ADB SANITATION DIALOGUE (ASD) 2021

Inclusive Sanitation

Everyone has access to and benefits from sanitation services, with human waste safely managed across the whole sanitation service chain

INCLUSIVE → RESILIENT → SUSTAINABLE

Climate Strategies for Sanitation: Unpacking Resilience

ASD Workshop #1, 12 April 2021

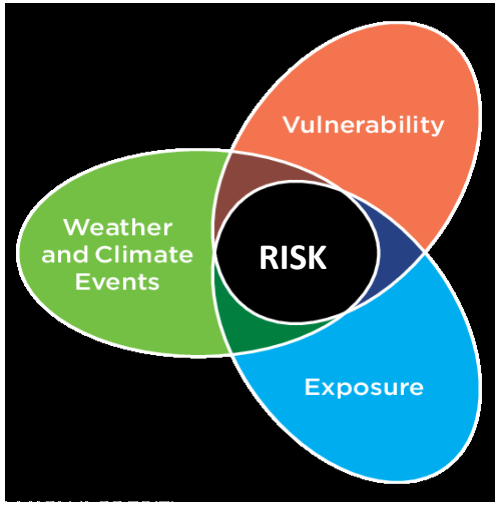
URBAN CLIMATE CHANGE RESILIENCE TRUST FUND
Asian Development Bank

RESILIENCE DEFINITION

- Resilience is used in many disciplines (engineering, ecology, economics, psychology) generally to mean ability to handle external stress **without breaking or losing functionality**.
- The IPCC defines it as the "capacity of social, economic, and environmental **systems** to cope with a **hazardous event** or **trend** or disturbance, responding or reorganizing in ways that **maintain their essential function**, identity, and structure, while also maintaining the **capacity** for adaptation, learning, and transformation."

Resilience = F(hazard, exposure, vulnerability)

We'll use the term RESILIENCE as short name for "adaptation and resilience," specifically the management of vulnerability



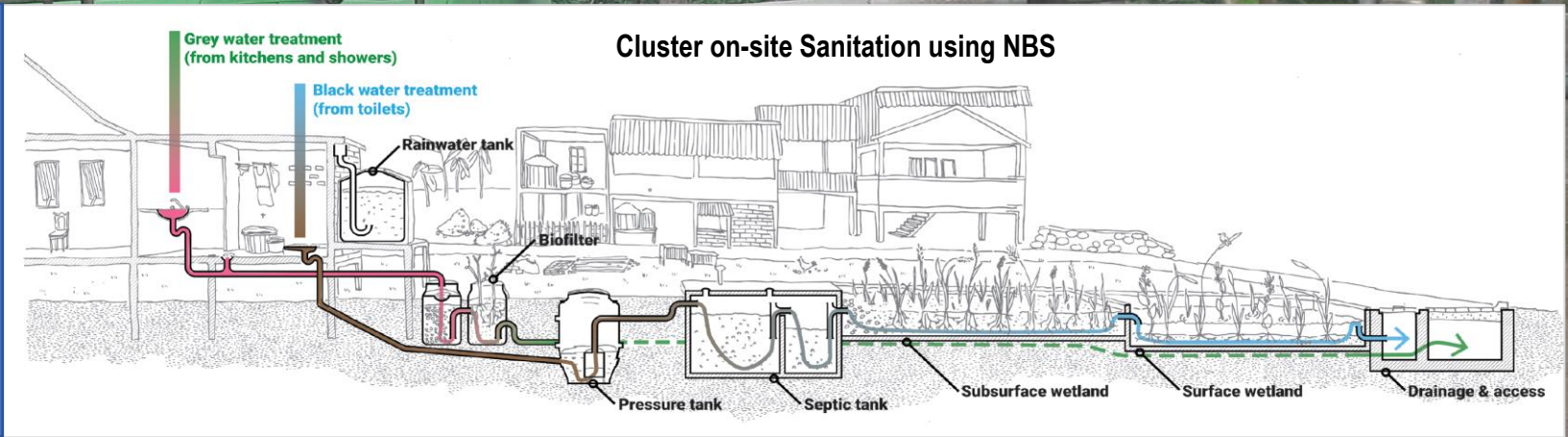
SEWERED

NON-SEWERED

RESILIENCE OF WHAT?

- PHYSICAL ASSETS
- ENVIRONMENT SETTING
- PEOPLE AND INSTITUTIONS

NON-SEWERED



SYSTEM CAPACITY

TO ADAPT TO CHANGE/STRESS – CLIMATE CHANGE ADAPTATION

TO REBOUND FROM SHOCKS – DISASTER MANAGEMENT

RESILIENCE TO WHAT?

- More intense and prolonged rainfall
- More variable rainfall with longer dry spells
- Sea level rise
- Increasing temperatures
- More frequent storms

CHALLENGES FOR PLANNERS AND DECISION-MAKERS

- Climate change uncertainty (how severe, when?) → need RISK framework
- Non-linear impacts, tipping points
- Climate change amplifies other problems → systemic risk
- Vulnerability is highly local, with disproportionate impacts
- Communicating the risk

EMPHASIS ON INSTITUTIONAL ASPECTS

- Sanitation as a government responsibility
- Policy and institutional framework
- Mandates and accountability
- Coordination and planning
- Capacity and financial resources

TECHNICAL **INSTITUTIONS** **RESOURCES**

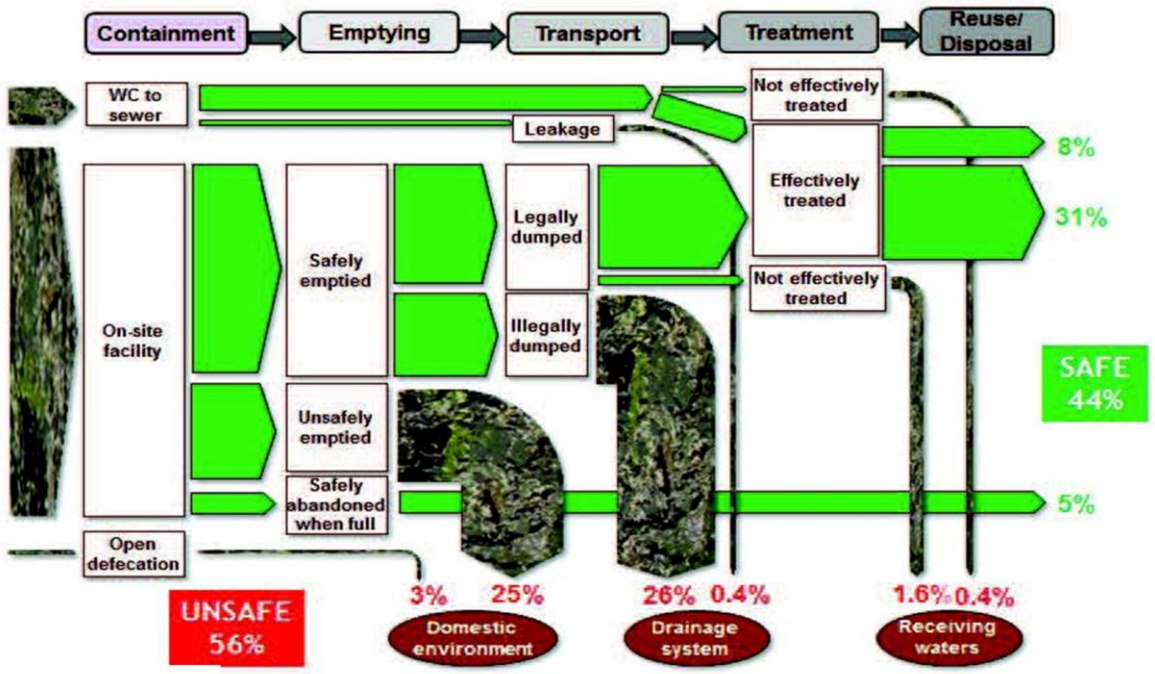
ADB review of 63 sanitation projects implemented 2003-2016

Success Factors	Failure Factors
• policy dialogue	• non-inclusivity
• Private sector participation (rules)	• weak capacity of implementing agencies
• Investment campaigns	• not supporting service providers
• combining water supply and sanitation	• not monitoring
• encouraging partnerships	• not incorporating gender
• demonstrating FSM	• slow use of funds

We must add **INSTITUTIONAL RESILIENCE**

THE PROBLEM

e.g., Metro-Manila's sewage



Source: WB 2015

Estimated 57% of urban dwellers in Asia-Pacific lack access to the full **sanitation service chain**, including waste containment, removal, treatment, and disposal (ADB 2016)



Rural solutions for resilient sanitation are even more varied and highly context dependent



CHALLENGES IN MAKING A "BUSINESS CASE" FOR SANITATION

- Sanitation is seen as a government responsibility (expense)
- Apply *cheapest* solution to meet basic service
- No appreciation of co-benefits
- Without co-benefits, resilience measures only add to cost

RESILIENCE

COSTS:

- PREVENTIVE MEASURES (AVOID HAZARD)
- MITIGATION MEASURES (MINIMIZE, REDUCE IMPACT)
- CONTINGENCY MEASURES FOR RESIDUAL RISKS (PREPARE, RESPOND, RECOVER)

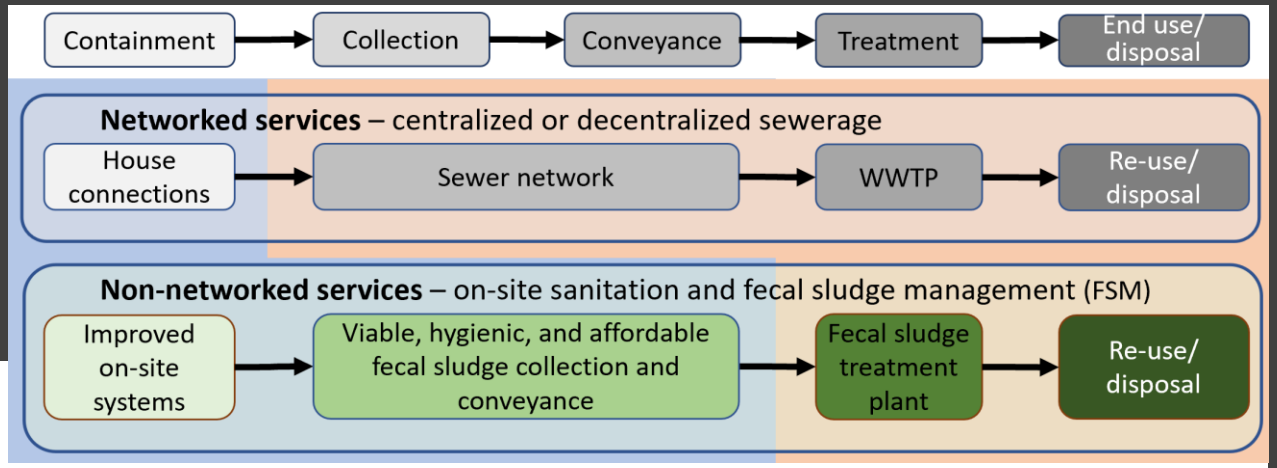
BENEFITS:

- AVOIDED COST OF FUTURE DAMAGE TO ASSETS
- AVOIDED COST OF DISRUPTED SERVICES
- CO-BENEFITS

UNPACKING RESILIENCE

LOGICAL STEPS

Across the sanitation service chain



DO NOTHING

or

PREVENT:

RELEVANT HAZARDS

DEFEND

Structural **Non-structural**

ABSORB

RELOCATE

CAN BE MITIGATED

CANNOT SIGNIFICANTLY BE MITIGATED

PREPARE

(TO RESPOND, REPAIR, REBUILD)

CONTINGENT FINANCING

- Fit-for-purpose solutions
- Consider how components might fail
- System view
- Don’t rely on historical climate to plan
- Dynamically adapt

ASPECTS OF SYSTEM RESILIENCE

"SCAFFOLDING" OR FRAMEWORK

For structuring programs and projects

ENVIRONMENT
(NATURAL AND BUILT ENVIRONMENT)

Nature-based solutions, Cross-sectoral and system linkages, integrated land use plan

Environmental impact assessment, landscape analysis using SPADE and EOS, natural capital and environmental accounting

INFRASTRUCTURE ASSETS

Concept phase → Preparation → Implementation

Type 1 and Type 2 projects

Climate risk screening, Climate risk vulnerability assessment, Climate risk adjustment factors

ADB KNOWLEDGE TOOLS

Cost-benefit analysis, Value for money analysis, Multi-criteria analysis

Economic instruments, Financial preparedness for emergency response and rebuilding

ECONOMY & FINANCE MANAGEMENT SYSTEM

Poverty and social impact analysis, Social safeguards, Gender mainstreaming categorization, DRM assessment

Vulnerable populations, Community involvement, Governance strengthening

PEOPLE AND INSTITUTIONS

Summary

- System view of climate change vulnerabilities
- Work with climate uncertainty and apply risk-informed planning
- Use holistic framework for problem-solving
- Emphasize institutional capacity and resource mobilization
- Resilience measures must cut across the sanitation service chain