

Bring on the RevoluSAN.....

South Africa's response to next generation sanitation



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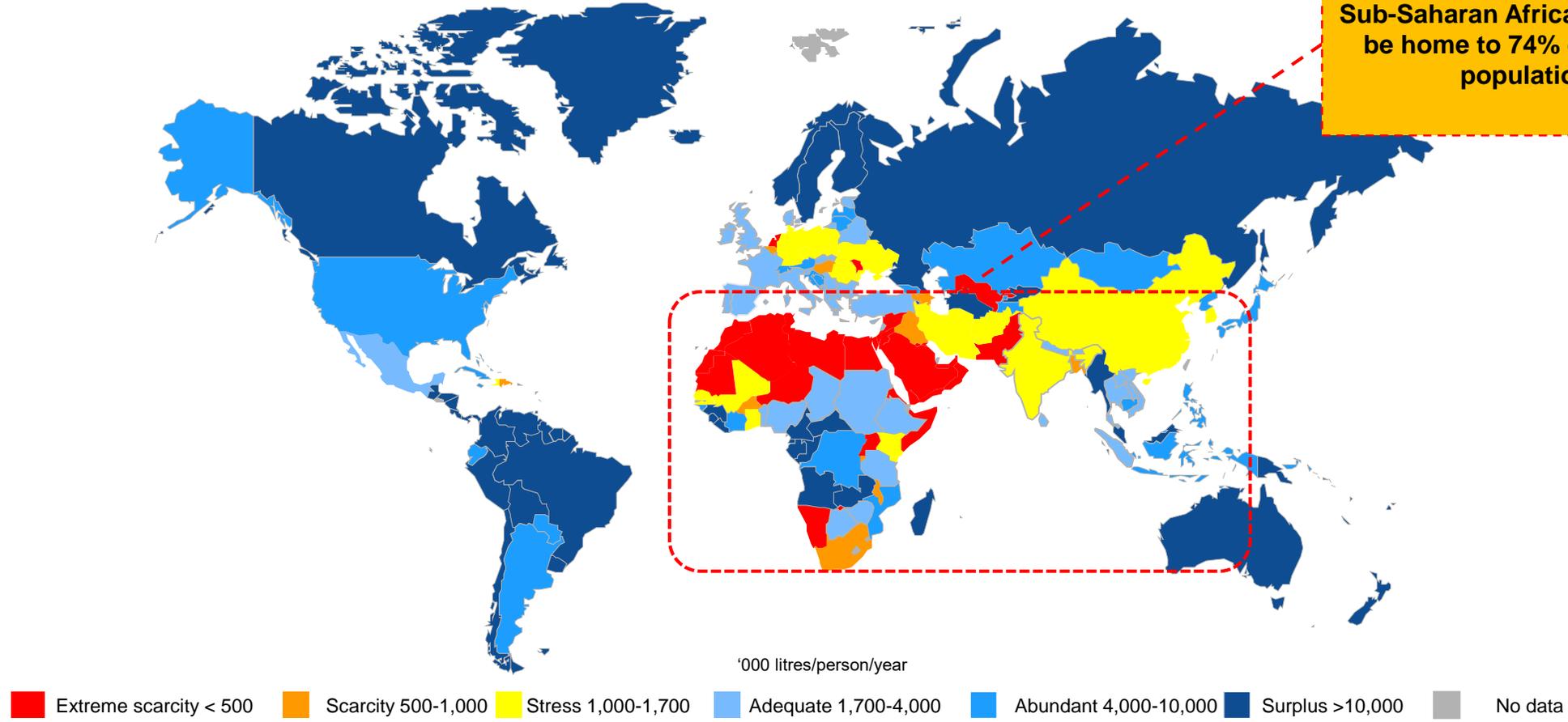
Water Research Commission, South Africa



WATER SCARCITY IS NOT DRIVING CHANGE !!!!

Future: 2030

Sub-Saharan Africa & Asia will be home to 74% of world's population



Twin challenges

- **Rapid urbanization** – massive growth in cities in the global South; means more water for their needs and more waste
- **Climate change** – increased weather variability
- **Problem** is that our pattern of urbanization and with it pattern of water-waste management is **highly resource intensive; capital intensive**
- Leading to inequity; unsustainability



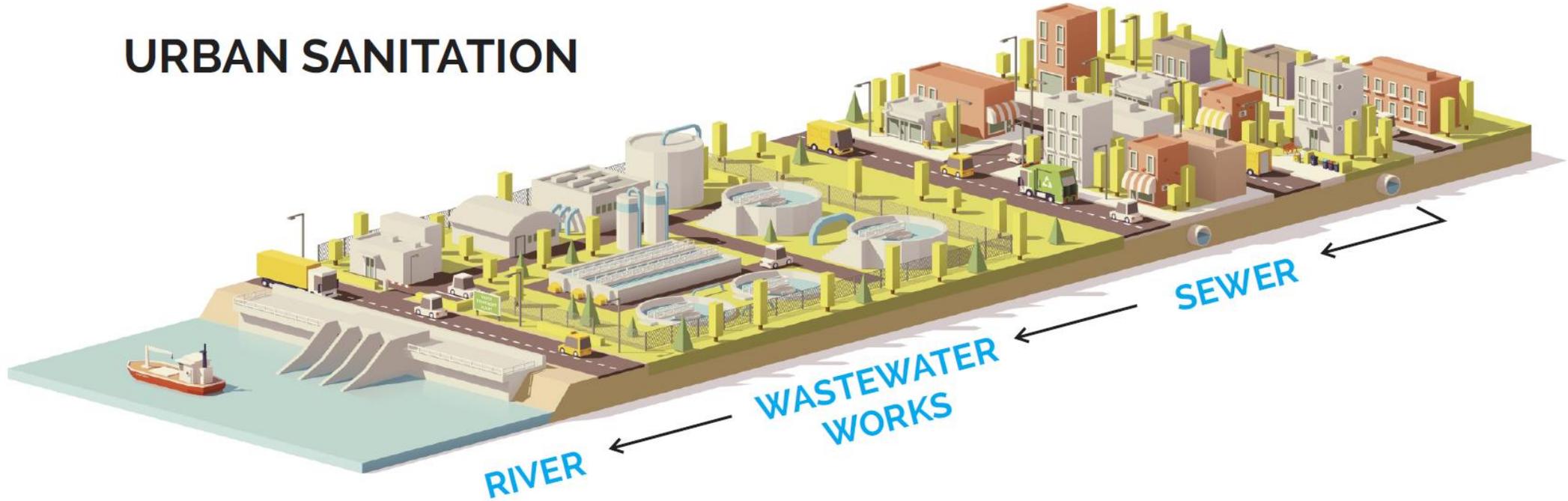
**NOT
ALONE**

**But
inevitable?**

Source: Dr Sunita Narain, CSE India



URBAN SANITATION



RURAL SANITATION



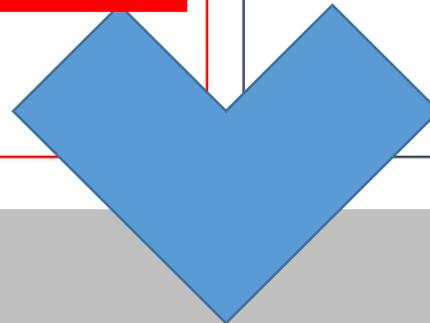
Current Binary Model

Conventional WWTW

- FLUSH-&-FORGET
- Considered “gold standard”
- Resource intensive (Capital, Sewers, Water, Energy, etc.)
- Challenge to meet urbanisation & population growth
- Expensive & beyond reach of developing countries
- Established technologies (discharge regulations, guidelines, policies, etc.)

On-Site Sanitation

- DROP-&-STORE
- Most prevalent tech in SSA
- Little / no water
- 5-50% cheaper (than activated sludge)
- Can be scaled at urbanisation rates
- Faecal Sludge Management – lack of policies & standards, disposal routes, O&M overlooked.
- Viewed as “temporary” solution



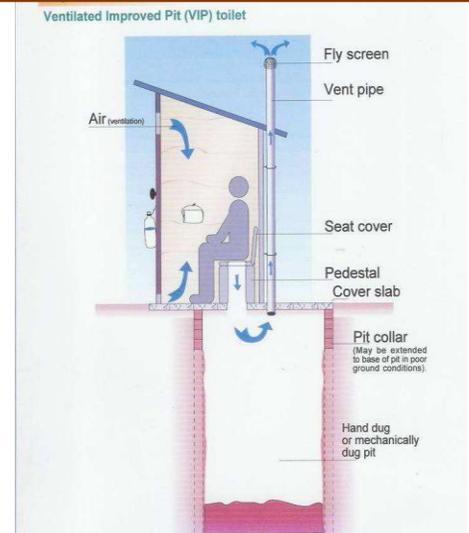
SOLUTION??



Gold Standard



Hole Standard





Source: Johnny Miller

Current solutions full of problems

Hanging toilets



Pit latrines



Chemical solutions



Flush: Septic tank



Flush: Sewer



Foul odors

Poor user experience

Potential safety concerns

Risk of environmental contamination

Frequent maintenance

Poor waste disposal

Difficult to retrofit

Risk of leakage

Expensive

Needs running water

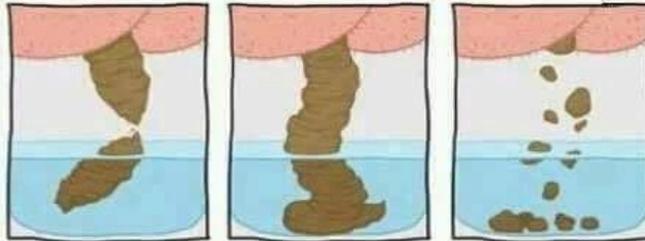
Requires infrastructure

Time consuming to build



150 to 200 grams

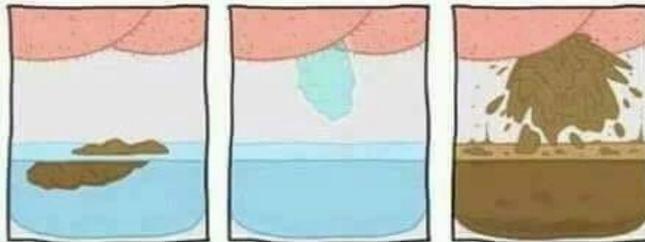
Types of Poop



The Titanic

The Snake

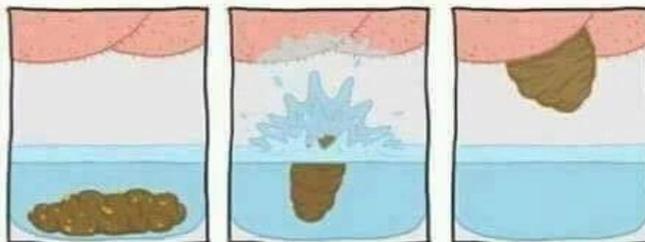
The Deer



The Floater

The Phantom

The Explosion



The Submarine

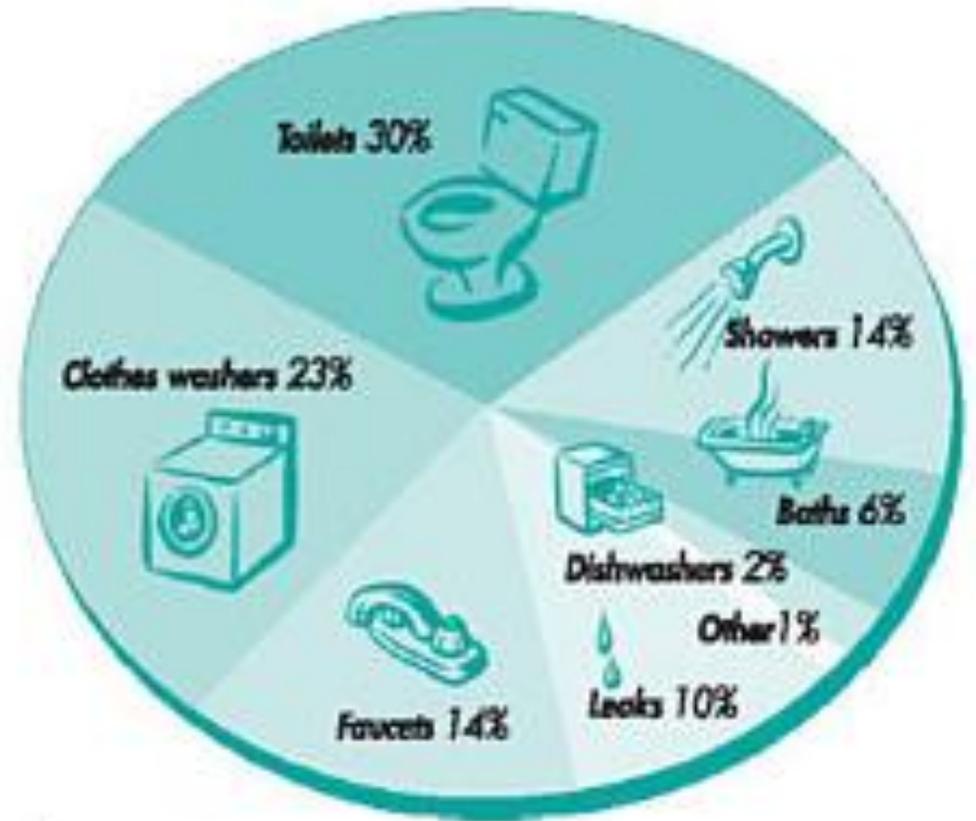
The Splashback

the Childbirth



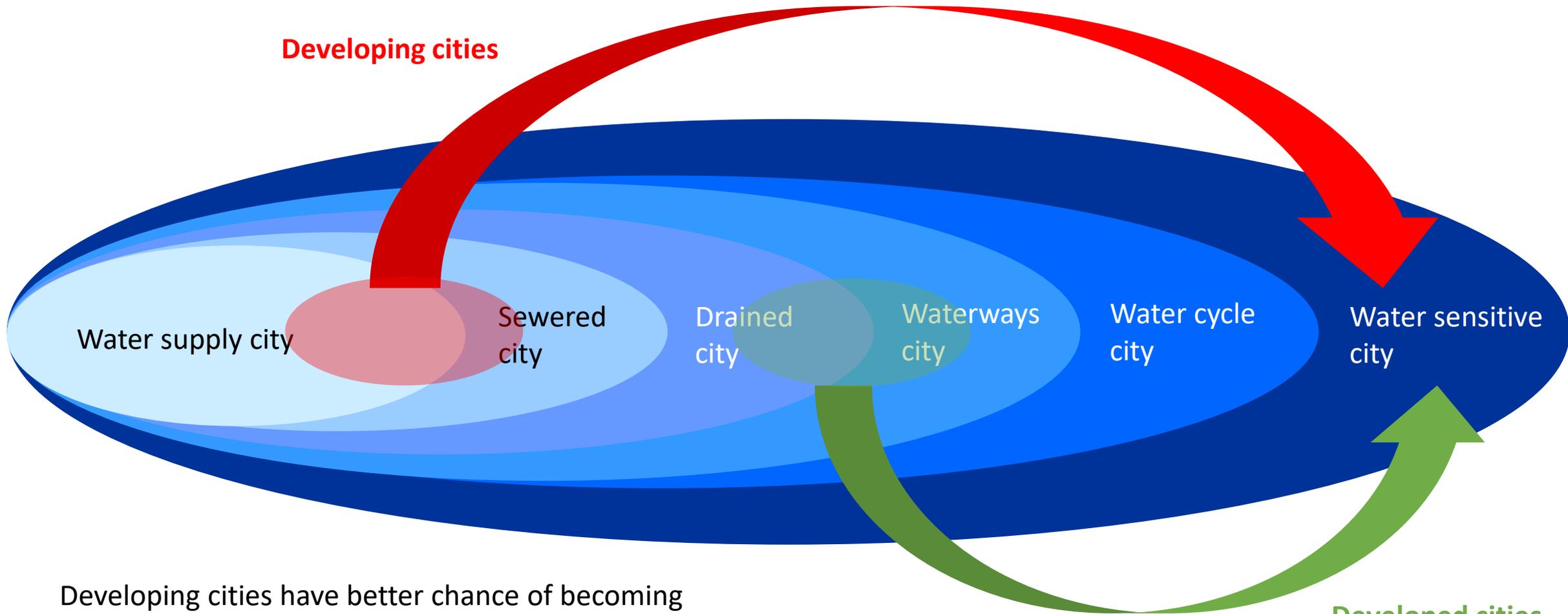
We have subjected nearly 200l per capita per day to pollution

- An individual flushes the toilet on average 6 times a day
- Uses a flush volume from 4 to 13 litres per flush (That's nearly 25 to 35% of domestic use)
- That to move around 150g to 200g of human wastes
- Then we use another 150 to 200l per capita to convey it down the sewer



* Source GVRD



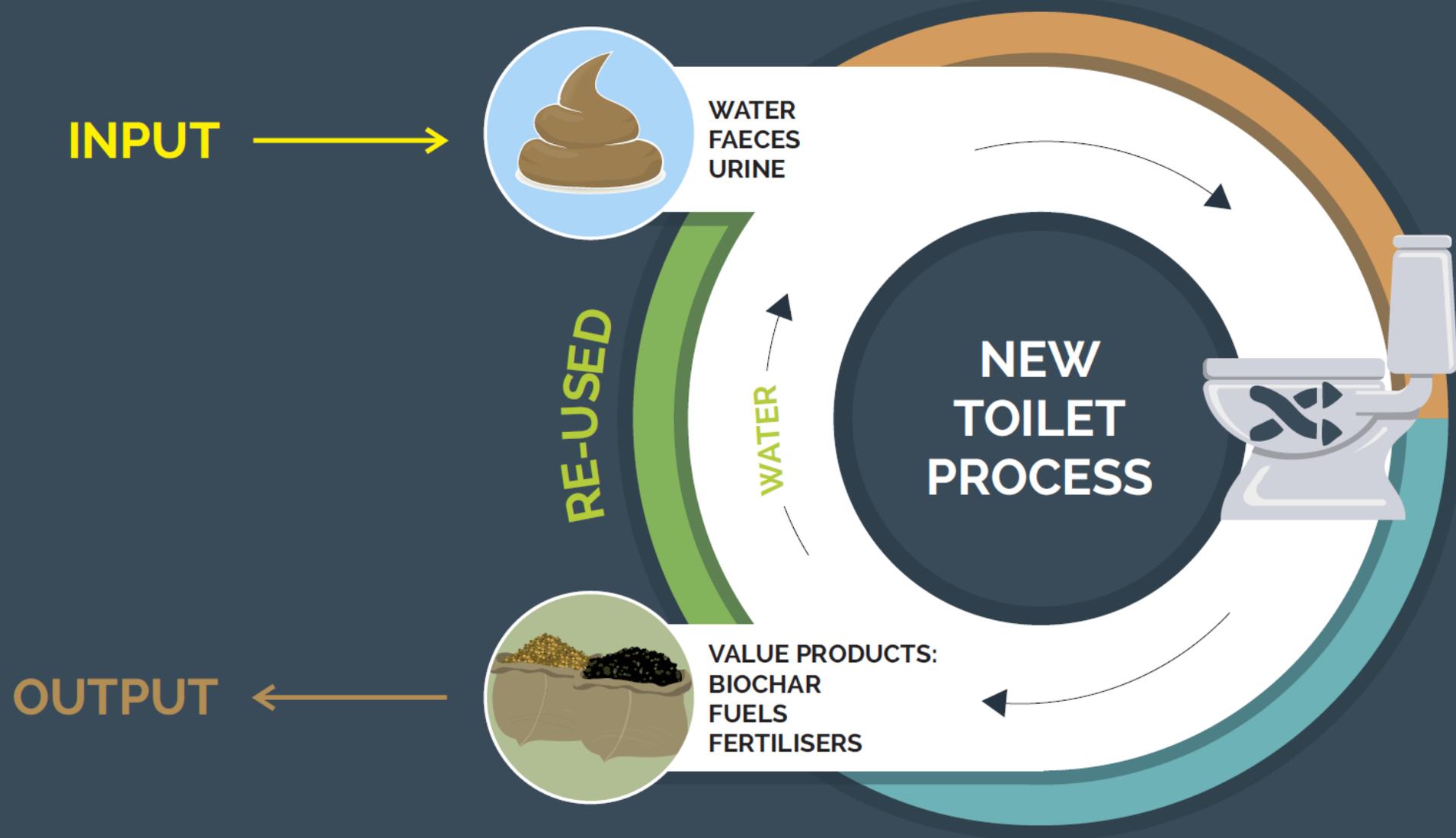


Developing cities have better chance of becoming Water sensitive since they have not heavily invested into old single-purpose systems

Developed cities

**Sanitation
Transformation
Initiative**





INPUT



WATER
FAECES
URINE

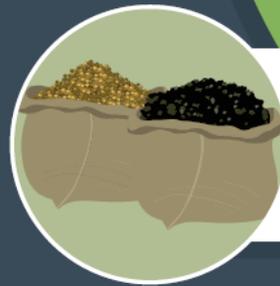
**NEW
TOILET
PROCESS**



RE-USED

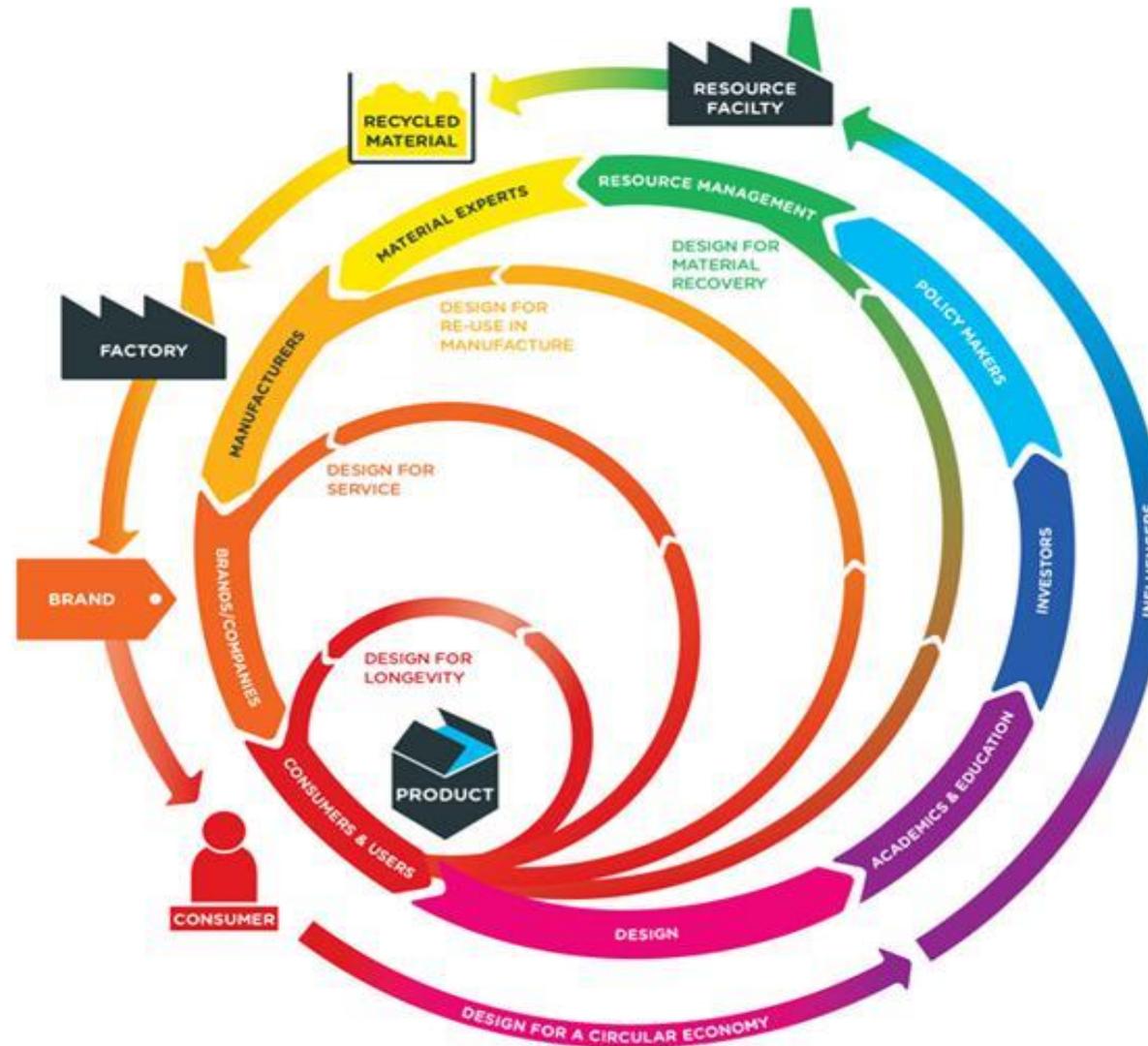
WATER

OUTPUT



VALUE PRODUCTS:
BIOCHAR
FUELS
FERTILISERS

New Sanitation Model CAN STIMULATE A CIRCULAR ECONOMY



SANITATION ACADEMY
Building the next generation and cohort of sanitation professionals

INDUSTRIAL PATHWAY

- Industrial information platform
- establishing manufacturing platforms
- Distribution logistics
- Servicing models
- Creating markets



SASTEP

- EFT
- Demonstration
- Market and manufacturing studies

POLICY

- Sanitation White Paper
- Political will
- IPAP
- WATER RDI

TECHNOLOGY STANDARD & REGULATIONS

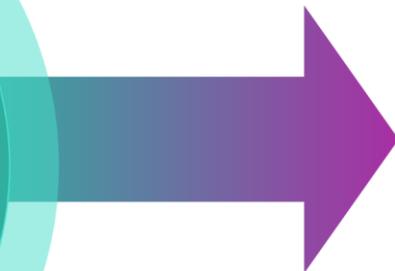
- ISO 30500
- SABS Draft
- NBR

Non-sewered Sanitation



Municipal Managed

Public driven model



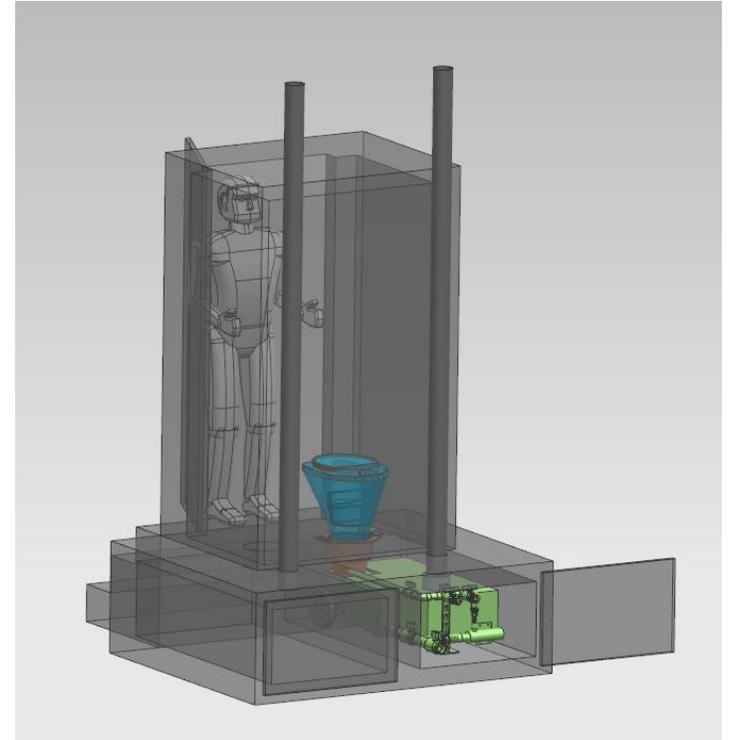
Municipal Enabled

Industry driven model

- SFD
- SSDs
- New institutional and social model
- Target behaviour change
- Valorisation and beneficiation
- New social entrepreneurial pathways

INDUSTRIAL POLICY ACTION PLAN 2017

- Next Generation Sanitation Cluster Programme
 - The establishment of the next generation sanitation CDP.
 - Development of emerging industry capable to develop new technology, within the framework of localisation.
 - Procurement and policy incentives for improved uptake.
 - Development of high-end skills for advanced thermal sanitation technologies and artisanal skills for operation and maintenance.
 - 20 SMMEs per annum post-implementation.
 - Potential 15,000 jobs at 20% market penetration for the currently unserved.



Not a Flush in the Pan – There is Impetus



EntrePOOnership

In South Africa we on our way to mine a new gold.....





Saved from dvice.com

The future is now.....
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