City – Basin dialogue in the Context of Megacities

United Nations Educational, Scientific and Cultural Organization

Megacities Alliance for Water and Climate (MAWAC)

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https://en.unesco.org/mawac
https://en.unesco.org/events/eaumega2020

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I. The Megacities Alliance for Water and Climate

Megacities Alliance for Water and Climate (MAWAC)

MAWAC is an international collaboration platform of the world's megacities. It aims to strengthen megacities' capacity to implement global standards and agreements, by promoting trans-disciplinary exchange, and the adoption of integrated approach through **international cooperation**, thus driving towards a paradigm shift in urban water management and climate change adaptation.

- **55%** of the world's population reside in city in 2018. By 2050, **68%** is projected to be urban.
- Around one in eight live in **33** megacities with more than **10 million** inhabitants. By 2030, the world is projected to have **43** megacities, most of them in developing regions.

Current Contact

Latin America	Asia & Africa	Europe, North America	Africa
Bogota	Bangkok	Istanbul	Lagos
Buenos Aires	Ho Chi Minh City	London	
Lima	Jakarta	Los Angeles	
Mexico City	Karachi	New York	
Rio de Janeiro	Lahore	Paris	
Santiago	Manila		
Sao Paulo	Mumbai		
	Wuhan		

*Working Group Focal Point

United Nations Educational, Scientific and Cultural Organization

ARCEAU Ile-de-France

SIAAP Service public de l'assainissement francilien

Métropole du Grand Paris

Time	Some past events
1-4 December 2015	**UNFCCC COP 21** **First International Conference on "Water, Megacities and Global Change" (EauMega 2015)**
	Launch the initiative, signature of the Declaration of the Megacities Alliance for water and climate by UNESCO-IHP, ICLEI and ARCEAU-IdF
June 2016	**22nd session of the IHP Intergovernmental Council**
	Establish the MAWAC Working Group consisted of 11 megacities
October 2016	**WaterLinks Forum**
	Proposition of establishing the regional platform for MAWAC
October2016	**Habitat III**
	Launch of the publication "Water, Megacities and Global Change"
November2016	**UNFCCC COP 22**
	Signature of the "Marrakech Declaration of Global Alliances for Water and Climate"; launch of the publication "Eau, mégapoles et changement global"
June 2018	**Launch of Partnership Project between SIAAP and MMDA of Manila**
May 2019	**Regional Conference for Latin America and the Caribbean**
	Signature on the principal framework of MAWAC-LAC Alliance
October 2019	**World Cities Day**
	UNESCO Metropolitan "ECO-RISE" R2020 Colloquium
December 2019	**UNFCCC COP 25**
	One UN for Climate-Compatible Cities
	PCCB Second Capacity Building Hub
January 2020	**ChangeNOW 2020 Program for Cities and Regions**
February 2020	**World Urban Forum 2020**
	UNESCO Cities Platform: urban solutions for global challenges
June 2020	**Webinar - Urban Solutions: Learning from cities' responses to COVID-19**
July 2020	**Webinar - COVID-19 Implication on Water Management in Megacities: Impacts, Reactions, and Lessons**
August 2020	**World Water Week**
	Urban Water Resilience Under COVID-19: What happens next?

II. Role of Basin in MAWAC Strategic Global Framework (upcoming)

Vision: Water secure megacities where communities are prosperous, resilient to the effects of climate change, and able to develop sustainably, while preserving the environment.

Mission: MAWAC is an international collaboration platform of the world's megacities, committed to adapting to the international global agendas on water and climate towards the sustainable megacities and water secure urban communities for all.

Water Secure Megacities

4 Key Stakeholders

- Decision Maker
- Utility and Operator
- Academia
- River Basin Authority

3 Intervention Scales

- Service scale
- City-Metropolitan scale
- Basin scale

Water Management

- **Pillar 1:** Water and sanitation management for human well-being
- **Pillar 2:** Water-climate related hazards
- **Pillar 3:** Ecosystem
- **Pillar 4:** Water for socio-economic development

- **Driver 1:** Water governance
- **Driver 2:** Data and information
- **Driver 3:** Cooperation
- **Driver 4:** Financing
- **Driver 5:** Science, technology and innovation (STI)

Stakeholder: River Basin Authority

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Intergovernmental Hydrological Programme

River basin authority in some contexts is the umbrella entity **undertaking basin-wide water resources management**, in response to stakeholders' demands or legal requirements and transboundary cooperation, such as monitoring, data collection, and co-ordination, planning and stakeholder engagement.

RBO or RBA are getting more involved in the various urban-related water aspects, and are increasingly valued by city level management.

Emerging innovative and integrated solutions, such as **natural-based solution** and **source-to-sea approach** obtain n international recognition

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Water Management

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Intervention Scale: Basin Scale

Aim/Target	Ensure coherence between urban water and basin management
Sub-Target	• Protect the quantity and quality of water resources • optimizing the interface between urban water and activities beyond the urban boundaries • Prepare for extreme events and impact of climate change • Develop source-to-sea approach
Related Pillars	Pillar 1, 2, 3, 4
SDGs	SDG 6.5.2, 14.1, 13.1, 3.9, 11, 15.6, 16.3, 17.9, 17.7

United Nations Educational, Scientific and Cultural Organization
Intergovernmental Hydrological Programme

III. Survey from MAWAC Working Group

Response from **Ho Chi Min City** (Viet Nam), **Istanbul** (Turkey), **Karachi** (Pakistan), **Lagos** (Nigeria), **Lima** (Peru), **Mexico City** (Mexico)
Collected by 23rd October 2020

A. Key Stakeholders for Water Resource and Basin Management in Megacities, Roles and Responsibility

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Megacity	Connected Basin
Karachi	Indus River basin
Lagos	(blank)
Mexico	Xochimilco Sub basin Mexico City sub basin La Compañia River Sub basin Texcoco Sub basin
Istanbul	European side: Alibey, Büyükçekmece, Sazlıdere, Terkos and Istrancalar. Asian side: Elmalı, Ömerli, Darlık, Kabakoz, Isaköy and Sungurlu. Outside the city: Melen catchment area.
Jakarta	Several river basins in Jakarta connected to other cities surrounding Jakarta
Ho Chi Minh City	Sai Gon – Dong Nai basin
Lima	The city of Metropolitan Lima uses water from the basins of three rivers: Rímac, Chillón and Lurín. These basins play a fundamental role as a source of water supply for human, agricultural and energy consumption

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Key Stakeholders in water activities

—— Water Resource Management & River Basin Development

	Karachi	Lagos	Mexico City	Istanbul	Jakarta	Ho Chi Min City	Lima
Water Resource Management	Sindh Irrigation Department, Government of Sindh	Lagos State Water Regulatory Commission	National Water Commission (CONAGUA)	Ministry of Agriculture and Forestry; Water and Sewerage Administration (ISKI)	Water Resources Office, DKI Jakarta Province	under Dept. Natural Resources and environment (DONRE): Environmental Management Division (EMD), Office of Mineral & Water Resource Management (OMWRM) and HCMC Environmental Protection Agency (HEPA)	National Water Authority- ANA
			Mexico's City Water System				
River Basin Development		-	National Water Commission (CONAGUA);			Sai Gon Dong Nai River Committee	Council of Water Resources of CUENCA
			Water of the Valley of Mexico Basin Agency				

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Intergovernmental Hydrological Programme

Key Stakeholders for River Basin Development (1/2)

	River basin development	Roles and Responsibility
Karachi	Irrigation Department, Government of Sindh	Distribute equitable water to all the competing users, maintaining the quality of water
Lagos	-	-
Mexico City	National Water Commission (CONAGUA)	- Prepare special programs of an interregional and inter-basin nature in matters of water; - Define the technical guidelines for the management of national waters, basins, works and services, to be considered in the preparation of programs, regulations and decrees of closures and reservation; - Prepare water quantity and quality balances by hydrological regions and basins;
	Water of the Valley of Mexico Basin Agency	- Know and agree on the regional water policy by basin - Formulate and propose the Water Program (s) by hydrological basin or by aquifer, update them and monitor their compliance - Preserve and control water quality, as well as manage hydrological basins - Prepare of hydrological balances by hydrological regions and hydrological basins in quantity and quality of water

Key Stakeholders for River Basin Development (2/2)

	River basin development	Roles and Responsibility
Istanbul	Ministry of Agriculture and Forestry	River Basin Action Plans are prepared by Ministry of Agriculture and Forestry for throughout the country
	Water and Sewerage Administrations (iSKi)	Special provision may be specified by Water and Sewerage Administration with more strict measures. Accordingly the action plans are prepared and submitted to Ministry for approval.
Jakarta	Water Resources Office	Supervise and coordinate public works and spatial planning in the sub-affairs of water resources, sub-affairs of drinking water, sub-affairs of wastewater
Ho Chi Minh City	Sai Gon Dong Nai river committee	River Basin Organizations for water resources planning on the basis of major river basins - the Sai Gon-Dong Nai river basin
Lima	Council of Water Resources of CUENCA	Institutional spaces for dialogue, where stakeholders related to water management in the basins discuss their problems in order to reach consensus, making agreements and committing to the implementation of actions in their respective basins

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Key Stakeholders in water activities

—— Development of drinking water and wastewater infrastructure &

Operation and maintenance of urban water and sanitation systems

	Karachi	Lagos	Mexico City	Istanbul	Jakarta	Ho Chi Min City	Lima
Drinking water and wastewater	Karachi Water & Sewerage Board (KW&SB)	Lagos Water Corporation	National Water Commission (CONAGUA)	Water and Sewerage Administration (ISKI)	Drinking Water Company DKI Jakarta (PALYJA);	The Sai Gon Water Supply Company (SAWACO)	Ministry of Housing, Construction and Sanitation (SEDAPAL)
		Lagos State Wastewater Management Office	Mexico's City Water System Water Commission of Mexico State Municipal operating agencies				
Operation of water and sanitation system		-	National Water Commission (CONAGUA)		Regional Environmental Agencies, DKI Jakarta	Ho Chi Minh city urban drainage company limited (UDC)	Technical Organization of the Administration of Sanitation Services (OTASS)
			Mexico's City Water System Water Commission of Mexico State Community water committees				

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Key Stakeholders in water activities

—— Regulatory Authority to Water and sanitation Services & Water Concession

	Karachi	Lagos	Mexico City	Istanbul	Jakarta	Ho Chi Min City	Lima
Water Regulation	No	Lagos State Water Regulatory Commission	National Water Commission (CONAGUA)	Ministry of Health; Ministry of Environment and Urbanization; Ministry of Agriculture and Forestry;	Health Office, DKI Jakarta	Dept. Natural Resources and environment (DONRE), following to People's Committee of HCMC	National Superintendency of Sanitation Services-SUNASS
			Mexico's City Water System; Water Commission of Mexico State; Municipal operating	Water and Sewerage Administrations (iSKi)			
Water Concession	Sindh Irrigation Department, Government of Sindh	-	National Water Commission (CONAGUA)	Ministry of Agriculture and Forestry	Water Resources Office, DKI Jakarta	Department of Agricultural and Rural Development (DARD) belong to the People's Committee	Rimac Hydraulic Sector User Board
				Water and Sewerage Administrations (iSKi)		The Ministry of Agricultural and Rural Development (MARD) ; Department of Industry (DI)	

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Key Stakeholders in water activities

—— Protection against Water-related Hazards

	Karachi	Lagos	Mexico City	Istanbul	Jakarta	Ho Chi Min City	Lima
Protection against Water-related Hazards	Karachi Water & Sewerage Board (KW&SB)	Office of Drainage Services	National Water Commission (CONAGUA)	Ministry of Environment and Urbanization	Regional Disaster Management Agency	Ho Chi Minh city disaster, research and rescue Board, belong to Department of Agricultural and Rural Development (DARD)	Local and regional governments
			Ministry for Civil Protection	Metropolitan Municipality; Water and Sewerage Administration (ISKI)			

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Adoption of Integrated Water Resource Management (IWRM) in Megacities

Overview

	Karachi	Lagos	Mexico City	Istanbul	Jakarta	Ho Chi Min City	Lima
IWRM Approach	On Plan	(no information)	(no information)	**Adopted**	On Plan	(no information)	**Adopted**

Adoption of Integrated Water Resource Management (IWRM) in Megacities

Istanbul and Lima (adopted)

IWRM adopted in Istanbul	
The regulations set by Ministry of Environment and Urbanization, Ministry of Agriculture and Forestry and Ministry of Health are in place for the integrated approach. These are ready and are in implementation stage.	
Driver	Related ministry and its provincial office have the sanction, for cases not comply with the regulations.
Context	Non-governmental organization are active in the complaint mechanism, if it is not comply with the regulations.

IWRM adopted in Lima	
With the promulgation of the Water Resources Law 29338 (March 31, 2009) and its regulations (March 23, 2010), IWRM is established in the country as a management philosophy, indicating that the use of water must be optimal and equitable , based on its social, economic and environmental value, by river basin and with active participation of the organized population. It also creates the **National Water Resources Management System (SNGRH) in order to articulate the actions of the state**, to conduct the processes of integrated management and conservation of water resources in the basins. At the head of this system, he places the **ANA (National Water Agency)** and gives it the task of leading it and building IWRM in the country.	
Driver	National Water Authority, Water Resources Council
Context	The basin water resources councils are made up of representatives of local and regional governments, user organizations, the Academy, peasant communities, professional associations, the Water Administrative Authority.

IV. Key Initiatives and Plans for MAWAC

Upcoming Major Activities and Projects

Megacities Alliance for Water and Climate (MAWAC) | Second International Conference "Water, Megacities and Global Change

Nov 2020 - Feb 2021 — **Establishment of Regional Platforms**

- Latin America and the Caribbean (MAWAC-LAC)
- Europe and North America (MAWAC-ENA)
- Asia and the Pacific (MAWAC-ASPAC)

Dec 7-11 2020 — **Pre-Conference**

Youth participation
New call for papers, call for side events , call for partnership
Webinar series

Dec 2021 — **Second International Conference "Water, Megacities and Global Change"**

- First Assembly of MAWAC
- Mayor Congress
- Regional Session

Upcoming Major Activities and Projects

United Nations Educational, Scientific and Cultural Organization · Intergovernmental Hydrological Programme

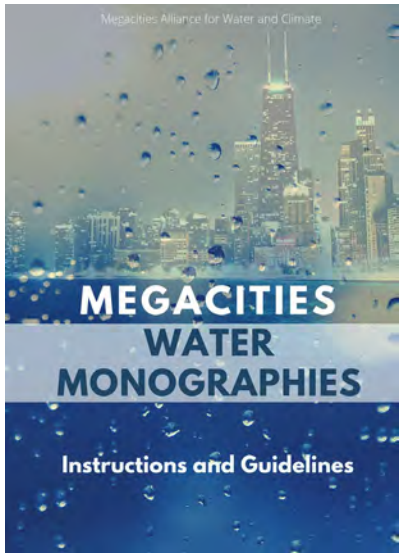
16 Megacities Monographies – 2016, 2019

Contribution of 33 authors from around the world.
Available: English, French, Spanish
View full version:
https://en.unesco.org/mawac/resources

2016
Habitat III: Launch of the 15 Megacities Monographies Publication
2019
16 Megacities Monographies (new : Kinshasa)

Ongoing Publication during 2020 and 2022

New Water Monographies – 2020-2022



624 indicators in 3 Comparative Dimensions
Megacity Profile, Water Supply, Wastewater

Type of data	Scenarios		
	Minimum ①	Intermediary ②	Optimum ③
Megacity Profile	23	38	50
Water Supply	59	102	135
Wastewater	45	67	105
Total	127	207	290

MDPI Joint Special Series 2020-2021

UNESCO electronic publication of the Proceedings

MDPI
UNESCO United Nations Educational, Scientific and Cultural Organization
ARCEAU Ile-de-France

434 papers received from 1057 authors of more than 70 countries.
146 papers selected to be presented

MAWAC Digital Infrastructure

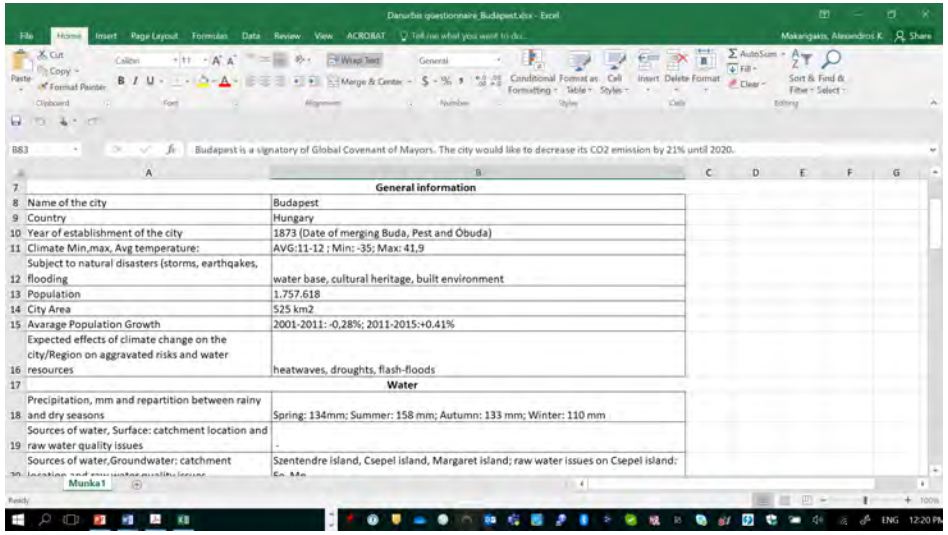
UNESCO IHP-WINS: Water Information Network System

WINS is an open access and free participatory platform for sharing, accessing and visualizing water-related information, as well as for connecting water stakeholders.

As a user-friendly and interactive tool, WINS allows to access to various types of information (maps, reports, graph, etc.) covering the entire water cycle, ranging from groundwater to urban water through gender issues, from local to global scale.

http://ihp-wins.unesco.org/

Danurbis



Budapest is a signatory of Global Covenant of Mayors. The city would like to decrease its CO2 emission by 21% until 2020.

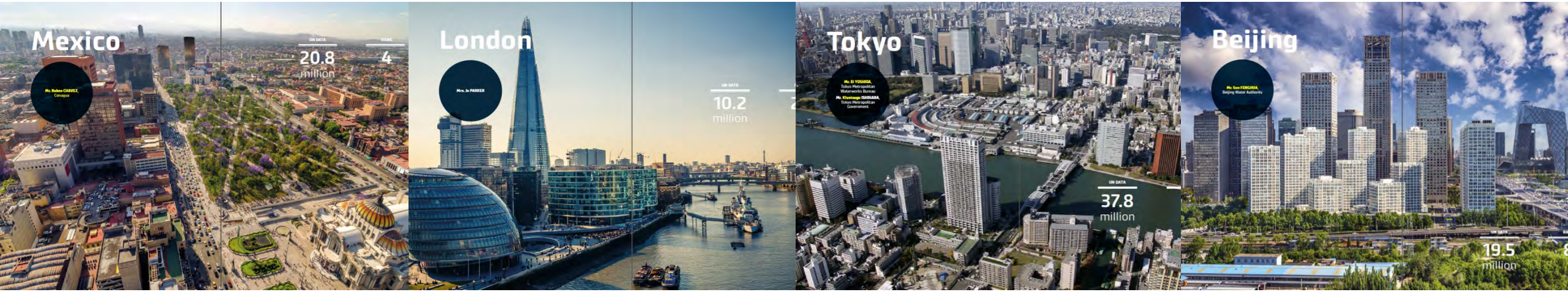
	A	B
7		**General information**
8	Name of the city	Budapest
9	Country	Hungary
10	Year of establishment of the city	1873 (Date of merging Buda, Pest and Óbuda)
11	Climate Min,max, Avg temperature:	AVG:11-12 ; Min: -35; Max: 41,9
12	Subject to natural disasters (storms, earthqakes, flooding	water base, cultural heritage, built environment
13	Population	1.757.618
14	City Area	525 km2
15	Avarage Population Growth	2001-2011: -0,28%; 2011-2015:+0.41%
16	Expected effects of climate change on the city/Region on aggravated risks and water resources	heatwaves, droughts, flash-floods
17		**Water**
18	Precipitation, mm and repartition between rainy and dry seasons	Spring: 134mm; Summer: 158 mm; Autumn: 133 mm; Winter: 110 mm
19	Sources of water, Surface: catchment location and raw water quality issues	-
	Sources of water,Groundwater: catchment	Szentendre island, Csepel island, Margaret island; raw water issues on Csepel island:

DANURBIS

UNESCO & The Council of Danube Regions and Cities address the issue of drinking and wastewater infrastructure and supply in the cities located in the Danube river basin to identify the critical aspects and compare the different approaches in the cities with a view of sharing best practices.

Work together through joint and concerted cooperation to carry out common projects and research along the basin of River Danube regarding water management & security, urban planning and cooperation.

Thank you very much



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