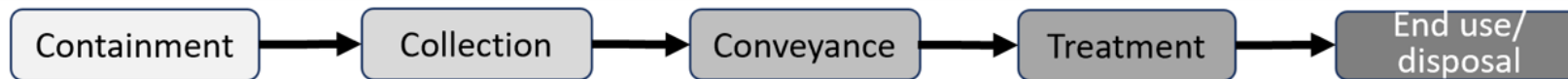


ADB SANITATION DIALOGUE (ASD) 2021

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

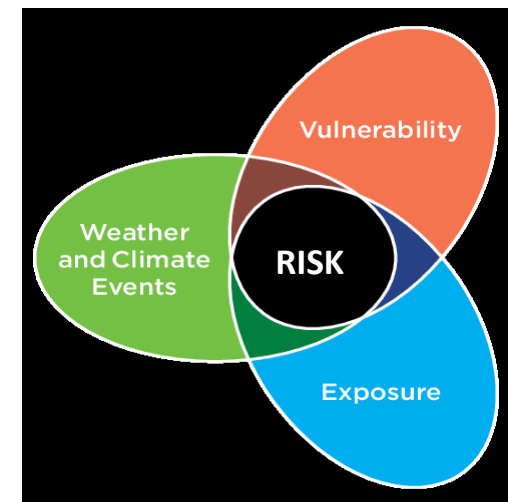
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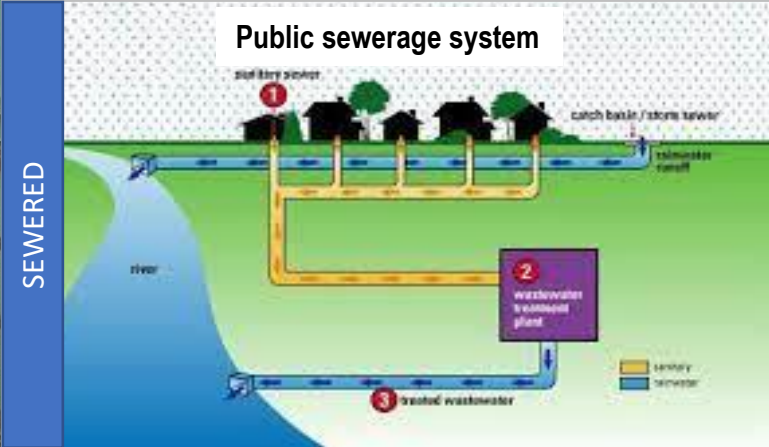
RESILIENCE DEFINITION

- 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)

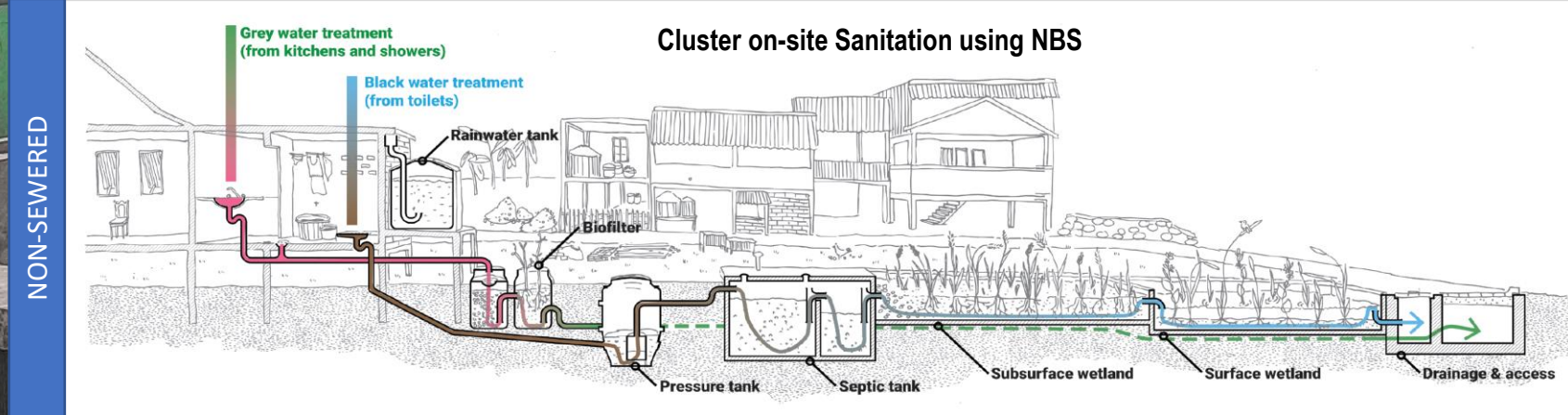
We'll use the term RESILIENCE as short name for “adaptation and resilience,” specifically the management of vulnerability





RESILIENCE OF WHAT?

- PHYSICAL ASSETS
- ENVIRONMENT SETTING
- PEOPLE AND INSTITUTIONS



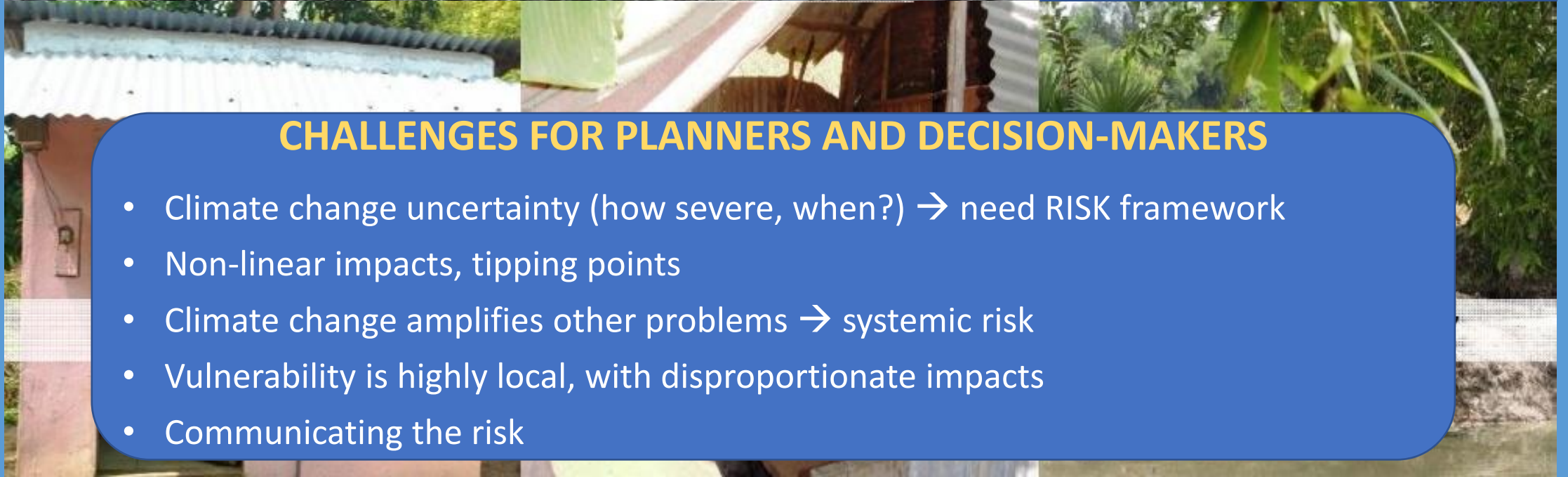
SYSTEM CAPACITY

**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

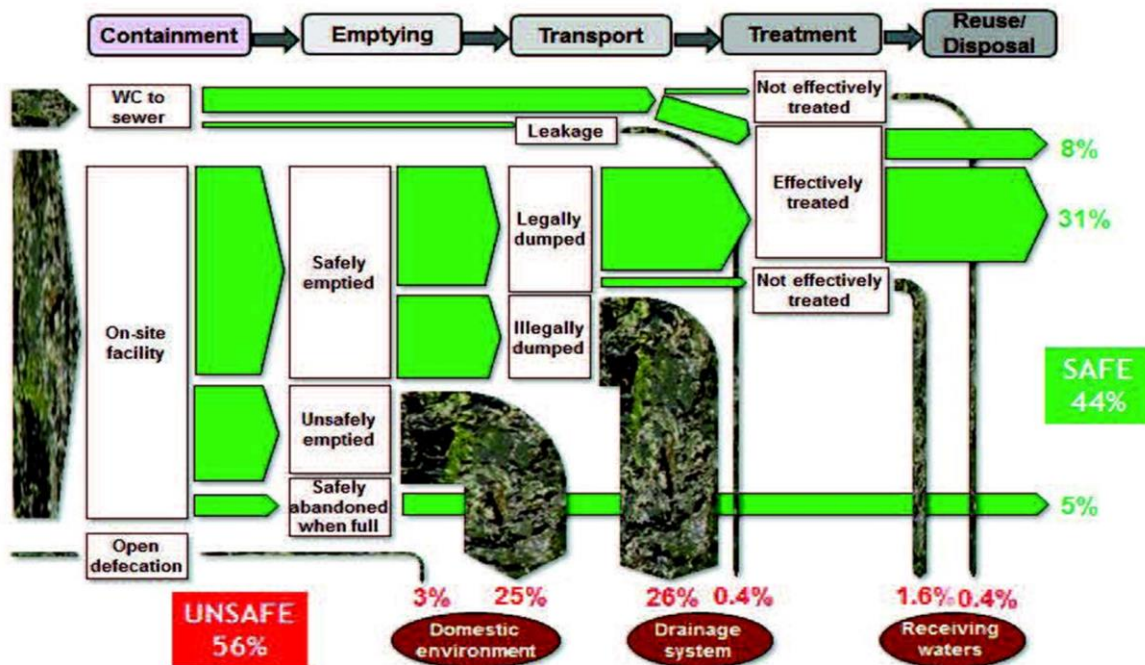
TECHNICAL

INSTITUTIONS

RESOURCES

THE PROBLEM

e.g., Metro-Manila's sewage



Source: WB 2015

ADB review of 63 sanitation projects implemented
2003-2016

Success Factors

- policy dialogue
- Private sector participation (rules)
- Investment campaigns
- combining water supply and sanitation
- encouraging partnerships
- demonstrating FSM

Failure Factors

- non-inclusivity
- weak capacity of implementing agencies
- not supporting service providers
- not monitoring
- not incorporating gender
- slow use of funds

We must add **INSTITUTIONAL RESILIENCE**

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

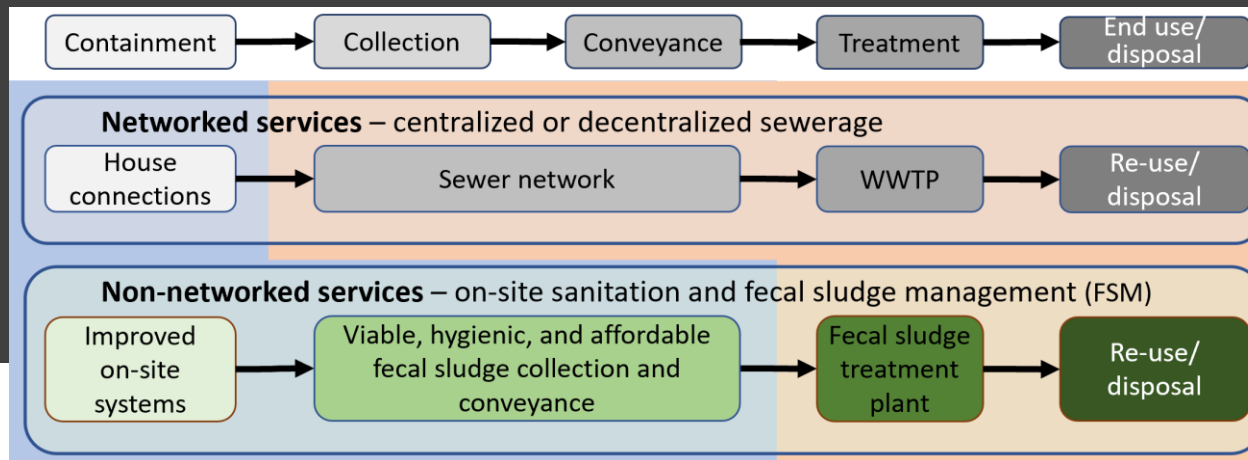
COSTS:

- 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

Across the sanitation service chain



UNPACKING RESILIENCE

LOGICAL STEPS

DO NOTHING

or

PREVENT:

DEFEND

Structural Non-structural

ABSORB

RELOCATE

RELEVANT HAZARDS



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

Ecological resilience, natural
assets that support resilience

Physical resilience of structures
and infrastructure systems

RESILIENCE

Financial resilience to provide
risk cover and to fund timely
relief, recovery, and rebuilding
when needed

**Social and institutional
resilience**, managing the
vulnerability of the poor and
enhancing capacity of public and
private institutions

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