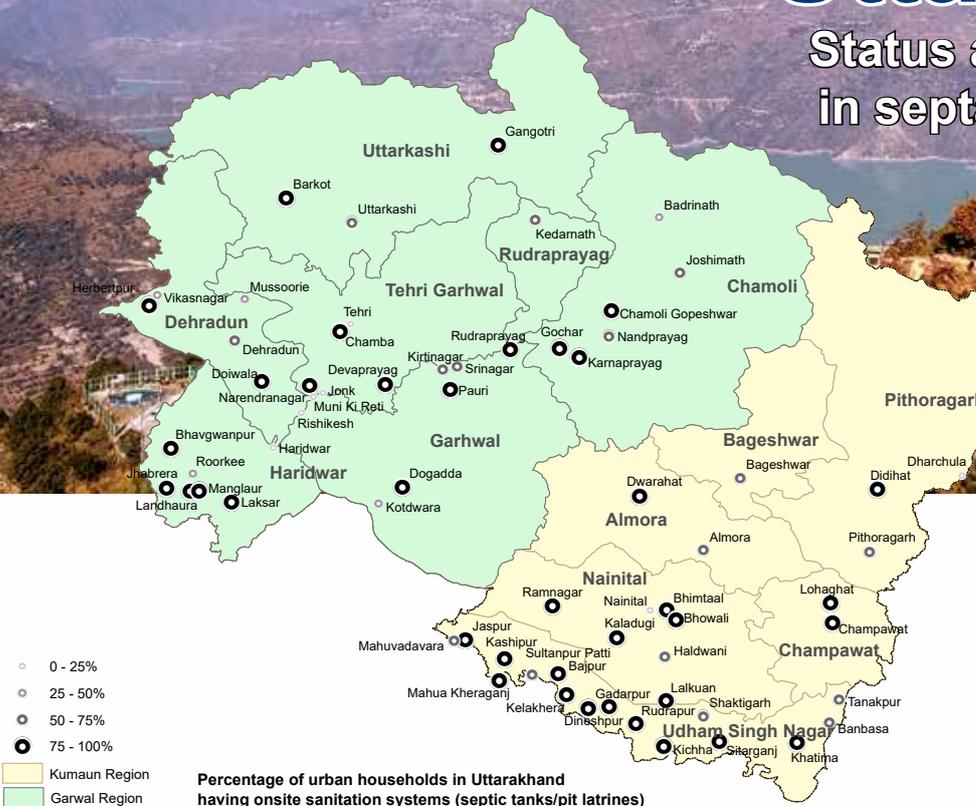


Urban Uttarakhand

Status and opportunities in septage management



78% septage remains untreated in Uttarakhand and disposed off without any treatment endangering the natural environment as well as human health.

Urban population^a
30.5 lakhs
 (30.2% of total population of state)

Urban local bodies^b
90
 Nagar Nigam (8)
 Nagar Palika Parishad (41)
 Nagar Panchayat (41)

Percent hilly area^c
86%
 9 out of 13 districts are hilly and pose a significant challenge to Septage Management

Faecal sludge generation^d
722 KLD

Current treatment through STPs^d
158 KLD
 (22%)

| Septage generation | No. of ULBs |
|--------------------|-------------|
| Below 4 KLD | 53 |
| 4 to 10 KLD | 22 |
| 10 to 50 KLD | 12 |
| Above 50 KLD | 3 |

Total STP^e capacity
288 MLD

Utilised STP capacity^e
116 MLD
 (60% unutilised)

Except **Tehri Garhwal** and **Haridwar** which have high piped sewer coverage, all other districts are largely served by septic tanks

Challenges

- Smaller towns are completely dependent on septic tanks
- Limited service provisions for desludging septic tanks
- Limited land availability for setting up septage treatment facility
- Laying of sewer lines in the towns at higher altitude with steep gradient
- Lack of financial resources within the ULBs

MLD - Million Litre Per day
 KLD - Kilo Litre Per day

Source: a. GOI (2011). Census of India 2011. Household Table. Registrar General and Census Commissioner of India, Ministry of Home Affairs, New Delhi, India. b. Directorate, Government Of Uttarakhand, <http://udd.uk.gov.in/>, 2018. c. State Horticulture Mission, Government of Uttarakhand, <http://shm.uk.gov.in/pages/display/6-state-profile>, 2019 d. Total faecal sludge generation was calculated by multiplying population of all households as on 2018 with 76.25 - the faecal sludge generated in litres/capita/year (as per ISO:2470). e. Uttarakhand Peyjal Nigam and Jal Sansthan data.

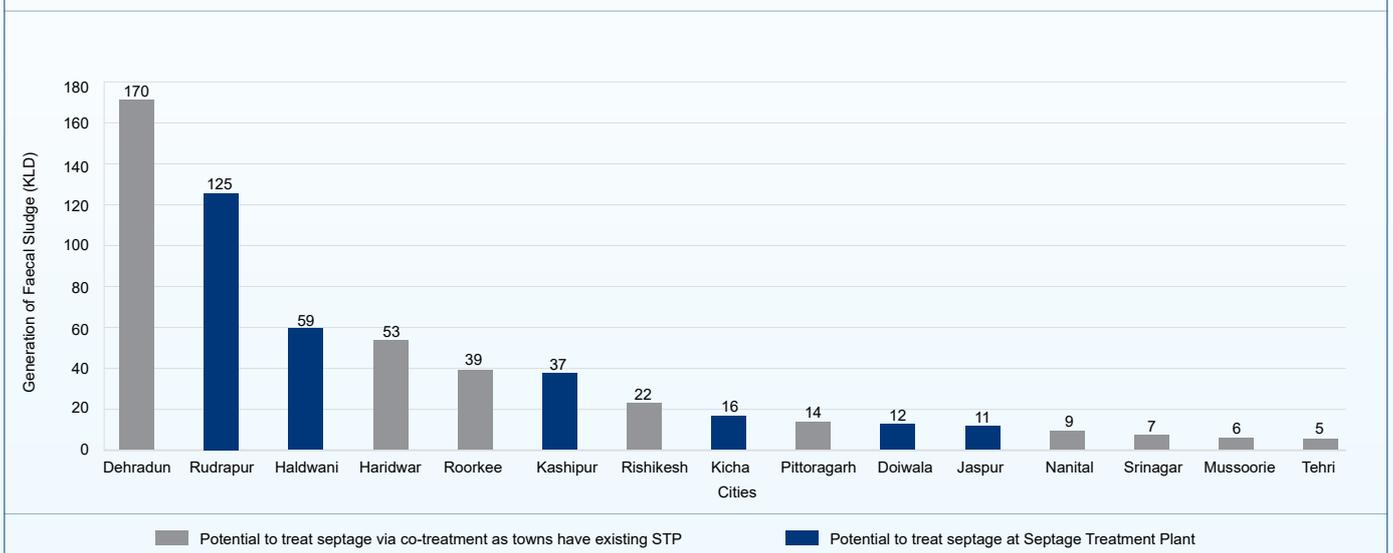
Sewage Treatment Plants (STPs), Uttarakhand, 2018



Note: STPs highlighted in blue shows higher potential for co-treatment of septage due to under utilized STPs.

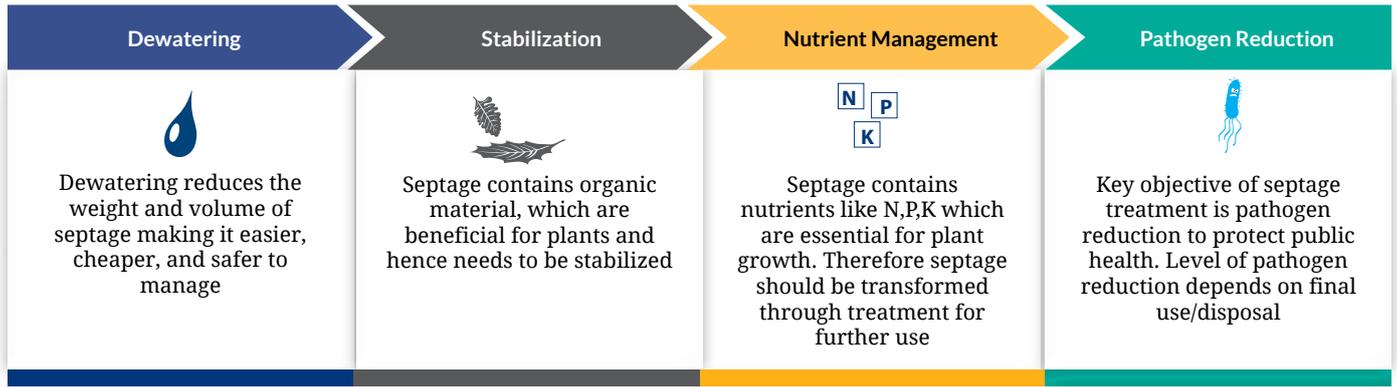
- 80% of Uttarakhand's total sewage treatment plant capacity caters to Dehradun, Rishikesh and Haridwar
- 9 cities mentioned below could explore co-treatment of septage at sewage treatment plant
- 6 cities could treat their septage via septage treatment plant
- 55 towns with septage generation less than 4 KLD need alternative septage treatment solution

Septage generation in various towns of Uttarakhand



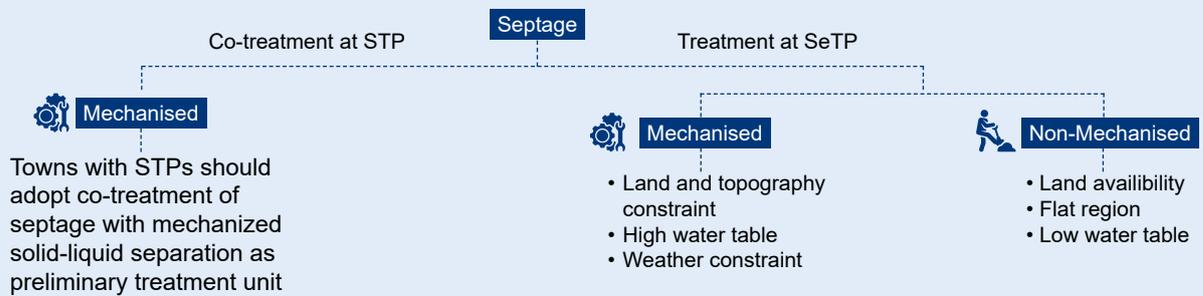
Objectives of treatment

To reduce the pathogens to a safe level and to recover resources from the septage.



Treatment options for Septage in Uttarakhand

The diagram depicts how septage can be treated in ways that are best suitable for the context of Uttarakhand.

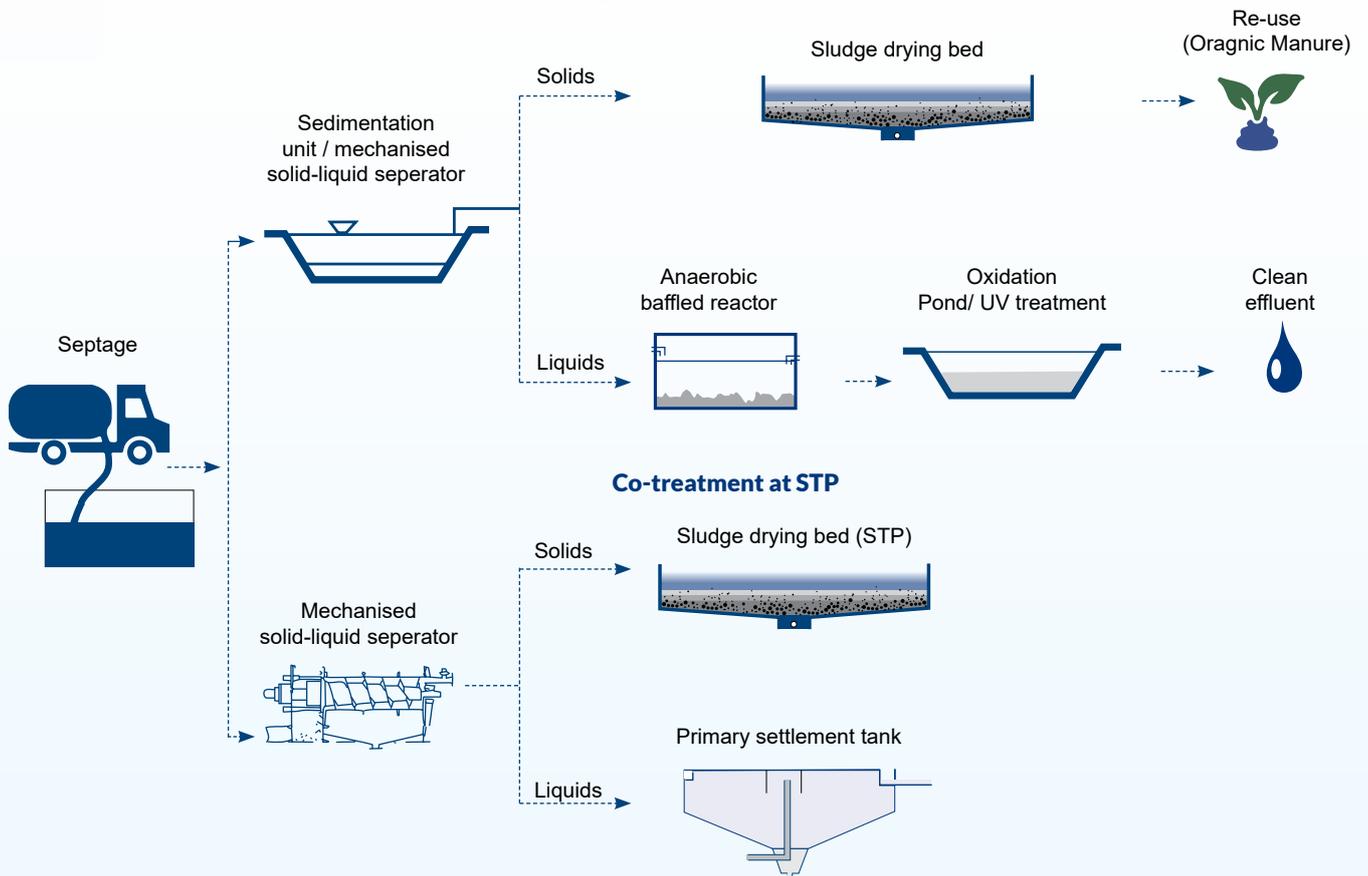


2 MLD (84%)

10 MLD (70%)
0.45 MLD (44%)
0.8 MLD (41%)
5 MLD (66%)

ni - 28 MLD (0%)

Septage Treatment Plant (SeTP)



Operationalising septage management in Uttarakhand

- Protocol for septage management notified in May 2017
- State septage management committee (NIUA supported) established in August 2019

State Level Advisory Body/ State Septage Management Committee

State Septage Management Committee

- Secretary, UDD: Chair
- Secretary, Peyjal Uttarakhand : Co-chair
- Director, UDD
- Managing Director, Peyjal Nigam
- Chief General Manager, Jal Sansthan
- NIUA representative

Technical Guidance on Co-treatment, SeTPs & Deep Row Entrenchment

Septage Protocol Rollout to ULBs/Parastatal

Investment Plan

Capacity Building Approach

Assessment

Implementation

District Level Monitoring Committee

Septage Management Cell at ULB level

- Executive body at ULB level for implementation
- Ensures the septage/effluent from individual or common septic tank and bio-digester is collected and appropriately treated before its safe disposal
- Power to impose 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

Protocol for Septage Management



Provides regulatory framework for construction, routine maintenance of septic tanks and bio digesters; transportation, treatment and safe disposal of septage



Prescribes 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



Provide for appropriate **inspection and enforcement mechanisms**



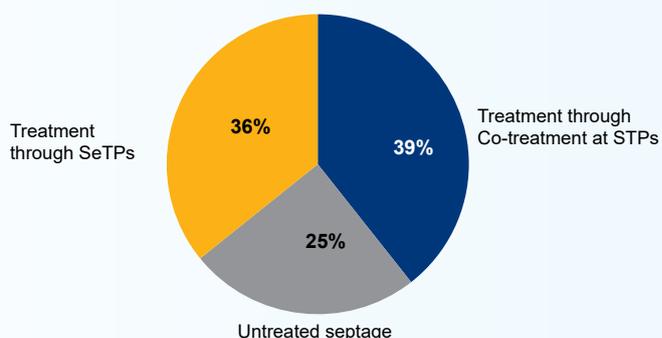
Ensure cost recovery on a sustainable basis for proper septage management



Facilitate participation of private and non-government sector in septage management

Septage Treatment Potential via Co-treatment at STPs and SeTPs in Uttarakhand

- Out of 722 KLD of septage generated only 158 KLD is currently treated
- Unused STP capacity can be used to treat faecal sludge/septage which will increase the treatment coverage by 25-30% taking the treatment coverage to 286 KLD in Uttarakhand
- Treatment of septage via SeTPs will further increase the treatment capacity in Uttarakhand by 260 KLD (36%)



Sanitation Capacity Building Platform



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उत्तराखण्ड शासन