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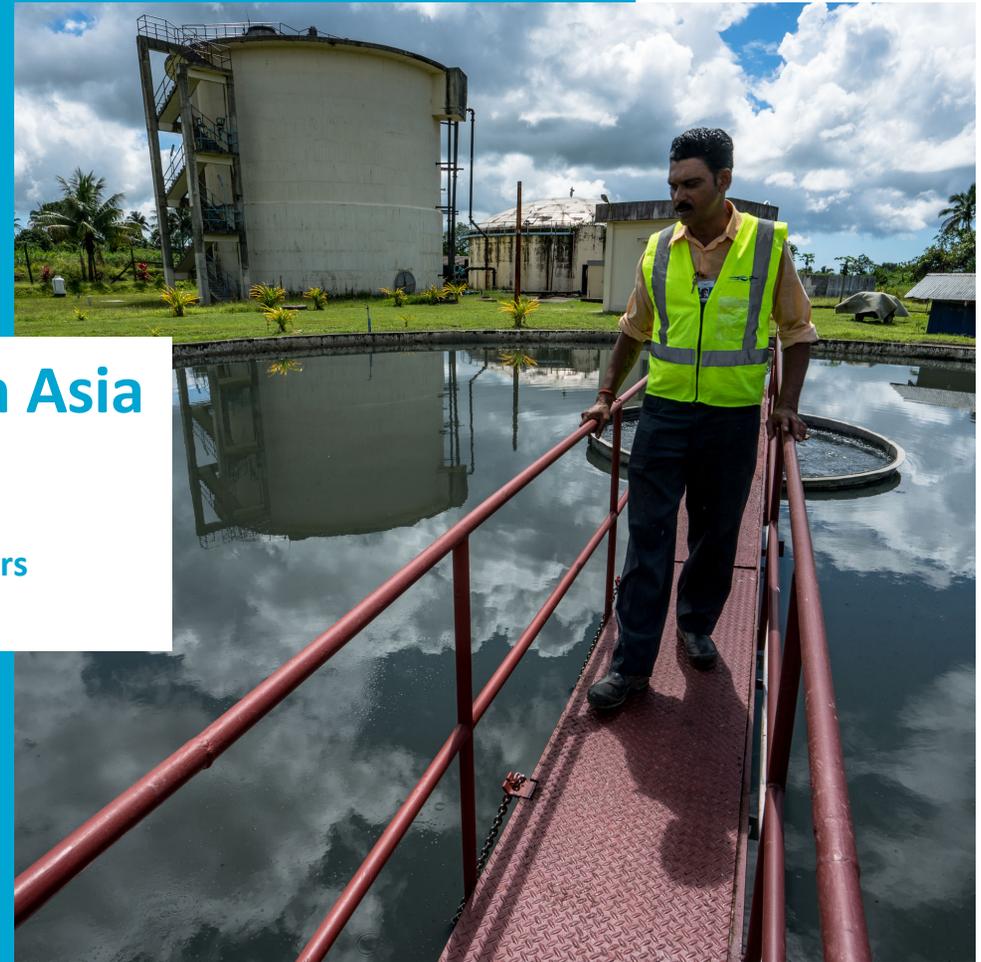
28th Conference of the Parties of the UNFCCC (COP 28)

10 December 2023 | Asian Development Bank

Decarbonizing the Water Sector in Asia and the Pacific

Best Practices, Challenges, and Opportunities for Practitioners

Alessio Giardino, *Senior Water and Climate Change Specialist*, ADB



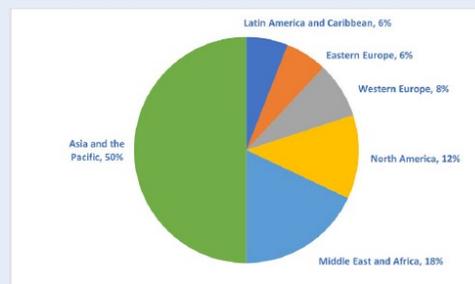
Why this Guidance Note?

- The water sector has been widely **overlooked** as a significant source of greenhouse gas emissions
- As a result, also overlooked as an **opportunity** to mitigate climate change and support the net zero carbon transition
- Estimates of GHG emissions from **wastewater** alone indicate that these emissions could be as high as **1.8%** of anthropogenic global GHG emissions, roughly equivalent to aviation sector emissions. The broader water sector's emissions may be as much as **two to three times higher**.



Some figures for the Asia and Pacific Region

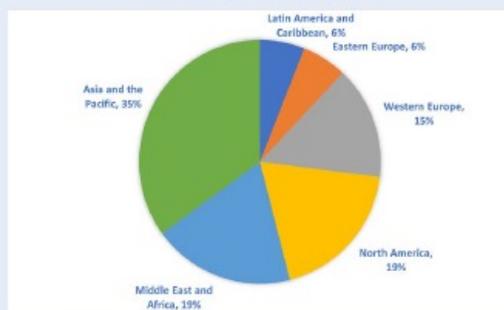
Figure: Water, Sanitation, and Hygiene: 100-Year Global Warming Potential Contribution by Region



Source: Global Water Intelligence. 2022. *Mapping Water's Carbon Footprint: Our net zero future hinges on wastewater*. Oxford.

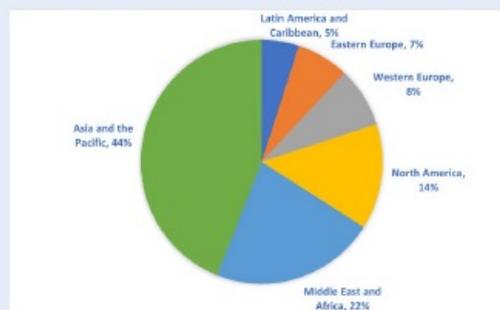
Asia and the Pacific represents **50%** of the global 100-year Global Warming Potential for the **Wastewater, Sanitation and Hygiene subsector**

Figure: Water, Sanitation, and Hygiene Electricity Consumption by Region



Source: Global Water Intelligence. 2022. *Mapping Water's Carbon Footprint: Our net zero future hinges on wastewater*. Oxford.

Figure: Water, Sanitation, and Hygiene Carbon Dioxide Emissions from Electricity Consumption by Region



Source: Global Water Intelligence. 2022. *Mapping Water's Carbon Footprint: Our net zero future hinges on wastewater*. Oxford.

- Asia and the Pacific represents **35%** of the global **electricity consumption** for the **Wastewater, Sanitation and Hygiene subsector**, and
- **44%** of the **Carbon Dioxide Emissions** from Electricity Consumption

Global Greenhouse Gas Emissions by Sector

- The water sector is generally not explicitly mentioned in GHG emissions sector analyses. However, water sector activities are **embedded in several other sectors**, including residential, commercial, waste, land use change and forestry, and agriculture
- **Greater data visibility** is required to facilitate decarbonization and including ongoing monitoring and reporting

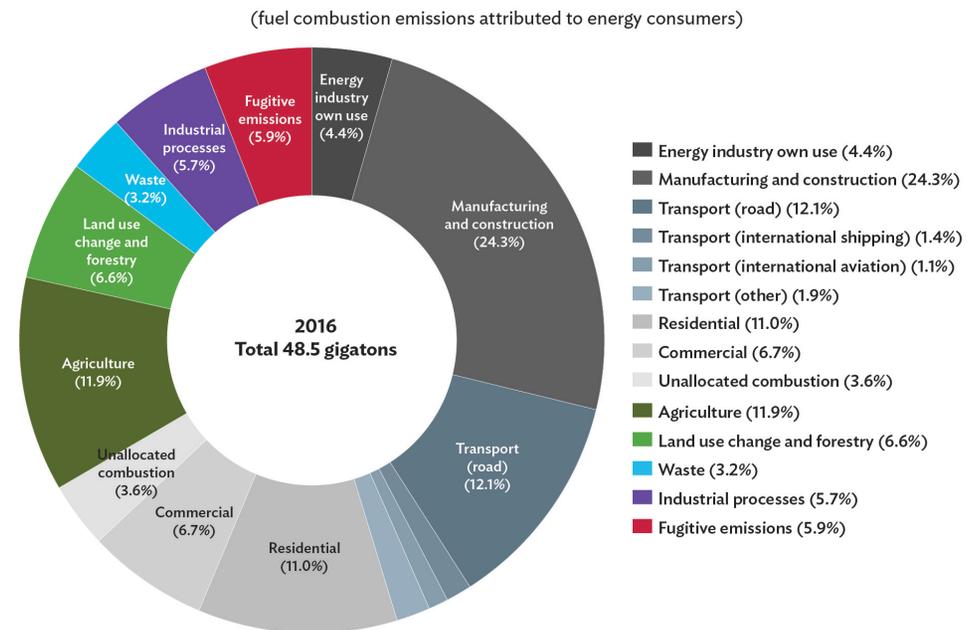
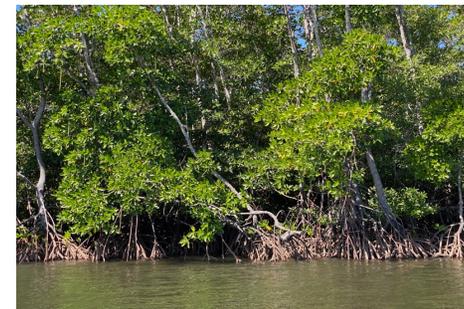


Chart: EcartCharts.org · Source: See website · Created with datawrapper

Structure of the Guidance Note

- The Guidance Note analyzes **mitigation and development challenges** and provide suggestions for **measures, policies** and **tools** to decarbonize the water sector, for each sub-sector including:
 - Water supply
 - Wastewater, sanitation, and hygiene
 - Water resource management: energy and water storage
 - Irrigated agriculture
 - Land use and forestry resource management



A Framework for Decarbonizing the Water Sector in ADB Operations



Accelerate upstream engagement and build demand for mitigation-focused water sector investments



Adopt a water community approach to build decarbonization capacity



Strengthen ADB staff capacity



Foster knowledge, innovation, and partnerships



Mobilize finance for water sector decarbonization

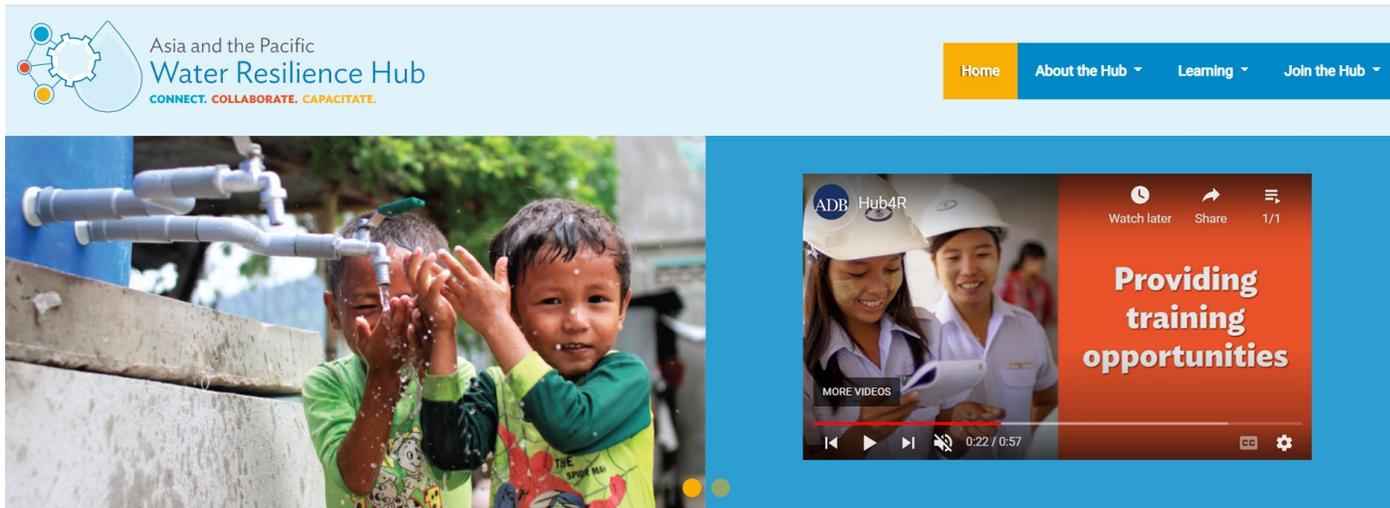


Spearhead digitalization for water sector decarbonization

- Based on **six mutually reinforcing pillars**
- Pillars are **complementary** to those presented in the “**Mainstreaming Water Resilience in Asia and the Pacific**” guidance note

The Asia and the Pacific Water Resilience Hub

<https://hub4r.adb.org/>



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- Join as **contributor**

Resilience and Adaptive Capacity ♦ Inclusiveness and Gender Equality ♦ Environmental Sustainability and Circular Economy
♦ Governance and Finance ♦ Innovation and Technology



Connect with water
resilience experts
and organizations

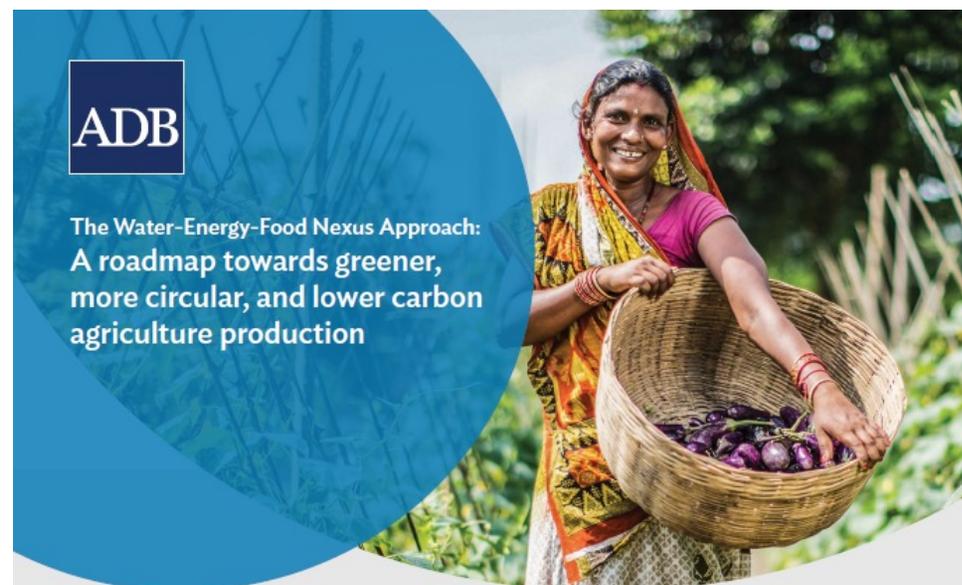
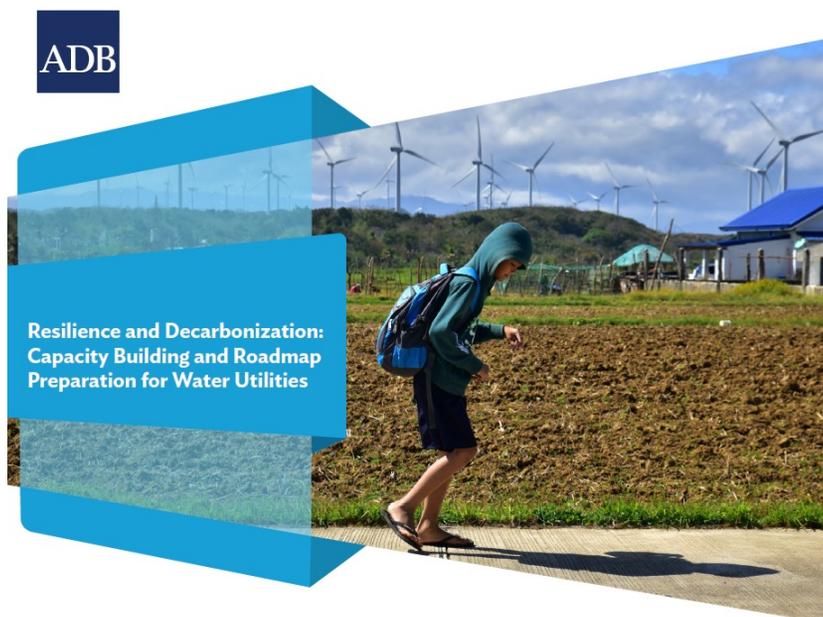


Access world-class
training resources



Browse tools, data,
innovative methods,
and digital technologies

Building local capacity towards decarbonization



In 2023, two courses were launched focusing on the preparation of **roadmaps** towards:

- **Decarbonization for water utilities** and
- Implementation of **water-food-energy** approaches for ADB executive and implementing agencies (e.g. irrigation, river basin and natural resources management authorities)



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