

CLIMATE RESILIENT SANITATION: COALITION FOR ACTION



WEBINAR

Evidence and Action from the Climate Resilient Sanitation Coalition



29 May 2024
15:00-16:15 GMT+1



WEBINAR INFORMATION

- This webinar will be **recorded and made available “on-demand”** on the [IWA Connect Plus](#) platform and IWA Network website with presentation slides, and other information.
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WEBINAR INFORMATION



- **'Chat' box:** please use this for general requests and for interactive activities.
- **'Q&A' box:** please use this to send questions to the panelists. (We will answer these during the discussions)

Please Note: Attendees' microphones are muted. We cannot respond to 'Raise Hand'.

IWA INCLUSIVE URBAN SANITATION INITIATIVE



- The IUS Initiative seeks to re-shape the global urban sanitation agenda through a dedicated campaign -**SanitAction**.
- Engage diverse stakeholders through 2 broad objectives:
 - Focus on the **public sector approach** to sanitation **service outcomes**.
 - Progress a **widely applicable framework** supported by **actionable guidance** to advance inclusive urban sanitation, especially in low- and middle-income countries.
- Diverse pool of **Advisory Board** and **Task Force** members.



IWA INCLUSIVE URBAN SANITATION INITIATIVE



**GET
INVOLVED**

- Publications (IWA Special Issues journal, books, discussion papers, stories, etc).
- Knowledge management (Webinars, blogs, capacity building, MOOCs/focused training).
- Urban sanitation applicable framework & actionable guidance – Global consultation.
- Workshop sessions at events.



MODERATORS & SPEAKERS



Nat Paynter
UNICEF, HQ
(Moderator)



Daniel Ddiba
SEI
Sweden
(Moderator)



Kate Medicott
WHO HQ



Ann Thomas
UNICEF, HQ



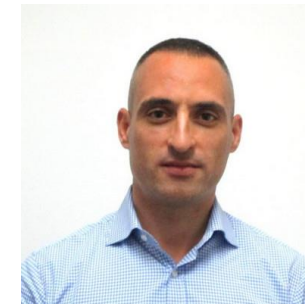
Juliet Willetts
UTS
Australia



Amelia Wenger
WCS
Australia



Sanyu Lutalo
World Bank, HQ



Jose Gesti
SWA
Spain



Meera Mehta
CWAS CEPT
India

AGENDA

-
- Opening** *Moderator, Introduction and poll – Nat Paynter, CRS coalition coordinator, UNICEF*
- Presentations**
- *Setting the scene – Kate Medlicott, Sanitation team lead, WHO*
 - *Evidence and Action from the CRS coalition - Jose Gestí, Senior Water and Climate Consultant at Sanitation and Water for All*
- Panel discussion** *Moderator: Daniel Ddiba - Research Fellow, SEI, Sweden*
- *Meera Mehta - Professor Emeritus, CEPT University, India*
 - *Amelia Wenger - Water Pollution Program Lead, Wildlife Conservation Society*
 - *Sanyu Lutalo - Senior Water and Sanitation Specialist, World Bank*
 - *Juliet Willetts - Research Director and Professor, University of Technology Sydney*
- Q&A** *All*
- Closing** *Ann Thomas - Senior WASH advisor, UNICEF*

POLL 1

Q: What is the greatest threat?

1. The threat **from** the climate crisis to sanitation service delivery?
2. The threat **to** the climate **from** poorly managed sanitation?

**CLIMATE
RESILIENT
SANITATION:
COALITION
FOR ACTION**



**Setting the
Scene:
A Call to
Action**

*Kate Medlicott
Sanitation team lead, WHO*

WHAT DOES SANITATION HAVE TO DO WITH CLIMATE?

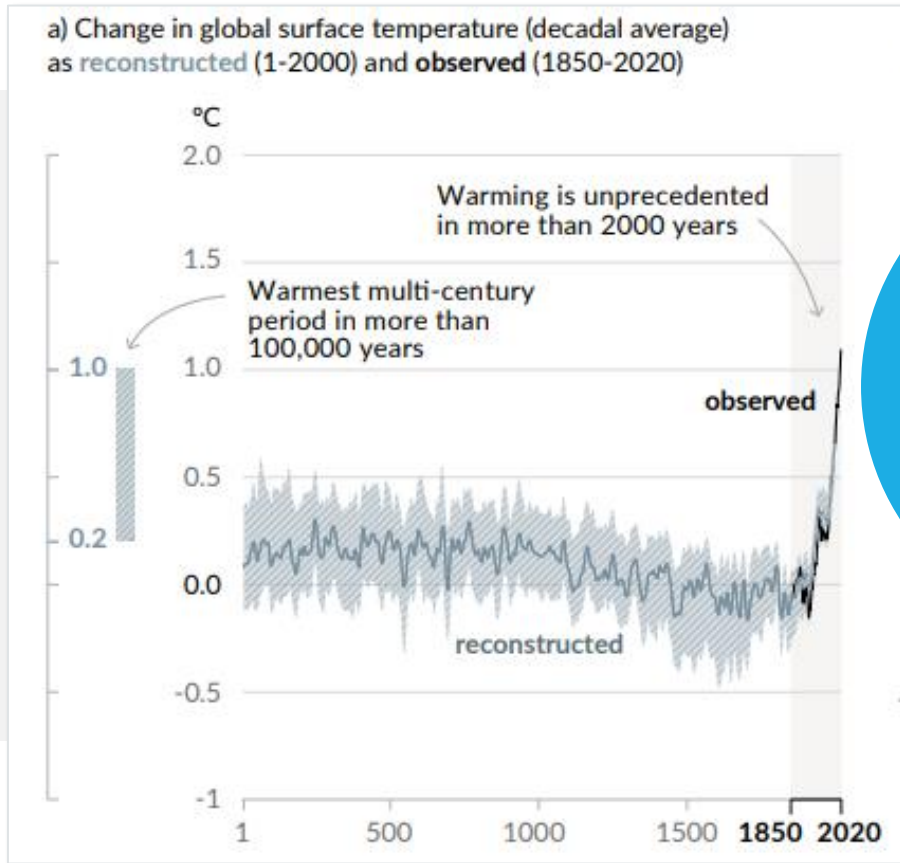


Photo: Jess MacArthur

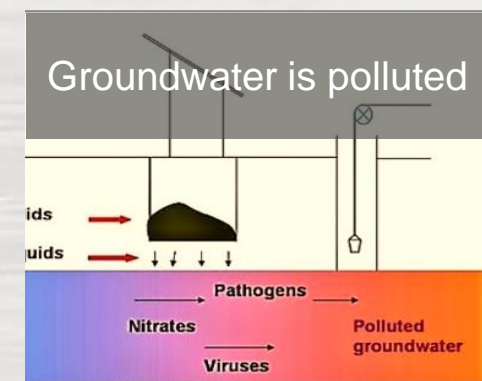
CLIMATE HAS EVERYTHING TO DO WITH SANITATION

**Not enough
water** means
that...



CLIMATE HAS EVERYTHING TO DO WITH SANITATION

**Too much
water** means
that...



CLIMATE HAS EVERYTHING TO DO WITH SANITATION



Methane emissions from onsite sanitation



Photo credit: Aquatic Ecology Center, Kathmandu University

communications earth & environment

ARTICLE

<https://doi.org/10.1038/s43247-022-00413-w>

OPEN

Check for updates

Whole-system analysis reveals high greenhouse-gas emissions from citywide sanitation in Kampala, Uganda

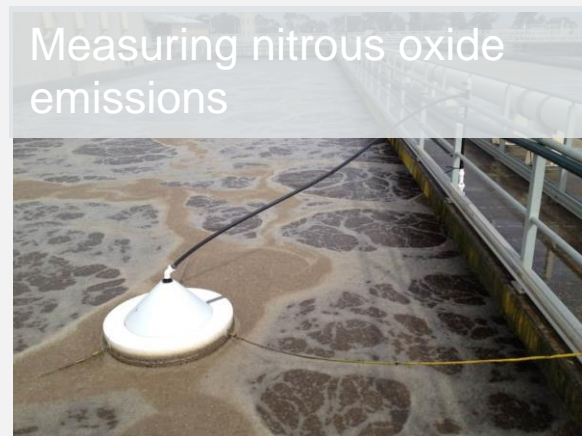
Jake Johnson^{1,3}, Fiona Zakaria^{1,3}, Allan G. Nkurunziza^{2,3}, Celia Way¹, Miller A. Camargo-Valero^{1,3} & Barbara Evans^{1,3,4}

Global estimates of emissions of greenhouse gases do not take into account the complex service chain in rapidly growing cities in low- and middle-income countries. This paper presents an end-to-end analysis to estimate emissions from all stages of the sanitation-service chain, using Kampala in Uganda as an example. We show that emissions associated with long periods of storage of faecal waste in sealed anaerobic tanks (49%), discharge from tanks and pits direct to open drains (4%), illegal dumping of faecal waste (2%), leakage from sewers (6%), wastewater bypassing treatment (7%) and uncollected methane emissions at treatment plants (31%), are contributing to high levels of greenhouse-gas emissions. Sanitation in Kampala produces 189 kt CO₂e per year, which may represent more than half of the total city-level emissions. Significant further empirical and modelling work is required to update estimates of greenhouse-gas emissions from sanitation systems globally.

GHG emissions



Biogas capture



Measuring nitrous oxide emissions

Photo credit: Juliet Willetts (top), SA Water (bottom)

WHY DOES IT MATTER?



Health & wellbeing

- Diarrhoea and vector borne disease - cholera and dengue fever are raging

Ecosystems

Societal resilience

- Cities
- food and energy systems

INVESTMENT IMPACT

Climate events threaten precious capital invested in sanitation infrastructure and services.



DISPLACED POPULATIONS

People displaced by climate events lack, or stress, sanitation services.



GHG EMISSIONS

Globally, sanitation is calculated to be as much as 2 – 6% of NDCs in many developing economies.

In Kampala, sanitation may contribute almost 50% of the city's greenhouse gas emissions.



HUMAN & FRESHWATER ECOSYSTEMS HEALTH

Damaged sanitation discharges into communities and freshwater ecosystems.

Exposure in drinking-water, irrigation and recreational water.

Larger, more widespread and more deadly outbreaks of Cholera and Dengue globally.

Eutrophication, toxic cyanobacterial blooms, fishkills.



MARINE ECOSYSTEMS

Damaged sanitation discharges waste into saltwater ecosystems, damaging seagrass beds, mangrove swamps, etc.

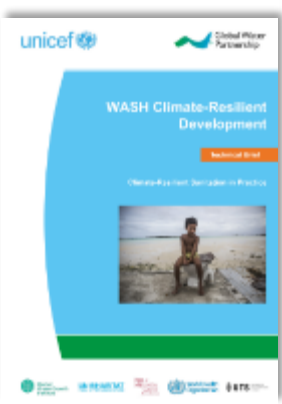
Mangroves store up to 5x carbon as forests**; shorelines from storm surges; seagrass beds sequester CO₂ 35x faster than rainforests and account for ~15% of total ocean carbon storage.

*88% of seagrass ecosystems are exposed to wastewater.**



*Tuholske et al, 2021 **Donato et al, 2011

CRS COALITION HISTORY



A CALL TO ACTION

Ensuring access to climate-resilient sanitation services for 3.6 billion people by 2030:

A call to action for acceleration

Climate change is drastically altering the world we live in. The Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report in 2022 confirms that global warming is projected to intensify the global water cycle and, in doing so, directly impact sanitation systems. This will further hamper progress on SDG 6.2 and undermine the health and well-being of billions of people. Today, an estimated 3.6 billion people still do not have access to safely managed sanitation services at home. Many of these people also live in [water-stressed or flood-prone](#) areas, a problem that is rapidly increasing as a result of climate change. Households that have gained access to basic or safely managed sanitation services risk losing them during climate-related disasters, changes in climate patterns and sea level rise, unless due consideration and diligence is undertaken to inform design and development of such systems, taking into account mitigation of potential risks and shocks.

Sanitation is a public good. It provides benefits across society in improved health as well as economic and social development. Making sanitation resilient is in the best interest of everybody. According to IPCC, key sanitation infrastructure systems will be increasingly vulnerable if design standards do not account for changing climate conditions. All relevant sector partners must unite to fight the devastating effect of climate change on sanitation as an essential public service that supports resilience across all sectors.

Non-climate-resilient sanitation services pose a substantial public health hazard. During more frequent and severe flooding, damaged toilets and sanitation systems have spread disease across entire communities. In drought-affected areas, non-resilient sanitation systems can concentrate water stress or cease to function, causing families to revert to open defecation. This impact is greatest on the poorest families, especially women and girls and persons with disabilities. Unless urgent actions are taken, the impact of climate change is set to undermine decades of progress in the sanitation sector. Systems and services must be made resilient to protect investments, promote public health and ensure universal access to sustainable, equitable and safe sanitation for all. Furthermore, safe use of sanitation wastewater and sludge from sanitation systems for irrigation and energy recovery has a large unreal potential to contribute to adaptation and mitigation in the agriculture and energy sectors.

Multiple climate-resilient sanitation services and options for mitigation already exist around the world; most have yet to be taken to large scale, however, largely due to gaps in capacity and resources. [A UNICEF study in 2020](#) estimated that \$106 billion per year is needed to achieve the sanitation component of SDG target 6.2 by 2030 and additional amounts are required to adapt to impact of climate change. Sanitation especially is often underfunded at the country level and is failing to take advantage of climate funding opportunities, with [less than 1% of major climate funding](#) being allocated to the sanitation sector.

Emissions from sanitation systems are often underestimated, and global estimates do not always consider the non-sewered sanitation systems which are prevalent in rapidly growing cities in low-and middle-income countries. The global methane emissions from non-sewered sanitation systems in 2020 was estimated at [5.7% of global anthropogenic methane emissions](#), which are comparable to the greenhouse gas (GHG) emissions from wastewater treatment plants. A [recent study](#) found that in an African city, sanitation systems may account for as much as half of all city-level emissions. Yet approaches to balance cost-effective access to resilient sanitation for all and lower emissions are not yet clear and projects to mitigate those emissions remain small in number. The sanitation sector in most countries must be supported to put emphasis on climate adaptation and mitigation and the opportunities for building resilience or achieving mitigation goals are incorporated as part of routine programming. There is an urgent need for the sector partners to mainstream adaptation and mitigation measures in sanitation programming.

For:

- Governments
- Development partners & civil society
- Donor
- Academia
- Private sector
- Climate activists

<https://www.unicef.org/documents/ensuring-access-climate-resilient-sanitation-services-36-billion-people-2030>

COALITION MEMBERSHIP & FOCUS COUNTRIES

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BILL & MELINDA
GATES Foundation



CWAS
CRDF

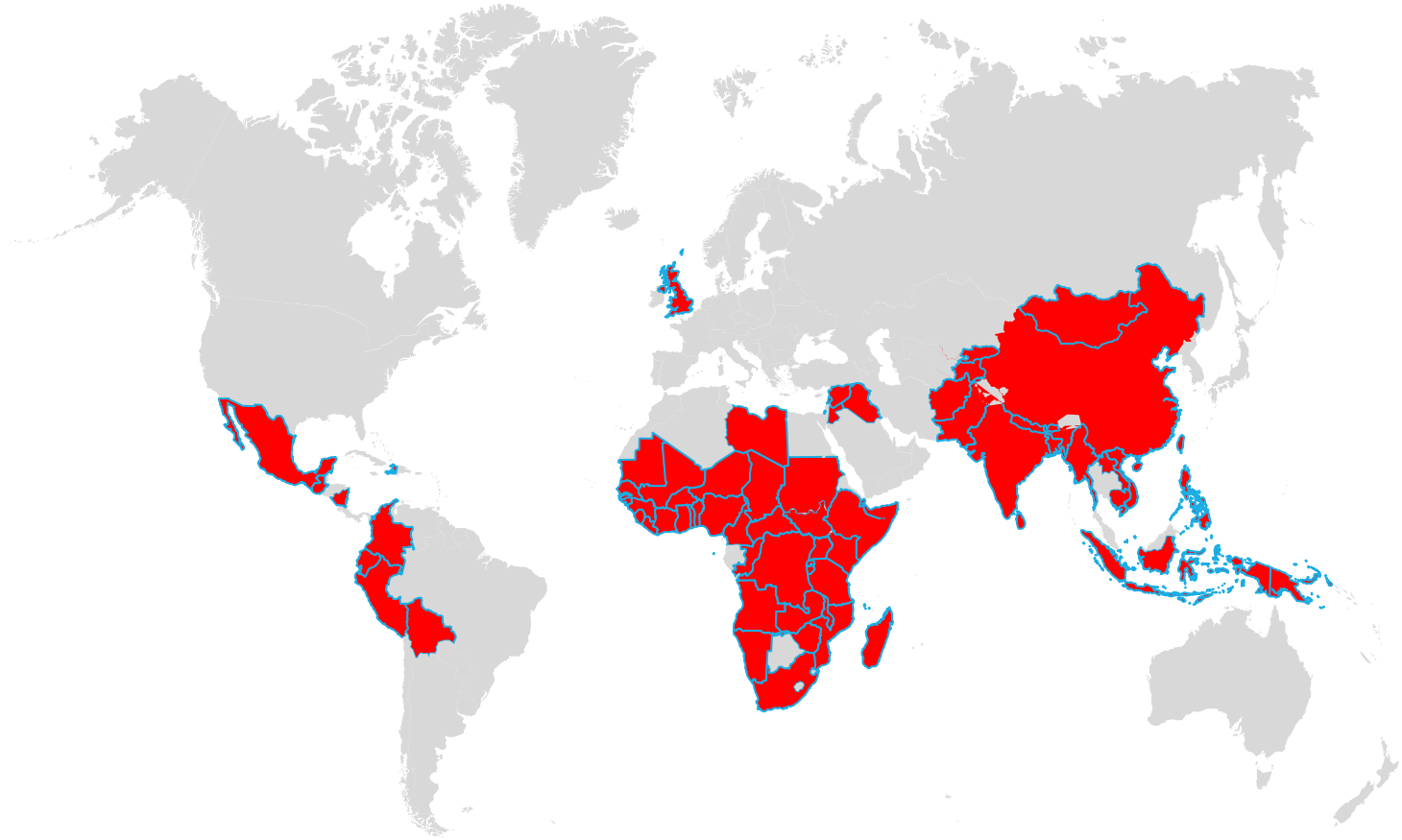


giz



LIXIL

Practical
ACTION



sustainable
sanitation
alliance



UN-HABITAT



University of
BRISTOL

UNIVERSITY OF LEEDS



World Health
Organization



WSUP
Water & Sanitation
for the Urban Poor

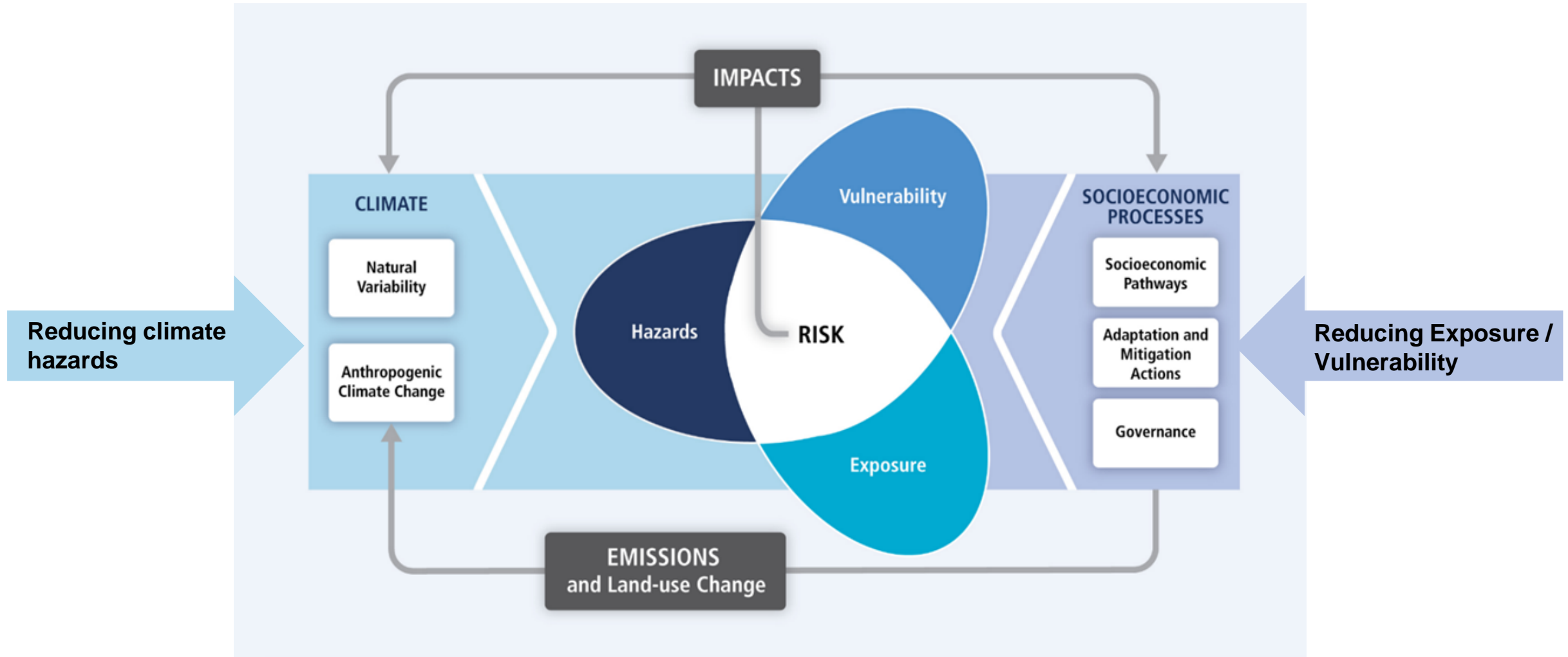
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**Evidence
and
Action**

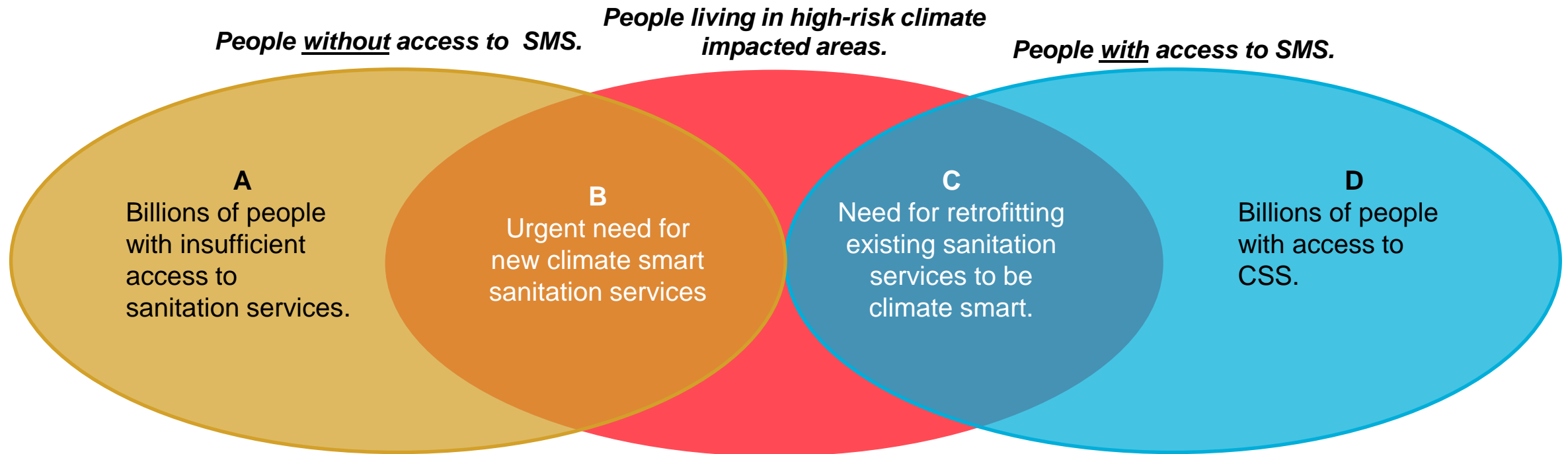
*Jose Gesti
Senior Water and Climate
Consultant, SWA*

REDUCING CLIMATE RISK AND SANITATION



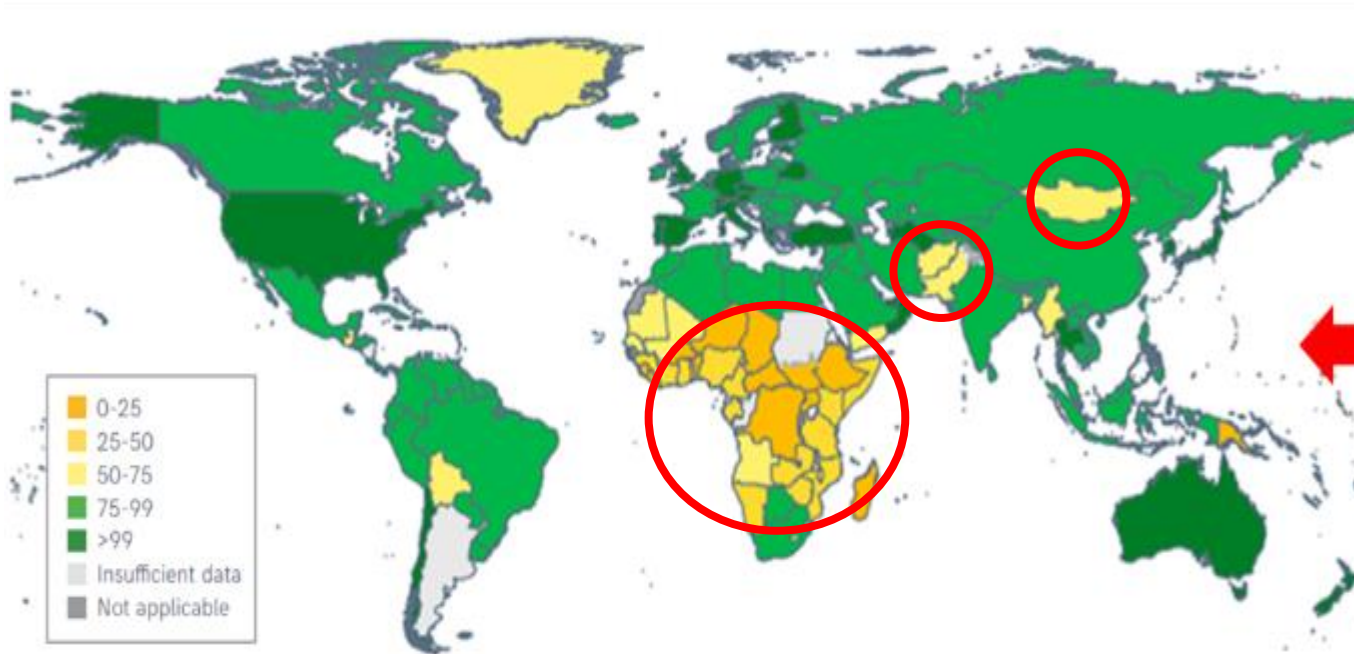
Source: Adapted from IPCC Fifth Assessment Report (AR5)

FOCUS ON PRIORITY POPULATIONS



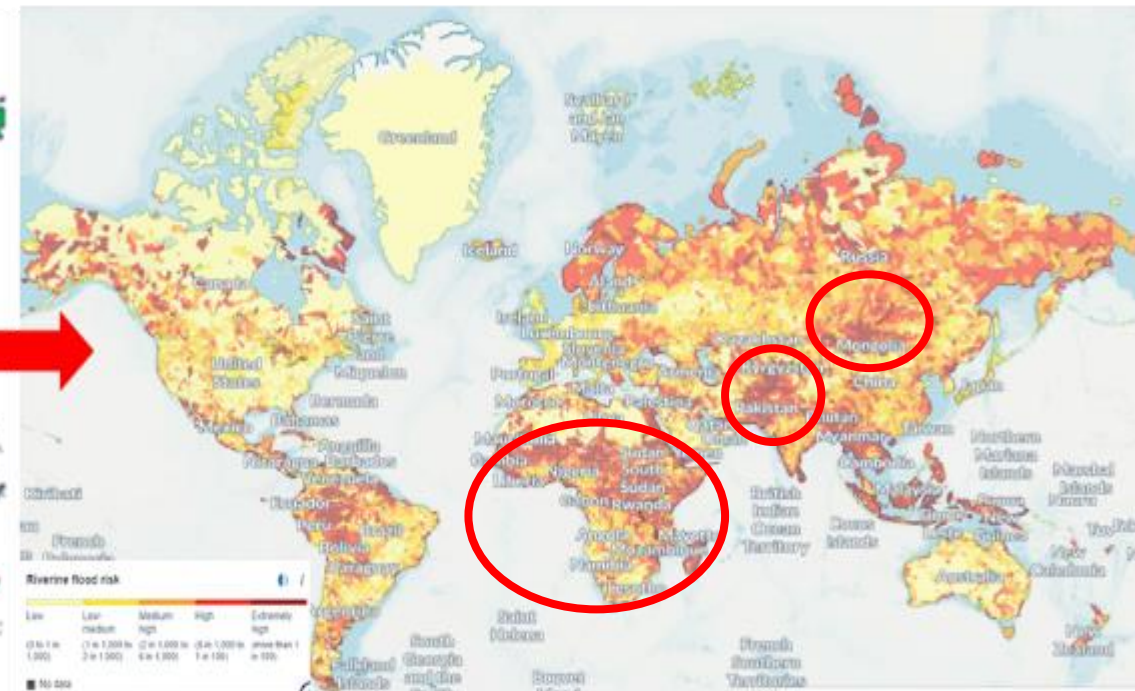
SANITATION AND CLIMATE CHANGE OVERLAP

Current Sanitation Access



Source: WHO-UNICEF Joint Monitoring Programme

Increasing Riverine Flood Risk



Source: World Resources Institute – Aqueduct

CLIMATE RESILIENT SANITATION IS NOW A GLOBAL PRIORITY

- **Paris Agreement Article 7:** established a **global goal on adaptation (GGA)**.
- **Challenge** - lack of a meaningful global metrics for “enhanced adaptation” cross a vast range of contexts.
- A **2022-2023** complex crafting the GGA Framework.
- **Global Framework adopted by consensus at COP28** “guide and strengthen efforts, [...] towards reducing vulnerability and enhancing adaptive capacity and resilience, as well as the collective well-being of all people, the protection of livelihoods and economies, and the preservation and regeneration of nature”.



2030 GLOBAL RESILIENCE TARGETS

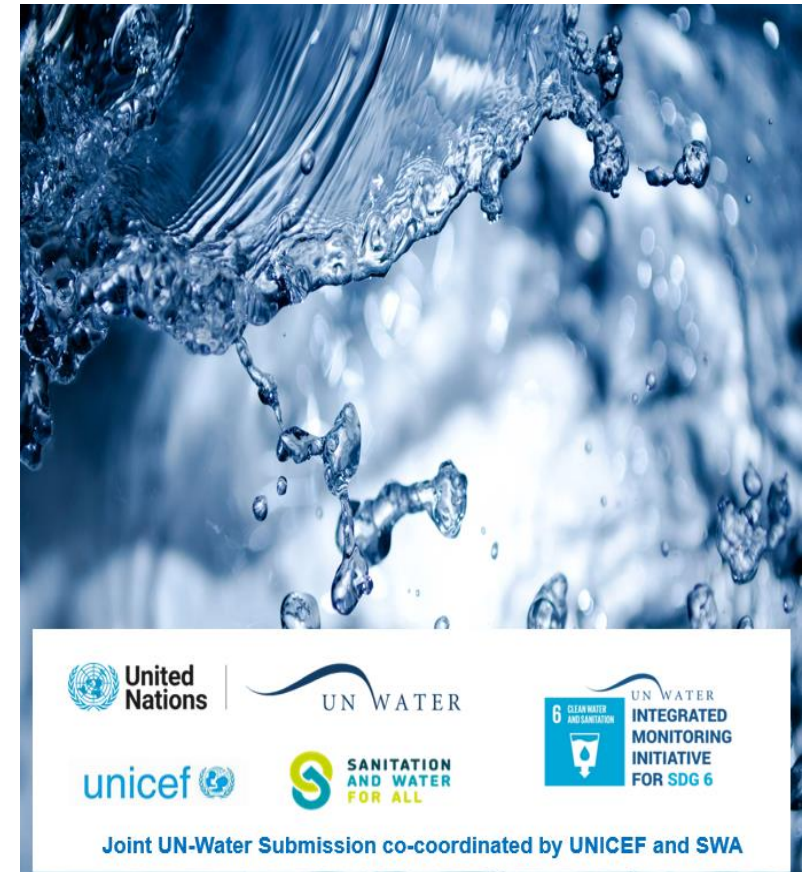
SANITATION IS LINKED TO ALL NEW GLOBAL RESILIENCE TARGETS

- 1. WATER-SANITATION:** Significantly reducing climate-induced water scarcity and enhancing climate resilience to water related hazards towards a climate-resilient water supply, **climate-resilient sanitation** and towards access to safe and affordable potable water for all.
- 2. FOOD-AGRICULTURE:** Attaining **climate-resilient food**, agricultural production, supply and distribution.
- 3. HEALTH:** Attaining **climate-resilient health** services.
- 4. ECOSYSTEMS:** including [...] conservation and the **protection of terrestrial, inland water, mountain, marine and coastal ecosystems.**
- 5. INFRASTRUCTURE- HUMAN SETTLEMENTS:** minimizing climate-related impacts on infrastructure and human settlements and **ensure basic and continuous essential services for all.**
- 6. POVERTY ERADICATION- LIVELIHOODS:** promoting the use of adaptive **social protection** measures for all.
- 7. CULTURAL HERITAGE:** developing adaptive strategies, preserving cultural practices and heritage sites.

OPPORTUNITIES FROM COP28 - COP30

ADAPTATION

- **2024-2025 Work programme on Indicators for measuring progress** towards climate resilient sanitation (March – June 2023).
- **Adaptation Committee:** recommendations on how to improve reporting on action and progress.
- **UNFCCC Secretariat:** will examine how adaptation is defined by COP29.
- **Least Developed Countries Expert Group (LEG):** to update the technical guidelines for the NAP process.

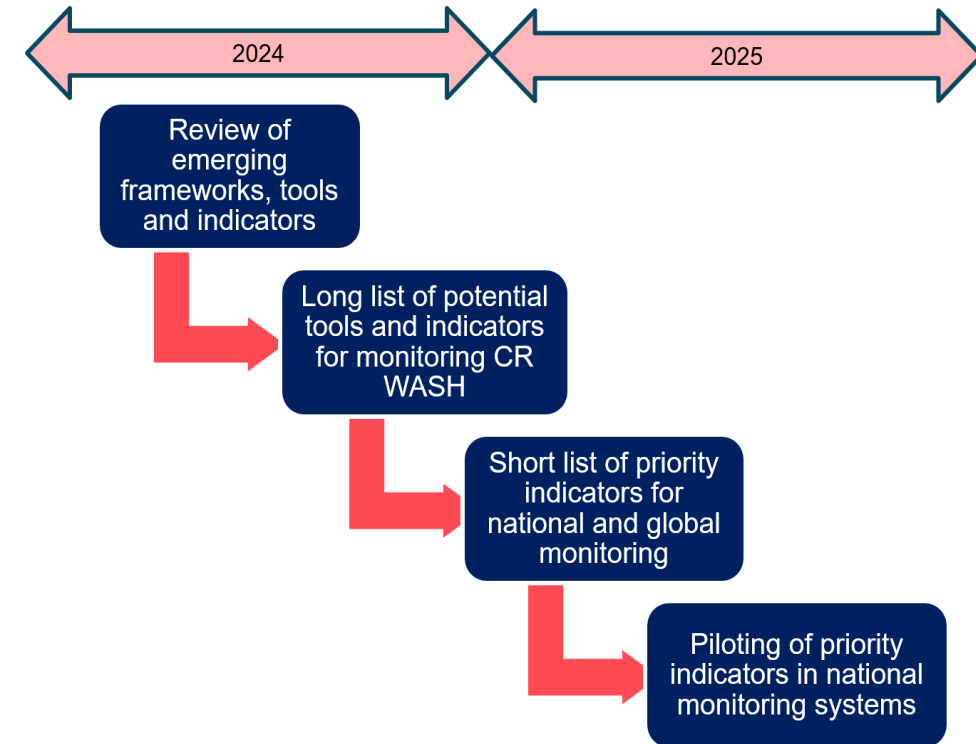


TOWARDS DEFINITIONS / INDICATORS

Building a consensus on what is a “climate resilient sanitation system”

- **Climate risk analysis** conducted.
- **Preventive measures considered** to cope and respond to climate shocks and stresses.
- **Resilient management/service delivery models in place.**
- **Environmental considerations** for sustainable use, protection and management of water resources in place.
- **Social considerations** are observed.
- **Contributions to community resilience** income generation, food, energy and ecosystem resilience.

SWA, WHO and UNICEF work to identify indicators for climate resilient water supply and sanitation services

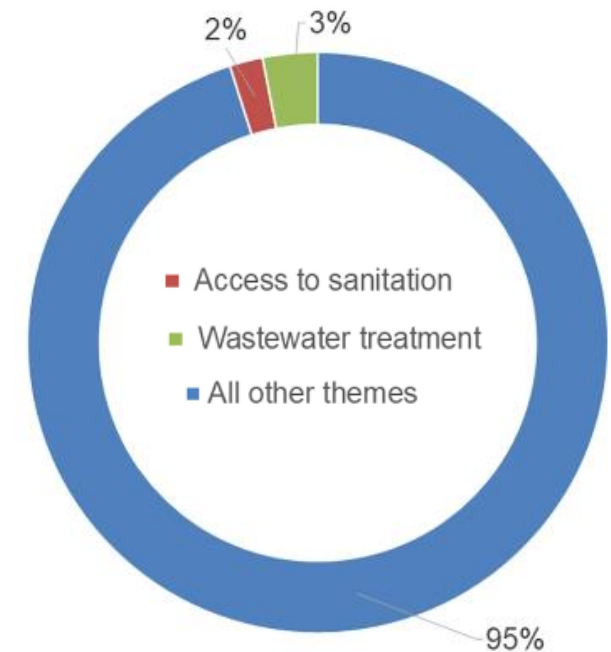


OPPORTUNITIES FROM COP28 - COP30

MITIGATION

- **Revision of Nationally Determined Contributions (NDCs):** COP28 requested Parties to revisit and strengthen the 2030 targets by Feb 2025.
- **Untapped sanitation opportunities to reduce GHGs:**
 - Choosing and managing technologies to limit emissions (e.g., methane, nitrous oxide)
 - Achieving net zero (or even positive) through recuperation of biogas, and other byproducts.
 - Using renewable energy (e.g., solar) and improving the energy efficiency for sanitation operations.

Sanitation in NDCs (2020)



Source: Dickins. et al. Sustainable sanitation and gaps in global climate policy and financing.

ON-GOING WORK

MITIGATION

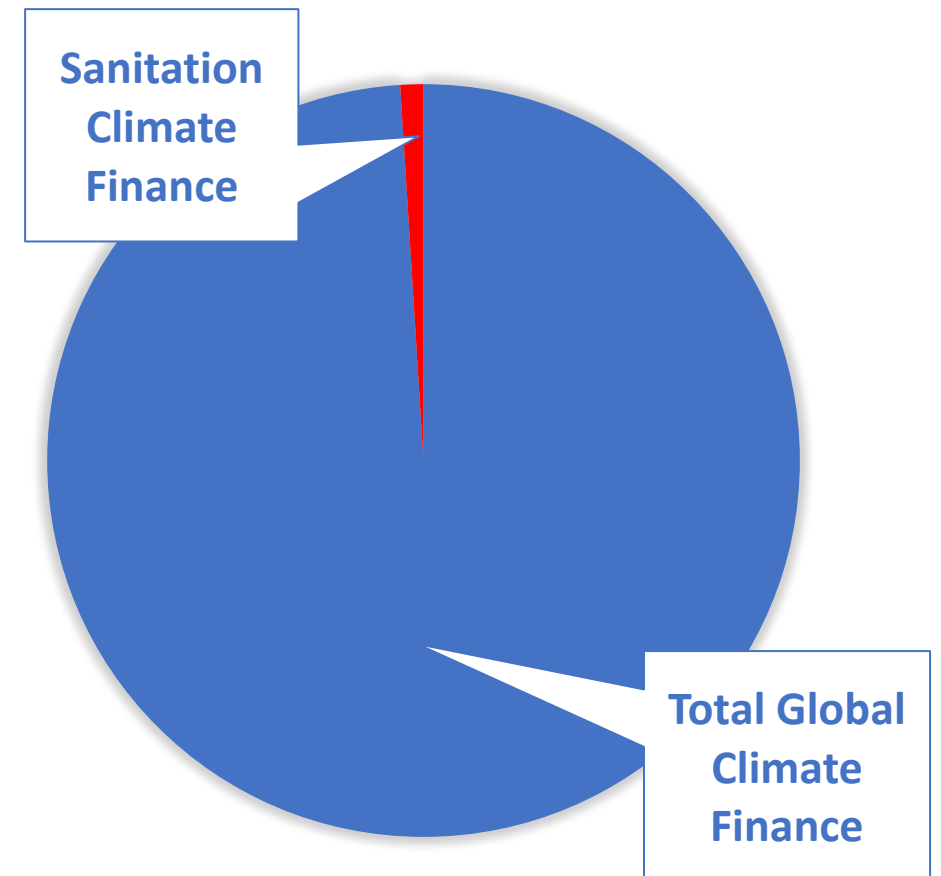
- **UNFCCC Sharm el-Sheikh Mitigation Ambition and Implementation Work Programme:**
 - 2024 dialogues “**Cities: buildings and urban systems**”
 - Two official submissions by the CRS coalition on mitigation
- **COP29 Presidency Initiative on “Waste Sector Methane Abatement for Climate Action”**
 - Aligns with the goals of the Global Methane Pledge to cut emissions by at least 30% by 2030 relative to 2020 levels.



CLIMATE FINANCE AND SANITATION

- **Sanitation receives a vanishingly small amount of climate investment.**
- **COP 28 loss and damage fund:** financial assistance to the countries most vulnerable to the impacts of climate change.
- **“New Quantified Global Goal on Climate Financing”**
 - What after the “100 billion” commitment?
 - 3-year programme concluding at COP29 (2024).

CLIMATE FINANCING



ONGOING WORK - GREEN CLIMATE FUND

Development of a Sanitation Annex to the GCF Water Security Guidelines:

1. Introduction
2. The state of sanitation and the climate crisis
3. Climate risks to sanitation
4. GHG emissions and other climate linkages
5. Responses and interventions
6. Developing a GCF Proposal



CRS COALITION VISION

Integrating sanitation into global and national climate policy & practice; and integrating climate into global and national sanitation policy & practice.



PRIORITY ACTIONS

Increase Access to Finance

Inclusion of sanitation in GCF Guidelines.

Increase Prominence of Sanitation in Climate Policy

*Build the evidence base and best practice.
Mainstream sanitation in the 3 key tracks of climate negotiations: adaptation, mitigation, finance.*

Build Capacity at National Level

Support governments with tools and expertise to include sanitation in climate policy and practice, and to include climate in sanitation policy and practice.



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THANK YOU

POLL 2

- *Does **sanitation** appear more often in national climate policies, or*
- *Does **climate** appear more often in sanitation policies?*

PANEL DISCUSSION

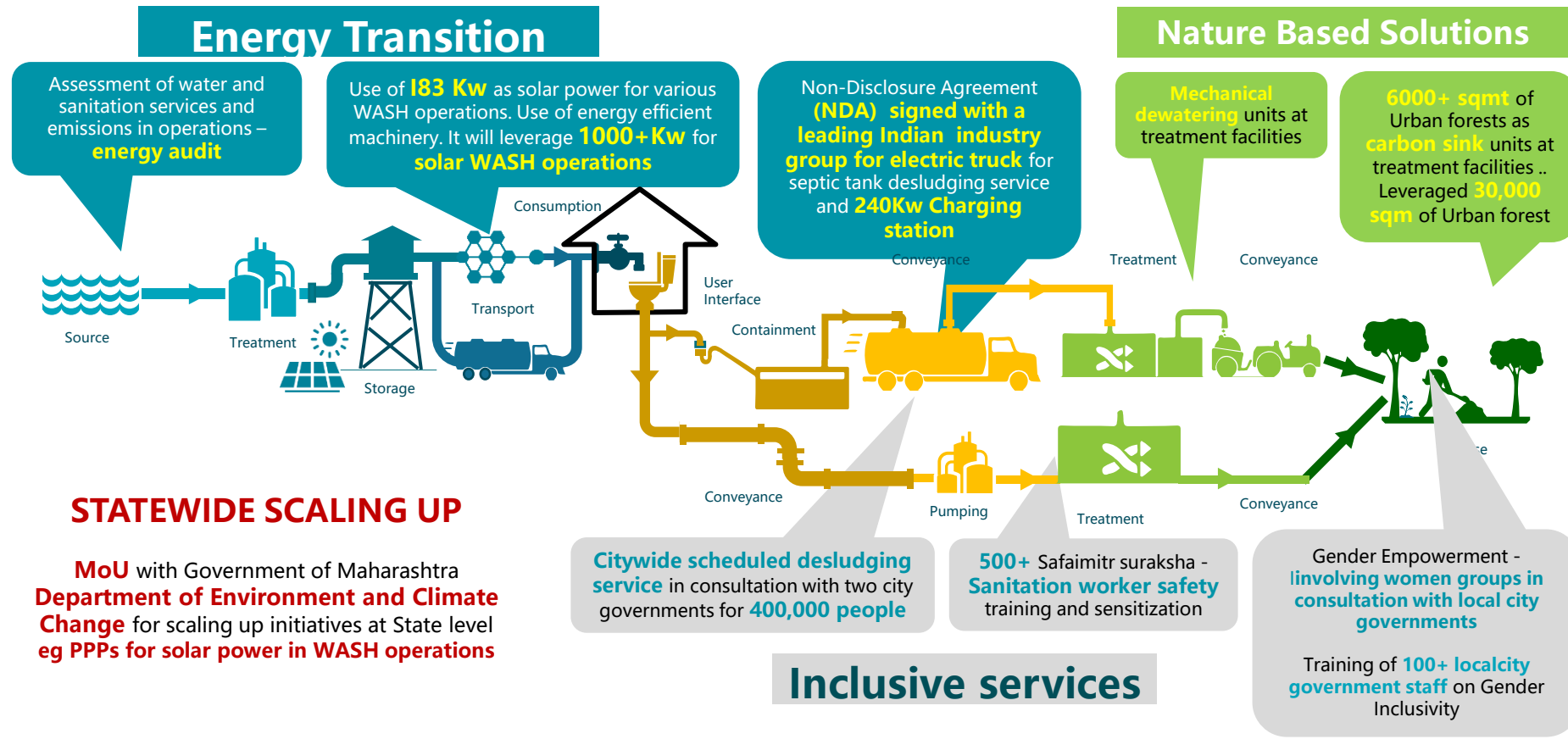
Moderator:

Daniel Ddiba
Research Fellow,
SEI, Sweden

Panelists:

- Meera Mehta - Professor Emeritus, CEPT University, India
- Amelia Wenger - Water Pollution Program Lead, Wildlife Conservation Society
- Sanyu Lutalo - Senior Water and Sanitation Specialist, World Bank
- Juliet Willetts - Research Director and Professor, University of Technology Sydney

CLIMATE INCLUSIVE WASH SERVICES – TO SUPPORT LOCAL GOVERNMENTS AND SCALE UP



Q&A

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Closing

*Ann Thomas
Sr. WASH Advisor
UNICEF*

UPCOMING IWA WEBINAR & EVENTS



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3 June 2024
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Organised by:
IWA DIGITAL WATER PROGRAMME
the international water association CHINA SUB-GROUP

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Online Webinar
04 June 2024

#WaterWiseEU

WEBINAR

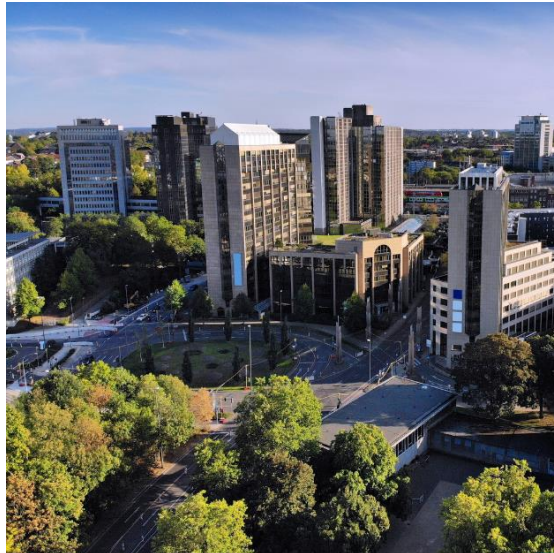
Urban Sanitation Challenges: Case Studies from Africa and Asia

19 June 2024
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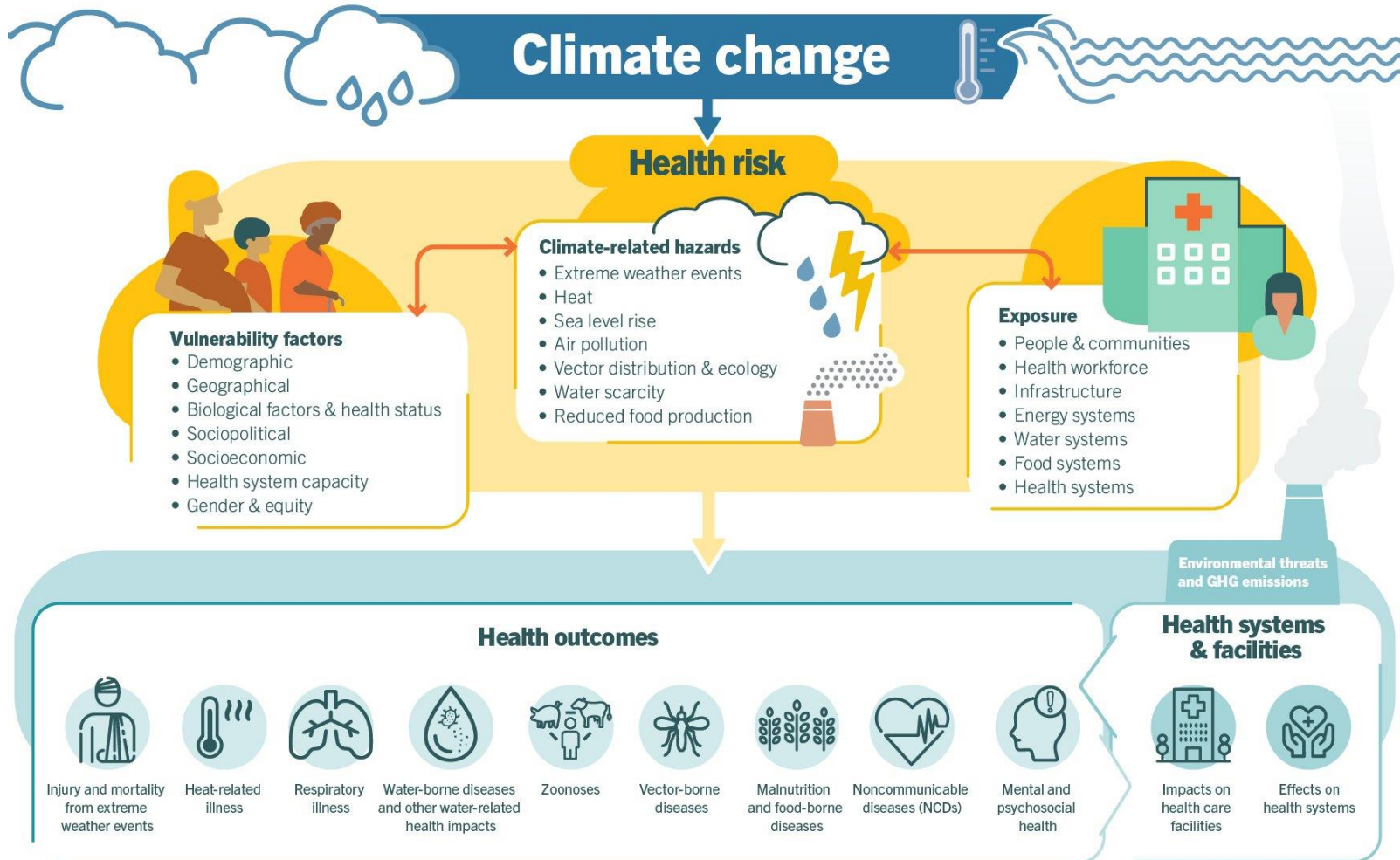
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inspiring change

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THANK YOU



- 3.6 billion people already live in areas highly susceptible to climate change.
- Between 2030 and 2050, climate change is expected to cause approx. **250 000 additional deaths per year** from undernutrition, malaria, diarrhoea and heat stress alone.

<https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health>