Introduction to CWIS

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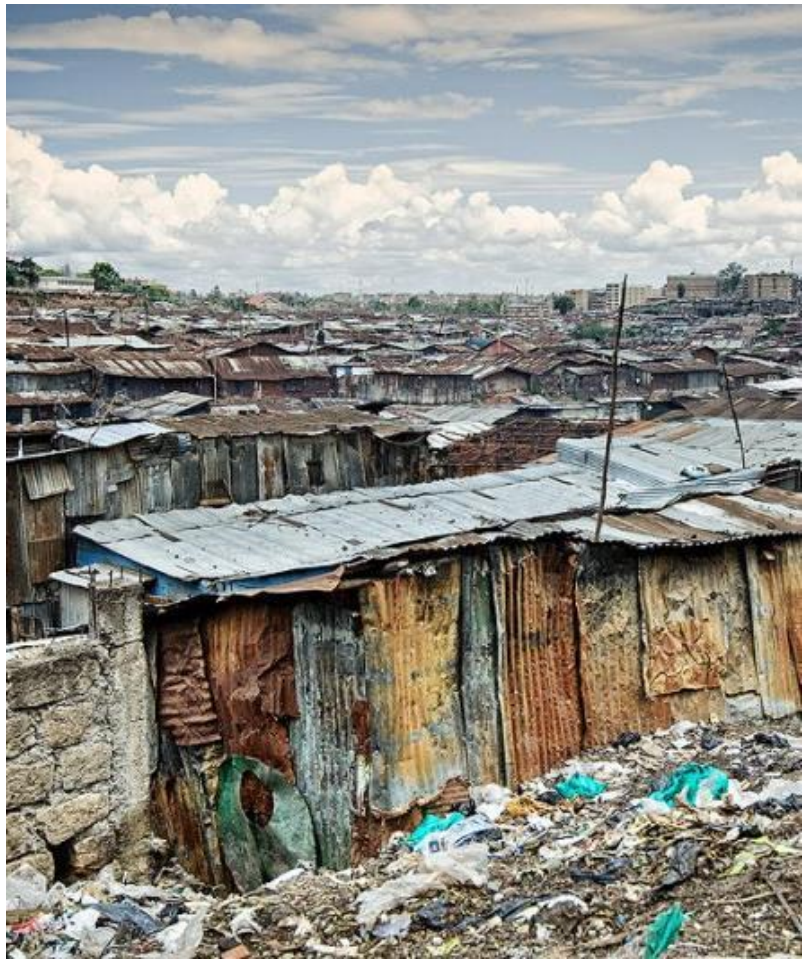
Sanitation Poverty – Asia, Africa, Latin America

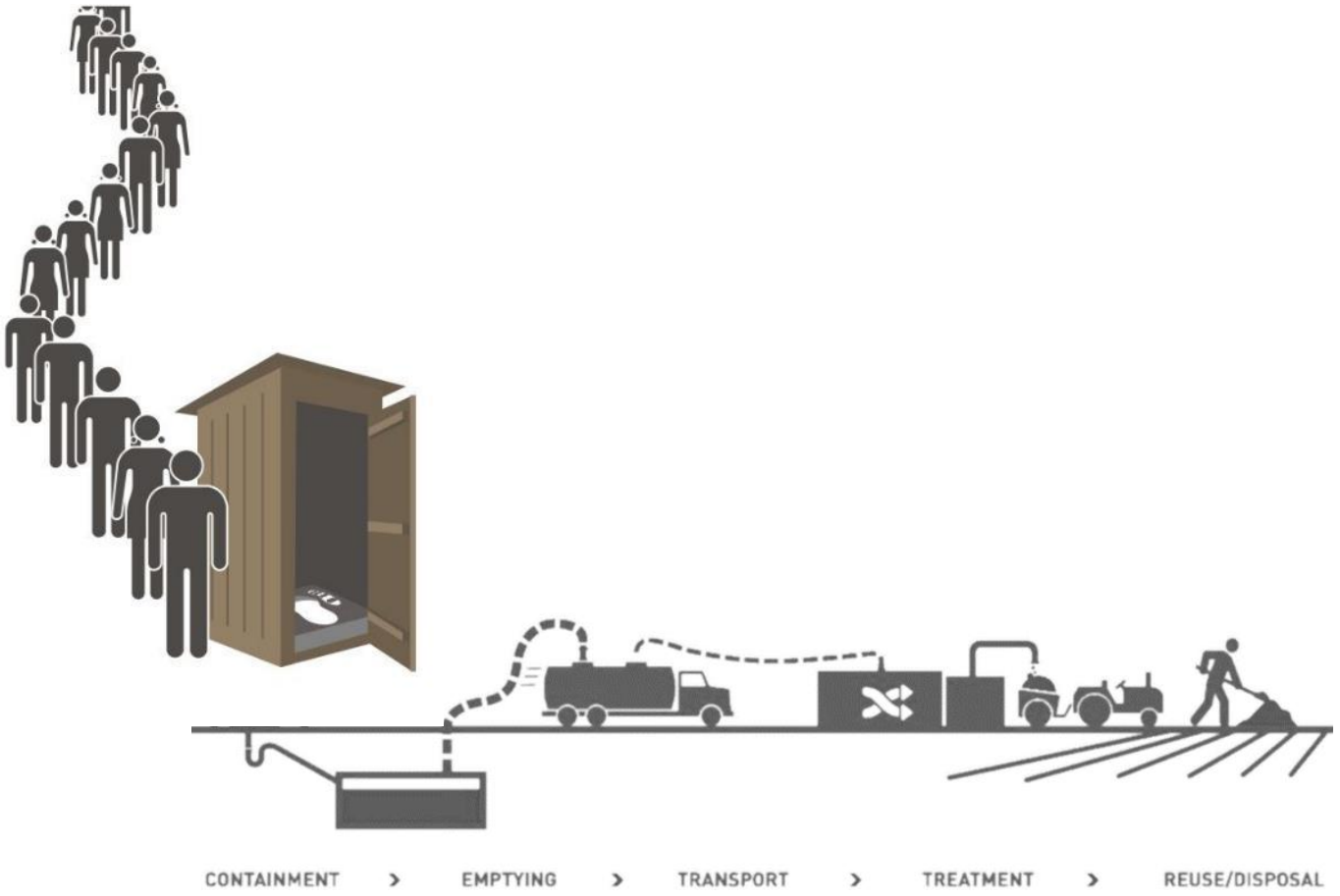
Hanging Toilets in Bangladesh
© Water.Org



Flying Toilets in Kenya
© Africa Times

Unusable Toilets in Peru
© WSP

Complexity of Urban Sanitation

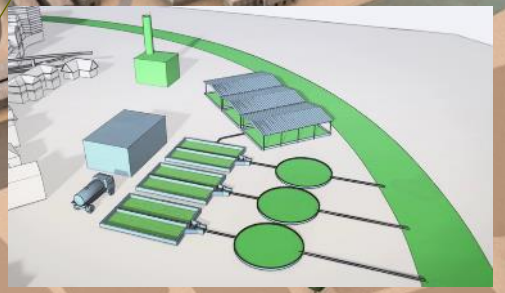


1. Rapid Urbanization
2. Population Density
3. More Inequities
4. Institutional jurisdictions
5. Slum and tenure issues
6. Lower social cohesion
7. Higher cost of implementation
8. No vision of entire chain
9. Poor urban planning
10. Low stakeholder involvement

Equity in service

Inclusive Planning

Conxtextual solutions



Environmental and social justice

CWIS brings various evolved thinking of urban sanitation under one umbrella

CWIS is embraced by all players

CWIS is an approach embraced by all major players

- CWIS is being widely accepted as an approach to align with.
- Research, Development Banks, NGOs etc., collaborating to develop CWIS further.
- CWIS is constantly evolving, and scope for everyone to contribute.

Evolution of CWIS

- 2016 – Conception (Atlanta Conference)
- 2017 – Call for Action (Stockholm Water Week)
- 2018 – 1 Billion USD Commitment (Beijing Expo)
- 2019 – Principles on CWIS (Manila Conclave)
- 2020 – Publications on CWIS (Frontiers in Envi.Sci)

So.. What is CWIS?

Initial understanding by CWIS Pillars – (WB et al., 2017)

Defining Citywide Inclusive Sanitation

An **approach** to urban sanitation, where **all** members of the city have **equitable** access to **adequate** and **affordable improved** sanitation **services** through appropriate systems of all scales (**sewered & non-sewered**), without any contamination to the environment along the **entire sanitation value chain**

(Narayan and Lüthi 2020)

Manila Principles on CWIS

1. Equity
Everyone in an urban area – including communities marginalized by gender, social, and economic reasons – benefit from equitable, affordable, and safe sanitation services.

2. Environment and public health
Human waste is safely managed along the entire sanitation service chain, starting from containment to reuse and disposal.

3. Mix of technologies
A variety of sewered and non-sewered sanitation solutions coexist in the same city, depending on contextual appropriateness and resource recovery potential.

4. Comprehensive planning
Planning is inclusive and holistic with participation from all stakeholders including users and political actors – with short- and long-term vision and incremental perspective and is synergistic with other urban development goals.

5. Monitoring and accountability
Authorities operate with a clear, inclusive mandate, performance targets, monitoring requirements, human and financial resources, and accountability.

6. Mix of business models
Sanitation services are deployed through a range of business models, funding sources, and financial mechanisms to reach all members equitably.

(Narayan and Lüthi 2020)

CWIS synergies with SDGs

- CWIS is mainly : 6.2.1 to 6.3.1

Access to improved sanitation to Treatment of all wastewater produced.

- But CWIS is also
  - good health and wellbeing (SDG 3)
  - gender equality (SDG 5)
  - reduced inequalities (SDG 10)
  - sustainable cities (SDG 11).
  - resource recovery (SDG 7)
  - circular waste economy (SDG 12)

Lüthi and Narayan 2019

photo: D. Crowther

Citywide Inclusive Sanitation: Achieving the urban water SDGs

Christoph Lüthi
Abishek Sankara Narayan
Eawag - Swiss Federal Institute of Aquatic Science and Technology

Between 2015 and 2030, Africa's population is expected to grow by 42 per cent or nearly half a billion people; Likewise, Asia's population will grow by a similar number, although representing only 12 per cent growth in the continent's population (UN DESA 2018). Most of this growth is projected to take place in urban areas, while rural population numbers will stagnate. Most cities lack the basic infrastructure and services needed for economic productivity, social inclusion and environmental sustainability, while inequalities within cities are persistent and widespread. The urban poor particularly lack access to adequate shelter, water, sanitation and health services.

Local authorities in developing cities often lack capacity in planning and implementation and therefore are ill-equipped to deal with this projected growth. In most countries of the Global South, urban infrastructure planning and programming is still top-down and follows

with special attention to water and sanitation services (UN 2017). The Sustainable Development Goals (SDGs) are 17 different goals, among which water, sanitation and hygiene form Goal-6. Under this framework, there are separate targets for drinking water, water quality, water-related ecosystems and specifically, the universal, equitable access to 'improved' sanitation. Globally, an additional one million persons have to get access to improved sanitation facilities each day to reach this goal by 2030 (Mara and Evans 2017). Although compared to rural areas, cities have better sanitation service provision, (WHO 2017), the latter is still a major contributor of untreated wastewater, creating hotspots for environmental degradation and public health hazards impairing social and economic productivity.

Most importantly, within the sanitation targets of SDG 6.2, for the first time, the focus is not only on toilet access, but on managing the entire sanitation value chain, encompassing

Unpacking equity and inclusion

Understanding “Inclusive” – Piece of Cake!

All technologies considered - Decentralised, and Centralised- FSM, CBS, Sewered, SSS, Central STP

Equity for Marginalised Communities – Gender, Age, Disabilities, Religion, Caste, Income levels

Consideration of Value Chain – Collection, Containment, Conveyance, Treatment, Reuse, Disposal

Planning with involvement of all Stakeholders – Government, Community of users, Private Service providers, Sanitary workers, Academia and Fund Granters

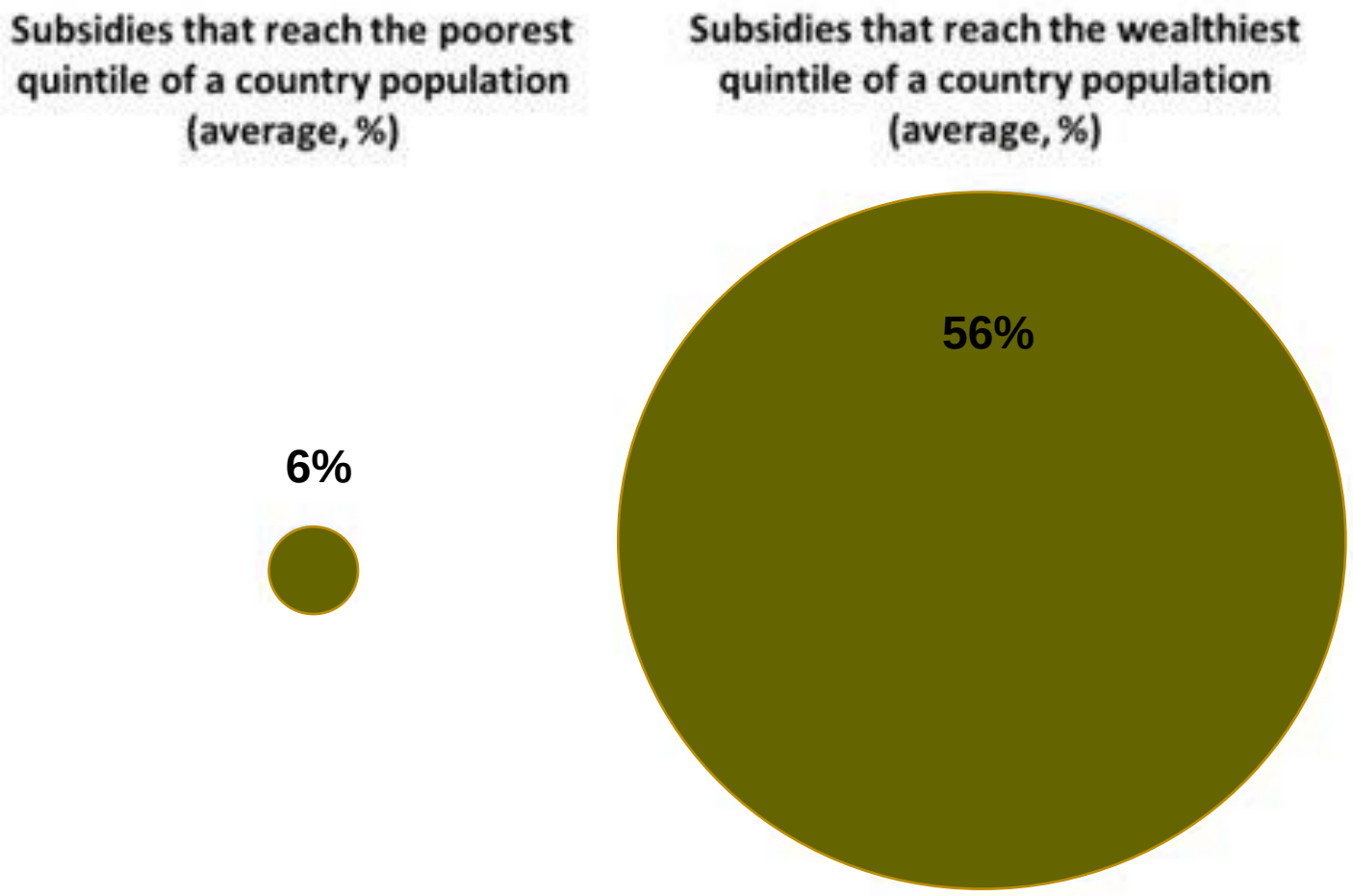
Taking account of larger urban developmental goals – Water, Transport, Climate, Energy, Poverty, Redevelopment, social inclusion

Equity, Equality and Justice in WASH

WASH subsidies are not pro-poor

World Bank 2019

Where the money goes



World Bank 2019

Cases where poor subsidize the rich

- Poor subsidize sewers for the rich. And also pay higher price for emptying.
- Often disguised fee charges fro sanitation under water tax.
- This too is unmetered – so shared houses end up paying increasing block tariff.
- Eg- Dar es Salaam (Tremolet, 2013)
  Addis Ababa (Narayan, 2017)

Unpacking mix of technologies

Conventional Urban Sanitation Approaches

6 Key Challenges in a Asian Developing Cities

- Space
- Sewers
- Funds
- Water
- Slums
- Political will



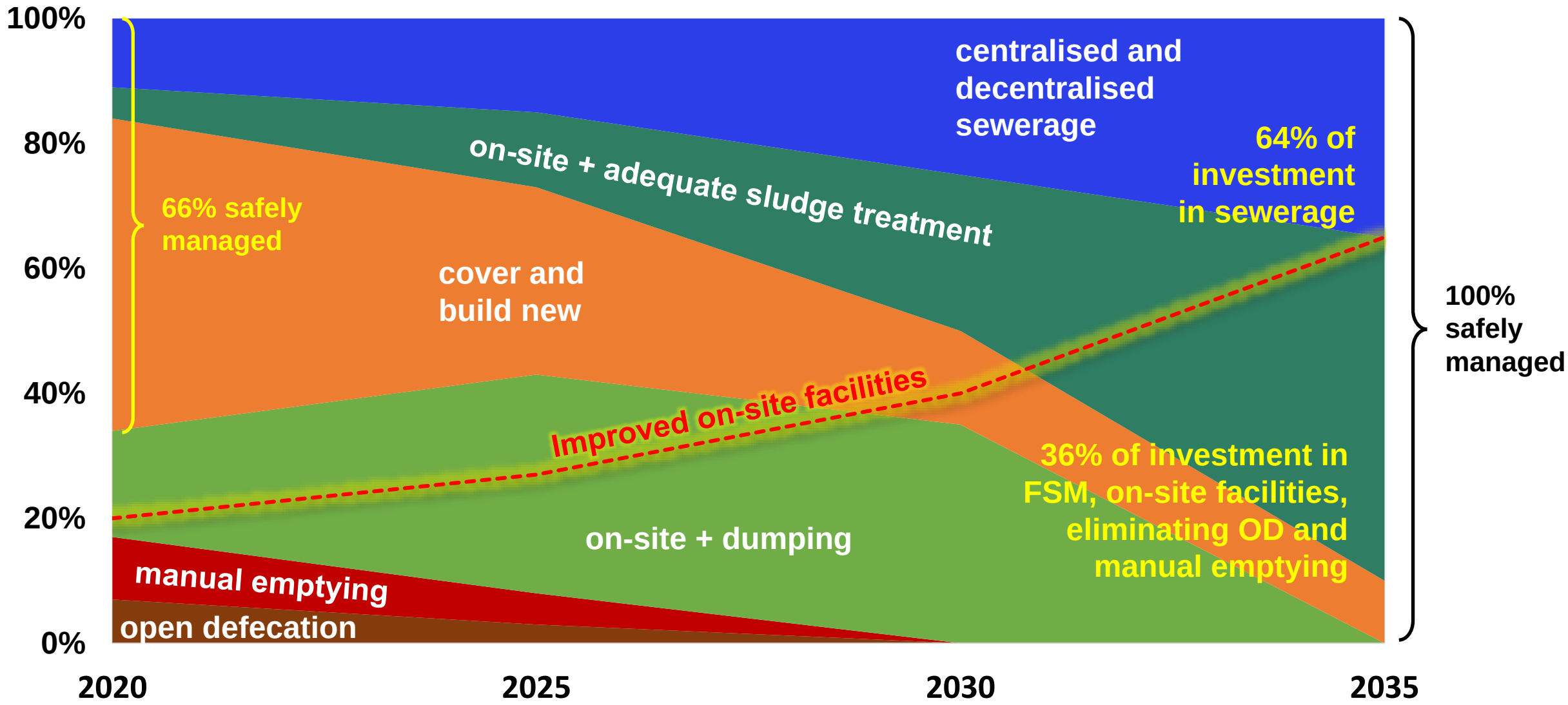



Context Specific Solutions

- Centralised systems
  where economy of scale works.
- Decentralised systems
  in areas dictated by topography, population density, and fund availability
- Fecal Sludge Management
  in outer areas where access is an issue. Eg- slums, and peri urban regions

Lüthi and Narayan, 2018

Right Mix of Solutions



Need for Comprehensive Planning

- With detailed diagnostic study, bringing local knowledge.
- That involves all stakeholders- both users and providers.
- Drives equity.
- Systematically considers all technological options.
- Makes an inclusive decision.
- Has spatial and temporal considerations.

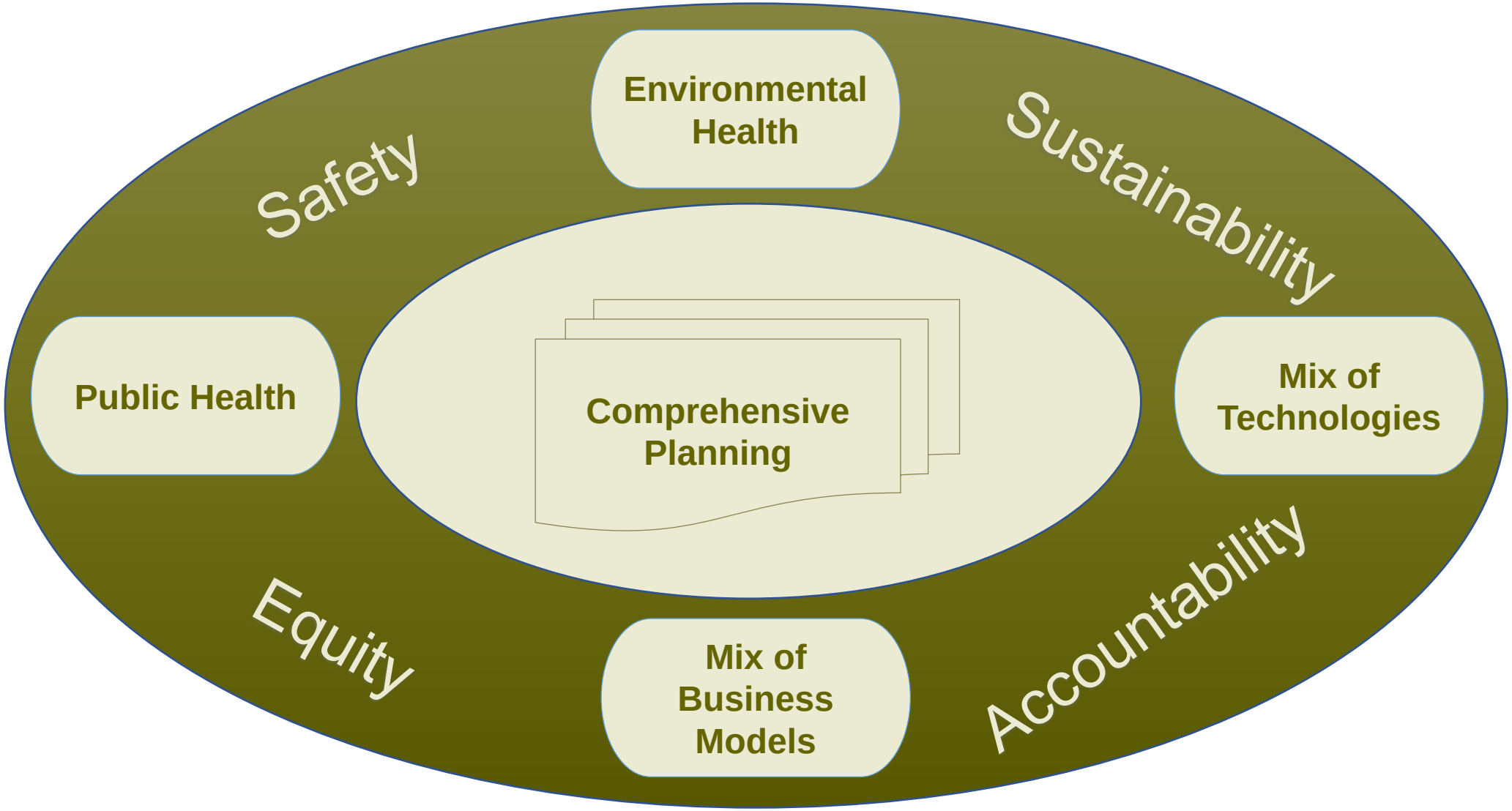
CWIS Service Framework

Service Outcomes	**EQUITY** 'Fairness' in distribution and prioritization of services, service quality, service prices, and use of public finance/subsidies	**SAFETY** All human waste is managed to protect public goods* for customers, workers and all communities	**SUSTAINABLITY** Management of revenues and resources--financial, labor, energy, water--sustain performance
System Functions	**RESPONSIBILITY** Authority or authorities execute a clear mandate to ensure inclusive, safe sanitation services	**ACCOUNTABILITY** Performance is monitored and managed with transparency, data, incentives and penalties	**RESOURCE PLANNING & MANAGEMENT** Resources are managed to support implementation of mandate and achieve goals across time / space

IGURE 2 | CWIS service framework. *Public Goods are the elements of sanitation service delivery system characterized by market failures –technically, ion-excludability and non-rivalry. Practically, they are the elements of sanitation service that are outside of individuals' direct private interests and can include safe n-site containment, network connections, transporting waste to safe disposal, and other activities required for long-term protection of water, land and public health long the value chain.

Schrecongost et al., 2020

CWIS Planning Framework



Narayan et al., 2021

Tools to help planning will be covered in Part - 3

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Key messages

- CWIS is an overarching approach to solving urban sanitation sustainably and equitably.
- The Manila principles explain the objectives of CWIS.
- The sanitation sector has come together to collaborate on CWIS.

- It needs comprehensive planning for success.