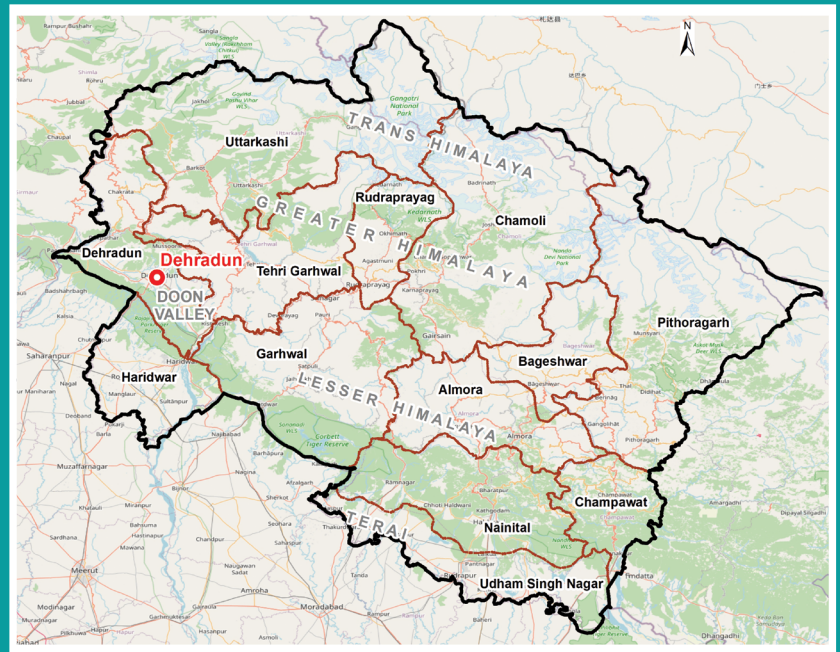
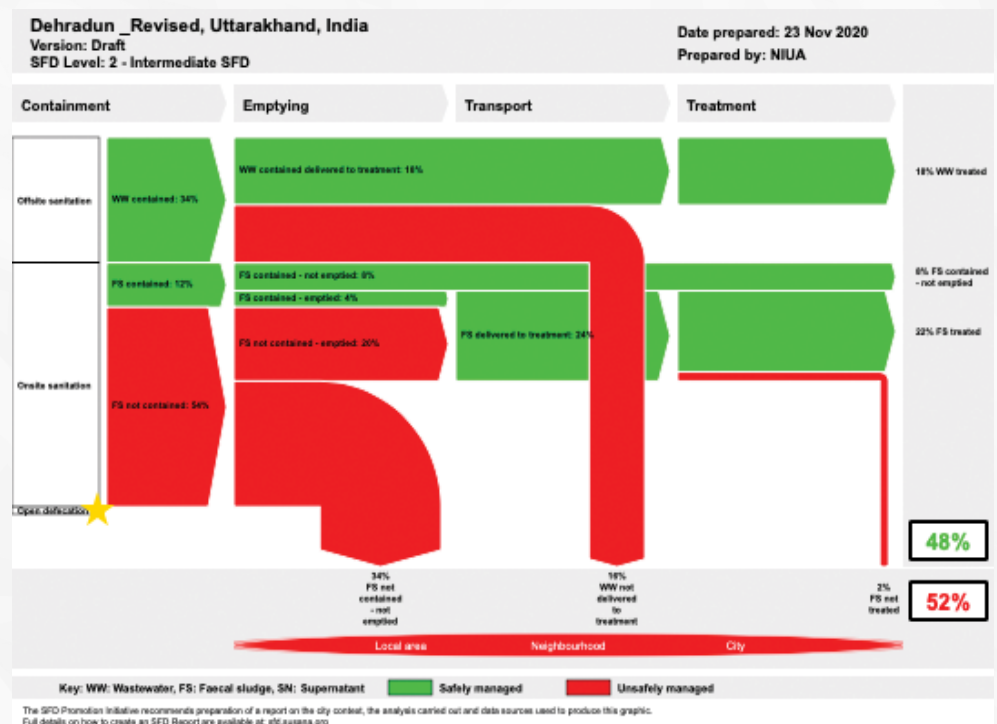


# Dehradun

Dehradun is the capital of the Indian state of Uttarakhand located near the Himalayan foothills. The city is governed by Municipal Corporation which comes under Dehradun Metropolitan Region, Uttarakhand.



<p>Population <b>8,04,379</b></p>	<p>Households <b>1,67,577 HHs</b></p>
<p>No. of Wards <b>100 wards</b></p>	<p>Municipal Area <b>100 sq. km</b></p>
<p>Local Govt <b>Municipal Corporation</b></p>	<p>Septage Management Cell <b>Yes</b></p>



SFD level 2 : Intermediate SFD (SFD Promotion Initiative, 2015)

## Overview of Septage Management



**34% of sewerage network** spread across 6 zones



**On-site sanitation (OSS)** systems mainly comprising of septic tanks



Desludging frequency  
**5 - 8 years**



Capacity of desludging vehicles  
**4000 to 6000 litres**



Average cost of desludging for a household  
**₹ 3000**



Wastewater treatment through **7 STPs**  
(Total capacity: 150 MLD; 34% utilization)

# Case study – Co-treatment of Faecal Sludge and Septage in STP at Kargi Chowk, Dehradun

- Capacity of STP **68 MLD**

- Type of treatment technology **Sequential Batch Reactor (SBR)**

- Current flow of sewage **≈ 20 MLD**

As per Jal Sansthan data on April 2020

## Rationale behind Co-treatment at Kargi Chowk STP

- Available capacity for sewage **48 MLD**

- Number of trucks discharging faecal sludge and septage\* **25 to 30 (during weekdays) and 40 (during weekends)**

- FSS collected **100 to 200 KLD**

As per Jal Sansthan data on April 2020

\*Seasonal variation in FSS collection – 6 to 7 average number of trucks

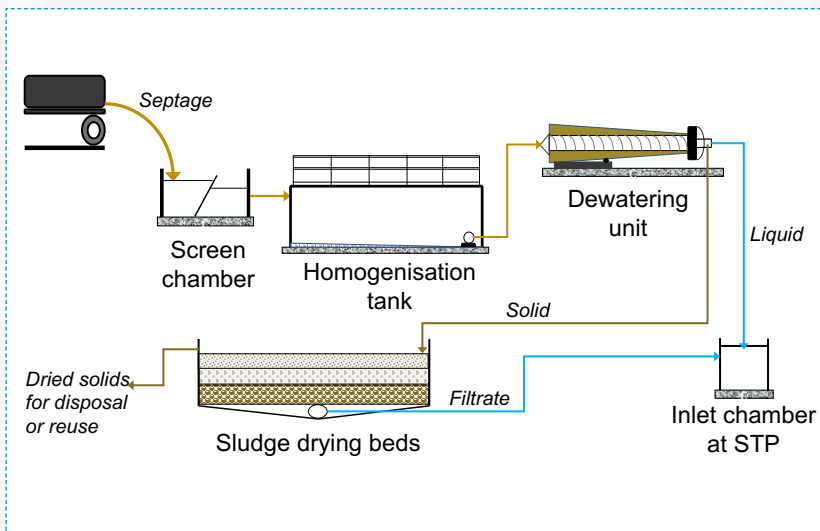
## Issues faced during Co-treatment trials

- High SS concentration** in aeration basin of STP

- Rise in **odor nuisance** within the STP premises

- Excess quantities of **fat, oil, and grease**

As per Jal Sansthan data on April 2020



Proposed line flow diagram for co-treatment facility suggested by NIUA at Kargi Chowk STP



Current practice of direct discharge of FSS at inlet pumping station at Kargi Chowk STP

## Recommendations by NIUA

- Systematic manner** of receiving faecal sludge and septage at the inlet of STP
- Solid-liquid separation** of incoming FSS using spare units in the STP
- Liquid stream** to be mixed with incoming sewage at the STP
- Solid stream** to be dewatered using centrifuge and sludge drying

## Faecal Sludge and Septage Co-Treatment Design Guidebook

Design Recommendations for Co-Treatment of Faecal sludge and Septage with Sewage, at Kargi Sewerage Treatment Plant, Dehradun

MAY 2020



Report from NIUA giving the design recommendation for co-treatment and feasibility at Kargi Chowk STP, Dehradun

## Co-Treatment Feasibility (Septage with Sewage)– Dehradun, Uttarakhand

(ADB supported Banjarawala, Mothrawala and Raipur Sewerage projects)

10<sup>th</sup> JULY 2020

Prepared For Uttarakhand Urban Sector Development Agency(UUSDA)



To access the above reports click the links below:

[FSS Co-treatment Design Guidebook](#)  
[Co-treatment feasibility in Dehradun Uttarakhand](#)



Sanitation Capacity Building Platform



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National Institute of Urban Affairs

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