

Circular economy in Vietnam's rural water and sanitation sector: making the most of current momentum



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Circular economy ideas have taken hold in Vietnam. How can water and sanitation agencies move from aspirational policy to operationalising circular practices? How can circular economy ideas drive safely managed, inclusive, climate resilient services?

Vietnam is facing serious climate change challenges. The 2021 Country Risk Climate Profile flags rising sea levels in low-lying areas, potential declines in agricultural productivity due to salinity, health issues from heat stress (hitting poorer communities the hardest) and strain on water resources that are already stretched thin. With a long coastline and low-lying landscape, Hà Tĩnh Province in the North Central Region sits between monsoon systems and the meeting point of two distinct climate zones (North and South). This makes Hà Tĩnh a hotspot for weather changes leading to intensified climatic patterns and frequent natural disasters.

The fact that Hà Tĩnh is primarily rural and one of the poorest provinces in the country means impacts are deeply felt, with the risk of flooding, drought, and saline intrusion disproportionately impacting vulnerable populations heavily reliant on natural resource-dependent sectors.



The picture gets trickier with more intense droughts posing a risk to water and sanitation services. Stress on drinking water sources is particularly for communities situated in high watersheds dependent on small streams. Salinisation further impacts coastal drinking water sources. It has also been found that floods not only threaten water quality and safety, but also cause water shortages by damaging wells.



This complex picture, characteristic of many rural areas in South-East Asia and beyond, demands innovative thinking about how to deal with uncertainty while planning for resilient, inclusive water and sanitation services.

At the same time, circular economy thinking is gaining popularity across multiple sectors and countries as a promising approach to strengthen sustainability and climate resilience. The concept of a circular economy has been taken up at the highest levels in Vietnam, propelled by a supportive policy environment led by the Prime Minister's Decree on circular economy in 2022 (Decision no 687/QĐ-TTg), with a specific focus on rural development and building climate resilience.

The ideas of circular economy are not new to Vietnam, and have been implemented through initiatives such as Vuon-Ao-Chuong (VAC) traditional farming systems that integrate gardening, fish rearing and animal husbandry. However, there had been a limited institutional framework, which the Prime Minister's Decision – highlighting the economic benefits of circular economy across multiple sectors – intends to address. The directive has already sparked a series of institutional efforts including a revised Law on Environmental Protection (LEP), 2020 (revised in 2022) which broadly emphasizes the obligation of ministries and local authorities to incorporate the principles of the circular economy into their planning strategies and development plans, and the upcoming National Action Plan on Circular Economy.

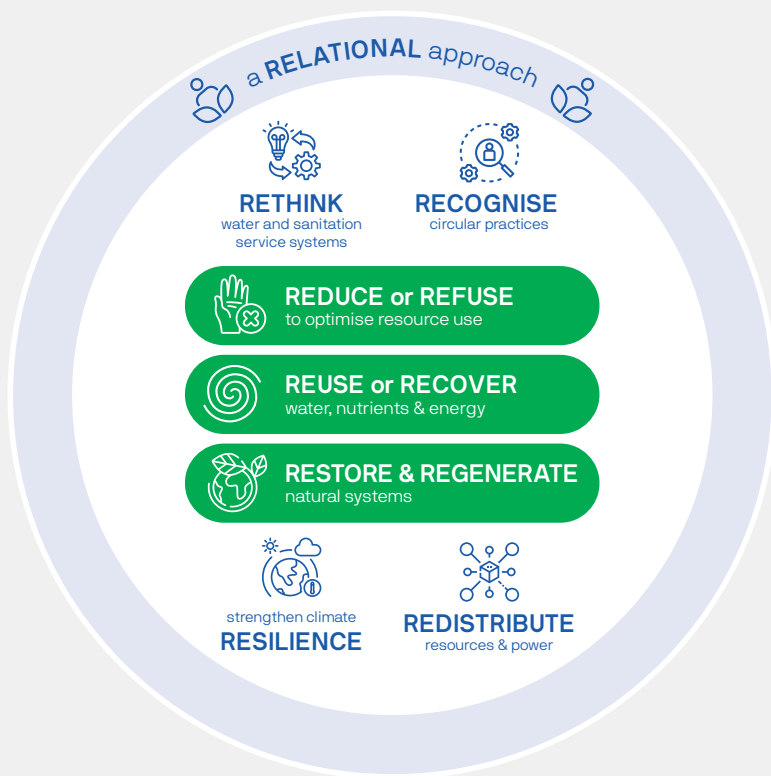


When it comes to rural water supply, the 2023 revised Law on Water Resources has put circular economy approaches on the agenda, foregrounding ideas such as water use efficiency, reuse and recycling of water and wastewater. For sanitation, Circular No. 04/2015/TT-BXD (under Decree No. 80/2014/ND-CP on drainage and wastewater treatment) details procedures for reuse of treated faecal sludge. In parallel, the most recent National Target Program (NTP) for New Rural Development (NRD) (2021-2025) is progressing water and sanitation service improvements, along with solid waste management, at pace – including a focus on reuse and recycling.



Given the favourable policy environment, the time is ripe for exploring how best to bring circular economy ideas to bear in rural water and sanitation, as the sector grapples with the challenge of achieving sustainable and safely managed service delivery in a changing climate. This is where CIRCLE WASH comes in, an initiative of Australian Aid's Water for Women Fund. A group of researchers is investigating how circular economy thinking can drive safe, climate resilient and inclusive systems that are also sustainable.

Case study research in Vietnam is focused on Hà Tĩnh province. The project aims to contribute new ways of thinking about how circular economy ideas can be applied in water and sanitation, as well as analysis of promising opportunities. The approach emphasises systems change towards delivery of water and sanitation services that are safe, inclusive and climate resilient.



8RS FOR CIRCULAR ECONOMY WATER AND SANITATION

Learn more about the 8Rs framework on the [CIRCLE WASH web page](#)

| R strategy | Meaning | Examples |
|---|--|--|
| RETHINK service systems | How could water and sanitation systems be different? What ideas come to mind if we think about changing typical approaches? | Changing thinking from 'wastewater' to 'resource-water'. Sanitation as a public service with shared government and household responsibilities. |
| RECOGNISE circular practices | What is already circular? This could include traditional practices and copying strategies. How can we value existing circular practices and ensure they are safe? | Saving and reusing water in a household, e.g. bathing water for garden. Use of dried faecal sludge as soil conditioner. Use of human urine as fertilizer. |
| REDUCE OR REFUSE to optimise resource use | How can we optimise use of resources in water and sanitation systems? Are there alternatives to water and energy use (reuse)? How can we improve efficiency (reduce)? | Reducing water losses. Designing low-energy wastewater treatment systems. Waterless toilets. Reusable menstrual health products. |
| REUSE & RECOVER water, nutrients & energy | How can we close loops in water and sanitation systems? Are there opportunities to reuse water (treated or for lower quality purposes)? Can nutrients be recovered from waste? | Household storage and reuse of water for different uses. Faecal sludge reuse to improve soil condition, nutrient capture and use to benefit food production. Wastewater reuse at various scales, use of sludge in biogas systems. Natural reuse systems e.g. irrigation system recharges groundwater where it is naturally treated before reuse. |
| RESTORE & REGENERATE natural systems | How can water and sanitation systems connect to natural systems? How can they contribute to the regeneration of nature? | Nature-based solutions e.g. source water protection, wetland recharge, wetland restoration or construction for wastewater treatment. |
| strengthen climate RESILIENCE | What climate change impacts do we need to consider when planning circular water and sanitation systems? How can circular options strengthen resilience? Resilience includes social, institutional, technical and natural dimensions. | Capturing, treating and reusing water supports resilience during times of drought. |
| REDISTRIBUTE resources and power | How can we ensure everyone has equal access to water and sanitation services? How can we include diverse voices when planning circular approaches? | Sustainable road recovery approaches that balance what user pays with public investment to ensure affordability. Representation from diverse social groups when planning and implementing circular opportunities. |
| a RELATIONAL approach | A relational approach emphasises collaboration and trust building. It focuses on connections between people and the world around them. Taking a relational approach means focusing on the process of moving towards circularity and interdependence between people and nature. | Bringing diverse perspectives together for conversations about circular economy water and sanitation systems. Creating space for connections to emerge and to shape actions. |

We recently spent time in Hà Tĩnh Province meeting with government officials at the provincial, district and commune levels. We used the project's 8Rs framework as a tool for talking through potential circular economy opportunities in the water and sanitation context of Hà Tĩnh. This framework offers a simple and engaging way to guide conversations towards ideation of circular economy opportunities.

We found strong interest, promising directions, and some challenges. The process was valuable in bringing together diverse perspectives and revealing multiple (sometimes conflicting) imperatives.

The three 'practical' circular economy Rs focused on reducing, reusing and restoring were the starting point for most discussions. The potential to reduce volumes of wastewater or improve the efficiency of water use were popular topics, as was enhancing community awareness of water source protection and restoration (for example, by preventing the disposal of solid waste, livestock waste, industrial waste into rivers).

At the same time, 'process-oriented' Rs (rethink, recognise, resilience, redistribute, relational) helped shape nuanced conversations about key considerations related to local context, social dynamics and critical questions of climate resilience. A focus on recognising existing circular practices and traditional knowledge about resource management highlighted a number of opportunities to build on, for example the installation of decentralised household systems that treat greywater onsite in a phased manner.

Highlighting 'redistribute' (with a social inclusion focus) in the 8Rs framework was a useful enabler to ensure aspects of power dynamics, resource allocation, equity and inclusion was touched upon in meetings, even if uncomfortable in certain circumstances amongst more technically-oriented groups.

There is more work to do, exploring how to effectively harness the present enthusiasm and ensure that the pursuit of circular economy stays true to its core values, and contributes to the ultimate outcome of climate resilient, inclusive, safely managed water and sanitation services. The next phase of research – analysis of promising circular opportunities – will highlight potential next steps.

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About CIRCLE WASH

CIRCLE WASH is a two-year research project contributing new thinking and case study insights about the potential of circular economy ideas for WASH service systems. The research is supported by Australian Aid's Water for Women Fund. Case study locations are Hà Tĩnh Province, Vietnam, and Kiritimati Island, Kiribati. Research partners include the University of Technology Sydney's Institute for Sustainable Futures (UTS-ISF), the Institute for Water Resource Economics and Management (IWEM) in Vietnam, UNICEF Pacific, the International Water Management Institute (IWMI), and a Pacific-based researcher.

