The WaCCliM Project

GHG Emissions Reduction in the Urban Water and Wastewater Sector

Mitigation Results in Jordan, Mexico, Peru, Thailand and beyond

The project "Water and Wastewater Companies for Climate Mitigation - WaCCliM" was officially closed at the COP27 in Egypt in November 2022.

Mitigation measures implemented by WaCCliM reduced around 66,000t of CO_2 equivalents (CO_2e) between 2014 and 2021.

The WaCCliM Project:

- Commissioned by the German government under the International Climate Initiative (IKI)
- Duration: 2014 – 2022
- Pilot countries: Jordan, Mexico, Peru, Thailand
- Partners: International Water Association (IWA), ministries and utilities in the pilot countries

GHG savings in WaCCliM's pilot utilities:

- The optimisation of sewage sludge treatment, biogas flaring and recovery in **Cusco (Peru)** reduces annual emissions by approx. 26,000t CO_2e, of which around 49% are methane (CH_4).
- Connecting more households to wastewater treatment and improvements in biogas utilisation in **San Francisco del Rincón (Mexico)** reduces approx. 4,300t CO_2e/a, of which around 92% is methane.
- Installing energy-efficient pumps reduces emissions in **Madaba (Jordan)** by approx. 2,500t CO_2eq/a; newly installed pumps in a system in **Russaifeh** are estimated to reduce around 607t CO_2-eq/a from 2022 onwards.
- In **Chiang Mai (Thailand)**, improved pumps reduce GHG emissions by approx.32% of the total utility's CO_2e emissions per year.

WaCCliM has demonstrated that water and wastewater emissions are relevant to reaching net zero emissions and can contribute significantly to methane reductions. To leverage the sector's mitigation potential, water and wastewater emissions should be considered in national GHG inventories. The **Global Methane Pledge**, in particular, can only succeed if solutions for low GHG wastewater management are scaled up.

While the WaCCliM project is now officially closed, the many years of collaboration with diverse partners resulted in proven approaches and tools that represent valuable contributions also to future mitigation action.

Some of the most important products of WaCCliM will continue to be used by different stakeholders in the water and wastewater sector:

- The ClimateSmartWater.org website, hosted by the International Water Association (IWA), serves as a knowledge platform for water and wastewater utilities.
- The Climate Smart Water E-learning offers an introduction to the link between climate change and the water/wastewater sector. Available in English and Spanish.
- The WaCCliM Roadmap to a Low Carbon Utility visualises the important phases of GHG mitigation in the urban water and wastewater sector in 5 steps, connecting climate-related goals with other sector priorities and co-benefits for utilities.

The web-based **"Energy Performance and Carbon Emissions Assessment and Monitoring" Tool (ECAM)** offers the possibility to calculate and optimise the emissions and energy consumption of water and wastewater systems. It was developed in collaboration with the Catalan Institute for Water Research (ICRA) and launched at COP26. The tool also includes the ECAM Methodology Guide, a scientific document that transparently presents and discusses the equations and methodologies behind the tool. Furthermore, a user manual is available. ECAM was used in over 17 countries to train over 480 people from water and wastewater utilities and is still used by international partners, e.g.:

- Global Water Intelligence (GWI) for mapping water's carbon footprint globally.
- The Inter-American Development Bank (IDB) for the evaluation of financing projects and for their e-learning programme.

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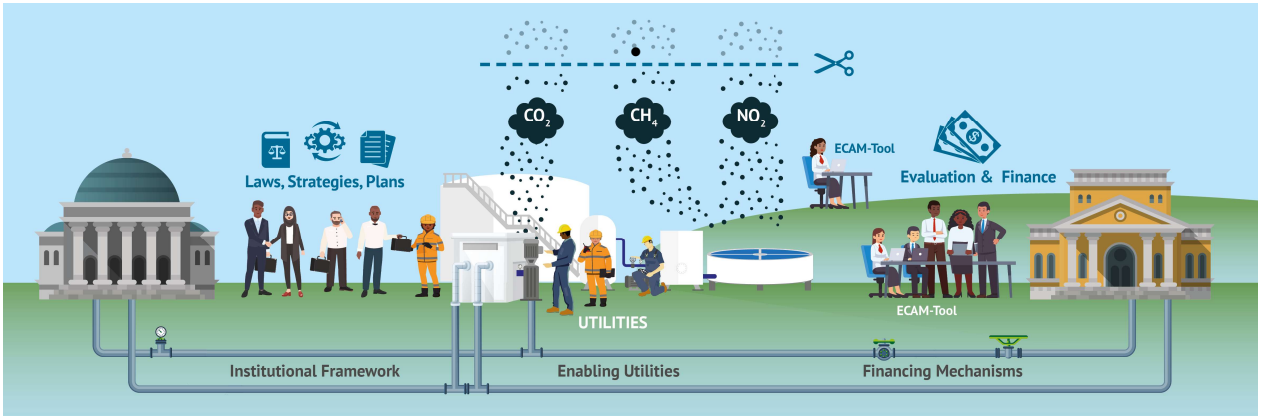

Lessons Learnt

WaCCliM's experience has shown that, besides developing technical capacities, it was of fundamental importance for the project's success to support governmental institutions to create an enabling environment for climate mitigation in the water and wastewater sector. The lessons learnt from this support are presented in the following documents:

- "GHG emission reporting in the urban water and wastewater sector" – Guidance for decision makers to comprehend emission reporting mechanisms and learn how water-related emissions can be visibly and comprehensively included in national monitoring, reporting and verification (MRV) systems.
- "Beyond economic incentives: Enabling mitigation action in the water and wastewater sector" – a policy brief to serve as an orientation for policy makers and their advisors on how mitigation can be successfully integrated in the urban water and wastewater sector.

Key measures on institutional level that help facilitate mitigation action are:

- Coordination between environmental/climate ministries and water ministries to include realistic water and wastewater sector contributions in national reporting systems and mitigation strategies.
- High level events, which can significantly accelerate processes.
- Assigning focal points with dedicated responsibilities for climate mitigation at the ministry and utility level.
- Using existing water and wastewater sectoral plans and regulation instruments as entry points to integrate mitigation targets; as political processes for climate adaptation are developed, mitigation should be included as low-hanging fruit.

On utility level, is proved essential to build a convincing case around co-benefits of mitigation measures, such as cost-savings or smell reduction. Moreover, enabling access to financing is a necessary step towards mitigation.

WaCCliM's Impact Continues

In WaCCliM's partner countries, mitigation in the water and wastewater sector has been institutionalised in national strategies or planning processes. The pilot utilities have shared their experiences country-wide. Globally, the International Water Association will continue to host the knowledge platform ClimateSmartWater.org.

The pilot measures are estimated to reduce up to 107,000t CO_2e by 2032. Thus, WaCCliM's impact has only just begun.

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