

Management of Social Services

**WEEK 10: WATER AND SANITATION
SERVICES (Actors in water and
sanitation sector)**

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Recap – previous week

Water and Sanitation Services

- Nature and status of water and sanitation services
 - Global perspective
 - Nature and status in Uganda
- Comparative analysis – Kenya, China and Netherlands



Fig. 1. Housing – Gamma app

This Week

Water and Sanitation Services

- Management of water and sanitation services in Uganda
- Comparative analysis
- Challenges of water and sanitation



Actors in Water and Sanitation Management, Administration and Delivery

Effective water and sanitation management requires coordination amongst diverse stakeholders to ensure sustainable practices and equitable access for all communities globally.

Fig. 2. Water and sanitation – Gamma app



Water Resources Management – An Integrated Approach

Various stakeholders are involved in the management of water and sanitation services, working in concert to deliver essential services. Government agencies majorly provide policy direction and regulatory oversight, while the civil society - non-governmental organisations contribute technical expertise and community engagement. Private sector entities bring innovation and investment capacity to infrastructure development.

Fig. 3. Water and sanitation – Gamma app



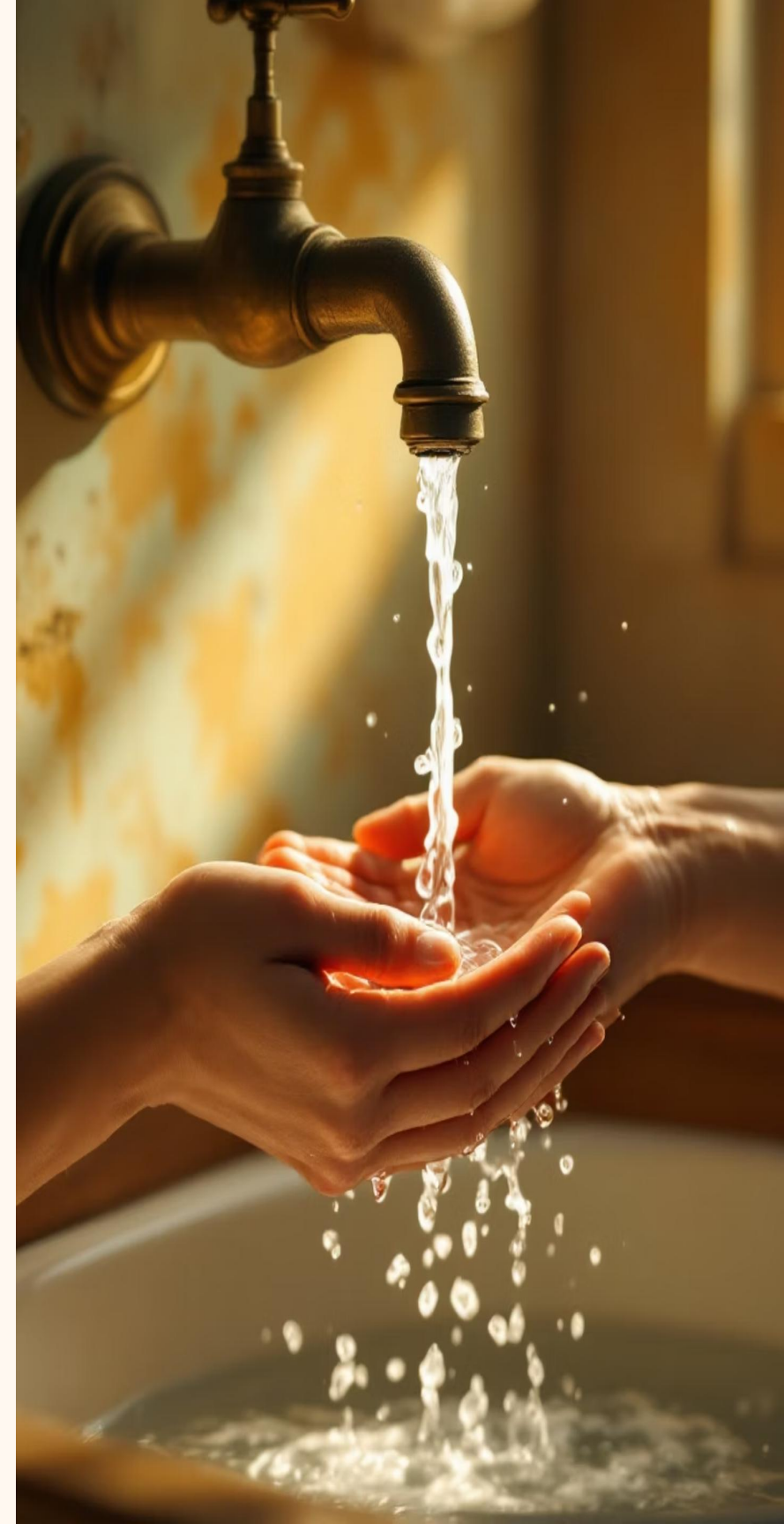
Water Resources Management – An Integrated Approach

The contemporary approach to balancing competing demand is the integrated Water Resources Management. This is a framework that seeks to harmonise social equity objectives with economic efficiency and environmental sustainability, recognising that water resources must serve multiple purposes while preserving ecosystem health for future generations.



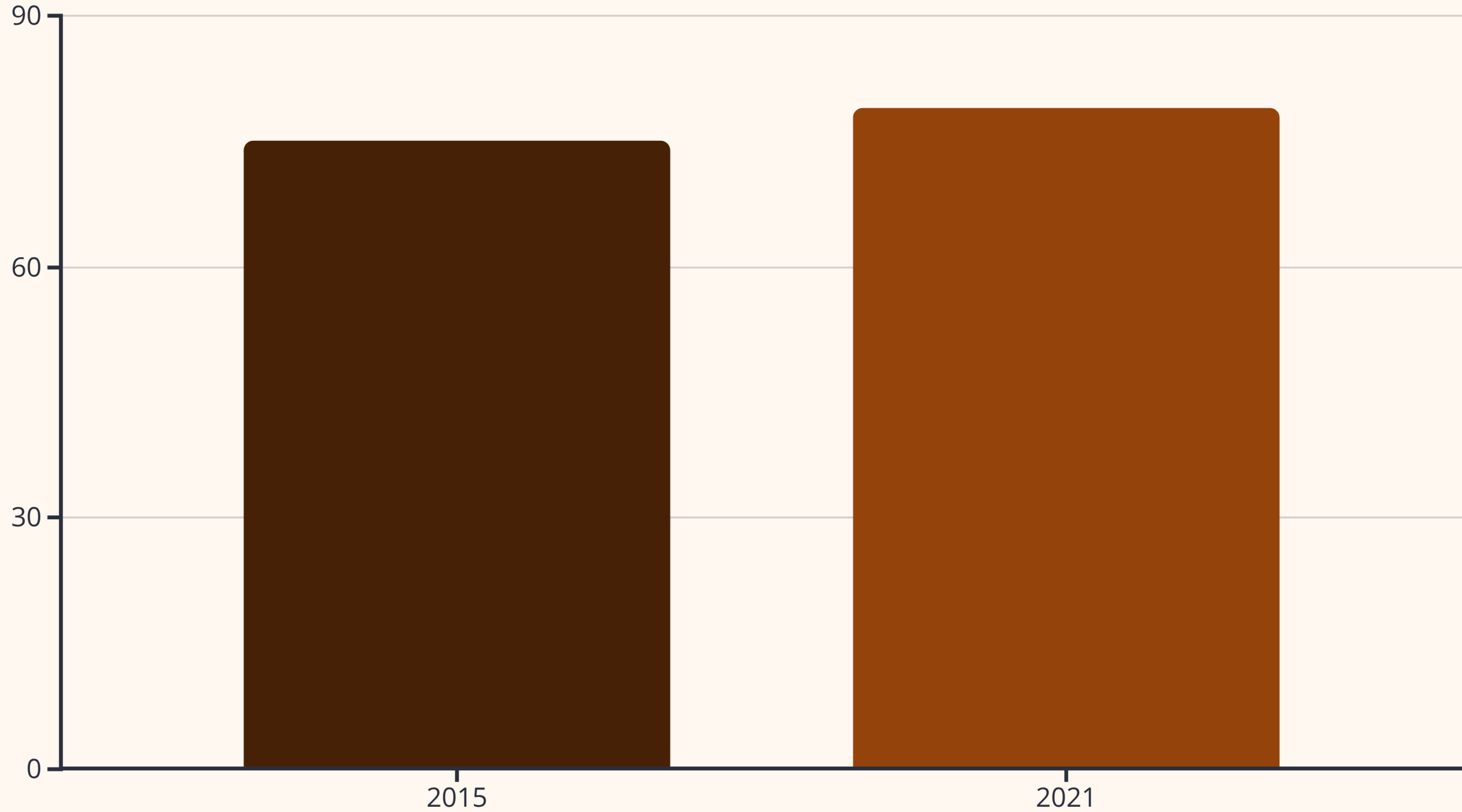
Management of Water and Sanitation Services in Uganda

The provision of Water, Sanitation, and Hygiene (WASH) services in Uganda has made significant progress, but is hindered by glaring inequalities, rapid population growth, and chronic underfunding. The water and sanitation sector is characterized by a clear rural-urban divide and a massive gap between basic access and safely managed services.



Uganda's Water Access Progress

National Service Delivery Survey Results 2022



Uganda's Institutional Framework for Water and Sanitation

Uganda has established a comprehensive multi-ministerial approach to water and sanitation service delivery, with clearly defined roles and responsibilities across government and community levels.



Ministry of Water and Environment

The Ministry of Water and Environment (MWE) is responsible for policy, coordination, and strategic direction.

Serves as the lead technical agency responsible for establishing policies, setting standards, and providing strategic direction for the entire sector.



Ministry of Health

Oversees household sanitation programmes, ensuring public health standards are met and maintained across communities.



Ministry of Education and Sports

Manages sanitation facilities and hygiene awareness within educational institutions nationwide.

Key Delivery Partners in Uganda's Water Sector

1

Local Governments

Responsible for planning, coordinating, and implementing water and sanitation programme activities at district and sub-county levels. They translate national policies into localised action plans tailored to community needs.

Responsible for implementing rural water and sanitation programs through their District Water Offices, with technical support from the ministry

2

Beneficiary Communities

These play a crucial role in demanding for services, taking part in decision-making processes, and maintaining water and sanitation facilities.

Community ownership ensures long-term sustainability of infrastructure investments.



3

Development Partners and NGOs

Provide financial resources, technical assistance, and capacity building support. Private sector actors contribute innovation, efficiency, and investment in infrastructure development and service delivery.



4

National Water and Sewerage Corporation (NWSC)

This is a state-owned, commercially run utility responsible for urban water and sewerage services in over 280 large towns and cities. It is widely regarded as a success story in African utility management.

Responsible to piped water supply

Uganda's critical challenges and gaps in WASH Sector

- 1. The Functionality Gap; Approximately 25-30% of rural water points (boreholes, protected springs) are non-functional at any given time (MWE Annual Performance Report, 2022). This is attributed to a lack of maintenance, limited local financing for repairs, and weak technical capacity at community level.
- 2. The Funding Gap; The sector is underfunded, government allocation for water and environment is consistently below 3% of the national budget, far less than what is required to achieve national targets or even maintain existing infrastructure.



Fig. 4. Water and sanitation – Gamma app

3. The Sanitation and Hygiene Crisis; Progress on sanitation

has been slow and heavily reliant on behavior change campaigns with insufficient investment in affordable sanitation technologies and emptying services for fecal sludge. This leads to environmental contamination.

4. Rapid Population Growth; Uganda's high population growth rate (3.2%) puts the efforts to increase access in a state of constant 'chasing after a moving target'. For every new water point built, the number of people needing service also increases.

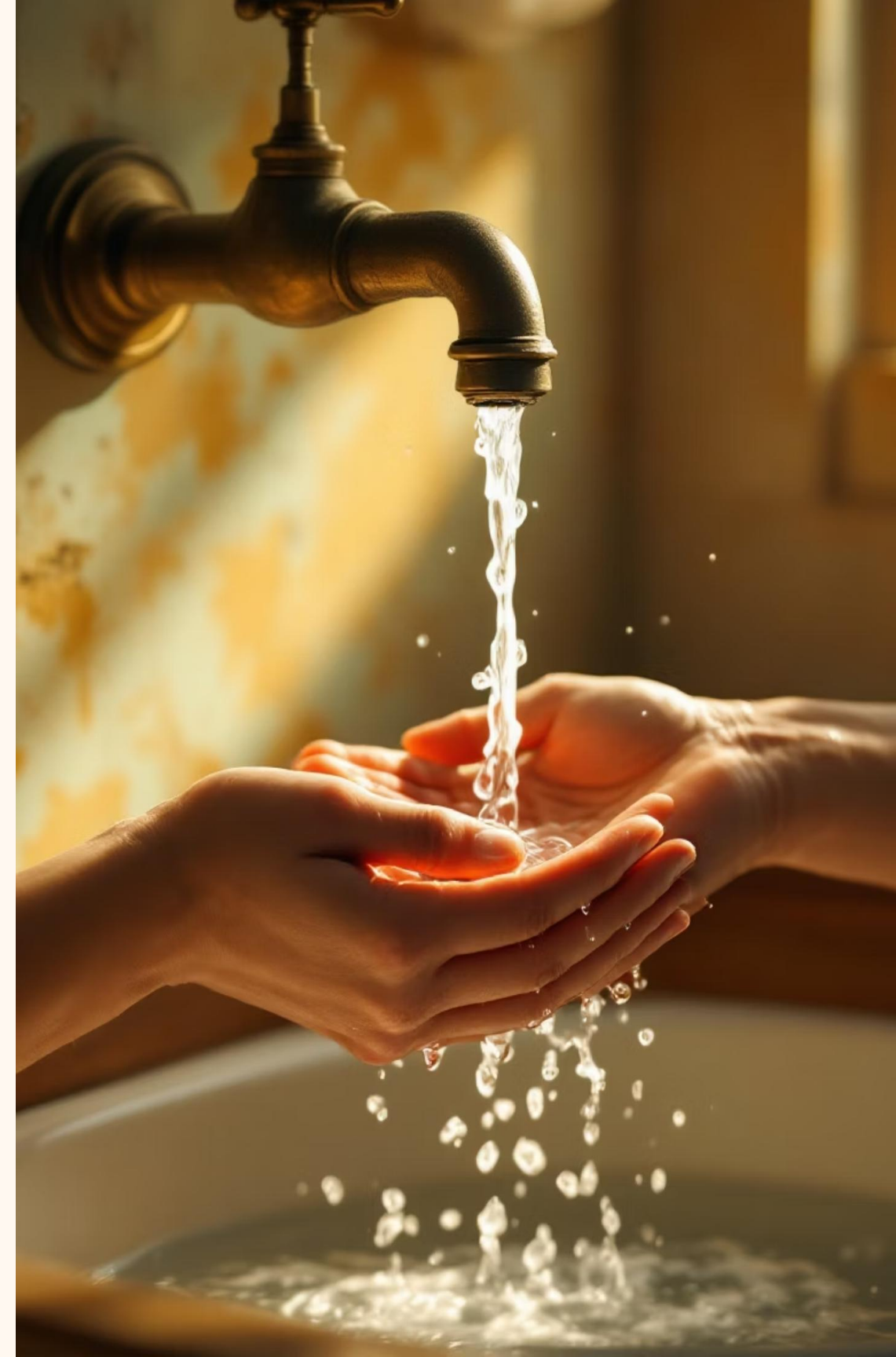


5. Impacts of Climate Change; Increased frequency of droughts lowers water table levels, drying up shallow wells. On the other hand, intense floods contaminate water sources and destroy water, as well as sanitation infrastructure.

6. Inequity; Access disparities are not just rural-urban. There are significant gaps based on region (e.g., Karamoja has the lowest access rates), wealth/economic status, and disability.



Management of Water and Sanitation Services: International Comparison



Comparing Kenya. Netherlands and China's Water and sanitation management to Uganda's

This comparison reveals a range of development, from a nation rassing with basic access (Kenya) to one that has achieved near-universal coverage through rapid infrastructure rollout (China), and finally to a global leader in efficiency and innovation (the Netherlands).

International Comparison: Kenya

Water and Sanitation Management and delivery

Kenya's WASH sector is characterized by a devolved governance structure, significant regional disparities, and a heavy reliance on point-source solutions (like boreholes) and on-site sanitation.

Fig. 5. Water and sanitation – Gamma app



Kenya's Approach to Water and Sanitation Management

Kenya has undergone reforms in its water sector; these include a decentralised framework that empowers 47 county governments while maintaining national oversight – the **national government**, through the ministry of water, sanitation, and irrigation sets policies.

Kenya's Water Act 2016 created the **Water Services Regulatory Board (WASREB)** which oversees regional water services providers to ensure quality standards and protect consumer interests.

The country operates through **Water Services Providers (WSPs)** licensed to serve specific geographical areas.

Community-based organisations manage rural water supplies, promoting local ownership and sustainability.

In Nairobi, the **Nairobi City Water and Sewerage Company** is the main utility.



Fig. 6. Water and sanitation – Gamma app

Critical Gaps & Challenges: ...

1. Acute Water scarcity due to climate variability; Kenya is a water-scarce country. Chronic droughts, particularly in the ASALs (Arid and Semi-Arid Lands), severely limit access.
2. Low access in Urban Slums; Informal settlements like Kibera have extremely low access to formal water and sewerage due to infrastructure deficits. Residents rely on expensive, often contaminated water from vendors and shared, unimproved latrines.
3. Low Sewerage Coverage; National sewerage coverage is estimated at **less than 15%**. The vast majority use septic tanks and pit latrines, with inadequate fecal sludge management.
4. Funding and Functionality; Like Uganda, Kenya faces a high rate of non-functional water points in rural areas due to maintenance challenges.

International Comparison: Netherlands

The Dutch system is a decentralized but highly regulated public-private model. It is focused on efficiency, integrated water management, and innovation.

This system is a global benchmark for quality and sustainability in water management.



Fig. 7. Water and sanitation – Gamma app

A Model of Integrated Water Management

Exemplifies a world-leading water management system, the Netherlands is a successfully protected low-lying nation with approximately 26% of its land sitting below sea level.

Water management characterised by: ...

Flood Protection

Sophisticated systems of dikes, storm surge barriers, and pumping stations protect against sea level rise and river flooding.

Water Quality Management

Advanced wastewater treatment achieves 99.9% coverage, with strict monitoring ensuring drinking water meets highest European standards.



A Model of Integrated Water Management

Water governance and management: ...

Participatory Governance

Regional **water authorities** operate independently with elected boards, ensuring community involvement in water management decisions.

Utilities

Ten highly efficient, regional public water companies are responsible for drinking water supply. They are non-profit and performance-driven

World leaders in energy-neutral water treatment, nutrient recovery, and building with nature to manage floods.



Critical Gaps & Challenges

1. Emerging Contaminants; primary concern is dealing with microplastics, pharmaceutical residues, and PFAS ("forever chemicals") in the water cycle.
2. Climate Change Adaptation; as a low-lying delta nation, the Netherlands faces immense challenges from sea-level rise and saltwater intrusion, requiring constant investment in dykes and innovative water management.
3. Infrastructure Aging; though well-maintained, parts of the extensive underground pipe network are old and may require costly replacement.

International Comparison: China

Unprecedented water infrastructure development with a focus on massive engineering projects to supply water, and growing attention to pollution control and wastewater treatment.

Fig. 8. Water and sanitation – Gamma app



China's Massive Water Infrastructure Investments

China has invested billions in projects to address severe water scarcity in northern regions and ensure access for its 1.4 billion population. The South-North Water Transfer Project diverts water from the Yangtze River to water-stressed northern cities including Beijing.

Urban areas have achieved near-universal access to improved water and sanitation, while rural regions continue catching up through government programmes. The government's "Sponge City" initiative promotes sustainable urban water management through green infrastructure and natural water retention systems.



Water governance and management: ...

Governance

Highly centralized.

The Ministry of Water Resources and the Ministry of Housing and Urban-Rural Development (MOHURD) set national policy and targets

Utilities

Local, state-owned water utilities are the primary providers. They are often vertically integrated, handling everything from source to tap

Critical Gaps & Challenges

1. Water Quality & Pollution despite access remains a severe problem. Industrial discharge, agricultural runoff, and insufficient wastewater treatment in some areas mean that "access" does not always equal "safe to drink."

Many urban residents rely on bottled or filtered water.

2. Water Scarcity; the home to a large population - Northern China, faces extreme water stress, addressed by monumental projects like the South-North Water Diversion Project.

3. Rural-Urban Quality Gap; there are regional disparities in service quality. While access is high in rural areas, the reliability and quality of water and sanitation services lag far behind urban centers'.

4. Tariff Structures; water tariffs are often too low to cover the full cost of operation and maintenance, potentially affecting long-term sustainability.

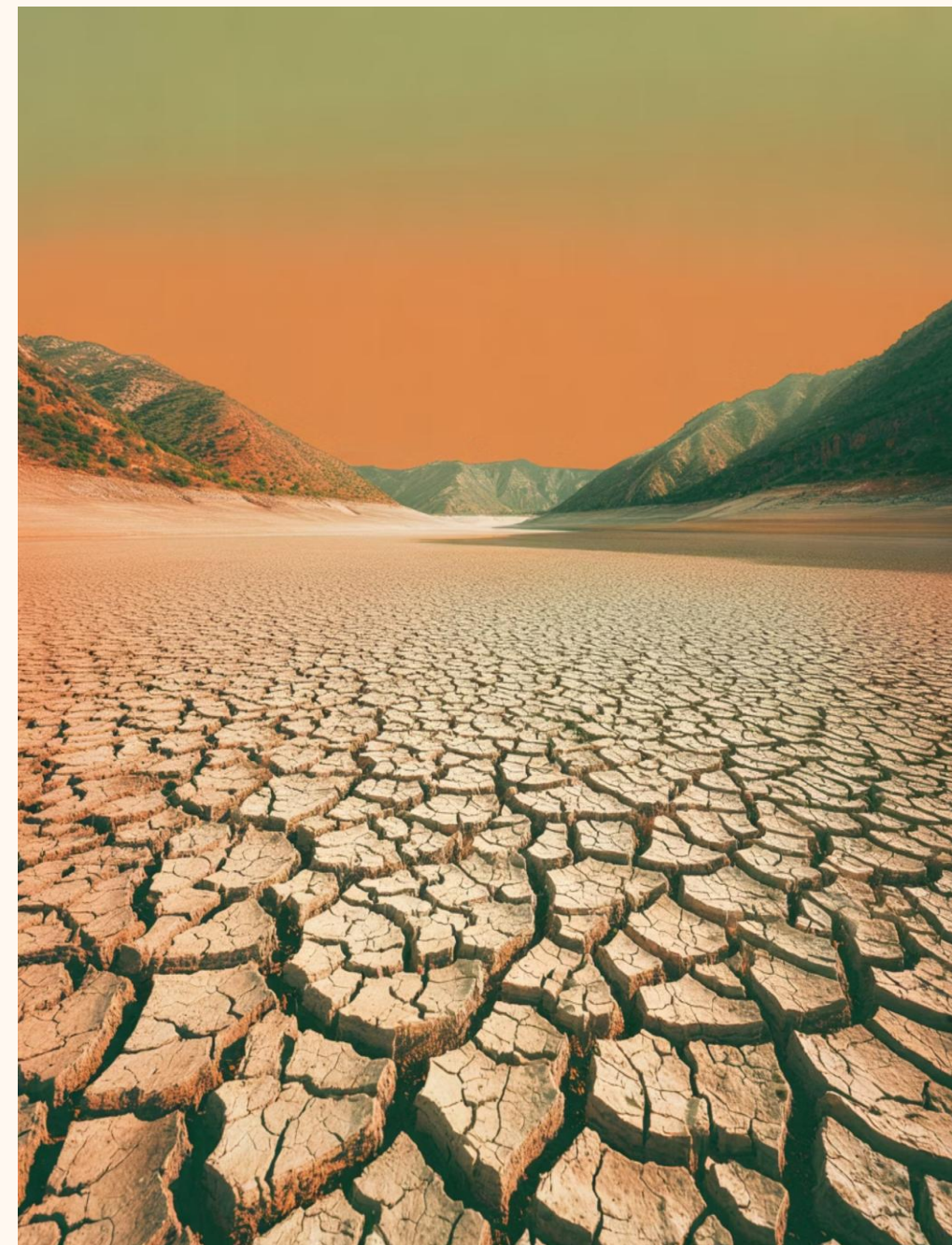
Global Challenges Facing the Water and Sanitation Sector

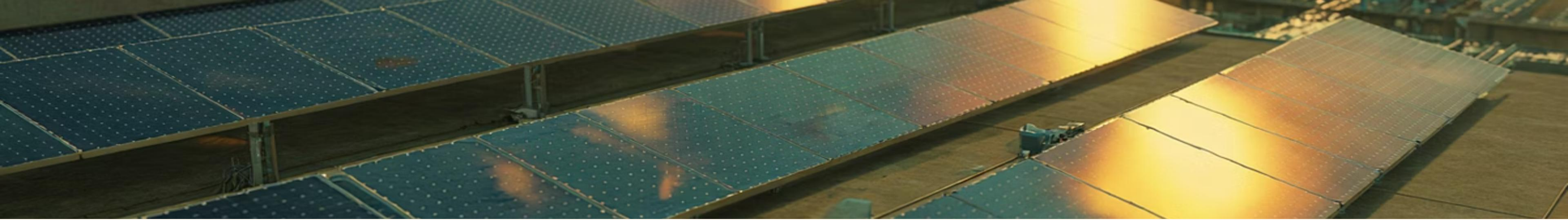
The Scale of the Crisis

The water and sanitation sector confronts unprecedented challenges that threaten progress towards universal access. Climate change intensifies water scarcity and disrupts traditional water cycles, while rapid population growth and urbanisation place overwhelming pressure on existing infrastructure.

Over 2 billion people globally experience water scarcity, facing daily struggles to secure adequate supplies for drinking, cooking, and hygiene. Inadequate sanitation facilities contribute directly to the spread of waterborne diseases including cholera, dysentery, and typhoid, claiming hundreds of thousands of lives annually, particularly amongst vulnerable children.

Fig. 9. Water and sanitation – Gamma app





The Investment Gap: Financing Universal Access

Funding and investment in water and sanitation infrastructure remain critical bottlenecks. Many developing nations struggle to mobilise sufficient domestic resources, while international development assistance falls short of requirements.

Innovative financing mechanisms and public-private partnerships offer potential pathways to bridge this substantial investment gap.



The Investment Gap: Financing Universal Access

\$114B

Annual Investment Required

Estimated funding needed each year to achieve universal access to water and sanitation by 2030 under Sustainable Development Goal 6.

2B+

People Affected by
Water Scarcity

Number of individuals globally who experience severe water scarcity for at least one month each year.

2030

Target Year for SDG 6

Deadline for achieving universal and equitable access to safe and affordable drinking water and adequate sanitation for all.

Moving Forward: Policy Priorities for Future Leaders

Achieving universal access to water and sanitation by 2030 requires coordinated action across multiple policy domains and sustained political commitment.

Strengthen Institutional Capacity

Invest in training, technical expertise, and coordination mechanisms amongst government agencies, ensuring effective policy implementation at all levels.

Mobilise Sustainable Finance

Develop innovative funding models including public-private partnerships, green bonds, and climate finance to bridge the \$114 billion annual investment gap.

Prioritise Climate Resilience

Integrate climate adaptation into water infrastructure planning, protecting communities against droughts, floods, and changing precipitation patterns.

Ensure Equitable Access

Target investments towards underserved populations, informal settlements, and rural areas, recognising water and sanitation as fundamental human rights.

Conclusions

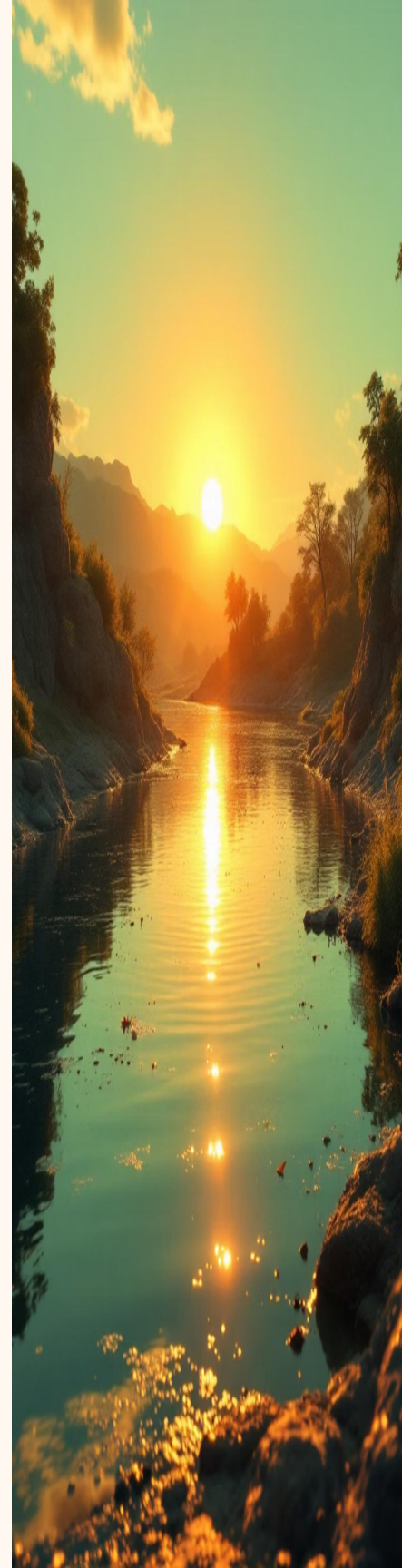
Kenya represents the foundational challenge of securing basic, equitable access against a backdrop of scarcity and rapid urbanization.

China represents the engineering scale-up phase, having built the foundational infrastructure at a breathtaking pace but now confronting the critical second-phase challenges of environmental quality and sustainability.

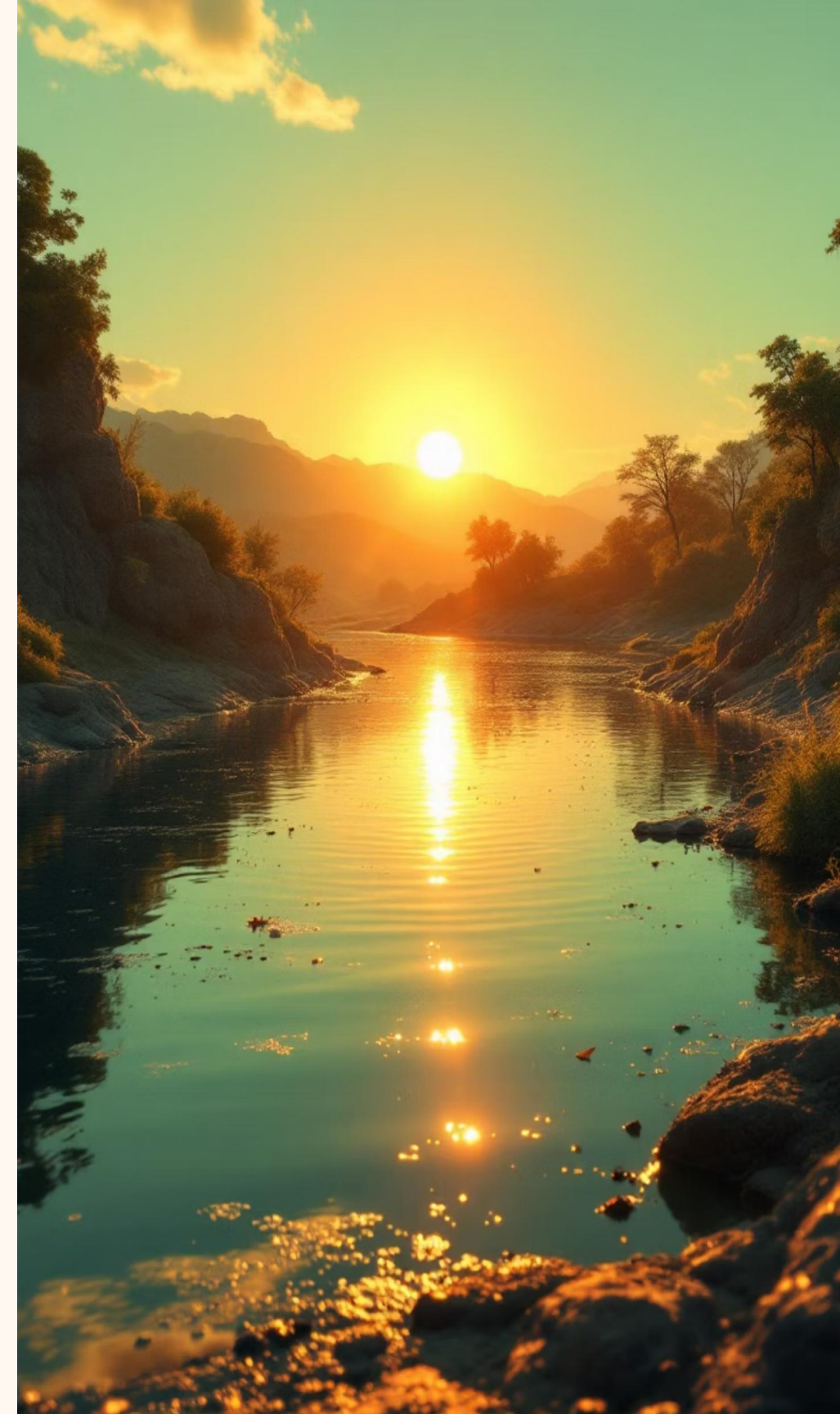
The Netherlands represents the mature, innovative frontier, where the focus has shifted from basic service delivery to perfecting the system, managing the entire water cycle as an integrated resource, and pioneering a circular economy for water.

The trajectory shows that achieving access is only the first step. The subsequent challenges of ensuring quality, sustainability, and resilience are equally, if not more, demanding.

Fig. 10. Housing – Gamma app



While Uganda has made strides in providing basic water access, the quality of that access is partly poor, and the sanitation situation remains a national emergency. Future success depends on dramatically increasing investment, prioritizing sustainable operation and maintenance, and launching a dedicated, well-funded national campaign to address the sanitation crisis.



Reference list

- **Ministry of Water and Environment (MWE). (2022).** *Annual Performance Report for Water and Environment Sector, FY 2021/22*.
- **National Water and Sewerage Corporation (NWSC). (2023).** *Annual Report 2022.*
(Shows the performance of the urban utility).
- **WHO/UNICEF Joint Monitoring Programme (JMP). (2022).** *Progress on household drinking water, sanitation and hygiene 2000-2022
- Figure 1-9. Water and Sanitation, Gamma app

Next week

Infrastructure Services:

- Nature, scope and status of infrastructure
 - Comparative analysis