker, The House of Rivers Symposium, Fluid Interdisciplinarity Conference, IHE Delft Institute for Water Education, the Netherlands. March 19-22, 2024

Outreach

Invited Talks

Sara Ahmed

- Webinar: Water Museums: Where Every Drop Tells a Story, hosted by SciCommX as part of the Aquamuse project
- Moderated a panel on Hydrosocial Assertions: Curating the Saga of Tidalectics through Transdisciplinary Water Research and Speaker at the Roundtable, International Symposium on Precarious Water Futures and the End(s) of the World(s), New Delhi. 13-16 November 2024
- Multiple Presentations at the 10th World Water Forum, Bali. May 2024:
- Panelist: "Towards a culturally diverse and inclusive water future," organized by the Yangtze Culture Dialogue, UNESCO Regional Office for Asia
- Panelist: "Multidisciplinary and digital tools for youth engagement and capacity building" as part of a workshop on 'Transformative Change for the Future Water-Smart Society – Linking Science, Policy and Action' organized by TU Delft
- Presentation: Visualising Rivers across India: the Living Waters Museum
- Multiple Presentations at the International Conference of the Global Network of Water Museums (WAMU-NET) in Porto, Portugal, 'Cities of Water: Peace and Prosperity through Water Sustainability Education' 9-11 October 2024:
- Panelist: Roundtable Connecting Water, Culture and Heritage
- Panelist: Discussion on proposed Online Repository on Water Education for and by water museums
- Brief presentation on Aquamuse and our Water Classrooms initiative as a collaboration between two members of WAMU-NET
- Exploring Liquid Heritages: Living Waters Museum Presentation, IHE Delft. 17 October 2024
- Fluid Heritage: Visualising Water Narratives, Workshop on Rivers, Sacred Values and Environmental Attitudes, University of Lund, Sweden. 3-4 December, 2024

Shalini Sharma

- Speaker, Research Project Symposium 2025, Advancing Innovation & Collaboration, IIT Indore. 4 April 2025
- Speaker at African Institute Sharjah Symposium, 'Reimagining Water Museums: Towards Resilient Hydro Trajectories', Sharjah UAE. 6 February 2024

Outreach

Community Engagement

ICOMOS Scientific Symposium: International Scientific Committee on Water and Heritage

As knowledge partners at the Scientific Symposium of the ICOMOS International Scientific Committee on Water and Heritage, Centre for Water Research, IISER-Pune, organised a Panel Discussion and Presentations on Pune's Water Heritage on 7 August 2024. The session was initiated by a welcome note by Dr. Sara Ahmed, Adjunct Faculty at HSS Department, IISER-Pune and Founder-Director of Living Waters Museum.

- Panel Discussion on the topic 'Water and Heritage: Bridging Divides and Connecting Past, Present and Future; Climate, Community, Context and Collaboration' with Shailaja Deshpande (Founder-Director, Jeevitnadi) and Himanshu Kulkarni (Scientist Emeritus, ACWADAM)
- Presentations by Dr. Pallavee Gokhale, Minal Sagre and Dr. Manas Marathe on Pune's Water Heritage.

Argha Banerjee

Member of Project Appraisal and Monitoring Committee, Hydrology & Cryosphere, Ministry of Earth Sciences.

Bejoy Thomas

Co-organized a project workshop on 'Food, Water and Biodiversity Nexus in the Upper Bhima Basin' attended by government, civil society representatives, and scientists, 12 November 2024, IISER Pune.



Outreach

Community Engagement

Radhika Mulay

Multi-scale Integrated River Basin Management program, ICIMOD, Nepal

Participated in the 'Multi-scale Integrated River Basin Management' professional training program for Hindu Kush Himalayan rivers organised by International Centre for Integrated Mountain Development (ICIMOD), Nepal with field visits to the Bagmati river basin, a tributary of Ganga river in Nepal and the Mekong river basin and Chayo Phraya river basin in Thailand from 25 September to 9 October 2024.



Field Visit to the Sundarbans, India (AQUAMUSE)

Participated in field visit and focused group discussions in the Sundarbans, India as part of AQUAMUSE project for facilitating just and sustainable water futures through water museums, digital media and the arts (2024-2026) funded by the Dutch Water Partnership Programme at IHE Delft, the Netherlands.



Sara Ahmed

Continue to serve as board member for WaterAid India, Wetlands International South Asia, Samerth, Utthan and the Development Support Centre Foundation, as well as Vice President, Global Network of Water Museums. Serving on the Global Committee for Safeguarding for the WaterAid International family.

Outreach

Community Engagement

Shalini Sharma

Water Journalist Roundtable: Reporting 'Water Crisis' and SDGs

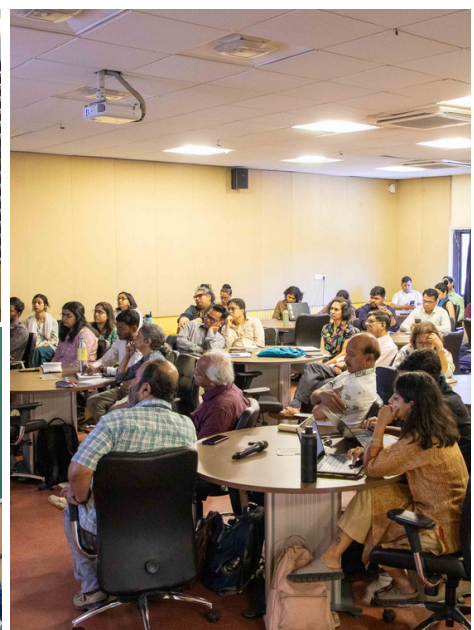
Reporting 'Water Crisis' and SDGs: a water-journalists roundtable, was a two-day dialogue held in November 2024 at IISER Pune to reflect on reporting focus, gaps, challenges and opportunities. With a dynamic cohort of 40 journalists bridging diverse backgrounds and domains within public communication media from radio to print and television to social media; the roundtable grew from a space of addressing issues to a forum for knowledge exchange, networking, and collaborations between academia, researchers, media (industry), museums, and other practitioners. The roundtable, conceptualised by Shalini Sharma, was held as part of the Aquamuse project, that seeks to look at storytelling and decentralized museum-making approaches for water awareness, action, and advocacy in three river deltas: the Blue Nile, the Voltas, and the Ganges/ Sundarbans.

Co-organiser for 'Dialogue on Water as Commons'

A 'Dialogue on Water as Commons' was organised from 5-6 March 2025 at IISER Pune focusing on ideas, issues, and threats around water commons. The dialogue was attended by researchers, scholars, representatives from various local initiatives and institutions working on water related issues across the country.

Knowledge Products Development:

- Directing an AV series "Water Waves Weekly" on water crisis reporting by journalists in India.
- A vidcast series "Aquamuse Dialogues" focusing on the use of art and curation for water awareness and advocacy.
- AQUAMUSE Project website: www.sciencemediacentre.in/aquamuse



Living Waters Museum

Established in 2017, the Living Waters Museum is a virtual museum which engages young people and children in visualizing water heritage and re-imagining sustainable, inclusive and equitable water futures. Through the power of storytelling and technology we seek to celebrate our water wisdom, inspire youth to look at water from an interdisciplinary perspective and co-build a digital repository as a source of learning for the future. The following section gives brief updates about the projects undertaken by researchers at LWM during 2024-25.

AQUAMUSE

Facilitating Just and Sustainable Water Futures through Museums, Digital Media, and the Arts. Working across three river basins—the Blue Nile (Ethiopia, Sudan, Egypt), the Nakambé (Burkina Faso) and the Ganga/Sundarbans (India)—AQUAMUSE is supported by the Water and Development Partnership Program at IHE-Delft. It envisions a future where water museums, both physical and digital, are not only unique repositories of our liquid heritage, but also play a role in reconnecting communities to water through education, public outreach, and art. While extreme weather phenomena related to water are a lived reality in these river basins, the knowledge of rivers and community memory of everyday encounters with water are slowly disappearing. Our project aims to bring inclusivity to education, media, and museum-making through oral storytelling and traditions of marginalised communities. The project is now in its second year and partners just met in Kolkata to review progress as well as visit our living lab/ museum-making field site in Kumimari village in the Sundarbans. Aquamuse project insights and outputs can be viewed/read on our Substack page and our work is available on our LinkedIn. As part of this project, Sara Ahmed also moderated two Aquamuse Dialogues (vidcasts) with artists Parag Tandel 'The Role of Art in Social Change' and Michelle Boyle 'Aesthetics of Water: A Force for Social Change?'.



Living Waters Museum

Kala Ghoda Arts Festival, January 2025

Living Waters Museum is proud to have been a part of the prestigious Kala Ghoda Arts Festival (January 25 to February 2, 2025) on its 25th anniversary in Mumbai. A veritable epicenter of art in India, the KGAF was the perfect avenue to explore the physicality of exhibition spaces and interactive experiences. We showcased the wonderful work that our collaborators and partners created for Confluence, a digital exhibition on Mumbai's Water Narratives, in a panel moderated by Sara Ahmed at the David Sassoon Library. From stories on marine life to Indigenous culture and equity issues, Confluence illustrated the city of Mumbai through its diverse waters. This was followed by a musical narrative, Mumbai ki Jalkatha with the East India Dastaangoi at the YB Chavan Centre.



The centerpiece of our festival engagement was the installation of “The Seahorse,” on Rampart Row, a sculpture, designed by Vyom Mehta from scrap metal and recycled plastic, representing the effects of human activity on marine ecosystems. The Seahorse is now at the Children's Museum at CSMVS, Mumbai.

River Ambassadors Initiative

The River Ambassadors initiative has been jointly conceptualized by Kult X, Living Waters Museum and the Sea Explorers' Institute as a prolonged footprint of the annual River Festival along the Hooghly River in Kolkata. Sixteen individuals, including tea sellers, sweepers, barbers and those doing odd jobs on the ghats, will be trained to keep vigil and educate visitors about proper waste disposal. They will also learn about the historical and cultural significance of the ghats and be equipped with basic life-saving skills to assist anyone who falls into the river. The ambassadors receive a stipend for their training hours to compensate for their lost earnings. The project aims to train a total of 100 individuals across multiple ghats in the city over several months. The first batch of 16 ambassadors operates around Champatala Ghat, between Kumartuli and Ahiritola. They have been trained on how to communicate effectively with visitors to prevent littering without causing conflicts. The Living Waters Museum provided training on the history and heritage of the ghats, emphasising the river's role in Kolkata's growth and trade and looking at these ambassadors as storytellers themselves. The Sea Explorers' Institute imparted life-saving techniques to ensure the safety of visitors.

Living Waters Museum

Living Waters Museum sees the River Ambassador Initiative as a vital component of the larger effort to achieve fluid change beyond the boundaries of a hybrid museum like ours. Through continued education, collaboration, and advocacy, the museum is committed to supporting and promoting initiatives that protect and celebrate our water resources with an inclusive and transdisciplinary lens.

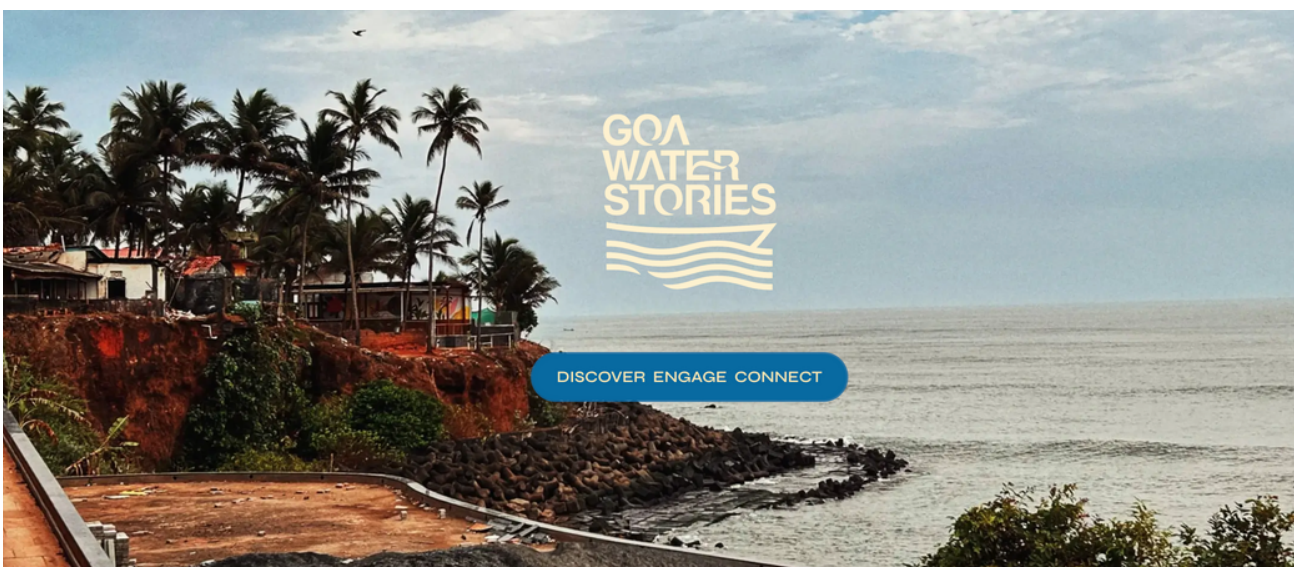
- 16 'river ambassadors' to keep vigil for cleaner ghats, prevent visitors from littering
- 13 hawkers from Kolkata riverfronts vow to help give ghats a makeover
- Ghat denizens become guardians of riverfront



Goa Water Stories

Launched in mid-2023, the Goa chapter worked with various stakeholders, including young researchers and artists, to critically examine the diversity of Goa's waters and their intersection with local and Indigenous communities, rituals and folklore, livelihoods, and practices. Curated by Wenceslaus Mendes, Trusha Sawant and Sara Ahmed in partnership with the Centre for Public Policy and Governance at the Goa Institute of Management, the University of Goa, and the Sunaparanta Centre for the Arts in Panjim the co-creation is a visually stunning, interactive digital exhibition:

<https://goawaterstories.livingwatersmuseum.org>



Contact Us...

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LWM welcomes expressions of interest, please contact:

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