

Brochure for Event on World Water Day 2021

Water Source Security: Is Desalination the way to go?

A Multi-Stakeholder Experience-Sharing Forum on Desalination
featuring academics, firms, public agencies and regulators



Sources: <https://www.indomer.com/minjur/> & <https://chennaietrowater.tn.gov.in/>

Date: 22 March 2021, Monday

Venue: Online on Zoom

Time: 2:00pm – 7:30pm (New Delhi, IST)

9:30am – 3:00 pm (Maastricht, CET)

7:30pm – 1:00am (Melbourne, Australia)

Sessions: Three sessions of presentations and discussions
with breaks between each session

Register for the event: <https://forms.gle/VgN6h9MXefAiTXiKA>



UNITED NATIONS
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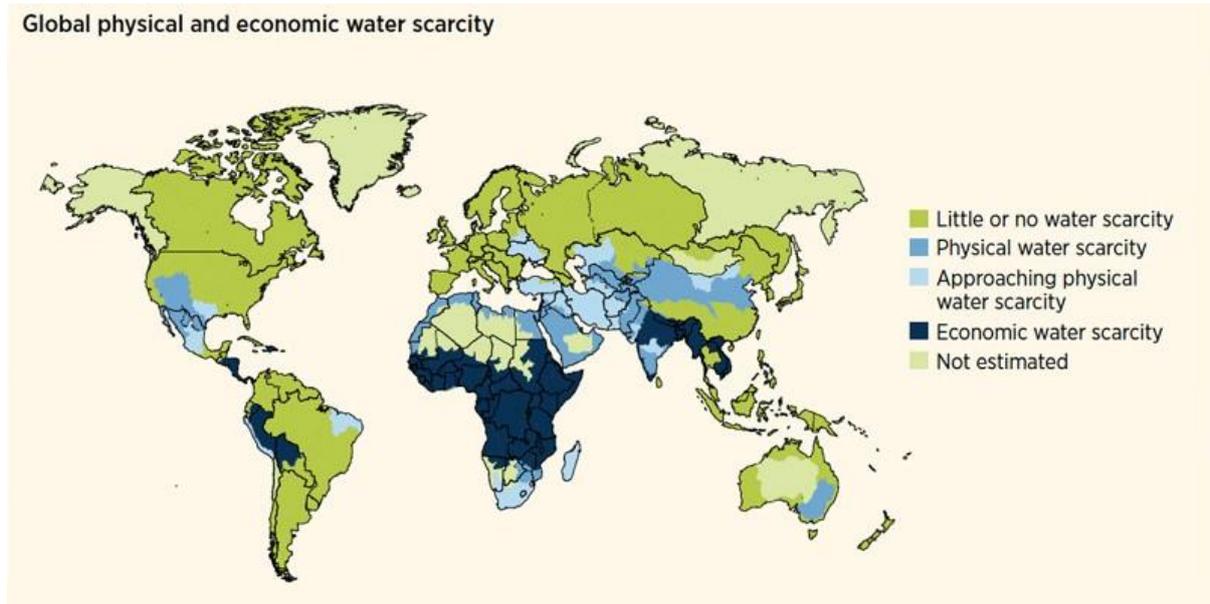
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Concept Note

Access to water is fundamental to human security. According to the United Nations, the human right to water can be defined as the right to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses. It can be extended to include water for meeting agricultural and industrial requirements. Water is required to satisfy the needs of individuals, communities and economic activities for development and growth. Data reveals that water insecurity or access to an adequate quantity and/or quality is most lacking in developing and emerging countries (see figure). Water insecurity is likely to become the principal limiting factor for sustainable development in these regions. Thus, now more than ever, it must be addressed better to achieve the 2030 Global Development Agenda.

Currently, many pathways are being explored to lower water stress. These include: i) Water Conservation (including rainwater harvesting, groundwater table replenishment), ii) Water Recycling and Reuse, and iii) “Expansion” of existing water resources. While the first two concern efficient management of existing water resources, the latter focuses on using new technologies like desalination to add to freshwater resources. Desalination seems to hold an important key to breaking the Gordian knot of water insecurity. A few countries which traditionally had limited freshwater resources became early adopters of these technologies. For instance, Singapore, Australia, UAE and Israel have incorporated desalination as a key component in their water sourcing strategy and planning.



Source: [World Water Development Report 4](#). World Water Assessment Programme (WWAP), March 2012.

However, their implementation and diffusion remains a considerable challenge for policy and project decision-making, in addition to being an expensive proposition and bringing in environmental concerns. Thus, it is important to take stock and understand how desalination technologies have evolved and assess whether they are still a white elephant or whether they are the golden bullets with which to eliminate water source insecurity.

To find out the answer(s) and make up your mind – we invite you to join our Multi-stakeholder Forum where experts from public agencies, the academic community, social sector and businesses will discuss these issues.

Why is an open experience-sharing event necessary?

Often the discussion on water source security is a part of larger debates on capacity building for Integrated Water Resource Management (IWRM), climate change and other related challenges. Often, this leads to the importance of water source security being overlooked. Also, most of the forums, networks and international associations focused on desalination seem to be either catering to a niche group (requiring memberships) or not having conversations with policy and decision-making agencies. In other words, with few exceptions, everyone is working hard on the problem in silos.

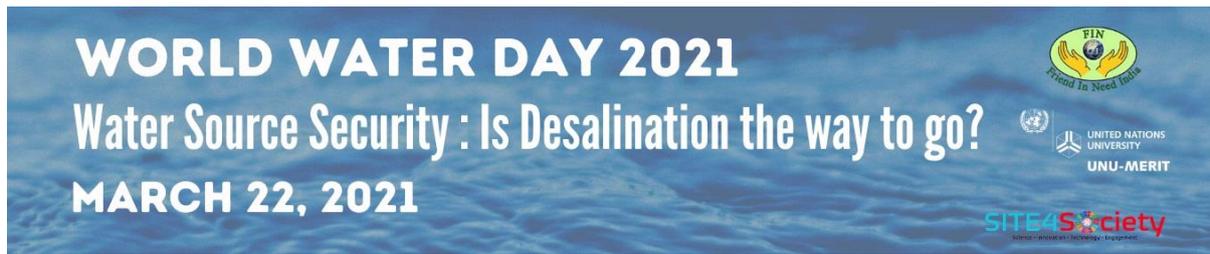
This network gap is what this initiative aims to bridge by bringing together these stakeholders. Through this event we aim to start a process that will lead to the creation of an open and free network for knowledge-sharing on this important theme of water security: specifically water source security. Thereby, we wish to draw the attention of policy and decision-making bodies to our cause and needs collectively. Only by documenting different stakeholder, geographic and socio-political perspectives can we propose ways to move towards greater water source security.

Under this context, the objective of this event, therefore, is to contribute to international experience-sharing in the area of desalination covering: policy, institutional delivery and an improved understanding in planning possible future projects. It will bring this issue to the fore, and centre discussion on the implementation and adoption of desalination as a component of the solution design to the challenge of water source security.

Expected outcomes from this event¹:

- A discussion paper to present the role of desalination within the overall framework of planning for water source security.
- Development of an international platform for knowledge sharing, from forum participants.
- Strategic and actionable inputs towards the development of a robust water source security framework for nations/regions.

¹ All output from this event will provide appropriate acknowledgements and credits to the relevant speakers for their inputs and ideas.



Programme Outline

(Regional Perspectives)

Session I: Setting the stage: An Introduction to Water Crisis, Water Source Security and Desalination technologies

2:00pm-3:30pm(Delhi)
9:30am-11:00am(Maastricht)
7:30pm-9:00pm(Melbourne)

What is Water Source Security?

- Key issues and challenges
- Importance in the contemporary scenario

What is Desalination technology?

- Role of desalination among available options

What are Desalination policies?

(Organisational Perspectives)

Session II: Experience Sharing in Applications of Desalination Technologies

4:00pm-5:30pm(Delhi)
11:30am-1:00pm(Maastricht)
9:30pm-11:00pm(Melbourne)

Desalination for developing and emerging countries

- About the feasibility of desalination for addressing water insecurities
- Long-term goals for the diffusion of desalination technology

(Governance and Policy Perspectives)

Session III: Applications of Desalination Technology: Policy and Governance (Including Feasibility vs. Opportunity Costs)

6:00pm-7:30pm(Delhi)
1:30pm-3:00pm(Maastricht)
11:30pm-1:00am(Melbourne)

Desalination for developing and emerging countries

- Role of international aid and inter-organisational cooperation
- Role of academia in facilitation of multi-stakeholder platforms and research
- Business models and Enabling environment

Programme Schedule: World Water Day 2021 Event

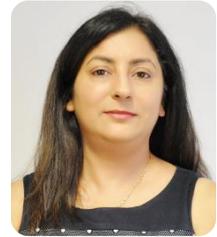
| Session I - Setting the stage: An Introduction to Water Crisis, Water Source Security and Desalination technologies | | |
|--|---|-------------|
| 2:00pm-3:30pm (Delhi), 9:30am-11:00am (Maastricht), 7:30pm-9:00pm (Melbourne) | | |
| Speaker | Topic | Time |
| Prof. (Dr.) Shyama V. Ramani UNU-MERIT & FIN India Trust | Introduction and Opening Statement | 5 minutes |
| Dr. Raja Venkataramani FIN - Centre for Circular Economy | What is water source security? ▫Key issues and challenges ▫Importance in contemporary scenario ▫Role of desalination among available options | 20 minutes |
| Audience Questions | | 5 minutes |
| Mr. Jairaj Gopalakrishnan, FIN- Centre for Circular Economy | Desalination: FIN Student academic project. Preliminary findings for setting the context. | 20 minutes |
| Audience Questions | | 5 minutes |
| Dr. Meenakshi Arora Associate Professor, University of Melbourne | Is desal the way to go? Insights from the Australian experience | 20 minutes |
| Audience Questions | | 5 minutes |
| Discussion | | 10 minutes |
| Break between sessions – 30 mins | | |
| Session II - Experience Sharing in Applications of Desalination Technologies | | |
| 4:00pm-5:30pm (Delhi), 11:30am-1:00pm (Maastricht), 9:30pm-11:00pm(Melbourne) | | |
| Speaker | Topic | Time |
| Prof. (Dr.) Shyama V. Ramani UNU-MERIT & FIN India Trust | Introduction and Opening Statement | 5 minutes |
| Mr. Sid Vollebregt Elemental Water Makers, The Netherlands | Experience Sharing in Small-Scale Solar Desalination Plants | 20 minutes |
| Audience Questions | | 5 minutes |
| Mr. A. Vijayaraman CEO/Director & Ms. J. Rajam Senior Manager Powertec Engineering | Experience Sharing from India: Managing Large Scale Desalination | 20 minutes |
| Audience Questions | | 5 minutes |

Water Source Security: Is Desalination the way to go?

| Mr. Jean-Pierre Burger, VIVELEAU SARL, France | Experience Sharing and Case for Small Desalination Plants (French based and their international efforts) | 20 minutes |
|---|---|------------|
| Audience Questions | | 5 minutes |
| Discussion | | 10 minutes |
| Break between sessions – 30 mins | | |
| Session III - Applications of Desalination Technology: Policy and Governance <i>(Including Feasibility vs. Opportunity Costs)</i> | | |
| 6:00pm-7:30pm (Delhi), 1:30pm-3:00pm (Maastricht), 11:30pm-1:00am (Melbourne) | | |
| Speaker | Topic | Time |
| Prof. (Dr.) Shyama V. Ramani UNU-MERIT & FIN India Trust | Introduction and Opening Statement | 5 minutes |
| Prof. (Dr.) Hiroshan Hettiarachchi, Senior Advisor, FIN India Trust | The Optimal Role of Desalination in Sustainable Development | 20 minutes |
| Audience Questions | | 5 minutes |
| Mr. Vangelis Constantianos Executive Secretary Global Water Partnership – Mediterranean | Global and Regional landscape of initiatives in the field of desalination Focus on the identified needs and initiatives in the MENA region | 20 minutes |
| Audience Questions | | 5 minutes |
| Panel Discussion | Considerations on Desalination (Policy and Projects) in the Indian Context | 30 minutes |
| Audience Questions | | 5 minutes |
| Closing Session – 5 mins | | |

Introduction to the Speakers:

Dr. Meenakshi Arora
Associate Professor, Environmental Engineering
Co-Leader, Urban Water Group
The University of Melbourne



Dr Meenakshi Arora has extensive experience in water resource management research and teaching. She completed her PhD from Indian Institute of Technology, Delhi, India in August 2006 on Fluoride and Arsenic removal from underground water. Her main research interests are Urban Water Cycle modelling, Water quality, Contaminant transport modelling and stream health. Dr Arora has close collaboration with Victorian water authorities such as Melbourne Water, Yarra Valley Water, City West Water and industries including BP, Veolia Environment and PANalytica. She has made significant contributions in understanding the integrated urban water cycle modelling, water-energy nexus and interactions between various centralised and decentralised water supply systems and their impacts on the existing infrastructure.

Mr. Jean-Pierre Burger
Founder and International Lead
VIVELEAU SARL, France



Mr. Jean-Pierre Burger has been involved in addressing the challenges in water treatment since 2009 through his consultancy agency and training organisation. His agency was started in 1991, in France and expanded to Luxembourg in 1997.

In 2014, after 5 years of consultancy in water sector, Mr. Burger created the company VIVELEAU SARL in Luxembourg. His company offers green solutions and high-quality products for treatment of saline & brackish water to companies, organizations and communities. They specialise in small scale desalination solutions and have been involved in talks with various government agencies for providing these small scale desalination services to communities.

He has provided services to industrial groups such as Gaz de France, EDF-GDF, Hager Téhalit, Johnson Control, Arcan, Migeon, Chaleur fuel, SBE, Viessmann, Airwell, Aliance, Climsure, Butagaz.

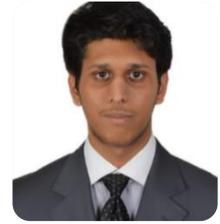
Mr. Vangelis Constantianos
Executive Secretary, Global Water Partnership – Mediterranean



Mr. Vangelis Constantianos has a professional experience of 20+ years in integrated water resources management (IWRM), environmental policies and multi-stakeholder networking, in the Mediterranean, Middle East & North Africa (MENA), and South East Europe (regional, sub-regional, national, transboundary and basin level).

His professional experience also includes Water-Energy-Food-Ecosystems Nexus; climate resilience through adaptation; policy making, strategy development and action planning at regional, national, local & trans-boundary levels; environmental policy making; management of specially protected areas; conservation of endangered species; sustainable tourism; public participation; civil society empowerment; private sector participation; development of multi-stakeholder platforms; regional networking; development assistance fundraising and management; environmental communications; capacity building; training; project development and management; Mediterranean; MENA; Balkans / South East Europe; Africa.

Mr. Jairaj Gopalakrishnan
B.A. Economics,
Research fellow
Centre for Circular Economy, FIN India Trust



Mr. Jairaj Gopalakrishnan has a Bachelors in Economics from Maastricht University. He has a deep interest in promoting the sustainable development goals. Mr. Jairaj is currently associated with the Centre form Circular Economy of FIN India Trust where he is studying the water policy in the countries which were the early adopters of desalination technology for addressing their water source security. He is especially interested in the policies and learnings from these countries which can help in developing an evidence based tool to suggest possible options for ensuring water management and source security in different scenarios. He is leading an academic case study project on desalination at the centre for circular economy. The study is aimed at understanding the position of desalination in ensuring water security.

Prof. (Dr.) Hiroshan Hettiarachchi
Independent Development Consultant
& Senior Advisor, FIN India Trust
(Formerly Professor at UNU-FLORES)



Dr. Hiroshan Hettiarachchi, is a professor of civil engineering from the United States and an expert in waste management, circular economy, and sustainability. He was the former Head of Unit – Waste Management at the United Nations University (UNU-FLORES) Germany. He is currently an Independent Sustainability Consultant and an active member of the Friends in Need (FIN) Trust.

Dr. Hettiarachchi's work also covers sustainable waste and wastewater management, integrated management environmental resources, nexus thinking, geotechnical and environmental engineering. He is also specialized in formulation/implementation of scientific and capacity development projects promoting sustainability. Much of his recent wok has high relevance to the theme covered in this event and focused on contributing to the United Nations 2030 developmental agenda through the Sustainable Development Goals. He has published extensively on above topics in the formats of journal papers, books, book chapters, policy briefs, and reports and made numerous invited talks on circular economy. While at the UN he established a unique PhD program on integrated management of Soil-Water-Waste, which is now in its 7th year and offered jointly by UNU-FLORES and the Technische Universität Dresden in Germany.

Dr. Raja Venkataramani
Independent Development Consultant,
Member of Centre for Circular Economy,
and Senior Advisor to FIN India Trust



Dr. Raja Venkataramani has over 25 years of experience in industry and management consulting across sectors covering both the government and private organizations. He works with Central, State, and Local Governments assisting them to take their reform agenda forward for strengthening governance and service delivery improvements. He has led major nationwide and regional initiatives in India covering programme management, PPP transaction advisory, and capacity building/institution development focused on urban development and management issues. In the water sector he has been working both at policy and at project levels. Another focus area is sustainability education for building stakeholder engagement through his role as senior advisor in Friend in Need Trust.

Mr. Sid Vollebregt
Managing Director,
Elemental Water Makers, The Netherlands



Sid Vollebregt is the Managing Director and co-founder of Elemental Water Makers (2012), who have commissioned their unique solar desalination technology in over 18 countries. Elemental Water Makers provides clean water from seawater using solar energy for resorts, communities, private properties, industries, and municipalities. As an engineer and water enthusiast, Sid believes that solar-powered desalination plays a crucial role to achieve SDG 6 and ensure a sustainable water supply. With his organization, he received the 1st prize of the MBR Global Water Award of the Emir of Dubai, selected out of 138 organizations active in solar-desalination. He's also an accredited Faculty Member of Singularity University & the Chairman of the Elemental Water Foundation, which is active with solar desalination projects for remote communities.

Mr. A. Vijayaraman
CEO/Director
Powertec Engineering Pvt. Ltd.



Mr. Vijayaraman is a Civil Engineer with an M.Tech from IIT-Madras. He has more than 40 years of experience in Coal based Thermal Power Plants and Desalination Plant. He was associated with the design and construction of sea water intake and out fall system, including Intake well of 19 MLD in the open sea of Bay of Bengal.

He is currently associated with Powertec Engineering (PE) as the CEO and is involved in co-ordinating various activities within PE-Civil both Pre and post-award of contracts. After joining Powertec, he has been associated with O&M supervision co-ordination for 100MLD Minjur Desalination plant, plant healthiness assessment for 100MLD Nimmeli Desalination and plant tendering activities 125MW Sendou TPP Desalination in Senegal.

Ms. J. Rajam
Senior Manager
Powertec Engineering Pvt. Ltd.



Ms. Rajam is a Distinction Chemical Engineer from Madras University. She has more than 15 years of experience in Water treatment plant & Waste treatment Plants for Power sectors and Sea water desalination Plants. She has deep knowledge in basic engineering for design of water treatment plants and waste water treatments plants for Power sector. Her expertise lies in finalization of desalination process to suit the site/client requirements and is involved in review of sea water intake and out fall system for desalination plants.

She has worked as a leader engineer in India's first 100 MLD Minjur Desalination plant from scratch to commissioning and is continuing as an Independent engineer for monitoring the O&M activities of same plant. She is actively involved in preparation of equipment's healthiness survey report for Entire 100 MLD Desalination Plant owned by government of Tamil Nadu; preparation of Feasibility Report (FR) and tender document for Desalination plant of 125MW Sendou TPP, in Sengal, West Africa.

Session Coordinator

Prof. (Dr.) Shyama V. Ramani
Professor, UNU-MERIT Maastricht &
Director, Centre for Circular Economy, FIN India Trust



Dr. Shyama V. Ramani is a Professorial Fellow at UNU-MERIT, United Nations University at Maastricht and Professor at Maastricht University. Her research focuses on the relationships between technology, innovation and their governance for inclusive development. She is currently studying the role of technology and innovation to attain the Sustainable Development Goals or SDG focussing on SDG4 (education), SDG6 (water and sanitation), SDG11 (sustainable cities and communities) and SDG12 (responsible consumption and production).

She is a serial academic entrepreneur who has also co-founded a profit unit (Tecknowmetrix, Voiron, France) and a non-profit (Sti4Change, Bangalore, India) based on her publications in the economics of innovation, but currently she is active only in FIN. Finally, in 2017, she co-founded SITE4Society in UNU-MERIT, an initiative to bridge gaps between academics and society, via events and understandable publication briefs dealing with science, innovation, technology and engagement – to leave no-one behind in terms of knowledge sharing on solution designs for sustainability transitions.

Event Registration Form: <https://forms.gle/VgN6h9MXefAiTXiKA>

Zoom link for the event will be sent to the registered participants.

About the Organisers

This multi-stakeholder forum is being organised by the *Centre for Circular Economy (FIN India Trust)*, along with *SITE4Society (United Nations University-MERIT)*.

Centre for Circular Economy (CCE) is a part of the [Friend In Need India Trust](#), an NGO working in India on the different issues of Sanitation, Waste Management, Hygiene and Water. CCE activities are focused on Policy Innovation & Action Research on themes related directly to the sustainable development goals. The organisation has successfully organised international forums in the past on topics related to sanitation, water and environmental sustainability.

[SITE4Society](#) is a platform for dialogue and cooperation between students, researchers and other community stakeholders on pathways to attain the Sustainable Development Goals. Its activities have been developed in collaboration with different groups of academics and students across the globe, with the core team being in UNU-MERIT.

The *United Nations University – Maastricht Economic and Social Research Institute on Innovation and Technology (UNU-MERIT)* is a research and training institute of United Nations University based in Maastricht in the south of the Netherlands. The institute carries out research and training on a range of social, political and economic factors that drive economic development from a global perspective.

The three organisations have collaborated for other such projects, the most recent of these was organised on [World Toilet Day 2020](#), a programme in which co-organisers included *Fusion Waste Management Services Pvt. Ltd.* along with the *Madhya Pradesh government* from India. The event included panellists and presenters from private and public sector organisations based in Albania, France, Germany India, Netherlands, Nigeria and Sweden and included a pan European alliance for Fecal Sludge Management. The collaboration between FIN-CCE, SITE4Society and UNU-Merit aims to develop a platform for the exploration of various social innovations and leveraging them for technological, social and behavioural changes.

This program is envisaged to be the first in a series of water-related policy discussions on critical themes that (prima facie) have relatively less focus in the multi-stakeholder understanding and dialogue context.

Organisation team:



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|--|--|----------------|
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