



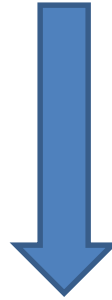
National Workshop on Non-Networked Sanitation Systems for India

(NIUA – SCBP – NCGG – AILSG)

Savoy Hotel, Mussoorie
February 27-28, 2019

Ravi Pandey,
SE, Urban Development Uttarakhand
Nodal Officer SWM & Septage Management

Non-Networked Sanitation Systems for India



Faecal Sludge/Septage Management in Hilly Towns

Context

- The National Urban Sanitation Policy (NUSP), 2008 highlights the importance of safe and hygienic facilities with proper disposal; and treatment of sludge from on-site installations.
- The MoHUA/ Ministry of Housing and Urban Affairs has come up with National Policy on Faecal Sludge and Septage Management.
- Missions such as SBM/AMRUT also specifies proper sanitation facilities and Faecal Sludge/ Septage Management in the ULBs.

Protocol for Septage Management, Uttarakhand

- To streamline FSM operations in State, **“Protocol for Septage Management”** developed in cooperation with GIZ and finalized in consultation with the stakeholders.
- The FSM Protocol for Septage Management **Notified by State Govt.** vide G.O. No. 597/IV(2)UD2017-50 (Sa)/16 dated 22nd May 2017.
- The Protocol specifies the comprehensive **programme for managing septic tanks**, bio digesters and the procedures for **desludging, transporting, treating and disposing of septic tank content/septage** in the ULBs.
- The provisions of The Protocols shall apply to the **Urban areas** under the jurisdiction of the ULBs of Uttarakhand.

Objective/Scope of Septage Management Protocol

- To provide a **regulatory framework** for construction, routine maintenance, of septic tanks and bio digesters; transportation, treatment and safe disposal of septage;
- To prescribe the **actions to be taken by the owners of the premises** connected to septic tanks/bio digesters and **septage transporters** to ensure compliance with their obligations;
- To provide for appropriate **inspection and enforcement mechanisms**;
- To **ensure cost recovery on a sustainable basis** for proper septage management;
- To facilitate **participation of private and non-Government sector** in septage management.

Institutional Framework

(Septage Management Protocol, Uttarakhand)

(1) State Level Advisory Body

(Presided by Secretary UD, Member- Secy Peyjal, Dir UDD, SPCB, Jal Nigam, Jal Sansthan, PD, SPMG, CEO, UUDHA, SE UDD)

(2) District Level Monitoring Committee

(DM, Mayor/ Chairman, Nagar Ayukta, SPCB, Jal Nigam, Jal Sanstahn, Health Dept.)

(3) Septage Management Cell at ULB level

(SDM, EO, Jal Sanstahn, Jal Nigam, SPCB, Health Dept, Expert for Tech advice)



Responsibilities of SMC

(Septage Management Cell)

- SMC is the **Executing body at ULB level** for implementation of Septage Management activities.
- To ensure the **septage/effluent** from individual or common septic tank and Bio digester is **collected and appropriately treated** before its consequential **safe disposal**.
- Power **to impose the penalty** to individual, government body or private entrepreneur to enforce the protocol.
- **Identification and registration** of individual septic tanks, Community septic tanks and Bio-Digesters

Elements of Septage Management

- Identification of individual septic tanks, bio digester, Community septic tanks/bio digester
- Collection of Septage
- Transportation of Septage
- Creation of infrastructure for treatment of Septage
- Disposal of Septage/Reuse Options
- Safety Measures
- IEC, Capacity Building and Awareness generation

Responsibilities of Owner

- The **owner of a premises** connected to septic tank shall be responsible for its **operation and maintenance**.
- The owner shall be responsible for **informing the SMC for emptying the tank**, as per the schedule provided by SMC.
- If the Bio digesters are constructed **for community septage** management, it shall be handed over to SMC for maintenance. Users shall be responsible for “User Charges” payment.

Septic Tank/ Bio Digester Construction

- The **SMC shall ensure** that the new septic tanks are designed and constructed **as per proper approved design.**
- The septic tank will be designed, as **per CPHEEO manual, 2013** and BIS standards, Indian Standard: Code of practice for installation of septic tanks (IS:2470 (Part 1) – 1985).
- **Design of Bio-Digester:** The Bio-Digesters to be constructed in accordance with the SBM (Urban) Guidelines of MoHUA

Collection of Septage/De Sludging of Septic Tanks

- De-sludging of tanks will be done once every **two to three years** as per SMC.
- The SMC shall decide the time of cleaning of Septic Tanks etc. and shall provide the owner a **schedule**.
- The de-sludging shall only be carried out by the **septage transporters registered** and authorized by SMC.

Transportation of Septage

- **Registration:** The SMC shall register and issue license to private entrepreneurs having motorized/mechanized emptying and transport vehicles.
- **Renewal of registration:** The application for renewal at least three months before the expiry of registration.
Every renewal granted under these Regulations shall be for a period not exceeding three years.

Disposal of Septage

- SMC shall designate the location for disposal/ treatment of septage collected.
- The septage transporter shall be responsible for safe transport of vehicle to the approved treatment facility.
- The disposal of the collected septage has to be done either in the existing STP (as co-treatment) or in a new treatment facility for Septage.

Treatment of Septage

- Each ULB shall have its own treatment unit, If there **already exists any STP within 25 km distance**, the septage shall be transported to the nearest STP.
- This treatment unit may be single or multiple based on urban population, existing provisions for sewage treatment etc.. The **different methods for Septage treatment as per CPHEEO Manual on Sewerage, 2013**
- The STPs/septage treatment facility shall be constructed by Uttarakhand Peyjal Nigam or any other agency as directed by the Govt. And the maintenance shall be carried-out by Uttarakhand Jal Sansthan or any other agency.
- It shall be promoted to engage private partners for construction and maintenance of STP/SeTP.

Monitoring

- District Level Monitoring Committee will monitor all the ULBs/SMCs within the District.
- The SMC will keep all the records related to septic tank numbers, size, schedule of emptying, O&M manuals, due date etc.
- Pollution Control Board to also monitor the compliances

User Charges

- All owners of septic tank shall pay a user charge for the desludging of their septic tanks and treatment of the septage, as notified by the SMC from time to time.
- The SMC shall revise the charges based on revisions in costs involved from time to time. Such user charges shall include cost of de-sludging, transportation, treatment and disposal.
- The SMC may authorize any person including septage transporter to collect user charges from the owners of the premises connected to a septic tank.

Safety Measures

- The desludging shall be carried out using appropriate technology, equipment, safety gear and using operating practices which are in compliance with the CPHEEO Manual 2013. Safety measures are:-
 - (a) all desludging workers **wear appropriate personal protective** as specified in the Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013;
 - (b) all the **safety equipment are operational** before proceeding to a collection site;
 - (c) all **de-sludging workers are trained** to use the safety gear and on hygiene practices;
 - (d) **first aid kit, gas detection lamp and fire extinguisher** are kept in the vehicle before it goes to the collection site;
 - (e) **smoking shall be prohibited** while working at septic tank;
 - (f) desludging workers shall **never enter septic tank** and shall ventilate the covered tanks by keeping them open for sufficient period before starting the operation;
 - (g) **children are kept away** and tank lids are always secured with screws and locks. The workers shall be cautious while performing desludging process as excessive weight on lid or manhole cover may result breakage;



IEC and Capacity Building

- Awareness program for **individuals, institutions or private entrepreneur** about the proper construction technology of septic tanks, bio digesters, de-sludging of septic tanks, collection mechanism, transportation, disposal and the treatment of septage.
- Regular **handholding of the staff** shall be done for monitoring of different activities for proper management of Septage.

Progress Made in Uttarakhand

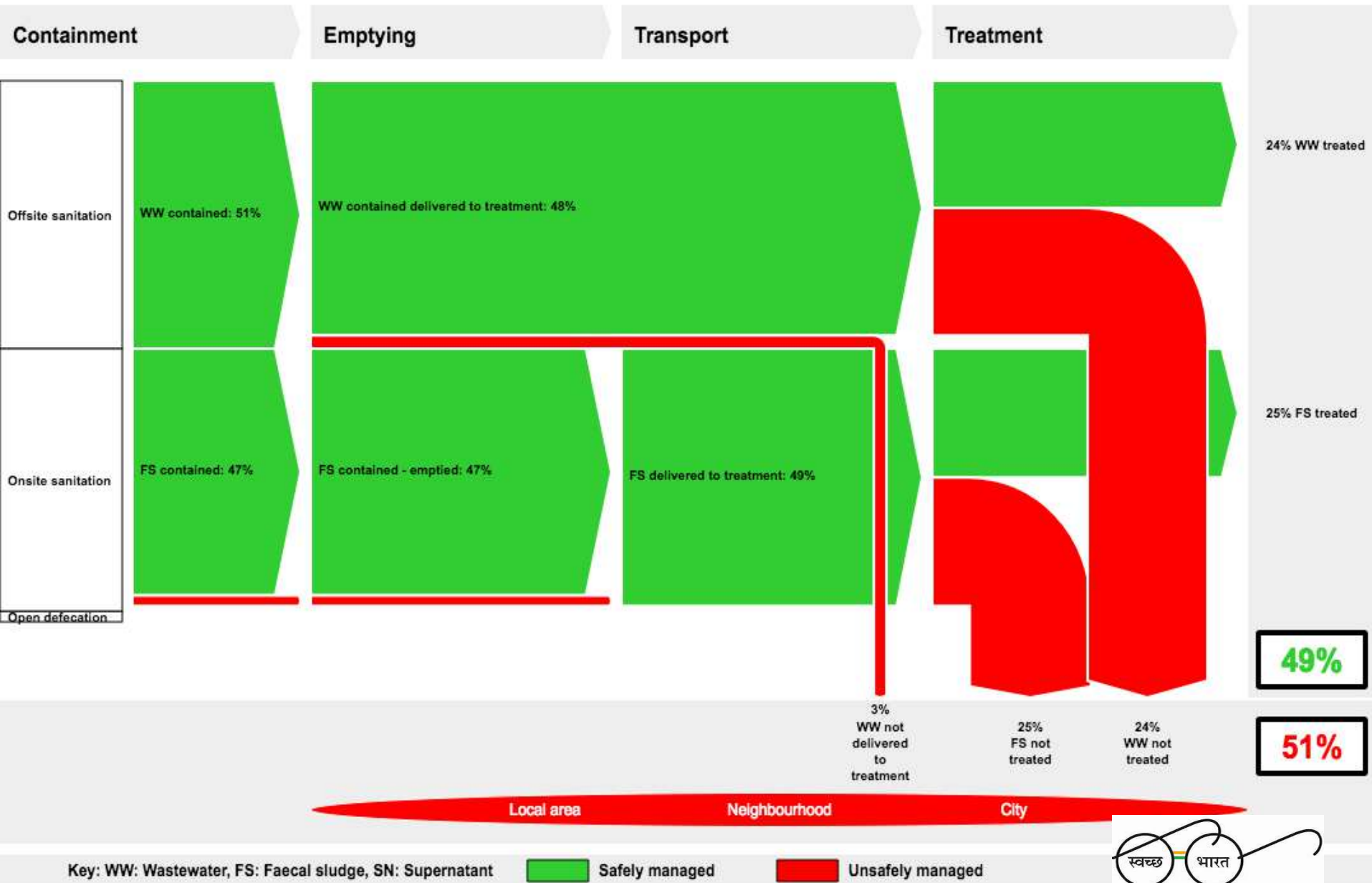
- **SMCs formed in cities** and its regular meetings being done.
- Presently **Municipal Corporation Rishikesh** and **NPP Chinyalisaur** has convened the SMC meetings and decision regarding fixing responsibilities of all stakeholders.
- Already NPP Chamba has started the **collection, transportation and treatment of Septage on STP Tehri with User Charges of Rs. 10000 per trip,** Rs. 9000 for Emptying, transportation Rs. 1000 for treatment of 5000 lts.
- **Feasibility assessment has been done for Rishikesh.** Sanitation Flow Diagram (SFD) in cooperation with GIZ has been done.
- DPR for **Septage Management Treatment Plant 125 KLD in Rudrapur under AMRUT** has been prepared with technical support from GIZ.
- Presently **GIZ is supporting** the implementation of Septage Protocol **in Ganga towns.**

Progress Made in Uttarakhand

- For **Faecal Sludge Management Assessment Study**, **MoU has been signed with NIUA** for five towns in 1st Phase
 - NPP Pithoragarh
 - NPP Jaspur
 - NN Rudrapur
 - NPP Tehri
 - NP Chinyalisar
- For **Co treatment with existing** STP of Ganga Towns, directions has been issued to all ULBs and for dilution and **for load of septage per day**, study has been initiated by SPMG.

Co Treatment Options

<u>Existing STP</u>		<u>Capacity in MLD</u>
• Dehradun	-	68+20 MLD
• Jagjeetpur Haridwar	-	18 +27 MLD
• Sarai, Haridwar	-	18 MLD
• Lakarghat, Rishikesh	-	6MLD
• Swargashram	-	3 MLD
• Tapovan	-	3.5 MLD
• Devprayag	-	1.4 MLD
• Srinagar	-	3.5 MLD
• Uttarkashi	-	2.0 MLD
• Gangotri	-	1.0 MLD



49%

51%



Septage Treatment Project: Rudrapur

Project Overview

Project	Design, Construction and O&M (5 years) of 125 KLD Septage Treatment Plant in Rudrapur (Uttarakhand)
Funding	AMRUT (90% Centre + 10% State)
Main stakeholders	<ul style="list-style-type: none">Uttarakhand Urban Development Directorate/Rudrapur Nagar NigamUttarakhand Peyjal Nigam/PIU AMRUT, Kashipur Division, Jal Nigam
Technical Support Provider	German Development Cooperation (GIZ)
Design Population	2,00,279 (Design Year-2029)
Discharge standards / Enduse	<ul style="list-style-type: none">The waste-water will be treated as per CPCB discharge standardsThe sludge will be reused as soil conditioner in agricultural fields
Project cost	Approx. Rs. 8.5 Crore (including 5 years O&M)
Proposed Technology	Anaerobic Digestion followed by aeration
Pre Feasibility Assessment	Pre Feasibility Assessment conducted by GIZ in coordination with Nagar Nigam & Jal Nigam
Current Status	DPR prepared, Currently under tender stage



User Charges Collection: Chamba

31/09/2018 How Tehsil संस्थान

दिनांक 0-TE/483 TE 6716210¹⁰

0-TE/483

नगर पालिका सं नगर पालिका परिषद की अर्वादि सं तक
 श्री/श्रीमती चम्बा गाह
 पता

जल मूल्य	जल कर	सीवर कर	सीवर शीट	अन्य प्राप्ति	जमा राशि (रु०)
	0.00	0.00		1000.00	1,000.00

बिल सं० 0-TE/483/82018/Sale
 OF Water दिनांक 31-09-2018
 जमा राशि / 1,000.00 Cash की सिवेट राशि
 शब्दों में ONE THOUSAND द्वारा प्राप्त हुई

बकाया राशि 0.00
 अतिरिक्त जमा राशि 0.00

वसिष्ठ तेलकपिकारी अभिमुख हस्ताक्षरकर्ता

नोट - बैंक द्वारा भुगतान की वशा में जारी रसीद बैंक केंद्र होने पर ही वैध होगी।

उपयुक्त नमययक आपका मायालय पत्र
 संख्या:-833-36/टी०एच०डी०सी०इ०लि०/दिहरी/उ.म.प्र/वी०सी०एम०/एफ-/2018 /835-36
 दिनांक-31-09-2018 को सत्यापित होना चाहिए।

Collection of Septage: Chamba



Co Treatment of Septage in STP



THANK YOU

