

TOWARDS BROWN GOLD

Re-imagining off grid sanitation in rapidly urbanising areas in Asia and Africa

BROWN
GOLD

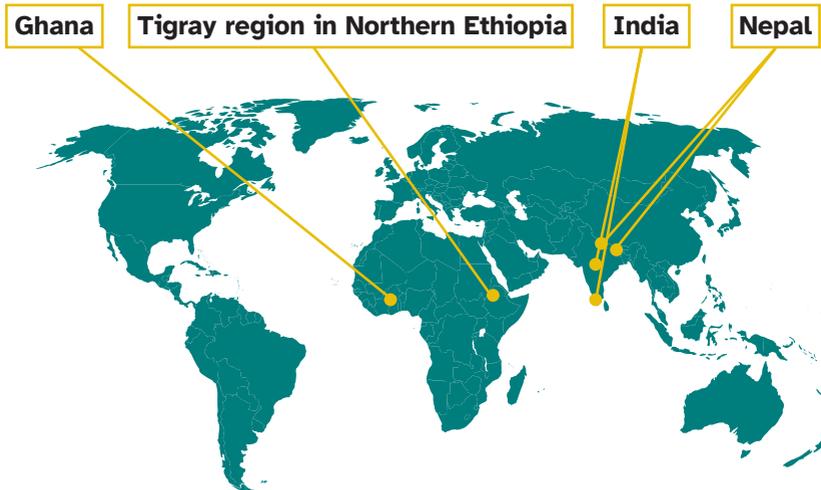
AN URGENT GLOBAL CHALLENGE

Safely managed sanitation is pivotal for wellbeing, productivity and health. But the World Health Organisation and UNICEF estimate that 3.6 billion people live without access to safe sanitation facilities. Growing small towns are home to around half of the world's urban population, where it is difficult to replicate and extend capital-intensive centralised sanitation and waste management systems.

Rapidly urbanising areas in the global South are often characterised by unsafe excreta disposal, deficient faecal sludge management and inadequate infrastructure for wastewater collection and treatment. Groups that are marginalised (including migrants, women, people that are homeless – many of whom are sanitation service providers) are more vulnerable to the risks associated with poor sanitation systems.

Poverty and exclusion combined with technical and institutional challenges make safely managed sanitation in expanding urban areas an **urgent global challenge**.

WHERE WE ARE WORKING



WHAT WE ARE DOING

'Brown gold' is the safe (re)use of shit and wastewater that unlocks its potential as a resource



We are moving towards Brown Gold

Moving towards Brown Gold involves addressing the socio-cultural, economic, political, environmental and technical processes along the sanitation chain. This requires attention to sustainability and social justice. Our project explores the challenges and opportunities of off-grid sanitation in growing towns of Ghana, India, Nepal and Tigray Region Northern Ethiopia.

We are working with local stakeholders

By working with local stakeholders we seek to facilitate bottom-up innovations that reuse faecal sludge and wastewater in ways that are people-centred, sustainable, equitable, and contribute to economic growth. We aim to address the urban sanitation crisis, enhance off-grid economies, and improve the well-being of excluded and marginalised people.

We are interdisciplinary

The project's interdisciplinary team brings together social science, law, engineering, microbiology, and creative and visual arts expertise. Our work is co-produced with urban-poor communities, sanitation workers, private sector, state agencies, civil society, Non-Governmental Organisations, and policy stakeholders.



The time to enhance sanitation systems, improve workers' conditions and move towards brown gold is now

Top photo: A community leader points out a rota of activities initiated during CLTS activities in Nanded, India. Photo by Lyla Mehta. Bottom photo: A community meeting lead by Towards Brown Gold team in Wa, Ghana. Photo by Alfred Dongzagla

TIGRAY REGION IN NORTHERN ETHIOPIA - MEKELLE

Mekelle, the capital of Tigray, suffers from water scarcity, and water bodies are often contaminated by overflowing wastewater. The war which started in 2021 and the ongoing famine pose severe risks to lives and livelihoods with several million displaced. Mekelle has been hosting approximately 175,000 internally displaced people, increasing pressure on the city's already fragile infrastructure.

We are evaluating technologies, business models, and regulatory and institutional arrangements to deliver sustainable faecal sludge management in Mekelle. Despite the war and communications blackout imposed by the Ethiopian government for over a year, we have been generating evidence related to water, sanitation and hygiene (WASH) and human waste management with a focus on safely reusing waste. Our evidence aims to strengthen long-term sustainable waste management and the post-war restoration of WASH services in Mekelle.



A garden growing ornamental trees in an old dumping site in Mekelle. Photo by Kifile Woldearegay

GHANA - WA

Wa, Upper West Region, shares sanitation challenges faced by other towns in Ghana. Private companies collect faecal sludge from storage containers to dispose at designated landfills. We found that farmers often purchase this waste to use as fertiliser. Even though this is illegal, it shows a recognition for the potential of waste as brown gold.

Our research looks at opportunities to recover and reuse faecal sludge. Circularity offers an opportunity to introduce new approaches and support safety and sustainability along waste-to-food system value chains. Our approach also prioritises the need to ensure equity.



A sanitation worker draining faecal sludge into a waste-disposal vehicle in Wa. Photo by Alfred Dongzagla

INDIA - ALLEPPEY

Alleppey, a major tourist destination in Kerala, has seen congestion of its extensive 'backwater' canals and severe damage to its fragile ecosystem. Unsuitable waste management leads to faecal waste spilling into water bodies during heavy rains, increasing the spread of water-borne diseases.

We are examining the links between floods, sanitation and health risks, and how unequal spaces and poor sanitary conditions contribute to these issues. We are researching the interaction of actors in the sanitation system, with a particular focus on the people most marginalised – the sanitation workers. We are also exploring the potential of decentralised waste management systems.



*A canal in Alleppey contaminated with solid waste.
Photo by Demathlal PM and Hariprasad VM*

INDIA - NANDED

Nanded, Maharashtra, pioneered a city-wide community-led total sanitation (CLTS) in 2011, but this ended just one year later. And challenges still exist. Poor communities face challenges in being connected to the sewerage network, and wastewater often leaks into their neighbourhoods. Sanitation workers – mainly from 'lower' castes – are still cleaning sewers and on-site sanitation systems manually. Gender, caste and occupation result in intense discrimination whilst exposing people to severe health risks.

We are analysing how power relations and marginality affect access to sanitation and waste management, and how inequalities contribute to further marginalisation and the need for decentralised systems to address waste problems in marginalised localities.



*An open drain next to a family home in Nanded.
Photo by Lyla Mehta*

NEPAL - GULARIYA AND LUMBINI

Nepal was declared open-defecation free in 2019 and is moving towards total sanitation – but challenges in managing the off-grid sanitation system persist. Faecal sludge storage and disposal practices are mostly inadequate, unsafe, or expensive. Sanitation workers have limited protective equipment and are not covered by health insurance. Communities are prone to severe health risks, especially the marginalised.

We are working in Gulariya and Lumbini (both terai communities sharing similar socio-cultural settings) in an interdisciplinary way – connecting natural science, social science and the arts to identify and address key issues along the sanitation chain. We will contribute to policy and technological developments to support faecal sludge and optimise the recovery of these resources.



*Top photo: A handpump near toilets.
Photo by James Ebdon.*



*Bottom photo: Sanitation workers leave one of Towards Brown Gold's mud houses.
Photo by Julian Myers*

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