

## Workshop/Forum Details

Title of Workshop / Forum (max 15 words)	
Sanitation Disruption: Creating a new Sanitation Paradigm based on Circular Economy Principles	
How is this Workshop/Forum connected to the chosen sub-theme (choose from list 1-6 above)	
<p>The topic is aligned to the theme: Develop skills and technology innovations and disruptors. The workshop aims to highlight an innovative and disruptive pathway for sanitation provision. The current sanitation engineering paradigm globally involves two technical approaches: sewer-based “flush-and-dispose” systems and on-site “drop-and-store” technologies. Both engineering approaches have their limitations. Scientific evidence indicates that sewer-based solutions cannot be scaled within the limited development target frameworks. Further, the requirements for laying sewers, energy and water, operation and maintenance costs, and skills requirement for upkeep mean that this engineering approach is not financially sustainable for the developing world. On-site sanitation approaches, while cheaper to implement than sewer-based approaches, are limited by poor user acceptance (compared to conventional flush approaches), odours and scant cost-effective means for the disposal of accumulated faecal sludges.</p> <p>A new sanitation paradigm will be disseminated at the workshop and supported through presentations of evidence-based research. The core technical focus of presentations will be on “off-the-grid” sanitation technologies which employ circular economy principles of reduce, recover and recycle. The workshop will also include the strategy of creating an enabling environment for sanitation disruptors through field testing of disruptors, the creation of industrial platforms for manufacturing of technologies, establishing a new cohort of sanitation maintenance providers, and process performance standards.</p>	
Name the SDG/s which link with this Workshop / Forum	
Target 6.2	
Explain the need and relevance of this workshop (1000 words)	
<p>Sanitation providers are limited to two engineering approaches; both of which have been shown to be limited in a developing world context. The workshop aims to disseminate to the wider water community the new sanitation paradigm that takes the best of the flush system and on-site approaches while eliminating their limitations. The workshop is of relevance given the challenges associated with the lack of technical options:</p> <ul style="list-style-type: none"> <li>• Water supply and availability</li> <li>• Expense of chemical toilets</li> <li>• Children falling into latrines</li> <li>• Lack of sewers infrastructure due to apartheid spatial planning</li> <li>• Challenges associated with upkeep of reticulated sewer systems.</li> </ul>	
Describe the target audience	
Water Service Providers, Water Service Authorities, Municipalities, Companies involved in manufacturing water products, DWS, DBE, DPW	
Name of Session Facilitator (chair) and Organisation	
Dr Sudhir Pillay	Water Research Commission
List the names and topics/titles (plus time allocation) of each presenter	

Activity	Presenter	Time (min)
Welcome and purpose of Workshop	Sudhir Pillay (Facilitator & Chair)	10
Provision enabled through Sanitation Innovation – A Municipal Perspective	Lungi Zuma – eThekweni	15
Field Testing New Sanitation	Rebecca Sindall - UKZN	15
SASTEP: Creating an Enabling Ecosystem for Sanitation Disruption	Akin Akinsete - WRC	15
Creating a Municipal Enabled Environment through the Industrialisation and Commercialisation of Sanitation Disruptors	Ms C Twala	15
Discussion		20

What is the expected outcome of this session and what impact on the water sector do you expect to have (max 60 words)

We expect the workshop to inspire service providers to apply innovation in accelerating sustainable sanitation services. We also expect to instil confidence to service providers that approaches disseminated have undergone scientific rigour in order for them to be adapted and applied in their jurisdiction.

Detailed workshop programme:

### **Sanitation Disruption: Creating a new Sanitation Paradigm based on Circular Economy Principles**

Since 1994, large-scale government-sponsored infrastructure programmes have been implemented to build ventilated improved (VIP) latrines to achieve national service delivery goals in South Africa. Current estimates show that around a third of the entire South African population rely on VIP toilets and related systems. Research undertaken by the Water Research Commission (WRC) has shown that the system eventually fill with faecal sludge that needs to emptied, transported and subsequently disposed. Current guidelines for sludge disposal recommend disposal via land disposal routes, specifically those that accept microbiological hazards. This is neither practical nor cost-effective considering the wide distribution of latrine technologies. From a social perspective, latrines are often viewed as an inferior toilet system compared to flush toilets and are subject to misuse. Coupled with the lack of servicing, many of the infrastructure deteriorates beyond normal serving operations and subsequently requires new infrastructure to be implemented.

New approaches must be found to deal with sanitation challenges that encompasses user aspirations and addresses current technical constraints, such the availability of water and energy, affordability of services, and the capability to effectively deal with accumulating faecal sludges. Although flushing toilets are usually viewed as the 'gold standard' among users, the systems and technologies associated with it are not possible to implement throughout South Africa. The new paradigm for sanitation is based on

technology disrupters of on-site sanitation options which can safely treat human excreta without the need for sewers and reliance for external water and energy supplies. Through innovation and smart chain supply, universal access can be achieved sustainably and linked to water security and business opportunities. The new paradigm moves away from the current linear sanitation design approaches – capturing, transporting, collecting, treating and disposing of human excreta – to a holistic model that shortens the management chain through innovative hardware which treats human waste where it is generated or off-the-grid. Hardware is only one aspect; there need to policy and regulatory enablers to drive the uptake of new technology while social studies are required to understand how users react to new sanitation.

This workshop will provide evidence towards moving towards a new sanitation paradigm and provide an update of inter-departmental initiatives designed to provide an enabling environment for new sanitation. The workshop will also provide insight and learning from technology demonstration programmes hosted in South Africa which examines user feedback, process performance, durability and ease-of-operation.

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