



## Centres of Excellence on Africa and Latin America



**Water Center**  
for Latin America & the Caribbean



Jürgen Mahlkecht, PhD



Over the last five decades, in Latin America and the Caribbean the population has been growing and urbanizing faster than in other regions, facing now a complicated scenario regarding water availability, distribution, use, and disposition.







This has an important impact on the socioeconomic development of cities and communities as well as on biodiversity of ecosystems.

# Major Concerns

- Inefficient water utility services
- Obsolete water distribution networks
- Contaminated surface water and groundwater
- Melting glaciers
- Sea level increase
- Raise of extreme hydrological events
- General unawareness of decision makers



The urgent and complex water situation in Latin America and the Caribbean, as well as the need for establishing strategic alliances in the region to solve it, have motivated Tecnológico de Monterrey, FEMSA Foundation, and the Inter-American Development Bank to create in 2008 the **Water Center for Latin America and the Caribbean.**

# Mission

To create a platform that contributes towards water sustainability in Latin American and Caribbean countries, by means of improving its management and use, as well as the reduction of environmental impact in the regional ecosystems.





# Objectives

- To establish **research and development programs** on topics related to relevant water issues in Latin America and the Caribbean
- To develop and deliver **training programs**, both postgraduate and capacity building, that will respond to the needs of the region in matters related to water
- To foster the **dissemination** of research results and knowledge to professionals and decision makers related to the water sector of Latin America and the Caribbean

# Location



## Headquarters:

Tecnológico de Monterrey  
Campus Monterrey  
Monterrey  
MEXICO

## Branch office:

Tecnológico de Monterrey  
Campus Ciudad de México  
Mexico City  
MEXICO



# Research

## Water Security and Risk Management

- Climate Forecasting
- Hydrological Modeling
- Hydrological Design of Large Infrastructure
- Forensic Analysis of Floods
- Drought analysis and forecasting
- Early warning systems
- Protection and Flood Control (Urban and rural Zones)
- Identification and Quantification of Groundwater Recharge Sources
- Calculation and Quantification of Flow and Groundwater Chemical Transport

# Research

## Surface and Groundwater

Dr. Aldo Ramírez – Hydrologic Processes

Dr. Gerald Corzo – Analysis and Modeling of Climate Change

Dr. Jürgen Mahlke – Isotope Hydrology



# Research

## Waste Water Treatment and Reuse

- Sustainable Holistic Systems for Water Supply and Sanitation in Rural and Peri-Urban Zones
- Reuse of Water and Minimization of Industrial Waste Waters
- Desalination of Ocean Waters and Salty Waters
- Characterization and Removal of Emerging Contaminants (Pharmaceutical and Endocrine Disruptors)
- Sustainable Bioprocesses for Maximizing Use of Water and Energy
- Anaerobic Digestion for Waste Water Treatment and the Production of Biogas
- Technological Innovation for the Treatment of Biodegradable Organic Waste



# Research



## Wastewater Treatment and Reuse

Dr. Miguel Angel López – Biological and Physicochemical Treatment

Dr. Roberto Parra – Environmental Bioprocesses

Dr. Ana Catalina Avella – Diagnosis of Waste Water Treatment Plants

Dr. Roeb García – Eco-Efficiency of Industrial Water Use



# Research



## Integrated Water Resources Management

- Integrated and Participative Planning of Water Resources in Watersheds
- Development of Performance Indicator Systems
- Water Footprint
- Water Access: urban water cycle
- Water, Hygiene and Sanitation in schools
- Watershed Observatories



# Research

## **Integrated Water Resources Management**

Dr. Enrique Cázares – Integrated Water Resources Management

Dr. Patricia Phumpiu – Water Governance, Environmental Planning

M.sc. Adriana Nelly Correa – Conservation and Applied Ecology

Dr. Ismael Aguilar – Water Economics

Dr. Mario Manzano – Biodiversity and Climate Change

Dr. Juan Valiente – Efficient Use of Water in Agriculture



# Capacity Building



The Water Center for Latin America and the Caribbean contributes to the capacity building offering updated, practical and effective classroom, online or in-house training courses for professionals.



Visit the Water Center's web page ([www.centrodelagua.org](http://www.centrodelagua.org)) for the complete and updated course program as well as contact information.

# Postgraduate Programs

## Doctorate in Engineering Sciences

*Major in Environmental Systems*

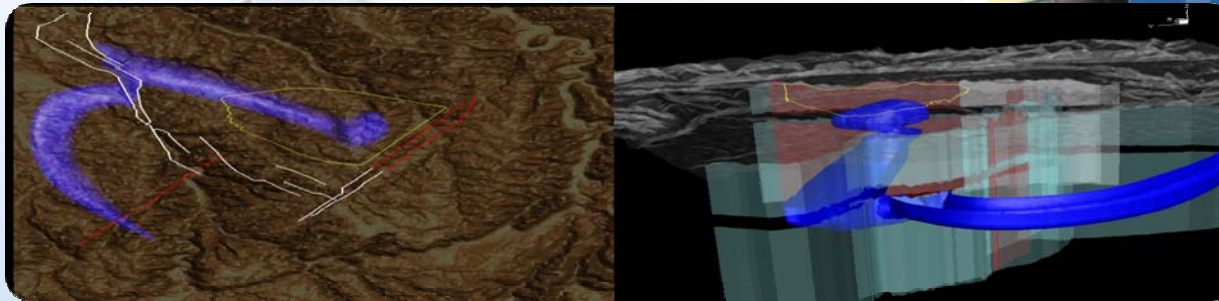


## Masters in Environmental Systems

*Major in Sustainable Water Use*



# Publications and Developments







# Awards

- 2009** Rómulo Garza Award – Dr. Miguel Angel López
- 2010** National Enzo Levi Award for Hydraulics – Dr. Aldo Ramirez
- 2011** Mexican Junior Water Prize - Luis Lira / Dr. Roeb García

# Thank you



MARSEILLE, FRANCE '12

**Centres of Excellence  
on Africa and Latin  
America**

