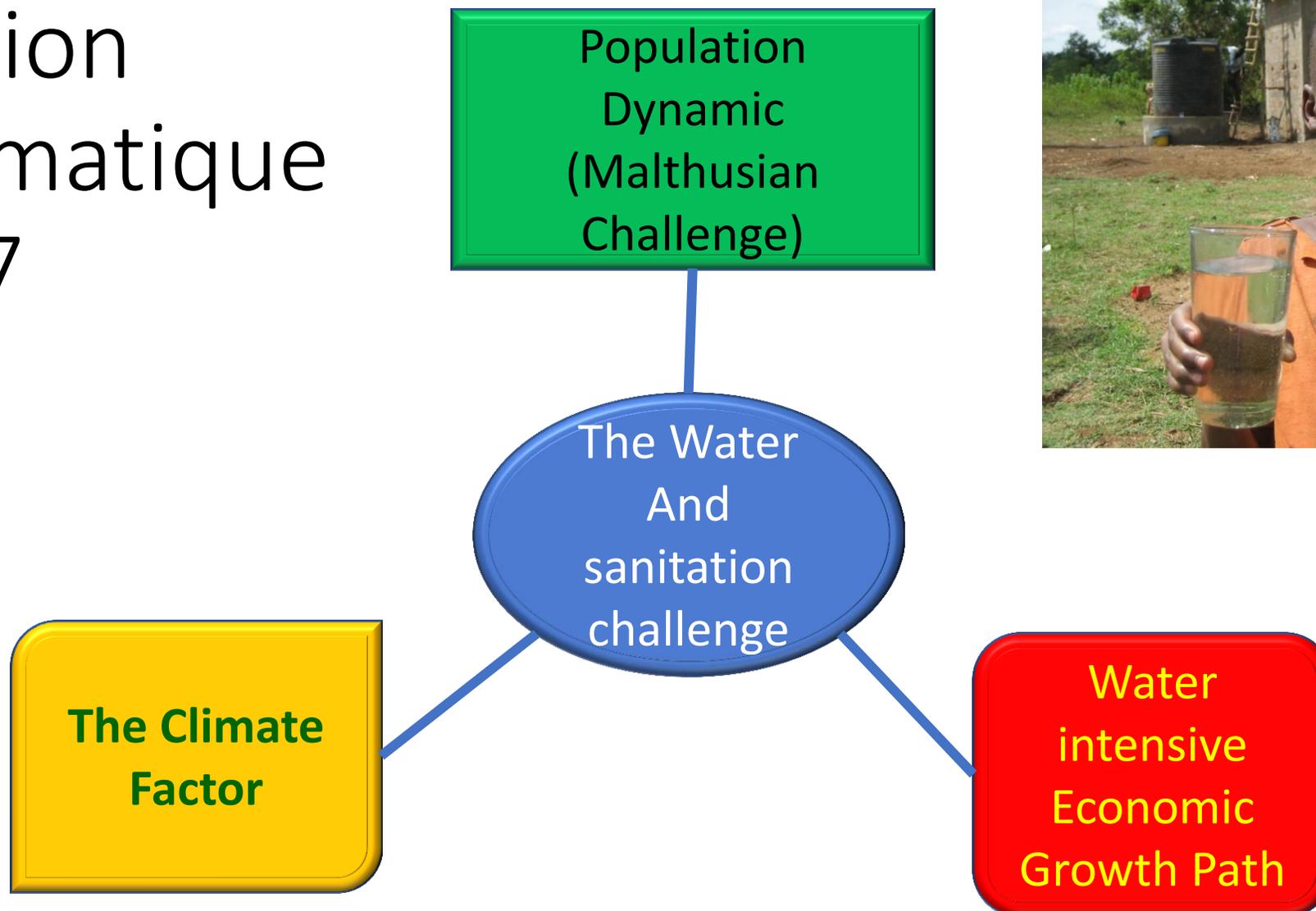
A large, artistic graphic on the right side of the slide. It features a water droplet with a rainbow reflection, from which a thick green line extends upwards and to the right. Below this, several thin, overlapping lines in shades of blue and green curve and flow downwards, creating a sense of movement and depth.

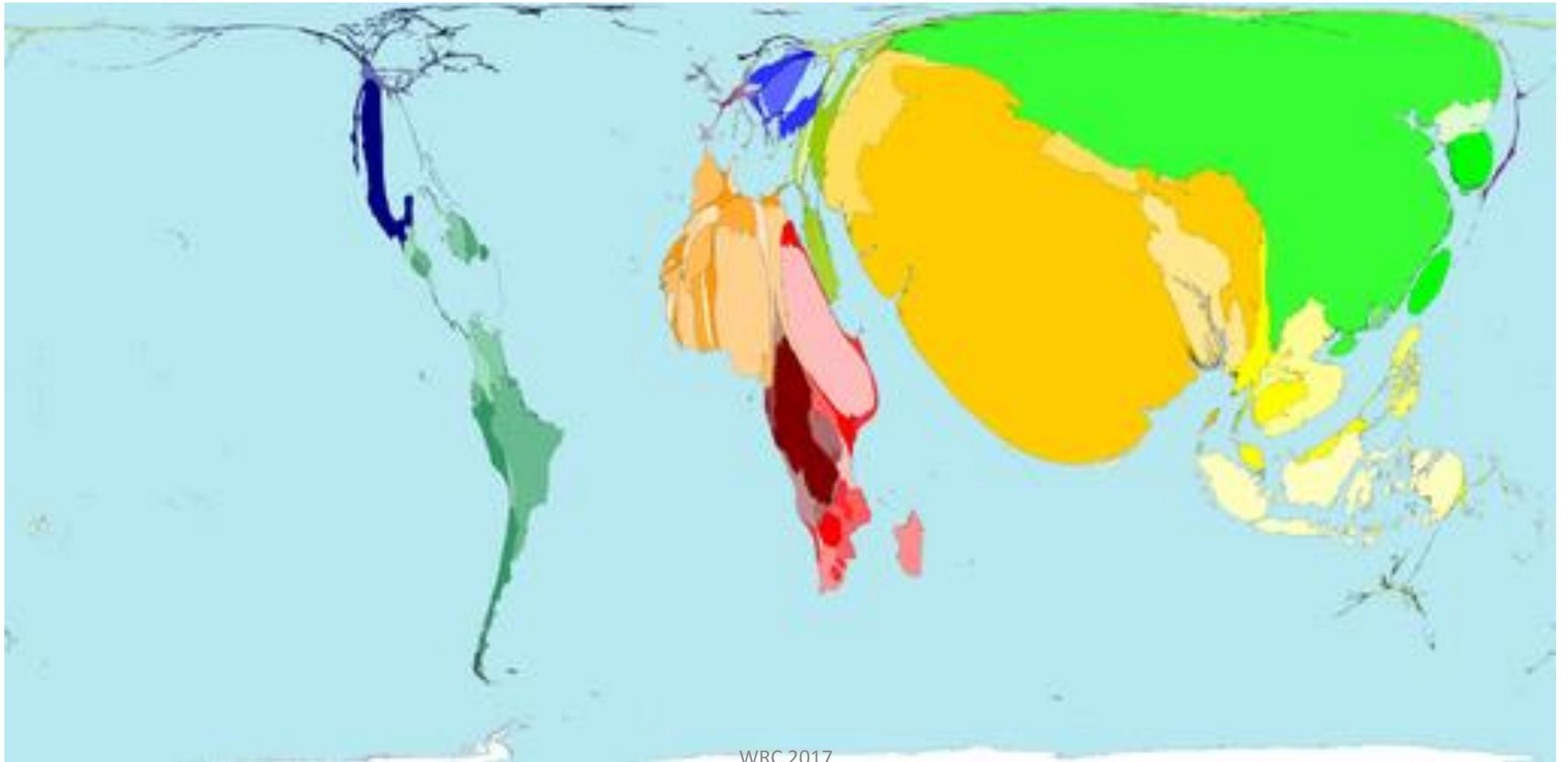
*New Sanitation : The
symbiosis opportunity*
Dhesigen Naidoo

FSM4, Chennai India
February 2017

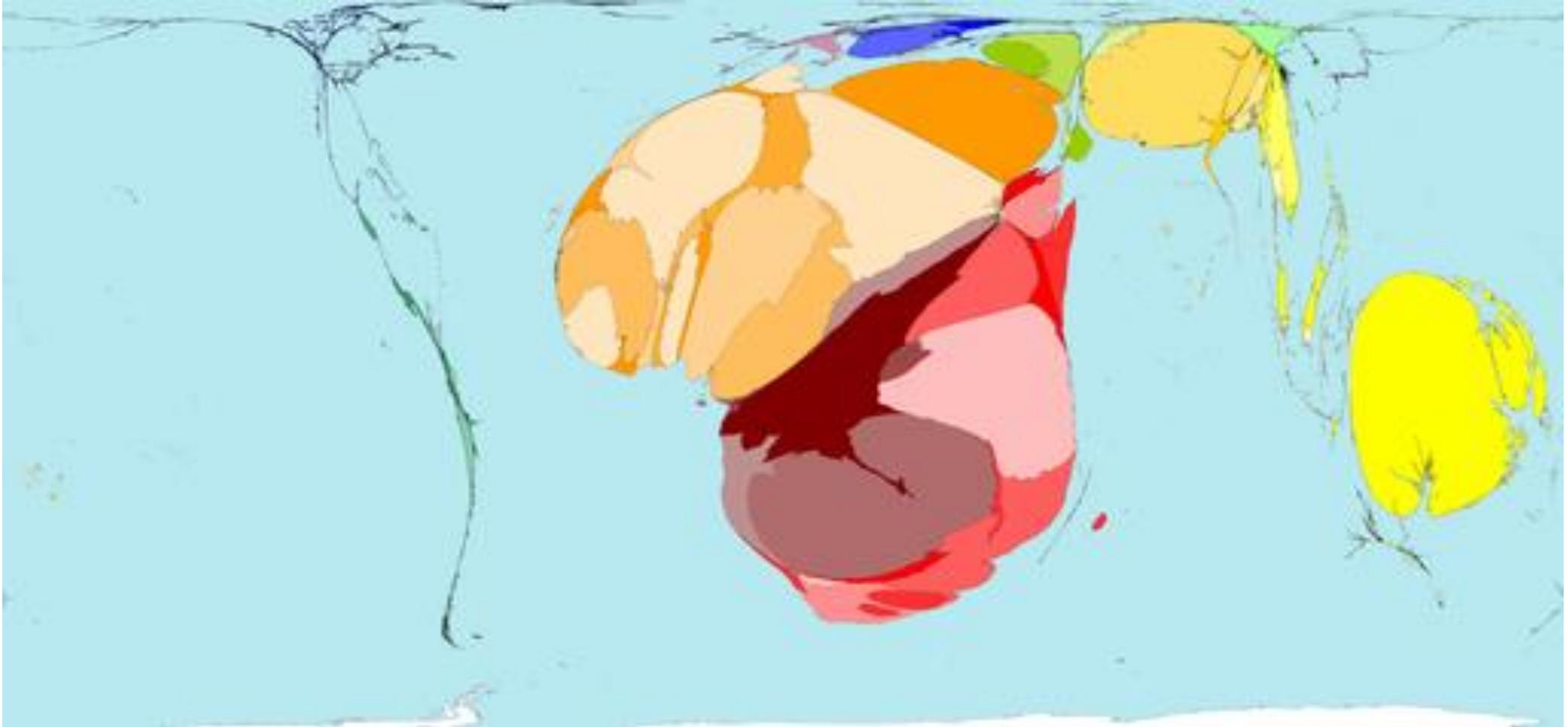
The Water and Sanitation Problematique in 2017



Poor sanitation access

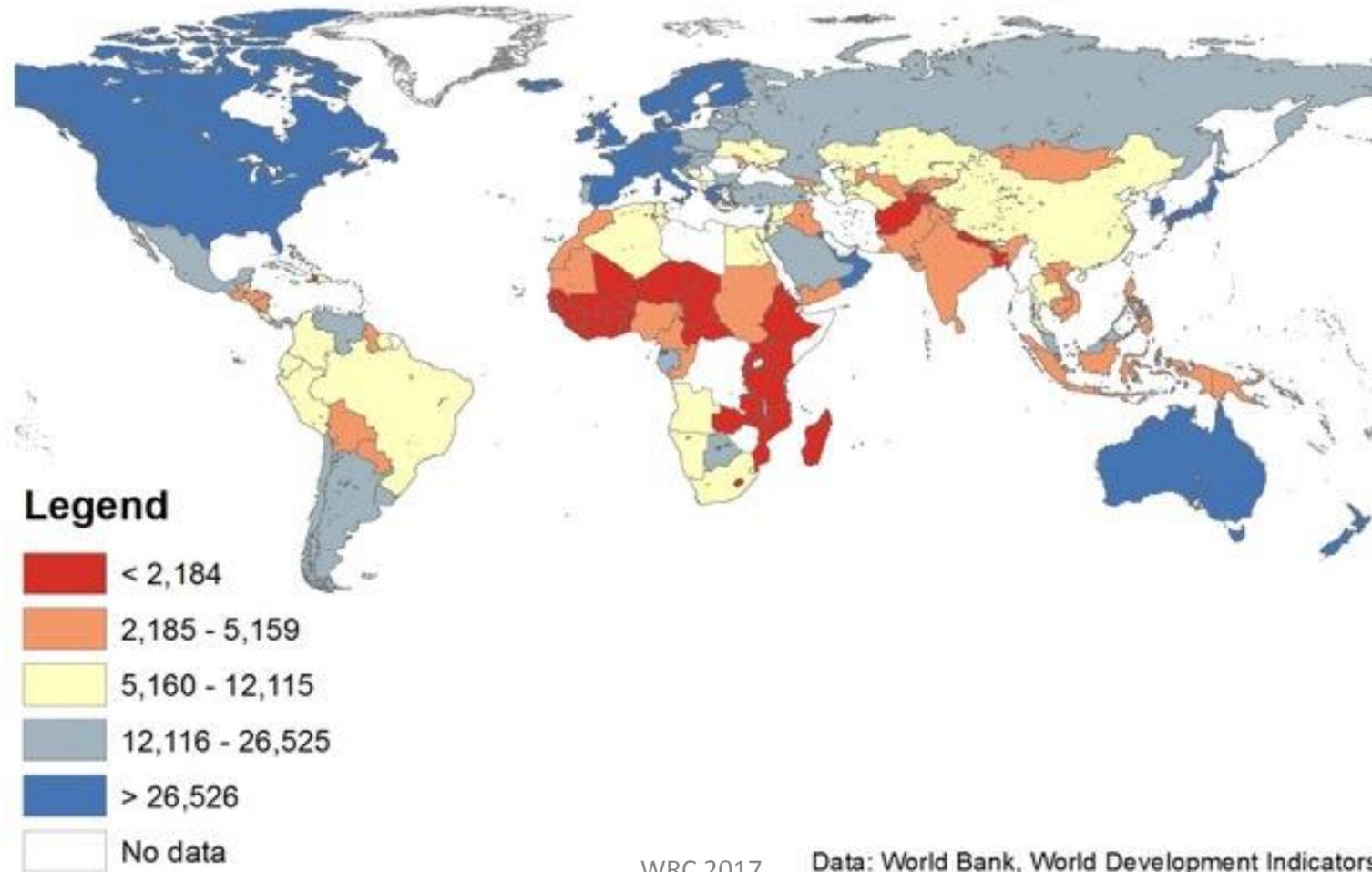


Sanitation proxy indicator – cholera prevalence - *worldmapper*

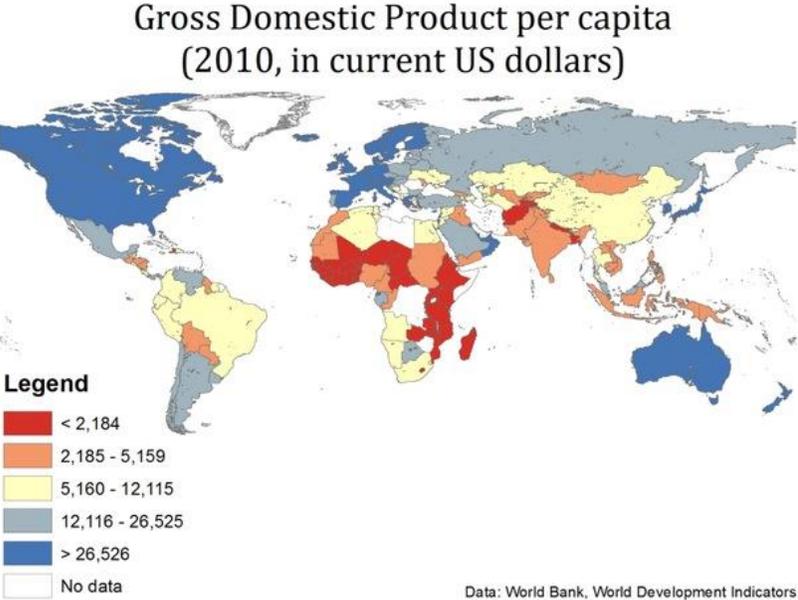


Global wealth distribution

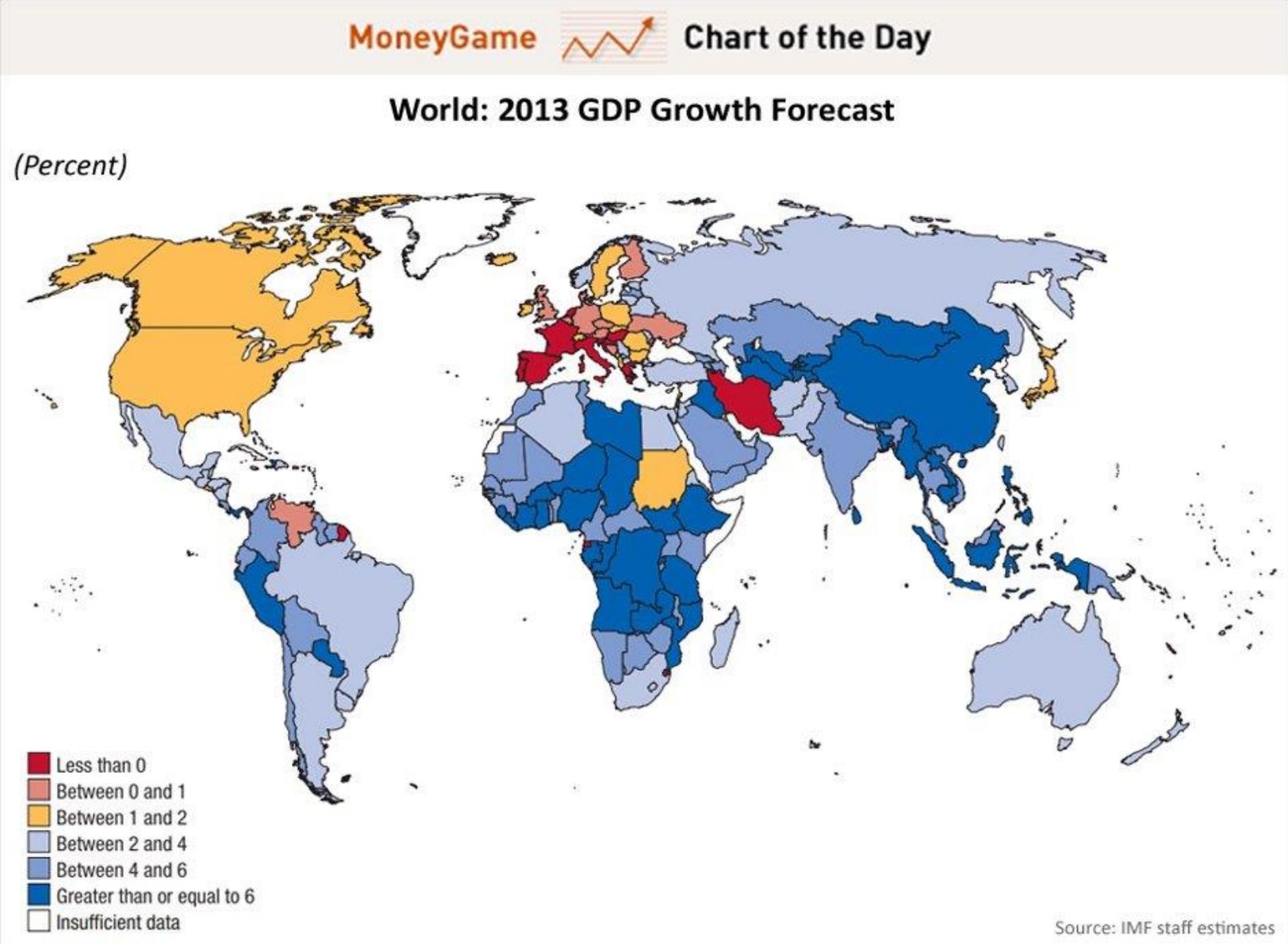
Gross Domestic Product per capita
(2010, in current US dollars)



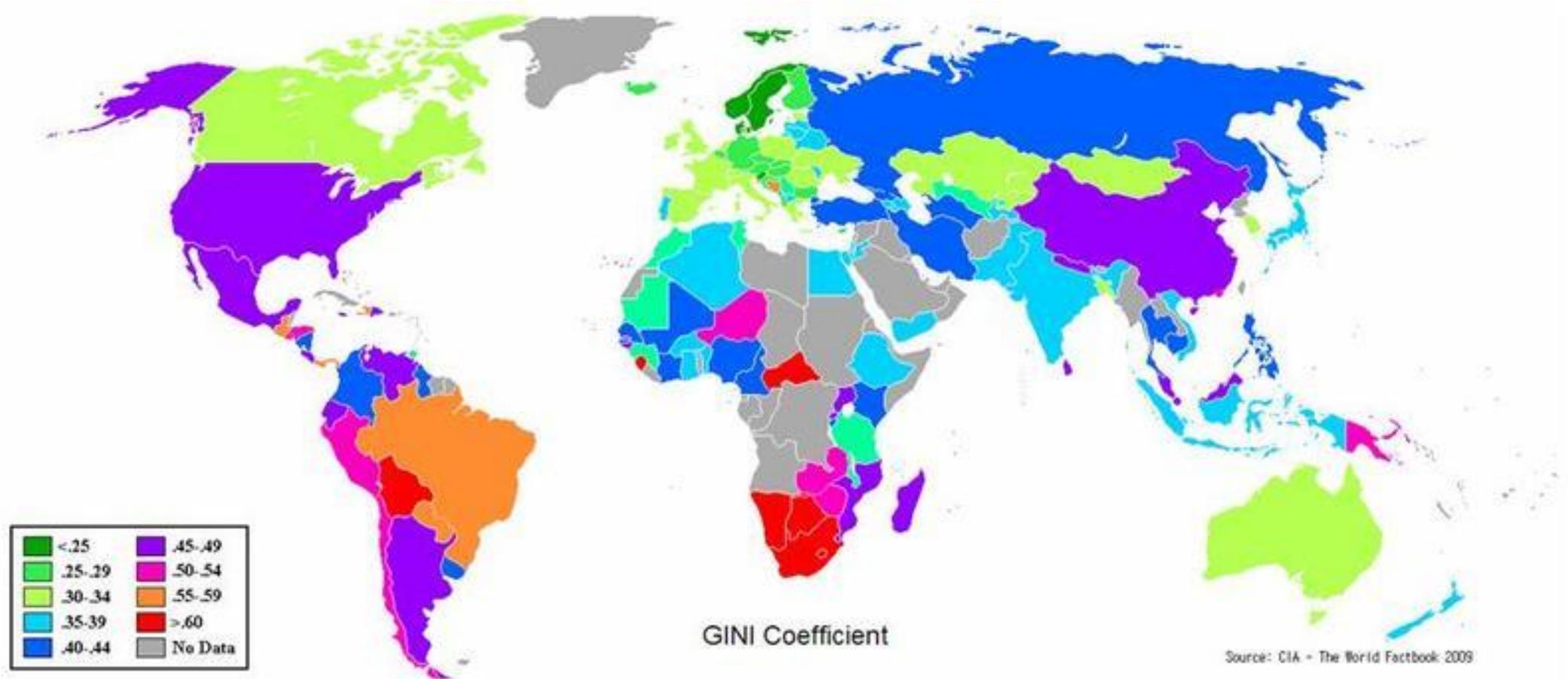
Global wealth distribution



Data: World Bank, World Development Indicators



The world by Gini co-efficient



South Africa for example

WEF Global Competitiveness Index #53/148 countries

IMF GDP ranking #30

World Bank GDP ranking #28

SA Gini ranges from 0.660 – 0.696 (dataset dependencies)

Expanding the conversation to include the Private Sector

Figure 3: The Global Risks Landscape 2017

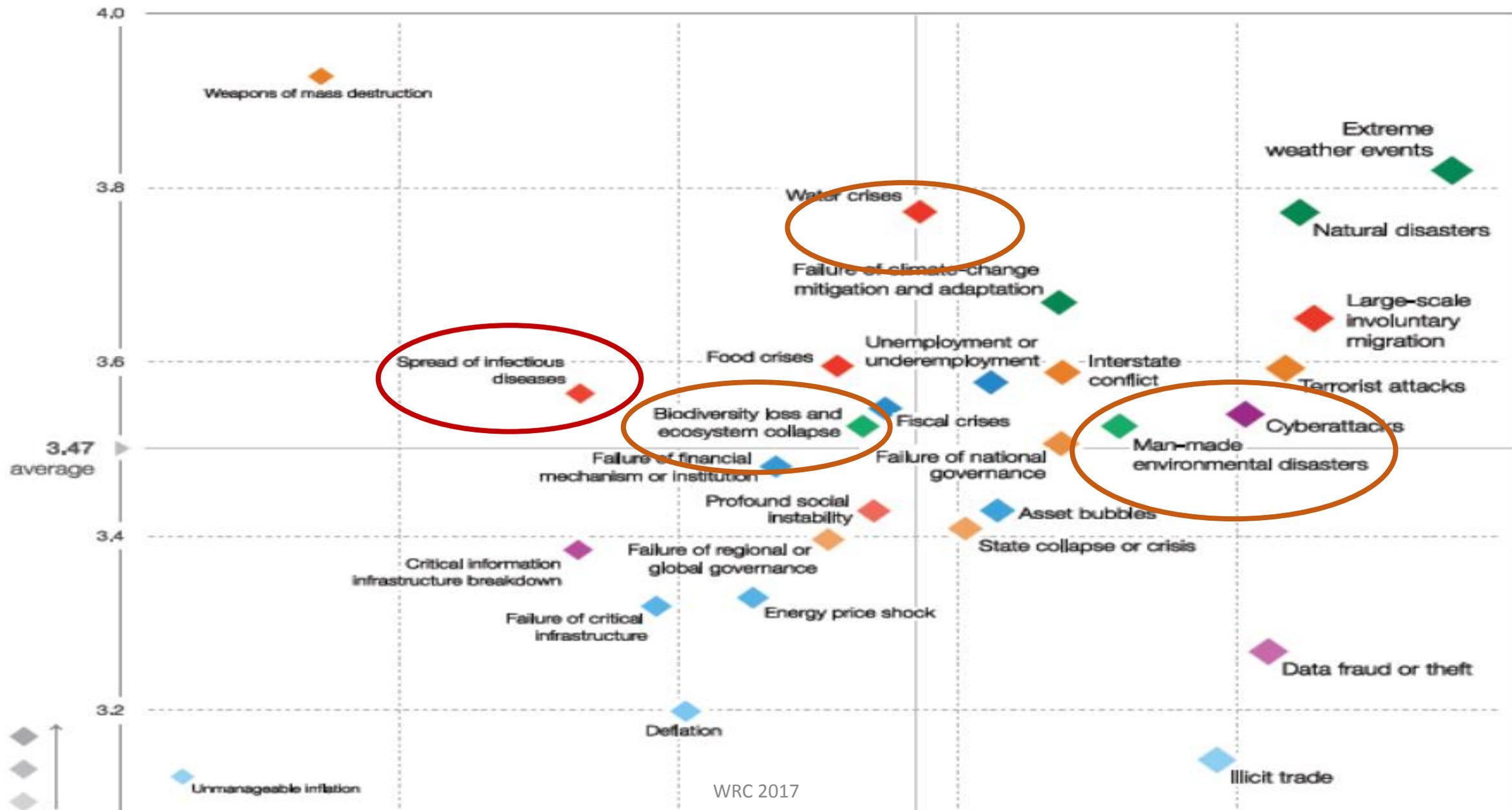
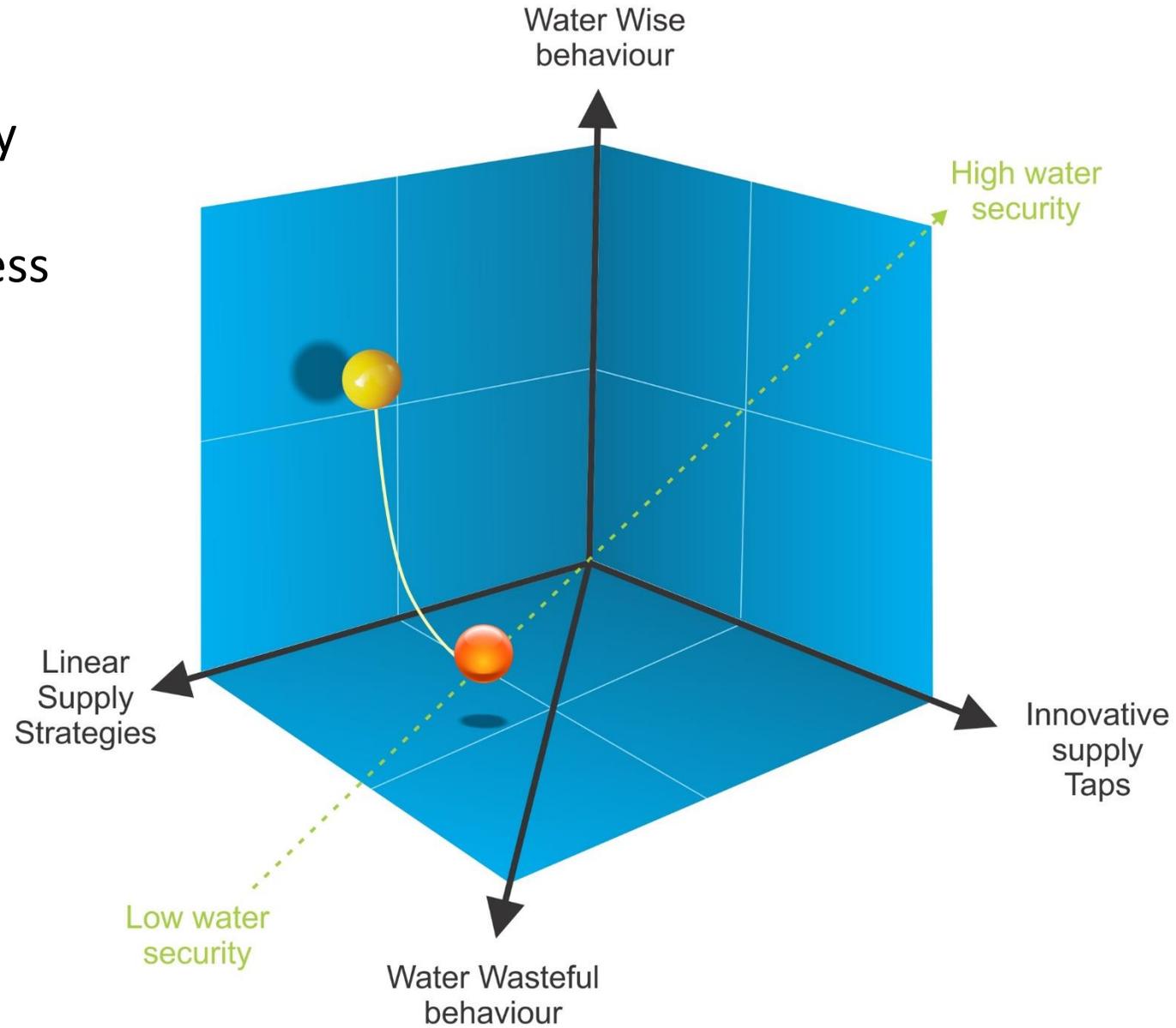


Figure 3: The Global Risks Landscape 2017



Scenarios for Success

Water as a proxy Indicator for Sanitation success



In order to address our current challenges we need to both do different things, as well as do the things we currently do, differently

R Mershalkar, former DG CSIR India





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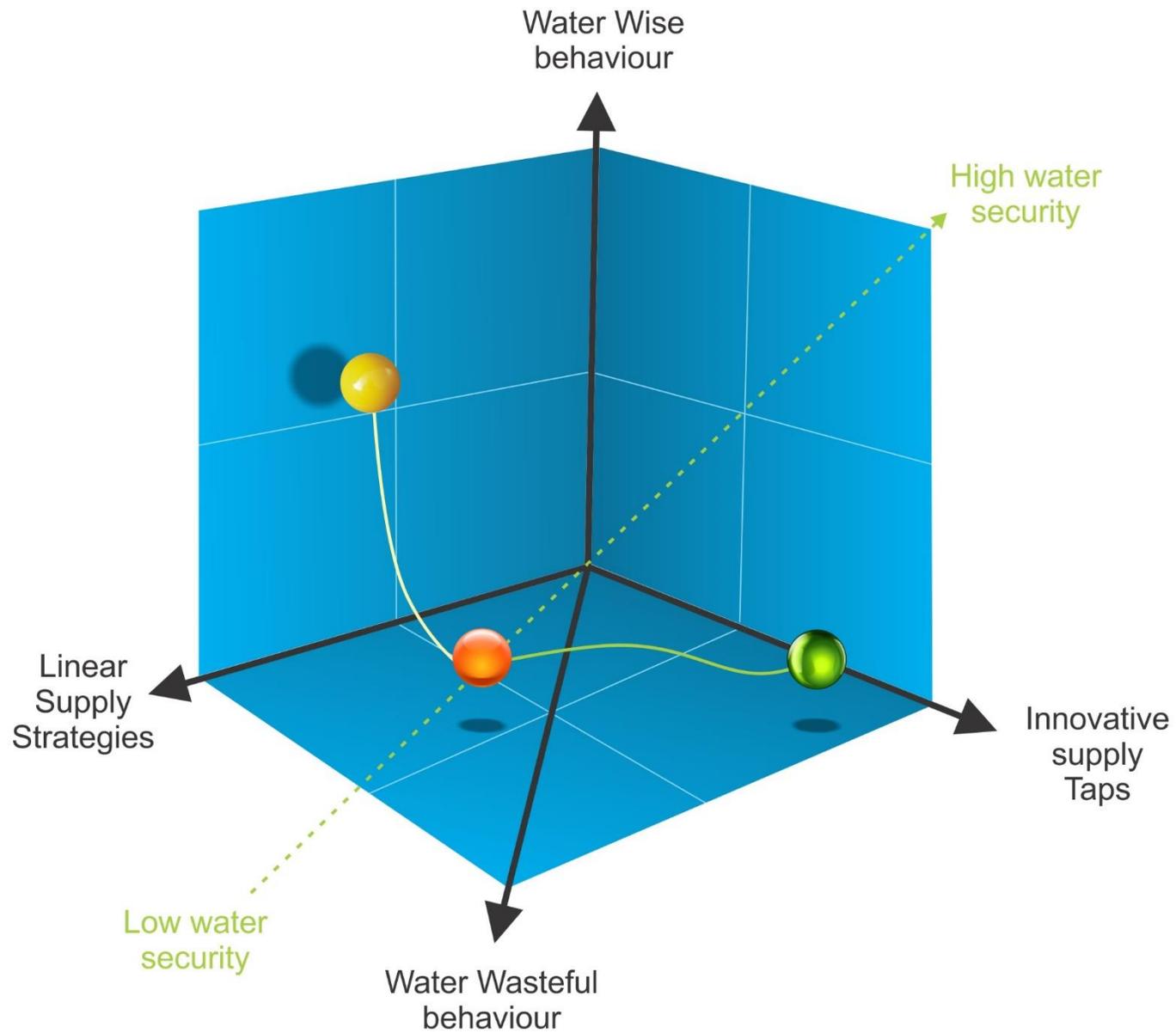
WRC 2017

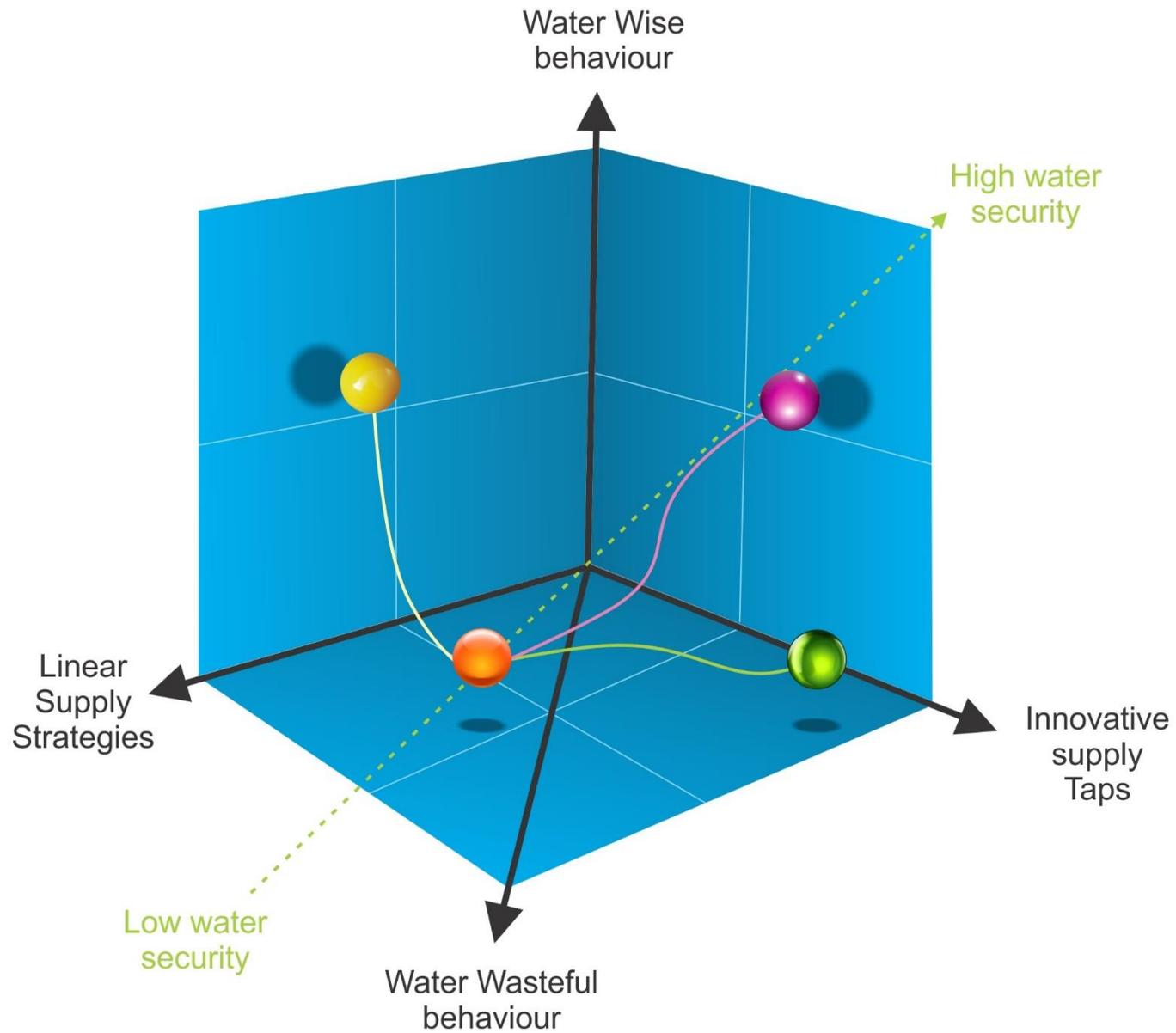


WRC 2017

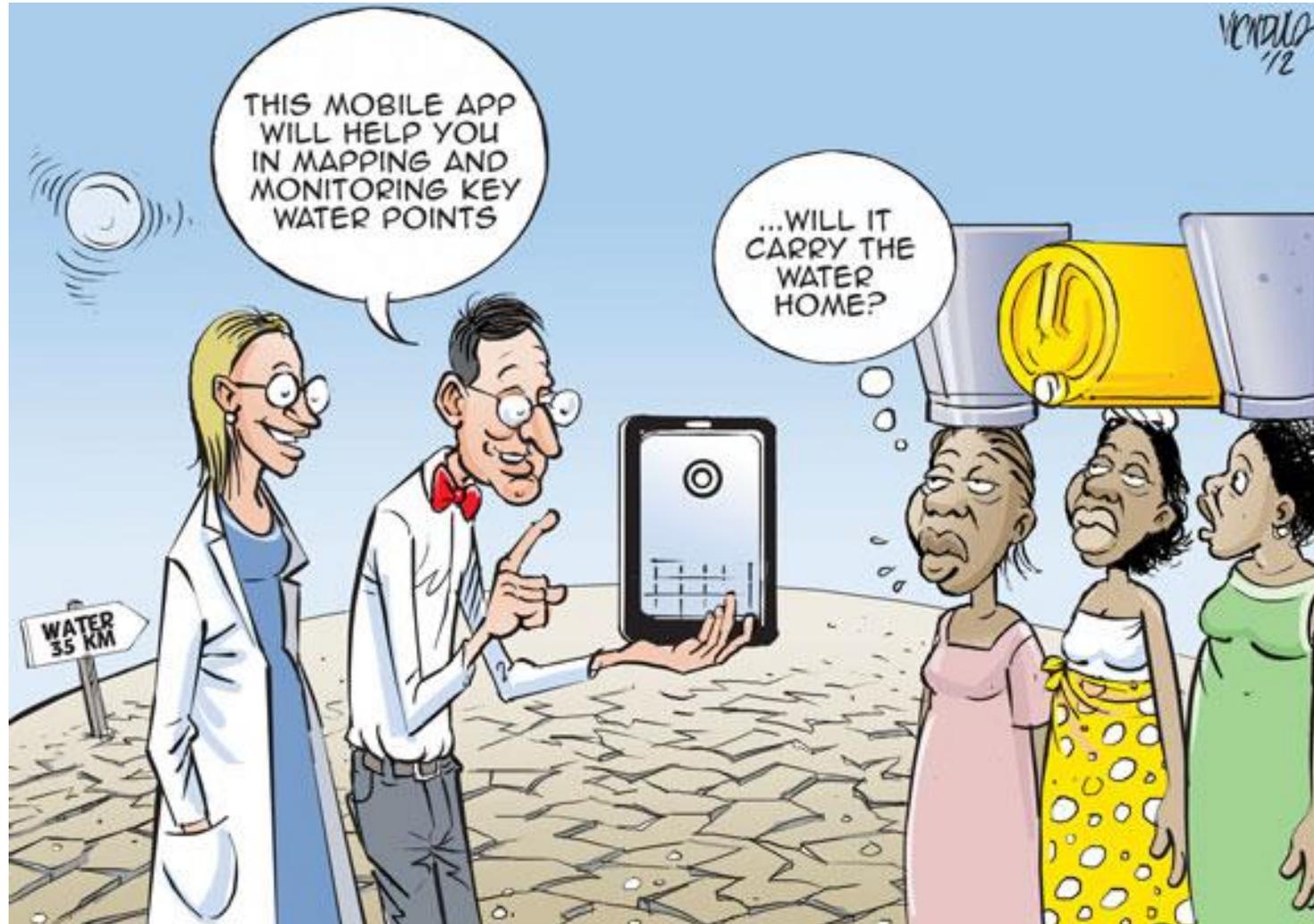


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While we are all keen to help, The intervention has to be appropriate and empowering



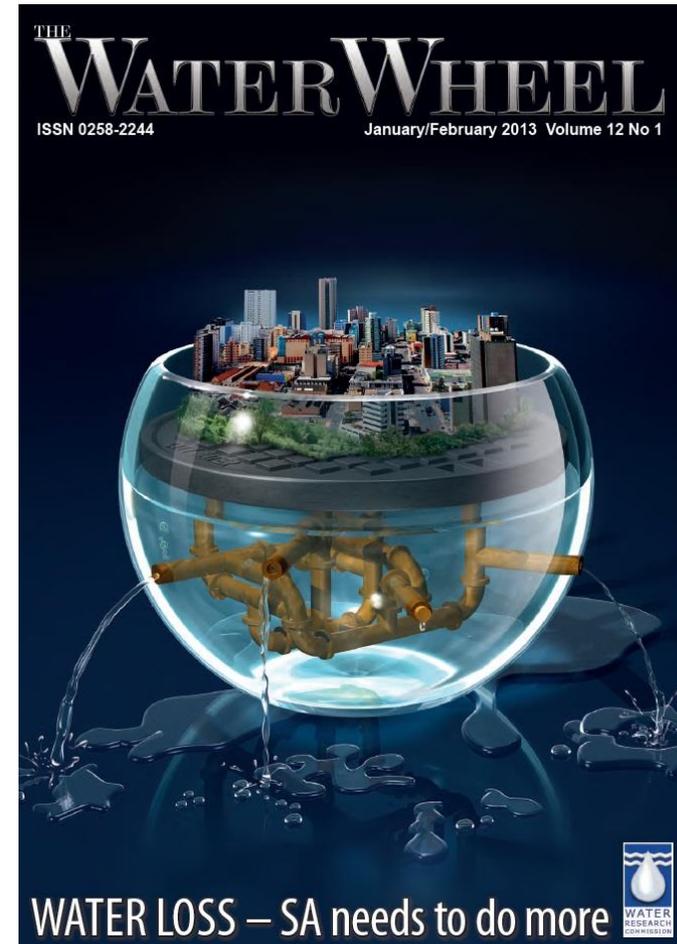
Characteristics of countries and companies with high water and sanitation security

- Good and well maintained infrastructure.
- Smart, highly aware **users** exhibiting responsible water and waste behaviors.
- Sustained pools of highly talented people managing and maintaining the system.
- High investments in **knowledge based solutions**

Tackling the Wicked Problems

Non-revenue water

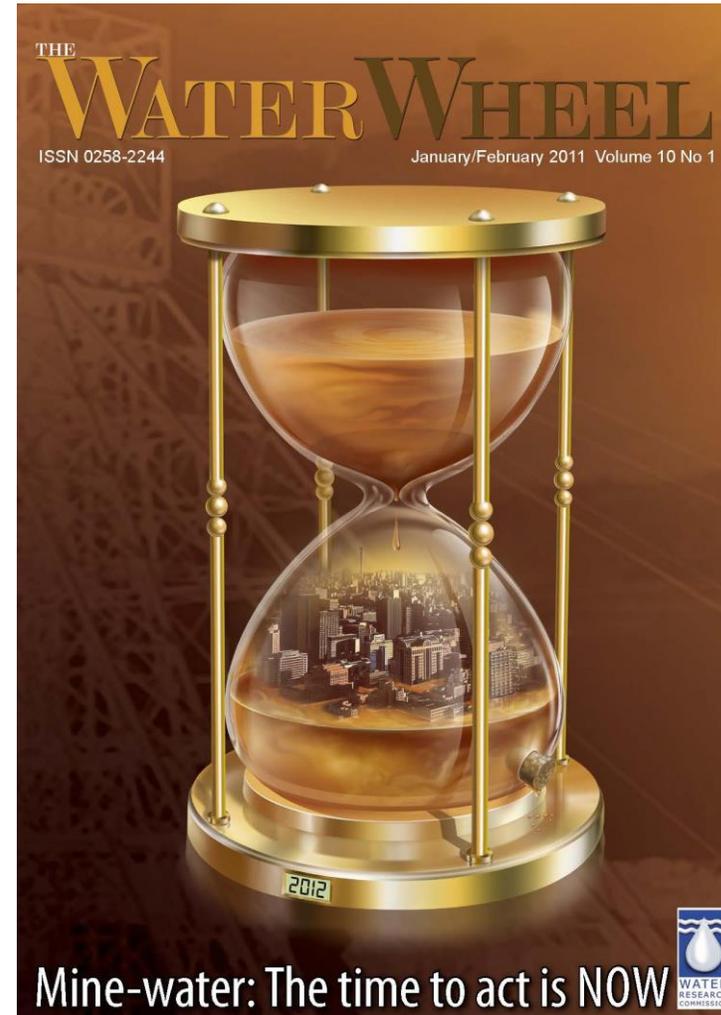
- Global average is 37%
- Tangled array of water management, poor infrastructure, bad water behaviour, weak financial management etc, etc, etc.
- To engineer the Wei Ji solution, we must embrace complexity



More Opportunities

Acid Mine Drainage

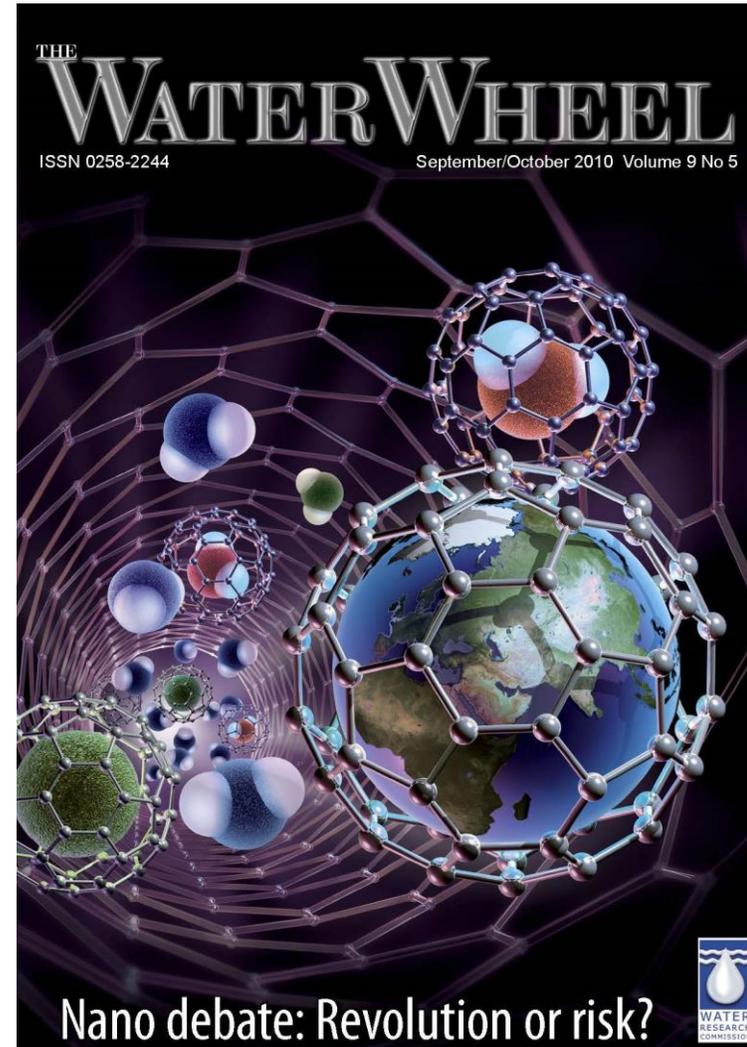
- 200 years of poor mining practices.
- Focuses the mind and has national attention.
- Opportunity for global lead on brines management.
- We have already developed world leading science and innovation.



Improving water quality as a key to FSM success

Point of use systems

- The challenge of infrastructure extension.
- A dire need to address safe drinking water for the poor.
- Point-of-use solutions on the back of nanotechnology improvements.
- A real solution for the developing world in both rural and urban areas.

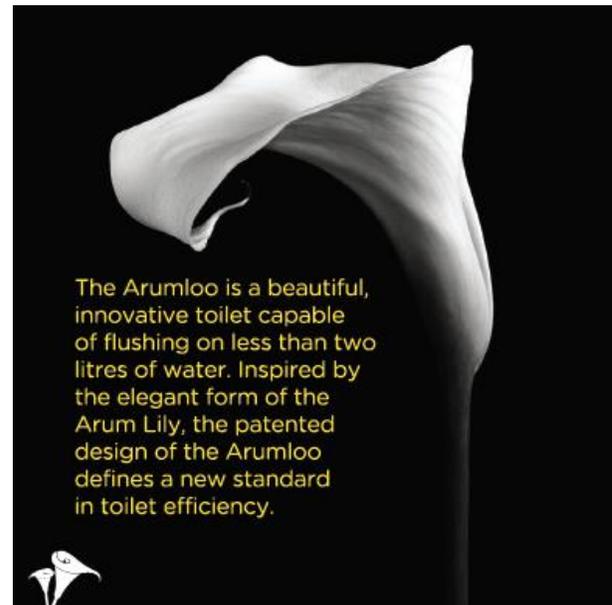
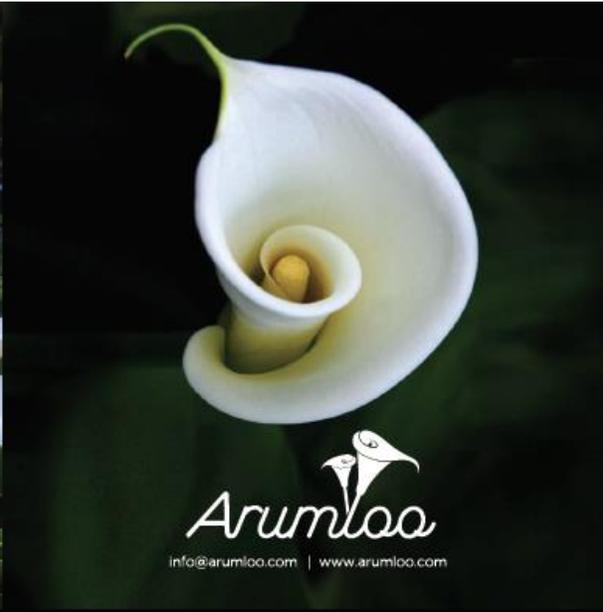
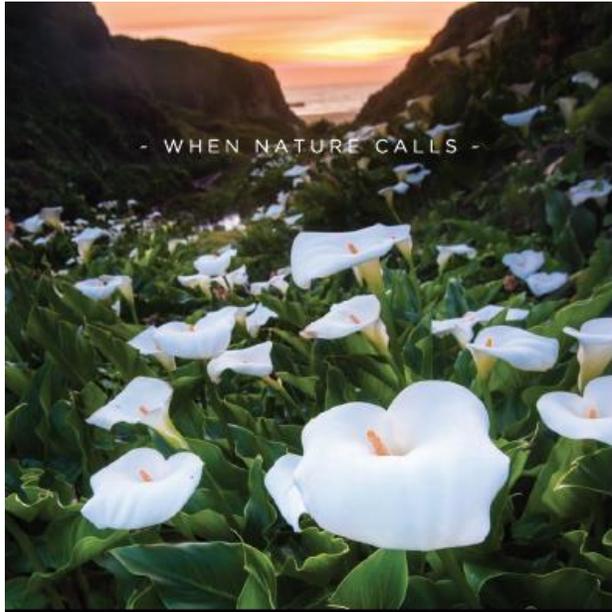




Waterborne sewage systems demand large quantities of water that can better be used for human consumption.

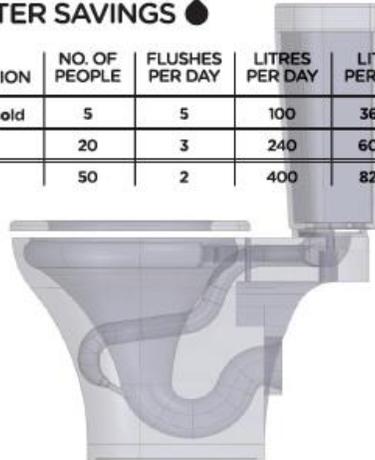
Sanitation solutions must have an ecosystem approach. The Pour Flush system example of New Sanitation dramatically reduces the catchment water burden from both a water quantity and quality perspective

Innovation - breaking through the flush barrier -1litre now.... Next 0.5



WATER SAVINGS

| LOCATION | NO. OF PEOPLE | FLUSHES PER DAY | LITRES PER DAY | LITRES PER YEAR |
|-----------|---------------|-----------------|----------------|-----------------|
| Household | 5 | 5 | 100 | 36,500 |
| Office | 20 | 3 | 240 | 60,000 |
| School | 50 | 2 | 400 | 82,000 |



ARUMLOO
INTERNATIONAL
PATENT NUMBER
WO/2016/063257 A1

Arumloo features:

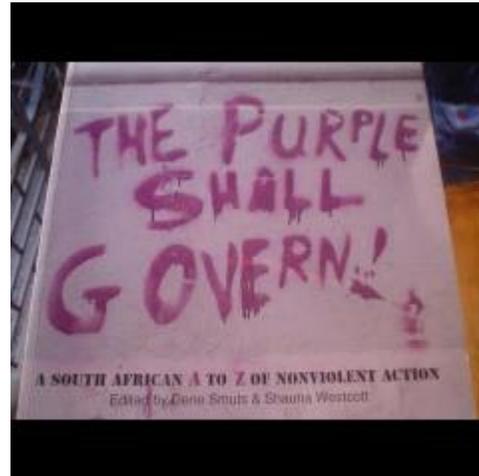
- Flushes on less than 2 litres (one third of normal flush volume)
- Superior quality ceramic toilet
- Developed in partnership with the Water Research Commission
- Flush with confidence (effective performance)
- Flush with peace of mind (reduced water footprint)
- The "greenest" low flush toilet on the market

Wastewater

- **Wastewater Treatment and Recycling** with alternative energy sources, low energy with significant energy repatriation, and special applications like Acid Mine Water.

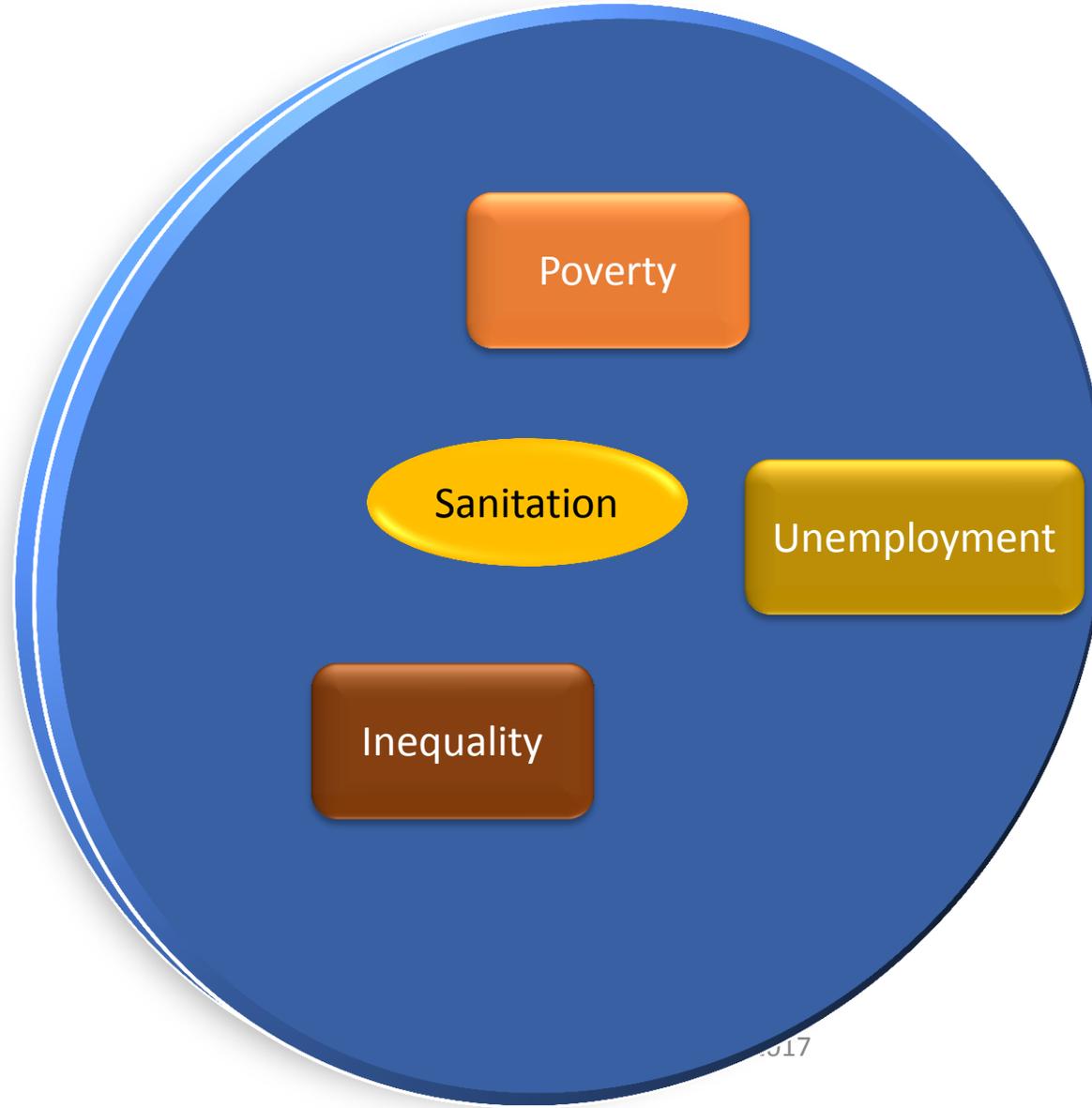


Purple revolution of the 1980s

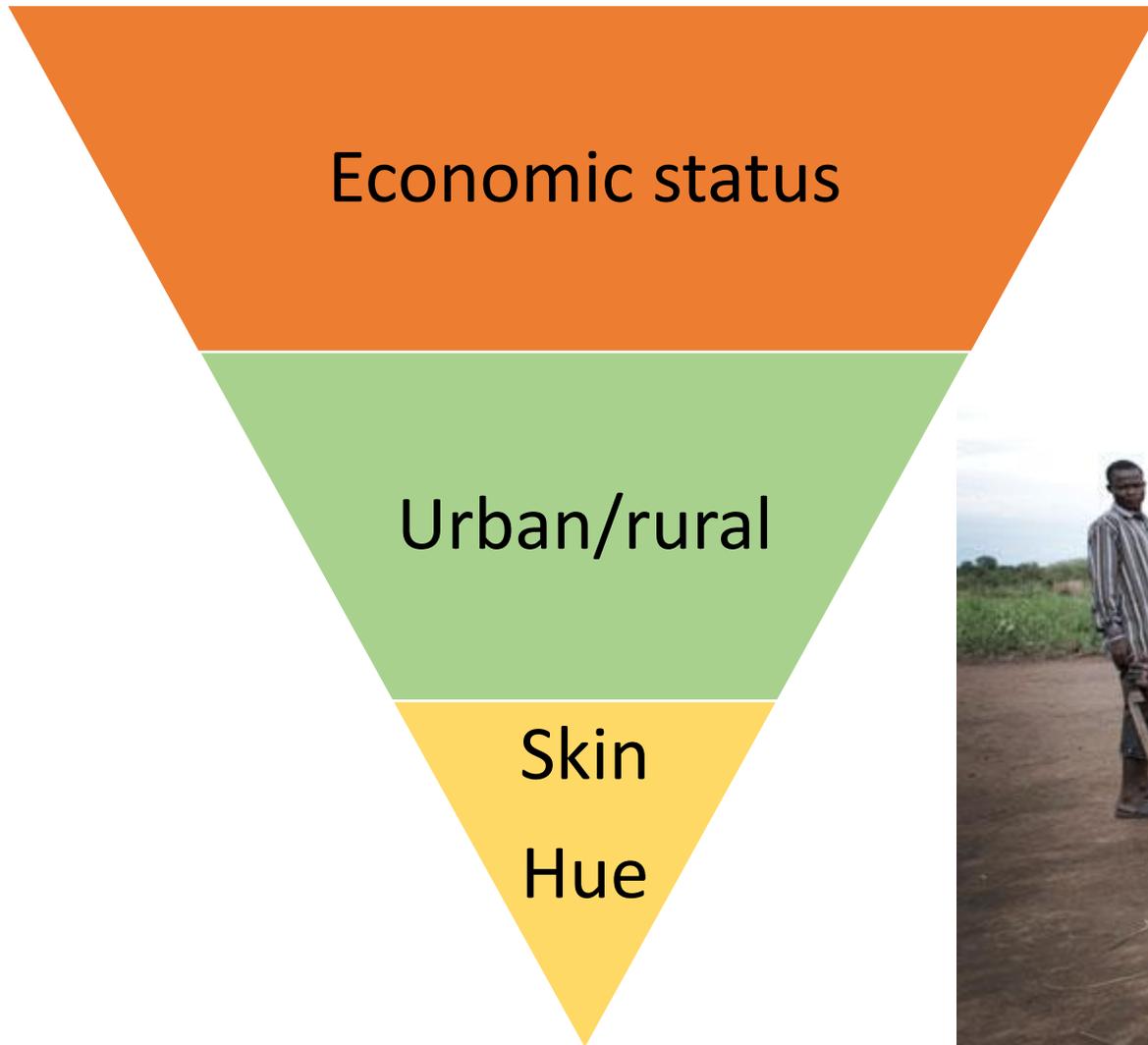


Leading the 2100s

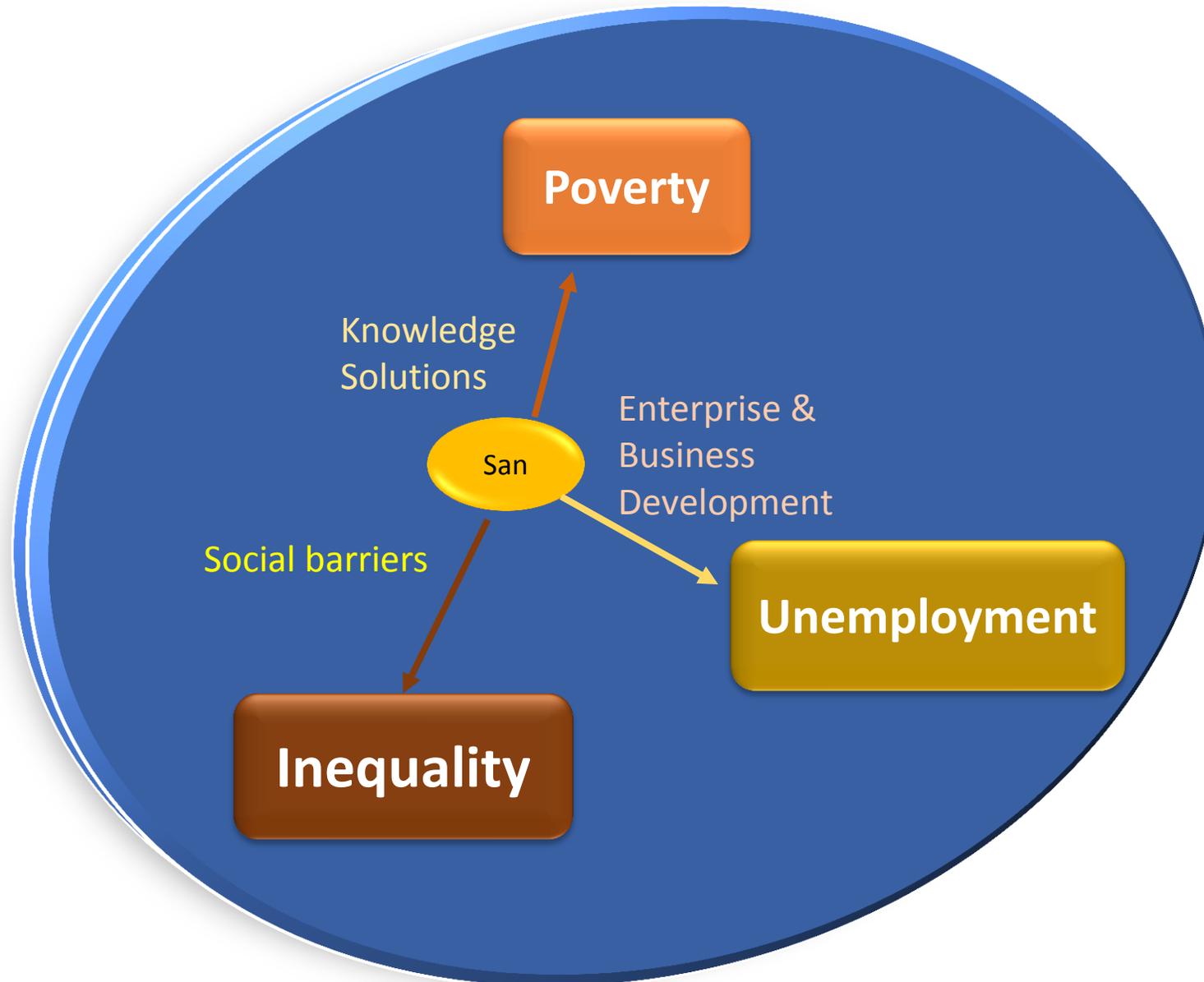
Sanitation and the Cubed Global Challenge



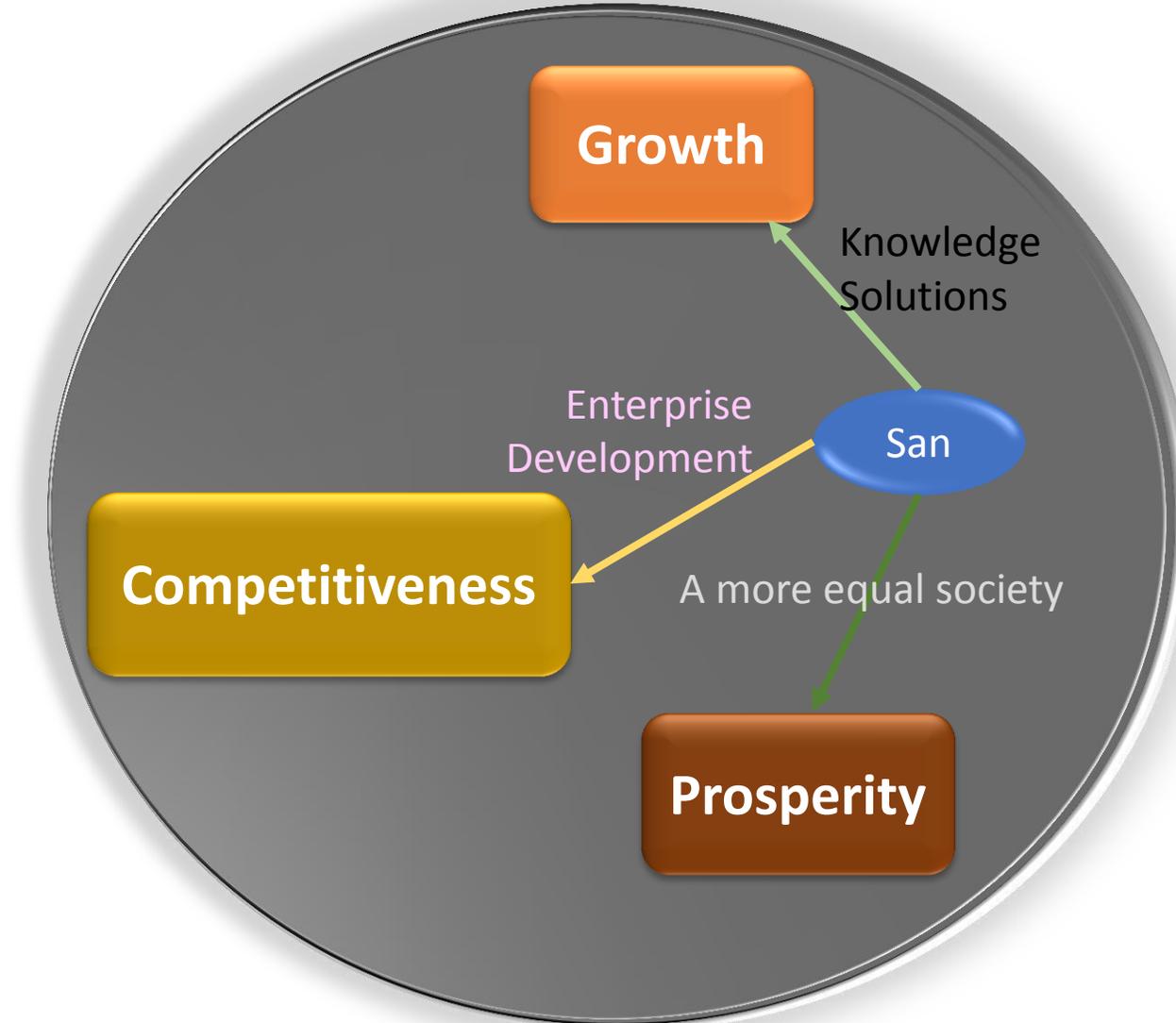
Layers of discrimination

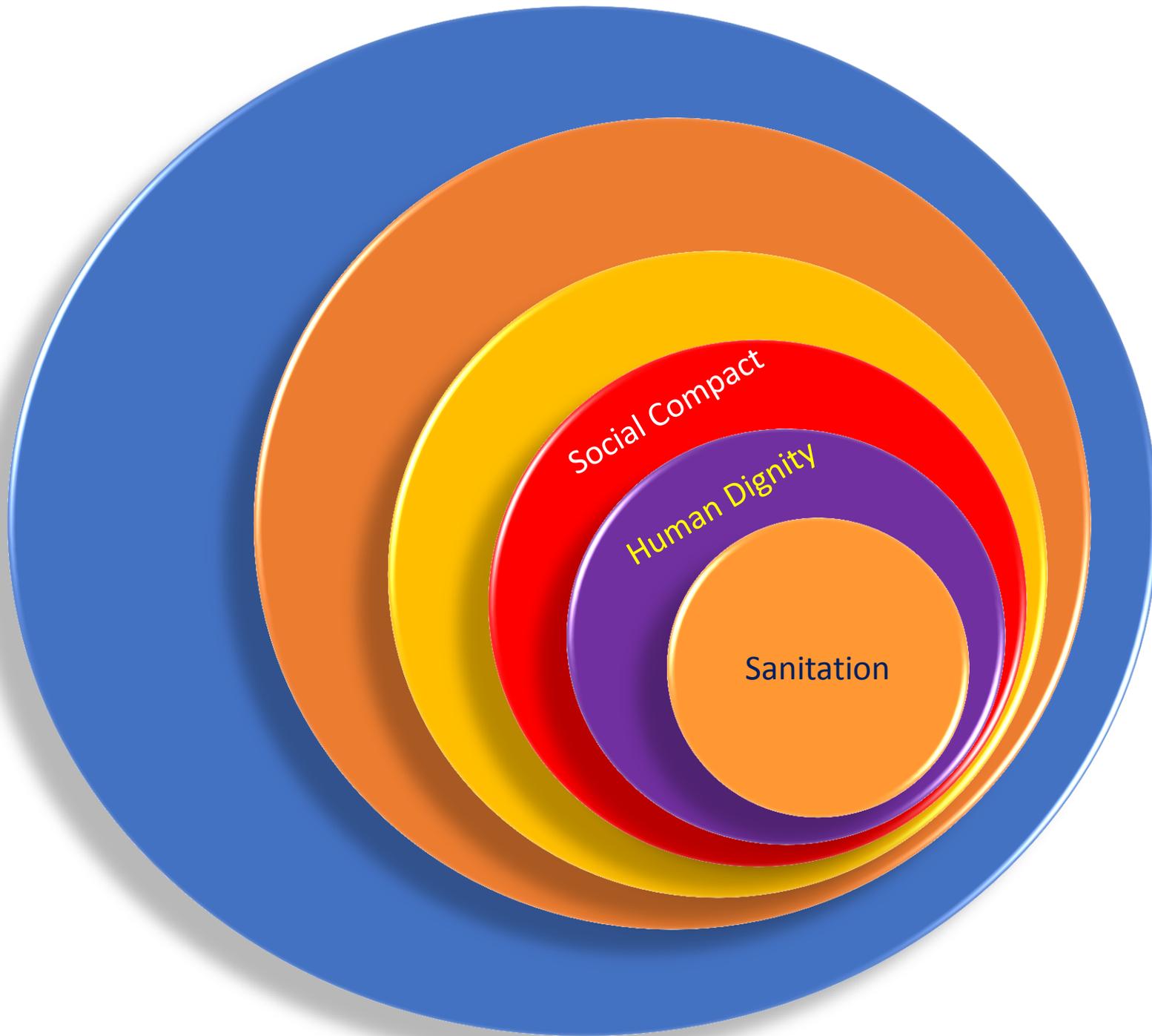


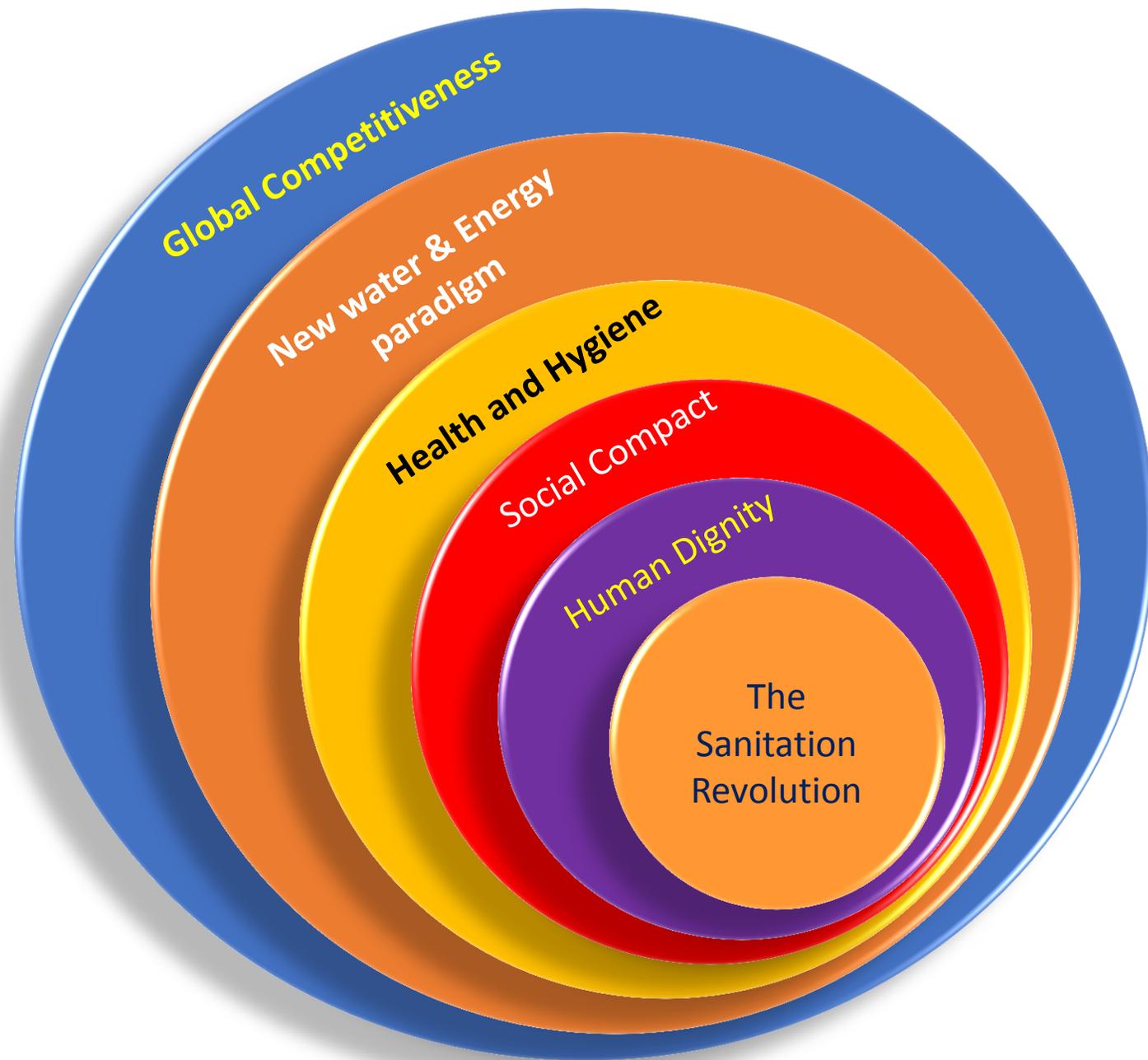
Sanitation and the Cubed Global Challenge



Sanitation and the Cubed Global Challenge







Global Competitiveness

**New water & Energy
paradigm**

Health and Hygiene

Social Compact

Human Dignity

**The
Sanitation
Revolution**

Optics are important

The challenge is huge,
but don't chase the
shadows



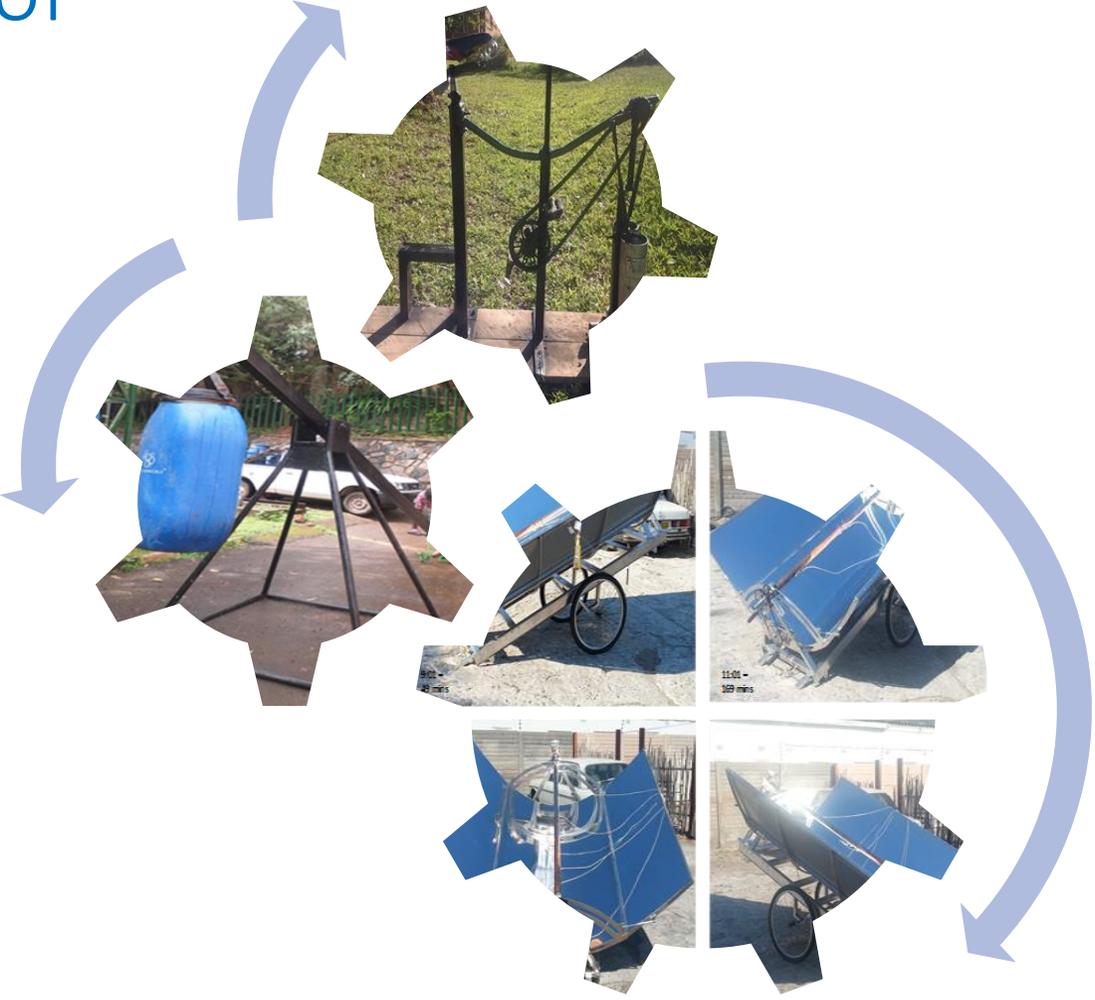
Optics are important

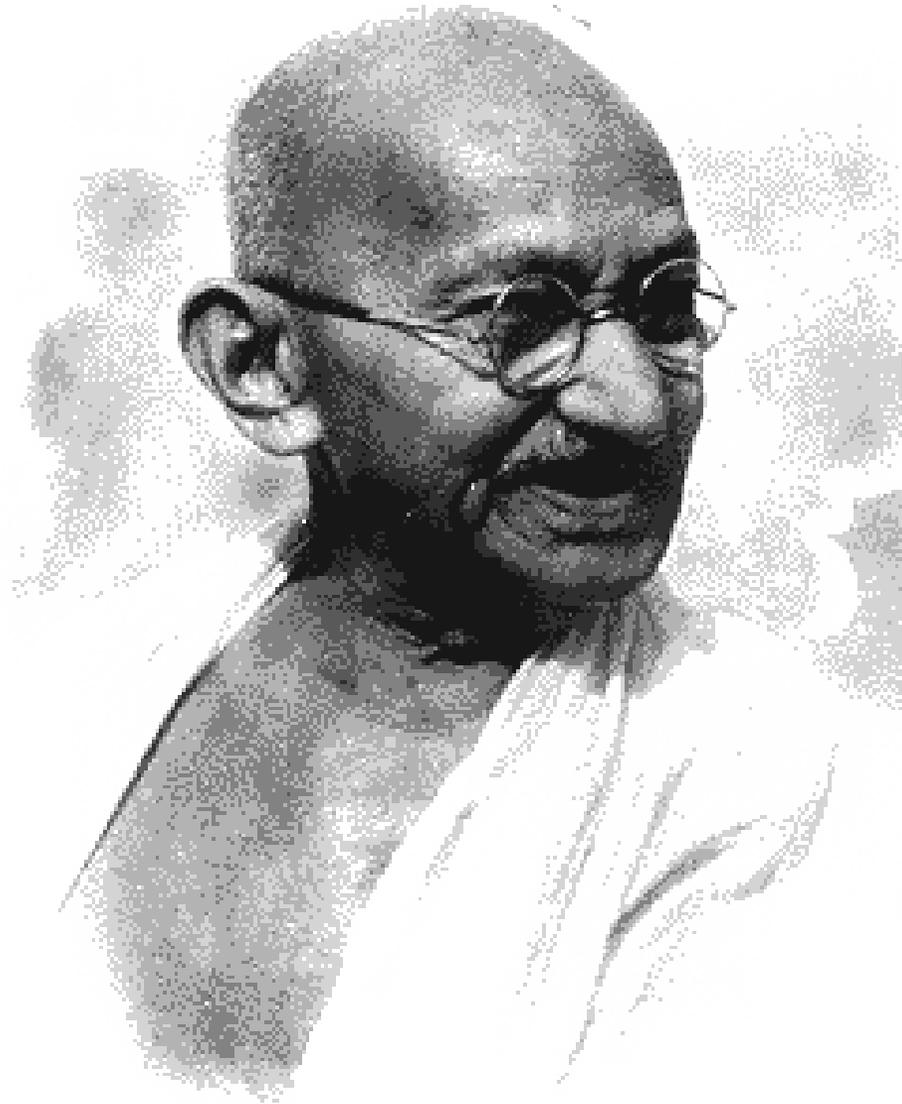
**Empower
yourself with
the right
perspective**

The challenge is huge,
but don't chase the
shadows



What if the servicing of the non-served 20% was the theatre to change the sanitation practice of the other 80% ?





Be the change
you want to see

Mahatma Gandhi



Thank You

WRC 2017