



2ND INTERNATIONAL CONFERENCE



WATER, MEGACITIES & GLOBAL CHANGE

11-14 JANUARY 2022

ARCEAU

CO-ORGANIZED BY





BACKGROUND

UNESCO's Division of Water Sciences and ARCEAU-IdF (Association of the Water Professionals, Researchers, Decision Makers And Elected officials from the Paris Metropolitan Area) are co-organizing the Second International Conference on Water, Megacities and Global Change (EauMega), in collaboration with the Greater Paris Metropolis and the Greater Paris Sanitation Authority (SIAAP, Syndicat Interdépartemental pour l'Assainissement de l'Agglomération Parisienne) on 11-14 January 2022, online.

In December 2015, UNESCO-IHP and ARCEAU-IdF hosted the First International Conference on Water, Megacities and Global Change, during the 21st United Nations Conference on Climate Change (COP 21), to draw attention to the significant challenges megacities are facing and to propose the creation of a global alliance to focus on climate change and water security: the Megacities Alliance for Water and Climate (MAWAC). Five years later, in December 2020, the online Pre-Conference "Water, Megacities and Global Change" gathering more than 6000 participants, reopened the discussion on this issue and paved the way towards the Second International Conference on Water, Megacities and Global Change. This flagship initiative will bring together scientists, water operators, decisionmakers, civil society and basin authorities, to exchange for four days on the management of water in very large urban centers, megacities.

perspective, and vice-versa, as their interdependence is strong, and their management deeply linked. For example, urban discharges to aquatic environments are one of the major causes of ocean pollution by plastics. Cities are increasingly vulnerable to extreme water events, such as hurricanes, floods, storms and storm surges or tidal waves. To tackle these increasingly recurrent incidents, the recent report by the OECD and UN-Habitat, "Global State of National Urban Policy", shows the importance of urban policies in climate change mitigation and adaptation and the promotion of sustainable development.

Given their size, the challenges posed by water management in megacities are of particular importance and raise new and specific issues that require close collaboration between scientists who advance knowledge, operators and basin authorities (public and private) who innovate technically and socio-politically, and local decision-makers who can support new, just and more efficient models of water governance, in constant interaction with the civil society. After providing a scientific and technical overview of the water and global change challenges facing megacities, the conference will propose and develop multi-dimensional solutions, based on collaboration between all urban water stakeholders, to lead to holistic and sustainable resource management.



EXPECTED OUTCOMES

- **To produce a scientific and technical overview** of water management in Megacities in order to identify and update the most important issues
- To strengthen the dialogue between science and policy actors at local level
- To activate the cooperation platform of the Megacities Alliance for Water and Climate (MAWAC) by concretizing the exchange of their expertise in the specific field of water and climate
- To review the Strategic Global Framework of MAWAC, prepared by the Working Group of UNESCO Intergovernmental Hydrological Programme (IHP)

EXPECTED OUTPUTS

- Publication of the 15 best papers in a high-level open- access international scientific journal
- UNESCO electronic publication of the Proceedings of the conference in open-access
- Youth Declaration and Call for Actions for water and climate change in Megacities

ORGANIZERS



UNESCO Division of Water Sciences holds the Secretariat of the Intergovernmental Hydrological Programme (IHP) which is the only intergovernmental programme of the United Nations system devoted to water research, water resources management, and education and capacity development.

Its eighth phase (IHP-VIII, 2014-2021) is devoted to "Water security: Responses to local, regional and global challenges." Using an interdisciplinary approach, and with the contribution of the "UNESCO Water Family" representing over 3000 experts, it addresses among others the topics the adaptation to climate change impacts, the management and protection of groundwater resources and water resources management for human settlements of the future.



ARCEAU-IdF is a non-profit organization founded in April 2013 by several local communities and research laboratories from the Paris region. Its activity is mainly oriented towards the transfer of both scientific data and pioneering actions in the water sector. Unique in its structure, ARCEAU-IdF is a pluralist debate platform, connecting researchers, operators and elected officials.



The Greater Paris Metropolis is a public establishment of inter-municipal cooperation covering a dense and continuous urban area. The Metropolis came into existence right after EauMega 2015, on January 1st, 2016. It comprises 131 municipalities including Paris, covers 814 square kilometers and has a population of 7.2 millions.



Service public de l'assainissement francilien

SIAAP is the public service utility that cleans every day waste water from 9 million inhabitants of Ile de France, including also storm water and industrial waste water. SIAAP, with more than 1,700 agents, cleans 7d/7, 24H/24, almost 2.5 million m3 of water, transported by 440 km of main sewers and treated by its six waste water treatment plants. This has allowed to get to a large step forward in the Seine and the Marne river quality improvement.

PROGRAMME IN SHORT

	DAV 1		DAV 0		DAVO			DAY 4	
0.00	DAY 1		DAY 2		DAY 3		DAY 4		
9:00			DISASTER RISK REDUCTION 3/2 Holistic water management 2/2 Land Issues and Challenges 1/1		Water Governance in Megacities facing of the multiplicity of actors and the challenges of climate change NEW WATER CULTURE 17/2 INNOVATIVE INITIATIVES 17/2		Enhancing Resilience in Blue Cities Comparing knowledge and experiences of Megacities on the urbanization processes and their effects on floodplains City-Basin dialogue and climate change adaptation: how to reconnect cities to their basins		
10:30	OPENING CEREMONY		Break		Break		Break Closing and award ceremony of the Youth Innovation Challenge		
11:00			GOVERNANCE MODALITIES 1/2 STRENGHTENING OF SUSTAINABLE SOLIDARITIES 1/1 SUSTAINABLE DEVELOPMENT GOALS & SERVICE CONTINUITY 1/1		Metropolitan Pandemics Challenges World Youth Perspectives NEW WATER CULTURE 27/2 INNOVATIVE INITIATIVES 27/2		CLOSING CEREMONY		
12:30	Lunch Break	SIDE-EVENTS: XYLEM / GREATER PARIS METROPOLIS	Lunch Break	SIDE-EVENT: Syctom	Lunch Break	SIDE-EVENT: Be water one	Lunch Break	SIDE-EVENT: THINK TANK (RE)SOURCES	
14:00	DISASTER RISK REDUCTION 173 PRE-CONFERENCE "WATER, MEGACITIES AND GLOBAL CHANGE": WHAT RESULTS ONE YEAR LATER? KNOWLEDGE OF THE TECHNICAL AND SOCIAL CONDITIONS 17/2		GOVERNANCE MODALITIES 272 TECHNICAL AND TECHNOLOGICAL SOLUTIONS 172 REGIONAL SESSION: Europe-North America, under the auspices of the Megacities Alliance for Water and Climate: Metropolitan CITIRISE Challenges				Assembly of Mayors and Governors under the auspices of the Megacities Alliance for Water and		
15:30	Break Opening of the Youth Innovation Challenge		PLANNING TOOLS 17/1 TECHNICAL AND TECHNOLOGICAL 17/2 REGIONAL SESSION: Latin America and the Caribbean, under the auspices of the Megacities Alliance for Water and Climate: Water and sanitation during the Covid-19 pandemic in megacities informal neighborhoods SIDE-EVENT: THINK TANK (RE)SOURCES					ate (MAWAC)	
16:00 17:30 19:00	DISASTER RISK REDUCTION 2/3 HOLISTIC WATER MANAGEMENT 1/2 KNOWLEDGE OF THE TECHNICAL AND SOCIAL CONDITIONS 2/2								



10:30 - 12:30

OPENING CEREMONY

Bio of the high-level speakers available here

Moderated by Abou Amani - Director, Division of Water Sciences and Secretary, Intergovernmental Hydrological Programme (IHP), UNESCO and Daniel Marcovitch Président, ARCEAU-IdF, Vice-President of the Board of Directors, Agence de l'eau Seine Normandie, Co-Chairman of the Joint Flood Commission

Welcoming address

> Audrey Azoulay - Director-General, UNESCO

Opening statements

- > Mami Mizutori Special Representative of the UN Secretary-General for Disaster Risk Reduction, United Nations Office for Disaster Risk Reduction (UNDRR)
- Mathias Cormann Secretary-General, Organisation for Economic Co-operation and Development (OECD)
- Loic Fauchon President, World Water Council (WWC)
- > Patrick Ollier President of the Greater Paris Metropolis, President of the Etablissement Public Territorial de Bassin Seine Grands Lacs, Mayor of Rueil-Malmaison
- > Bérangère Abba, Secretary of State to the French Minister of Ecological Transition, in charge of Biodiversity, French Minister of Ecological Transition

Keynote speeches

- > Felicia Marcus Landreth Visiting Fellow, Stanford University, and Founding Member, Water Policy Group, **United States**
- > Leo Heller Former UN Special Rapporteur on the Human Rights to Safe Drinking Water and Sanitation, Researcher in Oswaldo Cruz Foundation, Brazil
- > Jun Xia Academician of Chinese Academy of Sciences, China
- > Jean-Pierre Elong Mbassi Secretary-General of United Cities and Local Governments of Africa, Morocco
- > Florence Habets Hydroclimate Scientist, Senior Scientist at CNRS, Adjunct professor at Ecole normale supérieure, France

12:30 - 14:00

Lunch break



14:00 - 15:30

DISASTER RISK REDUCTION 1/3

Chaired by Alice Aureli - Chief of Section, Groundwater Systems and Settlements Section (GSS), Division of Water Sciences, UNESCO

Developing River Flood Warning Systems in Urban Areas: Ukrainian Experience

> Manukalo Viacheslav

From temporary flooding to permanent submersion of Ho Chi Minh City low elevation districts towards midcentury; pleading for a multi-disciplinary approach

> Georges Vachaud

Towards a global Day-Zero? Assessment of water supply and demand futures in 12 megacities

> Janez Susnik



14:00 - 15:30

PRE-CONFERENCE "WATER, MEGACITIES AND GLOBAL CHANGE": WHAT RESULTS ONE YEAR LATER?

Chaired by *Benjamin Gestin* - Director General, Eau de Paris and *François Prévot* - Professor, Institute of Earth Physics of Paris

Coping mechanism during erratic rainfall, frequent drought and challenge to supply potable water to millions, a case study of Jaipur City

> Anil Dutt Vyas

City Blueprint Assessment in 3 Central African Cities: A Contribution for the improvement of Urban Water Security

> Ibrahima Abdoulahi

The Implications of Physical and Technical Conditions on Flood Resilience in Self-build Housing in Tropical Wet and Dry Nigeria

> Waku Ken-Opurum

Working Better Together: Interagency Cooperation as the Key to Large-Scale Urban Water Reuse

> Shannon Spurlock and Eric Rosenblum

The Waterwheel: a socio-spatial method for understanding and displaying holistic water systems: the case of port cities on the Northern Adriatic coast

> Carola Hein

Assessing Integrity Management in Water Utilities

> Umrbek Allakulov

Development and Implementation of a Holistic Framework for Nature-Based Solutions Actuation in Urban Areas

> Maria Dubovik

Global change in the Sun Corridor Megaregion: managed aquifer recharge planning tools in the Central Arizona Desert, USA

> Rebecca Bernat

Water and Sanitation Sector Integrity Risk Index

> Alfredo Hernández Sánchez



KNOWLEDGE OF THE TECHNICAL AND SOCIAL CONDITIONS 1/2

Chaired by *Dominique Gatel* - Vice president, Public affairs/Water, Veolia Corporate

Flooding due to the rise in the urban water table: improving knowledge in the city of Niamey

> Halidou Alassane Hado

Smart Water Management platform for Urban areas, Case of Hurghada, Egypt

> Samar Alarif

A Collective study on Policy and institutional framework as a means of enabling water recycling environment

> Mahmoud Radwan

Wastewater is A Solution for World Clean Water Crisis

> Arnie Novianti Zulkarnain

Decentralized Treatment Facilities in the urban low income areas of Kenya

> Stella Warue

15:30 - 16:00

Break



Opening of the Youth Innovation Challenge, co-organized by the Youth Steering Committee for EauMega and Xylem

English event only

16:00 - 17:30

DISASTER RISK REDUCTION 2/3

Chaired by Alexandros Makarigakis - Head of Office a.i. and UNESCO Representative a.i.

A DPSIR approach for flood disaster risk reduction in Indian megacities

> S P Saravanan

Feedback about SEDIF response for floods in Île-de-France

> Grégoire Passavant

Water Management in Megacities in the light of Minas Gerais' Environmental Disasters

> Amael Notini Moreira Bahia and Mariana Magalhães Avelar

Flood disaster risk reduction in megacity Mumbai in a changing climate

> Kapil Gupta

HOLISTIC WATER MANAGEMENT 1/2

Chaired by Eric Tardieu - General Director, International Office for Water, OiEau

The Southern Urban Hydrosystem Syndrome (SUHS): New case studies from China, India and Democratic Republic of the Congo

> Karl Wantzen

In-situ passive sewage treatment in lake/tanks for recycling "used" fresh water for domestic purposes

> Seema Sukhani

Consider suburban streams as hybrids: Methodological reflexion from the PARISTREAMs project

> Laurent Lespez



KNOWLEDGE OF THE TECHNICAL AND SOCIAL CONDITIONS 2/2

Chaired by Pierre-Alain Roche - President, Mobility and Transport Section, General Council for the Environment and Sustainable Development, French Ministry of **Ecological Transition**

Public-Private Partnerships for Sustainable Water Security in Africa's Megacities: Turning around by putting more Emphasis on the Non-State Governance Mechanisms

> Sheila Kong Mukwele

Development of an innovative early warning system to manage bathing conditions in the Seine River in Paris region

> Sofia Housni

Water Management in Beijing Municipality

> Simon Yin

Plastic waste management - groundwater - public health nexus in Dhaka: issues and concerns

> Mohammed Nadiruzzaman





09:00 - 10:30

DISASTER RISK REDUCTION 3/3

Chaired by Nilo Nascimento - Professor, Federal **University of Minas Gerais**

Extreme precipitation and climate change at metropolitan scale: Mapping the historical trajectory of flood risk regimes in Grenoble- Alpes-Métropole

> Mohammed Kharbouche

Climate action is not uniformly motivated: Results from a multi-national survey

> Brayton Noll

Using Geo-spatial technology to enhance public Participation in disaster mitigation and adaptation Policymaking

Alexis Sebarenzi Gatoni

Increasing hydro-resilience to climate change: the case of Athens metropolitan area

> Jacques Ganoulis

Economic impacts of droughts: an analysis for the São Paulo Metropolitan Area

> Karina Sass

HOLISTIC WATER MANAGEMENT 2/2

Chaired by Oscar Cordeiro - Director General, National Water and Sanitation Agency, Brazil

Securing the Ile-de-France water supply

> Florent Casy and Laurence Breus

The challenges of water policy in the Metropolitan Area of Buenos Aires

> Melina Tobias

"Making water a resource for urban planning": from a field approach to the definition of public stormwater policy - case study of the aix-marseille-provence metropolitan area

> Thierry Maytraud

Turning Rainwater into a Usable Resource in Megacities

> Joshua Gallegos

LAND ISSUES AND CHALLENGES 1/11

Chaired by Jean-François Donzier - Administrator, French Water Academy

Water as a driver of megalopolitan systems: Tucson Metropolitan Area in the Ari-zona's Sun Corridor (US)

> Juan B. Valdes

Impact of Urban Growth on the Groundwater Resources: A Case of the Megacity of Delhi (India)

> Jauhari Deepika

Economic evaluation of health and environmental pollution costs caused by the non-connection of housings to urban sanitation networks in peri-urban areas in Argentina

> Regueira Jose Maria

Experimentation of a participatory and integrated management policy to handle irregular occupations in the guarapiranga reservoir watershed in São Paulo, Brasil

> Okamura Cinita and Jacques Lolive

10:30 - 11:00

Break

11:00 - 12:30

GOVERNANCE MODALITIES 1/2

Chaired by Anne Pelletier - Le Barbier - Bièvres Mayor, Vice-President, SEDIF

Sustainable water tariffs in megapoles: how to recover the full cost

> Bernard Barraqué

A framework to evaluate the extent of integrated urban water management in Indian cities and demonstrating its application for the city of Delhi

> Neha Midha

Transition by Tradition: Rethinking the Governance of Water Infrastructures in Today's Iranian Cities

> Narjes Zivdar



11:00 - 12:30

STRENGHTENING OF SUSTAINABLE SOLIDARITIES 1/1

Chaired by Graciela Schneier-Madanes - Professor, CNRS

Importance of Mekong river security related to Contested Waterscapes in the Mekong Region based on climate change, wildlife trade and deforestation and degradation

> Aung Aungthan Oo

Mitigating Water Crisis Impacts in Africa's Megacities through Cross-sectoral Regional Platforms of Capacity Building

> Sheila Kong Mukwele

Megacities, climate vulnerability and environmental displacement: interdependent challenges

> Amanda Carvalho

São Paulo City Green Belt Biosphere Reserve - Water Security and Human Well-Being

Victor Rodrigo Antonio Braga Moraes

SUSTAINABLE DEVELOPMENT GOALS & SERVICE CONTINUITY 1/1

Chaired by Denis Penouel - Director General, Syctom

Swimming in Paris, a practice for the sustainable city?

> Agathe Euzen

Public Toilets Sustainability Through Art and Culture

> Amir Tadros and Howaida Eid

Network extension in water crisis context in Lima (Peru). From informal settlements to real estate projects

> Jérémy Robert

Overexploitation, degradation of water resource quality and risk management in the face of sustainable water demand in the Greater Dakar region.

> Abdoulaye Cisse

12:30 - 14:00





14:00 - 15:30

GOVERNANCE MODALITIES 2/2

Chaired by Jean-Claude Deutsch - President, Conference **Steering Committee**

Governance of inter-sectoral reallocation of water within the context of urbanization in Hyderabad

> Atoho Jakhalu

Floodplain urbanization and degradation of the resilience of the inhabitants. Ambiguities in the individuation of flood risk management in the greater Paris

> José-Frédéric Deroubaix

The Milwaukee resilience plan to face change

> Eric Hestin

From a territorial diagnosis of los valles del tuy in Venezuelan's Miranda state to international cooperation for Andean countries

> Jose Rengel Strafella

TECHNICAL AND TECHNOLOGICAL SOLUTIONS 1/2

Chaired by Régis Moilleron - Professor, Université Paris Est Créteil - LEESU

Does the lack of access to water have an effect on poverty? Analysing the correlation between poverty and access to water in Egypt

> Hala Bayoumi

For an adapted city to climate change: how to cooling public space in Paris

> Julie Roussel

Nature-based solutions for sustainable stormwater: a model approach and sensitivity analysis for bioretention design using green and ampt and reservoir flood routing

> Marcus Nóbrega Gomes Júnior

How cities can adapt to water stress: Cross comparison of Cape Town and Windhoek cities

> Michel Lafforgue



REGIONAL SESSION: Europe-North America, under the auspices of the Megacities Alliance for Water and Climate: **Metropolitan CITIRISE Challenges**

Moderated by Ilan Juran - Professor, New York University and Georges Leclere - Vice President, National Academy of TV, Art & Science, NY Foundation

- > Fadi Georges Comair Former Chair of UNESCO-IHP Council, French Water Academy
- > Stephen Segaller Vice President Programming, WNET, PBS. NY
- > Thierry Witkowicz Senior Vice President, Resilience & Smart Cities, Veolia
- > Brice Lalonde Former Minister of Environment of France, Nicolas Hulot Foundation
- > Luc Abbadie Professor, Sorbonne University
- > Eric MacFarlane Deputy Commissioner, Department of Environmental Protection, New York City
- > Daniel Bicknell Head of Climate Adaptation Unit, City of London Government

15:30 - 16:00

Break

16:00 - 17:30

PLANNING TOOLS 1/1

Chaired by Maria Salvetti - Senior Policy Analyst, Cities, Urban Policies and Sustainable Development Division,

Role of regulators in assistance of providing of a right to access to a minimum quantity of drinking water

> Mariam Momiyan

Influence of Landscape changes on Urban Catchment flow (A Case Study of Nwaorie-Otamiri Catchment)

> Uchechukwu Ogbenna

Water and land, culture and society: how can they come together in metropolitan planning? some thoughts from a Brazilian experience

> Heloisa Soares De Moura Costa

Water and Climate in Megacities and the Contribution of Nuclear Science and Technology to Ecosystems and their Services

> Elaine Rodrigues Aparecida

TECHNICAL AND TECHNOLOGICAL SOLUTIONS 2/2

Chaired by Régis Moilleron - Professor, Université Paris Est Créteil - LEESU

Qualitative and quantitative management of the water resource of the Lyon metropole with climate change

> David Poinard

Urban growth and water and sewer services in the Metropolitan Area of Buenos Aires, Argentina

> Melina Tobias et Emilio J. Lentini

Resource recovery at wastewater treatment plants: potential, obstacles and levers for success

> Laurent Brunet

Novel methodology and instrumentation for in-situ microbiological risk assessment

> Dan E. Angelescu

REGIONAL SESSION: Latin America and the Caribbean, under the auspices of the Megacities Alliance for Water and Climate: Water and sanitation during the Covid-19 pandemic in megacities informal neighborhoods

Session available in French, English and Spanish

Moderated by Oscar Cordeiro Netto - Director General, National Water and Sanitation Agency, Brazil

- > Víctor Javier Bourguett Ortiz Director General, CONAGUA, Valle de Mexico Basin Authority
- > Claudio Darrigrandi Navarro National Director, Direction of Hydraulic Works
- > Melina Tobias Researcher, University of Buenos Aires and CONECIT
- > Isaac Volchan Professor, Federal University of Rio de Janeiro
- > Marco Antônio Palermo Head of the Municipal Commission of Water Security, Municipality of São **Paulo**
- > Jorge Luis Rucoba Tello Head of Research and Development - SEDAPAL



Water and risks in peri-urban areas of Africa and the Middle East: issues and solutions

Event in French [info p. 21]



09:00 - 10:30



Water Governance in Megacities facing of the multiplicity of actors and the challenges of climate change

Moderated by Michel Lafforgue, Project Manager, SUEZ, Administrator, Académie de l'Eau, France

- > Jean-Pierre Tabuchi SIAAP, Project manager,
- > Angela Licata-Misiak Assistant Commissioner of the Department of Environmental Protection, New York City Department of Environmental Protection - United States)
- > Ali Chavoshian Director of the Regional Center on Urban Water Management, Tehran, Iran
- > Julie Perkins Officer in charge of the Secretary of **UN-HABITAT**
- > Régis Thépot Administrator, Académie de l'Eau, France
- > Akomeno Oteri Consultant, Hydrated Geo Consulting Services (formerly Managing Director, Akute Geo-Resource Ltd), Lagos, Nigeria

NEW WATER CULTURE 1/2

Chaired by Jedrzdej Bylka and Redha Agadi -Representatives, EauMega Youth Steering Committee

New waterway transportation culture

> Sophie Manca

Enrich the prism of urban management of megacities: water alongside the plot, mobility, environment and energy

> Stéphane Lako Mbouendeu

Challenges for urban tourism: are they wise "waterwise"?

> Merrica Fernando



INNOVATIVE INITIATIVES 1/2

Chaired by Diane d'Arras - Immediate Past President of the International Water Association, Administrator of **International Water Association**

Institutional development and cost estimation in a payment for ecosystem service framework to protect strategic water sources in metropolitan areas

> Nascimento Nilo

The emergence of systems for the source separation and valorization of human waste in Greater Paris: from necessity to implementation

> Marine Legrand

Public acceptance of water reuse - cross views between France and Tunisia

> Benjamin Noury

Use of treated domestic wastewater in managed aquifer recharge and homestead irrigation - A Hydrogeochemical study from Khulna Bangladesh

> Tawhidur Rahaman Md

"Bussola": finding a direction to monitor public sanitation works in the Guanabara Bay, Brazil

> Julia Rosa

10:30 - 11:00

Break

11:00 - 12:30



Metropolitan PANDEMICS Challenges

Moderated by Ilan Juran - Professor, New York University, USA and Bruno Nguyen - Honorary President of W-Smart, France

- > Alan Cohn Director IWR NYCDEP, New York,
- > Felicia Marcus William C. Landreth Visiting Fellow, Stanford University, USA
- > Régis Moilleron Professor and Director, LEESU, École des Ponts ParisTech, France
- > Peter Grevatt CEO, Water Research Foundation
- > Tugba Olmez Hanci Head of Strategy Development Department, Istanbul Water and Sewerage Administration, Turkey
- > Ali Chavoshian Director, UNESCO Regional Center for Urban Water Management, Tehran, Iran
- > Claire Beyeler Head of Department GeMAPI-Water, MGP, Paris, France



World Youth Perspectives

Moderated by Liudmyla Odud - United Nations Mission in South Sudan, Environmental Engineer and Jedrzdei Bylka - Adjunct Assistant Professor, Politechnika Poznanska

- > Randolf Waters Senior Director, Global Partnerships & Branding, Xylem
- > Yang Villa Country Director, Philippines, Isle Utilities
- > Michael Aniekan Johnson Young Water Professional, HACE, International Water Association, Nigeria
- > Mariana Balderas Senior Designer, Isla Urbana

NEW WATER CULTURE 2/2

Chaired by Philippe Pypaert - Programme Specialist, Science Sector, UNESCO

Beyond resiliency to floods, designing and planning for 21st-century water cultures

> Emilie Gascon

T-Park: Leveraging the Energy/Water/Waste Nexus in **Municipal Sludge Treatment**

> Dominique Gatel

Establishing a Multi-Participation Urban Water Source Protection Site Mechanism: A Case Study of the Partnership of Metropolitan Watersource Protection (PMWP)

> Jinfeng Zhou

Water Supply System of Mumbai, India: Emerging into new water Culture from Old Past

> Periyasamy Velrasu

INNOVATIVE INITIATIVES 2/2

Chaired by Juan Carlos Bertoni - President, Instituto Nacional del Agua, Argentina

The Roadmap to a Low-Carbon Water Utility

> Martin Kerres

Urban heat island mitigation solutions

> Julien Grimaud

The Saint-Vincent-de-Paul project in central Paris pipeless stormwater management for a bioclimatic city

> Thierry Maytraud

Flood expansion zone: a new Geographic Information System decision tool

> Pascal Goujard

12:30 - 14:00





09:00 - 10:30



Enhancing Resilience in Blue Cities

Moderated by Oriana Romano - Head of Unit, Water Governance and Circular Economy, Centre for Entrepreneurship, SMEs, Regions and Cities (CFE), **OECD**

- > Aziza Akhmouch Head of Division, Cities, Urban Policies and Sustainable Development, CFE, OECD
- > Manuel Araujo Mayor of Quelimane City, Mozambique
- > Dan Lert Deputy Mayor in charge of the ecological transition, the climate plan, water and energy, Paris, France
- Anna Majo Crespo Director of Business Innovation Projects, City of Barcelona, Spain
- > Cassilde Brenière Deputy Director of Operations, French Development Agency, France
- Alice Aureli Chief of Section, Groundwater Systems and Settlements Section (GSS), Division of Water Sciences, UNESCO





Comparing knowledge and experiences of Megacities on the urbanization processes and their effects on floodplains

Moderated by Catherine Carré - Professor University Paris 1 Sorbonne, France, et Hervé Piegay -Research Director, CNRS, France

- Lucia Bellenzani Researcher, University of Saõ Paulo, Brazil
- > Barbara Belletti Researcher, Urban School of Lyon, France
- > Anne Chin Researcher, University of Denver, USA
- > José-Frédéric Deroubaix Researcher, Ecole des Ponts ParisTech, France
- > Frédéric Gâche Deputy Director of Territorial Support, EPTB Seine Grands-Lacs, France
- > Jeff Opperman Global lead scientist for freshwater, **WWF** Organization



City-Basin dialogue and climate change adaptation: how to reconnect cities to their basins

Moderated by Eric Tardieu - Director General, OI Eau, France

- > Tom Mollenkopf President or Diane D'Arras -Immediate past President, International Water Association
- > Katharine Cross Water Cities, International Water Association
- > Jean-Didier Berthault Paris Councillor, Paris Municipality, Administrator, SIAAP
- > Victor Bourguett Ortiz* General Manager, Mexico Valley Basin Organization, Mexico
- > François-Xavier Imbert International Cooperation Project Manager, International Office for Water

10:30 - 11:00

Break



CLOSING AND AWARD CEREMONY OF THE YOUTH INNOVATION CHALLENGE, CO-ORGANIZED BY THE YOUTH STEERING **COMMITTEE FOR EAUMEGA AND XYLEM**

Online event in English

11:00 - 12:30

CLOSING CEREMONY

Bio of the high-level speakers here

Moderated by Nicolas Rolland - Director, Environment, Water and Climate Department, Greater Paris Metropolis

- > Shamila Nair-Bedouelle Assistant Director-General of **UNESCO** for Natural Sciences
- > Youth Declaration Federick Pinongcos and Paulina Marcela Ramírez Quevedo - Representatives of the Youth Steering Committee
- > François-Marie Didier President, SIAAP
- > Hayati Yarkadas Senior Vice President & President, Water Infrastructure and Europe Commercial Team, **Xylem**
- > Jean-Claude Deutsch President of the Steering Committee
- > Co-Presidents of the Programme Committee, S.E. Blanca Jiménez Cisneros - Ambassador of Mexico to France and Jean-Marie Mouchel - Sorbonne University
- > Abdoulaye Sene Executive Secretary, 9th World Water
- Claudia Sheinbaum Head of Government, Mexico City

12:30 - 14:00 **Lunch break** (re)sources SIDE-EVENT: THINK TANK (RE)SOURCES How to secure access to essential services through land rights?

Event in French [info p. 22]

14:00 - 17:00

Assembly of Mayors and Governors under the auspices of the Megacities Alliance for Water and Climate (MAWAC)

14:00 - 14:10

Introduction

> Abou Amani, Director, Division of Water Sciences and Secretary, Intergovernmental Hydrological Programme (IHP), UNESCO

14:10 - 16:00

ITEM 1. MEGACITIES STATEMENT

Facilitated by Shamila Nair-Bedouelle - Assistant **Director-General of UNESCO for Natural Sciences**

Presentations of the challenges and solutions related to water management in the face of climate change, by the Mayors and Governors of the megacities

16:00 - 16:45

ITEM 2. MEGACITIES ALLIANCE FOR WATER AND CLIMATE

Facilitated by Abou Amani - Director, Division of Water Sciences and Secretary, Intergovernmental Hydrological Programme (IHP), UNESCO

16:00 - 16:15

Presentation of MAWAC and examples of ongoing cooperation (SIAAP)

16H15 - 16H30

Presentation by K-Water (Seal of Excellence + Water Security project)

16H30 - 16H40

Presentation of the Strategic Global Framework (UNESCO-IHP)

16:40 - 17:00

Discussion on the 1st draft of the Strategic Global Framework

Closing Ceremony

Artificial Intelligence for addressing smart cities poor urban health

> Dipankar Sengupta

Rainscape Index - An Opportunity in Waiting: A case of Chennai; India

Minal Sagare

Future Challenges and Mitigation Strategies for urban water security: A case Study of Udaipur Urban areas, India

> Bhanwar Vishvendra Raj Singh

Changing Nature of Wastewater in Cities

> Ashu Balhara and Nutan Maurya

Continuity and holistic management of water services in the 21st century: how to reconcile the contradictory dimensions of the three objectives of sustainable development (investment, environment and social). The case of the Liege agglomeration in Belgium

> Jean-Michel Compere

A cybernetic hypothesis for water governance

> Matias Nieto-Tolosa

Effective Recovery of Plant Essential Nutrients from Human Urine through Precipitation and Alkaline **Dehydration onto Biomass**

Mahesh Ganesapillai

ESG/ SDG Integration as Financial Solution and Non-Political Source of Sustainable Solidarity in the Age of "New Water Culture"

> Yelena Novikova

POSTERS

Is Maltese urban stormwater suitable for re-use?

Alison J. Zammit, Ian Holman. Sean Tyrell

Sewage threats to water bodies: a case study of Trivandrum City in Kerala

> A J Archa

Un A water lexicon for megacities in the framework of the SDGs

> Jean-Louis Janin

Water supply systems design methods - review of case studies and literature

> Jedrzej Bylka

Analysing a century of territorial representations in the water management of the Brazilian semiarid region (1909-2019)

> Sidclay Pereira

Facing the challenge of untreated sewage: the case of Guandu Basin in Rio de Janeiro

> Caroline Lopes Santos

Hydrological model of the flooding in the megapolicies under strong rain precipitations

> Sergey Myagkov

The management of peri-urban and urban multifunctional green to enhance Quito's resilience

> Sheika Aragundi

Integrating Sustainable Drainage System and multifunctional bluegreen infrastructure to promote a better living environment in a periurban area in Rio de Janeiro

> Celi Okumura

Megacities within their drinking water supply territories: the case of the city of Paris

> Mathilde Resch

Flood control in a consolidated urban environment: From the lot to the watershed scale

> Celi Okumura

Contribution of domestic water to urban pollutant flows: characterization and solutions for source control. The case of cosmetics in the Paris conurbation

> Adèle Bressy

Analysis of the rains of January 2020 in Belo Horizonte: main impacts and actions to deal with floods

> Ana Paula Furtado

An Experimental Study Probing Moisture Kinetics and Indices of Microwave Dried Faecal Sludge with an Insight on Real World Applications

> Mahesh Ganesapillai

TUESDAY 11 JANUARY

SIDE-EVENTS

Consult the list of speakers of the side-events here

12:30 - 14:00

INNOVATION & DIGITALIZATION: HOW TO **HELP LOCAL AUTHORITIES SOLVE WATER CHALLENGES?**

ORGANIZED BY XYLEM - Event in French

All water and wastewater utilities now face important challenges such as climate change, ageing infrastructure, the continuous need to improve performance, safety and quality of service. Building partnership, coordinating multi-disciplinary expertise, developing innovative digital tools and solutions is the successful formula to meet these challenges for all the players of the water cycle today, also anticipating the threats of tomorrow, given the uncertainties over the long term. Digitalization and data processing clearly open a new era towards overall water management and give the opportunity to accelerate the move toward a less energy-intensive and more resource-efficient society.

12:30 - 14:00

THE GREATER PARIS METROPOLIS FACING THE RISKS OF FLOODING AND CLIMATE CHANGE

ORGANIZED BY THE GREATER PARIS METROPOLIS AND EPTB SEINE GRANDS LACS

The Greater Paris Metropolis is a territory with 131 municipalities including Paris. It faces risks related to climate change, particularly those related to floods. To meet the needs of improving the living environment and protecting its population, it is committed to a planning strategy through its « Schéma de Cohérence Territorial » and its « Plan Climat Air Énergie Métropolitain » and a practical strategy for flood protection. This last strategy allows it to act on the one hand locally on its territory and on the other hand on a more global scale thanks to the coherence and synergy implemented with the basin operator, l'Etablissement Public Territorial de Bassin Seine Grands Lacs.

12:30 - 14:00

WASTE AND WATER: PRESERVING THE ENVIRONMENT TOGETHER?

ORGANIZED BY SYCTOM

Responsible consumption, micropollutants in the sea and in wastewater, plastic pollution, the congestion of sewage networks, the prospects for co-treatment of organic waste and wastewater, the treatment of waste that comes out of the water, and the dumping of hazardous waste in waste disposal centers: these are all problems and solutions that demonstrate the extent to which water management and waste management are linked.

The complicity between these two essential services, which SDGs 6, 11, 12 and 17 make it possible to stage in the megacities and elsewhere, deserves to be told by the actors and experts.

17:30 - 19:00

WATER AND RISKS IN PERI-URBAN AREAS OF AFRICA AND THE MIDDLE EAST: ISSUES AND SOLUTIONS

ORGANIZED BY THE THINK TANK (RE)SOURCES -**Event in French**

The issue of water is often simultaneously social, economic, religious and (geo)political. This workshop will be an opportunity to navigate these intersections, focusing on (peri-)urban regions of East Africa, the Sahel and the Middle East, and to reflect on solutions that ensure continued access to water for the most vulnerable populations in these areas subject to natural hazards and risks or weakened by conflict.

THURSDAY 13 JANUARY

12:30 - 14:00

BE WATER ONE: THE PYRAMIDAL SOLUTION

ORGANIZED BY BE WATER ONE

BE WATER ONE is a french NGO which aims at protecting the 1% of fresh and available water on earth. BE WATER ONE is a civilian force of propositions, acting in coordination with the authorities. We take into account the strategic dimension of water and respect the

BE WATER ONE: the pyramidal solution

- > At the State level: protection by UNESCO World Patrimony of certain main river
- > On a collective scale: institutional communication on the value of water, cross-sectional co-management system of water channels and water bodies involving all stakeholders of the concerned bioregion
- On an individual scale: offer simple solutions based on biomimetism to protect, treat and economise water resources

12:30 - 14:00

HOW TO SECURE ACCESS TO ESSENTIAL SERVICES THROUGH LAND RIGHTS?

ORGANIZED BY THE THINK TANK (RE)SOURCES -**Event in French only**

The growth of African metropolises is accompanied by a consequent sprawl of informal settlements, most of which do not have access to water, sanitation or electricity infrastructures. This workshop will be an immersion in the issues of land rights and inclusive urban planning as possible drivers of human and social development in that they allow access to water. The question of sustainability will also be addressed, in connection with the issue of urban-rural relations.



COMMITTEES

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- > Jean-Marie Mouchel Sorbonne University

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- > Eric Servat (Comité National Français de Géodésie et de Géophysique)

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- > José Paulo Soares De Azevedo (Universidade Federal do Rio de Janeiro/Escola Politécnica/Drhima - Brazil)
- > Andrea Catenazzi (Universidad Nacional de General Sarmiento - Argentina)
- > Srinivas Chary (Administrative Staff College of India -
- > Nilo Nascimento (Universidad Federal de Minas Gerais - Brazil)
- > Akomeno Oteri (Hydrated Geo Consulting Services -Nigeria)
- Juan Pablo Rodriguez Sanchez (Universidad de Los Andes - Colombia)
- > Otto Corrêa Rotunno Filho (Programa de Engenharia Civil/ COPPE/UFRJ - Brazil)
- Manfred Schütze (IWA/IAHR Joint Specialist Group on Urban Drainage - Germany)
- Juan Valdez (University of Arizona United States of America)
- > Rae Zimmerman (New York University United States of America)



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- > Frédéric Gache (EPTB Seine Grands Lacs)
- Dominique Gatel (VEOLIA)
- > Benjamin Gestin (Eau de Paris)
- > Pascal Goujard (EPTB Seine Grands Lacs)
- Xarine Bidart (Agence Parisienne du Climat)
- > Eve Karleskind (CD 94)
- > Nicolas Londinsky (Ville de Paris)
- Jean-Pierre Maugendre (SUEZ)
- Denis Penouel (Syctom)
- > Eric Pfliegersdoerfer (Eau de Paris)
- > Anastasia Poli Bodereau (Ville de Paris)
- > Anne Rieth De Jonghe (CD 92)
- > Thierry Witkowicz (VEOLIA)

INTERNATIONAL

- > Carlos Berroeta (Aguas Andinas/UNESCO-IHP Chile)
- > Edward Curley (Western Coalition of Arid States -United States of America)
- > Hamanth Kasan (Rand Water South Africa)
- > Emilio J. Lentini (Center of Transdisciplinary Water Studies - University of Buenos Aires - Argentina)
- Angela Licata-Misiak (New York City Department of **Environmental Protection - United States)**
- > Atsushi Masuko (Japan Ozone Association Japan)
- > Jose Augusto Mendes (Departemento de Ãques e Energia Electrica São Paulo - Brazil)

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- > Sylvain Berrios (Métropole du Grand Paris)
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- > Jean-François Donzier (Global Alliance for Water and Climate)
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- > Diane D'Arras (International Water Association)
- > Antoine Delepiere (SIWI Sweden)
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- > Arjun Thapan (WaterLinks Philippines)
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Youth Activities

EAUMEGA YOUTH STEERING COMMITTEE

AS PART OF THE GOALS OF THE EAUMEGA CONFERENCE 2022 AND UNESCO'S OPERATIONAL STRATEGY ON YOUTH (2014-2021), THERE IS A SPECIAL FOCUS ON CREATING YOUTH ENGAGEMENT CONCERNING THE TOPICS OF THE EVENT, MEGACITIES, WATER AND GLOBAL CHANGE AND, THE YOUTH STEERING COMMITTEE

The Youth Steering is composed of different members that are youth representatives and that come from different regions recognized by UNESCO. It consists of a group of 14 members with diverse backgrounds in the professional and academic sphere concerning water management. All members work on a voluntary basis and they are located all around the

Its principal objective is to create a space of exchange and dialogue for young people (15-35 years old) through different ways of expression in order to discuss the different issues related to water and climate change in megacities. The Youth Activities are the result of the efforts of the Youth Steering Committee to propose, organize, coordinate and implement a series of events during the Conference that are particularly targeted to develop the youth engagement. They also work in building a bridge between Water Networks focused on young people, especially through the Youth Declaration, which is a statement based on the experiences and thoughts from these groups concerning key issues of water and climate in cities around the world.

YOUTH ACTIVITIES

The Youth Steering Committee has planned diverse activities destined for the young people throughout the Conference. They are aimed to be developed before and during the Conference and some of them are reinforced by the mentoring of partners such as ARCEAU-IdF, Xylem and EurEau.

YOUTH INNOVATION CHALLENGE

> Opening: 11 January - 15:30-16:00

> Solving the Challenges: 12 and 13 January

Closing and award ceremony: 14 January 2022 -10:30 - 11:00

Online activity in English, co-organized by the Youth Steering Committee and Xylem

More info and challenges statements: https://eaumegayouth.org/challenge/

An event based on collaborative gatherings to learn and apply skills towards a particular problem solving that is based on a real life scenario concerning water and climate related issues in megacities. As a result a series of winners will be identified and recognized throughout the Conference.

WORLD YOUTH PERSPECTIVES

> 13 January - 11:00-12:30

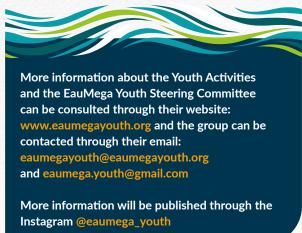
A space for young attendees to interact through discussions and presentations based on four thematic areas with the aim to find remarks about these different topics. The activity will focus on the targets of the Sixth Sustainable Development Goals (SDG): Clean water and sanitation.

Pitches and/or presentations will be realized concerning the topics of: i) drinking water and, sanitation and hygiene; ii) wastewater and quality and, water use and efficiency; iii) integrated water management and, water-related ecosystems; iv) cooperation and capacity building and, participation (knowledge of technical and social conditions).

YOUTH DECLARATION

> Closing ceremony - 14 January 2022 - 11:00-12:30

A document that is meant to be used as a reference in intergovernmental negotiations to ensure young people's perspectives are listened to concerning Megacities, Water and Global change. It is a Call to Action addressed to the global community from and through the voice of young people and built from the participation of diverse youth organisations and networks that responded to a survey sent to them the past year concerning diverse key issues related to the topic of the Conference.





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Available in English and French, the platform is also accessible on smartphones

