



Government of Nepal
Ministry of Water Supply
Department of Water Supply and Sewerage Management

CWIS Approach for Municipalitywide Inclusive Sanitation in Nepal Training of Trainers

Power Point Presentation Slide Note for Participant



Part I

August, 2023

Material and Learning Application:

This material is prepared by Environment and Public Health Organization (ENPHO) with the support of “CWISAN Thematic group” for Training Material Development and is to be used for training purposes only. Materials used in the package are for the reference to understand the concept and or to show the practices around the globe and at national level. The package development team so not claim for the materials used in the package as of their own but is the sole property of the respective organization.

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Introduction

This document, power point presentation with slide notes, is a supporting document for the trainers/presenter to conduct the "Citywide Inclusive Sanitation Training for Trainers" training. This is a compilation of all the slides to be presented in the training along with the notes for the trainer as of what to describe while presenting the particular slide.

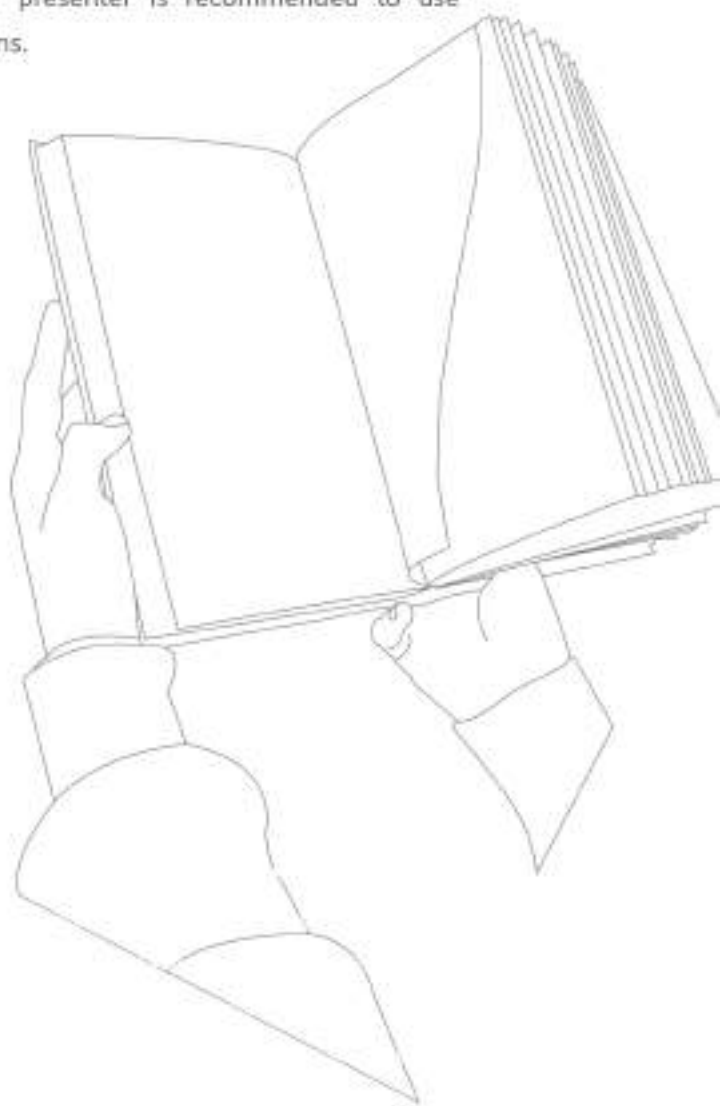
Objective

The main objective of the document is to guide the content that a presenter would be discussing on each slide. To this, it also provides a preview of all the slides contained in the training along with the slide notes.

How to Use?

The document consist of slides from all session. Slide notes for each slide is presented just below the slide itself. The trainers or presenter can go through the notes and describe the slides as per the information provide in the slide notes.

For the effective use of the documents, trainer or presenter is recommended to use simultaneously with the "Trainer Manual" with instructions.



SESSION 1

Training
Opening

Slide 1



**Citywide Inclusive Sanitation – Training of Trainers’
Training Opening**

Resource Person




Department of Water Supply and Sewerage Management

Slide 2

Training Introduction

- *Covers detailed topics related to citywide inclusive (CWIS) approach along with the topics of delivery skills*
- *Target audiences:*
 - *sanitation experts and professionals and*
 - *Academic professionals This training is participatory.*
- *The training focuses on the content related to CWIS approach along with the delivery skills of the trainers.*
- *The training will be an informal event*



Introduce self, the host of the training, and welcome participants to the event and explain about the training and training format

- This training covers topics related to citywide inclusive training (CWIS) approach.
- This workshop is designed for sanitation service provider especially engaged at municipalities; engineers, department/section chiefs, focal person, etc.
- This training is participatory. There are different types of group activities in various sessions.

Objectives

General
To create the "pool of resources" with enhanced knowledge on CWIS approach and skills on training delivery for further cascading the information on CWIS approach.

Specific Objectives

- To enhance knowledge on CWIS approach with the insights on practical experiences around the globe and at national level
- To internalize the CWIS approach with the detailed discussion on each component of CWIS framework
- To enhance training delivery skills relating with format for lesson plans and rationale of each part of the training

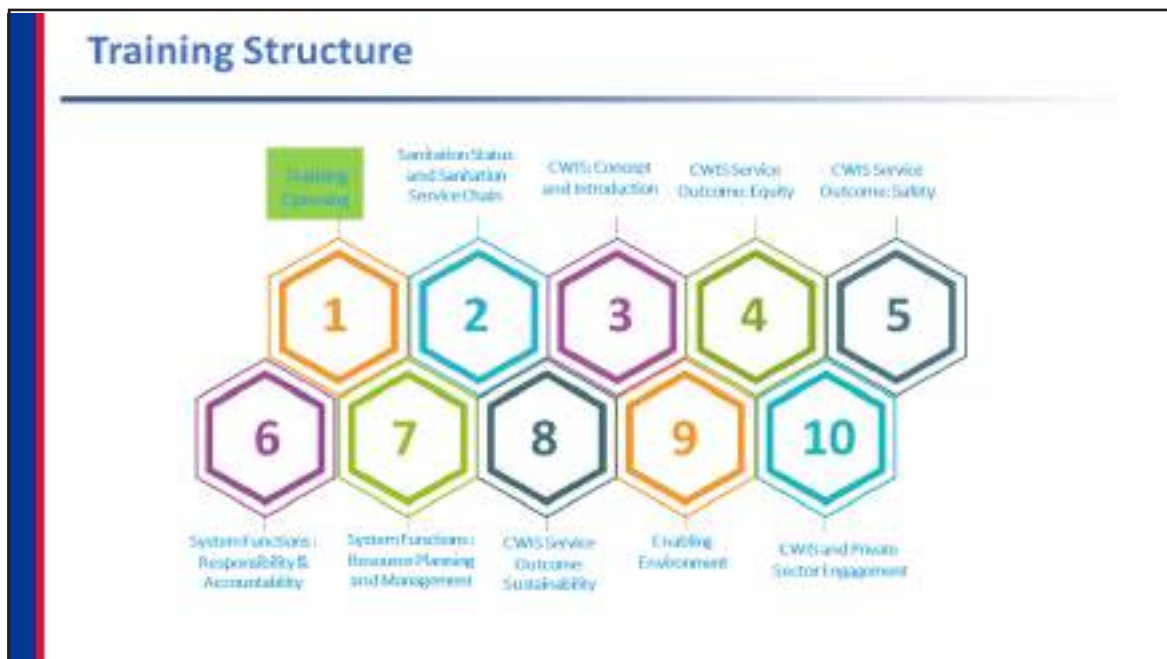
Present the objectives of the training.

Training Structure

- 20 main sessions
- Total 35 Sessions
- Background- Sanitation Status
- CWIS Approach (detail on each components of CWIS Framework)
- Technological Awareness
- Supporting session
- MToT- Knowledge and skills

This slide is for the reference of the trainer/ training facilitator to discuss on the training structure slides.

Slide 5



This training includes 20 main technical sessions, and are currently on session 1: Training Opening
 20 main sessions
 Total 35 Sessions
 Background- Sanitation Status
 CWIS Approach (detail on each components of CWIS Framework)
 Technological Awareness
 Supporting session
 MToT- Knowledge and skills

Slide 6



This training includes 20 main technical sessions, and are currently on session 1: Training Opening
 20 main sessions
 Total 35 Sessions
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 CWIS Approach (detail on each components of CWIS Framework)
 Technological Awareness
 Supporting session
 MToT- Knowledge and skills

Slide 7

Training Schedule

Time	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8
9:00 - 9:30	Registration	Review and assignment	Review and assignment	Review and assignment	Review and assignment	Review and assignment	Review and assignment	Review and assignment
9:30 - 11:00	Training Opening	Equity in Practice	Responsibility and Accountability- Rationale and Concept	RPM-Group work and presentation	Enabling environment	CWIS Tools and Platform	Exposure Visit	Practice session
11:00 - 11:15	Break							
11:15 - 12:45	Sanitation Status and Sanitation Service Chain	Equity- Group work	Responsibility and Accountability in Practice	CWIS Service Outcome- Sustainability	CWIS and Private Sector Engagement	CWIS Tools and Platform	Exposure Visit	Practice session
12:45 - 1:45	Lunch Break							
1:45 - 3:15	CWIS Concept and Introduction	CWIS Service Outcome- Safety	RPM- Rationale and Concept	Sustainability in Practice	Integrating CWIS in Project Cycle	Technological Awareness	Effective Learning	Next course of actions
3:15 - 3:30	Break							
3:30 - 5:00	CWIS Service Outcome- Equity	Safety in Practice and group work	RPM in Practice	Sustainability- Group Work	Monitoring and Benchmarking	Technological Awareness	Effective Training	Closing Session
5:00 - 5:15	Day Closing							

Present the schedule and review the day-1 agenda with participants, along with the breaks and lunch time, also explain about the day review and day evaluation.

Slide 8

Building Layout

- Bathroom Location
- Emergency Exits
- First Aid




For any kind of emergency, contact the host or organizer. For the easy access, the bathroom location is in...

The emergency exits are...

For the first aid kit, ...

Also add on the information on station for participants where they can put queries or questions for discussion during anytime of the day and introduce the station to the participants

Slide 9

Participants' Introduction

- Ask participants to approach next participant to introduce self
 - Name
 - Designation
 - Organization
 - Experience in urban sanitation
- This could be either in pair or a chain where one approach other and goes on
- After the mingling activity, ask participants to come in circle and ask a participant to introduce the one approached to him/ her.
- Ask the participant being introduced to come and stand next to the one introducing
- Repeat the process

Refer to lesson plan for further activity of repeating the name of participants, other activity to mingle participants like 'secret angel' or 'K soche maile k bhayo aile'

Slide 10

Introduction

- Name
- Designation
- Organization
- Experience in urban sanitation



Before starting the event, let's introduce with each other. Ask participants to introduce themselves with the above points or do it as per instruction on slide 10.

Name

Designation


Organization

Experience in Urban sanitation

Slide 11

Learning Expectations

- Two learning outcomes from each participant
- One on each of the meta-cards



Once the meta-cards with learning expectations are collected, review the expectation in the large group and discuss in which module it will be addressed

Collect meta-cards and list the learning expectations of the training

Slide 12

Group Agreement

Discuss with participants and note the points for the common understanding.

Ex.

Keeping mobile in silent mode

If one has to answer the calls, going out of the hall

Give and take respect



Taking turns to put the ideas one by one

Avoiding side talks

Slide 13

Assessment

- Pre-test form
- Same form will be used for the post-test
- To evaluate the learning



5-10 minutes

Inform participants about the pre and post test and provide the form for pre-test. Provide 10 minutes time for the activity.

Slide 14

Training Format and Agenda- Daily Program

- Start each morning at 9 AM
- 15-minute tea and toilet break mid-morning
- 60 minutes lunch break
- 15-minute tea and toilet break mid-afternoon
- Aim to finish by 5 PM



These are the daily schedule for the training. This can be arranged as per the requirements and along with discussion with participants.

Training Format and Agenda

- Experiential, hands-on and learn by doing
- Individual and group activities
- Assignments and group works
- Case studies and learning from others' experience
- Open discussion, questions and answers
- Develop a sense of community and network within the group

We believe on very participatory learning so... (present above points)

As this is a ToT level training for adult, it is more focused on self learning and for the same, assignments and references will be provided. Participants are to carry out the activity as per the need at individual level, in pairs or in groups.

Thank you!
धन्यवाद !



Government of Nepal
Ministry of Water Supply
Department of Water Supply and Sewerage Management
Dhawal Bhaking, Thapathar, Mahanagar, Kathmandu, Nepal
Phone: 977-1-442296, 4118752
website: www.dwsn.gov.np

Technical Support



Environment & Public Health Organization (EPHO)
House Plot 5, Patan, Kathmandu, Nepal
Phone: 977-1-442296 | Website: www.ephonp.org

SESSION 2

Sanitation Status and Sanitation Service Chain



**Citywide Inclusive Sanitation – Training of Trainers’
Sanitation Status and Sanitation Service Chain**

Resource Person




Government of Nagaland
Ministry of Water Supply
Department of Water Supply and Sewerage Management

Before Starting...


We need to have good understanding of where we are

→


To get to where we want to go



सुदृढता दिशापरिसार पयनी



सकल नदीको प्रयोग



Let's understand our current status before we move ahead

Slide 3



This training includes 20 main technical sessions, and are currently on session 2: Sanitation Status and Sanitation Service Chain


Slide 4



This training includes 20 main technical sessions, and are currently on session 2: Sanitation Status and Sanitation Service Chain


Learning Outcomes

- Explain key terminologies of sanitation sector
- Understand current situation of sanitation sector in Nepal and discuss on way forward



Presentation Outline


- Sanitation and its terminology
- Sanitation Service Chain
 - Components of SSC
 - Types of SSC
- Open defecation free status and its sustainability - Open defecation to open disposal
- Safely managed sanitation and SDG and other national goals
- Strengthening supply chain in urban sanitation



Slide 7

Sanitation

- Where does your poo go when you flush your toilet ?
- Where does your wastewater go?
- Where does your rainwater go?
- Where does faecal sludge or septage go?
- Where does sludge from treatment plant dispose?
- Where does menstrual hygiene waste go?



Reference: Toilet Day questionaries

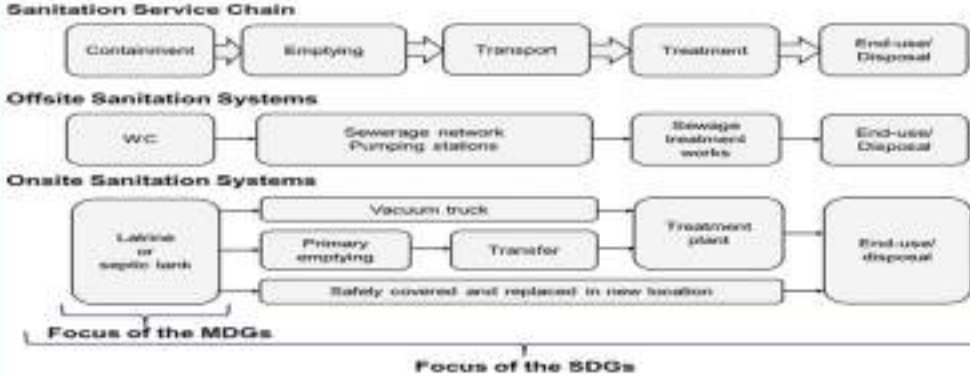
Ask participants if they did poop in the morning? Expected answer: Yes

If so, ask participants if they know the answer to above questions.

Slide 8

Sanitation Service Chain

- **Sanitation Service Chain** contains a series of steps from the capture of human excreta in the toilet through to treatment and finally disposal or end use.



Reference: <https://www.frontiersin.org/articles>

Reference: <https://www.frontiersin.org/articles>

Reference: <https://sswm.info/taxonomy/term/2657/sanitation-systems>

Linking to their answer from earlier slide, the answer to the questions are either it is carried to treatment plant or directly disposed to open water bodies through sewer network or it is stored in a containment which is then emptied and transported to a treatment facility and then to a disposal site.

The whole thing is linked with 5 components in a linear chain and is termed as sanitation service chain.

Sanitation

- **Sanitation**
 - is access to, and use of, excreta and wastewater facilities and services
 - ensuring privacy and dignity,
 - ensuring a clean and healthy living environment for all
- **Facilities and Services** should include
 - **collection, transport, treatment and disposal of human excreta, domestic wastewater and solid waste** and,
 - associated hygiene promotion to the extent demanded by the particular environment conditions




Reference: UN-Water Decade Programme on Advocacy and Communication (UNW-DPAC)


Reference: UN-Water Decade Programme on Advocacy and Communication (UNW-DPAC)

Before even starting with the session, one needs to come to same understanding of basic terminologies that all use. As for ex. what does sanitation refers to is...

Terminologies- Group work



5 Groups
5-7 minutes



Divide participants into 5 groups and provide the terminologies to each group (refer to the end of lesson for the terms to 5 groups).

Provide 5-7 minutes time for the activity and after the time, ask to share each group on the terminologies while displaying the terminologies on the screen.

Slide 11

Terminologies

- **Containment:** The first step in the Sanitation Service Chain where the capture and storage of waste is done so that it does not come in contact with people or contaminate the local environment.
- **Safely Managed Sanitation:** Population using an improved sanitation facility that is not shared with other households and where excreta are safely disposed of in situ or treated off.
- **Improved sanitation facilities:** It includes flush/pour flush to piped sewer systems, septic tanks or pit latrines; pit latrines with slabs (including ventilated pit latrines), and composting toilets.

Reference: <https://www.frontiersin.org/articles>

Slide 12

Terminologies

Sanitation Technology and Systems

- Sanitation technology is simply a functional unit
- Sanitation system
 - is a combination of different functional units
 - that together allow managing and reusing or disposing the different waste flows
 - from households, institutions, agriculture or industries
 - in order to protect people and the environment
- Address the water and nutrients cycle, from the toilet user where wastewater is generated, over the collection, treatment, up to reuse or discharge

Reference: <https://sswm.info/taxonomy/term/2657/sanitation-systems>

<https://sswm.info/taxonomy/term/2657/sanitation-systems>


Functional units ex- toilet, containment, sewer, septic tank, biogas...

Terminologies

Types of sanitation system

Offsite (also referred to as sewered or networked or grid)

Offsite sanitation systems are defined as systems where excreta and wastewater are collected and transported away from where they are generated and use sewers for transport (Tilley et al., 2014).



Reference: <https://www.frontiersin.org/articles>

Reference: <https://www.frontiersin.org/articles>

Terminologies

- **Onsite** (also referred to as non-sewered or non-networked or off-grid)
- **Onsite sanitation systems** are defined as systems where excreta and wastewater are collected and stored or treated where they are generated (Tilley et al., 2014), then emptied and the contents are transported for treatment.



Reference: <https://www.frontiersin.org/articles>

Reference: <https://www.frontiersin.org/articles>

Slide 15



This is non-sewered sanitation with onsite treatment means it is a complete system where the sludge from the containment is fully treated in itself and does not require for further treatment. Hence, is disposed safely or reused.

Ex: Twin pit, bio-gas digester, UDDT (urine diverting dry toilet)/ dry Eco-San toilet

Slide 16

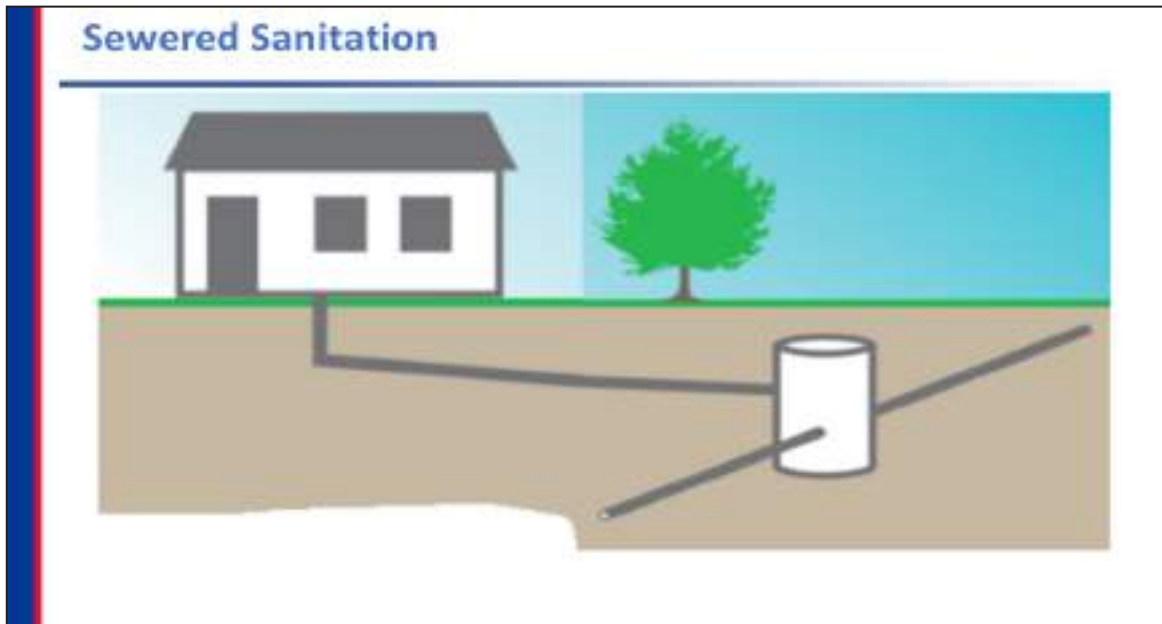


Source: https://www.waterpathogens.org

This is non-sewered sanitation with offsite treatment means the sludge from the containment is emptied and transported for further treatment.

Ex. Septic tank, holding tank, pit

The highlighted component of the system is termed as onsite sanitation component. While the entire chain is termed as offsite sanitation with offsite treatment.



Source: Tilley et al., 2014

Here, among the components of SSC, there is no containment rather is transported through a sewer network to a treatment plant (if available) or is disposed.

Terminologies

- **Sewers:** Underground drainage systems for disposal of wastewater and rainwater
- **Sewerage:** Entire sewer network including sewer, manhole, etc.
- **Sewage:** Used water containing all kind of waste in it which generated from sewerage system. Generally, it is also termed as **wastewater**.

Reference: <https://www.speakupafrika.org>

Reference: <https://www.speakupafrika.org>

Sewage: This term refers to a collective sanitation system

Slide 19

Terminologies

- **Wastewater:** All water from cooking, laundry, taps, bathrooms, and toilets (mix of black water and grey water)
- **Type of wastewater**
 - **Blackwater:** Wastewater from toilets which likely contains pathogens
 - **Grey Water:** Grey water is wastewater produced from household activities like kitchen, shower or laundry
 - **Brown Water:** Water + faeces+ other waste
 - **Yellow Water:** water + Urine
- **Waste-water Management:** It refers to the handling of wastewater including conveyance, treatment and safe disposal

Reference: <https://www.speakupafrica.org>

Reference: <https://www.speakupafrica.org>

Slide 20

Terminologies

- **Fecal sludge:** Fecal sludge is a combination of feces, wastewater, household waste and debris that accumulates in the bottom of latrine pits and septic tanks
- **Septage:** Fecal sludge from septic tank
- **Fecal Sludge Management:** It refers to the handling of faecal sludge including emptying, conveyance, treatment and safe disposal
- **Dumping:** The action of emptying septic truck tanks, or any other fecal sludge container. Dumping may be "illegal" when the place chosen for emptying is random, unprotected and unregulated.

Reference: <https://www.speakupafrica.org>

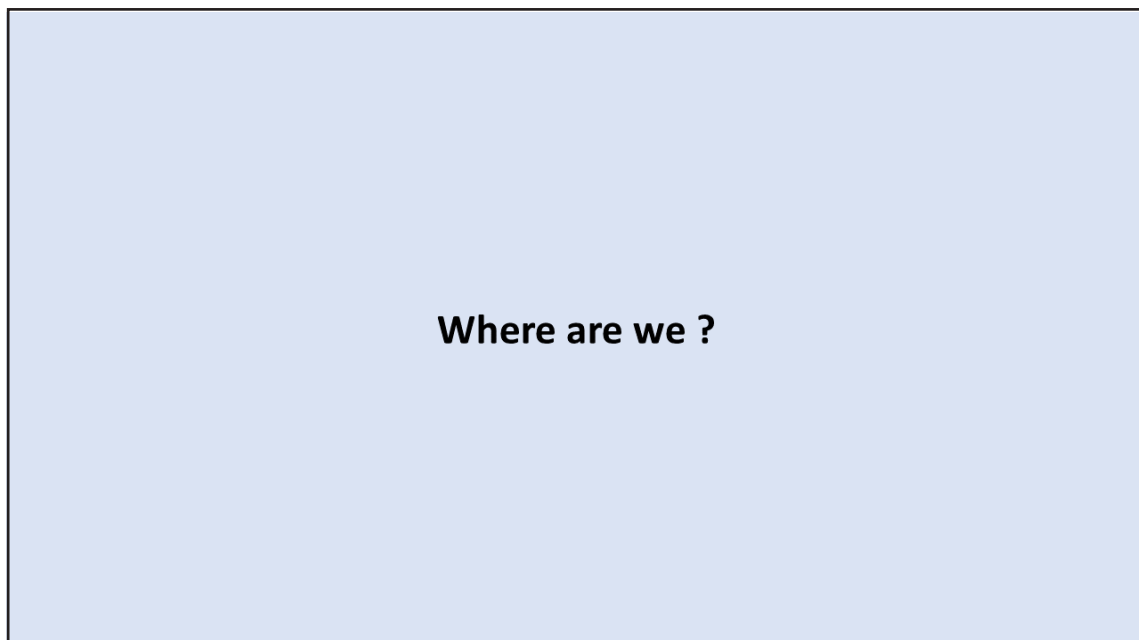
Terminologies

- **Sludge:** Semi-solids removed from wastewater treatment plant or technology which may require further treatment or stabilization prior to disposal
- **Compost:** A product obtained through the decomposition of organic waste mixed with mineral substances. It improves soil structure and provides nutrients for plants.
- **Biogas:** Gases (CH₄+CO₂) produced by the fermentation of organic materials, such as fecal matter. It can be used as a combustible or to generate electricity.
- **Reuse:** Beneficial use of reclaimed or repurified wastewater of stabilized bio-solids.

Reference: <https://www.speakupafrika.org>

Reference: Metcalf & Eddy, Inc. 2003MMecalfandEddy2003ecalfandEddy2003

Difference between sludge and compost is sludge may require further treatment or stabilization while compost is already a stabilized product.




As discussed earlier, we need to know the current status and context to move forward in the sanitation sector. So, let's see where are we...

Slide 23

Urban Sanitation, Public Health and Environment

- Globally, **80% of all wastewater** is discharged untreated into the **environment** (UN Water 2018)
- Globally, 1.5 billion population have access to sewer network without any treatment
 - 69% of this group live in Asia



Globally, 80% of all wastewater is discharged untreated into the environment (UN Water 2018). Many households have connections to sewer network that releases sewage without treatment. According to an estimate, 1.5 billion of the world population fall under this category. 69% of this group live in Asia.


Source

Slide 24

- Safe collection, transport and disposal of sanitation waste is often neglected; in Dhaka City:
 - **71% of 74% households** using on-site facilities **discharge directly into environment without treatment**
 - **20% population** are connected to **sewer network**
 - only **30% sewage** from the sewer system **reaches the treatment plant**
- Practice of irrigating vegetables with untreated or partially treated wastewater is also prevalent
 - In West Africa, **60%–100% of vegetables** consumed by urban residents were grown **irrigating with contaminated water**

Urban Sanitation, Public Health and Environment

- Manual emptying is still much more widely prevalent in comparison to safer practices such as vacuum trucks;
 - in informal settlements of **Nairobi**, **85% of pit latrine emptying** is done manually
 - in urban areas of **Bangladesh**, **69%** of emptying is done manually
 - In **India**, more than 1.2 million scavengers have been engaged in sanitation work, about 40% of them work in urban areas



Picture source: Google/PhotoTrust of India

In India, more than 1.2 million scavengers have been engaged in sanitation work, about 40% of them work in urban areas and roughly half are women.
 (source: https://www.researchgate.net/publication/345973650_Health_Identity_and_Livelihood_Status_of_Sanitation_Workers_in_Bhubaneswar_City_Odisha)

National context- ODF Declaration



1st Country in South Asia to declare ODF

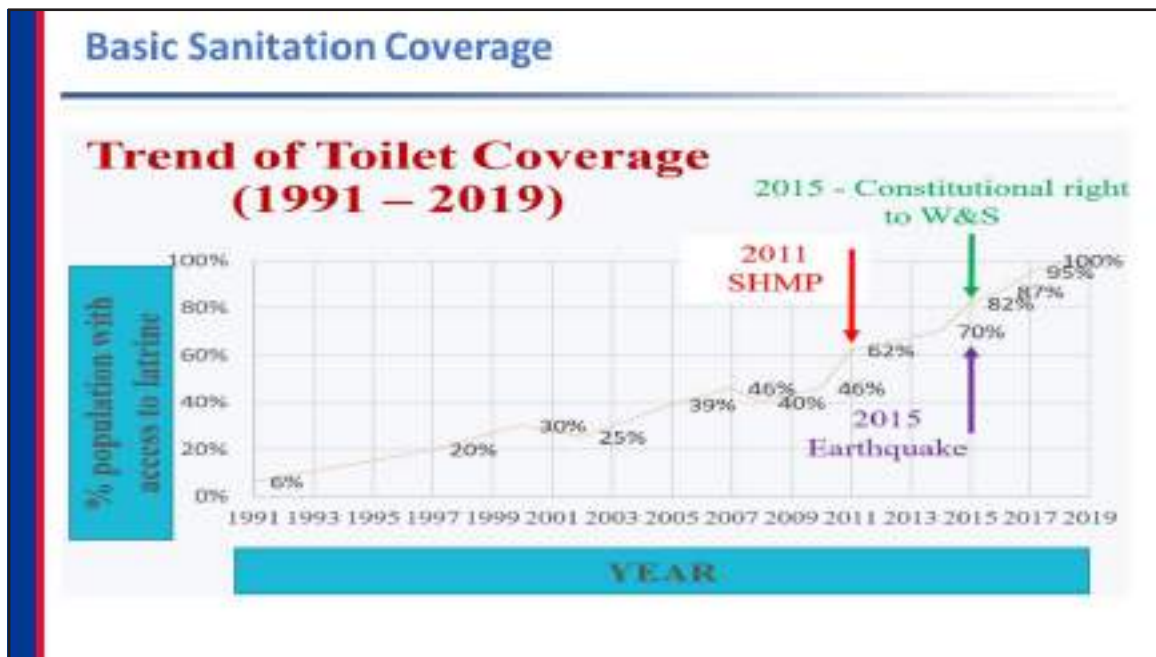
With Due Respect to the Declaration of 753 Palikas and 77 Districts as Open Defecation Free, I declare Nepal as Open Defecation free Country.

Besides, I call upon the people of Nepal to move towards total sanitation country and achieve the target of the Sustainable Development Goals by 2030. – Hon. K.P. Sharma Oli, Prime Minister, Nepal

Date: 30 September 2019 (2076 Ashoj -13)

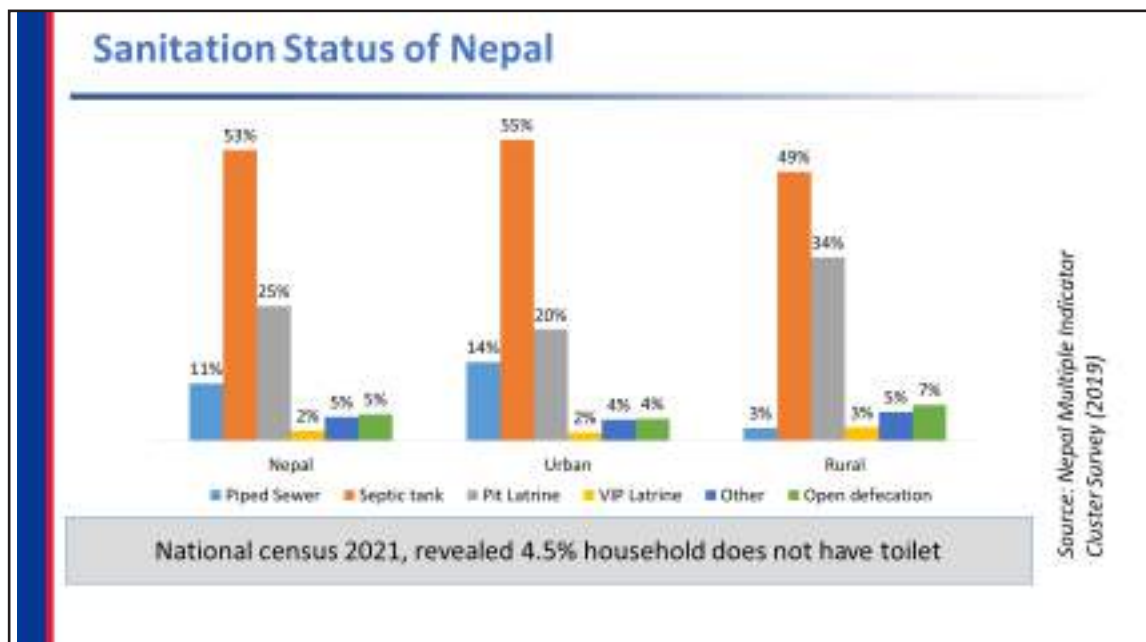
ODF declaration was the biggest achievement for sanitation sector in Nepal till date, everyone involved in the sector (Communities, development partners, households, civil society organizations, community based organization etc.) made it happen under the efficient leadership of Government of Nepal.

Slide 27



This graph presents the trend of basic sanitation coverage, along with the milestones in the sector, that is, the endorsement of ‘sanitation and hygiene master plan, 2011’ and water and sanitation as a constitutional rights in 2015. The graph also presents the progress in the sector from the year 2015.

Slide 28

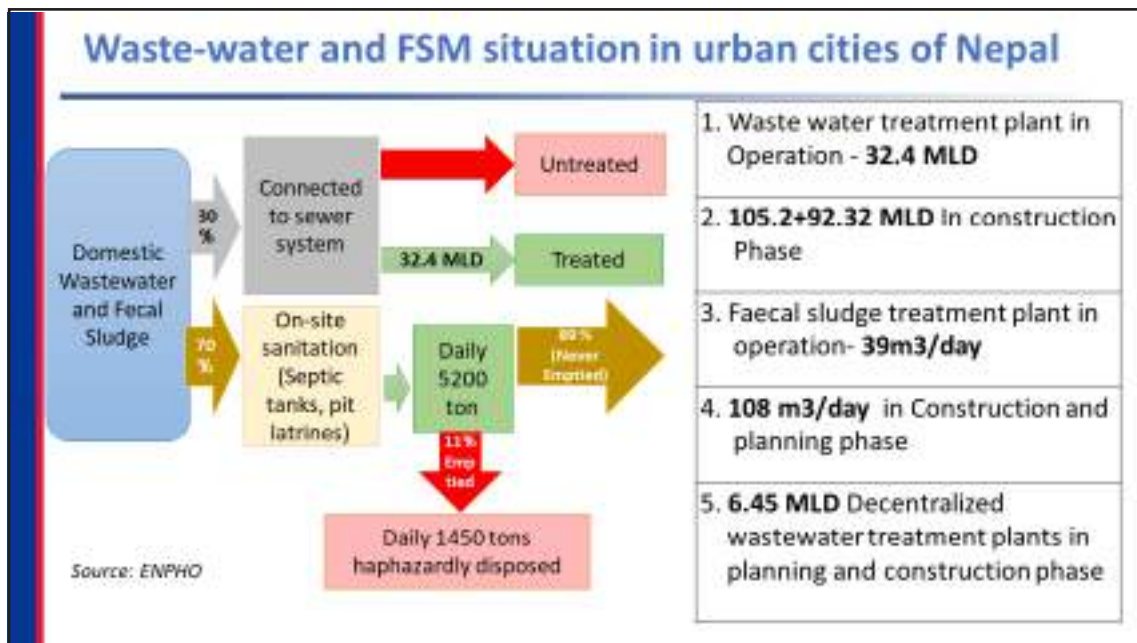


So, as per the context of Nepal, what is the overview of data in urban and rural context as per the sewer or non-sewer system

Provincial Data- As per the province

MICS Indicator	SDG ¹	Description ²	Nepal	Province						
				Province 1	Province 2	Bagmati	Central	Province 5	Karnali	Subsahyachitra
WS.8	6.1	Percentage of population using improved sanitation facilities	81.3	86.8	84.1	86.3	89.8	85.3	86.0	84.6
WS.9	6.1 & 6.2	Percentage of population using improved sanitation facilities which are not shared	79.2	85.8	73.3	79.8	82.7	83.4	86.2	83.2
WS.10	6.2	Percentage of population with an improved sanitation facility that does not flush to a sewer and over emptied	81.7	85.3	83.4	88.8	84.4	90.8	85.4	83.0
WS.11	6.2	Percentage of population with an improved sanitation facility that does not flush to a sewer and with waste disposed in site or reused	2.8	2.9	2.2	3.1	2.1	4.0	4.2	3.0

Focus on the relevant province while presenting the slide as per the MICS, 2019.



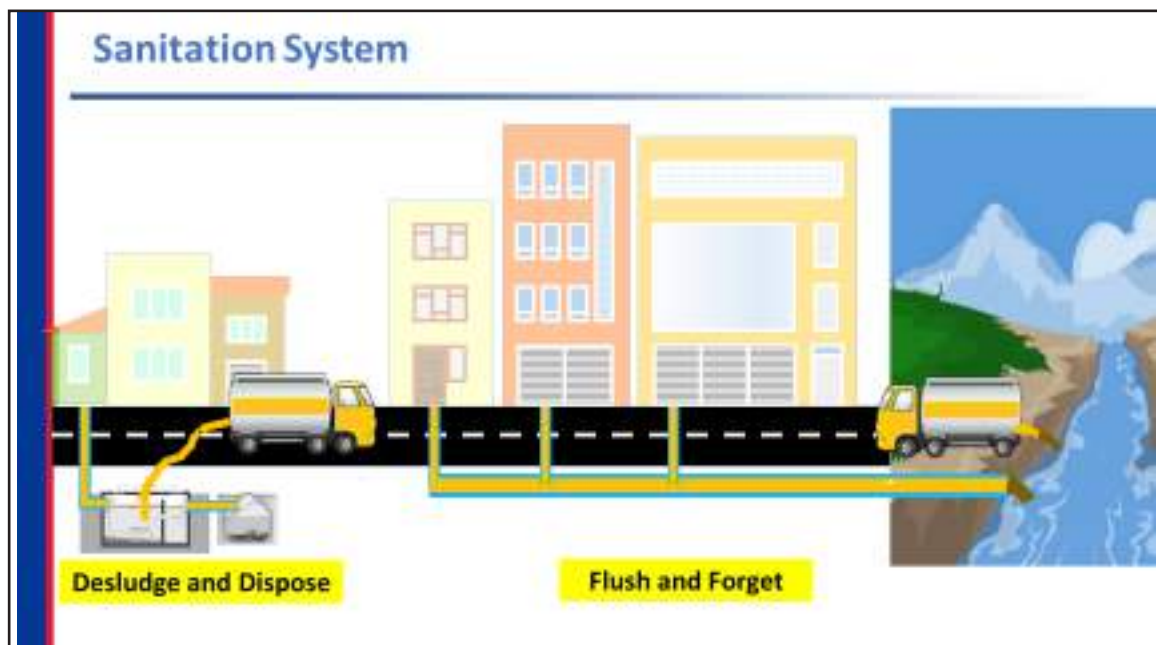
This slide present the data of waste water and FSM situation in urban cities of Nepal where 30% is connected to sewer system while 70% is based on on-site sanitation system.

Slide 31

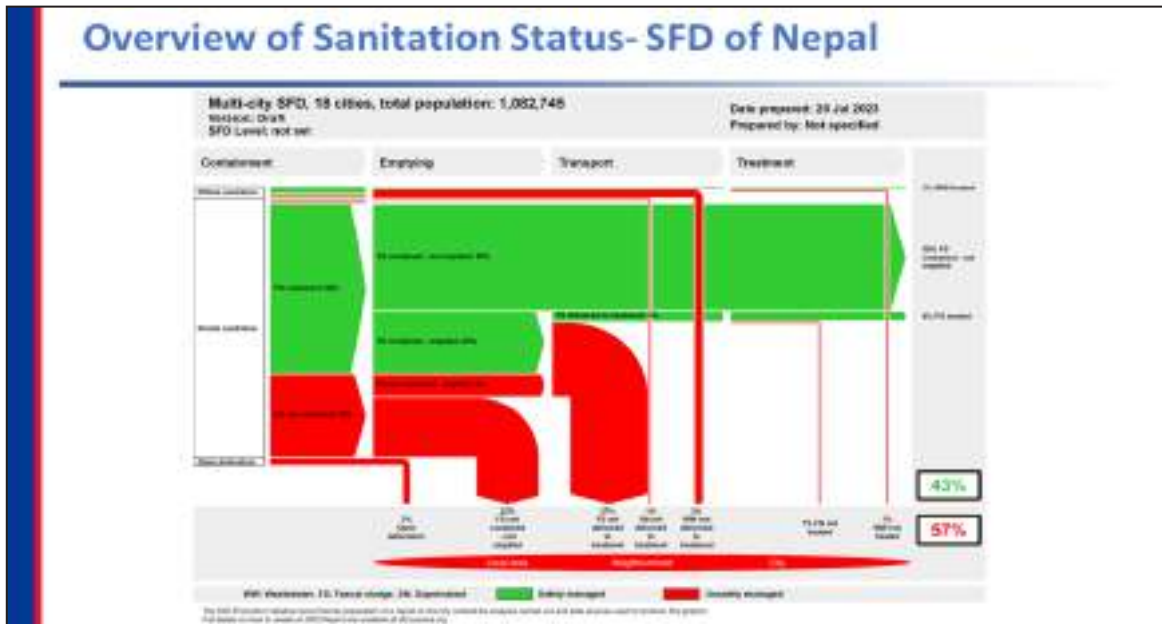


Water situation is like proxy indicator for sanitation situation. Although, we have covered the basic sanitation, but in presence of only 2.1% treatment, it has huge impact in the environment.

Slide 32



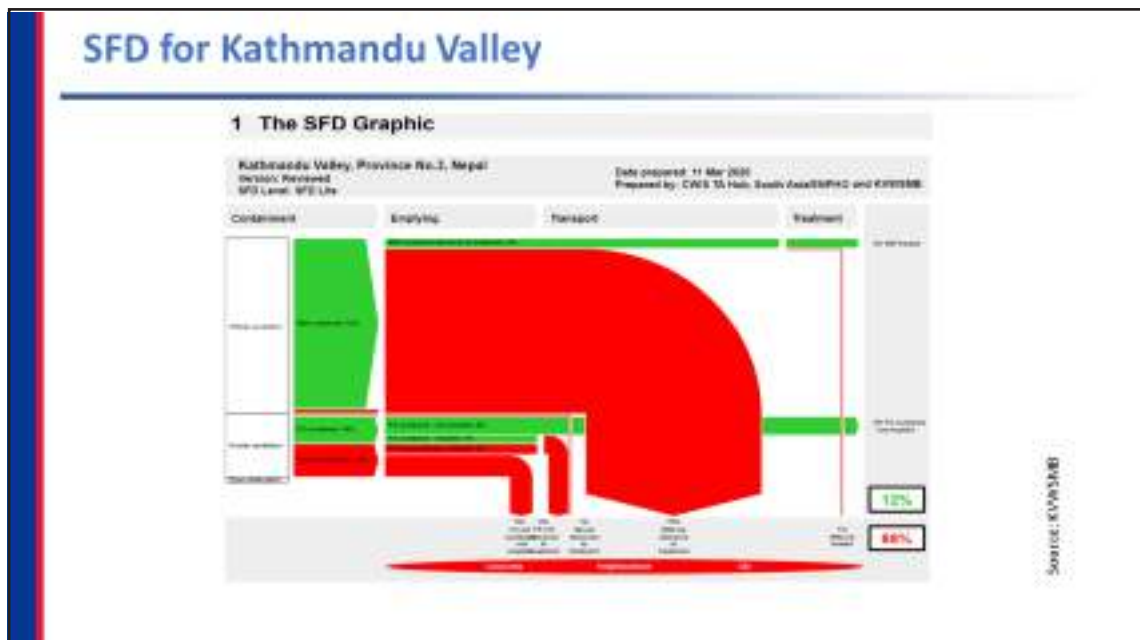
In general, there are two types of sanitation systems: on-site and off-site sanitation systems. In on-site sanitation systems, the sludge is collected in containment and is desludged. For off-site sanitation, wastewater is transported through a sewer network. In either system, waste should be treated before disposal. However, due to lack of treatment systems, the common practice of on-site sanitation is desludging and disposal of fecal sludge, and flushing and forgetting the wastewater.



Ask the participants if they know SFD.

SFD or shit flow diagram is a graphical representation of the sanitation status where the green color denotes the safely managed sanitation while the red, the color for danger represents unsafely managed sanitation. This is the draft SFD of Nepal based on the data collected from 18 cities which shows the overview of the sanitation condition. The green colored arrow depicts the safely managed sanitation in Nepal which is presented as 43% while the rest red color coded is unsafely managed one.

Now, if the condition of Nepal is this, ask participants what they think about the condition of Kathmandu valley, the capital of the country. Do they think the situation is better or worse, take 3 to 4 thoughts and proceed following slide.



Here, in the graph represents the situation of Kathmandu valley where, only 12% of the fecal sludge is only treated while the rest is disposed in water bodies, or openly. Here, the green color representing the safely managed sanitation is seen very minimal while the red block covers almost all part of the SFD.

Slide 35



So, does that mean we have not done anything in the sector for safely managed sanitation? Obviously not, as we had constructed such initiatives and sanitation services back in the history. But, at present context, we cannot find even remnants of some of such sanitation services while others are not functional.

Slide 36



This is the example of non-functional FSTP



Very few of them are in operation and are updated as per context.



Regardless our country is moving from open defecation to open disposal (indicating the data on earlier slide) Picture 2 source: <https://www.wsup.com/blog/the-devastating-impact-of-poor-wastewater-management/> MICS 2019, shows that 5.5% of the population is openly defecating. 92.7% sludge from NSS is not emptied, only 2.8% is removed for treatment while rest of 4.5 % is openly disposed. While discussing about the 11% of the sewered sanitation, we have very few numbers of WWTP that are treating the WW while the rest is again openly disposed in the nature mostly in water bodies.

Slide 39

What Next after ODF??



Keeping all these point in mind, ask participants what could be next starting from the ODF...

Slide 40

ODF Sustainability

- Financial sustainability?
- Technological sustainability?
- Institutional sustainability?
- Behavior sustainability?
- Environmental sustainability?
- Social sustainability?
- Commitment?
- Address to the needs of vulnerable and marginalized people?



While discussing about the ODF state, at the current phase, sustainability is a big question

What Next after ODF..??

- Beyond Toilet??ODF Sustainability?
- Recovery in ODF slippage?
- What is sector driving Policy?
- Institutions??
- Capacity??
- Coordination??
- Regulation and Compliance??
- Sector Performance?
- Utility performance??
- Management tools??

- Who is leading organization ?
- What are the requirement of change (federalization)?

All these questions need clear answers to move ahead. Discuss on some of the questions and inform that sustainability is a big concern in sanitation.

Confused sector and leadership?

- Sewered city??
- Non-sewered City??
- Hybrid??

Which one is better to us?
Which factors affect the right selection?

- Enforcement of septic tank construction and sewer line concurrently??
- What is safely managed sanitation system??
- FSM? Centralized TP? DEWATS? Industrial wastewater?

Investment in septic tank and sewer line concurrently?? Is it feasible?

They are confused on how to get to safely managed sanitation?

Slide 43

Discussion

- Sewered city??
- Non-sewered City??
- Hybrid??

Which one is better to us?
Which factors affect the right selection?

- Investment in septic tank and sewer line concurrently?? Is it feasible?
- What is safely managed sanitation system??
- FSM? Centralized TP? DEWATS? Industrial wastewater?

Discuss this with earlier slide.

Slide 44

Existing Condition of Cities

- Existing situation of sanitation status in these cities...
- What is understanding regarding safely managed sanitation system?
- FSM? Centralized TP? DEWATS? Industrial wastewater?
- What about the involvement and investment of private sector?

Note: Discuss with participants and get answer in Meta card.

We lack data, we lack information, that is the reason for confusion
 Encouraging Research & Development/ study of new sanitation technologies
 Investing in education and awareness campaigns

Way forward

- Know about your city sanitation- research and development, awareness
- Strengthening the supply chain- private sector engagement, and involvement, capacity building
- Creating the enabling environment

These are the way forward relating to all the discussion of ODF, knowing about the current situation by research and development on sanitation, awaring the citizen on sanitation and related issues. To this, other way forward is the strengthening the supply chain for ODF sustainability and moving ahead through private sector engagement and involvement and capacity building of human resources along with creating the enabling environment for the same. While discussing about sanitation supply chain, what do you think about it, or what is your understanding?

Sanitation Supply Chain

- It is the **network of businesses** involved in the production, delivery and sale of sanitation products and services to the consumer
- It is the **combination of organizations, people, activities, information and resources** required to create a product or service and move it from supplier to customer
- The supply chain analysis will critically inform the design of interventions to **support and strengthen market-based solution** and support to vulnerable

Source: Worldbank

Supply chain entities typically include suppliers, producers, transporters, wholesalers, retailers and consumers. Discussing on sanitation supply chain, we are not only discussing on the materials and products but also it refers to the services including the supply chain of capable and trained HR.

As a next problem/ issues- add example of supply chain of capable/ trained HR

Slide 47



Either in a product or services of supply chain
 Engagement of private sector- are they aware of the situation, did we on-board the private sector?
 Are they not the relevant stakeholders for the equitable, safe and sustainable sanitation services and facilities?
 Developing partnerships with local businesses/market for easy access to services and facilities.
 If we are to discuss on the figure for services, what would it like be?

Slide 48



Collecting responses from participants discuss on strengthening supply chain in sanitation with capable Human resources, providing services by the capable HR from local organization or local governance, for the same, training and capacity building activities. Further, sensitizing other relevant stakeholders on sanitation and update on R&D, new approaches to meet the targets and goals while collaborating with GOs and other relevant stakeholders including private sector, individual consultants and all.

Strengthening Enabling Environment...

- A. Strengthening Enabling Environment:** Policy, Legal enforcement, plan, financing

- B. Creating responsible WASH units at local government:** Regulation and compliance, robust data and information system, coordination, capacity, by enhancing innovation, governance, by applying management tools

- C. Collaborating with three tires** of government and non-government organizations to establish and enforce regulations and standards

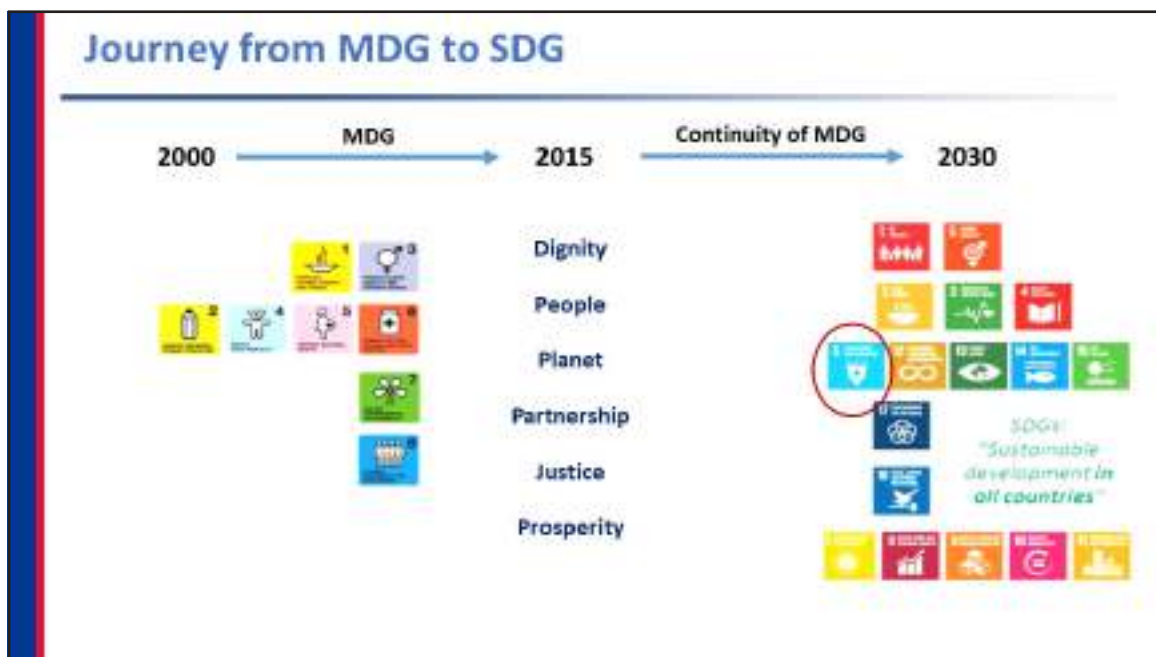
Linkage with CWIS: what is the condition of plan and policies on sanitation, by-laws on sanitation/ septic tank in your LG etc.

Way forward?



Our Destination: By 2030, achieve access to adequate and equitable sanitation and hygiene for all, and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.

This as a whole means safely managed sanitation for all which is the goal of SDG, 2030. How did we come to land in this? How are we moving forward? This actually started from MDG, the millennium development goals.



How the paradigm has shifted, from MDG to SDG with more of the points to consider

Dignity : End poverty, fight inequality

People : Ensure healthy lives, knowledge, inclusion of women and children

Planet : protect our ecosystems for all societies and our children

Partnership : Analyse global solidarity for sustainable development

Justice : Promote safe and peaceful societies, strong institutions

Prosperity : grow a strong, inclusive and transformative economy

Reference: M<https://www.publichealthnotes.com>. calfandEddy2003ecalfandEddy2003

Guiding Principles (SDG)

6 CLEAN WATER AND SANITATION

TARGET 6-1	TARGET 6-2	TARGET 6-3	TARGET 6-4
 <small>SAFE AND SUSTAINABLE DRINKING WATER</small>	 <small>END OPEN DEFECATION AND PROMOTE ACCESS TO ADEQUATE AND EQUITABLE SANITATION</small>	 <small>IMPROVE WATER QUALITY WASTEWATER TREATMENT AND SAFE RAINWATER</small>	 <small>INCREASE WATER EFFICIENCY AND SECURE FRESHWATER SUPPLIES</small>

- Ensure everyone has access to safely managed sanitation by promoting a range of solutions - **both onsite and sewerred, centralized or decentralized** - based on contextualized situations.

SDG 6: Ensure availability and sustainable management of water and sanitation for all

SDG 6.2: by 2030, achieve access to adequate and equitable Sanitation and hygiene for all, and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

Guiding Targets and Goals		
लक्ष्य आ.व. ०७९/८०	पन्ध्रौं योजना लक्ष्य (०८०/८१)	दिगो विकास लक्ष्य सन्-२०३०
<ul style="list-style-type: none"> आधारभूत सरसफाइ सेवा - १००% प्रशोधन सहितको ढल प्रणाली - ३% 	<ul style="list-style-type: none"> आधारभूत सरसफाइ सेवा - १००% सबै प्रकारका फोहोरपानी प्रशोधन - २०% 	<ul style="list-style-type: none"> आधारभूत सरसफाइ सेवा - १००% उत्पादित फोहोरपानीको प्रशोधन - ५०%

Source

These are some of the goals that are contextualized by government of Nepal.



For the way forward, these are some of the guiding goal which continued from MDGs to SDGs which is basically reaching for the safe disposal along with the improving service delivery.

Slide 55

Guiding approach?

- **Rethink?** Does the Conventional approach of sewerage and wastewater treatment address **universal safely managed sanitation**?
 - **Universal?**
 - **Safely Managed Sanitation?**
 - **Throughout time- Sustainability?**





- **Change in Mindset**

To get to the goals and targets, one need to rethink, if the conventional approach of sewerage and wastewater treatment address the universal safely managed sanitation. Here, discussing on the points, universal means, access to all city denizens, including city dwellers, people living in squatters, slums and etc. It also means affordability, for such services throughout the SSC. Similarly, safety for all means safety of all relevant stakeholders including sanitation workers. Similarly, it does not mean for a fixed time period only but throughout time, which feed us to think about sustainability. For this all, one needs to bring change in mindset.

Slide 56



Key Messages

- There is no perfect solution for sanitation
- Context matters when planning and designing sanitation
- Issues of urban sanitation stemming from infrastructure focused, inappropriate technology rather than service delivery
- Sustainability of ODF and other aspects is core along with the achievement of basic sanitation services
- Way forward in sanitation is 'Sanitation for All' with specific guiding approach along with targets and goals

Inform the participants that as we go ahead the course we will come back to the points we have discussed

References

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- Metcalf & Eddy, Inc. 2003
- <https://www.publichealthnotes.com>

Thank you!
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Government of Nepal
 Ministry of Water Supply
 Department of Water Supply and Sewerage Management
 Jhamsikh Building, Patanasthan, Kathmandu, Nepal
 Phone: (977) 1114 443111
 website: www.dwsst.gov.np

Technical Support



Environment & Public Health Organization (EPHO)
 House No. 1, Rajgopal and Bhanuwar, Kathmandu, Nepal
 Phone: (977) 1114 443111 | Website: epho.gov.np

SESSION 3

CWIS: Concept and Introduction

Slide 1



The diagram illustrates the wastewater management process. It starts with a 'COLLECTOR' pipe that carries wastewater from various sources to a 'TREATMENT PLANT'. At the treatment plant, the wastewater undergoes several stages: 'PRE-TREATMENT', 'PRIMARY TREATMENT', 'SECONDARY TREATMENT', and 'TERTIARY TREATMENT'. The treated effluent is then discharged into a 'RECEIVING WATER BODY'. The sludge produced during treatment is sent to a 'SLUDGE TREATMENT' facility. The treated effluent is also used for 'REUSE' in various applications, such as 'INDUSTRIAL USE', 'AGRICULTURE', and 'DOMESTIC USE'. The diagram also shows a 'WATER TREATMENT PLANT' and a 'DISTRIBUTION NETWORK' that provides clean water to 'RESIDENTS'.


Citywide Inclusive Sanitation – Training of Trainers’
CWIS: Concept and Introduction
 Resource Person

Government of India
 Ministry of Water Supply
 Department of Water Supply and Sewerage Management

Slide 2

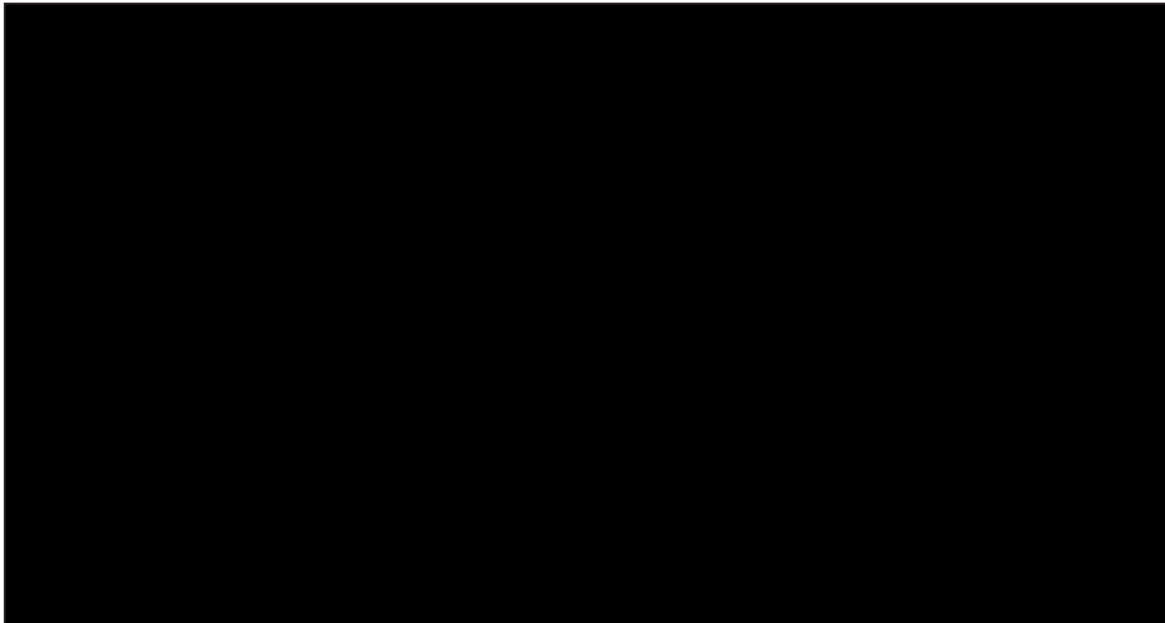
Before Starting

- Namuna basti
 - Annapurna Post on 8th July, 2023
 - Blue tinned roof
 - Uniform houses
 - Alluring settlement
 - Kalikot Raskot-7, Pokharikot integrated model settlement'
 - Although all houses are ready, most of them are empty
 - Although, Provincial government was supposed to support for the completion, had taken loan to complete the houses
 - In lack of basic facilities like water, electricity, road or school at nearby proximity is not suitable to use or even to sell



This is the story where provincial government was supposed to provide the financial support with estimated 4 lakhs rupees but 8 lakhs rupees was spent to construct one. People took loan for the insufficient fund and completed houses, but due to lack of basic facilities people stay at their old homes which is in a very disaster prone area for their livelihood.

Cover story: Annapurna Post, July 8th 2023 (Asad 23, 2080)



As the sanitation goals have shifted from MDGs to SDGs, our perception and approach also need to move and should clarify some of the ideas that we tend to embed in our mentality from the past experiences like... (present the video on 7 myths)

These all myths led to the need of CWIS approach and hence evolution of CWIS... (present next slide)



This training includes 20 main technical sessions, and are currently on session 3: CWIS: Concept and Introduction

Slide 5



This training includes 20 main technical sessions, and are currently on session 3: CWIS: Concept and Introduction

Slide 6


Learning Outcomes

- Describe CWIS approach and its importance
- Clarify the CWIS concept with the practical example
- Discuss the CWIS framework and principles of CWIS

At the end of the session, participants will be able to ...

Presentation Outline

- Introduction to CWIS
- Evolution of CWIS
- CWIS Principles and Framework
- Videos and cases of CWIS implementation
- Key Messages



SDG 6.2

Safely Managed Sanitation for All

What is SAFELY
MANAGED
SANITATION?

Who means ALL?

For how long ?

SDG 6.2 defines safely managed sanitation for all
 What does this statement means to you or what do you understand?
 Collect 2 to 3 responses
 Responding to the participants idea, let's analyze the statement in pieces.
 Everyone- who is everyone?
 (CLICK)Safe- What is safe?
 For how long?

Slide 9



“No-one is safe until everyone is safe”

What does this statement means to you or what do you understand?

Collect 2 to 3 responses

Responding to the participants idea, let’s analyze the statement in pieces.

Everyone- who is everyone?

(CLICK)Safe- What is safe?

For how long?

Slide 10



As we have discussed sanitation means sanitation systems along with services as well. And the public health depends on these systems and services. But while discussing on these, we need to support the frame and as discussed in SDG 6.2, we need to think of including citywide approach inclusive of all which is simply termed by CWIS approach.

This new paradigm shift has inclusion as its centre piece. The term ‘inclusive’ encompasses informal and peri-urban, sewer and non-sewer technologies, the entire value chain, all stakeholders, larger urban goals, and importantly marginalization based on gender, disability, age, religion, caste and income level.

This depends on “on one is safe until everyone is safe” as if one person defecates openly it not only effect on the same person, but have impact to the community or wide population.

What is CWIS?

- Citywide Inclusive Sanitation (CWIS) is a **public service approach**
- **to planning and implementing urban sanitation systems**
- **to achieve outcomes summarized by Sustainable Development Goal 6:**
 - safe, equitable, and sustainable sanitation for everyone in an urban area,
 - paying special attention to the needs of the poor, the marginalized, and women and girls.

Ask for the full-form of CWIS if any have paid attention to.

CWIS is the holistic approach to dealing with sanitation

CWIS is a public service approach that guides the planning & design of sanitation systems and services, operations and management of sanitation systems and service delivery, and monitoring and evaluation of sanitation systems and services.

Citywide Inclusive Sanitation (CWIS)

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]

CWIS is the holistic approach to dealing with sanitation



Citywide Inclusive Sanitation (CWIS) is a public service approach to planning and implementing urban sanitation systems to achieve outcomes summarized by Sustainable Development Goal 6: safe, equitable, and sustainable sanitation for everyone in an urban area, paying special attention to the needs of the poor, the marginalized, and women and girls.

Slide 13

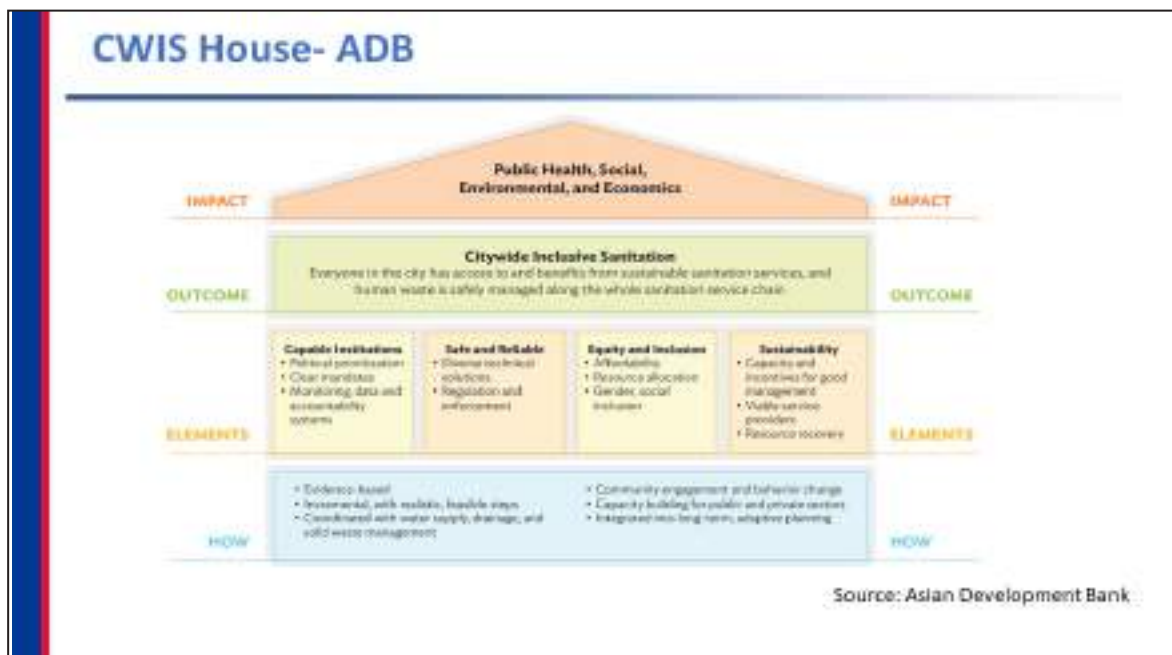


Different prominent actors have presented in different ways...
IHE DELFT, IWA, SuSANA



As per the World Bank, the concept is presented by 4 pillars of CWIS support;

1. Knowledge and learning
 - a. Launch of CWIS learning/ webinar series
 - b. Making the links to WASH in slums
 - c. CWIS regional knowledge and learning events
 - d. CWIS national workshops
2. Operational support
 - a. Advocacy/ initiating CWIS approaches in over 20 countries, across all bank regions
 - b. Influencing the design of urban sanitation projects in over 35 countries globally
3. Building partnerships
 - a. Through national, regional and international events and conferences
 - b. Through collaborating with a range of development partners
4. Tools and resources
 - a. Tools: sanitation rapid assessment tool; CWIS costing and planning tool; Emergency WASH rapid assessment
 - b. Resources: Connecting the unconnected guide; Small towns wastewater manual; sanitation workers; FSTP engineering design book; COVID guidance notes on sanitation; FSM TOR; Condominial sewers TOR



CWIS is an evolving concept to meet the sanitation challenges in the world’s growing urban areas more effectively. It builds on current sanitation technologies and practices to achieve more comprehensive, effective, and sustainable sanitation services.

The outcome of a CWIS approach is that everyone in an urban area has access to and benefits from adequate and sustainable sanitation services. And all human waste is managed safely along the whole sanitation service chain.

CWIS comprises four elements—capable institutions, safety and reliability, equity and inclusion, and sustainability—with associated actions to achieve the desired outcome

- ### Consensus- CWIS
- **CWIS builds on rather than replaces** existing systems of sanitation delivery, based on resources and needs of cities and promotes sanitation systems that foster a process of continuous improvement
 - **CWIS creates demand for technology and business model innovation**
 - **Investments made by the private sector can become meaningful, formalized, and relevant** beyond niche markets and pilots

All definition and explanation comes to the consensus that ...

Changes in aspect of Sanitation

- Address all Sanitation system
- Include sewerred and non-sewerred technology
- Proper coordination in planning and management including the sectors of Solid waste, sewerage, drinking water, land management
- Result based analysis
- Include all community people

Defining all these perspective, as the solution for urban sanitation, we need changes in aspect of sanitation and CWIS...

CWIS address all sanitation system

CWIS include sewerred and non-sewerred technology

CWIS look forward for proper coordination in planning and management including the sectors of Solid waste, sewerage, drinking water, land management

CWIS does a result-based analysis

CWIS include all community people

CWIS Framework

	EQUITY	SAFETY	SUSTAINABILITY
CORE CWIS OUTCOMES	Services reflect fairness in distribution and prioritization of service quality, prices, and deployment of public finance/ subsidies.	Services safeguard customers, workers, and communities from safety and health risks—reaching everyone with safe sanitation.	Services are reliably and continually delivered based on effective management of human, financial and natural resources.
CORE CWIS FUNCTIONS	RESPONSIBILITY An authority(ies) executes a clear public mandate to ensure safe, equitable, and sustainable sanitation for all.	ACCOUNTABILITY Authorities' performance against their mandate is monitored and managed with data, transparency and incentives.	RESOURCE PLANNING AND MANAGEMENT Resources—human, financial, natural, assets—are effectively managed to support execution of mandate across time/space.

Although the understanding and presentation on CWIS is different of various organization, however, the core concept is same and for now throughout the training we will be going through the idea of BMGF with the CWIS framework and CWIS principles.

As presented by BMGF, there are majorly 6 components of CWIS framework, categorized into 2 sections as outcomes and functions. Outcomes that we want to get/ have while discussing about any sanitation services or facilities while the functions are responsible to get up to the outcomes. Does this mean that we have not done anything in the sector? The answer is obviously we have done a lot and have achieved some as well, but we have missed some so need to learn from the past and need to focus as such.

Slide 19



Some of the examples of equity is, if the sanitation system and services are accessible to all, in terms of technical, social and financial aspects. Similarly, safety also looks for the safety of each and every stakeholder related to the sanitation system and services likewise sustainability of such infrastructures and services is of another concern.

Slide 20



Provide one component of CWIS framework to each group and ask to discuss in their groups on the point presented on the component.

To this, ask participants to discuss on the major points that needs to cover or that contributes to each component. Ex. what does equity means and for whom?

Similarly, safety means what and regards/ discuss on whose safety?

And so on of each component.

After the time, ask participants to present their idea and paste their ideas in 6 stations of the hall.

Now ask groups to go through a gallery walk and write/ include any point that they feel to add.



Similarly, CWIS perspective could be use in any particular sanitation infrastructure or throughout the whole SSC.



As we discuss on CWIS and CWIS component, where does this idea came from and how is nice idea to understand the concept.

Slide 23

Manila Principles on CWIS

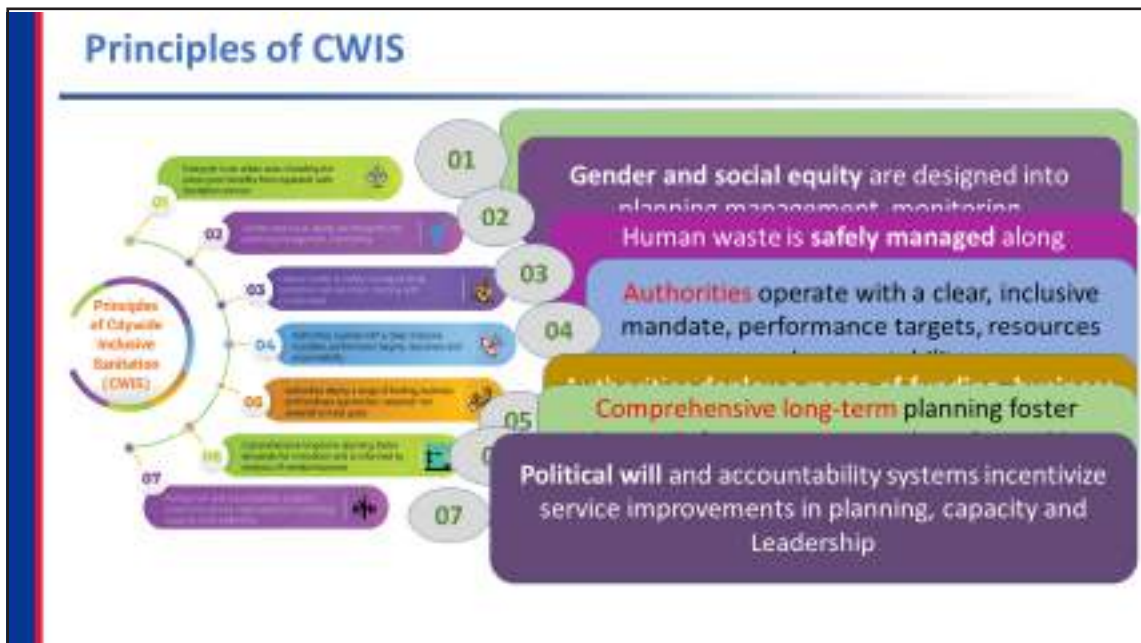
1. Equity - Provide safe and affordable sanitation to all
2. Providing Environmental and Public health by ensuring safely managed sanitation along entire sanitation service chain
3. Mix of technologies - Sewered and Non-sewered
4. Comprehensive planning
5. Monitoring and Accountability
6. Mix of Business models

Manila Principles on CWIS

- 1. Equity**
Everyone in a community – including disadvantaged marginalized by gender, social and economic conditions – has equal access to toilets, latrines, and safe wastewater services.
- 2. Environment and public health**
Human waste is safely managed along the entire sanitation service chain, starting from collection to reuse and disposal.
- 3. Mix of technologies**
A variety of necessary and non-necessary sanitation options needed in the service city, depending on local needs and existing conditions and resource availability, is needed.
- 4. Comprehensive planning**
Planning is inclusive and holistic with participation from all stakeholders including users and political actors – both local and long-term actors and institutional arrangements used to implement water supply and sanitation service chain.
- 5. Monitoring and accountability**
Sanitation services are planned, monitored, regulated, performance targets, resources requirements, financial and technical resources, and accountability.
- 6. Mix of business models**
Sanitation services are provided through a range of business models, funding resources and financial arrangements to meet all financial objectives.

Manila CWIS Principles would be the first major update to urban sanitation after the Bellagio Principles on Sustainable Sanitation

Slide 24



As per the CWIS, there are 7 principles and read out (only) 7 principles of CWIS

You may also ask different participants to read a point or two of 7 principles



Provide the list of points on 7 principles (one principle to each group) and ask to discuss core concept presented in each principles and also ask to place the principle in which component of CWIS framework does the principle support along with their rationale.

Reference for the discussion: <https://www.frontiersin.org/articles/10.3389/fenvs.2020.00019/full> (figure 1)



<https://www.youtube.com/watch?v=z7OomhH3rOY>

CWIS Service Framework

• **Points discussed in the video;**

1. CWIS implementation in the world
2. The whole sanitation service chain for sustainable services
3. Different partnership
4. Accessible services to all
5. Contributing to thriving urban economy
6. Customer centric services
7. Reuse or adequate disposal, emphasizing green circular economy
8. Technology selection depending on the context/ city
9. Financing and subsidies and to whom it is targeted to
10. Regulation of private sectors, wastewater treatment plans and effluent
11. Responsible entity

	EQUITY	SAFETY	SUSTAINABILITY
WATER QUALITY	Ensure effective treatment, minimize susceptibility of water quality issues, and protection of water resource reserves	Ensure adequate treatment, water, and sewerage health and hygiene - meeting awareness and demand	Ensure an ability and willingness to invest in effective management systems through decision-making
WATER QUANTITY	Ensure sufficient water is available and accessible to all	Minimize pollution and ensure water is treated and managed appropriately, safeguarding resources	Ensure water, financial, and other resources are managed in a way that supports sustainable development

Linking to the above video, discuss how each of the components are discussed in the video, in brief.

Example: the main points discussed in the video are:

CWIS implementation in the world

The whole sanitation service chain for sustainable services

Different partnership

Accessible services to all

Contributing to thriving urban economy

Customer centric services

Reuse or adequate disposal, emphasizing green circular economy

Technology selection depending on the context/ city

Financing and subsidies and to whom it is targeted to

Regulation of private sectors, wastewater treatment plans and effluent

Responsible entity



Citywide inclusive sanitation, when implemented effectively, can have a synergetic effect on various Sustainable Development Goals (SDGs). Here's an overview of how citywide inclusive sanitation contributes to the achievement of several SDGs: The first list of SDGs are directly linked with CWIS while the second list of SDGs have indirect linkage or impact with CWIS.

SDG 6 (Clean Water and Sanitation): The most direct impact is on SDG 6, which focuses on ensuring access to clean water and sanitation for all. Citywide inclusive sanitation helps improve sanitation infrastructure, reducing open defecation, and promoting proper waste disposal, which, in turn, contributes to water quality and availability.

SDG 3 (Good Health and Well-Being): Improved sanitation facilities contribute to better public health by reducing the spread of waterborne diseases, improving hygiene, and preventing illnesses. This, in turn, supports the goal of ensuring good health and well-being.

SDG 4 (Quality Education): Adequate sanitation facilities in schools contribute to a healthier and more conducive learning environment. This can positively impact attendance rates, especially for girls, who may be more likely to attend school when sanitation facilities are available.

SDG 5 (Gender Equality): Citywide inclusive sanitation can address gender inequalities by providing safe and accessible sanitation facilities for women and girls. This is particularly important for promoting gender equality and ensuring the dignity and safety of women and girls.

SDG 8 (Decent Work and Economic Growth): Improved sanitation in urban areas can contribute to better public health, leading to a healthier and more productive workforce. This, in turn, supports the goal of decent work and economic growth.

SDG 11 (Sustainable Cities and Communities): Citywide inclusive sanitation is integral to creating sustainable and resilient urban environments. It contributes to improved living conditions, environmental sustainability, and overall urban development.

SDG 12 (Responsible Consumption and Production): Effective sanitation practices contribute to responsible consumption and production by promoting efficient use of resources, waste reduction, and proper waste management.

SDG 13 (Climate Action): Sustainable sanitation practices can contribute to climate action by reducing environmental pollution and promoting resource efficiency. Additionally, well-designed sanitation systems can address the impact of climate change on water resources.

SDG 16 (Peace, Justice, and Strong Institutions): Access to sanitation is linked to social stability and public health, contributing to the development of peaceful and just societies.

SDG 17 (Partnerships for the Goals): Achieving citywide inclusive sanitation often requires collaboration between governments, communities, private sectors, and NGOs. Effective partnerships are essential to realizing the goals of sustainable sanitation.

By addressing the sanitation needs of urban populations in an inclusive and comprehensive manner, citywide inclusive sanitation has the potential to create positive synergies across various SDGs, promoting sustainable development and improving the overall well-being of communities.

Slide 29



BMGF _ Public Service Approach

In these 8 cities, mainstreaming of CWIS approach in planning, management and monitoring are being done and are setting examples for the same.

Slide 30

In Context of Nepal,

- **CWIS plan guideline-** drafted, to be finalized
- Different **training modules** are being developed
- **Capacity building** at different level
- **Localizing CWIS indicators-** on going
- **CWIS plan** in different municipalities
- **OHS guidelines** for FS desludger
- Different **studies related OHS**
- **Licensing** for FS desludger

Training modules- Orientation on CWIS, Intro to CWIS, OHS, Mason training on septic tank, and CWIS ToT

Capacity building-

- Sensitizing mayors and higher level stakeholders for CWIS integration in plan and policies, enabling environment
- Training to officers level (government organizations, DPs, etc.) on CWIS- concept and implementation
- Training and orientation to frontline workers- SWs, masons and etc. on OHS, hands on training on septic tank and etc

Key Messages

- No one is safe until everyone is safe
- CWIS as an emerging approach to achieve universal access to SMS for all
- It is a public service approach to advance Equitable, Safe, and Sustainable outcomes, by strengthening core public system functions of Responsibility, Accountability, and Resource Planning and Management
- CWIS foster a process of continuous improvement and builds on rather than replaces existing systems of sanitation delivery, based on resources and needs of cities and promotes sanitation systems
- Focus on proper coordination in planning and management with water supply, solid waste, climate etc.,

Assignment

- a. Group 1: <https://www.adb.org/sites/default/files/publication/751531/cwis-citywide-inclusive-sanitation-needed.pdf>
- b. Group 2: <https://www.worldbank.org/en/topic/sanitation/brief/citywide-inclusive-sanitation>
- c. Group 3: <https://www.frontiersin.org/articles/10.3389/fenvs.2020.00019/full>
- d. Group 4: https://www.youtube.com/watch?v=u3dY2m_GJes&pp=ygUKRUFXQUcrQ1dJUw%3D%3D

Divide participants into 4 groups and each group is provided with the link. Ask to go through the link and will be discussing on the points in next day's review.

Slide 33

References

- <https://www.worldwaterweek.org/event/9823-citywide-inclusive-sanitation-how-far-have-we-come%20>
- <https://www.adb.org/sites/default/files/publication/751531/cwis-citywide-inclusive-sanitation-needed.pdf>
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- <https://www.worldwaterweek.org/event/9823-citywide-inclusive-sanitation-how-far-have-we-come>
- [CWIS-Citywide-Inclusive-Sanitation-Needed.pdf](#)
- <https://blogs.worldbank.org/water/cwis-new-web-hub>

Slide 34

Thank you!
धन्यवाद !

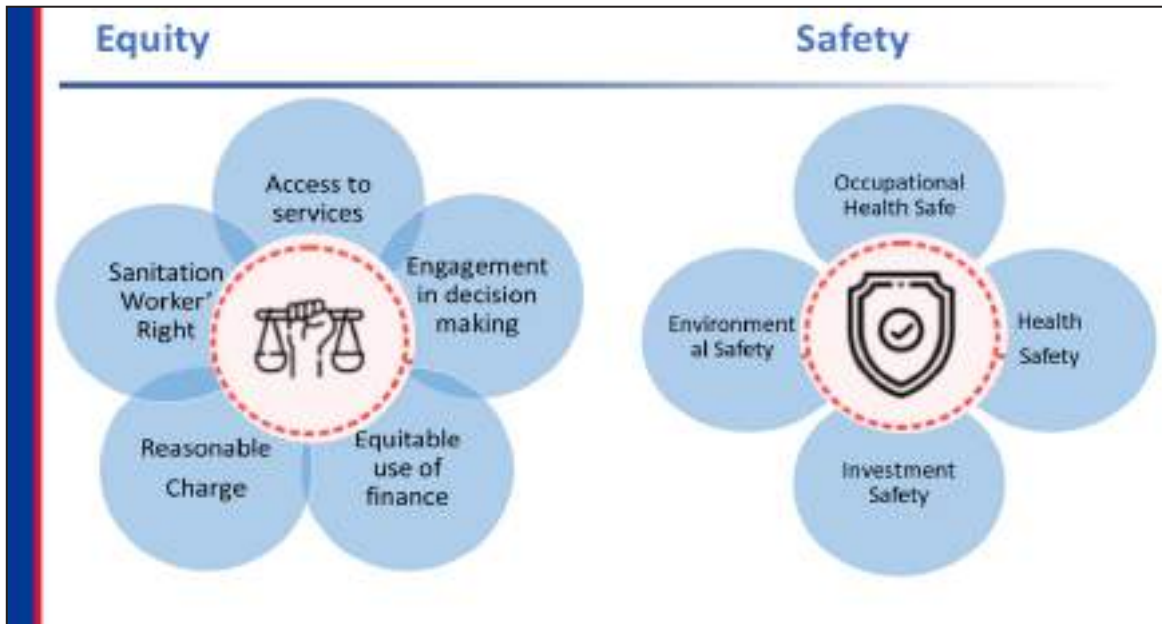


Government of Nepal
Ministry of Water Supply
Department of Water Supply and Sewerage Management
12/224 Building, Pancheshwar, Mahanagar, Kathmandu, Nepal
Phone: 01-4412745, 4412752
website: www.dwsms.gov.np

Technical Support

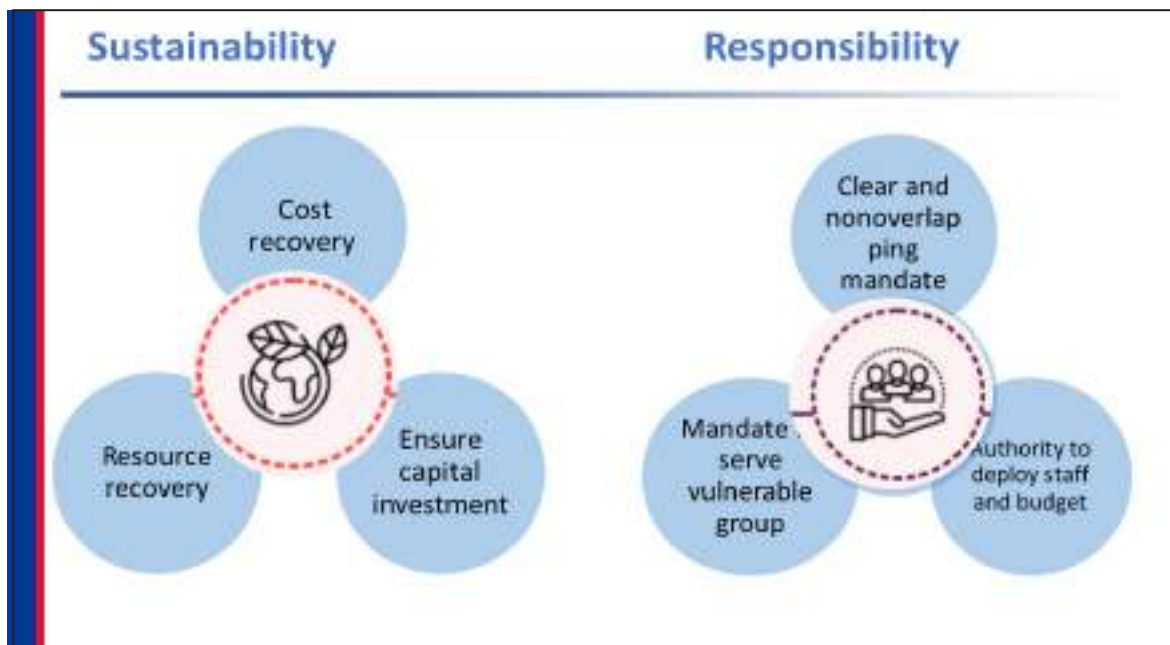


Environment & Public Health Department (EHPHD)
Address: Plot 1, Tribhuvan, Newroad, Kathmandu, Nepal
Phone: 01-4448844 | Website: www.ehp.gov.np



Equity and safety in CWIS address the above-mentioned points.

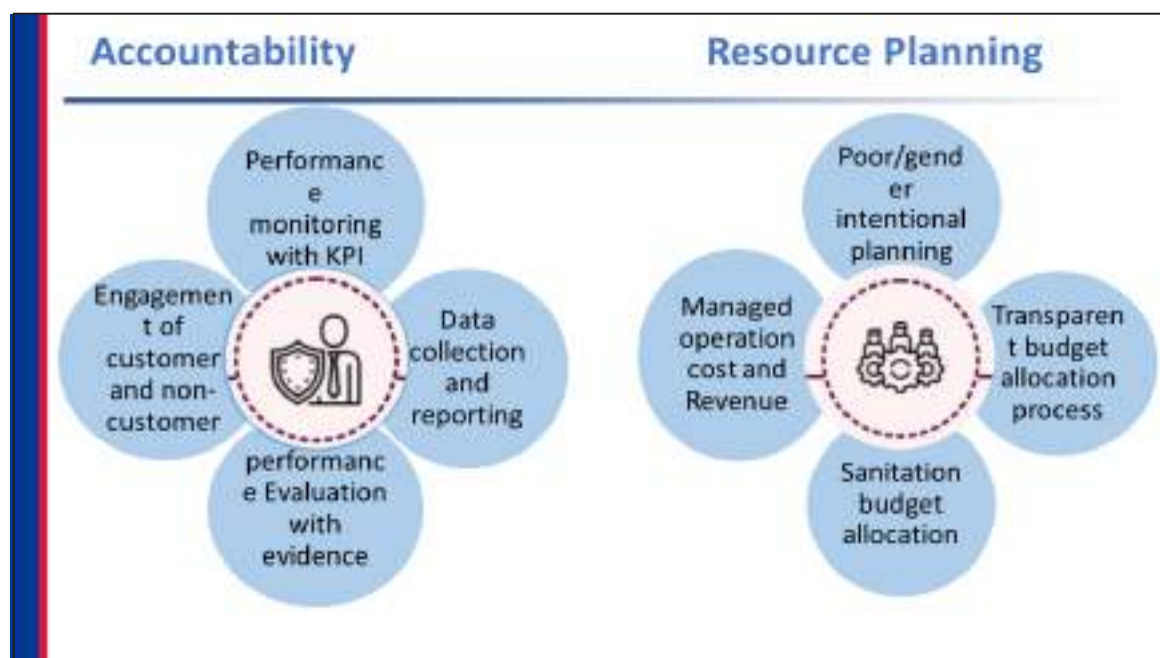
Detail on each of the points will be discuss further in each session of the CWIS framework.



CWIS address the above-mentioned points.

Detail on each of the points will be discuss further in each session of the CWIS framework.

Slide 37



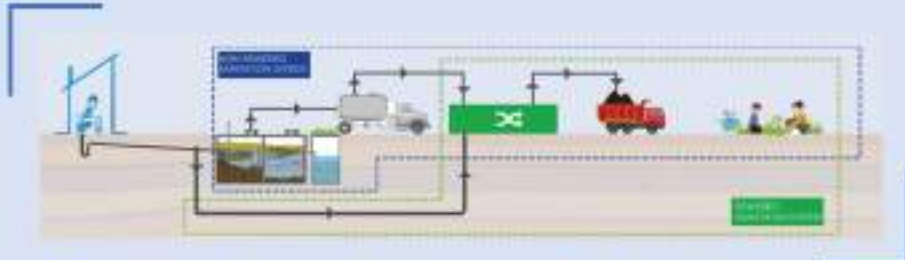
CWIS address the above-mentioned points.

Detail on each of the points will be discuss further in each session of the CWIS framework.

SESSION 4

Equity

Slide 1



The diagram illustrates a water supply and sewerage system. It shows a pump station with a tank and a pump, connected to a network of pipes. A truck is shown on the right side of the system. The diagram is labeled 'NON-SEWERED SANITATION SYSTEM' and 'CWIS'.

Citywide Inclusive Sanitation – Training of Trainers’
CWIS Service Outcome: Equity
 Resource Person

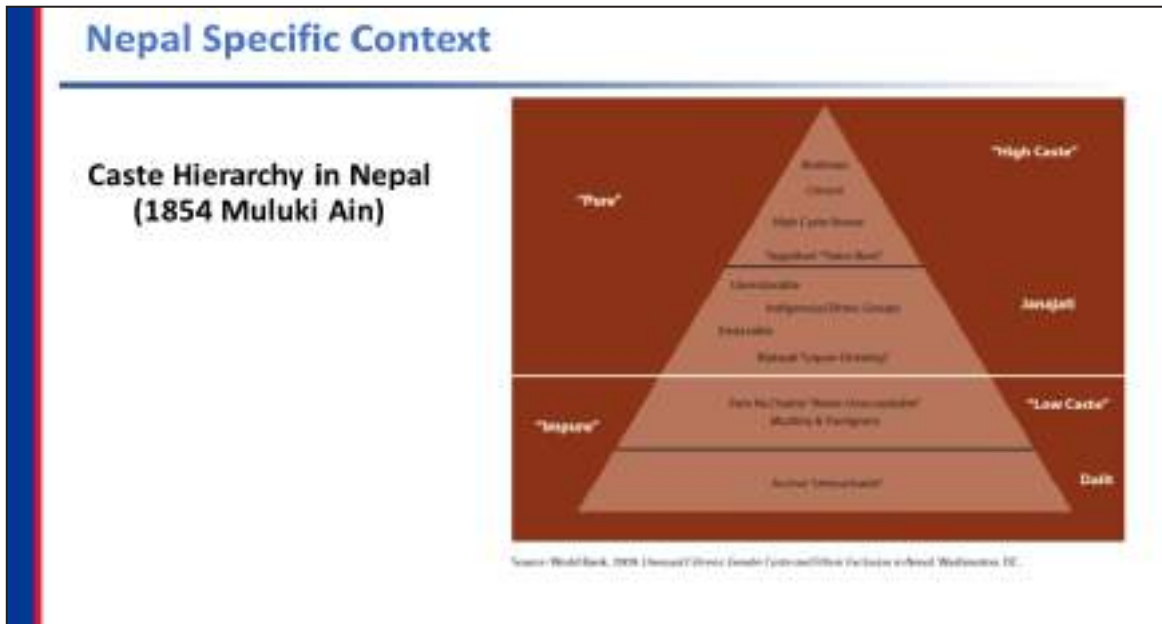
Government of Karnataka
 Ministry of Water Supply
 Department of Water Supply and Sewerage Management

Slide 2

Before Starting...

Using a toilet

- 5 Volunteers
 - One volunteer will have a leg tied as a person with physical disability
 - One volunteer will have his/her eyes covered
 - One volunteer will have a handbag or representing carrying baby of 5-7 kgs
 - One volunteer will have a bag tied to his/ her stomach representing pregnant woman
 - One volunteer has no limit- he/ she can be him/her-self
- How did you feel?



Present the slide and inform this was the practice in earlier days (Do not describe for long)



This training includes 20 main technical sessions, and are currently on session 4: CWIS Service Outcome: Equity

Slide 5




This training includes 20 main technical sessions, and are currently on session 4: CWIS Service Outcome: Equity

Slide 6

Learning Outcomes

- Articulate CWIS service outcome-equity
- Summarize the key elements required for equity



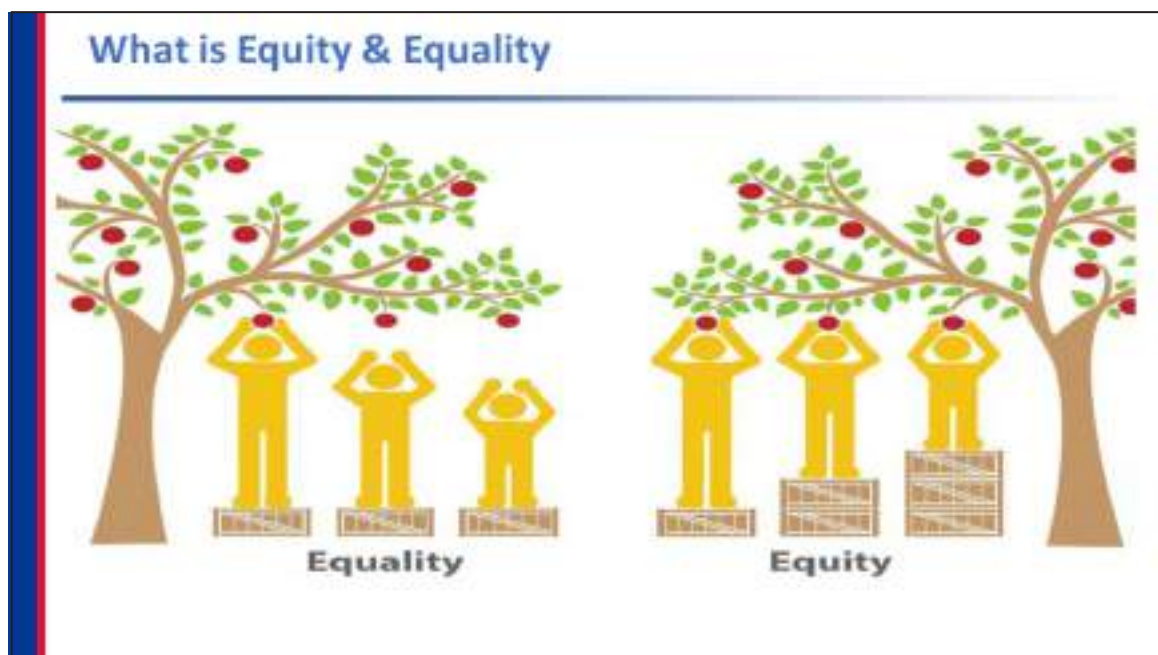
At the end of the session, participants will be able to ...

Presentation Outline

- Terminologies:
 - Equity and equality
 - Gender and inclusion
- Equity in sanitation sector
- Current status
- Key Gaps and measures of equity
- Anticipated impacts
- Key Messages



Slide 8



Equity and equality are two concepts often used in discussions about fairness, justice, and social issues. While they sound similar, they have distinct meanings and implications.

Equality:

Definition: Equality refers to the state of being equal, especially in terms of rights, opportunities, and treatment.

Illustration: Imagine three individuals of different heights trying to pick an apple from a tree. Equality would mean giving each person the same-sized box to stand on. However, since their heights are different, the shorter person might still struggle to pick the fruit, while the taller person might not need the entire box.

Key Idea: Equality focuses on treating everyone the same, providing the same resources, opportunities, or support regardless of individual needs or circumstances.

Equity:

Definition: Equity is about fairness and justice, ensuring that everyone has the opportunity to reach their full potential by addressing disparities and taking individual needs into account.


Illustration: Using the example of the individuals picking an apple from the tree, equity would involve providing boxes of different sizes to each person based on their height. This way, each person gets the support they need to have an equal chance of picking the fruit.

Key Idea: Equity recognizes that people have different starting points and may need different levels of support to achieve the same outcome. It aims to address and remedy existing inequalities.

In summary, equality focuses on sameness, treating everyone alike regardless of their circumstances, while equity focuses on fairness, acknowledging and addressing differences to ensure that everyone has an equal opportunity to succeed. The goal of equity is to achieve justice by recognizing and responding to the diverse needs and circumstances of individuals or groups. The concepts are often visualized through the images of “equality” providing the same resources to everyone and “equity” adjusting resources to accommodate individual needs.

What is Gender ?

Gender means the **state of being male or female** and is typically used with reference to **social and cultural differences** rather than biological ones.



Gender is primarily a **social and relational construct**.

The **transgender** also needs to be considered while addressing gender issues.

Gender means the state of being male or female and is typically used with reference to social and cultural differences rather than biological ones. Gender is primarily a social and relational construct. The transgender also needs to be considered while addressing gender issues.

What is Inclusion ?

Inclusion is about making sure that the **marginalised members of society** are not only told they are included but also **feel like they are**.




Inclusion goes further than telling someone: **"Your differences are appreciated"**

Source: <https://www.kaplanpathways.com/blog/why-is-inclusion-important/>
 Marginalized members of society (for example, those with disabilities or special needs, and minority groups)
 Inclusion goes beyond telling someone that he/she is different but ensures that the individual feels appreciated, valued, respected and involved.

Slide 11

EQUITY goal in sanitation




- **SDG Goal 6.2:** by 2030, achieve access to adequate and equitable **Sanitation and hygiene for all**, and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

Focused on Sanitation for all, the aspirational state for gender means inclusion of all.

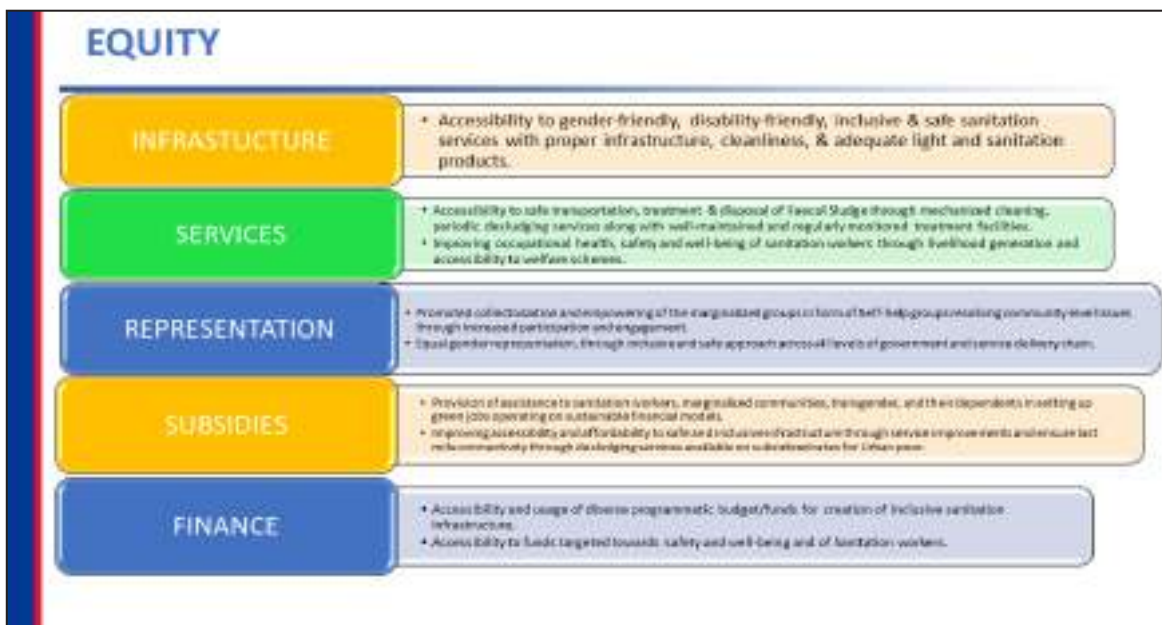
Slide 12

EQUITY

- **Services reflect fairness in distribution and prioritization of service quality, prices, and deployment of public finance/ subsidies**
- **What does an aspirational state look like?**



Refer to next slide 13, for the discussion on the topic and points.



EQUITY

- Accessibility to ...
 - gender-friendly,
 - disability-friendly,
 - inclusive & safe sanitation services
 - with proper infrastructure,
 - cleanliness, & adequate light and
 - sanitation products

INFRASTRUCTURE



Equity in terms of infrastructure defines the accessibility to gender-friendly, disability-friendly, inclusive & safe sanitation services with proper infrastructure, cleanliness, & adequate light and sanitation products

EQUITY

- **Accessibility to safe transportation, treatment & disposal of faecal sludge** through mechanized cleaning, periodic desludging services along with well-maintained and regularly monitored treatment facilities
- **Improving occupational health, safety and well-being of sanitation workers** through livelihood generation and accessibility to welfare schemes

SERVICES



Equity in terms of Services...

EQUITY

- Promoted collectivization and empowering marginalized groups in form of self-help groups resolving community-level issues through increased participation and engagement
- **Equal gender representation**, through inclusive and safe approach across all levels of government and service delivery chain

REPRESENTATION



Equity in terms of representation

Stakeholder Engagement

- Municipality - Mayor
- Municipality - Deputy Mayor
- Municipality - Chief Administrative Officer
- Municipality – Section Chief
- Ward representative
- Sanitation Service provider
- Media
- School representative
- Development partners
- Community Based Organizations
- Private sectors

Inform participants while discussing on the stakeholder engagement, it should be noted that all the topics might not be of equal interest of all stakeholders. Similarly, all stakeholders might not be of same level of influences.


Hence, while planning for stakeholder engagement both interest and level of influence of stakeholders should be considered.

For a sanitation related project, for the establishment of a FSTP/ WWTP, discuss on the stakeholder engagement along with the participants.

EQUITY

- Provision of assistance to sanitation workers, marginalized communities, transgender, and their dependents in **setting up green jobs operating on sustainable financial models**
- Improving accessibility and affordability to safe and inclusive infrastructure through service improvements and ensure last mile connectivity through **desludging services available on subsidized rates for urban poor**

SUBSIDIES



Subsidy Programs for JobKasou Installation

The Government of Karnataka has approved a Subsidy Program for JobKasou Installation. The program aims to provide financial assistance to eligible households for the installation of JobKasou units. The subsidy is provided in the form of a grant, which is used to cover the cost of the unit and the installation. The program is implemented through the Karnataka Sanitation and Hygiene Promotion (KASH) project. For more information, please visit the KASH website.

Equity in terms of subsidies ...

Slide 19

EQUITY

- **Accessibility and usage of diverse programmatic budget/funds** for creation of inclusive sanitation infrastructure
- **Accessibility to funds targeted towards safety and well-being of sanitation workers**

FIANANCE



Equity in terms of finance...

Slide 20

Current Status

- If these are your goals or the aspirational state of equity in sanitation services, then
 - what is current status?
 - where are we?
 - what do we have?



In terms of legal documents and provisions, we have...

GESI Operational Guideline 2013: MOUD

Gender Equality and Social Inclusion Operational Guidelines 2017 : MoPIT

Provision for Participation


- Proportion of seats held by women in national parliaments (% of total number of seats) : **32.7%**
- Proportion of elected seats held by women in deliberative bodies of local government : **41%**
- Proportion of women in managerial positions : **13.2%**
- Proportion of women in senior and middle management positions : **13.9%**

In the election, 191 women leaders (33.2%) were elected out of 575 seats, and Cabinet nominated 6 women out of 26 seats, resulting to 197 women members (32.8%) in the Legislative parliament. The GoN has taken steps toward realizing the constitutional commitment of federalism and promoting GESI. The 15th Plan also reinforces the GoN’s commitment to implement the constitutional provisions and have strong commitments for GESI. The Civil Service Amendment Act 2014 embraces inclusivity and provides quotas for 45% of all civil service positions. Employees of these allocated 45% positions must comprise 33% women, 27% Adivasi Janajatis, 22% Madhesis, 9% Dalits, 5% persons with disabilities and 4% from other excluded groups. In addition, the provisions of the Local Government Operation Act [Section 24 (3 and 5)] makes it mandatory to ensure the participation of women, and excluded groups in the planning and implementation of development programmes.

Slide 23

Constitution of Nepal 2015

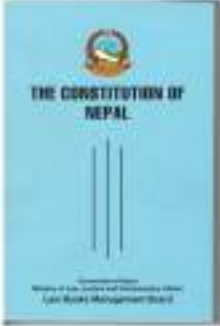
- Constitution of Nepal, 2015 includes in **Article 38** :
- There **shall not be** any physical, mental, sexual or psychological or any other kind of **violence against women, or any kind of oppression** based on religious, social and cultural tradition, and other practices
- Constitution of Nepal provides a clear and comprehensive framework to **end all forms of discrimination and inequality**. It strictly prohibits the violence and discrimination against women and girls. It is strongly anchored in internationally recognized human rights.
- The constitution has provisioned the **special right** for women, right to equality, right to justice, right to social security among others as fundamental rights



Slide 24

Constitution of Nepal 2015

- **Article 29 Right against Exploitation:**
- (1) Every person shall have the right against exploitation.
- (2) No person shall be exploited in any manner on grounds of religion, custom, tradition, usage, practice or on any other grounds.
- (3) No one shall be subjected to trafficking nor shall one be held in slavery or servitude
- Cited by 56 - (3) Each person shall have equal access to health care.
- (4) Each citizen shall have the **right to access to clean water and hygiene**.
- 36. Right to food



Data on water and sanitation

- **82.5%** of population has access to an improved source of drinking water
- **24.5%** has access to improved sanitation facilities

When the figures are disaggregated by area, economic status, and caste and ethnicity, there is considerable variation.

Explain the highlighted points only

Segregated data on water and sanitation

- Generally, all castes and ethnic groups and regions have quite good access to water, but
- the **Hill Dalits have the lowest access to improved drinking water** at 70% compared to the national average of 82%.
- Despite an increase in sanitation coverage,
- **the poorest and most vulnerable are still not being reached.**
- While 71.6% of Newars, 66.3% of Hill Brahmans, and 65.7% of Terai Madhesi Brahman/ Chhetris have private latrines,
- **only 4.6% of the Terai Madhesi Dalits reported having private latrines**

Women, Girls, Disabled ... : Multi dimensional exclusion

Slide 27

Group Activity



4 Groups
5 minutes



Discuss on gaps in sanitation service provisions from equity perspective. Ask participants to think about the points that discussed in earlier slides. Provide a newsprint paper and ask to fold it in half and note the points in the half of the paper. Provide 5 minutes time for the activity and after the time ask groups to present their ideas without repetition and summarize the presentation with following slide.

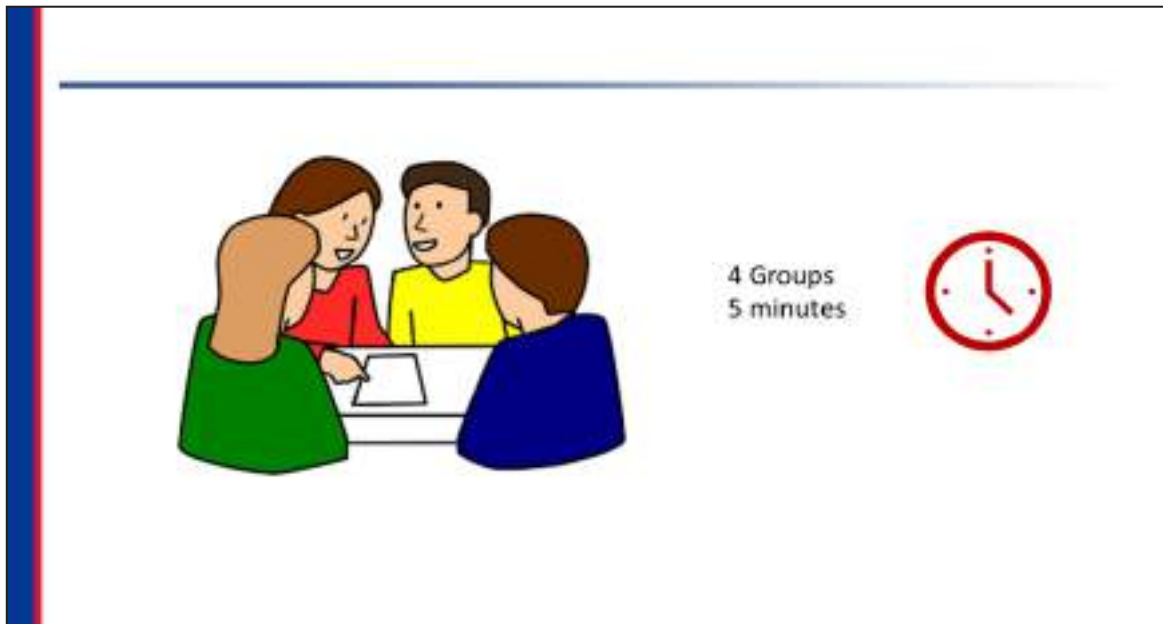
Slide 28

Equity for Sanitation Services



- All gender not included in planning, designing, implementation, operation and monitoring
- No gender balance in work teams
- Design of infrastructure lacks gender perspectives (from security, privacy and dignity perspective)
- Caste based vulnerabilities
- Budgets don't include gender specific cost heads
- Sanitation responsibilities handled by weaker gender;
- Leadership roles to the powerful





In other half of the paper, ask participants to note the measures for equitable sanitation services. After the time ask groups to present and summarize the presentation with following slide.




Ways of Equity Inclusion in Sanitation Services

- Development of **Inclusion policies and procedures**
- **Segregated data** collection and analysis
- **Involvement of women and men plus all segments** in sanitation planning, design, construction and maintenance are needed
- **INCLUSIVE work teams**
- **Equal pay** for all Inclusive based on qualifications and ability
- **Empowerment opportunities** for all diverse segment
- **Inclusive sub-committee** as part of City Sanitation Task Force (CSTF)
- **Gender / inclusive budgeting**
- Equity considerations
- Awareness and **behavior change** communication for changing
- mindsets to encourage **equal participation**
- **Gender sensitive infrastructure** (develop a rating system for toilets)

The diagram consists of four colored boxes arranged horizontally, connected by a double-headed arrow. From left to right: a yellow box labeled 'DIVERSITY' (with a person icon), an orange box labeled 'EQUITY' (with a person icon), a green box labeled 'INCLUSION' (with a person icon), and a blue box labeled 'JUSTICE' (with a person icon). Each box contains a brief definition of the concept.

Slide 31

What are the key enablers and inhibitors?


- **People** (attitude, engagement, capabilities) 
-  • **Process** (existing systems, institutions, roles and non-knowledge transactions among key stakeholders)
- **Technology** (physical or virtual infrastructure) 

Slide 32

What are the key enablers and inhibitors?

Inhibitors

- **Social stigma/taboo** around sanitation workers' roles, especially transgender communities.



Present ideas on people and refer to following slide

What are the key enablers and inhibitors?

Enablers	Inhibitors
<ul style="list-style-type: none"> • Training sanitation workers, marginalized communities, youth groups and individuals to create awareness and generate demand for safe sanitation services. • Build capacity of nodal officers, municipalities, local representatives etc. through gender sensitization workshops • Build occupational capacity and skills to support SHGs of sanitation workers, waste pickers, women and transgender to address the key challenges across the sanitation value chain, while ensuring safety at work 	<ul style="list-style-type: none"> • Social stigma/taboo around sanitation workers' roles, especially transgender communities. <div style="background-color: #90EE90; padding: 5px; text-align: center; margin-top: 10px;"> People (attitude, engagement, capabilities) </div>

Present ideas on people

What are the key enablers and inhibitors?

Inhibitors

- Inequitable costs involved for accessing sanitation infrastructure limiting urban poor from practicing safe sanitation.
- Unavailability of designated identity cards for Sanitation workers to avail benefits on government schemes and Insurance, especially transgender and urban poor.
- **Employment of women and transgender** collectives as professionals/service providers across the sanitation value chain, and **creating market linkages** for improved livelihood
- **User-fee models that generate revenue for O&M** in sanitation services



Process

Present and discuss ideas on process referring to following slide

Earmarking of separate budget or resources for gender/inclusive infrastructure, sanitation workers' safety & welfare schemes, mechanization and regular monitoring of services across sanitation value chain.

Slide 35

What are the key enablers and inhibitors?

Enablers	Inhibitors
<ul style="list-style-type: none"> Earmarking of separate budget or resources for gender/inclusive infrastructure, sanitation workers' safety & welfare schemes, mechanization and regular monitoring of services across sanitation value chain. Enable convergence among different government departments to utilize budget for FSSM and related adjacencies. Support women & transgender SHG and private operators in generating income through O&M and desludging services by providing subsidies and low cost loans. Employment of women and transgender collectives as professionals/service providers across the sanitation value chain, and creating market linkages for improved livelihood User-fee models that generate revenue for O&M if sanitation services 	<ul style="list-style-type: none"> Inequitable costs involved for accessing sanitation infrastructure limiting urban poor from practicing safe sanitation. Unavailability of designated identity cards for Sanitation workers to avail benefits on government schemes and insurance, especially transgender and urban poor. <div style="background-color: #90EE90; padding: 5px; margin-top: 10px;"> <p>Process (existing systems, institutions, roles and non-knowledge transactions among key stakeholders)</p> </div>

Slide 36

What are the key enablers and inhibitors?

Inhibitors

- Improper design, construction or maintenance of physical facilities** across the sanitation value chain
- Lack of disposal facilities for menstrual hygiene products** in schools, community toilets, public toilets, etc.



Technology

Present and discuss more from the perspective of technology referring to following slide

What are the key enablers and inhibitors?

Enablers	Inhibitors
<ul style="list-style-type: none"> • Inclusive design and construction of sanitation facilities in Public Toilets indicating government buy-in for service delivery monitoring to ensure equitable access. • Availability of WASH facilities, safety gear, PPE kits and regular medical check-ups & aid to ensure safety of sanitation workers 	<ul style="list-style-type: none"> • Improper design, construction or maintenance of physical facilities across the sanitation value chain • Lack of disposal facilities for menstrual hygiene products in schools, Community toilets, public toilets, etc.
<div style="background-color: #90EE90; padding: 5px; display: inline-block;">Technology (physical or virtual infrastructure)</div>	

Present and discuss more from the perspective of technology

Requirements for Equity & Inclusion

Policy	<ul style="list-style-type: none"> • Are specific gender objectives articulated in water and sanitation policies?
Operational Guidelines	<ul style="list-style-type: none"> • Are schemes for water and sanitation designed to be gender responsive? • Are specific needs of pregnant, elderly, homeless, disabled women being addressed?
Budgets	<ul style="list-style-type: none"> • Are the budgetary outlays for the gender responsive components in the schemes adequate? • Are the funds to these schemes utilized?
Implementation	<ul style="list-style-type: none"> • Are the needs of the most marginalized/vulnerable women being prioritized in the scheme's implementation? • Are women involved in decision making during implementation of interventions?
Monitoring and Evaluation	<ul style="list-style-type: none"> • Was the money spent as planned? • What was delivered and to whom? • Has the implementation of the programmes brought about changes?

Slide 39

Anticipated Impacts

- **Women also have opportunities** to become active agents of change in the water and sanitation sector in their communities
- through **leadership and membership** in water users' associations, sanitation committees, and waste disposal management committees, as
- they can **contribute to critical decisions** affecting their lives
- Proper toilet facility encourages women to drink adequate water and reduce health related risks
- **Redistribution of roles and responsibilities** across men and women to make them more equitable.

Slide 40

Anticipated Impacts

- **Men can be important advocates** for women and gender equality
- Initiate the **process of women empowerment** by gaining access and control over basic infrastructure facilities like; water and toilet
- **Increase in women's dignity, self-esteem**
- Women will be able to **overcome mobility constraints and social barriers**
- Gender sensitive project planning will enable the utility and sustainability of sanitation services

Key Messages

'Sanitation for all' can be achieved through

- Inclusive approaches for policy and laws
- Gender sensitive budgets for capital as well as operational expenses
- Infrastructure that allows use by all
- Institutional arrangements that allow the participation and decision-making by all gender and inclusive segment
- Capacity building and behavior change initiatives towards gender sensitivity

The diagram illustrates the CWIS Service Framework. It begins with the 'CWIS SERVICE FRAMEWORK' on the left, which leads to 'CWIS FUNCTIONS' (at Household/Worker Level and City Level). These functions lead to 'CWIS OUTCOMES', which are categorized into EQUITY, SAFETY, and SUSTAINABILITY. Below these outcomes are RESPONSIBILITY, ACCOUNTABILITY, and REGULATE PLANNING AND MANAGEMENT.

Review

- Who are left behind in the sanitation sector?
- 2 to 3 responses
- Come up with the strategy to include sanitation workers, informal settlements, financially backward groups who are living far away from city centers, disable people, and transgender while constructing sanitation facilities or providing sanitation services
- 2 to 3 responses

Slide 43

References

- IGI Global, <https://www.igi-global.com/dictionary/gender/11916>
- <https://www.kaplanpathways.com/blog/why-is-inclusion-important/>
- <https://nepal.un.org/en/sdgs/6>
- Pro-poor policies and interventions, learning brief, CWIS cities
- National Sanitation and Hygiene Coordination Committee, Nepal (2020), Open Defecation Free Nepal: Narration of the Journey
- GESI Operational Guideline 2013: MOUD
- Gender Equality and Social Inclusion Operational Guidelines 2017 : MoPIT

Slide 44

Thank you!
धन्यवाद !



Government of Nepal
Ministry of Water Supply
Department of Water Supply and Sewerage Management
DWSSM Building, Pancheshwar, Mahanagar, Kathmandu, Nepal
Phone: 977-01-4412745, 4412752
website: www.dwssm.gov.np

Technical Support



Environment & Public Health Department (EPHD)
Address: Plot 1, Tribhuvan University, Kathmandu, Nepal
Phone: 977-01-4424241 | Website: www.ephd.gov.np

- **Diversity is a mixture, Inclusion is making the mix work.**

- Andres Tapia

SESSION 4.1A

Equity in Practice Global Level

Slide 1



"Citywide Inclusive Sanitation – Training of Trainer's"
CWIS Service Outcome – Equity in Practice

Resource Person



Government of Nepal
 Ministry of Water Supply
 Department of Water Supply and Sewerage Management

Slide 2

Before Starting...




Statements for intro activity

- If you are left-handed, take a step forward.
- If you rely on public transport, take a step forward.
- If you have come from a single-parent background, take a step back.
- If you have ever faced sexual harassment at the workplace, take a step back.
- If you have ever faced an identity crisis, take a step back.
- If you are a female, take a step forward.
- If you are a male, take a step back.
- If you wear spectacles, take a step back.
- If you have any chronic diseases, step back

Slide 3

Learning Outcomes

- Discuss the measurement indicators of CWIS service outcome-equity
- Give examples of equity in practice at global and national level




At the end of the session, participants will be able to ...

Slide 4

Presentation Outline

- Equity
- Equity- measurement indicators
- Equity in practice at global level





This training includes 20 main technical sessions, and are currently on session 4, CWIS Service Outcome: Equity



Slide 7

EQUITY

Services reflect

- Fairness in distribution and prioritization of
 - Service quality,
 - Prices, and
 - Deployment of public finance/subsidies

Slide 8

Equity- measurement indicators


- Toilet access and safe services in Low Income Communities (LICs) are proportionate to citywide levels
 - *% of LICs population with access to safe individual toilets/ % total population with access to 'safe' individual toilets*
 - *% of safe management LIC / % safe management citywide (IHHL)*

First ask participants what might one need to go for monitoring.

Slide 9

Equity- measurement indicators

- Equitable use of public finance across populations and communities
- HH and users' costs to access sanitation services are equitable across the city
 - *Subsidy amount paid to NSS/SS*




The icon consists of a pair of scales of justice, symbolizing equity, enclosed within a dashed red circle. Below the circle, the word "EQUITY" is written in a bold, black, sans-serif font. The entire icon is set against a light pink rectangular background.

Slide 10

Equity- measurement indicators

- Gender intentional representation in decision-making
 - *% of women in sanitation related decision-making bodies (government institutions)*



The icon consists of a pair of scales of justice, symbolizing equity, enclosed within a dashed red circle. Below the circle, the word "EQUITY" is written in a bold, black, sans-serif font. The entire icon is set against a light pink rectangular background.

Slide 11

Equity- measurement indicators

- Sanitation workers' rights, protections, and safety nets are actively fostered
 - *Gender pay gap in sanitation workforce*
 - *[Indicator Area] Sanitation worker equity*



EQUITY

Slide 12

Equity at Global Context

8 CWIS cities

- Dakar
- Kampala
- Khulna
- Lusaka
- Narsapur
- Trichy
- Wai
- Warangal

- Pro-poor policies and interventions



Pro-poor policies and interventions in poor households and slum communities
 The approaches differed in size and scope, in how they define and engaged poor HHs and slum communities and ultimately in the motivations and goals driving their design and implementation.

Pro-poor Policies and Interventions

- Creating or improving sanitation access for poor and marginalized communities in urban areas
- Often- poor communities are located in slums
 - Over-crowded conditions,
 - Temporary or semi-permanent housing
 - Lack of access to improved water and sanitation
 - Lack of secure tenure

This led to crowded conditions limit the space available to build individual household latrines or properly empty the containment units when full, lack of secure tenure creates a disincentive to build or improve IHHL, water access for washing and flushing after using the latrine.

Group Activity



4 Groups
5 minutes



Slide 15

CWIS Cities at Glance

City	Local Authority ^a	Local Partner	Population	Slums/ Informal Settlements	Sewer Access (open or closed)	Functional TP Capacity (volume)	Functional TP Capacity (% of full coverage)	TP Usage
Wai	WMC	CEPT	43,000	3.74%	0%	70 KLD	>100%	50%
Narsapur	NMC	ASCI	58,901	61%	0%	15 KLD	37%	33%
Warangal	GWMC	ASCI	817,959	35%	0%	25 KLD	13.1%	33%
Trichy	TCC	IHS	9,16,674	10%	45%	58 MLD	>100%	96%
Khulna	KCC	SNV	1.5 mill	7.86%	0%	180 KLD	9.2%	4%
Kampala	KCCA	KCCA	1.5 mill	60%	8%	40 MLD	NA	>100%
Lusaka	LWSC	LWSC	2.5 mill	70%	16%	52 MLD	40%	>100%
Dakar	ONAS	ONAS	2.8 mill	NA	30%	21 MLD	NA	>100%

Collaborating partners, city size, treatment plan capacity, including both fecal sludge treatment plants and sewage treatment plants and the percentage of capacity currently being used.

Slide 16

Designing and implementing pro-poor interventions

	Narsapur	Warangal	Trichy	Khulna	Wai	Lusaka	Kampala	Dakar
Infrastructure	IHL; CT	IHL; DEWAT	IHL; CT	FSTP	IHL; CT; scheduled desludging	IHL; FSTP in slum areas	Dumping points on sewers & mini TPs	Innovative IHL in flood-prone areas
Outreach (targets of IEC/BCC)	HH	HH	HH	HH	HH	HH	IHL landlords	HH
Capacity Building in Slums	IHLs maintain PTs/CTs	IHLs maintain PTs/CTs	CBOs; sanitation workers	CBO maintain CTs/PTs	[None]	[None]	[None]	Desludging operators
Policy and Regulation	[None]	[None]	[None]	[None]	Council resolution	Mandate expansion, by-laws, standards	Legal & regulatory framework	[None]
New Institutional Structures	[None]	[None]	[None]	Multi-stakeholder working group	[None]	[None]	Multi-stakeholder forum	Direction de l'Assainissement et Autonomie

Across the 8 CWIS cities, pro-poor sanitation interventions could be categorized in one or more of the above 5 areas.

Assessing the Needs of the Poor

- Defining- WHO is Poor?
 - Household surveys- for both
 - identifying which HHs/ slums to target
 - Gathering information on sanitation needs and challenges
- Household survey, GIS mapping exercises, sanitation mapping study, An enumeration of sanitation workers
- Survey of community toilets, Qualitative interviews with city officials
- Triangulated with transect walks

Engaging Local Stakeholders

- In Narsapur and Warangal, ASCI's interventions
 - tailored to specific setting found in slums
 - Location (ex. low lying areas),
 - Physical characteristics (narrow roads, crowded conditions)
 - Financial constraints
- In Trichy, IHS designed interventions
 - Strengthening of ties with local CBOs,
 - Targeting youth as change agents- 'sanitation champions'
 - Working directly with sanitation workers

Slide 19

Engaging Local Stakeholders

- In Khulna, SNV
 - Local NGO
 - Toilet management committee
 - Livelihood Improvement of the urban poor communication to share experiences
- In Wai, CEPT
 - In consultation with municipality officials
 - Interviews and Focused Group Discussions (FGD)
 - Understand existing situation and local practices

Slide 20

Engaging Local Stakeholders

- In Lusaka, LWSC
 - Interviews and FGDs
 - Discussions with CBOs
 - Learnt through failure- community toilets
 - Limited engagement with users at the start of the projects

Refer to CWIS learning brief series o “Pro-poor policies and interventions” for the description.
<https://s3.amazonaws.com/resources.cwis.com/learning/94/CWISMLELB3ProPoorInterventions-FinalEnglish.pdf>

Outputs and Outcomes

- In Narsapur and Warangal,
 - Conversions of slums from **insanitary to sanitary conditions** using government subsidies
 - CTs and PTs are being **maintained through municipal subsidies**
 - Gender forum in Narsapur (SHGs)- **trained to conduct trainings and do outreach**
- In Trichy,
 - 6 pilot slums- moved **one step up in sanitation ladder** (from OD to CT or from CT to IHHL)
 - **Increased local capacities in CBOs**- especially SHE groups and youth sanitation champions
 - Over 100 CTs upgraded including **user friendliness**
 - **Assisted SWs in accessing government schemes** for pensions, education grants for their children, health camps and government IDs

Sanitation, Health and Education- SHE

Outputs and Outcomes

- In Wai,
 - **Increased coverage of IHHL** by linking HHs to Micro-financing institutions credits
 - **Upgraded CTs**- making gender friendly
- In Khulna,
 - **Different affordable toilet management and technology options**
 - **Provided technology support** to develop decentralized wastewater treatment systems and trainings on maintenance of community toilets

Slide 23

Outputs and Outcomes

- Lusaka
 - **LWSC is mandated to provide sanitation** services to low income settlements within city and rural areas- OSS and FSM
 - **Cost subsidies** (roughly 75% of cost) for construction of 5000 IHHLs in 3 low income settlements
 - **Pit emptying is subsidized** for all HHs (roughly 50% covered by LWSC)
- Kampala
 - **Increase in customer usage** of its call center for professional emptying services
 - Reduced price of emptying by 20%- **increased services**
 - KCCA and partners in public primary schools- **96 toilets**
 - **Trained pit emptying** operators and distributed PPE
 - **Increase in reporting** of illicit practices such as illegal dumping

Slide 24

Challenges and Lesson Learnt

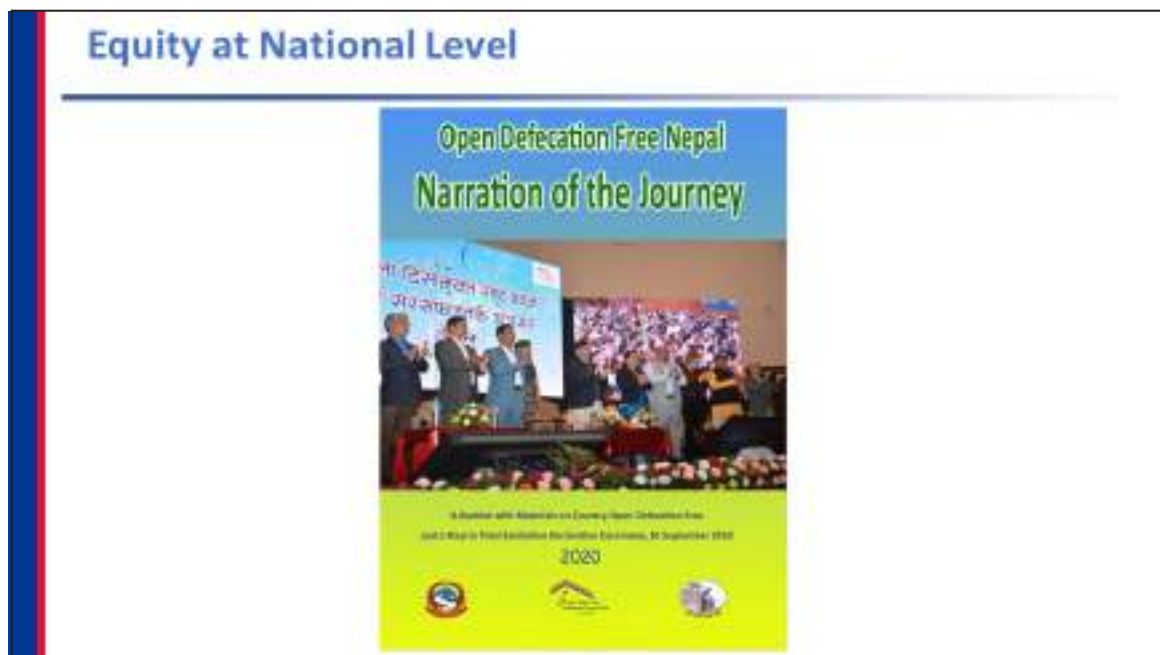
Types of Challenges	Narsapur	Warangal	Wai	Trichy
Space & Land Tenure	Insecure land tenure	--	Space constraints for IHHL	Insecure land tenure
HH Constraints	Financial constraints for IHHL construction	--	--	Varied sanitation needs. Interventions designed in participatory ways
Service-Provider Constraints	--	--	--	CT caretakers did not have the skills for proper accounting and reporting systems

Challenges and Lesson Learnt

Types of Challenges	Khulna	Dakar	Lusaka	Kampala
Space & Land Tenure	Slums have inaccessible roads for mechanical emptying	--	Poor road network	Insecure land tenure
IHL Constraints	Affordability of cost of IHL construction Contacting working members during the day	--	IHL too expensive if not subsidized	IHL too expensive, Garbage in pits, Lined pits too expensive
Service-Provider Constraints	High staff turnover, delayed service, tedious bureaucratic processes	--	Project delays due to the long procurement process	--

- ### Key Messages
- Pro-poor interventions based on building new or upgrading old infrastructure
 - Capacity building in slums
 - Adopting new policies and regulations or creating new institutions
 - IHHLs- consumer subsidies and outreach,
 - CTs- capacity building
 - **Treatment plants-** using outside funding to pay the entire costs of construction
 - Infrastructure based interventions and IEC programs were implemented in cities

Slide 27



Inform participants that now they have discussed on the practice at global level, further participants will be discussing some practices at national level.

Slide 28

Thank you!
धन्यवाद !



Government of Nepal
Ministry of Water Supply
Department of Water Supply and Sewerage Management
19/2004 Building, Panchsagar, Mahanagar, Kathmandu, Nepal
Phone: 977-01-4412745, 4412752
website: www.dwsmsm.gov.np

Technical Support

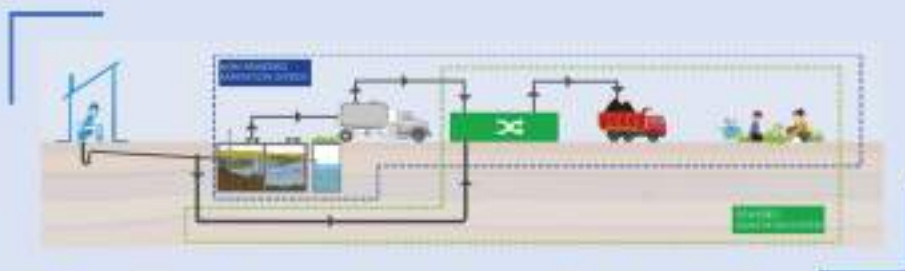


Environment & Public Health Organization (EPHO)
Address: Plot 5, Marginal, New Baneshwar, Kathmandu, Nepal
Phone: 977-01-4448444 | Website: www.ephonp.org


SESSION 4.1B

Equity in Practice (National Level)

Slide 1



"Citywide Inclusive Sanitation – Training of Trainer's"
CWIS Service Outcome – Equity in Practice (National)
 Resource Person




Department of Water Supply
 Ministry of Water Supply
 Department of Water Supply and Sewerage Management

Slide 2

Presentation Outline

- Open Defecation Free Campaign
 - Services
 - Infrastructures
 - Finance
 - Subsidies
 - Representation
- Key Messages



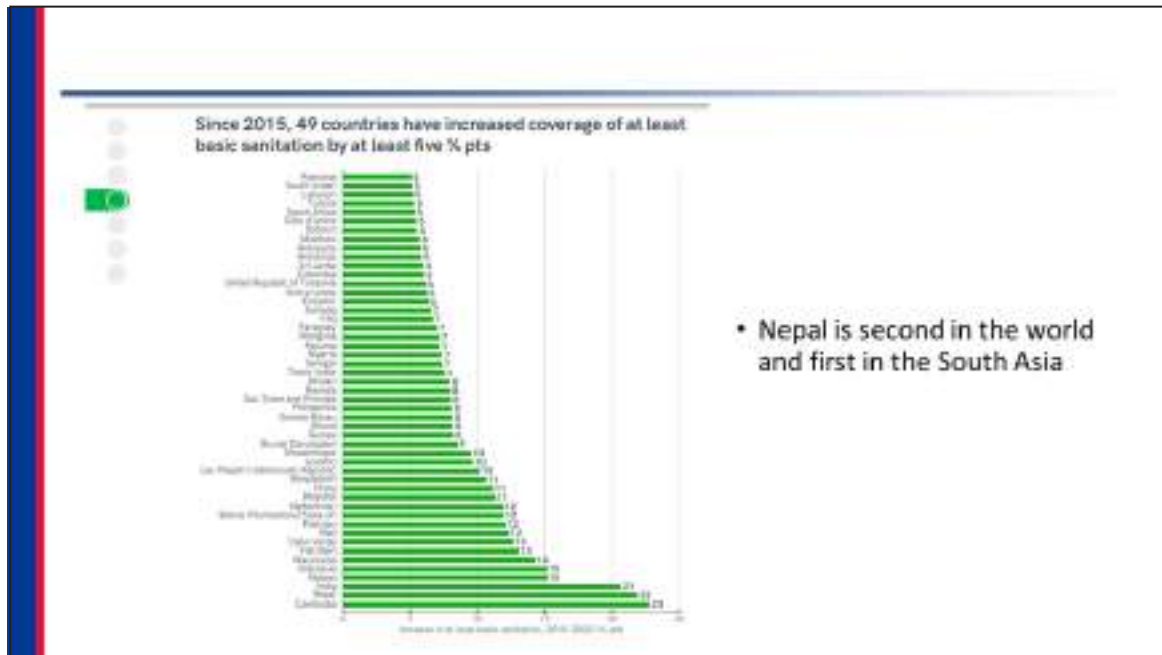


This training includes 20 main technical sessions, and are currently on session 4: CWIS Service Outcome: Equity



This training includes 20 main technical sessions, and are currently on session 4: CWIS Service Outcome: Equity

Slide 5



Slide 6

ODF

- Sanitation campaign of Nepal is example of an inclusive social campaign
- The ODF campaign of Nepal has meaningful participation from all provinces, political parties, stakeholders, various castes, religions, classes and gender.
- In the ODF campaign, the policy has been adopted to promote sanitation facilities that are economically feasible for users, technically appropriate, geographically suitable and user friendly.

Slide 7




Slide 8



Slide 9

Group work



5 Groups
5 minutes


Divide participants into 5 groups and provide a topic to each group.

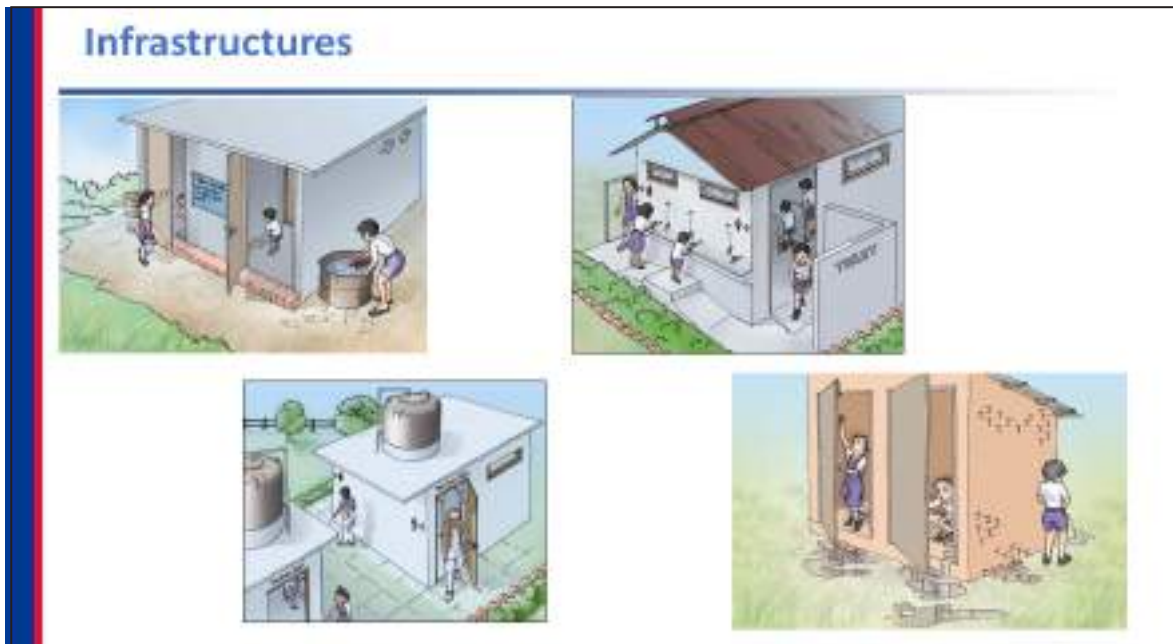
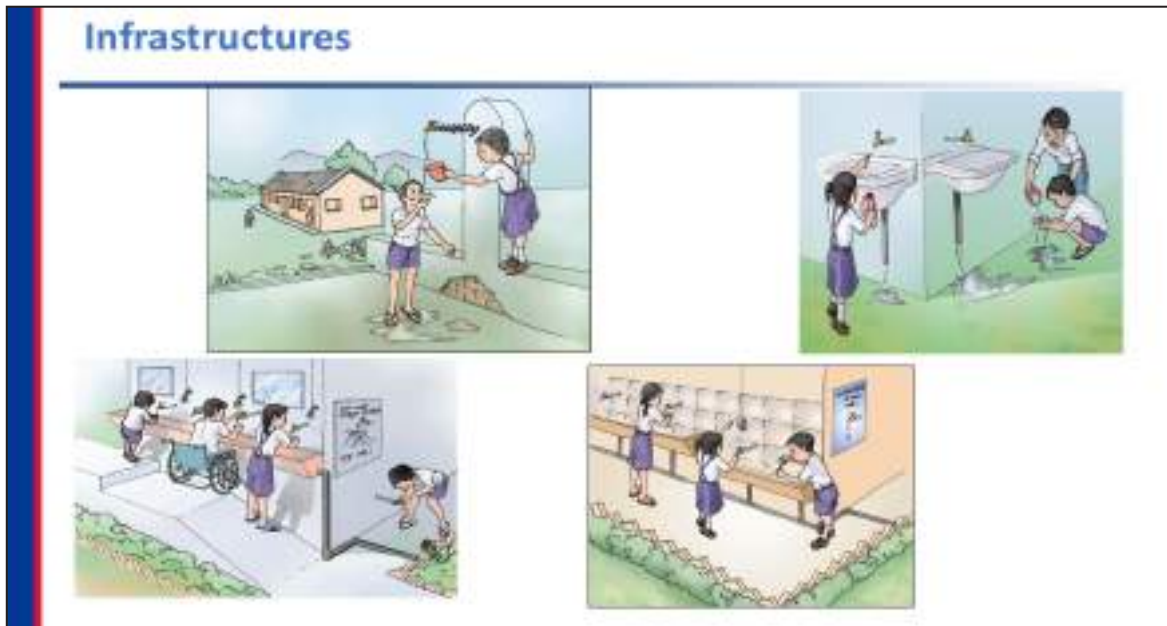
- a. Infrastructure
- b. Services
- c. Representation
- d. Subsidy
- e. Finance

Slide 10

Infrastructures

- The communities have been provided information about the toilet that suit their need and capacity. Child-friendly, gender-friendly, people with disability-friendly toilets have been promoted in schools and public places.
- Likewise, there are certain standards of promoting child-friendly, gender-friendly and people with disability-friendly water and sanitation facilities in schools.
- Separate toilets and urinals are constructed for boys and girls in schools.





Slide 13

Services

- Output Based Aid is used to support poor households to build toilet in Small Towns Water Supply and Sanitation Project areas.
- Publicity, awareness, capacity building, community empowerment, monitoring,



Slide 14

Representation

- Coordination committees at various level have been formed and institutionalized through inclusive approach.
- Gender sensitivity has been implicated in all sanitation activities. In all coordination committees including at the local level, members include participation of women along with the representatives from various segments of the society.
- The ODF campaign has been carried out by considering the issue of gender sensitivity and social inclusion. Besides, advocacy campaigns, educational activities and media materials have considered these aspects.
- The Ministry of Education, in collaboration with the stakeholders, has adopted a policy to develop mechanism for ranking schools as 'one star', 'two stars' and 'three stars' on the basis of WASH facilities available in the schools.

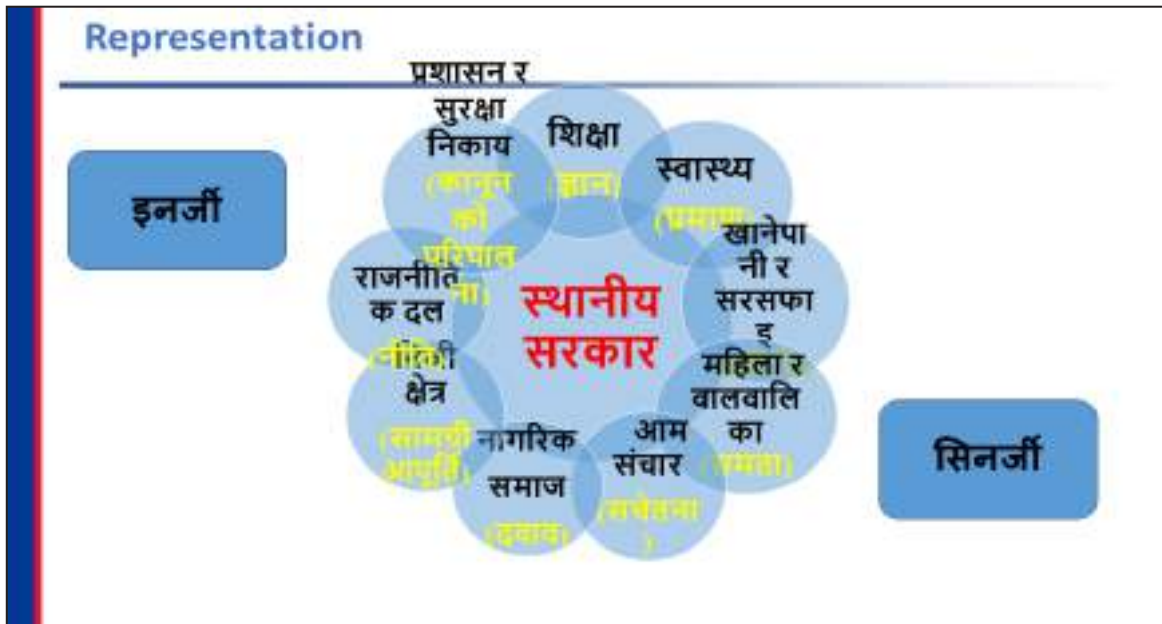


Figure: Kamal Adhikari

How:

The ODF status is the outcome of all the Joint Plan, Co-finance, Collaborative Action and Joint Monitoring of all the sectors

Subsidies

- Output Based Aid
- Loan (zero interest and soft)
- Material support

Slide 17

Subsidies

- For construction of toilets,
 - financial and material support was provided
 - only to the landless, ultra-poor, people with disability, single women and socially disadvantaged and marginalized families
 - who are deprived of access to sanitation
- Funds are also utilized in community and school for
 - triggering, publicity, awareness, capacity building, community empowerment, monitoring,
 - exchange of learning and institutional strengthening in order for sustainable sanitation management, upgrading of the sanitation facilities and behavioral change communication in sanitation

Slide 18

Finances



Finances

- While constructing public toilet at fairs, market areas, highways, bus park and other public places,
- The private sectors and other support organizations are encouraged to do **partnership** and **share cost**, instead of making investment by a single organization
 - Basket planning
 - Cost sharing
 - Co-financing
 - Revolving fund
 - Matching fund
 - Reward and recognition (sanitation champion, sarsafai doot, and daanbir)
 - Sanitation marketing

Key Messages

- ODF campaign was linked to Health, Dignity and Development
- Good example of stakeholder engagement
- Synergy/ collaboration and coordination

Slide 21

References

- National Sanitation and Hygiene Coordination Committee, Nepal (2020), Open Defecation Free Nepal: Narration of the Journey
- Presentation from Kamal Adhikari

Slide 22

Thank you!
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Government of Nepal
Ministry of Water Supply
Department of Water Supply and Sewerage Management
JWSSM Building, Pancheshwar, Mahanagar, Kathmandu, Nepal
Phone: 977-01-4412745, 4412752
website: www.dwsn.gov.np

Technical Support



Environment & Public Health Organization (EPHO)
House Plot 5, Pancheshwar, Mahanagar, Kathmandu, Nepal
Phone: 977-01-4412745 | Website: www.ephonp.org

SESSION 4.2

Equity: Group Work

Slide 1



"Citywide Inclusive Sanitation – Training of Trainer's"
CWIS Service Outcome 4.2: Equity-Group Work
Resource Person



Government of Sri Lanka
Ministry of Water Supply
Department of Water Supply and Sewerage Management

Slide 2



This training includes 20 main technical sessions, and are currently on session 4: CWIS Service Outcome: Equity – Group work



This training includes 20 main technical sessions, and are currently on session 4: CWIS Service Outcome: Equity – Group work


Learning Outcomes

- Analyze possible challenges to implement the equitable services
- Discuss the ideas to overcome such mentioned challenges to implement the equitable services along with the initiatives taken for the same (based on LISA)


At the end of the session, participants will be able to ...

Slide 5

Group work



3 Groups
10-15 minutes



Slide 6

Group work

Policies/Plan level Initiatives (Group 1)

Program Implementation level Initiatives (Group 2)

Grassroot level Initiatives (Group 3)

Initiatives taken for equity	Possible challenges while implementing such initiatives

Group work

Policies/Plan level Initiatives (Group 1)

Program Implementation level Initiatives (Group 2)

Grassroot level Initiatives (Group 3)

	Possible challenges to implement	Ideas to overcome

CWIS Service Framework and Local Institutional Self Assessment (LISA)

CWIS OUTCOME	EQUITY Thematic Area - 8: Social Inclusion Thematic Area-7: Physical Infrastructure Development Thematic Area-5: Service Delivery	SAFETY	SUSTAINABILITY Thematic Area-7: Physical Infrastructure Development
	RESPONSIBILITY Thematic Area 1 –Governance System Thematic Area 2- Organization and Administration	ACCOUNTABILITY Thematic Area-5: Service Delivery	RESOURCE PLANNING AND MANAGEMENT Thematic Area- 3: Annual Budget and Plan Formulation Thematic Area-5: Service Delivery Thematic Area-4: Fiscal & Financial Management

As discussed on concept of CWIS-we are now aware on CWIS framework relating to LISA. The points covered in mentioned thematic area that is 5, 7 and 8 represents the point for the equity.

Slide 9

Existing Actions to speed up for equity in cities

- 1: % of the Low-Income Community (LIC) population with access to 'safe' individual toilets / % of the total population with access to 'safe' individual toilets**
 - Based on poverty mapping the social thematic area services were delivered to women, Dalits, endangered indigenous peoples, persons with disabilities, children, and senior citizens
 - User-friendly public infrastructure
- 2: % safe management LIC / % safe management citywide (only for Individual Household Latrines/IHHLs)**
- 3: Subsidy amount paid to Non-Sewered Sanitation (NSS) / Sewered Sanitation (SS)**
 - The Job Description of all units, Training to the staff, Data management
 - GESI Responsive Budget Audit

Source: LISA

While going through the LISA, Points to contribute to the achievement of mentioned global CWIS indicators on Equity.

Slide 10

Existing Actions to speed up for equity in cities

- 4: % of women in sanitation-related decision-making bodies (government institutions)**
 - Women's participation in the decision-making process
- 5: Gender pay gap in the sanitation workforce**
- 6: Sanitation worker equity (formalization, legal recourse, right to unionize, social security, and health insurance)**
 - Facilitation for Social Security Fund/Health Insurance affiliation /Group Term Insurance (Private sector/municipality sanitation workers)
 - Policies/Guidelines development

Source: LISA

While going through the LISA, Points to contribute to the achievement of mentioned global CWIS indicators on Equity.

Slide 11

Strong Coordination & Collaboration among different units

Sanitation led Section GESI focal Point

Sanitation led Section GESI focal Point

Stop making assumptions while working on Gender and Equity

Summarizing all the discussions on equity, inform participants that one of the core gap seen in the sector while discussing on the GESI is demonstrated by the slide itself.

Further, if the projects and thoughts could be synched together like that of sanitation led section and GESI focal point, most of the targets of these two sectors could be easily met.

Hence, while projecting any plans or projects, one should stop making assumptions while working on gender and equity.

Slide 12

Local Government Institutional Self-Assessment (LISA)

- Thematic Area 1 –Governance System
- Thematic Area 2- Organization and Administration
- Thematic Area- 3: Annual Budget and Plan Formulation
- Thematic Area-4: Fiscal & Financial Management
- Thematic Area-5: Service Delivery
- Thematic Area - 6: Judicial Work Performance
- Thematic Area-7: Physical Infrastructure Development
- Thematic Area - 8: Social Inclusion
- Thematic Area- 9: Environment Protection and Disaster Management
- Thematic Area- 10: Co-operation and Coordination

Thank you!
धन्यवाद !



Government of Nepal
Ministry of Water Supply
Department of Water Supply and Sewerage Management
Dangra Building, Mahabharat, Mahanagar, Kathmandu, Nepal
Phone: (977) 413344, 443153
website: www.dwsst.gov.np

Technical Support



Environment & Public Health Organization (EPHO)
Bhakti Marg, 1, Thapaga, New Baneshwor, Kathmandu, Nepal
Phone: (977) 1442441 | Website: epho.gov.np

SESSION 5

**CWIS Service
Outcome - Safety**

Slide 1

"Citywide Inclusive Sanitation – Training of Trainer's"
CWIS Service Outcome– Safety
 Resource Person

Government of Nepal
 Ministry of Water Supply
 Department of Water Supply and Sewerage Management

Slide 2

Before starting...

No one is safe until everyone is safe.

What does this mean in Sanitation?

care
 10 YEARS

Linking to SDG 6: Sanitation for all, means that when everyone is safe then only the sanitation till everyone stops open defecation and open disposal or when the sanitation is safely managed then only the public health can be ensured. The outcome of poor sanitation will not be biased among



This training includes 20 main technical sessions, and are currently on session 5: CWIS Service Outcome: Safety




This training includes 20 main technical sessions, and are currently on session 5: CWIS Service Outcome: Safety

Slide 5

Learning Outcomes

- Discuss the CWIS service outcome 'safety' along with issues related to safety
- Explain measures to attain safety throughout sanitation service chain




At the end of the session, participants will be able to ...

Slide 6

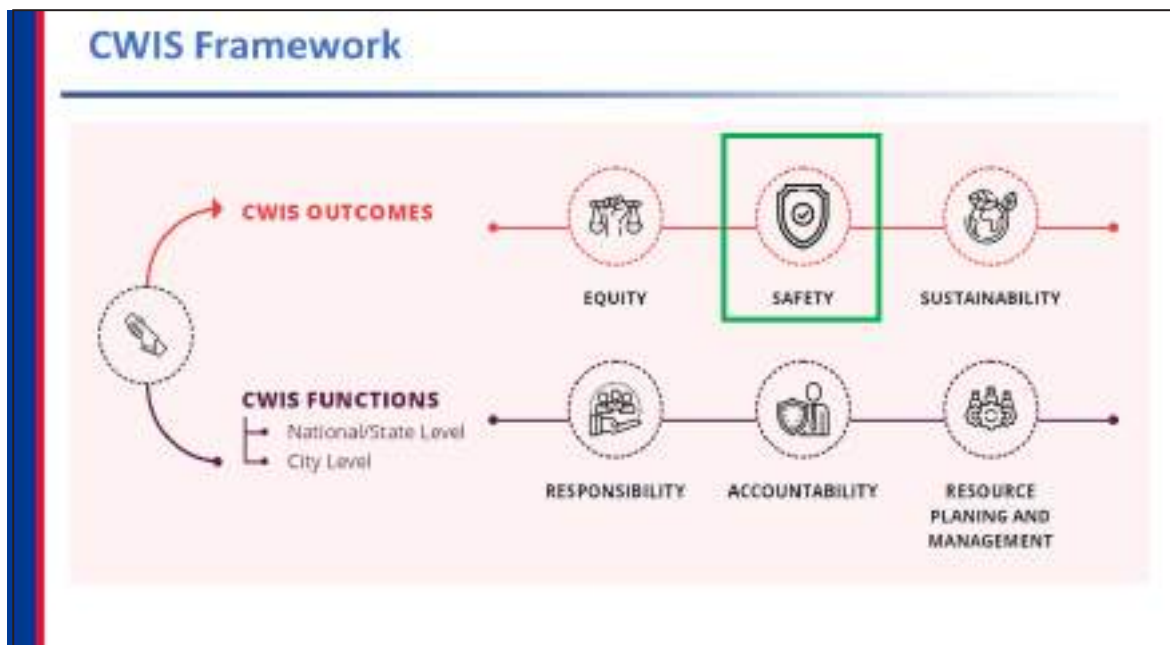
Presentation Outline

- SDG 6: Target and Indicators
- Safety – definition, usage and incorporation
- Functional Group and Safety
- Estimation of GHGs emission from domestic wastewater in Nepal
- Wastewater standard
- Sanitation Safety Planning and its steps
- OHS and Measures for OHS
- Operational Monitoring Plan



SDG 6 – Target and Indicators

Targets and Indicators		2015	2019	2022	2025	2030
Target 6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations						
6.2.1 Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water						
1	Households using improved sanitation facilities which are not shared (%)	60 ^a	69.3	78.7	85.7	95
2	Proportion of population using latrine (%)	67.6 ^a	75.7	83.8	90	98
3	Sanitation coverage (%)	82 ^a	86.5	89.9	93.3	99
4	Urban households with toilets connected to sewer systems/ proper FSM (%)	30 ^a	46	62	74	90
Target 6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated waste water and increasing recycling and safe reuse.						
6.3.1 Proportion of wastewater safely treated						
1	Proportion of untreated industrial waste water (%)	99 ^a	75.3	57.5	39.7	10
6.3.2 Proportion of bodies of water with good ambient water quality						



Citywide Inclusive Sanitation (CWIS) initiative support to redesigning urban sanitation service systems of cities and in the particular session will be discussing on measures to equitable sanitation services.

Slide 9

CWIS – core outcome and functions

SAFETY

“Services safeguard customers, workers and communities from safety and health risks by reaching everyone with safe sanitation.”

CWIS SERVICE FRAMEWORK			
	EQUITY	SAFETY	SUSTAINABILITY
CORE CWIS OUTCOMES	Services reflect fairness in distribution and prioritization of service quality, prices, and deployment of public financial subsidies.	Services safeguard customers, workers, and communities from safety and health risks—reaching everyone with safe sanitation.	Services are reliably and continually delivered based on effective management of human, financial and natural resources.
CORE CWIS FUNCTIONS	An authority(ies) executes a clear public mandate to ensure safe, equitable, and sustainable sanitation for all.	Authorities' performance against their mandate is monitored and managed with data, transparency and incentives.	Resources—human, financial, natural, assets—are effectively managed to support execution of mandate across time/space.

As termed in the CWIS service outcome, safety means...

Slide 10

CWIS – core outcome and functions

CWIS SERVICE FRAMEWORK			
	EQUITY	SAFETY	SUSTAINABILITY
CORE CWIS OUTCOMES	Services reflect fairness in distribution and prioritization of service quality, prices, and deployment of public financial subsidies.	Services safeguard customers, workers, and communities from safety and health risks—reaching everyone with safe sanitation.	Services are reliably and continually delivered based on effective management of human, financial and natural resources.
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Public Goods are elements of sanitation service delivery system characterized by market. Practically, they are the elements of sanitation service that are outside of individuals' direct private interests and can include **safe on-site containment, network connections, transporting waste to safe disposal, and other activities required for long-term protection of water, land and public health along the value chain.**



Safety – a mechanism to ensure that certain activities or object are not allowed to be use/carry
 One of the major usage for safety are signage as shown in picture on left hand side, we see many such signage e.g., traffic rule, permits etc.
 Other example is security in airports
 Recent example can be shown precautions and preventive measures used during COVID-19



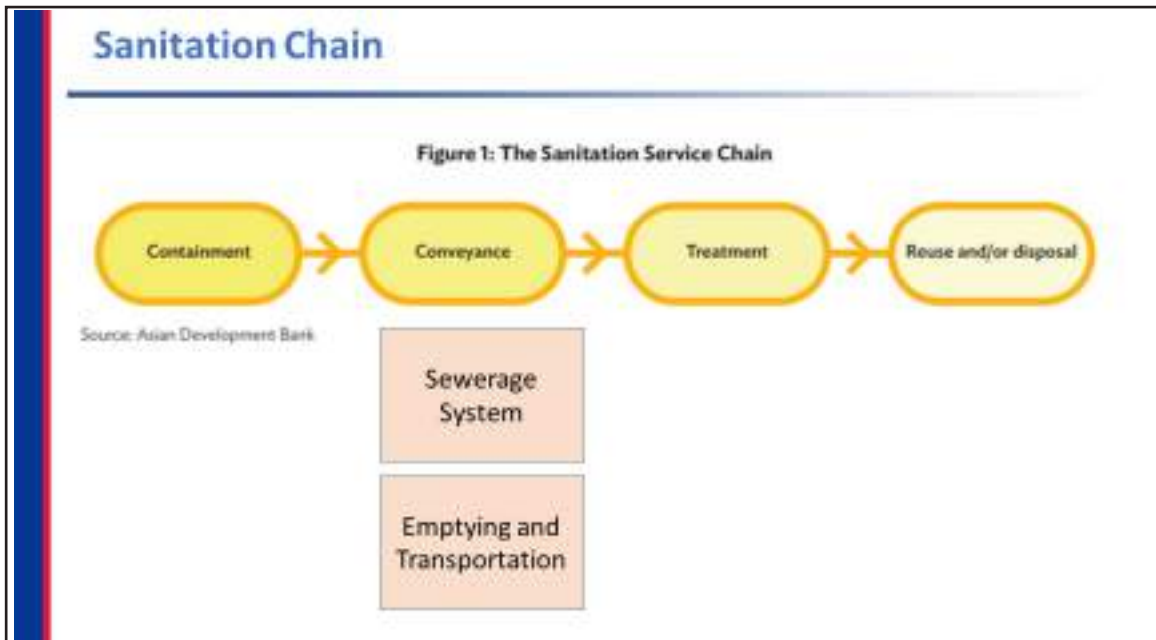
While discussing about safety, have you ever searched in google and find about safety in sanitation. While you look for the precise information on sanitation and safety one need to consider other practical issues that comes together.

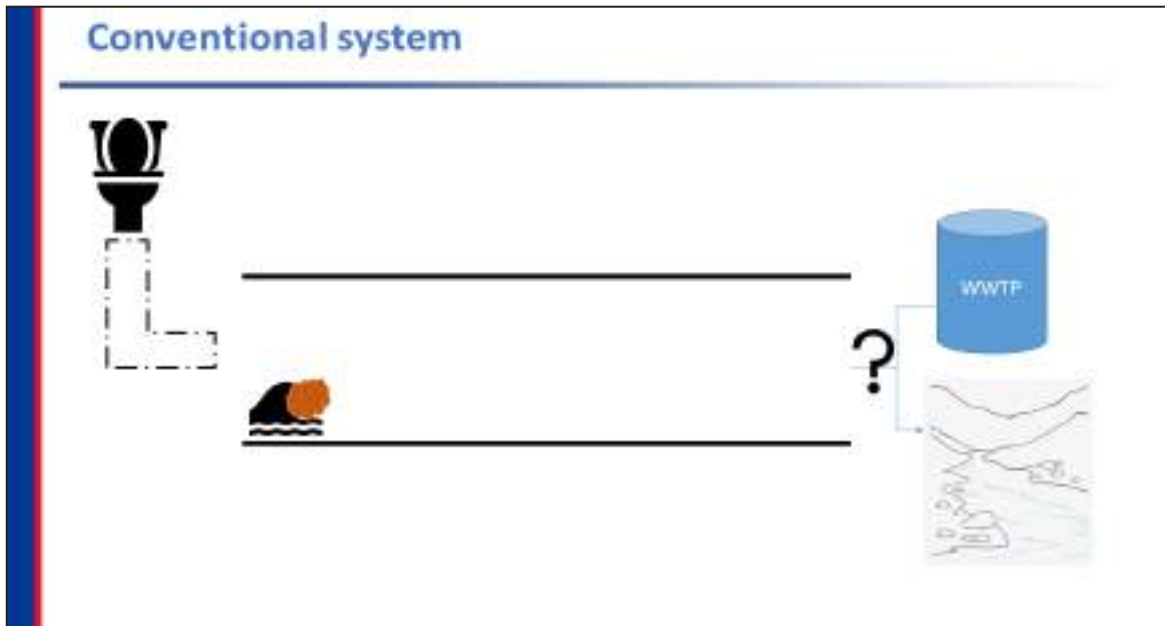
Slide 13



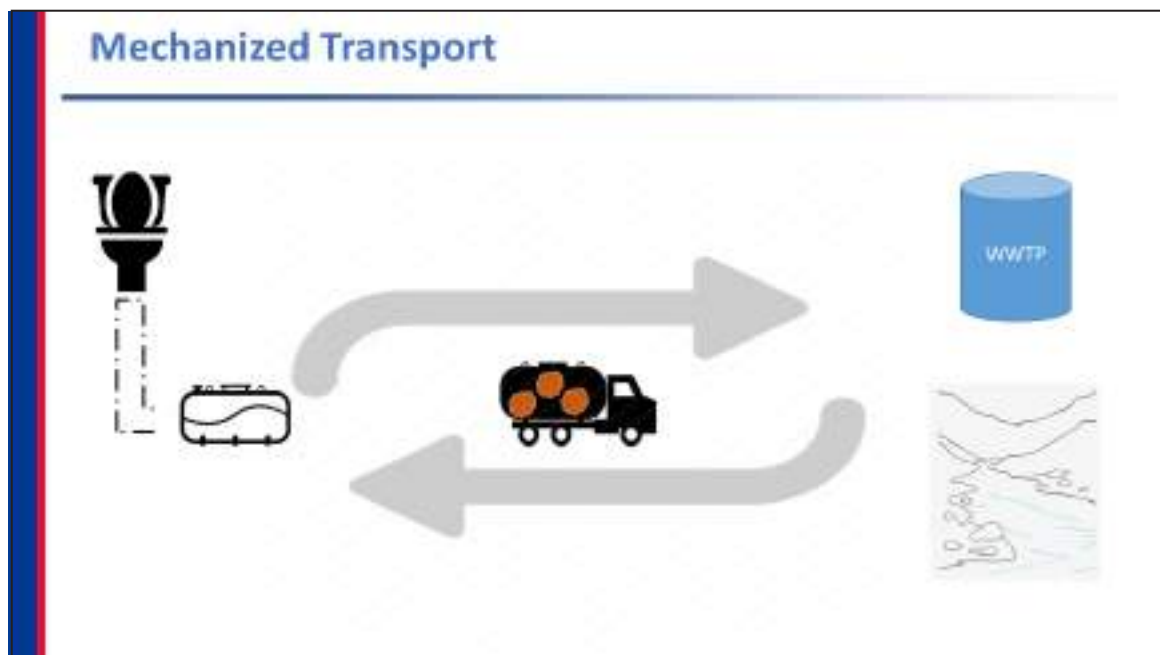
As suggested both are measuring and it is very precisely doing it. But thinking this in different circumstances should also be considered.

Slide 14

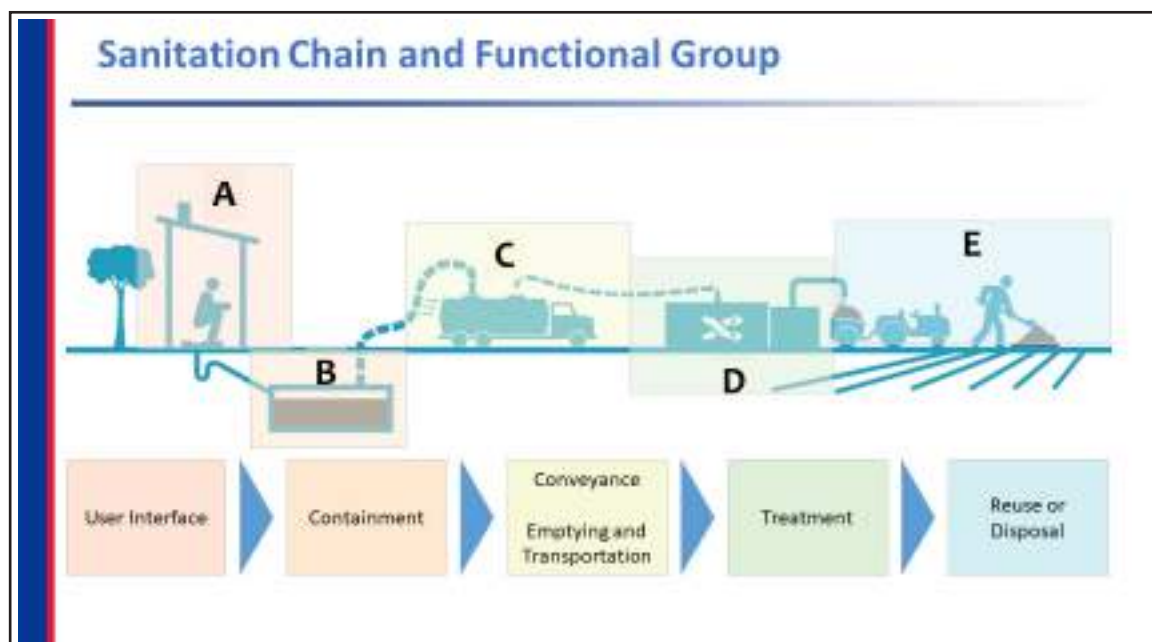




Slide 17



Slide 18



This slide gives an overview of overall FSM chain and various sanitation functional groups, this can also be used to discuss on possible points where safety mechanism could require

Functional Group and Safety

Functional Group	Safety			
	Public Health	Environment	Financial	Occupational Health and Safety (OHS)
Containment				
Emptying				
Transport				
Treatment				
Reuse/Disposal				

This slide is used to show the relationship between functional group and the impact of improper activities related to each functional group to each of the category.
 Ex. In case of lack of proper containment, it is directly impacting on environment health and public health.

Group Work – Functional Group and Safety




5 Groups
5 minutes

Relating to earlier slide, inform participants that they are going for a group work and in their groups, they will be assigned a functional group and, in their groups, participants are to discuss what issues one might face related to each of 4 safety component.
 Refer to the end of the lesson plan for more information

Slide 21

Safety

- What is your understanding on safety
- What are various ways to increase or improve safety



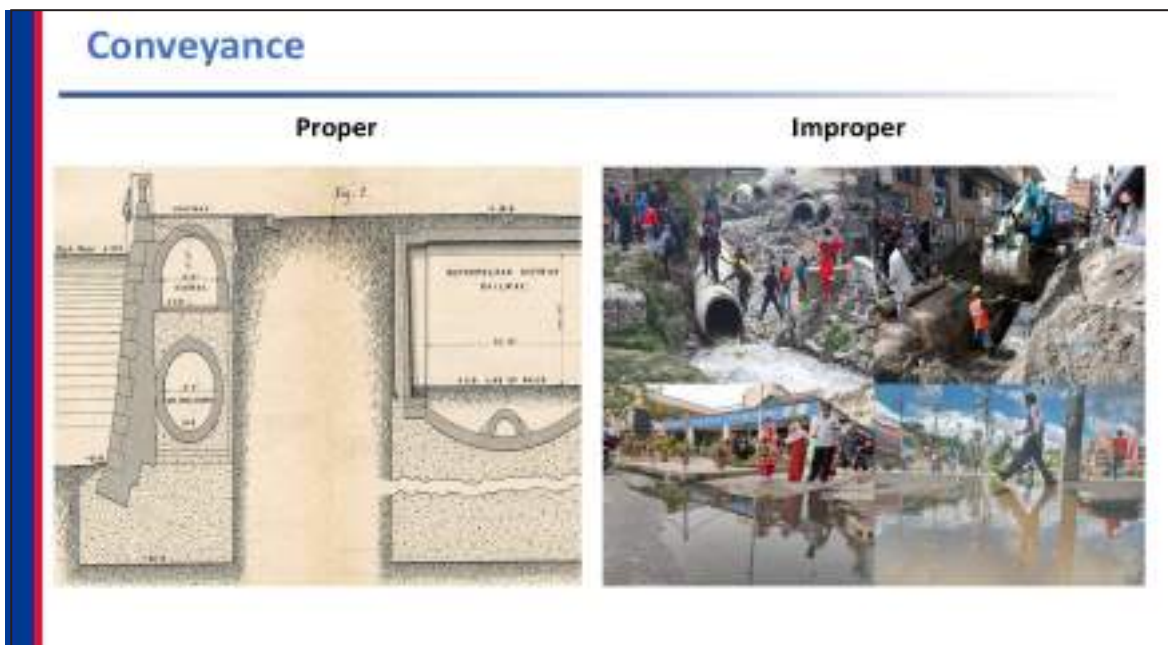
The illustration shows a sequence of safety-related activities. On the left, a person stands at a gate. In the center, a truck is connected to a large container by a hose. On the right, a tractor is pulling a trailer, and a person is sweeping the ground.

Slide 22

User interface



The diagram illustrates a user interface for a toilet. It shows a sequence of actions: a bucket of water being poured, a pair of blue slippers, a brush and a bottle of cleaning solution, and a hand being washed. A green arrow points to a toilet. A red X is placed over the toilet, and a line connects it to a person in bed, indicating a problem or error.



Present a picture of proper conveyance and inform participants how it is well planned in the case of Europe. Here in the left hand side picture, along with the subway, sewer line is planned/ designed for the effective planning of a transportation while in the right hand side pictures, although sewer-line is placed for storm water management, it is not properly planned and hence causing disruption in movement.

Slide 25

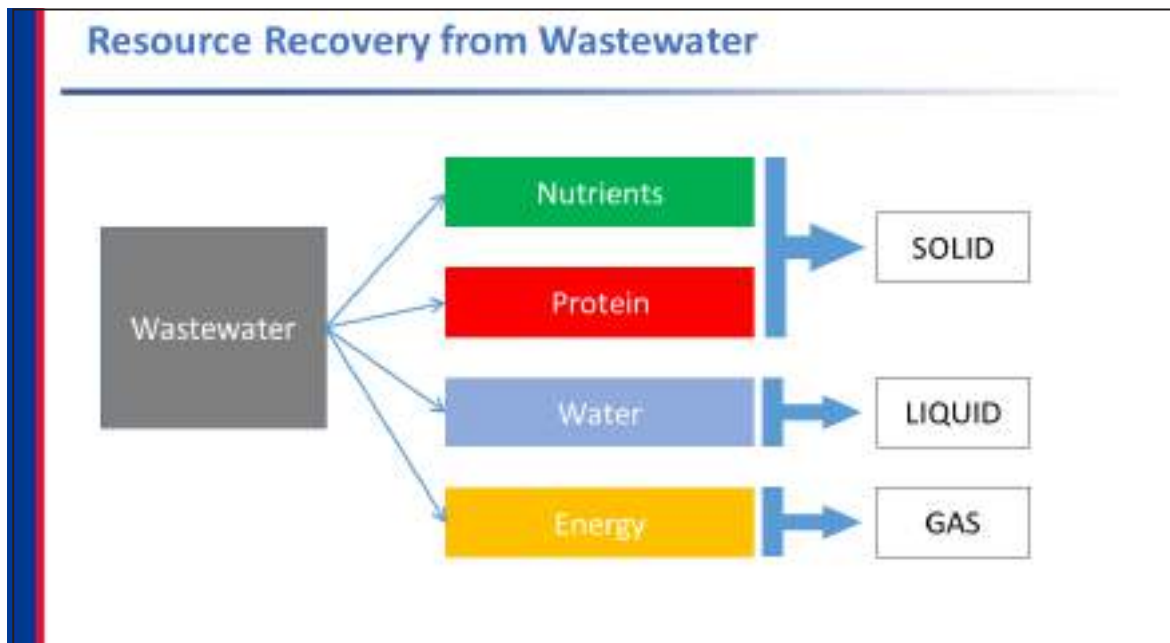
Emptying

With spillage and w/o PPE	No spillage and w/ PPE
	

Slide 26

Transport

Condition of truck with leakages	Properly maintained truck
	



Further inform participants that mainly, the resource recovery from fecal sludge is done in the form of nutrients, energy, water and protein.

End products as

nutrient recovery- compost, pellets, biochar

Energy- biogas, briquettes, biochar

Water – treated water

Protein – flies larvae

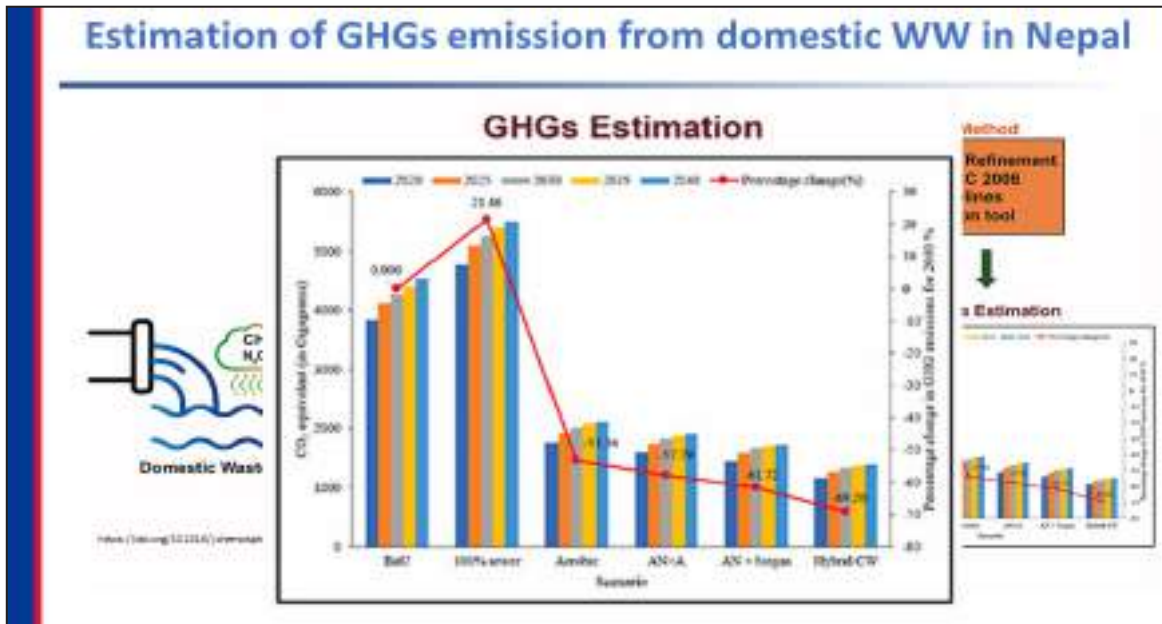
In case of Nepal, resource recovered from FS is mainly in the form of Biogas, compost- prepared from the co-composting of slurry from biogas and treated wastewater for irrigation.



Estimation of greenhouse gases (GHGs) emission from domestic wastewater in Nepal: A scenario-based analysis applicable for developing countries

<https://www.sciencedirect.com/science/article/abs/pii/S0045653522009948>

Domestic wastewater and wastewater treatment plants (WWTPs) are key emitters of greenhouse gases (GHGs). Quantifying these emissions in the present and future is crucial to tackle global climate change issues. As a developing country with few rural and urban wastewater treatment facilities, Nepal may have a unique opportunity to reduce future GHGs emissions by a proper selection of wastewater treatment technology. In this paper, the authors used Python programming to estimate the GHGs emissions from the domestic wastewater sector in Nepal under various technological development scenarios for 2020 to 2040 using the refined 2019 estimation methodology developed by Inter-governmental Panel on Climate Change (IPCC). Results show total equivalent CO₂ emission of 3829.43 and 4523.65 Gigagrams in 2020 and 2040, respectively. The 2020 value is seven times greater than Nepal's 2017 national estimates because this study considered rural population and updated methodology. Comparing the technology development scenarios with the Business as Usual scenario, the highest GHGs reduction could be achieved by hybrid constructed wetlands (69.20%) followed by a combined anaerobic and aerobic system with biogas recovery for energy generation (61.72%). Further accuracy may be attained only through the actual measurement of WWTPs emissions and country-specific emission factors. Thus, this paper proposes GHGs estimation of future scenarios portraying urban and rural populations may be invaluable to policy-makers of GHGs mitigation for selection of feasible WWTPs, especially in developing countries with limited wastewater treatment facilities and wastewater activity data.



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Organic compost Standard for Registration in the Ministry

S. No.	Criteria	Value
8	Odor	Odorless
9	Mesh size (mm) for particle size	0.15 – 0.21
10	Heavy metals:	
	Arsenic (as2O3) ppm	Maximum 10
	Cadmium (Cd) ppm	Maximum 5
	Chromium (Cr) ppm	Maximum 50
	Lead (Pb) ppm	Maximum 100
	Mercury (Hg) ppm	Maximum 2

The standard for maximum moisture is 25% in powdered organic compost and in vermi-compost while that for pallet form is 20%. And the compost should be odorless.

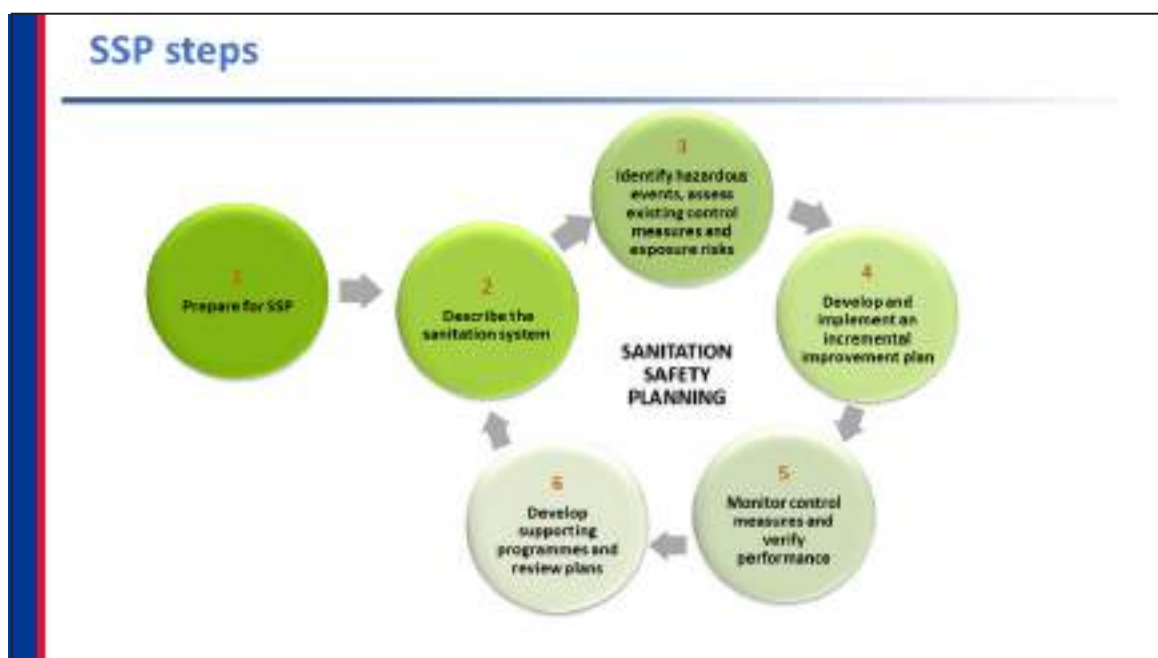
Particle size for powdered organic compost should pass through the mesh size of 0.15-0.21 mm

Sanitation Safety Planning (SSP)

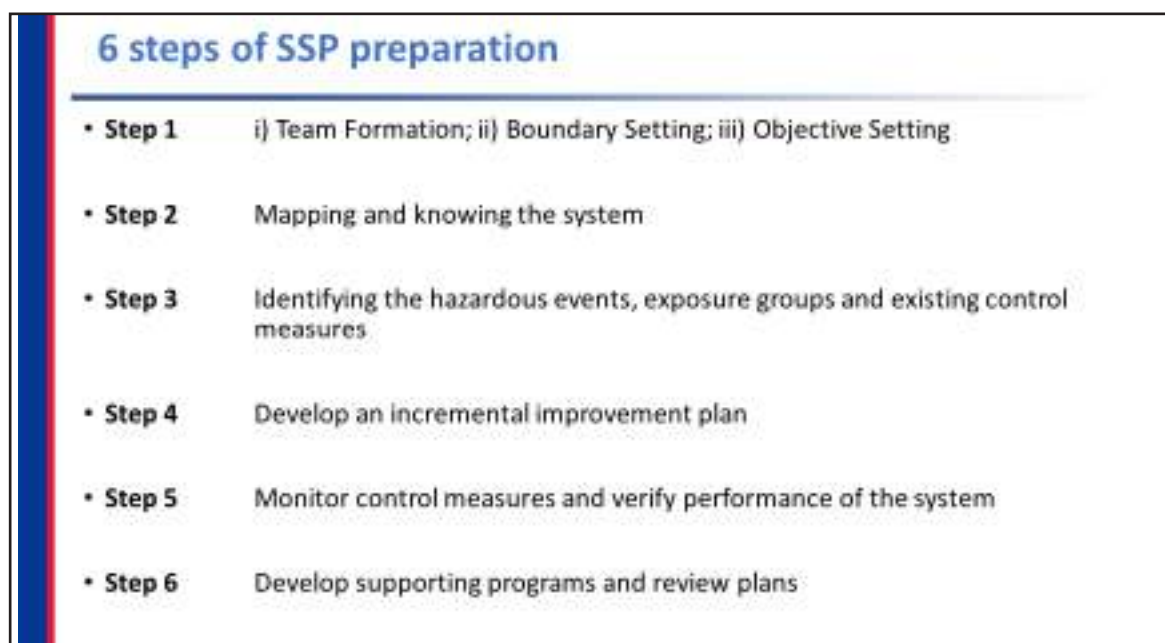
SSP is a risk-based management tool for sanitation systems, which

- Systematically identify and manage health risk among the sanitation chain
- Guide investment based on actual risks, promotes health benefits and minimize adverse health impacts,
- Provides assurance to authorities and public on safety of sanitation-based services and products

Slide 35



Slide 36



Step I: Prepare for SSP

i. Team Formation

ii. Boundary Setting

- Looking into whole system or parts

iii. Objective Setting

- Functional evaluation of sanitation chain
- Identification of hazard – in operational process, various steps, etc.
- Control measures
- Safe reuse or discharge of by-products from treatment processes



1
Prepare for
SSP

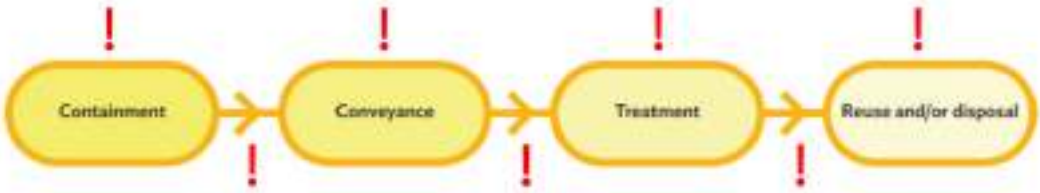
The first step of SSP is to prepare for SSP itself by forming team, setting boundaries and setting objectives for the SSP.

Step II: Describe the Sanitation System

Hazardous Events

Exposure Groups

Existing Control Measures

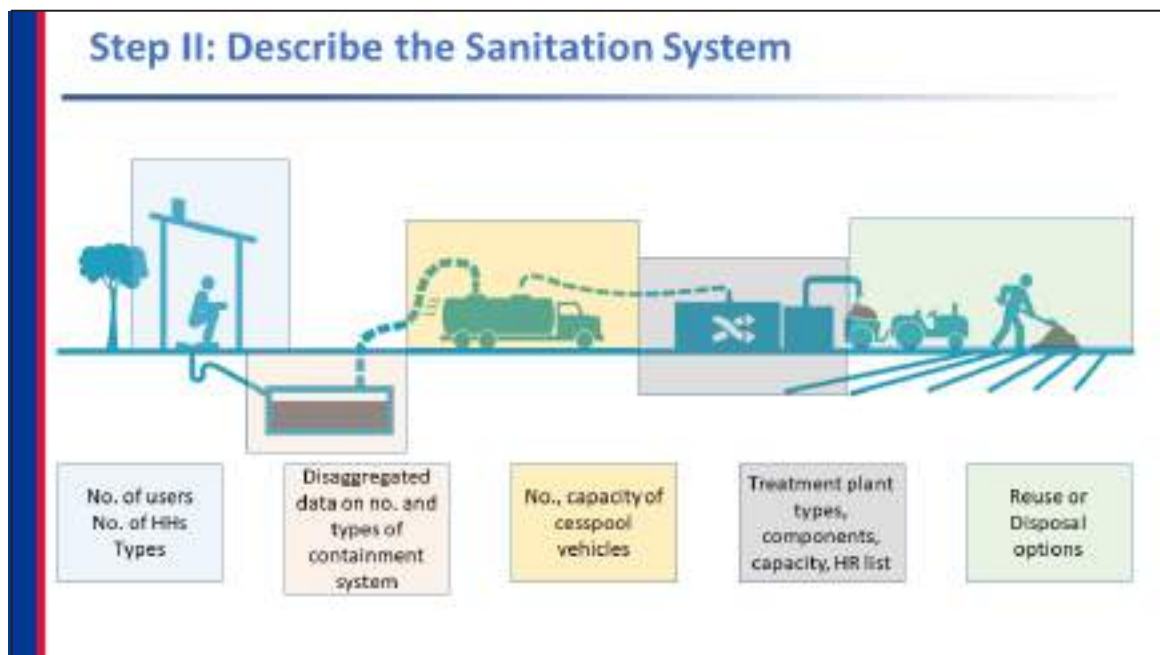




2
Describe the
sanitation
system

Second step of the SSP is to describe the system as per the boundary that one has set. Describing each component of the system is described in the step.

Slide 39



Ex. in the step, all the related information to the system is described in details.

Slide 40

Step III- Identifying Hazardous Events, Exposure Groups, Control measures

SN	Critical points of consideration	Hazardous event	Exposure groups	Existing control measures

1
Identify hazardous events, assess existing control measures and exposure risks

The third step of the tool is to identify the hazardous events, exposure groups and control measures of the system. While describing the system, where is the most critical point or points where the system could lead to the hazardous events impacting on the public health. To this the exposure groups are also described in the step along with the existing control measures that are in practice for the preventing such hazardous event, if any.

Exposure group categories (example)

SYMBOL	SHORT NAME	SHORT DESCRIPTION
W	Workers	A person who is responsible for maintaining, cleaning, operating or emptying the sanitation technology
F	Farmers	A person who is using the products (e.g., untreated, partially or fully treated wastewater, biosolids, faecal sludge)
L	Local community	Anyone who is living near to, or downstream from, the sanitation technology or far, on which the material is used, an may be passively affected
C	Consumers	Anyone who consumes or uses products (e.g., crops, fish or compost) that are produced using sanitation products

While discussing on the exposure groups in step 3 of SSP, it is described as mentioned in the slide.

Likelihood classification

DESCRIPTOR	DESCRIPTION
Likelihood (L)	
1 Very Unlikely	Has not happened in the past and it is highly improbable it will happen in the next 12 months (or another reasonable period)
2 Unlikely	Has not happened in the past but may occur in exceptional circumstances in the next 12 months (or another reasonable period)
3 Possible	May have happened in the past and/or may occur under regular circumstances in the next 12 months (or another reasonable period)
4 Likely	Has been observed in the past and/or is likely to occur in the next 12 months (or another reasonable period)
5 Almost Certain	Has often been observed in the past and/or will almost certainly occur in most circumstances in the next 12 months (or another reasonable period)

For the calculation of the critical points, it is measured by scoring through the risk assessment matrix which is again described to the likelihood of the events. How likely is the event to happen is the main concern of the point.

Slide 43

Severity Classification

Severity (S)		
1	Insignificant	Hazard or hazardous event resulting in no or negligible health effects compared to background levels
2	Minor	Hazard or hazardous event potentially resulting in minor health effects (e.g., temporary symptoms like irritation, nausea, headache)
4	Moderate	Hazard or hazardous event potentially resulting in a self-limiting health effects or minor illness (e.g., acute diarrhoea, vomiting, upper respiratory tract infection, minor trauma)
8	Major	Hazard or hazardous event potentially resulting in illness or injury (e.g., malaria, schistosomiasis, food-borne trematodiasis, chronic diarrhoea, chronic respiratory problems, neurological disorders, bone fracture); and/or may lead to legal complaints and concern: And/or major regulatory non-compliances
16	Catastrophic	Hazard or hazardous event potentially resulting in serious illness or injury, or even loss of life (e.g., severe poisoning, loss of extremities, severe burns, drowning); and/or will lead to major investigation by regulator with prosecution likely

With the likelihood of the events happening, severity of such events or the impact that the break-out of the event could have an impact on the public health is the next component for the calculation of the risk assessment matrix.

Slide 44

Risk Assessment Matrix

			SEVERITY (S)				
			Insignificant	Minor	Moderate	Major	Catastrophic
			1	2	4	8	16
LIKELIHOOD (L)	Very unlikely	1	1	2	4	8	16
	Unlikely	2	2	4	8	16	32
	Possible	3	3	6	12	24	48
	Likely	4	4	8	16	32	64
	Almost Certain	5	5	10	20	40	80
Risk Score R = (L) x (S)			<6	7-12	13-32	>32	
Risk level			Low Risk	Medium Risk	High Risk	Very High Risk	

Once the likelihood and severity is scored, risk score is calculated with L*S, the matrix gives the answer to how risky it is and how instantly one should focus to mitigate the event. The events with high score is of very high risk and so the attention should be given for the instant mitigation.

Step III - Summary

S.N	Hazardous Events	Risk Analysis				Priority level (1 – Highest, decreases with subsequent numbers)
		Likelihood	Severity	Score	Level of Risk	
1.	Cap at the inlet point is missing, so there is the chance of intrusion of unwanted materials and extra load to the treatment plant.	5	2	10	Medium	9
2.	Sometimes back flow of the thick faecal sludge during feeding through inlet point.	3	2	6	Low	13
3.	Splattering of faecal sludge into body parts of caretaker while checking the type of incoming faecal sludge and cleaning the bar screen.	4	1	4	Low	12

Step IV: Develop an Incremental Improvement Plan

- **Action plan**
 - Identification of actions
 - Time duration
 - Responsibility
 - Cost




S.N	Improvement Plan	Responsible person	Duration	Tentative Cost

Slide 47

Step V: Monitor Control Measures and Verify Performance

- **Monitoring plan**
 - Action points
 - How to do the action
 - Who to do
 - When to do (schedule)




S.N	What?	How?	By Whom?	When?

Slide 48

Step VI: Develop Supporting Program

- **Review of action and monitoring plan**
 - Action points and its implementation
 - How monitoring plan is going on
 - What to do next?



S.N	Programs	When?	By Whom?



Urban Sanitary Services And Public Health- F Diagram

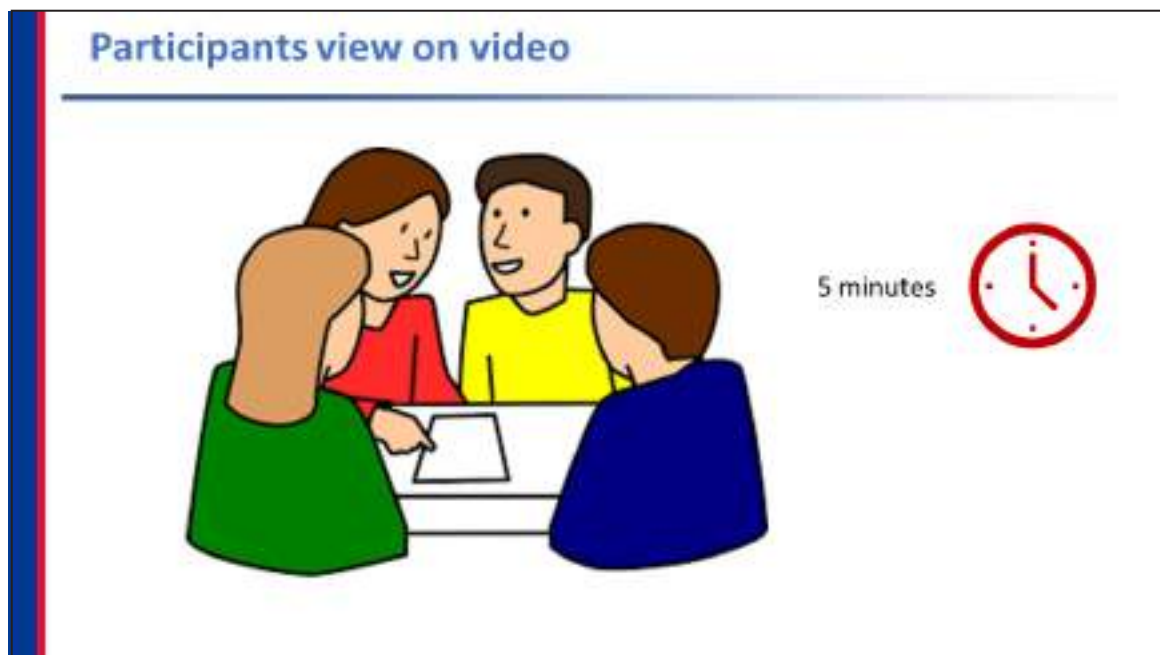
Public health might face different sanitation hazards through-out sanitation service chain and might have a consequences of hazardous events.



<https://www.youtube.com/watch?v=8Dx9PWJSEyo&pp=ygUdY2hhbGxlbmdlcyBmYWNlZCBieSB-kZXNsdWRnZXI%3D>

One of the exposure group that are highly in need for the safety concern are the SWs, and the challenges faced by a type of SW is shown in the video..

Slide 51



They are going for a group work. For this, participants will be provided a case and will be divided into 4 groups

Slide 52



OHS is a multidisciplinary field concerned with the safety, health, and welfare of people at work (i.e. in an occupation).

The goal of an occupational safety and health program is to foster a safe and healthy occupational environment. OHS also protects all the general public who may be affected by the occupational environment.

As defined by the World Health Organization (WHO) “occupational health deals with all aspects of health and safety in the workplace and has a strong focus on primary prevention of hazards.”

Measures for OHS

- Mandatory to wear personal protective equipment (PPE) to avoid any
- To avoid hazard while carrying out de-sludging services
- To avoid direct exposure to faecal sludge
- Avoid unsafe working practices like entering into containment



Some of the measures for occupational health and safety

Measures for OHS

<p>Immunization for Health and Safety</p> <ul style="list-style-type: none"> • Desludging workers should be immunized for: (Tetanus, Hepatitis A & B and Diphtheria) • First-Aid equipment • Emergency eye wash facilities • Emergency contact numbers • Deworming Tablets (once in three months) 	<p>Training Program</p> <ul style="list-style-type: none"> • Training program for desludging operators including emptier on health and safety measures • Training program on use of PPE • Training program on use of First-Aid
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Provide medical/health/life insurance to the sanitation workers

Operational Monitoring plan

1. Operational monitoring plan for: Occupational health and safety of Pit Emptyers			
Operational limits or compliance criteria	Operational monitoring of the control measure		Corrective action when the operational limit is exceeded or not complied with
100% of vacutug operators comply with standard occupational health and safety protocols while performing mechanical emptying, complete-elimination of manual emptying practice in the municipality	What is monitored?	Frequency of use of proper personal protective equipment (clothing, boots, goggles, masks), washing hands with soap after work, cleaning equipment after desludging, observing emptying practice of households	What action is to be taken? <ul style="list-style-type: none"> Identify why the mechanical emptiers are not wearing PPE. Communicating the hazard of manual emptying practice Education and communication program.
	How it is monitored?	Observation, survey	
	Where it is monitored?	Individual households	Who takes the action? Municipality conservancy officer (with technical guidance from DPHE)
	Who monitors it?	Municipality conservancy officer, any surveyor hired by the municipality	When it is taken? Once a month, until 100% compliance reached
	When it is monitored?	During cleaning operation	Who needs to be informed of the action? Sakhipur SSP Committee

The whole idea can be summarized as the need and implementation of guidelines and SOPs for SWs. To this awareness on legal provisions for SWs is one of the other measures to ensure OHS.



Households with different toilet facility									
Year	Nepal			Nepal / Urban			Nepal / Rural		
	2011	2021	↑	2011	2021	↑	2011	2021	↓
Total Households	5,423,297	6,660,841	↑	1,045,575	4,474,699	↑	4,377,722	2,186,142	↓
Flush toilet (public sewerage)	448,359	653,710	↑	316,041	593,401	↑	132,318	60,309	↓
Flush toilet (septic tank)	1,814,293	3,867,780	↑	496,624	2,443,115	↑	1,317,669	1,224,665	↓
Pit toilet	1,055,862	2,005,480	↑	129,732	1,246,732	↑	926,130	758,748	↓
Public toilet	-	32,381	↑	-	20,636	↑	-	11,745	↑
Without toilet facility	2,069,812	301,490	↓	95,030	170,815	↑	1,974,782	130,675	↓
Not stated	34,971	-	↓	8,148	-	↓	26,832	-	↓

आर्थिक वर्ष २०८०/८१ को नीति तथा कार्यक्रम

नीति तथा कार्यक्रमको बुँदा नं. ८४, ८६, ८७ र ८८ मा खानेपानी, सरसफाइ र स्वच्छता सँग सम्बन्धित विषयले स्थान पाएका छन् ।

- बुँदा नं. ८७) शहरी तथा राजमार्ग वरिपरि यात्री, पर्यटक, सेवाग्राहीको अत्यधिक चाप हुने सार्वजनिक स्थानमा निजी तथा सामुदायिक साझेदारीमा कम्तीमा एक हजार सुविधासम्पन्न सार्वजनिक शौचालय र विश्रामस्थल निर्माण गरिनेछ । राजमार्गहरुमा सार्वजनिक निजी साझेदारीमा स्मार्ट रोडसाईड स्टेशन निर्माण गर्न सुरु गरिनेछ ।
- बुँदा नं. ८८) तीन तहका सरकारको समन्वयमा सरसफाइ स्वच्छता कार्यक्रमलाई राष्ट्रिय अभियानको रुपमा सञ्चालन गरिनेछ । नदीनाला तथा पानीको स्रोतलाई प्रदूषणमुक्त राख्न फोहोरपानी प्रशोधन प्रणालीको विकास र विस्तार गरिनेछ ।

Legal Provision for Sanitation Workers

- परिच्छेद २ श्रमिक सम्बन्धी आधारभूत व्यवस्था
- परिच्छेद ७ काम गर्ने समय सम्बन्धी व्यवस्था
- परिच्छेद ८ पारिश्रमिक सम्बन्धी व्यवस्था
- परिच्छेद ९ विदा सम्बन्धी व्यवस्था
- परिच्छेद १२ व्यवसायजन्य सुरक्षा र स्वास्थ्य सम्बन्धी व्यवस्था
 - सुरक्षा र स्वास्थ्य सम्बन्धी नीति बनाउनु पर्ने
 - श्रमिकप्रति रोजगारदाताको कर्तव्य
 - श्रमिकको कर्तव्य
 - सुरक्षा तथा स्वास्थ्य समिति गठन गर्ने
 - तत्काल खतरा भएमा काम बन्द गर्ने
 - व्यवसायजन्य सुरक्षा र स्वास्थ्य सम्बन्धी विशेष व्यवस्था

1. Basic Provision related to Labour

Minimum standards

Child labour is restricted

No discrimination

No discrimination for wages for same work

2. Working time related provision

Working hours

3. Provision related to payment

Payment to labourer

Annual increment in payment

4. Provisions related to leave

Weekly leave

Public holiday

Annual leave

Sick leave

Substitute leave

Maternity leave

Mourning leave

Legal Provision for Sanitation Workers

- व्यवसायजन्य सुरक्षा र स्वास्थ्य सम्बन्धी विशेष व्यवस्था
 - आँखा बचाउ सम्बन्धी व्यवस्था,
 - रासायनिक पदार्थबाट बचाउ सम्बन्धी व्यवस्था,
 - प्रेसर प्लान्टको सञ्चालन सम्बन्धी व्यवस्था,
 - मेसिनको छेकवार सम्बन्धी व्यवस्था,
 - भारी उठाउने सम्बन्धी व्यवस्था,
 - अन्य आवश्यक व्यवस्था ।
- प्रेसर प्लान्ट तथा बोइलर परीक्षण सम्बन्धी व्यवस्था तोकिए बमोजिम हुनेछ ।
 - प्रतिष्ठान स्थापनाको जानकारी तथा अन्य व्यवसायजन्य सुरक्षा तथा स्वास्थ्य सम्बन्धी व्यवस्था तोकिए बमोजिम हुनेछ ।

Key Messages

- The core objective of CWIS is to ensure safety of customers, workers and communities or the public health as in general
- This means the safety throughout the functional group of sanitation service chain
- Sanitation safety plan is a risk-based management tool for sanitation systems through risk assessment and hazard analysis of such risk
- Occupational health and safety is one of the major concern related to safety and it deals with all aspects of health and safety in the workplace and has a strong focus on primary prevention of hazards

Slide 62

References

- <https://www.who.int/publications/i/item/9789240062887>
- https://en.wikipedia.org/wiki/Occupational_safety_and_health
- <https://youtu.be/Apw-dYWjmjs>
- <https://www.youtube.com/watch?v=8Dx9PWJSEyo>
- <https://www.youtube.com/watch?v=1bqhUAO--1Y>
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- <https://www.youtube.com/watch?v=W8ReSOUYJZY>

Slide 63

Occupational Health and Safety



WASH facility for sanitation worker

<https://www.youtube.com/watch?v=mQF8v2uEcfo>

<https://www.youtube.com/watch?v=nH0MeZguXeY>

Slide 64



<https://www.youtube.com/watch?v=nHOMeZguXeY>

Slide 65

Thank you!
धन्यवाद !

 **Government of Nepal**
Ministry of Water Supply
Department of Water Supply and Sewerage Management
DWSM Building, Panchsathi, Mahadiganj, Kathmandu, Nepal
Phone: (+977) 01-4412744, 4412752
website: www.dwsms.gov.np

Technical Support

 **Environment & Public Health Directorate (EPHD)**
House 10/3, Thapathali, New Baneshwor, Kathmandu, Nepal
Phone: (+977) 01-4424242 | Website: www.ephd.gov.np

SESSION 5.1

Safety in Practice and Group Work

Slide 1



"Citywide Inclusive Sanitation – Training of Trainer's"
CWIS Service Outcome – Safety Practice & Group Work
 Resource Person



Government of Nepal
 Ministry of Water Supply
 Department of Water Supply and Sewerage Management

Slide 2

Before starting...

- How can you ensure your city is safe in terms of sanitation services?
 - One needs data or evidence to ensure a safe city
 - Need to measure and compare data, information and evidence by preparing specific indicators

Ask participants how one can ensure the city is safe or not, in terms of sanitation services.

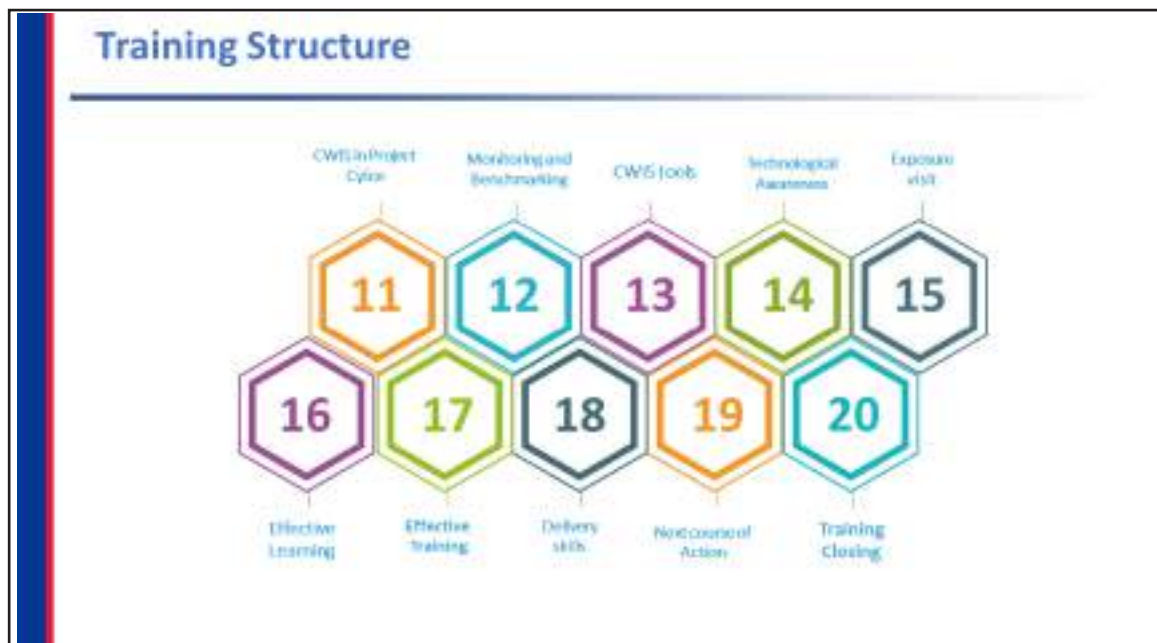
Collect 2 to 3 responses and present further.

Slide 3



We are discussing under safety session on what are the practices related to safety and a group work to internalize the safety component.


Slide 4



This training includes 20 main technical sessions, and are currently on session 5: CWIS Service Outcome: Safety

Learning Outcomes


- Discuss the CWIS service outcome 'safety' measurement indicators
- Analyze initiatives taken for safety and determine possible interventions for safe sanitation services



At the end of the session, participants will be able to ...

Presentation Outline

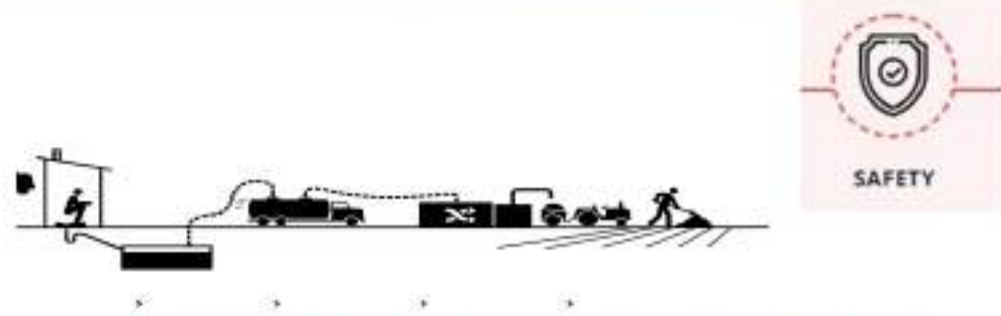
- Safety – measurement indicators
- Group activity



Will be discussing on safety measurement indicators developed by athena infonomics. To this participants will be discussing on the practices being carries out at national and global level. Further, for the internalizing the practices, participants will be doing a group work on safety related to urban sanitation issues.

Slide 7

Safety



• The condition of **being protected from** or **unlikely to cause danger, risk, or injury**

Slide 8

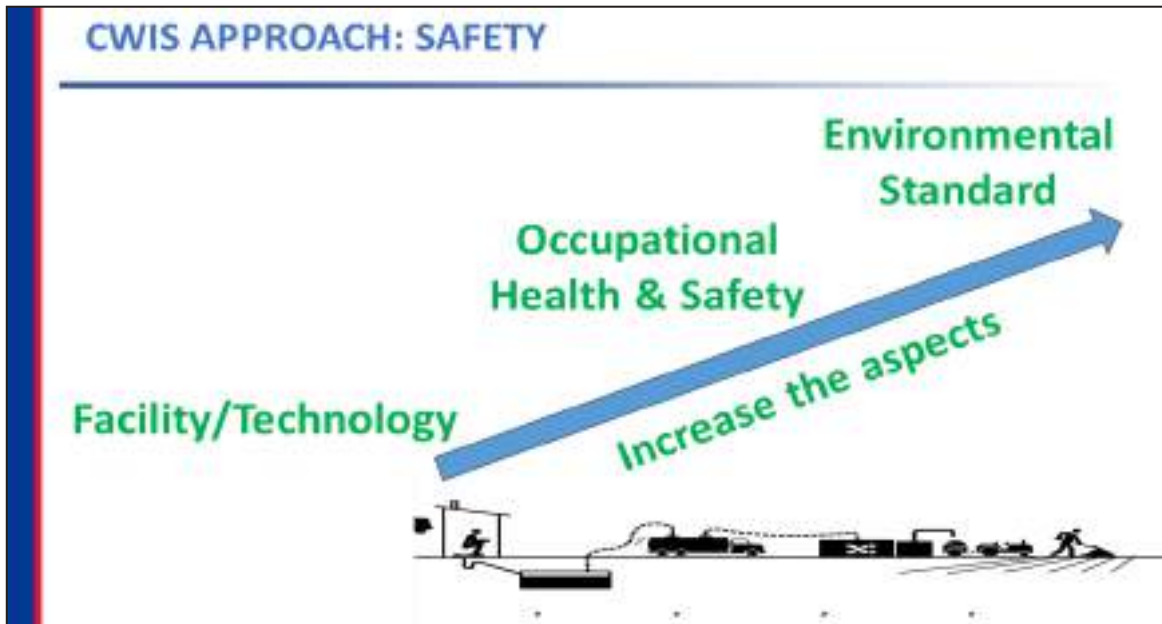
CWIS APPROACH: SAFETY

You are not safe unless everyone is safe

Expand Your Horizon



IHHs LIC IHHs Institutions Public Spaces Environment



MLE Indicators

Services safeguard customers, workers, and communities from safety and health risks by reaching everyone with safe sanitation

- Residents and city users have **access to adequate toilet facilities** in residential, community & public spaces, schools & healthcare facilities
- Toilet facilities and waste services are managed to **protect public health and environmental outcomes**
- Waste disposal and treatment facilities are **sufficient and operational**

(Source: cwiscities.com)

Slide 11

Safety: Sanitation facilities/technology

- **SF-1: % Safely managed sanitation in Citywide Individual Household Latrines(IHHLs)**
 - % of population with access to safe individual toilets
 - % of IHHL OSSs that have been desludged
 - % of collected FS disposed at treatment plant or designated disposal site
- FS treatment capacity as a % of total FS generated from non-sewered sanitation
- FS treatment capacity as a % of volume disposed of at the treatment plant
- WW treatment capacity as a % of total WW generated from sewer connections and greywater and supernatant generated from non-sewered connections
- Effectiveness of FS/WW treatment in meeting prescribed standard for effluent discharge and biosolids disposal/reuse

Slide 12

Safety: Sanitation facilities/technology

- **SF-2: % safely managed sanitation for LIC IHHL**
 - % of LIC population with access to safe individual toilets
 - % of LIC OSSs that have been desludged
 - % of FS collected from LIC that is disposed at treatment plant or designated disposal site

Safety: Sanitation facilities/technology

- **SF-3: % Safely managed liquid waste for shared facilities**
 - % dependent population (without IHHL) with access to safe shared facilities
 - % of shared facilities that adhere to principles of universal design
 - % of shared facility users who are women
 - Average waiting time at shared facility
 - Average distance from HH to shared facility

Safety: Sanitation facilities/technology

- **SF-4: % of public spaces that have adequate sanitation facilities (Public toilets/ PT)**
 - % of PTs where FS/WW generated is safely transported to TP or safely disposed in situ
 - % of PTs that adhere to principles of universal design
 - Average waiting time at PT
 - % of PT users who are women

Slide 15

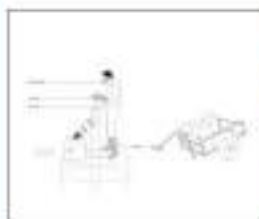
Safety: Sanitation facilities/technology

- SF-5: % of educational institutions where FS/WW generated is safely transported to TP or safely disposed of in situ
- SF-5: % of healthcare facilities where FS/WW generated is safely transported to TP or safely disposed of in situ

Slide 16

Safety: Service Equipment

- SF-7: % of desludging services completed mechanically or semi-mechanically (gulper)
- SF-8: % of desludging vehicles which comply with maintenance standards



Safety: Environmental and Health Outcomes

- SF-9: % of **water contamination** compliance (on fecal coliform)
- SF-10: **Incidence (per 1000) of fecal-oral pathway diseases**

Safety: Occupational Safety Health

- SF-11: **Sanitation worker safety** (health and safety standards in place and monitored and enforced, and government funded regular health checkups)
- SF-12: **Presence of certification mechanism for which treated WW/FS and Biosolids have to qualify**



Slide 19

Safety in Practice- Discussion

- At national level;
 - Lahan: Citywide Inclusive Sanitation – YouTube
- At Global level;
 - Let's discuss on the indicators of 'WAI CWIS City Snapshot'.

Click the above link for the video on Lahan.

Slide 20

Safety in Practice- Lahan



Pair share
5 minutes



They are going for a group work. For this, participants will be provided a case and will be divided into 4 groups and ask what could be the aspects of OHS practices to be considered?

Safety in Practice- Wai




4 groups
5-7 minutes




They are going for a group work. For this, participants will be provided a case- city snapshot of CWIS city Wai, and from the document, participants are to draw key points and present. Focus on the mentioned safety indicators along with the achieved percentage and numbers.

Safety- Group work



4 Groups
15 minutes



Inform participants as they have been discussing about the safety outcome of CWIS approaches, now, ask participants to think about some of the major issues on urban sanitation of any emerging city.

Slide 23

Safety- Group work

- Major urban sanitation issues of any emerging city- List
 - 5 minutes to list
 - Prioritize- 8 to 10 issues

Urban Sanitation Issues	Safety concerns related to such issues	Impact of such issues

Slide 24

Review

- Think about a point you can immediately implement in your workplace

- 2 to 3 responses

References

- <https://youtu.be/4pw-dYVlmis>
- ENPHO Faecal Sludge Treatment Plant - YouTube
- <https://www.youtube.com/watch?v=BDx9FW58yo>
- <https://www.youtube.com/watch?v=1bqhUAG--1Y>
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- https://snv.org/cms/sites/default/files/explore/download/guideline-occupational_safety_and_health_guidelines_for_fm_d.pdf

Thank you!

धन्यवाद !



Government of Nepal
 Ministry of Water Supply
 Department of Water Supply and Sewerage Management
 (DWSSM Building, Panchsagar, Mahanagar, Kathmandu, Nepal)
 Phone: 22-4412744, 4412752
 website: www.dwssm.gov.np

Technical Support

 Environment & Public Health Directorate (EHPHD)
 House 10/3, Thapathali, New Bhanu, Kathmandu, Nepal
 Phone: 22-440044 | Website: www.ehp.gov.np

SESSION 6

Responsibility and Accountability

Slide 1



"Citywide Inclusive Sanitation – Training of Trainer's"
CWIS System Function – Responsibility and Accountability
 Resource Person



Government of Nagaland
 Ministry of Water Supply
 Department of Water Supply and Sewerage Management

Slide 2

- Have you ever faced the **toilet clogging** at your home, and did you know the **reason behind**?
- When **your toilet** (in your house) is **clogged**, **what do you do?** Why?




- When a **man-hole or a drain** is **clogged**, **what do you do?** Why?

Relating to the responsible entity the action will be taken, as for example, when the toilet in your house is clogged, it is your responsibility

But when a drain or sewer is clogged, the responsible entity is the local governance and will act upon similarly by placing a call/ complain etc.

Now, what if the responsible entity does not respond?

Link the responses to accountability as due to lack of accountability they might not have respond and as they do not get the desired incentives (positive or negative) they might not feel accountable for their action or toward their responsibility. For this one need to have a monitoring mechanism and will be discussing on it in the session.

Slide 3



This training includes 20 main technical sessions, and are currently on session 6: System Functions: Responsibility & Accountability


Slide 4



This training includes 20 main technical sessions, and are currently on session 6: System Functions: Responsibility & Accountability

Learning Outcomes


- Describe the CWIS system function 'Responsibility' and 'Accountability' along the sanitation service chain
- Identify key stakeholders for the Responsibility and Accountability in participants' context
- Explain the roles and responsibilities for delivery of sanitation services



At the end of the session, participants will be able to...

Presentation Outline

- CWIS System Function : Responsibility and Accountability
- Responsibility throughout SSC
- Sanitation Service Key Stakeholders
- Responsibility vs. Accountability
- Responsibility related to Accountability and RPM
- Measuring Responsibility and Accountability
- Basic indicators of Responsibility and Accountability
- Key Messages



The overall session will cover...

Slide 7

Citywide Inclusive Sanitation

- What do we want in our city in the context of sanitation?
- Who is responsible for making it happen?
- Who are they accountable to?
- How are they supported to make it happen?

CITYWIDE INCLUSIVE SANITATION PLAN
Metropolitan, Sub-Metropolitan, Municipality
(Source: Adapted from EAWAG 2010)

1. Inclusive
2. Safe
3. Sustainable

1. Inclusive
2. Safe
3. Sustainable

1+2+3 = 100% SAFELY MANAGED SANITATION TARGET

Source: EAWAG

While discussing in urban sanitation, these are some of the

Slide 8

What do we want to see in our Cities?

Service OUTCOMES	EQUITABLE	SAFE	SUSTAINABLE
	<p>'Everyone benefits from services, prices and public investment equitably, with a focus on ensure social and gender inclusion</p>	<p>Human waste is safely managed from containment to reuse/disposal</p>	<p>Financial, human, environmental resources can sustain services across areas and time</p>

As we have been discussing throughout the sessions/ training, we want sanitation services to be equitable, safe and sustainable

Common Challenges across globe

- Improper design & poor installations
- Lack of monitoring of compliance (of sanitation system) with the building standards
- Improper management of sludge
- Unregulated desludging operators working in difficult conditions
- Improper treatment/disposal of onsite sludge
- Poor regulation and compliance- governance




Source: Adbi Japan

- Lack of emphasis on research and development – Innovation and technology
- Poorly designed, maintained , operated infrastructure-sustainability
- Institutions for WASH governance at local level-Governance
- Unplanned - urbanization

Common Challenges across globe

- Improper operation and maintenance
- Lack of human resources for maintenance work
- Lack of awareness of onsite systems among system owners and local governments
- Poor operation and maintenance of large-size onsite systems of commercial users



Source: Adbi Japan Case

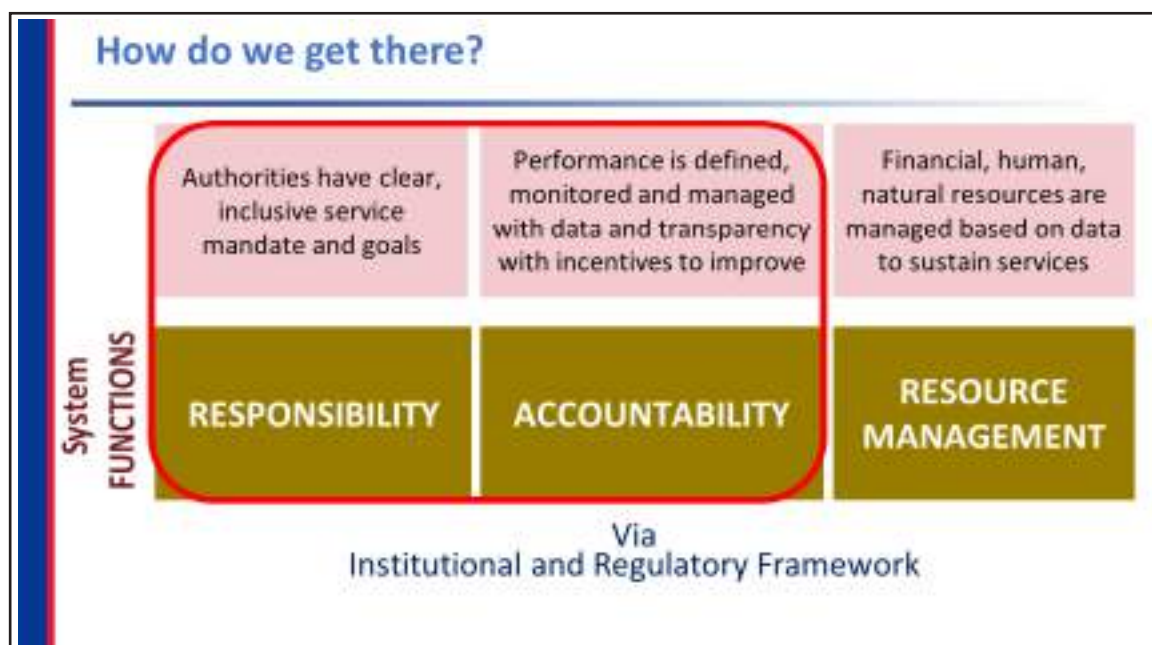
Slide 11

Foundation for Safe Sanitation

Citywide Inclusive Sanitation identifies Sanitation (including NSS) as **Public Service**

To properly address the above-mentioned challenges in the country, Sanitation needs to be identified as any country’s public service. Making onsite systems a public matter is crucial when considering regulatory frameworks for Citywide Inclusive Sanitation (CWIS). Onsite systems must become part of an agenda; they become a public matter, there will be abundant solutions available, technical as well as regulatory. And that’s where responsibility and accountability comes in – mainly responsibility from public sector i.e. government.

Slide 12



The responsibility and accountability of relevant stakeholders including the requirement for making policy, institutional set ups and regulations

CWIS System Function – Responsibility (जिम्मेवारी)



- **Clear and non-overlapping mandate** covering the entire service chain
- Mandates cover **all** urban areas without exclusions related to land tenure or artificial administrative boundaries
- Mandate is explicitly **pro-poor, gender intentional, and inclusive** of other vulnerable groups or status
- Develop legal provisions, regulatory framework and institutional arrangements with clear mandates.

Authority(ies) executes a clear public mandate to ensure *safe, equitable, and sustainable sanitation for all*.

Responsibility and Serving the Poorest (Mandates)

- The service jurisdiction of mandates should be complete and inclusive
- Clear responsibilities for serving the poorest begin at the Constitutional level
- The definition of city boundaries is key to inclusive mandates
- Responsibilities should include all residents within the authority's jurisdiction
- Number of authorities are proactively engaging to address the specific challenges of sanitation service provision to informal settlements

Use as a trainer reference to explain the point 'Mandate is explicitly pro-poor, gender intentional, and inclusive of other vulnerable groups or status' from the earlier slide.

Slide 15

CWIS System Function – Responsibility




Authority(ies) executes a clear public mandate to ensure *safe, equitable, and sustainable sanitation* for all.

- Mandated authorities are **delivering inclusive services**
- Sanitation is a series of **interconnected services** that needs to function 24/7
- Services can only be delivered reliably by motivated people in institutions with **well defined roles** and **accountabilities**
- Authorities deploy **sufficient staff and budget** to execute their mandate
 - Sanitation budget is a **separate line item** independent of water, solid waste management, health, or environment
 - Sanitation revenue is **ringfenced**

Slide 16

Clear Responsibilities are Necessary

- Who is to be held **accountable**?
- Fragmented and unclear mandates, **no clearly responsible of single entity**
- Limits of responsibility is equally important



Who is to be held accountable for ensuring public goods and services are delivered? Particularly in the case of non-sewered sanitation, fragmented and unclear mandates, with no single entity clearly responsible for ensuring that a city's sanitation (sewered and non-sewered) is functioning effectively and inclusively

Understanding the limits of responsibility is equally important: often public authorities are expected to act on social needs that are beyond the scope of their legal mandate.



Present Sanitation Service Chain and ask participant who is the responsible entity for the service provision through-out the sanitation service chain?
 Ask participants to answer component wise.
 Conclude with following slide



The responsibility of toilet and desludging is mainly based up on the household or the individual level while the service provision responsibility of the rest of the component of the service chain rely on the local governance.
 To this, the service provision through-out the SSC, rely on municipality. Although, the individual or HH are responsible up to toilet construction and desludging, what if the individual or HH are not able to construct or use it. It is the responsibility of the local governance for the services.
 Similarly, a private entity could be engaged and can support to local governance to provide such services as for desludging and transportation, operation and maintenance of the FSTP and WWTP and reuse of by-products.
 Example of Guheshwori STP, Responsibility of Operator with KPIs
 Conclude with following slide

Slide 19


Sanitation Service Key Stakeholders

Federal	Provincial	Local
<ul style="list-style-type: none"> • National Planning Commission (NPC) • Ministry of Water Supply (MoWS) • Ministry of Health & Population (MoHP) • Ministry of Science, Tech & Education • Ministry of Urban Development (MoUD) • Ministry of Federal Affairs and General Administrations (MoFAGA) • Ministry of Forest and Environment (MOFE) 	<ul style="list-style-type: none"> • Ministry of Physical Infrastructure & Development (MOPID), • Water Supply and Sanitation Division Office (WSSDD) 	<ul style="list-style-type: none"> + Municipalities • Infrastructure Dev. Unit • Social Dev. Unit
<ul style="list-style-type: none"> <li style="width: 33%;">• Policy <li style="width: 33%;">• Facilitating <li style="width: 33%;">• Fixation <li style="width: 33%;">• Planning <li style="width: 33%;">• Tariff 	<ul style="list-style-type: none"> <li style="width: 33%;">• Planning <li style="width: 33%;">• Infrastructure Development 	<ul style="list-style-type: none"> <li style="width: 33%;">• Planning <li style="width: 33%;">• Monitor <li style="width: 33%;">• Implement <li style="width: 33%;">• Regulate
<p>Development Partners: NGOs/INGOs, NGOs, UN Agencies, JICA, USAID, FINIDA, GIZ, WB, ADB etc.</p>		


MuAN and NARMIN

Slide 20

Group work



3 Groups
5 minutes





We know that there’s a range of stakeholders involved in developing a conducive enabling environment and delivering the range of service. Let’s look now at their specific roles in urban sanitation. National (or state level) government provides the overall enabling environment for Local Government and community engagement.

For example, it should set policy, and the legislative, regulatory and monitoring frameworks; coordinate the multiple stakeholders to avoid gaps and overlaps, plan and provide finance for capital work; and ensure adequate human resources and technical capacity.

Municipalities have a crucial role in bringing out local sanitation laws and regulating them, coordinating sanitation with related basic urban services, and enforcing standards.

They need to ensure that effective sanitation service providers are in place and must monitor outcomes.

Where services interface directly with individual customers, community engagement is vital, to ensure that the right services are provided and that they are used.

Constitutional Provision

Federal, Provincial and Local Government Power and Responsibility

Federal	Provincial	Local
Schedule 5 11. Policies relating to conservation and multiple uses of water resources 27. Environment management	Schedule 6 7. Province level water supply services, navigation 19. Use of forests and waters and management of environment within the Province	Schedule 8 5. Management of the Local services 9. Basic health and sanitation 10. Local market management, environment protection and biodiversity 19. Water supply, small hydropower projects, alternative energy
Schedule 7 13. Provincial boundary river, waterways, environment protection, biological diversity 18. Tourism, water supply and sanitation		
Schedule 9 5. Services such as electricity, water supply, irrigation 6. Service fee, charge, penalty and royalty from natural resources, tourism fee		

Slide 23

Legal Provision on Responsibility

स्थानीय सरकार सञ्चालन ऐन, २०७४ को व्यवस्था: परिच्छेद ३, ज्ञ. आधारभूत स्वास्थ्य र सरसफाइ

- १) आधारभूत स्वास्थ्य सरसफाइ तथा वीथी सम्बन्धी नीति, कानून, प्रापण्ड, योजना तयुमा, कार्यान्वयन तथा निपाम,
- २) सरसफाइको सरोतमा अभिवृद्धि र स्वास्थ्यजन्य फोहोरकैलाको व्यवस्थापन,
- ३) स्वास्थ्यजन्य फोहोरकैला सङ्कलन, पुनः उपयोग, प्रसोधन डिपोजिन र सो को सेवा शुल्क विधाण र विपन,
४. सरसफाइ तथा स्वास्थ्य श्रेयबाट निष्कासित फोहोरकैला व्यवस्थापनमा निजी तथा गैर सरकारी क्षेत्रसंग समन्वय, सहकार्य र साझेदारी

खानेपानी तथा सरसफाइ ऐन, २०७९

परिच्छेद ३ खानेपानी तथा सरसफाइको जिम्मेदारी तथा वाधित्य

परिच्छेद ५ खानेपानी तथा सरसफाइ सेवा सञ्चालन सम्बन्धी दफा १८(२७)

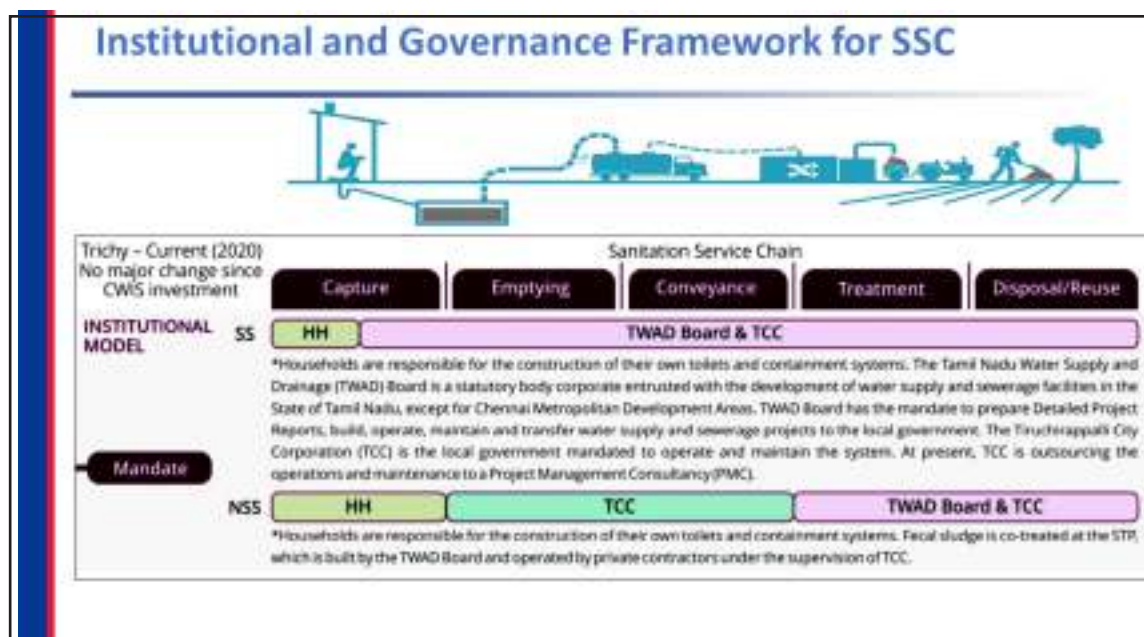
परिच्छेद ६ महानगर तथा सेवाशुल्क सम्बन्धी दफा २८(३५)

परिच्छेद ८ सेवाको अनुगमन तथा निगरानी सम्बन्धी दफा ३९(४९)

सार्वजनिक निजी साझेदारी तथा लगानी ऐन, २०७५

१७) विकास निर्माण व्यवस्थापन सञ्चालन तथा हस्तांतरण गर्न सक्ने

Slide 24



For the SS in Trichy, HH are responsible for the construction of their own toilet and containment systems.

TWAD (Tamil Nadu Water supply and Drainage) board is responsible for the rest of the services and transfer to TCC, local government.

TCC is outsourcing the operations and maintenance to a PMC (project management consultancy).

NSS,

HH are responsible for the construction of their own toilet and containment systems- as SS

For the rest of the services, TCC is responsible where the sludge is co-treated at the STP built by TWAD board and operated by private contractors under the supervision of TCC.



Before starting further with the slide content, let the audience know that sewerage and STP (sewerage treatment plant) in developing countries like ours is mostly under government jurisdiction. On the other hand in faecal sludge management many stakeholders are involved. Go further with the content of slides. Conclude that interesting private sectors are engaged in the sanitation service chain.

Private Sector Role

Institution	User Interface	Containment	Collection	Transport	Treatment	Reuse
Private	Building toilets	Building septic tanks	Desludging	Transport of FS	Construction	Resource recovery
					Operation	Sale of by Products

- “by unlocking the potential of private sector to work alongside public sector, progress will be faster...however, private sector needs to be engaged appropriately, overseen responsibly, and motivated according to clear principles” (AMCOW, 2021)
- “private sector is encouraged to bring **efficiencies and capital investment** through public-private arrangements” (MWDSEP, 2020)
- a **well-structured public sector approach and strong public authority** enables private sector to invest in expanded, more efficient and higher-quality services

Relating to the earlier slide, present the points on private sector role and engagement in providing services throughout the SSC.

-PPP Model

लगानी र प्रभावकारी सेवा प्रवाहका लागि

बलियो तथा राम्रो संरचना सहितको सार्वजनिक क्षेत्रको विकासले मात्र निजी क्षेत्रलाई प्रोत्साहन गर्न सक्छ ।

Slide 27

PPPs: Why Involve the Private Sector? (*)

<p>Market discipline ✓</p> <p>Individual services</p> <ul style="list-style-type: none"> • Lower prices • Flexible response to client demand • Expansion and movement to new areas <p>Shared services</p> <ul style="list-style-type: none"> • Competitive tendering • Performance targets <p>Resource mobilisation ✓</p> <ul style="list-style-type: none"> • Already present – formally or informally • Experienced staff • Equipment, tools and materials • Access to loans and own capital 	<p>But markets might not deliver ✗</p> <ul style="list-style-type: none"> • Reliable quality • Affordable products for the poorest <div style="text-align: center;">  </div> <div style="background-color: #e0f2f1; padding: 5px; margin-top: 10px;"> <p>Public-private partnership can be an effective approach to fecal sludge management, as it can combine the strengths of both sectors to achieve better results.</p> </div>
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Market discipline
 Individual services
 Lower prices
 Flexible response to client demand
 Expansion and movement to new areas
 Shared services
 Competitive tendering
 Performance targets
 Resource mobilisation
 Already present – formally or informally
 Experienced staff
 Equipment, tools and materials
 Access to loans and own capital

But, there is a potential downside.

A completely free market doesn't necessarily guarantee quality, or goods and services at prices affordable to the poorest customers.

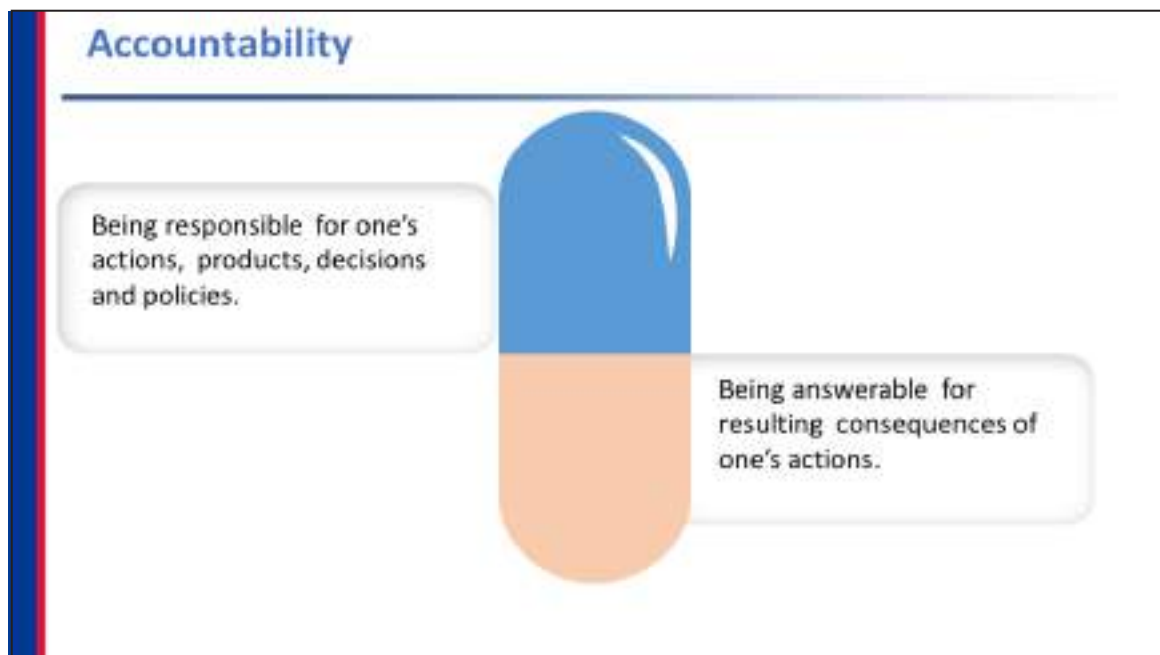
That's why we also need regulation to ensure adequate quality and affordable prices, as we discussed in the previous session.



CWIS Framework			
Service Outcomes	EQUITY 'Fairness' in distribution and prioritization of service quality, service prices, and public finance/subsidies	SAFETY Human waste is safely managed to protect public goods	SUSTAINABILITY Resources and revenues sustain performance
System Functions	RESPONSIBILITY Authority or authorities have clear mandate for ensuring inclusive, safe sanitation services	ACCOUNTABILITY Performance is transparently monitored and managed with +/- incentives	RESOURCE PLANNING & MANAGEMENT Resources are managed to support implementation of mandate and achieve goals across time / space

Discuss in detail about +/- incentives are highlighted in accountability. If one performs greatly what is the incentives and if one performs poorly what is the consequences. This point is highlighted in the accountability part in CWIS.

Slide 30

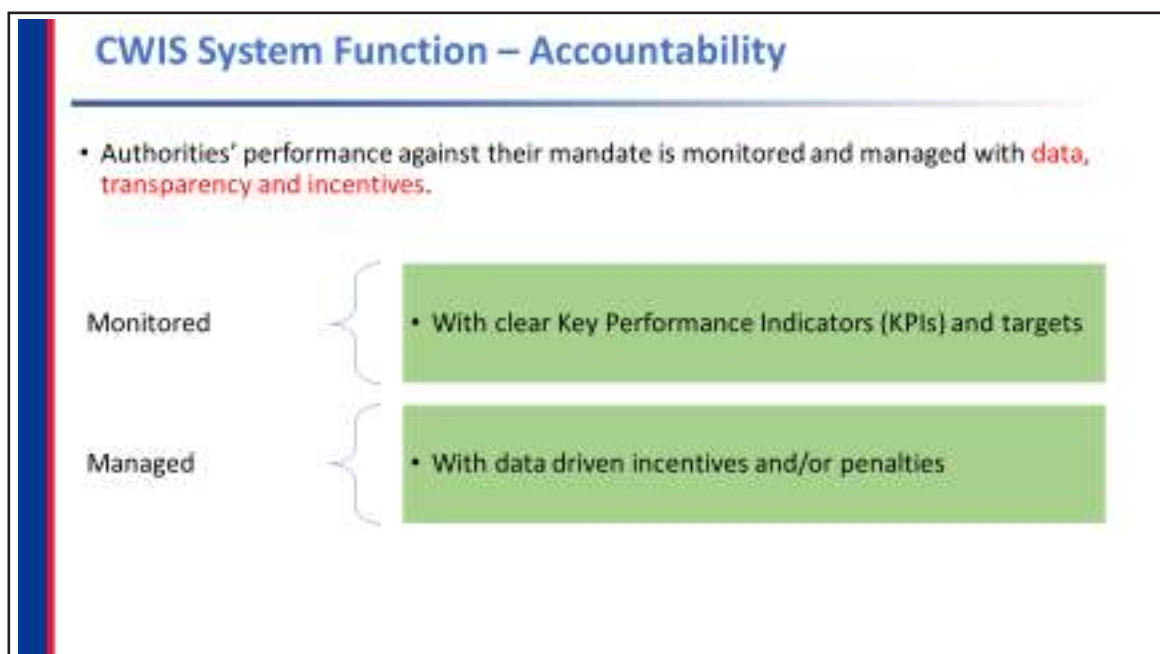


A UNICEF Paper observes that 30-50% of WATSAN projects fail in 2-5 Years, So building accountability towards various dimension is important.

IMPORTANCE

- Impact on Service Delivery
- Efficient Resource Utilization
- Transparency and Public Trust
- Check on Executive Power
- Payment for Performance-P4P
- Improvement of Financial Management
- Enhanced transparency and Consistency

Slide 31



- Data that is representative of the entire city, including in low-income settlements and on vulnerable groups
- Authorities actively report on performance indicators with transparency
- Data is used to inform and manage service delivery and enforcement of performance incentives
- Citizen Report Cards
- Participatory Budgeting
- Community managed Toilets



“Responsibility may be bestowed, but accountability must be taken. In other words, responsibility can be given or received, even assumed, but that doesn’t automatically guarantee that accountability will be taken. It’s possible to bear responsibility for something or someone and still lack accountability.”



An ICT system for real-time monitoring of public sanitation facilities in Urban Telangana. The State Government of Telangana (GoT) has taken several path breaking initiatives towards enhancing sanitation service delivery to its citizens. It is committed to providing high quality public sanitation facilities and services. Following the national guidelines, the state has decided to build one public toilet per every 1000 population in all the Urban Local Bodies (ULBs). While well-designed infrastructure is being constructed, it is equally important to focus on the Operation and Maintenance (O&M) of these facilities through regular monitoring and evaluation. To support towns in ensuring timely completion of public conveniences with quality standards and to ensure good operation and maintenance of these facilities, a real-time monitoring system called Pattana Pragathi Toilet Monitoring System (PPTMS) has been developed. This system aims to help the State administrators, Additional Collectors and Municipal Commissioners in tracking the progress, quality and sustainability of public sanitation facilities.

Slide 34

Monitoring Performance, Making Accountable

Pattana Pragathi Toilet Monitoring System

- An ICT based monitoring system
- Implemented across a month (June, & July) by extensive response
- Weekly review for SLAs/SLAs
- This initiative won National Awards

Effluent Water Quality and Effluent Water Quality Standards

Parameter	Unit	Standard	Observed
BOD	mg/L	300	10-20
COD	mg/L	500	1-200
TSS	mg/L	400	10-20
TDS	mg/L	75	1-50
Free Chlorine	mg/L	100-120	100-120
pH & Alkalinity	mg/L	6.5-8.5	7-8

PIA/CI's performance by CBU/PPP/Contract/ULB

Operational and Quality index by CBU (85%), PPP (70%), Contract (80%), ULB (85%)

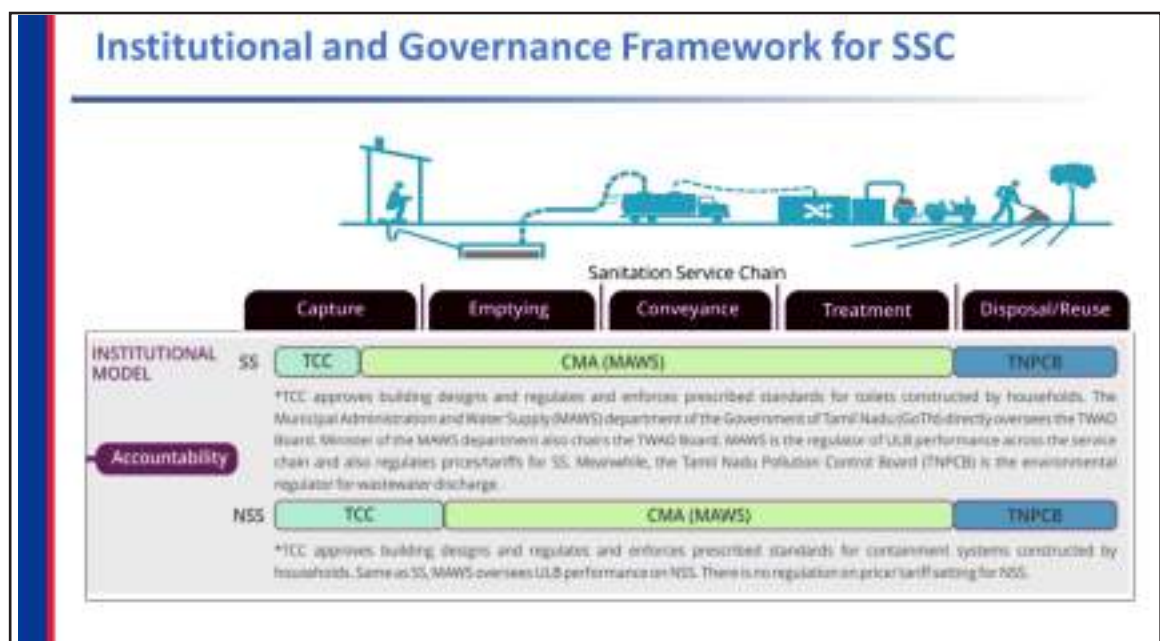
WASTA Program Toilet Monitoring System (PFTMS) goal:

1. To provide a comprehensive monitoring system for all toilets across the city.
2. To provide a comprehensive monitoring system for all toilets across the city.
3. To provide a comprehensive monitoring system for all toilets across the city.

Regulating and licensing private desludging operators. Trucks monitored with GPS tracking

ICT based Citizen Monitoring System-PPCMS

Slide 35



Relating to the responsibility and accountability, local government, that is, municipality approves for the building designs and regulates and enforces prescribed standards for toilets constructed by households. While the above picture describes an example of responsibility and accountability in Trichy.

Behavior Change and Social Mobilization

- Responsibility of authority to make and aware citizens on their Responsibility

A citizen of a country has his/her rights granted by the constitution. To the rights granted by the constitution, a responsible citizen abides by all the law and order of the country and has to take responsibilities and perform duties expected of him/her like obeying laws, paying taxes, etc. For the same relevant stakeholders/ authorities are responsible for the awareness of citizens for the behavior change and social mobilization on sanitation.

Responsibility related to Accountability and RPM

➤ **How?**
 ➤ **How is responsibility related to accountability and resource planning and Management?**

Responsibility, accountability and resource planning and management are related to each-other. In presence or absence of one other two are hampered just like the principle of working of computer.

Ask participants what are the relation between these 3. Collect participants response and present the points and discuss accordingly.

Slide 38

Responsibility related to Accountability and RPM

- Sanitation mandates often lack associated accountability or financing mechanisms to incentivize implementation
- Clear responsibilities are a pre-requisite for effective accountability mechanisms
- Responsibilities cannot be fully executed unless the resourcing mechanisms are in place
- Depending on the level of fiscal autonomy, local governments may be able to supplement transfers through own-revenue generation
- The resourcing gap has implications for accountability



A Venn diagram with three overlapping circles. The top circle is yellow and labeled 'Responsibility'. The bottom-left circle is blue and labeled 'Resource Planning & Management'. The bottom-right circle is green and labeled 'Accountability'. The circles overlap in the center, and each pair of circles also overlaps.


Slide 39

Key Messages

"When performance is measured, performance improves.

When performance is measured and reported, the rate of improvement accelerates."

– Thomas S. Monson



A photograph of four men in dark suits running a race on a red track. They are captured in mid-stride, crossing a red finish line. The background shows trees and a clear sky.

References

- WWW.CWIS-ASCI.ORG.IN
- Institutional Framework on Onsite Sanitation Management System (<https://www.adb.org/publications/institutional-frameworks-onsite-sanitation-management-systems>)
- Measuring CWIS (<https://cwiscities.com/Dashboard/DashboardInfo>)
- ESAWAS CWIS paper series (<https://www.esawas.org/index.php/news/122-launch-of-cwis-paper-series-accountability-responsibility-and-resourcing>)
- chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://s3.amazonaws.com/resources.cwis.com/learning/184/PattanaPragathiToiletMonitoringSystemPPTMSBriefNote.pdf

Thank you!
धन्यवाद !



Government of Nepal
Ministry of Water Supply
Department of Water Supply and Sewerage Management
(DWSM Building, Panchsathi, Mahanagar, Kathmandu, Nepal)
Phone: 22-4412744, 4412752
website: www.dwsms.gov.np

Technical Support

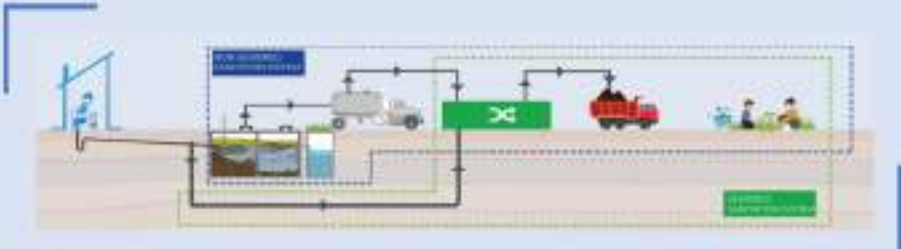


Environment & Public Health Department (EHPHD)
Water Wing, Ministry, New Bhanu Chowk, Kathmandu, Nepal
Phone: 22-2240441 | Website: www.ehp.gov.np


SESSION 6.1

Responsibility and Accountability in Practice

Slide 1



"Citywide Inclusive Sanitation – Training of Trainer's"
CWIS System Function – Responsibility and
Accountability in Practice
Resource Person



Government of Nepal
Ministry of Water Supply
Department of Water Supply and Sewerage Management

Slide 2

Before Starting...

- Practices relating to



As per the theory discussed on earlier session on responsibility and accountability, they are now going to dwell more with examples at global and national level.

Slide 3



This training includes 20 main technical sessions, and are currently on session 6: System Functions: Responsibility & Accountability


Slide 4



This training includes 20 main technical sessions, and are currently on session 6: System Functions: Responsibility & Accountability

Learning Outcomes

- Discuss different models of responsibilities that are practiced across globe.
- Explain the CWIS service outcome 'responsibility and accountability' measurement indicators.
- Relate responsibility and accountability practices at national and global level



What is perfect model of responsibility ??

Slide 7

What is perfect model of responsibility ??



RESPONSIBILITY

Who is responsible??



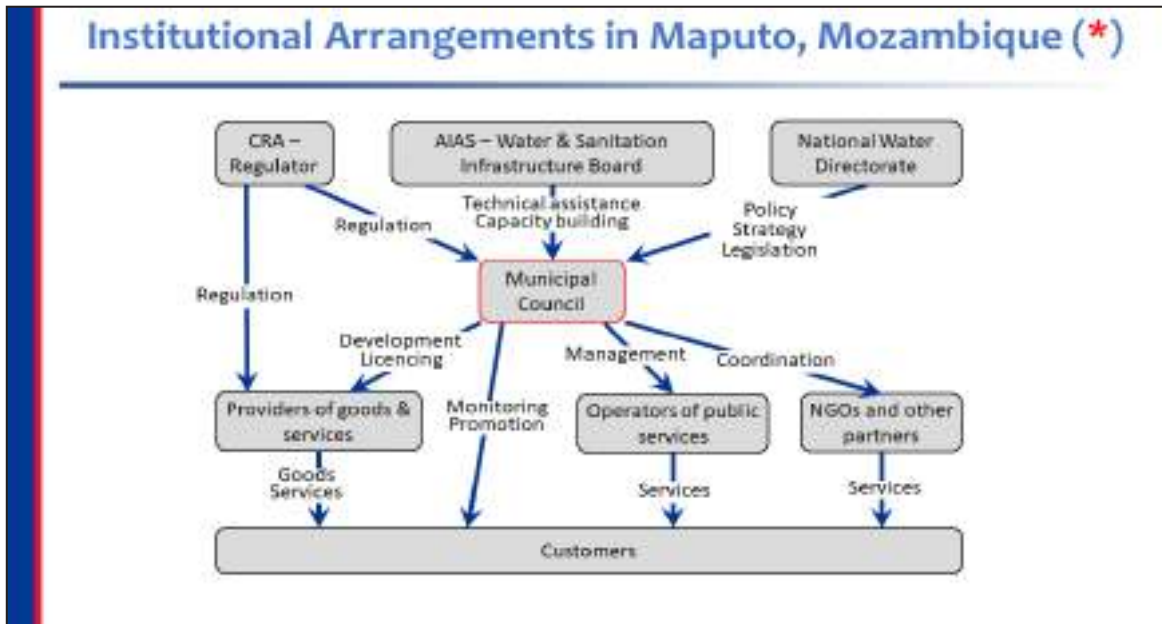
Slide 8

5 Models of Responsibilities

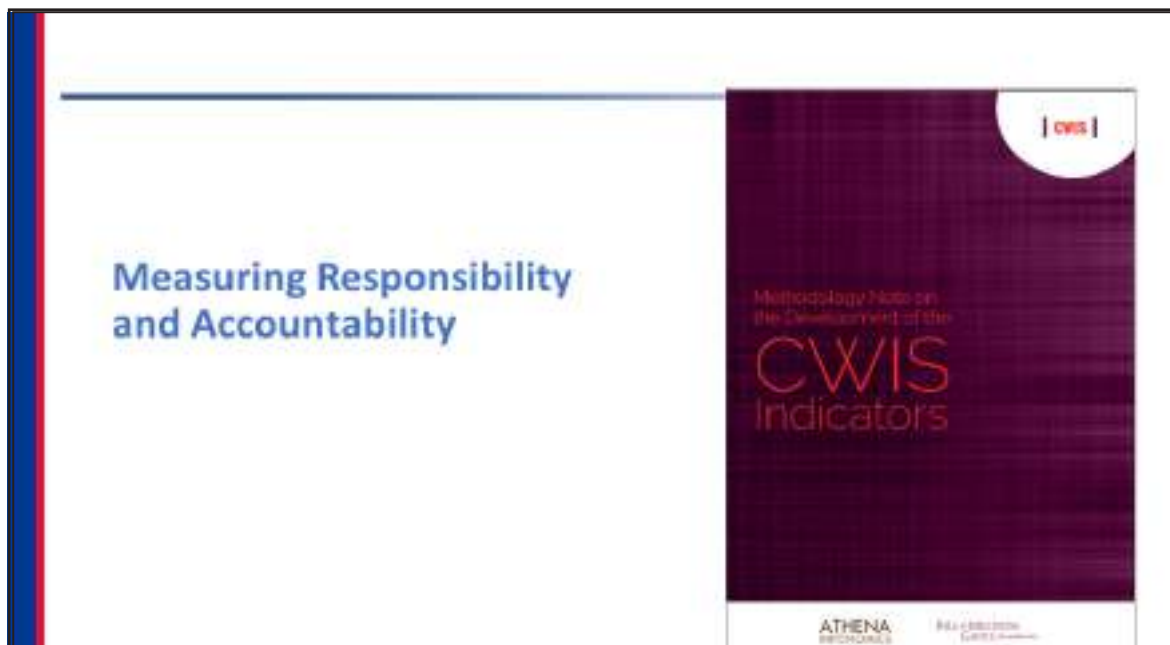
Mandate structure	Mandate for sewerage sanitation (SS)	Mandate for non-sewered sanitation (NSS)	Mandate for SS and NSS integrated or split	Examples
1	National utility	National utility	Integrated	Malaysia, Senegal, Rwanda
2	Subnational utility	Subnational utility	Integrated	Zambia, Tanzania
3	National utility	Local government	Split	Uganda, Sri Lanka
4	Subnational utility	Local government	Split	Bangladesh, Philippines
5	Local government	Local government	Integrated	Ghana, Mozambique, Ethiopia, Indonesia, Thailand, Bolivia, Brazil

Conclusion from this slide is : How responsibility works at the country and city level is contextual. As an example, for Nepal, the responsibility model is split as

1. In Kathmandu valley the Kathmandu Valley Water Supply Management Board (KVWSMB) is responsible while for rest of the country DWSSM is responsible.
2. Similarly, for non-sewer system, the local government is responsible for all.



Here we see a situation where there is no utility involved, with the municipal council playing a pivotal integrating and coordinating role. However, in practice, many of these functions are not being carried out. In addition, financing recurrent costs is a problem, and the municipality is introducing a sanitation fee to be charged on water bills collected by the water utility and passed on to the municipal council.



For the better monitoring and performance evaluation, a well defined indicators to measure responsibility and accountability is required as that with other components of the CWIS framework.

Basic Indicators of Responsibilities (Athena Infonomics)

1. Customer satisfaction
2. Employee satisfaction
3. Compliance with regulations
4. Environmental sustainability
5. Community engagement
6. Ethical business practices



Customer satisfaction: Measuring customer satisfaction through surveys or other methods can indicate how well the business is meeting the needs of its customers.

Employee satisfaction: Employee satisfaction can indicate the level of engagement and commitment of the workforce, which can have a direct impact on customer service.


Compliance with regulations: Adhering to relevant laws and regulations can demonstrate a commitment to ethical and responsible business practices.

Environmental sustainability: Implementing eco-friendly practices and reducing the business's environmental impact can indicate a commitment to sustainability.

Community engagement: Involvement in community initiatives and charitable causes can demonstrate a commitment to social responsibility.

Ethical business practices: A strong code of ethics and adherence to fair and transparent business practices can indicate a responsible approach to business operations.

Basic Indicators of Responsibilities (Athena Infonomics)

National/Province level indicators	<p>RS 1a: [Indicator Area] Legal mandate for service delivery is clear and inclusive</p> <p>RS 2a: Approved local service authority staff positions within mandated authority areas are sufficient to execute mandate (* Context specific. Evaluated at point where staff head count and organogram is determined for mandated authority. This could be city, state or national)</p>	 <ol style="list-style-type: none"> 1. Customer satisfaction 2. Employee satisfaction 3. Compliance with regulations 4. Environmental sustainability 5. Community engagement 6. Ethical business practices
City level indicators	<p>RS 1b: [Indicator Area] Mandated service authorities are delivering inclusive services</p> <p>RS 2b: [Indicator Area] Local service authority staff positions are filled and capable to execute mandate</p> <p>RS 3: Local service authority sanitation budget is a separate line item independent of water, solid waste management, health, or environment</p> <p>RS 4: Local authority's sanitation revenue is ringfenced</p>	

Customer satisfaction: Measuring customer satisfaction through surveys or other methods can indicate how well the business is meeting the needs of its customers.

Employee satisfaction: Employee satisfaction can indicate the level of engagement and commitment of the workforce, which can have a direct impact on customer service.

Compliance with regulations: Adhering to relevant laws and regulations can demonstrate a commitment to ethical and responsible business practices.


Environmental sustainability: Implementing eco-friendly practices and reducing the business's environmental impact can indicate a commitment to sustainability.

Community engagement: Involvement in community initiatives and charitable causes can demonstrate a commitment to social responsibility.

Ethical business practices: A strong code of ethics and adherence to fair and transparent business practices can indicate a responsible approach to business operations.

Basic Indicators of Accountabilities (Athena Infonomics)

1. Performance metrics (KPIs-Revenue, customer satisfaction etc)
2. Quality assurance (Regular audits)
3. Transparency (For customers', employees and other stakeholder trust)
4. Continuous improvement (Regular reviewing)
5. Communication
6. Feedback



Performance metrics: Measuring key performance indicators (KPIs) such as revenue, customer satisfaction, and employee satisfaction can help determine the level of accountability within the business.

Quality assurance: Implementing quality assurance processes, such as regular audits, can help ensure that the business is providing high-quality services in a consistent and reliable manner.

Transparency: Being transparent about the business's operations and performance can help build trust with customers, employees, and other stakeholders.


Continuous improvement: Regularly reviewing and improving processes, services, and customer satisfaction can demonstrate a commitment to accountability and continuous improvement.

Communication: Having open and effective communication channels with customers, employees, and other stakeholders can help ensure that the business is responsive to concerns and suggestions.

Compliance: Having a system in place to ensure compliance with laws and regulations, and having a system for reporting and handling non-compliance, which can help demonstrate accountability to relevant authorities and the public.

Feedback: Encouraging and acting on feedback from customers, employees, and other stakeholders can demonstrate a commitment to accountability and improvement.

Basic Indicators of accountability (Athena Infonomics)

National/Province Level Indicators	<p>AC 1: [Indicator Area] Performance indicators are set and monitored</p> <p>AC 2: [Indicator Area] Clear and progressive performance targets are set, monitored, and enforced for sanitation [* Context specific. Evaluated at the level where performance targets are set. This could be city, state or national.]</p> <p>AC3a: Performance data from service authorities are transparent</p> <p>AC4a: Incentives and/or penalties tied to performance exist for sanitation service authority</p>	 <ol style="list-style-type: none"> 1. Performance metrics (KPIs-Revenue, customer satisfaction etc) 2. Quality assurance (Regular audits) 3. Transparency (For customers, employees and other stakeholder trust) 4. Continuous improvement (Regular reviewing) 5. Communication 6. Feedback
City Level Indicators	<p>AC 1b: [Indicator Area] Service authorities actively report on the performance indicators</p> <p>AC 2: [same as for national/state level] [*Context specific]</p> <p>AC 3b: [Indicator Area] Service authorities regularly collect representative data</p> <p>AC 4b: Incentives and/or penalties are actively used/applied by national/state accountability authorities at the service area level</p>	

Performance metrics: Measuring key performance indicators (KPIs) such as revenue, customer satisfaction, and employee satisfaction can help determine the level of accountability within the business.

Quality assurance: Implementing quality assurance processes, such as regular audits, can help ensure that the business is providing high-quality services in a consistent and reliable manner.

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Compliance: Having a system in place to ensure compliance with laws and regulations, and having a system for reporting and handling non-compliance, which can help demonstrate accountability to relevant authorities and the public.

Feedback: Encouraging and acting on feedback from customers, employees, and other stakeholders can demonstrate a commitment to accountability and improvement.


Slide 15

Group Work

Identifying indicators



4 Groups
7 minutes



What will be the possible indicators/measuring factors for the safe and hygienic public toilet – From Responsibility and Accountability perspective? – In the format given in Next slide.

Slide 16

Group Work- Public Toilet





As discussed on concept of CWIS-we are now aware of the CWIS framework relating to LISA. The points covered in the mentioned thematic area that is 1, 2, 5 and 6 represents the point for the responsibility and accountability.

- ### Contextualizing- Responsibility
- **Thematic area 1: Governance System**
 - Decision making process
 - **Thematic area 2: Organization and Administration**
 - Capacity development of municipality/ Rural municipality
 - Policy provisions on personal management (act, rule, by-laws, guidelines etc.)
 - Reporting and information dissemination
 - Detail terms of reference (ToR) of sectoral division/ section/ unit
 - Investment on HR development and capacity development

Main points highlighted in LISA relating to responsibility are as mentioned in the slide.

Slide 19

Contextualizing- Accountability

- **Thematic area 5: Service Delivery**
 - Satisfaction on received services
 - Standard Operating Procedure (SOP) of service delivery
 - Grievances settlement
 - Public hearing
 - An innovative approach is used on service delivery
 - Citizen access to health services
- **Thematic area 6: Judicial Work Performance**
 - Settlements of complaints

Similarly, these are the points mentioned in LISA relating to accountability. As we discuss in these points, these are some of the points that address on how fulfilling the mandates and accountability is contributing to the score in LISA.



Slide 20

Case Studies (Lets Watch and Learn)

1. [Spotlight on Japan's "Johkasou" Sanitation System: A Model for Asia | Asian Development Bank \(adb.org\)](https://www.adb.org/news/videos/spotlight-japan-johkasou-sanitation-system)

(<https://www.adb.org/news/videos/spotlight-japan-johkasou-sanitation-system>)
(7:29 minutes)

Group Work

4 Groups (Same group as above)
15 minutes

From above case studies, please identify points on how they have **addressed responsibility and accountability**– Do you think there are **any gaps**, please mentioned them.

The groups will be same as the group as earlier group work.

Summary and Reflection: Japan's case to address common challenges (Via Institutional and Regulatory Framework)

Improper management of sludge	Structural standards, government approval, performance testing
Lack of monitoring of compliance (of sanitation system) with the building standards	Building confirmation by building officials deployed by local government
Poor installation	<ul style="list-style-type: none"> • Registration system for business installation • Certification and Examination system for Installation Workers
Improper design	<ul style="list-style-type: none"> • Enactment of on-site system act (Johkasou Act) • Regular desludging obligation

Source: Adbi Japan Case

Slide 23

Summary and Reflection: Japan's case to address common challenges

Unregulated desludging operators working in the difficult conditions	Approval system for desludging vendors
Improper treatment/disposal of onsite sludge	Development of sludge treatment facilities nationwide
Improper operation and maintenance	<ul style="list-style-type: none"> Enactment of the Onsite System Act (Johkasou Act, 1984)) Owner's legal obligation for operation and maintenance Owner's obligation of deploying a Technical Supervisor for a large onsite system (>/= 501 population equivalent) Registration system for operation and maintenance vendors

Slide 24

Summary and Reflection: Japan's case to address common challenges

Lack of human resources for maintenance work	Training, certification, and examination system for operation and maintenance technicians
Lack of awareness of onsite systems among the system owners and local governments	Establishment of training institution for professionals in business related to onsite systems
Lack of accountability	Legal inspection
Poor operation and maintenance of large-size onsite systems of commercial users	Monitoring under the Water Pollution Control Law (compliance with the effluent standard, measurement, report, and inspection)

Source: Adbi Japan Case

Key Messages

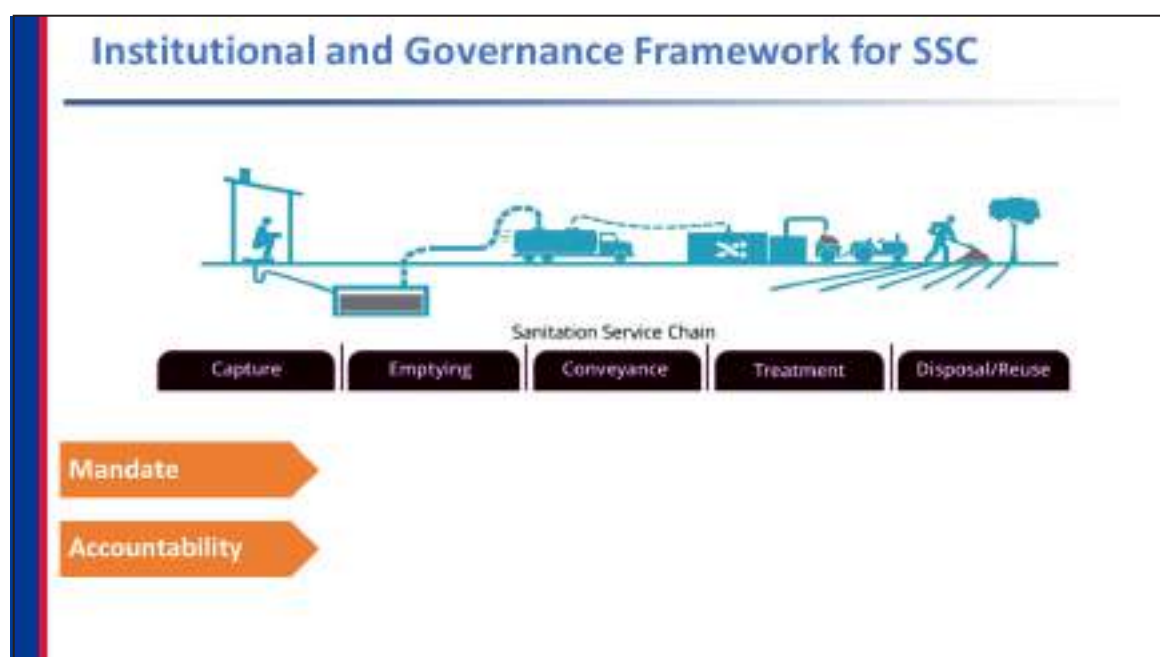
- Mandates must provide clarity on who is responsible for ensuring different elements of SSC
- Formal legal mandates and actual practice must be aligned
- Responsibilities for sewered and non-sewered sanitation should be integrated where feasible
- The service jurisdiction of mandates must include informal settlements
- Authorities' performance against their mandate is monitored and managed with data, transparency and incentives



Assignment

Work on Lusaka case: In their earlier group from the session, provide the case to each group and ask to go through the document. And they are to discuss and come up with the idea throughout the SSC as shown in the following slide.

Slide 27



As per the given picture/ slide, participants are to go through the Lusaka case and fill up the areas under each of the component of SSC.

Slide 28

References

- WWW.CWIS-ASCI.ORG.IN
- Institutional Framework on Onsite Sanitation Management System (<https://www.adb.org/publications/institutional-frameworks-onsite-sanitation-management-systems>)
- Measuring CWIS (<https://cwiscities.com/Dashboard/DashboardInfo>)
- ESAWAS CWIS paper series (<https://www.esawas.org/index.php/news/122-launch-of-cwis-paper-series-accountability-responsibility-and-resourcing>)
- स्थानीय तह सस्थागत क्षमता स्वमूल्याङ्कन कार्यविधि , २०७७

Thank you!
धन्यवाद !



Government of Japan
Ministry of Health, Labour and Welfare
Department of Water Supply and Sewerage Management
2-1-1 Higashi-Shinjuku, Shinjuku-ku, Tokyo 162-8601, Japan
Phone: 03-912246, 912211
Website: WWW.SWSAFJ.GOV.JP

Technical Support

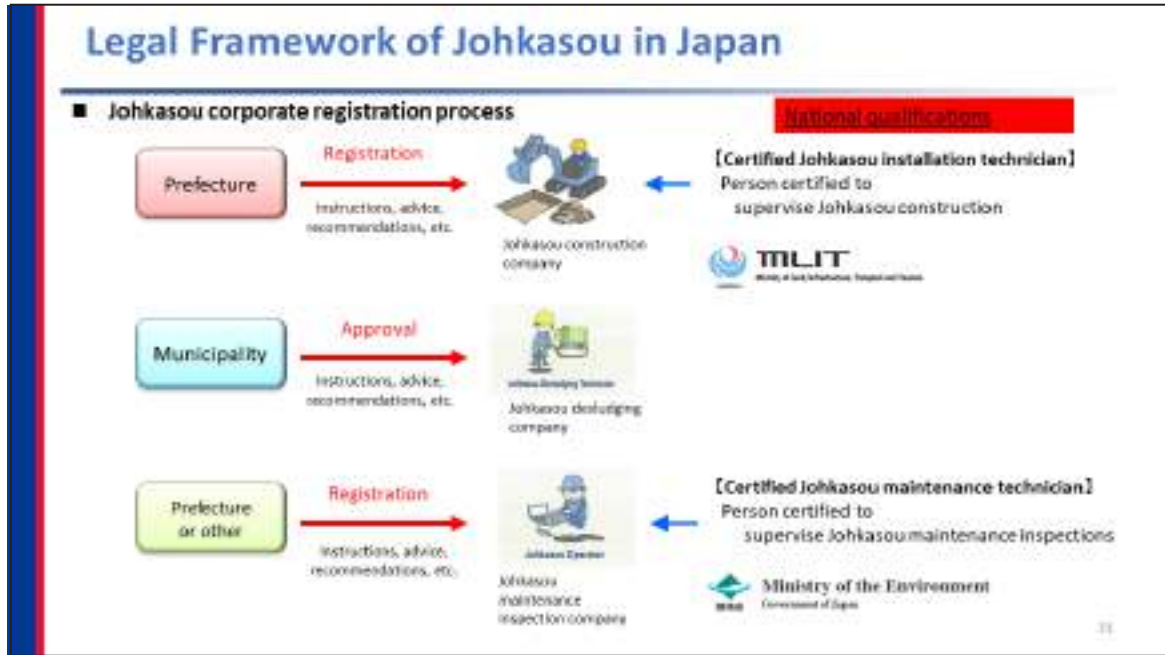


Environment & Public Health Organization (EPHO)
Nishi-Shinjuku 1-Chome, Shinjuku-Ku, Tokyo
Phone: 03-32464111 Website: www.ephoo.org

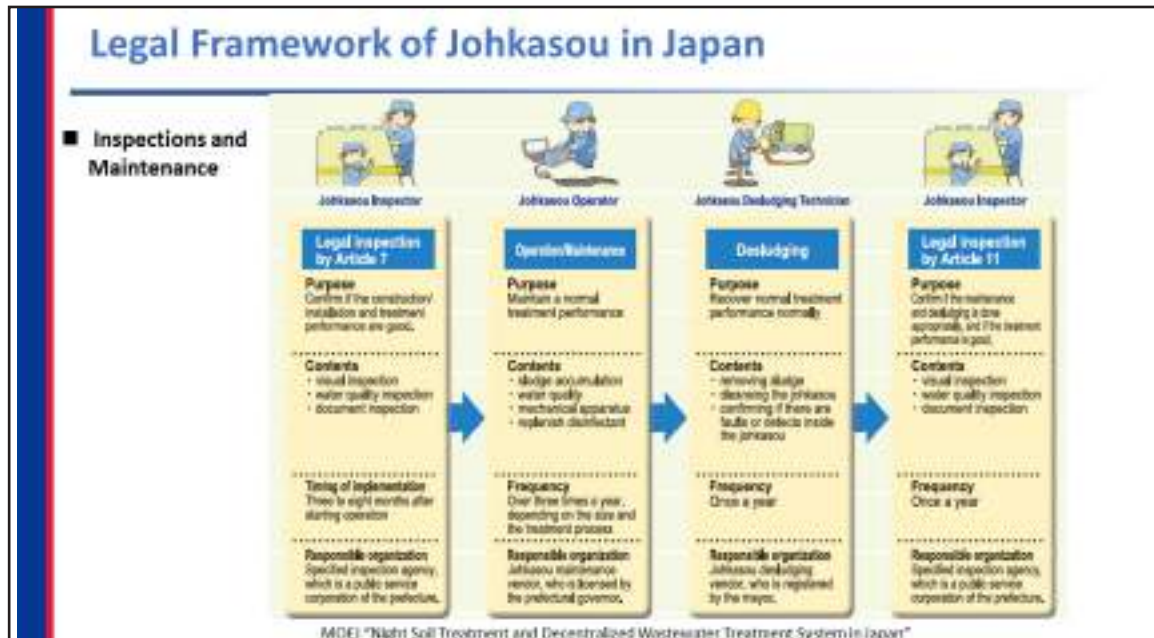


Comprehensive Basin Wide plan for Sewerage System (CBPSS)

Slide 31



Slide 32



SESSION 7

Resource Planning and Management

Slide 1

"Citywide Inclusive Sanitation – Training of Trainer's"
Resource Planning and Management - Concept
 Resource Person

Government of Nepal
 Ministry of Water Supply
 Department of Water Supply and Sewerage Management

Slide 2

Before Starting...

Do we want this to continue??

Show the beautiful picture of Kaiser Mahal to the participants,, (show the ruined garden of old (picture of Kaiser Mahal)... and Kaiser Mahal was renovated years ago but it still remains beautiful, discuss among the participants what might be the reason. Conclude the slide that the money flow (from the people visiting, restaurants, etc.) helps tremendously for its maintenance otherwise there's no way it could be maintained (How else can they pay for all those malis/gardeners who keeps it beautiful, or workers who works everyday to keep it clean for everyone to enjoy its beauty). That is why proper resource planning and management is crucial, it is one of the crucial key factor to ensure sustainability



This training includes 20 main technical sessions, and are currently on session 7: System Functions: Resource Planning and Management




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Slide 5

Learning Outcomes

1. Explain resource planning and management along with CWIS financial framework
2. Interpret ideas on diverse mechanisms to strengthen financial resources
3. Analyze the financial flows of municipality and identify the gaps




At the end of the session, participants will be able to:
 Explain resource planning and management along with CWIS financial framework
 Interpret various ideas on diverse mechanisms to strengthen financial resources
 Analyze the financial flows of municipality and identify the gaps

Slide 6

Presentation Outline


- Resource Planning and Management
- Financing framework development
- Nepal's sector policies, Prioritize and target
- Cost, Financial Needs, Investment plan
- Identifying financing sources
- Financial flow: WASH sector in Nepal
- Estimating Financial Needs for Sanitation
- Financial resources to CWIS framework
- Key Messages



Inform participants that they will be discussing on the above topics throughout the session.

Some Important Data

- Global capital costs of achieving universal access to safely managed water and sanitation services and hygiene are **\$114 billion** annually (or three times the historical financing trend) (UN 2018)
- **66%** of financing of water, sanitation and hygiene originates from household source via **tariffs and self-supply**. (Global Analysis and Assessment of Sanitation and Drinking-water (GLAAS) 2016/2017)



These data highlights on the context of RPM. The figure itself explains the need for financial management and also on how the resources are being managed to date.

Resources Planning and Management

- **Resources** – human, natural, financial, equipment, assets, facilities, and more.
- **Resource Planning** - A process of **identifying, forecasting, and allocating** resources at the **right time and cost**.
- **Resource Management** - A process of **pre-planning, scheduling, and allocating** resources **efficiently and effectively** to get the best value out of them.



Resource planning maximizes efficiency by helping to manage their utilization rates, track capacity, and monitor progress, to keep projects on budget and work on track.

While discussing about RPM in CWIS, resources are effectively managed at all level- national, state and city level to fulfill the mandate across time/ space.

Slide 9

Human Resources

People who are part of workforce. Other resource becomes useful with input by human resource.

Human Resource in Sanitation
"Sanitation Workers"

Investment in human capital supports in meaningful impact



Working Environment	▪ Proper policies and directives in place
Right skills and qualification	▪ Capacity building through education, trainings
Clear roles and responsibilities	▪ Clear TOR/ID
Benefits and security	▪ Proper health care, insurance, social security, <u>financial safety</u>


Slide 10

Sanitation Workers– Financial Safety

Is desludging a profitable business?

Do you think desludgers are foundation of safe sanitation for urban Nepal??

What is the financial safety of such sanitation workers ?? **None**



What are the components one needs to consider to ensure financial safety of workers/entrepreneurs?

Would you invest in a business of which you do not see any future ?

Obviously, the answer is NO

Measures for financial safety

- **Establish institutional capacity**
 - Clarification of legal and regulatory systems and institutional roles
 - Capacity-building for regulation
 - Allocation of budgets for regulation and enforcement
- **Develop regulation**
 - Incremental approach over five or more years
 - Be realistic about enforcement capacity and incentives
- **Address critical regulatory needs**
 - Containment
 - Mandatory safe disposal
 - Licensing/contract



- ✓ Improves safe sanitation
- ✓ Helps generate business


Financial Resources

Financial resources is the most important aspect of resource planning and management that also determines the fate of other resources. Hence, will be discussing further, in following slides.

Slide 13

RPM Questions

- Are there any clear **financing framework to guide allocation of resources?**
- Are the decision-making process for sanitation budget allocation transparent, inclusive and informed?
- Is the cost- impact (**benefit**) **analysis done** for sanitation investment?
- Are **sanitation revenue generation and operating cost managed?**



Inform participants that while discussing about the RPM, one should be clear about some of the questions related.

Clear financing framework- to guide sanitation budget allocation based on mandate and service area strategies

Decision making process- are pro-poor, gender intentional and inclusive


Sanitation revenue and operating cost are managed

If the answer to anyone of the above questions is 'no' there will be a question mark in the achievement of CWIS service outcome. So as to fulfill the CWIS service outcome, one needs to deal with the questions posed and the answer to all should be yes.

Slide 14

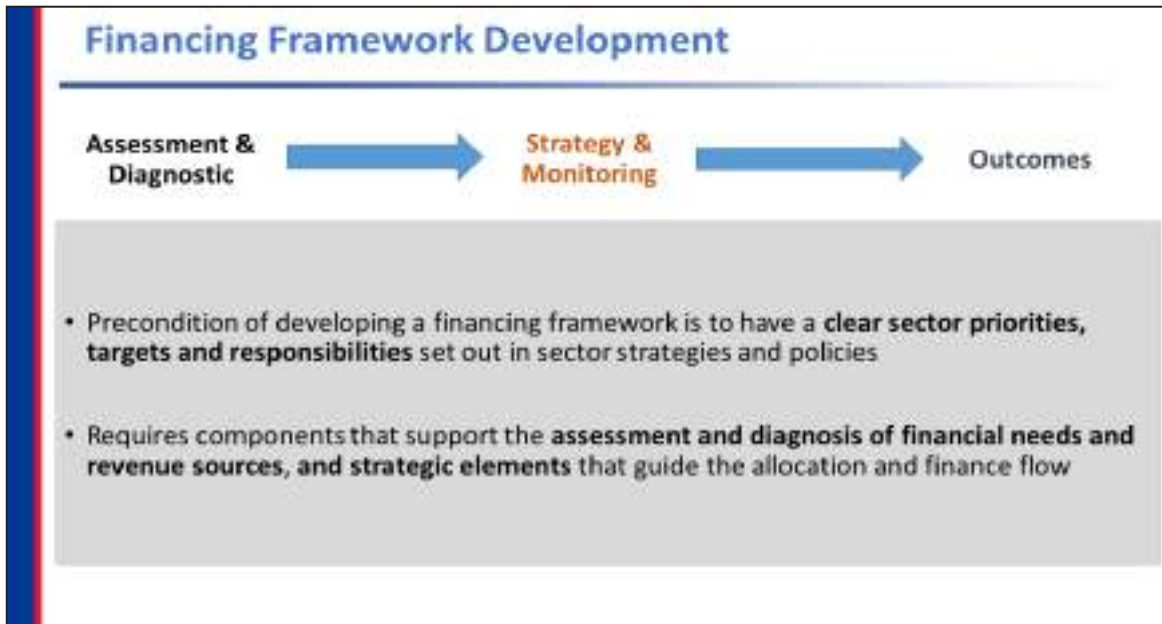
RPM: A framework for Analysis

- **Well articulated financing frameworks provide a strong foundation for investment**
- **Investments in national system soft infrastructure must accompany hard infrastructure**
- **Public finance should be at the centre of balanced financing mix**
- **Financing mechanisms need to be tailored to fit what is permissible and desirable in different contexts**



Sanitation [NSS] needs to be identified and prioritized as public sector

These are some points on why resource planning and management is essential and what are important considerations on resource planning and management.



For the financing framework development for the proper budget allocation or for the RPM, these things should be considered and describe as per the slide. It should start from the policies, to understand the effectiveness of the system proper monitoring should be done, only then .,

Summarize the key requirements of the frame through two points provided in grey box



This slide show case how sanitation is integrated in Nepal's policy, as Nepal's answer to information, starting from the 15th periodic plan guided by SDGs 2030, followed by the targets.

Slide 17



This slide presents on the financial need in WASH sector

Slide 18

Costs, Financial Needs, Investment Plan

Table 3.19: Major interventions and annual average investment requirement for urban infrastructure, housing, and reconstruction (Unit: Nepali Rs in billion)

Intervention	2016-19	2020-22	2023-25	2026-30	Average over 2016-30
HH with Toilet	0.5	0.5	0.6	0.7	0.6
Sewerage	10.1	11.5	12.9	15.2	12.4

Needs Assessment, Costing and Financing Strategy, for Sustainable Development Goals

Budget allocation should be done based on the mandate and city/ service area strategies

Sanitation revenue and operating cost are understood and managed , and budgets are allocated to meet targets



This slide explain demand of WASH sector in grey boxes (as per UN report). In green boxes finance flow to the sector. Which is clearly not sufficient as shown by financing gap
Click and show how additional ideas to enhance the finance flow

Identifying sources : Public, Private, HH

Table 4.10: Total public finance requirement by the major sectors (low revenue mobilisation scenario)* (LWR: Nepal\$ Bn in billion)

SDG Area	Total investment requirement	Share of Public investment in Total	Public investment	Available public finance	Available public finance	Financing gap in public
Water and Sanitation	1,155.4	80.3	950.7	503	230.1	313

Table 4.5: Private-sector SDG investment requirement, financing sources and financing gap* (LWR: Nepal\$ Bn in billion)

SDG Area	Total investment requirement	Share of private investment in total investment (%)	Private investment requirement	Available private finance (Inc. FDI)	Available private finance (FDI)	Financing gap in private sector
Water and Sanitation	1,155.4	8.1	93.1	56.6	4.6	36.6

Table 4.1: Proposed household financing criteria (in percent of the SDG investment requirement by categories of income group)

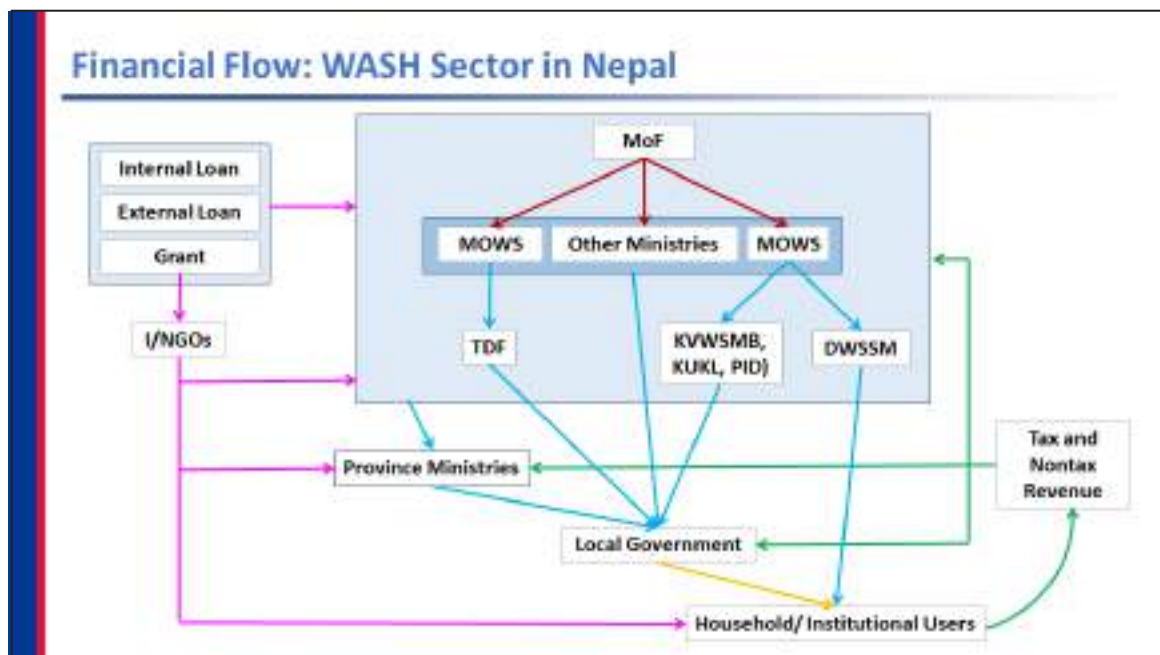
Sectors/ Type of HHs	HH1		HH2		HH3	
	Rural	Urban	Rural	Urban	Rural	Urban
Water and Sanitation	1	1	3	3	10	10

Needs Assessment, Costing and Financing Strategy, for Sustainable Development Goals

Budget allocation should be done based on the mandate and city/ service area strategies

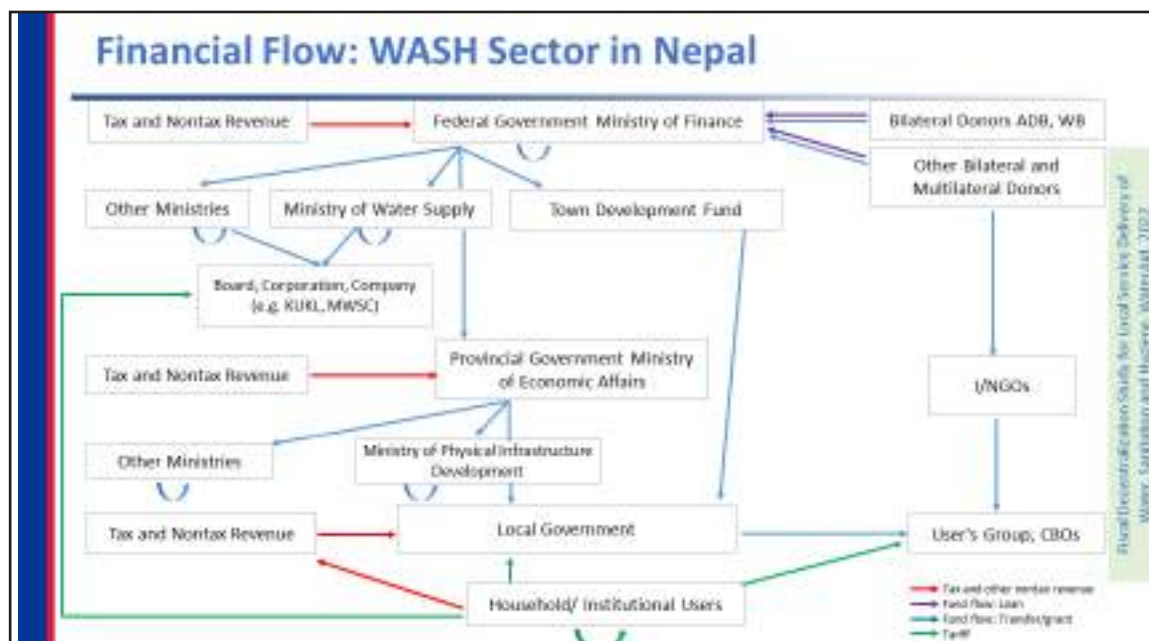
Sanitation revenue and operating cost are understood and managed , and budgets are allocated to meet targets

Slide 21

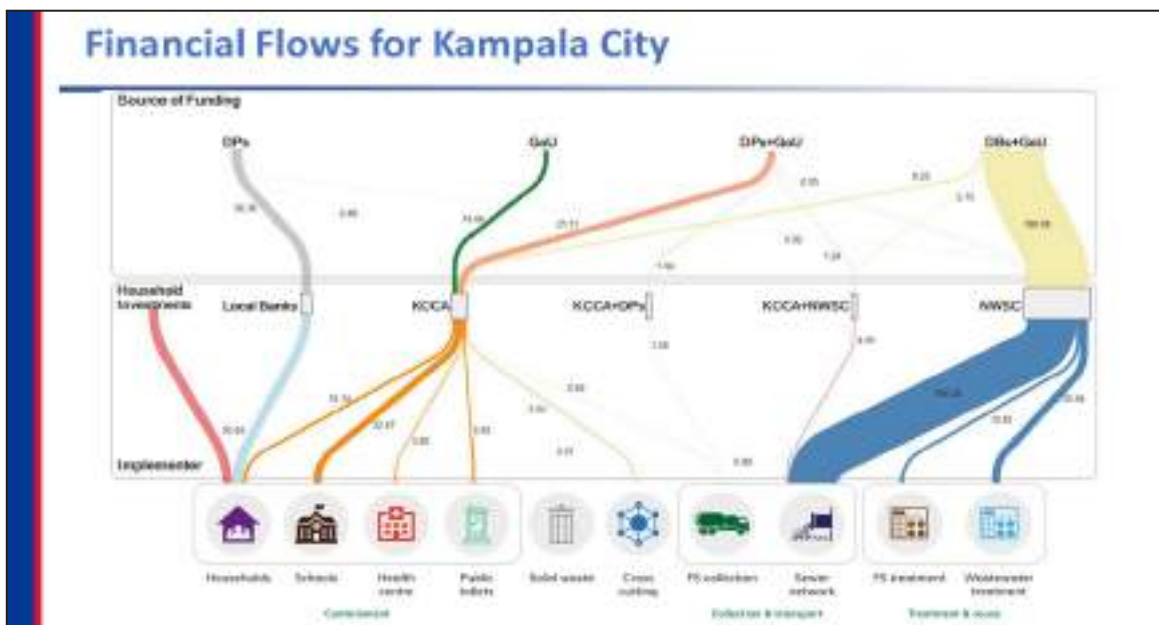


The financial flow for the sanitation services in Nepal majorly includes the tax and other nontax revenue, fund flow like loan, transfer/ grant and tariff. And the flow clearly denotes how the flow of finance in WASH sector in Nepal starting from tariff collection from household/ institutional level to loan and grant.

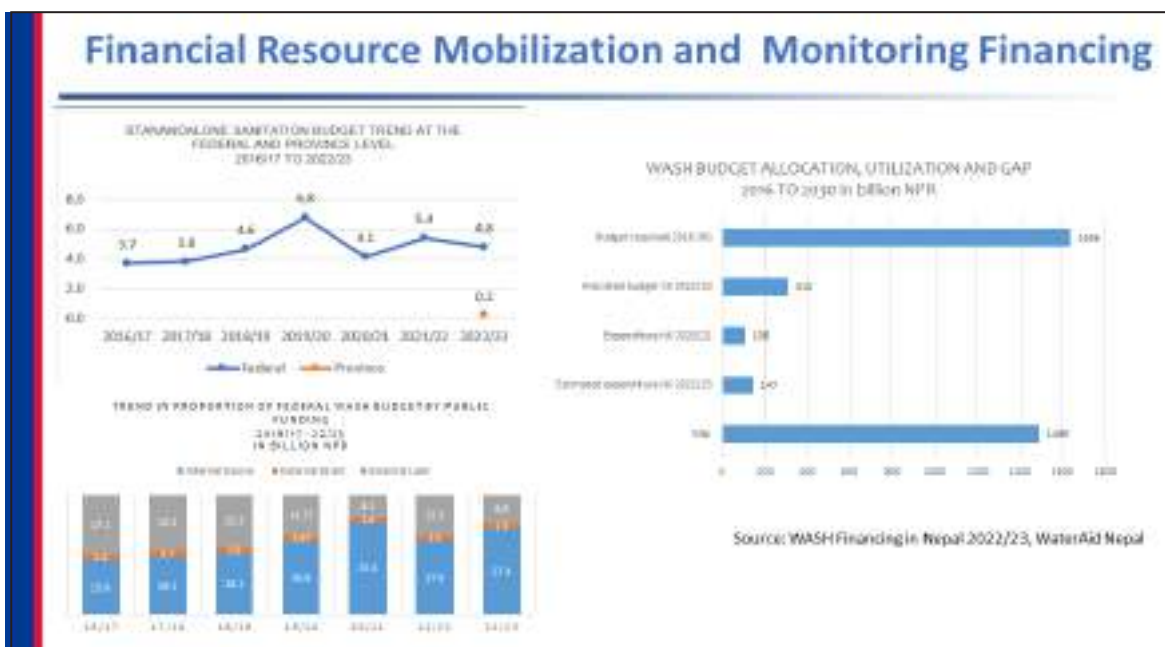
Slide 22



The financial flow for the sanitation services in Nepal majorly includes the tax and other nontax revenue, fund flow like loan, transfer/ grant and tariff. And the flow clearly denotes how the flow of finance in WASH sector in Nepal starting from tariff collection from household/ institutional level to loan and grant.

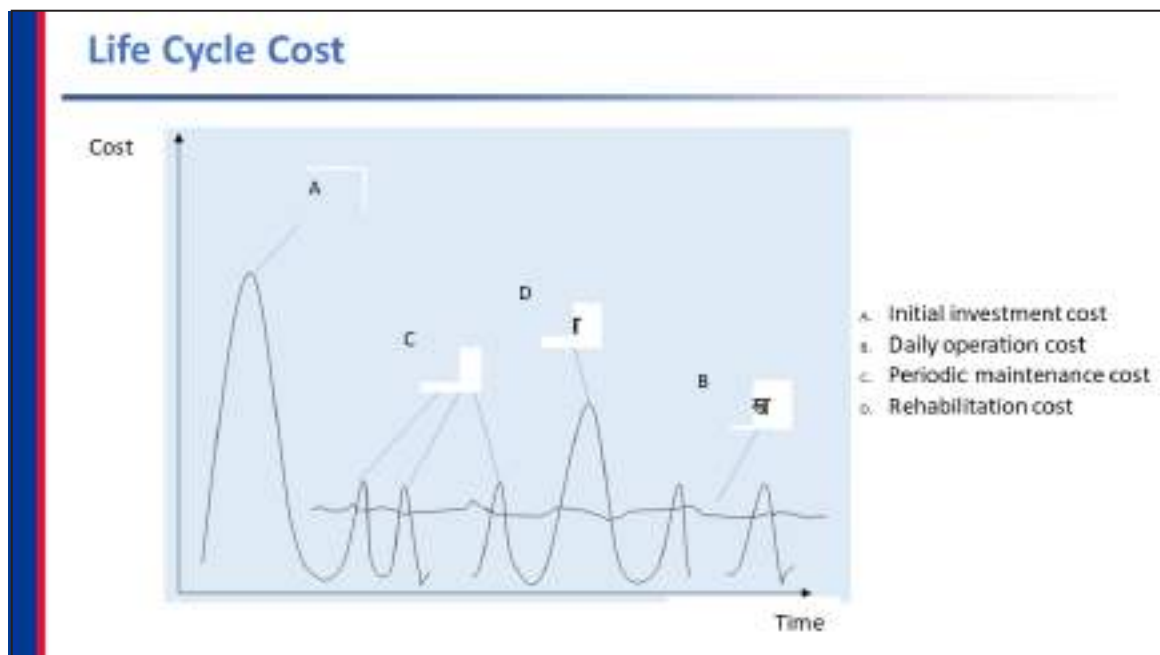


Present the slide as an example of financial flows. The main source of Funding for Kampala city is Development banks and the Government of Uganda while other sources includes Development partners and household investments. Similarly, the major portion of investment is done in the sewer network while relatively very less budget is invested on FS treatment and wastewater treatment.



Budget utilization status through financial monitoring. Here, highlights the need of such monitoring for informed decision making on structuring financing.

Slide 25



Life cycle cost for sanitation is present, which helps in identifying the overall financing need for system/sector and overall sanitation planning.

Slide 26

Estimating Financial Needs for Sanitation

Service	Technology (Design Period)	Status	Target	Difference	FSM Target and Cost				Sewer Network and Target					
					Capital Cost (Total)		Maintenance Cost (Total)	Operation Cost	Capital Cost (Total)		Maintenance Cost (Total)	Operation Cost		
					CapEx	Software			CapEx	Software				
Any fix time defecation	Any latrine (including unimproved) (2 Yr)	24	0	24	20	a	b1	c1	d1	4	e1	f1	g1	h1
Basic Sanitation (Onsite only)	Pit Latrine (8 yr)	34	0	34	12	a1	b2	c2	d2	2	e2	f2	g2	h2
	Latrine with Septic Tank (20 yr)	34	0	34	12	a2	b3	c3	d3	2	e3	f3	g3	h3
Safely Managed Sanitation (local sludge management or sewerage only)	Sewerage with treatment (20 yr)	2	20	-18	0	a3	b4	c4	d4	2	e4	f4	g4	h4
	Septic tank with treatment (FSM) (20 yr)	48	20	-28	48	a4	b5	c5	d5	0	e5	f5	g5	h5

a1 - Capital expenditure for transforming one technology to FSM level
 b1 - Software cost for transforming one technology to FSM level
 c1 - Capital maintenance cost for transforming from one technology to FSM level
 d1 - Operation cost for transforming from one technology to FSM level

e1, f1, g1, and h1 represents capital, software, capital maintenance and operation costs for transforming from one technology to sewer network



Financial flow can be explained mainly as revenue, CapEx and OpEx/CapManEx. In the slide, the size of the Thaili is symbolic to the amount required in each stage. For ex. the cost for construction of treatment plant is larger in comparison to other meaning, the construction cost is higher than other cost.

Revenue streams comprises following provisions

Sanitation Tax- Currently, people are paying sanitation tax along with water tariff but people who have no access to water supply are not liable to the sanitation tax. So, it could be a point of discussion that how can every people take under sanitation tax provision.

Desludging fee (This also includes transportation fee as well)

Tipping fee- This is the service charge that has to be paid for treatment operator to discharge FS. It also can be termed as treatment fee.

Sales of end products (compost, biogas etc.)- Particularly, in case of nature based treatment technology, revenue from sales of end products can be enough to bear operating cost.

Capital costs is required for following activities

Construction of containment- In Nepal, the cost of construction of containment is solely upon the household level.

Purchase of suction vehicle- In Nepal, the private sector and municipality are providing desludging services so the capital cost for purchase of suction vehicle is solely upon the private sector or municipality.

Construction of treatment facility- In Nepal, for the construction of treatment facility requires highest investment and operation and maintenance and most of the financial flow for this is from Government and development partners. However, engagement of private for investment in FST is one of the most challenging and equally important.

Operating costs is required for following activities

Maintenance of containment (household level)

emptying of the containment (household level)

Staff salary of desludger/treatment plant operator

Maintenance of vehicle and treatment plant

Packaging and cost for end products supply

Income from revenue can cover annual O&M costs


Cap Maintenance Expenditure is major maintenance which require capital cost that should be managed. This is not considered by many. But, for the major damage, a capital cost for maintenance might require and should be planned accordingly.

Types of financial resources to CWIS framework


		Equity	Safety	Sustainability		Responsibility	Accountability
			Equipment PPE	Climate/Disaster Resilient Infrastructure	Operation and Maintenance	Legislation Contracts HR	Regulation Data/Monitoring Performance/HR
Interface	HH	Subsidy		Tariff	Tariff	Revenue/grant	Revenue/grant/transfer
Containment		Subsidy	-	Tariff	Tariff	Revenue/grant	Revenue/grant/transfer
Desludging/Transfer		Subsidy	Revenue/tariff	Transfer/Equity	Revenue/tariff/cross subsidy	Revenue/grant	Revenue/grant/transfer
Treatment		Subsidy	Revenue/tariff	Revenue/grant/transfer	Revenue/tariff/cross subsidy	Revenue/grant	Revenue/grant/transfer
Reuse			Revenue/tariff	Transfer/revenue	Trade/Cross subsidy	Revenue/grant	Revenue/grant

Many factors need to come together to achieve a positive sanitation outcome. These are some of the key ones. Both the public and private sectors will typically be involved. At the upstream end of the service chain, people are usually willing to pay to free themselves of fecal waste, but they may be less willing or able to pay for the public benefits provided by the downstream parts of the chain, so public funds are usually required as well. Whoever provides the services, effective local governance is needed to provide an enabling environment, which itself depends on the national policy, legal, institutional, regulatory and financial environment.

Group Work




3 Groups
10 minutes




Ask participants to work on the financial flows of their municipality. You may show the earlier slide as an example for their exercise

Key Messages

- Financing frameworks are key
- Better understanding of the cost of CWIS is crucial
- Investments in software along with hard infrastructure
- Affordability remains a constraint to a balanced funding mix and viable service delivery
- Evidence based monitoring to improve performance, drive investment and address inequality



“



Give me six hours to chop down a tree and i will spend the first four sharpening the axe.

Get more on BuffsWorld.com - Abraham Lincoln”

Comprehensive Basin Wide plan for Sewerage System (CBPSS)

Slide 32

References

- ESAWAS, Citywide inclusive sanitation series: Citywide Inclusive Sanitation: Resource Planning and Management
- [Water & Sanitation PPPs Public Private Partnership \(worldbank.org\)](http://www.worldbank.org)
- Nepal's 15th Periodic Plan
- [Water & Sanitation PPPs Public Private Partnership \(worldbank.org\)](http://www.worldbank.org)
- Engaging the Private Sector in Urban Sanitation Services: A Review of South Asian Cities

Slide 33

Thank you!
धन्यवाद !



Government of Nepal
Ministry of Water Supply
Department of Water Supply and Sewerage Management
12/2004 Building, Pancheshwar, Mahanagar, Kathmandu, Nepal
Phone: 01-4412745, 4412752
website: www.dwsms.gov.np

Technical Support



Environment & Public Health Organization (EPHO)
House 1102, 1, Prakash, New Baneshwar, Kathmandu, Nepal
Phone: 01-4448844 | Website: www.ephonp.org

SESSION 7.1

Resource Planning and Management in Practice

Slide 1

"Citywide Inclusive Sanitation – Training of Trainer's"
Resource Planning and Management in Practice
 Resource Person

Government of Nepal
 Ministry of Water Supply
 Department of Water Supply and Sewerage Management

Slide 2



This training includes 20 main technical sessions, and are currently on session 7: System Functions: Resource Planning and Management



This training includes 20 main technical sessions, and are currently on session 7: System Functions: Resource Planning and Management


Learning Outcomes

1. Explain how financial flow can be diversified
2. List indicators for measuring resource planning and management
3. Give examples of RPM at global and national level

Slide 5

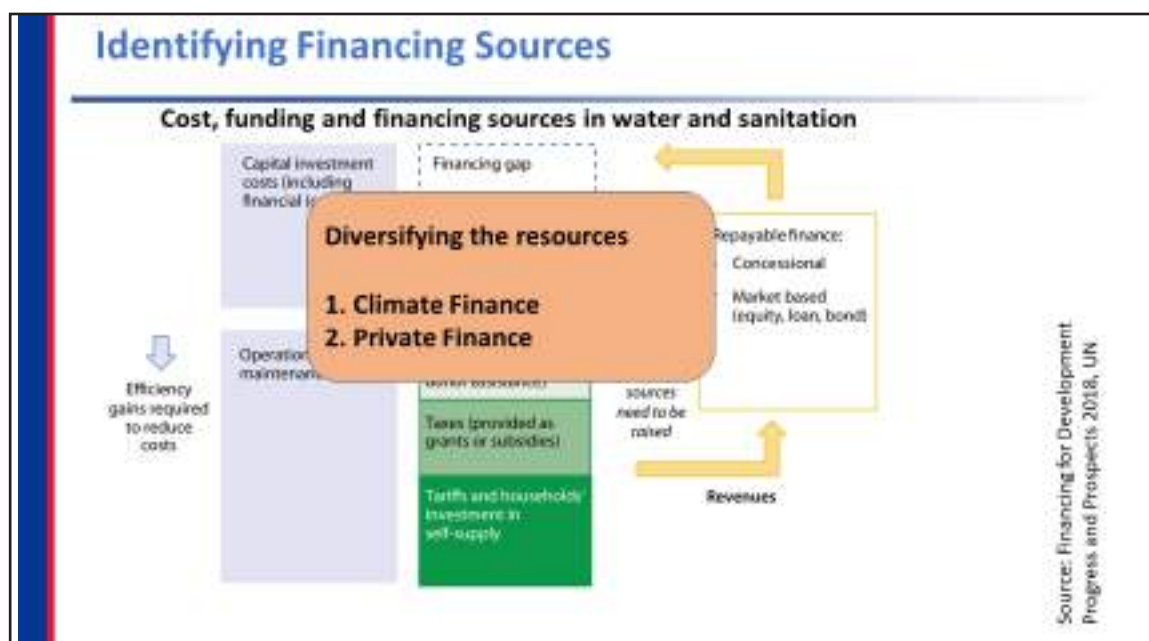
Presentation Outline

- Diversifying financial flow
- Cases
- Indicators for measuring resource planning and management

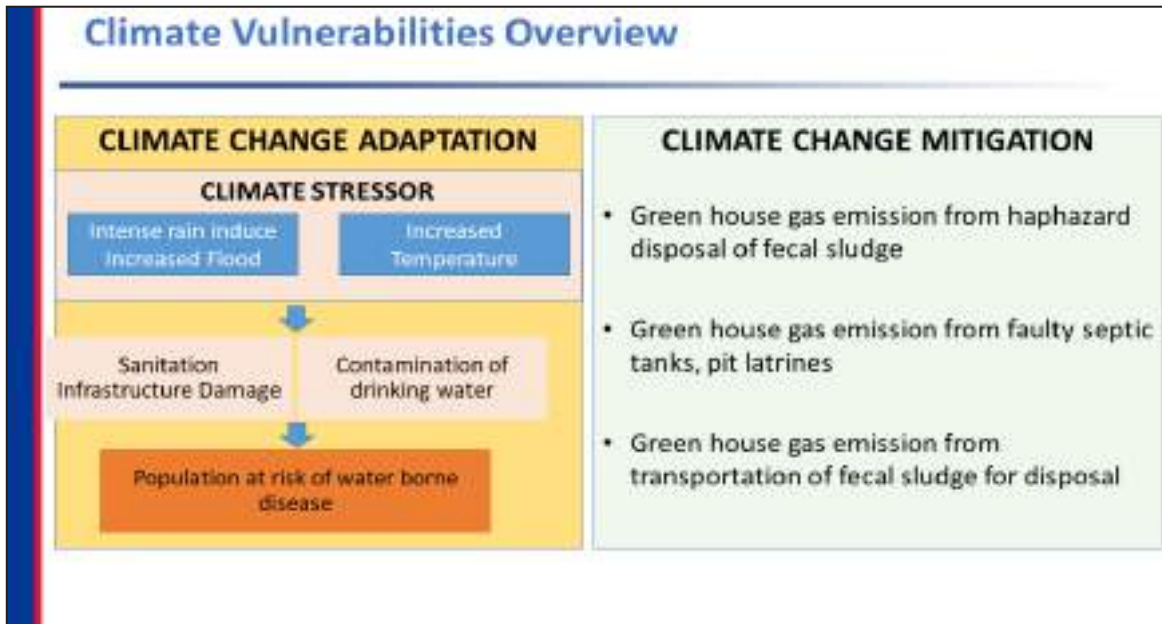


Inform participants that they will be discussing on the above topics throughout the session.

Slide 6



Ask to the participants, on the budget allocated for sanitation in their respective working area from the government side enough? Expected answer: not enough budget
 Highlight the need to diversify financial flow i.e. additional sources of fund to the sanitation sector to achieve the desired targets.



The need for climate resilient sanitation planning provides the overview on climate vulnerabilities from and towards sanitation sector, from climate change (CC) adaptation perspective and from climate change mitigation perspective.

From CC adaptation perspective the impact is directly on public health with the potential public health outbreaks of water borne disease, due to the contamination of water sources from defective/damaged sanitation. Whereas, from CC mitigation perspective, sanitation system if not properly managed emits green house gases to the environment

The points in the mitigation column: If these are reduced or managed properly then the cause of climate change will be reduced

Source: Third National Communication 2021

GHG emission from Nepal Waste sector

Years →	Gigagrams (Gg) in CO ₂ equivalent			
	1994	2000	2008	2011
Waste	520	667	758	925

3.28% – Waste Sector contribution to Nepal's overall GHGs

Waste Categories	Emissions [Gg]			Emissions [Gg CO ₂ Eq]				
	CO ₂	CH ₄	N ₂ O	CO ₂	CH ₄	N ₂ O	Total	%
1. Solid Waste Disposal		10.4633			261.5813		261.5813	28.32
2. Biological Treatment of Solid Waste		0.1047	0.0063		2.6171	1.8718	4.4889	0.49
3. Open Burning of Waste	2.3617	0.3402	0.0061	2.3617	8.5057	1.8250	12.6924	1.37
4. Wastewater Treatment and Discharge		11.4461	1.2036		286.1522	358.6615	644.8137	69.82
4a. Domestic Wastewater		6.9628	1.2036		174.0689	358.6615	532.7304	
4b. Industrial Wastewater		4.4833			112.0833		112.0833	
Total	2.3617	22.3543	1.2160	2.3617	558.8563	362.3583	923.5860	

GHG – Green House Gases (methane, nitrous oxide, carbondioxide, ozone, chlorofluoro carbon, carbon monoxide, sulphur dioxide)

Slide 9

Have you ever considered Climate resilience in preparing your financial plan or budget??

- Assessing the impacts of Climate Change and integrating into the Sanitation planning and budgeting
→ Resilient Sanitation system
- Climate budgeting (MOFE allocates budget on sector wise climate resilient heads)
- Prioritize sanitation as National Climate Change Agenda
- How can it be done? Examples:
 - Location of toilets/Sanitation systems (Avoiding disaster areas)
 - Resilient design




Photo from Rautahat, Nepal flood 2017

Slide 10

Quiz: Can you name the Nepal's National Documents on Climate Change where Sanitation have been integrated ??

**Second Nationally Determined Contributions
National Adaptation Plan**

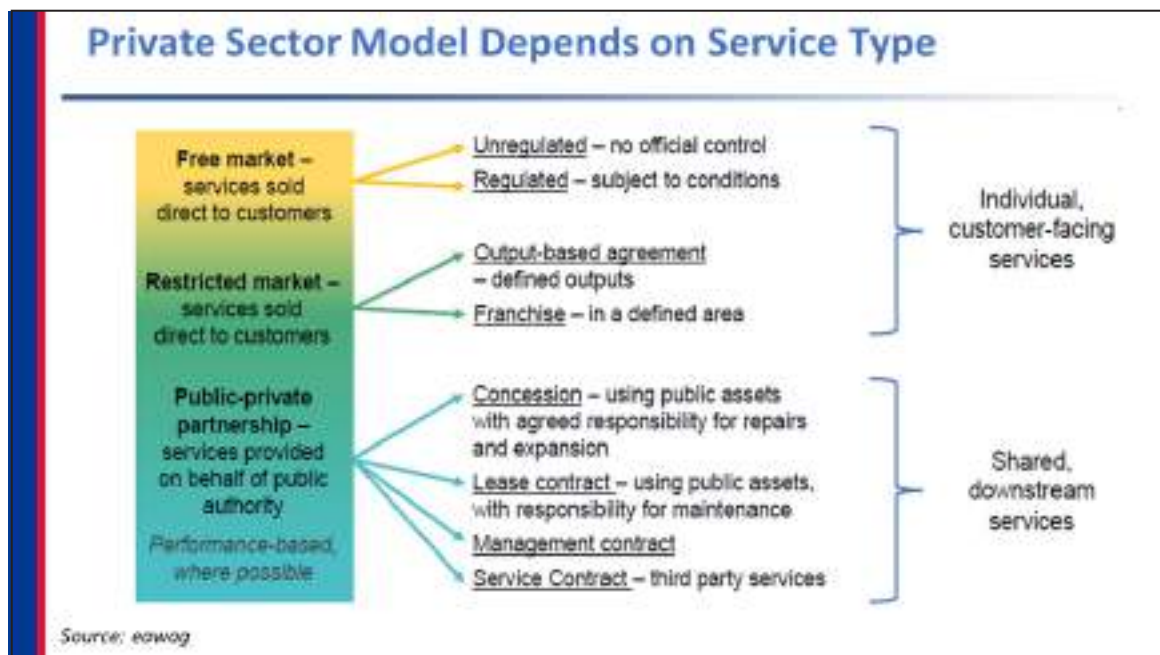
Answer : Second Nationally Determined Contributions, National Adaptation Plan

Why Private Sector's involvement in Sanitation??

- Water and Sanitation sector is chronically under-funded and inefficient.
- Public-private partnerships (PPPs) can be a mechanism (among others) to help governments fund much needed investment and bring technology and efficiency that can improve the performance and financial sustainability of the water and sanitation sector.



Slide 13



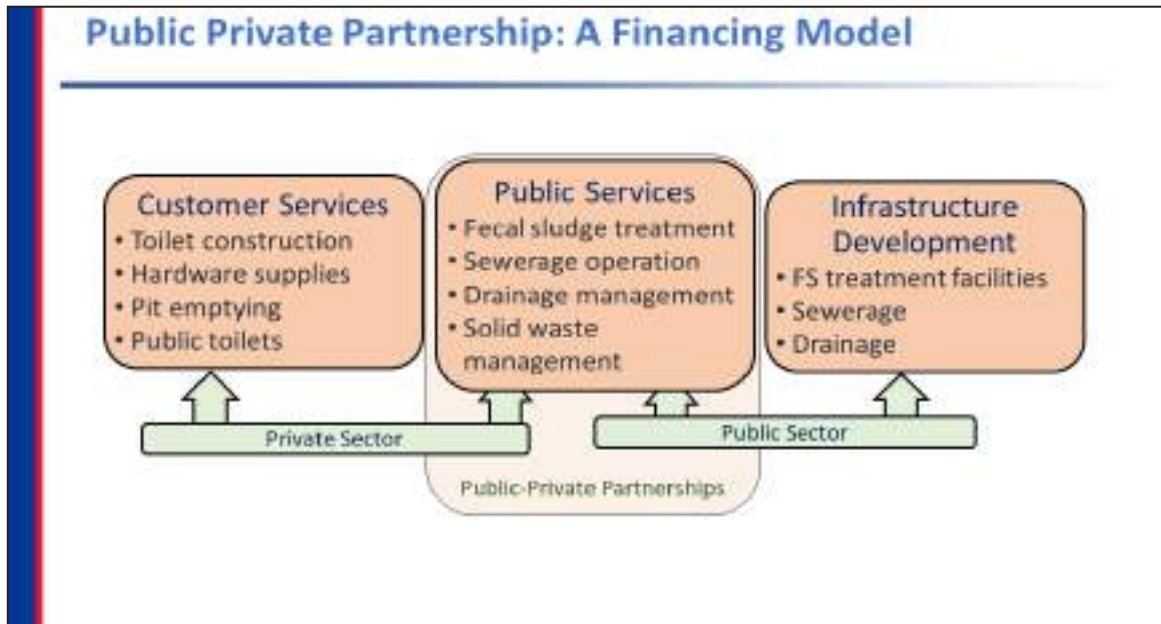
Slide 14



Ask the participants, where could be the positioning of free market, restricted market and PPP in the sanitation chain.

Answer:

Free and Restricted market in the individual services, or the purchase of equipments (eps. In yellow areas) and PPP in green areas.



Many factors need to come together to achieve a positive sanitation outcome. These are some of the key ones. Both the public and private sectors will typically be involved. At the upstream end of the service chain, people are usually willing to pay to free themselves of fecal waste, but they may be less willing or able to pay for the public benefits provided by the downstream parts of the chain, so public funds are usually required as well. Whoever provides the services, effective local governance is needed to provide an enabling environment, which itself depends on the national policy, legal, institutional, regulatory and financial environment.

Case Studies

- **Wai: A Model for Scheduled Desludging in Sanitation**
(<https://www.youtube.com/watch?v=ul7z-59y5Al>)
- OR,
- <https://www.youtube.com/watch?v=Xdd4b2yAkgw> (Warangal: The Model Sanitation City)

Relating to the respective case study, conduct a discussion:

Discussion Guiding Question:

1. What was the target of the city?
2. What initiatives have been taken??
3. Do you see any gaps or possible challenges while implementing such interventions in our cities?
4. How to address such challenges?

Slide 17

Quick Activity: Research on what are the popular PPP models

Let the participants research quickly on their phones, and list out their research

Slide 18

PPP models in Sanitation




Namami Gange: Hybrid Annuity Based PPP Model

Guheswori WWTP: BOOT (Build Own Operate and Transfer model)


This area is work on progress, learning by doing; Tremendous scope for research and development

Circular Economy for Sustainable Waste and Sanitation




Circular Economy: Identifying the resource potential of different waste streams for recovering water, energy and soil nutrients


Changing the waste challenge into an opportunity



Linear Economy



Circular Economy



By establishing good market for the re-use product
 → Enhance private investment
(Starting with enabling environment; Coordination with the concerned sector like Agriculture, energy)

Linking to circular economy, the area through which private sector can be attracted to sanitation sector is by establishing good market for the re-use product.

Case Studies



Large commercial Biogas plants



Ghana's Safi Sana Case
<https://www.youtube.com/watch?v=Q-iFYzCCZf8>




Faecal sludge Treatment Plants

These are some areas where it is feasible to materialize the concept of circular economy. Present the video on project by Safi sana, after the video have been observed by all, discuss: Whether circular economy could be potential financing source?? Do you think private sector would be attracted if we position circular economy in sanitation sector? What are the reforms that country needs to do such that it could be good financing source? <https://www.youtube.com/watch?v=Q-iFYzCCZf8> Hybrid Annuity Model (HAM) (<https://www.youtube.com/watch?v=FmOYULFFnXg>)

Slide 21

CWIS Indicators for RPM (Athena Infonomics)



National/Province Level Indicators	<p>RPM 1a: [Indicator Area] Clear financing framework at the national level to guide allocation of resources</p> <p>RPM 2a: [Indicator Area] National/province level decision making process for sanitation budget allocation is transparent, inclusive, and informed by city/service area strategies</p>
City Level Indicators	<p>RPM 1b: [Indicator Area] Clear financing framework at the city level to guide allocation of resources</p> <p>RPM 2b: [Indicator Area] City level decision making process for sanitation budget allocation is transparent, inclusive, and informed by city/service area strategies</p> <p>RPM 3: [Indicator Area] Quality of investment decision making</p> <p>RPM 4: [Indicator Area] Integrated citywide inclusive sanitation strategy</p>

Slide 22

CWIS Service Framework and Local Institutional Self Assessment

CWIS OUTCOME	EQUITY	SAFETY	SUSTAINABILITY
	<p>Thematic Area - 8: Social Inclusion</p> <p>Thematic Area-7: Physical Infrastructure Development</p> <p>Thematic Area-5: Service Delivery</p>		<p>Thematic Area-7: Physical Infrastructure Development</p>
CWIS FUNCTIONS	RESPONSIBILITY	ACCOUNTABILITY	RESOURCE PLANNING AND MANAGEMENT
	<p>Thematic Area 1 –Governance System</p> <p>Thematic Area 2- Organization and Administration</p>	<p>Thematic Area-5: Service Delivery</p> <p>Thematic Area6: Judicial Work Performance</p>	<p>Thematic Area- 3: Annual Budget and Plan Formulation</p> <p>Thematic Area-5: Service Delivery</p> <p>Thematic Area-4: Fiscal & Financial Management</p>

For the resource planning and management, the thematic area 3, 5 and 4 are the main relevant point for any municipality for the score in LISA.

Contextualizing Indicators

- Thematic Area 3: Annual Budget and Plan Formulation
 - Annual budget, program and periodic plan formulation
 - Implementation of the program of NGOs after approval from the assembly
 - Annual internal revenue increment compared to last year
- Thematic Area 4: Fiscal and Financial Management
 - Inter source of revenue
 - Fiscal discipline
 - Preparation of procurement Master plan and annual procurement plan as per prevailing law
- Thematic Area 5: Service Delivery
 - Social security fund
 - Promotion of local products and marketing

RPM: Key Opportunities and Ways Forward

- Effective resource planning requires alignment of responsibilities, decision-making and incentives
- Weak monitoring limits understanding of investment effectiveness and creates risk for investment integrity
- Full cost recovery is infeasible: well-designed **public finance** crowds in private finance and benefits the poor
- Commercial finance presents an opportunity, provided barriers can be overcome

Slide 25

References

- ESAWAS, Citywide inclusive sanitation series: Citywide Inclusive Sanitation: Resource Planning and Management
- [Water & Sanitation PPPs Public Private Partnership \(worldbank.org\)](http://worldbank.org)
- Nepal's 15th Periodic Plan
- [Water & Sanitation PPPs Public Private Partnership \(worldbank.org\)](http://worldbank.org)
- Engaging the Private Sector in Urban Sanitation Services: A Review of South Asian Cities

Slide 26

Thank you!
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Government of Nepal
Ministry of Water Supply
Department of Water Supply and Sewerage Management
12/2004 Building, Pancheshwar, Mahanagar, Kathmandu, Nepal
Phone: 22-4412745, 4412752
website: www.dwsms.gov.np

Technical Support



Environment & Public Health Organization (EPHO)
Address: Plot 1, Tripathi, New Baneshwar, Kathmandu, Nepal
Phone: 22-444004 | Email: info@epho.gov.np

SESSION 7.2

Resource Planning and Management - Group Work

Slide 1



The diagram illustrates a Citywide Inclusive Sanitation (CWIS) system. It shows a cross-section of the ground with various components: a water supply system on the left, a central treatment plant, and a sewerage system on the right. A red truck is shown collecting waste from a house. A person is shown using a toilet. The system is labeled with 'NON-SHARED SANITATION SYSTEM' and 'CWIS SYSTEM'. Below the diagram, the text reads: "Citywide Inclusive Sanitation – Training of Trainer's" CWIS System Function – Resource Planning and Management : Group Work Resource Person.

"Citywide Inclusive Sanitation – Training of Trainer's"
CWIS System Function – Resource Planning and Management : Group Work
Resource Person



GOVERNMENT OF SRI LANKA
Ministry of Water Supply
Department of Water Supply and Sewerage Management

Slide 2

Before starting...

- What are the main headings of your income/s and expense/s for your family?
- 2 to 3 responses



This training includes 20 main technical sessions, and are currently on session 7, Resource Planning and Management




This training includes 20 main technical sessions, and are currently on session 7, Resource Planning and Management

Slide 5

Learning Outcomes


1. Analyze the financial flows of municipality in each component of sanitation service chain
2. Identify the gaps in resource planning and management



Slide 6

Presentation Outline

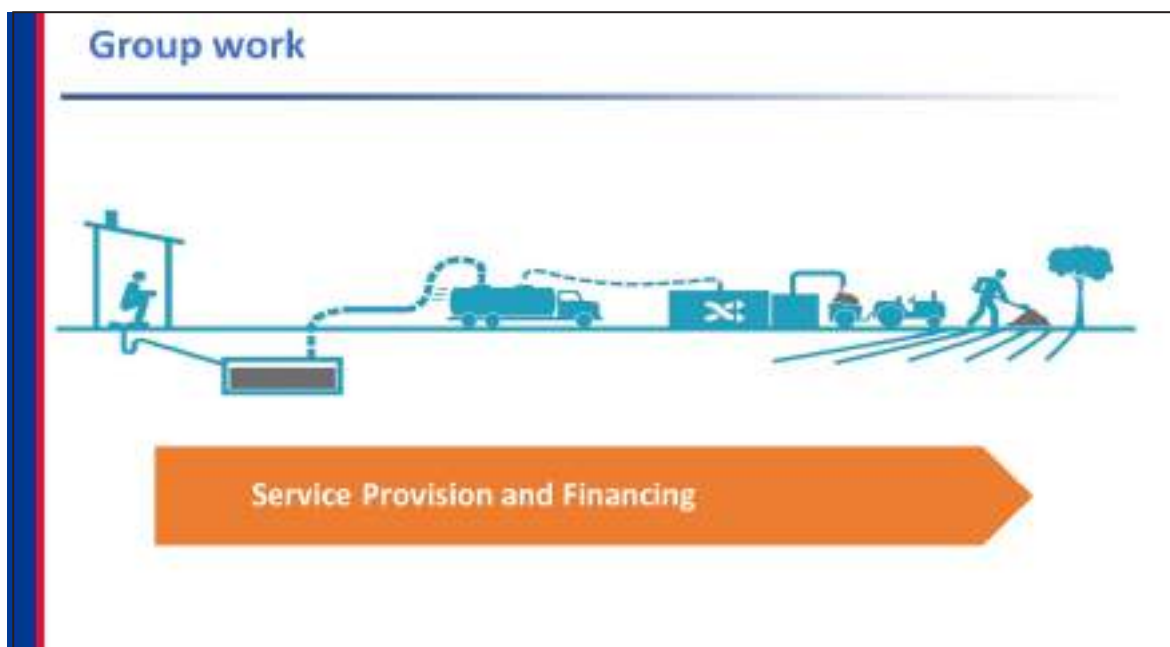
- RPM in each component of Sanitation Service Chain (SSC)
- RPM Gap Analysis



Inform participants that they will be discussing on the above topics throughout the session.

CWIS Indicators for RPM (Athena Infonomics)	
National/Province Level Indicators	<p>RPM 1a: [Indicator Area] Clear financing framework at the national level to guide allocation of resources</p> <p>RPM 2a: [Indicator Area] National/province level decision making process for sanitation budget allocation is transparent, inclusive, and informed by city/service area strategies</p>
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These indicators are just discussed in the earlier session and as stated in the indicators, further will be discussing on the service provision and financing for each components of SSC.

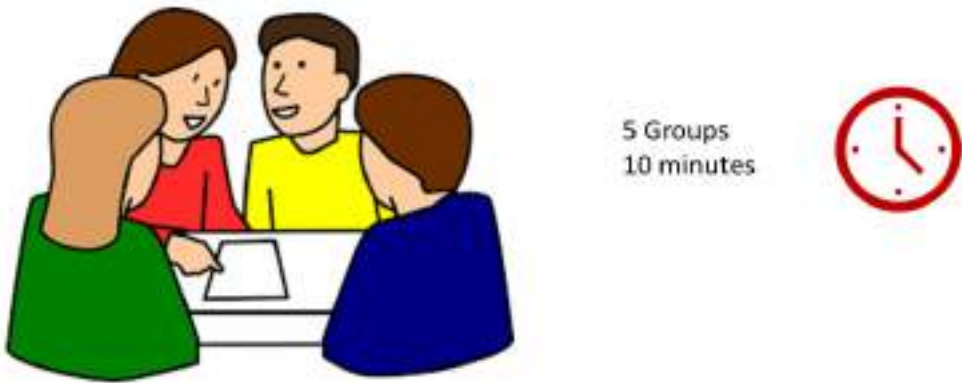


Again, ask participants to note the responsible entity for the service delivery and financing mechanism throughout the sanitation service chain (in their respective municipalities if possible or general in Nepal as per their experience).

You may present the earlier slide for the reference.

Slide 9

Group work




5 Groups
10 minutes

Divide participants into 5 groups and assign them a component of sanitation service chain.

Within the group ask to discuss in each component of SSC what is the source of income, who will pay it, source of expenses and who will expenses it. For the reference refer to the following table in slide 10. After the group discussion ask participant to present in the large group and summarize it in reference to Identify financial resources: sanitation service chain.

Slide 10

Group work



Income source heading	Who will pay/contribute?	Expenses headings



Financial flow can be explained mainly as revenue, CapEx and OpEx/CapManEx

In the slide, the size of the Thai is symbolic to the amount required in each stage. For ex. the cost for construction of treatment plant is larger in comparison to other meaning, the construction cost is higher than other cost.

Revenue streams comprises following provisions

Sanitation Tax- Currently, people are paying sanitation tax along with water tariff but people who have no access to water supply are not liable to the sanitation tax. So, it could be a point of discussion that how can every people take under sanitation tax provision.

Desludging fee (This also includes transportation fee as well)

Tipping fee- This is the service charge that has to be paid for treatment operator to discharge FS. It also can be termed as treatment fee.

Sales of end products (compost, biogas etc.)- Particularly, in case of nature based treatment technology, revenue from sales of end products can be enough to bear operating cost.

Capital costs is required for following activities

Construction of containment- In Nepal, the cost of construction of containment is solely upon the household level.

Purchase of suction vehicle- In Nepal, the private sector and municipality are providing desludging services so the capital cost for purchase of suction vehicle is solely upon the private sector or municipality.

Construction of treatment facility- In Nepal, for the construction of treatment facility requires highest investment and operation and maintenance and most of the financial flow for this is from Government and development partners. However, engagement of private for investment in FST is one of the most challenging and equally important.

Operating costs is required for following activities

Maintenance of containment (household level)

emptying of the containment (household level)

Staff salary of desludger/treatment plant operator

Maintenance of vehicle and treatment plant

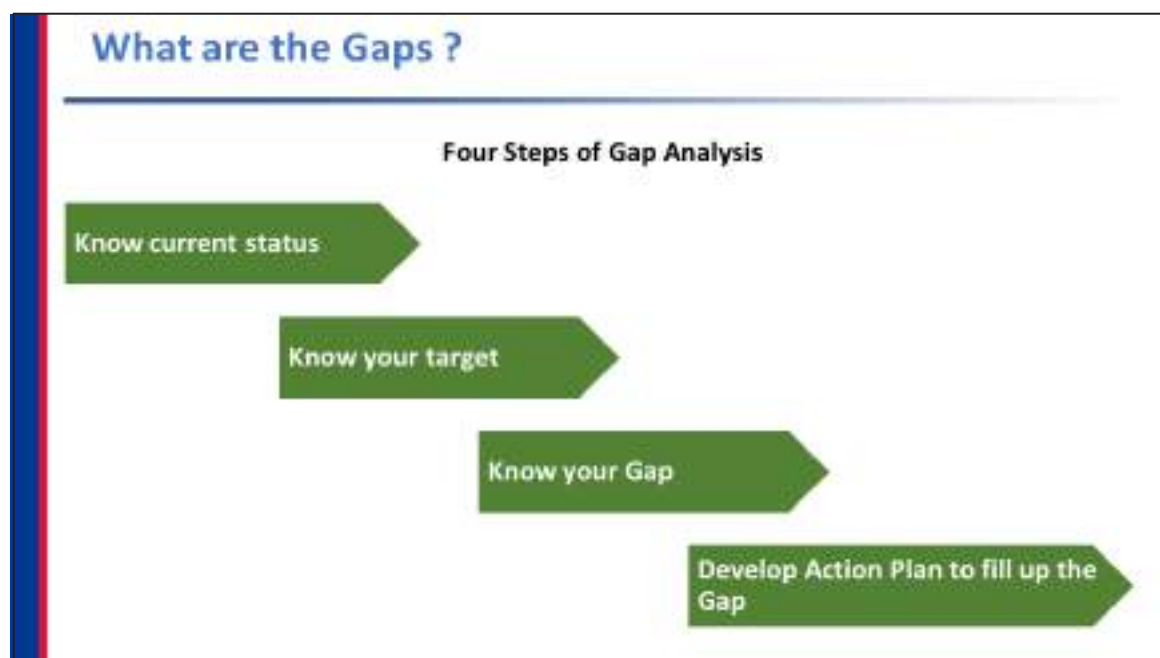
Packaging and cost for end products supply

Income from revenue can cover annual O&M costs

Cap Maintenance Expenditure is major maintenance which require capital cost that should be managed.

Many did not consider. At the time of the major damage, There may require capital cost for maintenance.

Slide 12



After the presentation of the group work from earlier activity, ask participants if they felt any kind of gap in sanitation budget allocation and explain that for the gap analysis there are four steps and present as per the slide.

Slide 13



Common Gaps and Issues

- **Split responsibilities can hamper cross-subsidies** for non-sewered sanitation
- Private sector engagement and commercial finance present an opportunity, provided barriers can be overcome
- The **misalignment of responsibilities, decision-making and incentives**
- **KPIs for urban sanitation are weak and insufficient** to guide finance priorities
- **Poor and informal communities remain marginalized** in finance priorities

Key Messages

- Financing frameworks are key
- Better understanding of the cost of CWIS is crucial
- Investments in software along with hard infrastructure
- Affordability remains a constraint to a balanced funding mix and viable service delivery

Slide 16

Key Messages

- Evidence based monitoring to improve performance, drive investment and address inequality
- Financing and investment decisions, asset ownership and operations often sit with different stakeholders.
- Achieving the right mix of finance is critical for long term services, as well as equity and viability of results.
- The tracking of investment results is imperative, but currently overlooked by both lenders and borrowers.

Slide 17

References

- ESAWAS, Citywide inclusive sanitation series: Citywide Inclusive Sanitation: Resource Planning and Management
- [Water & Sanitation PPPs Public Private Partnership \(worldbank.org\)](http://worldbank.org)
- Nepal's 15th Periodic Plan

- [Water & Sanitation PPPs Public Private Partnership \(worldbank.org\)](http://worldbank.org)
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References

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Thank you!
धन्यवाद !



Government of Nepal
Ministry of Water Supply
Department of Water Supply and Sewerage Management
17/10/11 Building, Pancheshwar, Mahanagar, Kathmandu, Nepal
Phone: 977 01 42546411, 41111111
website: www.dwsn.gov.np

Technical Support



Environment & Public Health Organization (EPHO)
17/10/11 Building, Pancheshwar, Kathmandu, Nepal
Phone: 977 01 42546411, 41111111

SESSION 8

Sustainability

Slide 1



"Citywide Inclusive Sanitation – Training of Trainer's"
CWIS Service Outcome: Sustainability
Resource Person



Government of Nepal
Ministry of Water Supply
Department of Water Supply and Sewerage Management

Slide 2



Ask to participants, if you want to handover this car to your child after 5 years in the very good condition and looking as new, what activities do you need to do over this time?

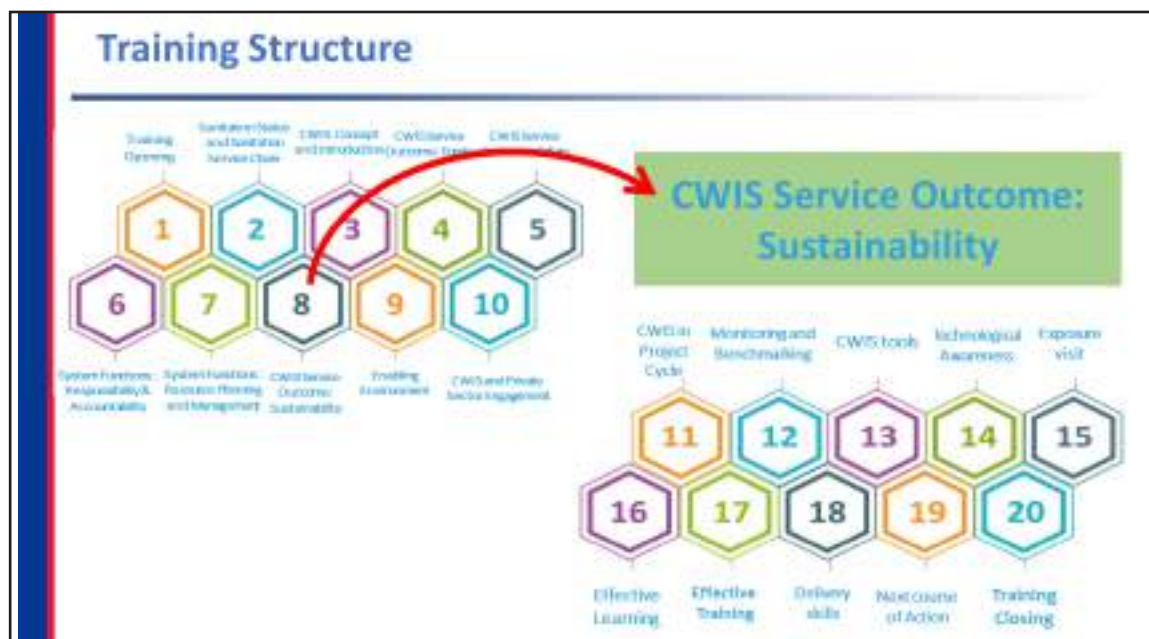
Just like this, if we want to use our sanitation services/infrastructures, we need to do some specific activities. We are going to discuss about sustainability of sanitation services in this session.

Slide 3



Relating to sanitation, what’s happening today, all our toilets are discharging into rivers and dirty nature is what we are ultimately leaving behind for our children. We need to correct our act. Hence, we are going to discuss about sustainability of sanitation services in this session.

Slide 4



This training includes 20 main technical sessions, and are currently on session 8: CWIS Service Outcome: Sustainability



This training includes 20 main technical sessions, and are currently on session 8: CWIS Service Outcome: Sustainability

Learning Outcomes

- Describe the concept on sustainable sanitation
- Explain sustainability dimensions of sanitation
- Climate change and sustainability

Slide 7

Presentation Outline

- Concept on Sustainable Sanitation
- Present scenario of sanitation services/facilities
- Reasons behind the unsustainable sanitation services/facilities
- Interventions for sustainable sanitation service (Criteria)
- Climate change and sanitation
- Key messages

An icon depicting a person in a green shirt and pants standing next to a whiteboard on a tripod stand. The whiteboard has several horizontal lines representing text. The person is pointing towards the whiteboard.

Slide 8

Why sustainability ?

A composite image. The main part shows a pair of weathered, dark-skinned hands cupping a small, realistic globe of the Earth. The globe shows continents in green and yellow and oceans in blue. An inset photo in the top right corner shows a smiling woman in a blue headscarf and green jacket carrying a young child on her back. They are outdoors in a rural setting.


**To hand over
the earth alive
for our children.**

SDG Goal 6.2

- **Sustainable Development Goal 6.2:** By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

←

Including an urban area



SDG 6.2 Indicators

- ~~Population using safely managed sanitation services (%)~~
- Population using at least basic sanitation services (%)
- Population with basic handwashing facilities at home (%)

Do you want to use this public toilet?




Linking with Intro., we want to use a car for long time. But we don't want to use this toilet anymore. Or do any of the participants want to use it? We spent thousands and thousands of money to construct a sanitation facility, the facilities turn to these condition over very short period of time.

Slide 11



Slide 12



Looking at the pictures and the condition of the toilets, are you brave enough to use these?

If you have any comment,



Another examples of how we have securely established a component of sanitation services however, failed to look beyond for the safety impacting on the outcome / sustainability of the whole sanitation services.

Few more examples of sanitation



Slide 15



Slide 16



We had/ have these sanitation facilities, one of the types back in history but we can not find even a remnants of some while some are existing without any functions.

What are the reasons behind it ?



- Discussion
- Meta cards for each participants
- 3 minutes



Ask to participants to write 2 reasons in 2 different meta cards.

Inform them that as we go further ahead in the training these failures will be categorized within CWIS framework.

Definition of Sustainability



<https://www.youtube.com/watch?v=B5NfTN0chi0>

Present the video defining sustainability and summarize the concept after taking a point or two from participants.

Slide 19

What is Sustainability ?

“meeting the needs of the present without compromising the ability of future generations to meet their own needs”
(1987, United Nations Brundtland Commission)



- **Balance between economic growth, environmental care and social well-being**



What do you think is sustainability or what does it mean?

Slide 20

What is Sustainable Sanitation ?

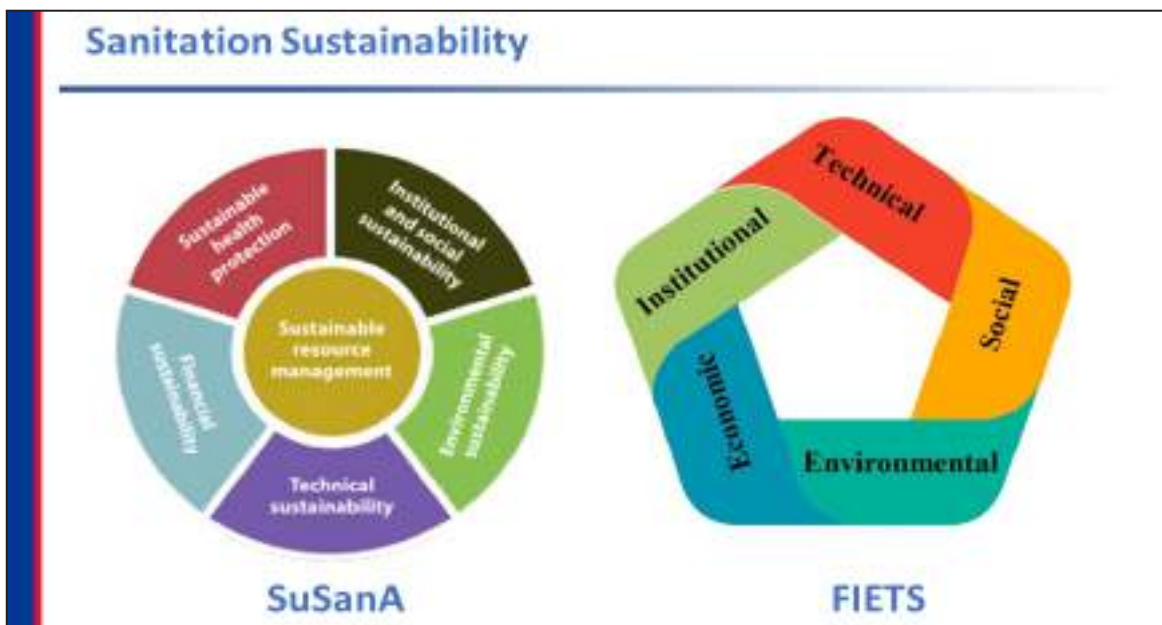
- To qualify as sustainable sanitation, a sanitation system has to be **economically viable, socially acceptable, technically and institutionally appropriate, and protect the environment and natural resources**. It is crucial that sanitation systems are evaluated carefully with regards to all dimensions of sustainability.

(Sustainable sanitation alliance, SuSanA)

sustainable sanitation alliance

The **Sustainable Sanitation Alliance (SuSanA)**, established in 2007, is a loose network of organizations who are "working along the same lines towards achieving sustainable sanitation"

Present the definition as per the slide and further, present the categorized meta-cards into the 5 components of CWIS framework from earlier activity (slide 16).

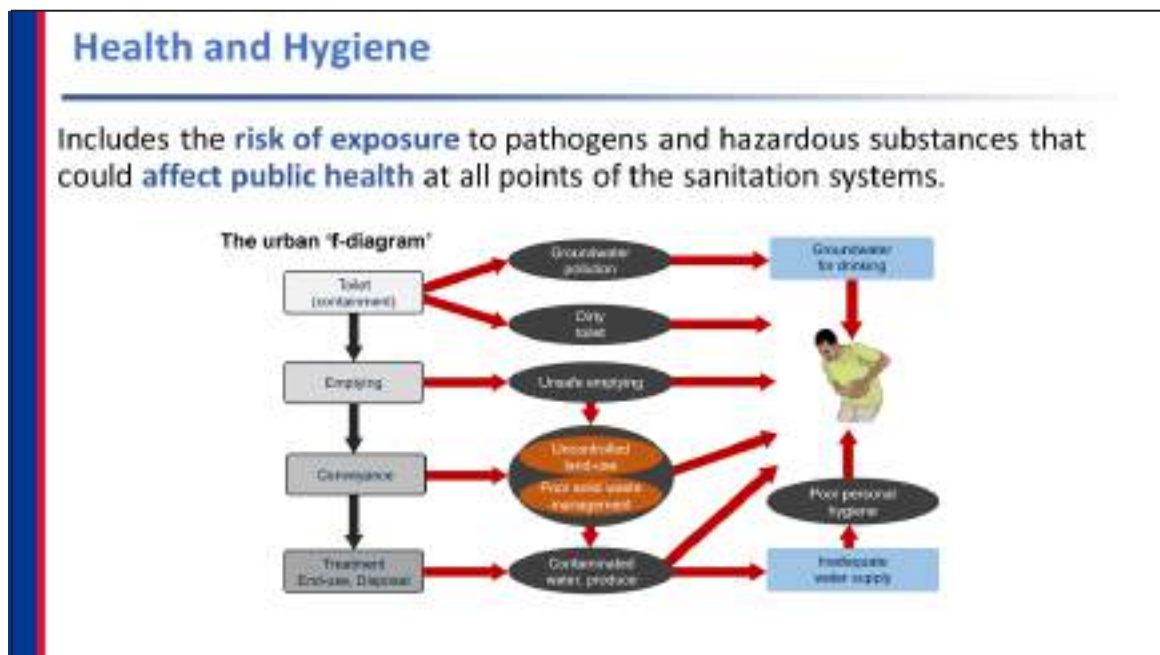


Sanitation sustainability does not discuss only about the sanitation infrastructures only but considers/ comprises of all of the following:

- a. Financial sustainability,
- b. Institutional sustainability
- c. Environmental sustainability,
- d. Social sustainability and
- e. Technical sustainability

Sanitation Sustainability in CWIS

CWIS SERVICE FRAMEWORK			
	EQUITY	SAFETY	SUSTAINABILITY
CORE CWIS OUTCOMES	Services reflect fairness in distribution and prioritization of service quality, prices, and deployment of public finance/ subsidies.	Services safeguard customers, workers, and communities from safety and health risks—reaching everyone with safe sanitation.	Services are reliably and continually delivered based on effective management of human, financial and natural resources.
CORE CWIS FUNCTIONS	RESPONSIBILITY An authority(ies) executes a clear public mandate to ensure safe, equitable, and sustainable sanitation for all.	ACCOUNTABILITY Authorities' performance against their mandate is monitored and managed with data, transparency and incentives.	RESOURCE PLANNING AND MANAGEMENT Resources—human, financial, natural, assets—are effectively managed to support execution of mandate across time/space.



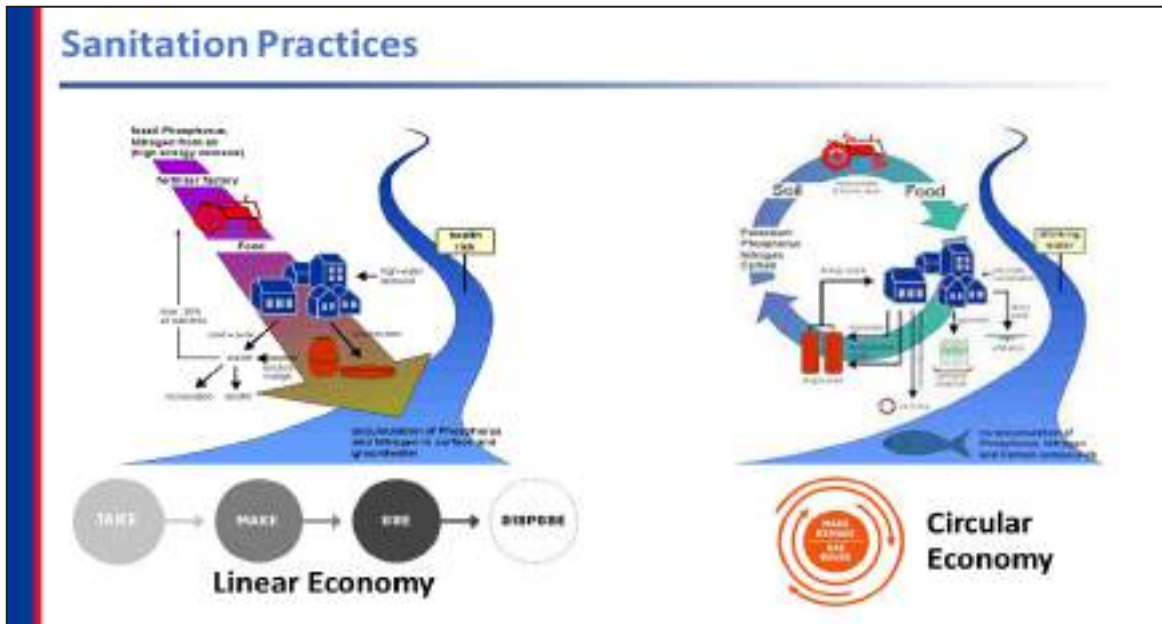
The main criteria for sanitation sustainability is health and hygiene of public health which is directly or indirectly linked. The risk of exposure of pathogens and hazardous substances to public health should be monitored throughout each component of SSC. (discuss the information from slide)

Environment and Natural Resources

Includes issues such as the **water, energy and other natural resources** required for construction, operation and maintenance of the system, including the **potential emissions** to the environment resulting from use.

- **Eco-friendly**
- **Climate Resilient**
- **Uses clean and lean energy/resources**

The icon depicts a green globe of the Earth surrounded by stylized green leaves and a vine, symbolizing environmental friendliness and sustainability.



Technology and Operation

Includes the **functionality** of the system, and the extent to which the entire system can be **constructed, operated and monitored** by the local community or the technical teams of the local utilities.

- **Robust and smart - Efficiency and functionality**
- **Local Availability - Technology and Technician**
- **Contextual**
- **Low or No emission**
- **Nature based**


An illustration shows two people standing next to a stylized tree. The tree's branches are represented by various icons: a recycling symbol, a water drop, a leaf, a lightbulb, and a gear. This represents the integration of different technologies and operational aspects.

Slide 27

Financial and Economic issues

Includes the **capacity of concerned entities** (households, communities, government) **to finance the sanitation system**, including the construction, operation, maintenance and necessary reinvestments in the system.

- **Affordability - Operation and maintenance including installation**
- **Access to finance/financing**
- **Local Entrepreneurship**



As has been discussing throughout the CWIS training other aspects of sanitation sustainability is the acceptance by the consumers/ the community along with the financial and economic planning and resource management.

Slide 28

Social Cultural and Institutional Aspects

This criteria evaluates if the sanitation system is **socio-culturally acceptable and appropriate for the users**. Special considerations include - Convenience, perceptions, gender issues, religious or cultural issues, impacts on human dignity, compliance with the legal framework, and stability of institutional settings.

- **Inclusion - accessibility, acceptability**
- **Empowerment - Awareness, Capacity building**
- **Institutional setup**
- **Stakeholder Engagement**
- **Need Based**



FIETS approach of Sustainability on sanitation



How does FIETS work?

<https://www.youtube.com/watch?v=MZhnMsfjz8>

What are the reasons behind it ?



- Discussion
- 10 minutes

Ask to participants to write 2 reasons in 2 different meta cards.

Inform them that as we go further ahead in the training these failures will be categorized within CWIS framework.

Slide 31

Group work - Reason of Sustainability

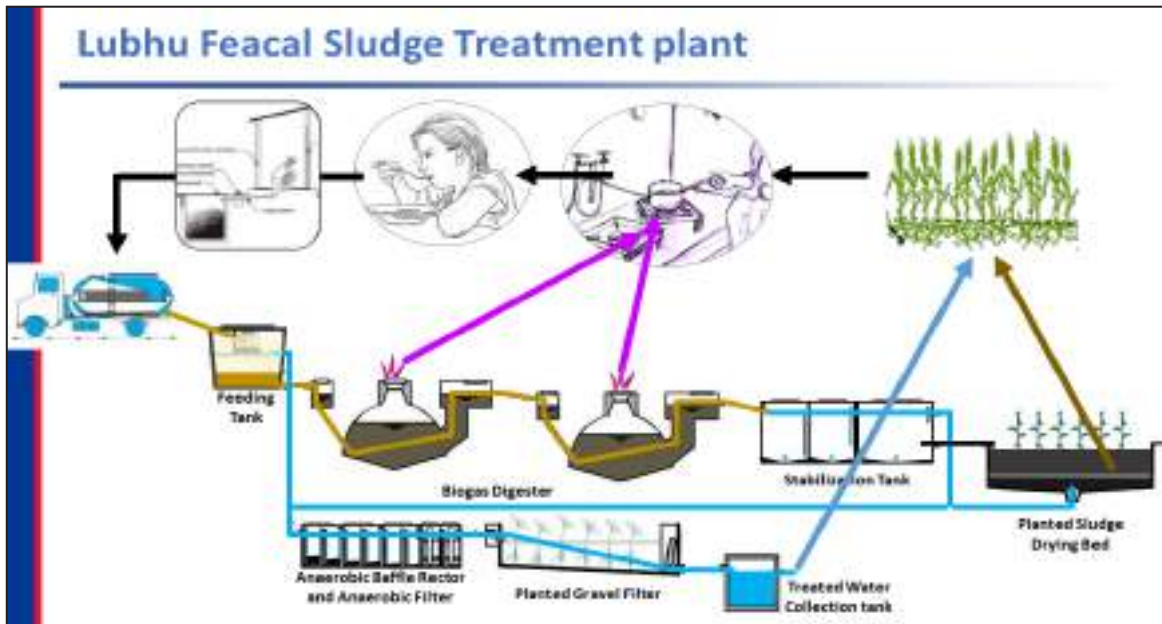
Financial Institutional Environmental Social Technical Climate Resilient

Ask the participants – Can we use this toilet ?? Click and mention the additional perspective on Climate resilience (6)

Slide 32

Lubhu Feecal Sludge Treatment plant

An aerial photograph of the Lubhu Feecal Sludge Treatment plant. The image shows several large, circular treatment tanks covered with white and green tarps. The facility is situated in an urban area with buildings and roads visible in the background. A person is walking on a path in the foreground.

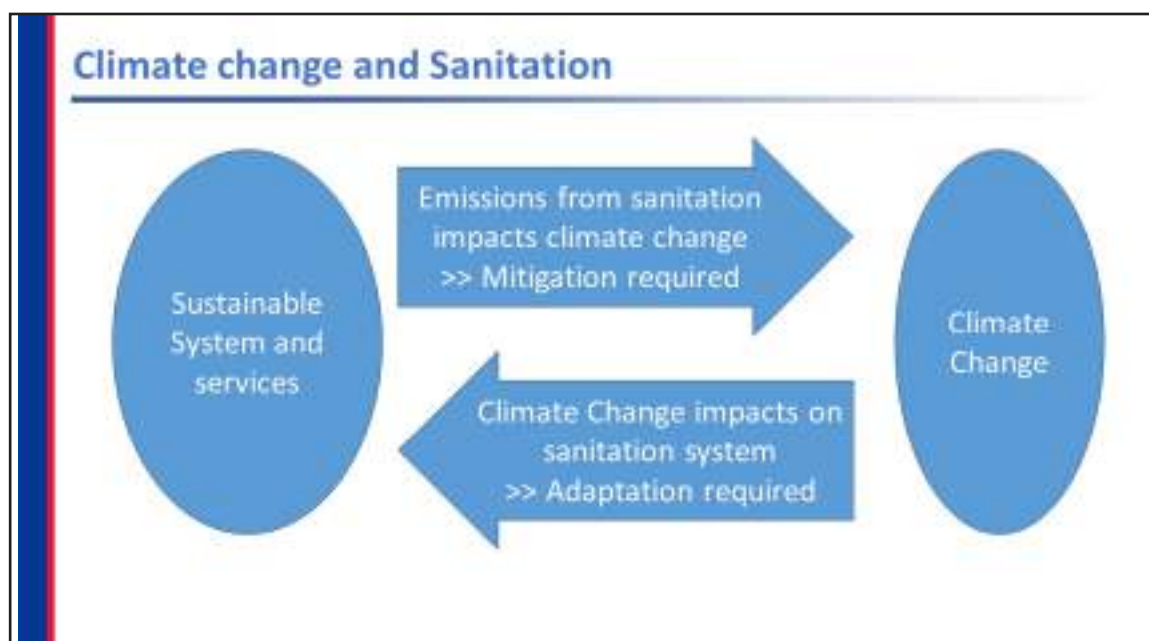


Slide 35



Discuss among the participants what does sustainability implies?. After discussion click to add on – while sustainability means long-term functionality of services or the infrastructure, the entities that defines long-term functionality may differs in each of the components of sanitation chain, but these entities will always be linked to CWIS core outcomes and CWIS core functions (2 by 2 matrix) and Sanitation sustainability criteria as described in slides 17, 18 and 19.

Slide 36



Climate change and Sanitation

Green house gas emission from containment system	Green house gas emission from desludging and transportation of faecal sludge for disposal	Green house gas emission from haphazard disposal of faecal sludge
--------------------------------------------------	-------------------------------------------------------------------------------------------	-------------------------------------------------------------------

The diagram illustrates the greenhouse gas (GHG) emissions associated with wastewater management. It shows three stages: 1. Containment system (represented by a house icon), 2. Desludging and transportation (represented by a truck icon), and 3. Haphazard disposal (represented by a person with a wheelbarrow and a person dumping waste). Each stage is accompanied by a CO₂ icon and an upward-pointing arrow, indicating emissions. A line connects the stages, showing the flow of waste from containment to transport to disposal.

70% Nepal Waste sector's GHG emission is associated with the wastewater management (TNC, 2020)

A photograph showing a polluted water body, likely a river or stream, with a large amount of garbage and debris floating on the surface. Several people are wading through the water, possibly collecting or disposing of waste. The water is dark and murky, and the surrounding area appears to be a densely populated urban or semi-urban area.

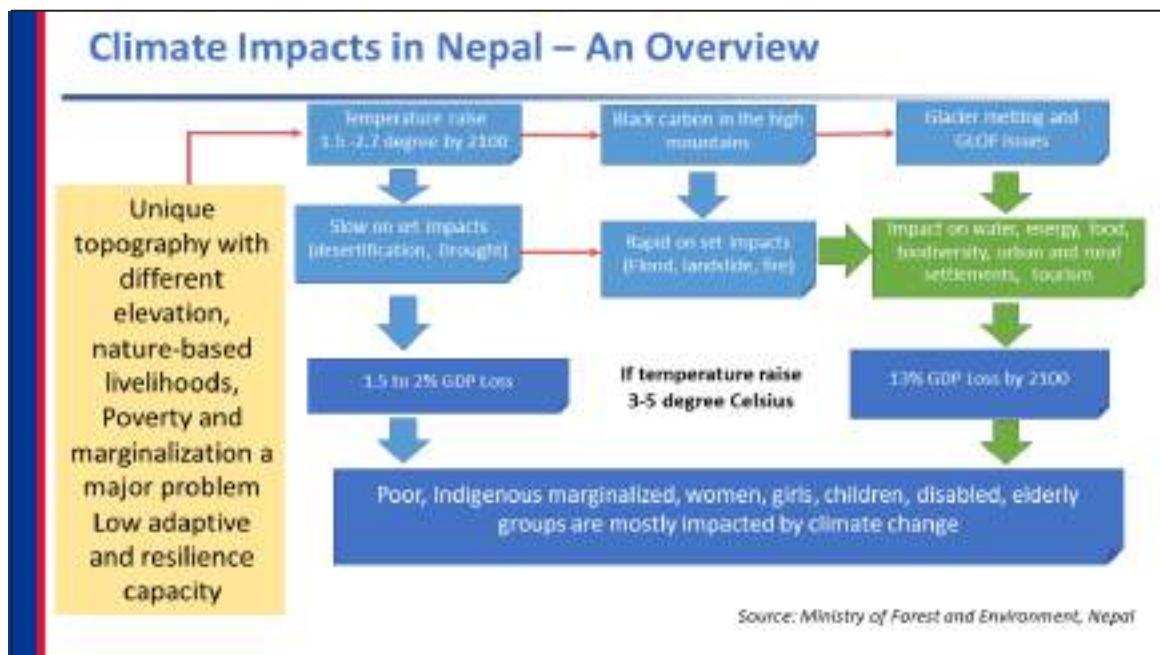
With fast paced and haphazard urbanization in many South Asian countries, both climate change impact and sanitation situation are foreseen to be aggravated tremendously in the immediate future

Climate Change

- Even if **greenhouse gases** are radically reduced right now, average global warming will most likely exceed **1.5° C** in the near future. Such a temperature increase can have **disastrous consequences**, like the **melting of glaciers, the disappearance of animal and plant species, forest fires and droughts**, among others.

The image shows a hand holding a small globe of the Earth. The globe is split vertically. The left side of the globe is a dark, brown, and cracked Earth, representing a hot, dry, and desolate planet. The right side of the globe is a bright blue and green Earth, representing a healthy, cool, and lush planet. The background is a bright, sunny sky with a rainbow, suggesting a positive future if climate change is addressed.

Slide 39



Slide 40

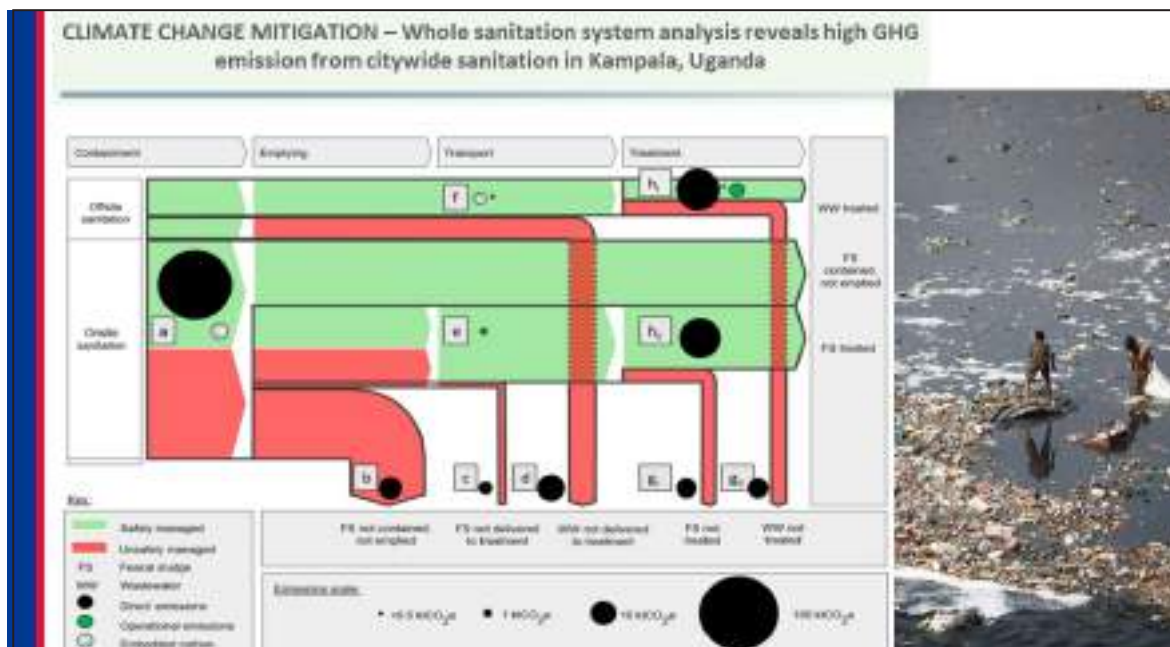


Additional Perspective of Sustainability - Climate Resilience

Climate resilience: Sustainable sanitation also involves the consideration of climate change related impacts on sanitation infrastructure and behavior and the resilience of technologies and communities



Ask the participants – Can we use this toilet ?? Click and mention the additional perspective on Climate resilience (6)



With fast paced and haphazard urbanization in many South Asian countries, both climate change impact and sanitation situation are foreseen to be aggravated tremendously in the immediate future

Slide 43



Slide 44

Nepal's step towards Climate Resilient Sanitation: - Sanitation targets- Second NDC

- By 2025, 380 million litres/day of wastewater will be treated before being discharged, and 60,000 cubic meters/year of faecal sludge will be managed

Policy target (By 2030)

- Create an enabling environment for both public and private sector to treat industrial and municipal waste, including faecal sludge
- Focus on co-production of energy and organic fertilizer

1. GSSP will strengthen policy and regulation to attract finance to the sanitation sector.
2. GSSP will integrate investment for sanitation into localized green growth plans and strategies, in order to build connections between markets, waste valorization and the circular economy.
3. These will be economically viable, socially acceptable and, technically and institutionally appropriate.

Nepal's step towards Climate Resilient Sanitation: Sanitation targets-National Adaptation Plan



Target Date: 2030

- Climate Change Resilience Development through Capacity Building, Innovation, Improvement and Construction of WASH services and facilities
- Research, Innovation and Development of climate resilient measures/technologies for Water Supply, Sanitation and Health Systems

Sustainability Criteria/Indicators and CWIS Framework (Linkage)

Health & Hygiene	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	SUSTAINABILITY Management of revenues and resources—financial, labor, energy, water—sustain performance
Environment and natural resources		System Functions	RESPONSIBILITY Authority or authority creates a clear mandate to create inclusive, safe sanitation services	ACCOUNTABILITY Performance is monitored and managed with transparency, data, incentives and penalties
Technology and operation				RESOURCE PLANNING & MANAGEMENT Resources are managed to support implementation of mandate and achieve goals across time / space
Financial and Economic issues				
Social-cultural and Institutional aspects				
Climate Resilience				

The criteria defined by Susana (even before the concept of CWIS) fits perfectly into the CWIS 2 X 3 framework. Ex. the health and hygiene point accounts to the safety component of the framework while environment and natural resources accounts to RPM. Similarly, technology and operation addresses the equity (access and affordability) along with sustainability as well as all of the system functions.

Slide 47


Principles for planning and implementing SSS

1. Human dignity, quality of life and environmental security at household level should be at the centre of any sanitation approach
2. In line with good governance principles, decision making should involve participation of all stakeholders, especially the consumers and providers of services.
3. Waste should be considered a resource, and its management should be holistic and from part of integrated water resources, nutrient flow and waste management processes.
4. The domain in which environmental sanitation problems are resolved should be kept to the minimum practicable size (household, neighborhood, community, town, district, catchments, city).


SSS- Sustainable sanitation system

Slide 48

Group work



4 Groups
5 minutes



Inform participants that they will be divided into 4 groups and in their groups, participants will get a topic and they are to discuss in groups if they think it is sustainable in Nepal. (from experiences of Nepal.)

Group work - Cases from Nepal (Linking to Sustainability)



The slide displays four photographs of wastewater treatment systems. On the left is an EcoSan Toilet, a brick structure with a vent pipe. In the top center is a Decentralized Wastewater Treatment Plant (DEWATS) with several concrete basins. On the right is a Sewerage Treatment Plant with large circular tanks. In the bottom center is a Faecal Sludge Treatment Plant (FSTP) with rectangular concrete basins.

EcoSan Toilet

Decentralized Wastewater Treatment Plants (DEWATS) – In General

Sewerage Treatment Plant – In General

Faecal Sludge Treatment Plants (FSTP) – In General

Participants into 4 groups – Give one topic to each group. Discuss in groups if they think the system is sustainable in Nepal (from experiences of Nepal); If yes, Describe the points that make it sustainable in Nepal and arrange the points from CWIS framework perspective). If No, why, describe the points according to CWIS framework.

- Discuss in groups if they think its sustainable in Nepal (from experiences of Nepal);
- If yes, list the points that make it sustainable in Nepal and arrange the points from CWIS framework perspective).
- If No, why, list the points according to CWIS framework

Slide 51

Guheshwari Wastewater Treatment Plant – Sustainability Case

Before		After
<ul style="list-style-type: none"> • Extremely high electricity cost • Extended aeration technology using aerators that was producing aerosols (from wastewater) • Load shedding was challenge to keep the system running • Government of Nepal was operating with limited skilled manpower • National wastewater discharge/effluent standards was not in place 		<ul style="list-style-type: none"> • Rehabilitated and being operated (for 10 year) by private company under PPP contract • Updated technology with minimal impact to the environment • Payment made based on the desired outputs • Energy recovery system (with target to address 50% of the energy consumption of the system)

Even though its too early to say, but after the rehabilitation of Guheshwari Treatment Plant and its management contract with Private company, It looks promising so far.

Slide 52

Key Messages

- Initiation of sanitation service/facility is important, but its sustainability is more crucial
- There are plenty of reasons behind the failure or discontinuity of sanitation services/system
- Sustainability is equally important to ensure at each stages of sanitation services
- No single perspective/aspects is responsible for unsustainability. Basically Social, environmental, technical, financial and institutional are the major dimensions of sustainability of sanitation system and services

References

- <https://www.susana.org/en/about/vision-mission/sustainable-sanitation#>
- CWIS measurement (Athena, Infonomics)
- Nepal's Third National Communication
- Second Nationally Determined Contributions 2020

Thank you!
धन्यवाद !



Government of Nepal
Ministry of Water Supply
Department of Water Supply and Sewerage Management
22/22nd Building, Panchsathi, Mahalaxmi, Kathmandu, Nepal
Phone: 22-4412744, 4112752
website: www.dwsms.gov.np

Technical Support



Environment & Public Health Organization (ENPHO)
House 17/3, Thapathali, New Bhanu, Kathmandu, Nepal
Phone: 22-224024 | Website: www.enpho.org.np

SESSION 8.1

Sustainability in Practice

Slide 1



"Citywide Inclusive Sanitation – Training of Trainer's"
CWIS Service Outcome: Sustainability in Practice
 Resource Person

Government of Nepal
 Ministry of Water Supply
 Department of Water Supply and Sewerage Management

Slide 2



This training includes 20 main technical sessions, and are currently on session 8: CWIS Service Outcome: Sustainability

Slide 3




Slide 4

Learning Outcomes

- Discuss sustainability measurement indicators in context of Nepal
- Give examples of sustainability at global and national level

Presentation Outline


- Sustainability indicators- Athena infonomics
- Sustainability criteria/ indicators and CWIS framework (linkage)
- Reasons for failure
- Interventions for sustainable sanitation facilities/ services
- Climate change and its impact
- Key Messages



Sustainability Indicators (MLE Indicators – Athena Infonomics)

Services are reliable and continually delivered based on effective management of human, financial and natural resources

- Cost recovery of service delivery system operating expenses
 - % of treated FS and wastewater that is reused
 - % of operational cost recovered for STPs/WWTPs and FSTPs (from revenue generation activities)
- Financing resources for CAPEX expansion and renewal
 - % of sanitation capital investments covered by budget line/government transfers



How can these be achieved ???

Slide 7

What is Sustainable Sanitation ?

- To qualify as sustainable sanitation, a sanitation system has to be **economically viable, socially acceptable, technically and institutionally appropriate, and protect the environment and natural resources**. It is crucial that sanitation systems are evaluated carefully with regards to all dimensions of sustainability.
(Sustainable sanitation alliance, SuSanA)

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	
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

Present the definition as per the slide and further, present the categorized meta-cards into the 5 components of CWIS framework from earlier activity (slide 16).

Slide 8

What are the reasons behind the failure of sanitation service?

<ul style="list-style-type: none"> • Equitable Sanitation Service • Safe Sanitation Service 	Service Outcomes	EQUITY	SAFETY	SUSTAINABILITY
<ul style="list-style-type: none"> • Responsible Stakeholders • Accountable Stakeholders • Proper Resource Planning and Management 	System Functions	RESPONSIBILITY	ACCOUNTABILITY	RESOURCE PLANNING & MANAGEMENT

Ask to participants to write 2 reasons in 2 different meta cards and categorize the reasons under the components of CWIS framework (except sustainability)
Inform participants to make the sanitation services sustainable, all other components of CWIS frameworks support or plays a crucial role.

What interventions can be done to make sustainable?



5 Groups
10 minutes

Based on the previous reasons – What are possible interventions to avoid the failure or to make the sanitation service sustainable?

Divide participants in 5 groups and ask to discuss in group and note down the interventions to make the sanitation services more sustainable under 5 components of CWIS Framework (Equity, Safety, Responsibility, Accountability, Resource Planning and Management)

What interventions can be done to make sustainable?

- Equitable Sanitation Service
- Safe Sanitation Service
- Responsible Stakeholders
- Accountable Stakeholders
- Proper Resource Planning and Management



Based on the previous reasons – What are possible interventions to avoid the failure or to make the sanitation service sustainable?

Divide participants in 5 groups and ask to discuss in group and note down the interventions to make the sanitation services more sustainable under 5 components of CWIS Framework (Equity, Safety, Responsibility, Accountability, Resource Planning and Management)

Slide 11



Slide 12

Equitable Sanitation Services - Case

- Discussion

An illustration showing four people—two women and two men—gathered around a table. They appear to be in a collaborative discussion, with one person pointing at a document on the table. The people are drawn in a simple, colorful style.

Ask participants on some cases as an example from their side and discuss on it

Safe Sanitation Service for Sustainability (How?)

- Easy and Comfortable PPEs
- Safe Environment
- Safe End Products from FS
- Public Health-Centered



Safe Sanitation Service - Case



myRepublica

Four suffocate to death in septic tank

CHIMBORAZO, Ecuador (AP) — Four people died on Saturday after suffocating inside an under-construction toilet tank of a house in Ecuador's highland northwestern province.



Standard Operating Procedures
for Occupational Health and Safety

SNV



Government of Odisha
Housing & Urban Development Department

garima

Standard Operating Procedures for Occupational Health and Safety

Slide 15

Responsible Stakeholders for Sustainability (How?)

- National and Province Level Policy and Guideline
- Municipal Policy and By-laws Formulation
- Job Description of individuals with clear mandate for action
- Community level awareness



संघीय लोकतान्त्रिक गणतन्त्र नेपाल
२०७२





Slide 16

Responsible Stakeholders - Case

- Jokashau regulatory framework
- Clarity in the legal framework



संघीय लोकतान्त्रिक गणतन्त्र नेपाल
२०७२




Accountable Stakeholders for Sustainability (How?)

दिसाजन्य फोहोर खोलासा फाल्ने कन्टेनरलाई एक लाख रुपैयाँ जारिवाना

काठमाडौं, २०७५/०५/०५

संकेत - काठमाडौंको फोहोर खोलासा गर्नका लागि काठमाडौं उपत्यका विकास प्राधिकरणले एक लाख रुपैयाँ जारिवाना गर्ने घोषणा गरेको छ।

काठमाडौं उपत्यका विकास प्राधिकरणले फोहोर खोलासा गर्नका लागि काठमाडौं उपत्यका विकास प्राधिकरणले एक लाख रुपैयाँ जारिवाना गर्ने घोषणा गरेको छ।

काठमाडौं उपत्यका विकास प्राधिकरणले फोहोर खोलासा गर्नका लागि काठमाडौं उपत्यका विकास प्राधिकरणले एक लाख रुपैयाँ जारिवाना गर्ने घोषणा गरेको छ।

Accountable Stakeholders - Case

- <https://www.youtube.com/watch?v=yMamiWig9Rg> (ISO project)

Slide 19

Environmental regulations – (What we have?)

- **Environment Protection Act, 2019** – Highlights pollution from industrial perspective; emphasizes **Polluter's Pay principal**
- **NS-ISO 24521 Guidelines** for Domestic Wastewater
- **National standard** for domestic wastewater effluent
- **WASH Bill**, recently approved: Fecal sludge as an integral part of wastewater management. Include wastewater testing and compliance monitoring, enforcement and penalty, and ambient quality of rivers and lakes.

Proposed National Standards for Domestic Wastewater Effluent			
Effluent Characteristics	Unit	Monthly Average Limit	Remarks
Biochemical Oxygen Demand (BOD ₅)	mg/L	50	May be modified based on receiving water quality
Total Suspended Solids (TSS)	mg/L	60	
pH	Standard Limits	6.0 to 9.0	
TSS ₂₅₀	mg/100 ml	1000	May be modified based on receiving water quality
Chemical Oxygen Demand (COD)	mg/L	-	Screen and Report only

Wastewater discharge guidelines (Ministry of Environment, 2010)

Note: the slide shows the proposed national standards for domestic wastewater effluent by technical team; however its yet to be approved.

Slide 20

Environment perspective – What we have or dont??

CONTAINMENT

- Building code mandates construction of septic tanks (during approval of building design for construction)
- Lack of awareness and norms on quality construction of septic tank

EMPTYING

Informal
No regulations in place

TRANSPORT

TREATMENT

- National wastewater discharge standards (in draft)
- Initial Environmental Examination (IEEA) not required for WW/ESM

REUSE/DISPOSAL

- No national level guidelines or standards in reuse options

Proper Resource Planning and Management for Sustainability

- Assessment of Available Resources
- Fund Collection for Infrastructure Construction and O & M
- Capacity Building for Stakeholders
- Business Plan
- Coordination with Stakeholders

(How?)

Financial Resource: Sewerage System vs. Onsite

Table 1: An example of differences in Centralized Vs. Decentralized Treatment System costs in India

Options	Capex/Capita (USD)	Opex/Capita (USD)
Sewerage collect and treatment System	48 – 650	5 – 56
Fecal Sludge Management (FSM)	8 - 30 ¹	2 - 4

Source Example Study from India BORDA, 2017

Note: Such cost benefit assessment is very important to make decision and also helps understand and plan for financial sustainability

Slide 23

Resource Planning and Management - Case

- Discussion



Ask participants on any experiences related to this.

Slide 24

References

- <https://www.susana.org/en/about/vision-mission/sustainable-sanitation#>
- CWIS measurement (Athena, Infonomics)
- Nepal's Third National Communication
- Second Nationally Determined Contributions 2020

Thank you!
धन्यवाद !



Government of Haryana
Ministry of Water Supply
Department of Water Supply and Sewerage Management
24/54A Building, Parliament, Mahatma Park, Gurgaon, Haryana, India
Phone : 011-261246, 8182161
Website : www.DWS&S.GHRI.org

Technical Support



Environmental & Public Health Organization (EPHOC)
Koyu Bldg 1, Higashi-Shinjuku, Shinjuku-Ku, Tokyo
Phone: 81-3-3344-1111 Website: www.ephoc.org

SESSION 8.2

Sustainability - Group Work



"Citywide Inclusive Sanitation – Training of Trainer's"
CWIS Service Outcome: Sustainability-Group Work
Resource Person



Government of Nepal
Ministry of Water Supply
Department of Water Supply and Sewerage Management



This training includes 20 main technical sessions, and are currently on session 8: CWIS Service Outcome: Sustainability-Group Work

Slide 3



This training includes 20 main technical sessions, and are currently on session 8: CWIS Service Outcome: Sustainability-Group Work


Slide 4

Learning Outcomes


- Interpret the situation for sustainability
- Audit initiatives taken for sustainability and determine possible interventions for sustainable services

Slide 5

Group Work



3 Groups
30 minutes



- Cases share (videos)
- Group activity
- Presentation

Slide 6

Group Exercise

- <https://www.youtube.com/watch?v=WZgT2Vwfvwc> (FSTP at Devnalli – Sustainability case study) (7:56 minutes)
- <https://www.youtube.com/watch?v=uI7z-59y5A> (Wai: A Model for Scheduled Desludging in Sanitation) (13:04 minutes)
- <https://www.youtube.com/watch?v=Xdd4b2yAkgw> (Warangal: The Model Sanitation City) (10:25 minutes)

Slide 7

Questions

- Identify the **sustainability components practiced** in the given cases? Why do you think these components contribute towards sustainability?
- Categorized each identified components as per the CWIS framework? Give the reason why?
- **Any gaps** that you identify here **to achieve sustainability**? How do you think it can be done to **fill those gaps**? (From sustainability perspective)

Slide 8

Group Presentation

References

- <https://www.susana.org/en/about/vision-mission/sustainable-sanitation#>
- CWIS measurement (Athena, Infonomics)
- Nepal's Third National Communication
- Second Nationally Determined Contributions 2020

Thank you!
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Government of Nepal
Ministry of Water Supply
Department of Water Supply and Sewerage Management
DWO/4 Building, Panchsathi, Mahanagar, Kathmandu, Nepal
Phone: 22-4412744, 4112752
website: www.dwsms.gov.np

Technical Support



Environment & Public Health Organization (EPHO)
House 10/3, Thapathali, New Bhanu, Kathmandu, Nepal
Phone: 22-222022 | Website: www.ephonp.org



Government of Nepal
Ministry of Water Supply
Department of Water Supply and Sewerage Management

DWSSM Building, Panipokhari, Maharajgunj, Kathmandu, Nepal
Phone : 01-4413744, 4418253 | website : www.dwssm.gov.np

Technical Support



Environment & Public Health Organization (ENPHO)
Adarsh Marg-1, Thapagaun, New Baneshwor, Kathmandu, Nepal
Phone : 01-5244641 | Website : www.enpho.org