

वैचारिकी VAICHARIKI

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जनवरी-जून, 2025



Dr. R. S. Tolia Uttarakhand Academy of Administration,
Nainital

कॉपीराईट : डॉ० आर० एस० टोलिया उत्तराखण्ड प्रशासन अकादमी, नैनीताल, 2023

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वैचारिकी डॉ० आर० एस० टोलिया उत्तराखण्ड प्रशासन अकादमी, नैनीताल द्वारा प्रकाशित अर्द्धवार्षिक पत्रिका है। वैचारिकी में लेख तथा समीक्षाओं आदि के विषय में पत्र व्यवहार सम्पादक, वैचारिकी, डॉ० आर० एस० टोलिया उत्तराखण्ड प्रशासन अकादमी, नैनीताल – 263001 से करें।

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सम्पादक

प्रस्तावना

उत्तराखण्ड शासन द्वारा 'डॉ० आर० एस० टोलिया उत्तराखण्ड प्रशासन अकादमी, नैनीताल' को राज्य के शीर्षस्थ संस्थान के रूप में मान्यता प्रदान की गई है। अकादमी द्वारा वर्तमान समय में उत्तराखण्ड राज्य में प्रशिक्षण के माध्यम से ज्ञान, कौशल एवं गुणवत्ता विकास हेतु निरन्तर प्रयास किये जा रहे हैं। मुझे यह सूचित करते हुए हर्ष हो रहा है कि, उत्तराखण्ड शासन की प्राथमिकताओं एवं जन सामान्य की अपेक्षाओं की पूर्ति हेतु उत्तराखण्ड राज्य में कार्यरत अधिकारियों एवं कार्मिकों को कार्यक्षेत्र में दक्ष बनाने के उद्देश्य के साथ अकादमी में आयोजित किये जाने वाले क्षमता विकास कार्यक्रमों व अन्य गतिविधियों को तदनुसार निरन्तर बेहतर किए जाने के प्रयास अकादमी स्तर पर किये जा रहे हैं।

'वैचारिकी' पत्रिका डॉ० आर० एस० टोलिया उत्तराखण्ड प्रशासन अकादमी, नैनीताल की मुख्य अर्द्धवार्षिक पत्रिका है। 'वैचारिकी' पत्रिका का खण्ड 04 अंक 01 आपके सम्मुख प्रस्तुत करते हुए मुझे अत्यन्त हर्ष का अनुभव हो रहा है। यह अंक शहरी विकास मुद्दों एवं उनके प्रबंधन के सम्बन्ध में अत्यन्त महत्वपूर्ण है। इस अंक में अकादमी द्वारा किए गए दो मुख्य कार्यों से सम्बन्धित लेखों को शामिल किया गया है। पहला, अकादमी द्वारा उत्तराखण्ड के 06 शहरों— नैनीताल, हल्द्वानी, चम्पावत, अल्मोड़ा, मसूरी एवं पौड़ी के समक्ष आने वाली जल, ठोस अपशिष्ट प्रबंधन एवं यातायात व्यवस्था की चुनौतियों पर एक शोध अध्ययन किया गया, जिसमें वर्तमान स्थिति, मुद्दों और चुनौतियों का विश्लेषण किया गया। दूसरा, अकादमी द्वारा "Innovative Solutions and Strategies for Sustainable Development in Himalayan and Hilly Towns" विषय पर दो दिवसीय कॉन्क्लेव आयोजित किया गया, जिसमें विभिन्न विशेषज्ञों द्वारा उत्तराखण्ड में शहरी विकास संबंधी नवाचार गतिविधियों को प्रस्तुत किया गया।

अतः उपरोक्त दो गतिविधियों से सम्बन्धित लेखों को इस अंक में सम्मिलित किया गया है। हमें पूर्ण विश्वास है कि यह पत्रिका राज्य के शहरी क्षेत्रों में कार्यरत सभी कार्मिकों एवं अन्य पाठकों के लिए अत्यन्त उपयोगी सिद्ध होगा। इस अंक के बारे में अपने सुझावों से अकादमी को अवश्य अवगत करायें। आपके सुझावों का स्वागत है।

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महानिदेशक,

डॉ० आर० एस० टोलिया उत्तराखण्ड प्रशासन अकादमी, नैनीताल

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I	Blueprint for Urban Renewal: A Study of Six Towns of Uttarakhand (Nainital, Champawat, Almora, Pauri, Mussoorie and Haldwani-cum-Kathgodam) B. P. Pandey, Director General, DRSTUAoA, Nainital Dr. Mahesh Kumar, Joint Director, DRSTUAoA, Nainital Manoj Pande, Program Director, SIUD, DRSTUAoA, Nainital	1-71
	Introduction to the Study	2-6
	Nainital	7-17
	Champawat	18-27
	Almora	28-37
	Pauri	38-47
	Mussoorie	48-58
	Haldwani cum Kathgodam	59-69
	Conclusion	70
	Bibliography	71
II	Kedarnath's Successful Plastic Waste Management Initiatives: Leading the Way for Sustainable Tourism Jitender Verma, Sub District Magistrate, Dharchula, Pithoragarh, Uttarakhand	72-76
III	Best / Innovative Practices uxj vk; [æ] uxj fuxe] ngjknw] gY}kuh , oa: ni g vfe'kk l h vfedkj] uxj ikfydk ifj'kn]- T; ksrzB , oackxsoj vfe'kk l h vfedkj] uxj ipk; r] ykydqka	77-106
	ifjp;	77
	'lgjh (le- eai ; løj.k I jek gsrqildh LFkiuk <ul style="list-style-type: none"> • xk/kh ikd] uxj fuxe] ngjknw • l hkk'k ikd] uxj fuxe] gY}kuh 	77-80

	<p>ođV VwošFk</p> <ul style="list-style-type: none"> ešhfj; y fjdojh Qđl fyVh] uxj ikfydk ifj"kn] T; křržB ođV VwoMI Zyđl] uxj fuxe] : niđ 	81-87
	<p>I lefgd I gHfřrk</p> <ul style="list-style-type: none"> cđkh I sđk }kjk Mksj VwMksj I đk, ř uxj fuxe] gY}kuh Lo; a l gk; rk I eđ }kjk LoPNrk I đk, ř uxj ikfydk ifj"kn]- cksđoj jkT; đk iq "k Lo; a l gk; rk I eđ đk vkRefuHk] e,My] uxji pk; r] ykyđqka 	88-105
	<p>fu"đ'k</p>	106
IV	<p>ušřky tuin dsxřek {le-le}leuxj dstkřhřk , oavkMk eYyřk dstykřř; křukřeaty thou fe'ku dsvřřř mřjkřđl dk igyk IoT vřkřřř I đj ik; yV iktđV fo'kky I Dl sđk] v/kř{k.k vřřk; Urk] ty I đ.Fkkuj gY}kuh</p>	107-110

Blueprint for Urban Renewal: A Study of Six Towns of Uttarakhand (*Nainital, Champawat, Almora, Pauri, Mussoorie, and Haldwani-cum-Kathgodam*)

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A research study was undertaken by the State Institute of Urban Development (SIUD), Dr. R. S. Tolia Uttarakhand Academy of Administration, Nainital, in collaboration with the School of Planning and Architecture (SPA), New Delhi on six towns of Uttarakhand namely Nainital, Champawat, Almora, Pauri, Mussoorie, and Haldwani-cum-Kathgodam, examining three critical urban sectors: Solid Waste Management, Water Supply & Availability, and Urban Transport & Parking. It identifies prevailing challenges and proposes actionable solutions, each tailored to the unique geographical and socio-economic context of the respective towns. These towns were strategically selected to represent the diversity of urban typologies across the state, ranging from tourism-driven centers to administrative hubs and commercial gateways. This comprehensive blueprint provides a cohesive overview of the research study undertaken, providing valuable insights for fostering sustainable and resilient urban development in Uttarakhand's rapidly evolving urban landscape.

1. Introduction to the study

The broad focus of the research is to analyse and understand the current situation and the issues related to the Municipal Solid Waste Management (MSWM), Water Availability and Supply, and Urban Transportation and Parking in selected towns of Uttarakhand Viz. Nainital, Champawat, Almora, Pauri, Mussoorie and Haldwani-cum-Kathgodam. The objectives of the Research Project are shown in Figure below.

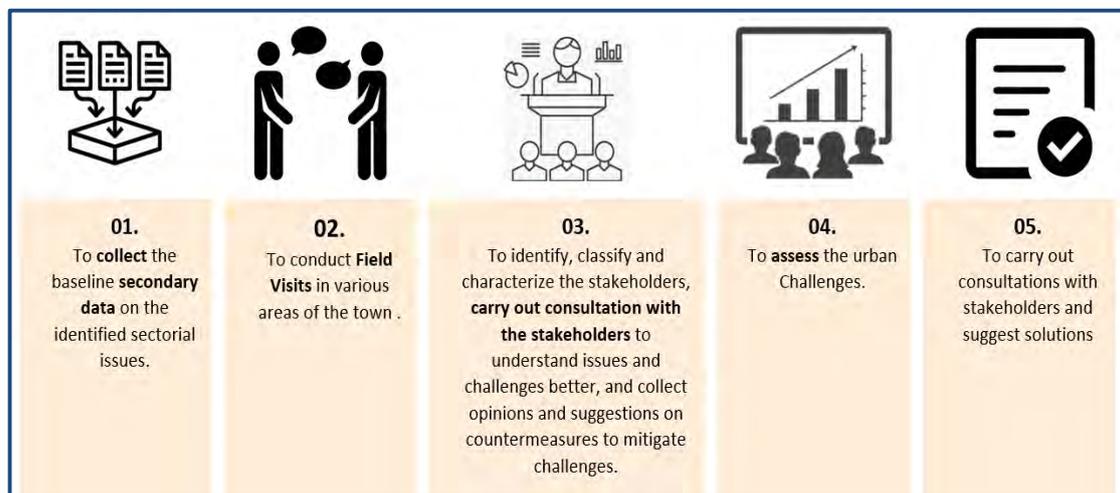


Figure 1: Objectives of the Research Project

1.1. Methodology

The Research Study Methodology is divided into four stages namely Stage-01, Stage-02, Stage-03 and Stage-04. Stage-01 consists of the Need of Study, the Objectives defined and the Scope of Work. Stage-02 consists of Literature Study and Data Collection for the Research Project for the parameters mentioned in the Scope of Work. Stage-03 consists of the Data Analysis based on the Major Findings and Issues and the final Stage-04 consists of the possible solutions and suggestions for improvement along with appropriate recommendations based on the previous stages

and brainstorming sessions with the stakeholders of all towns in the Pre Study as well as the Post Study Workshops.

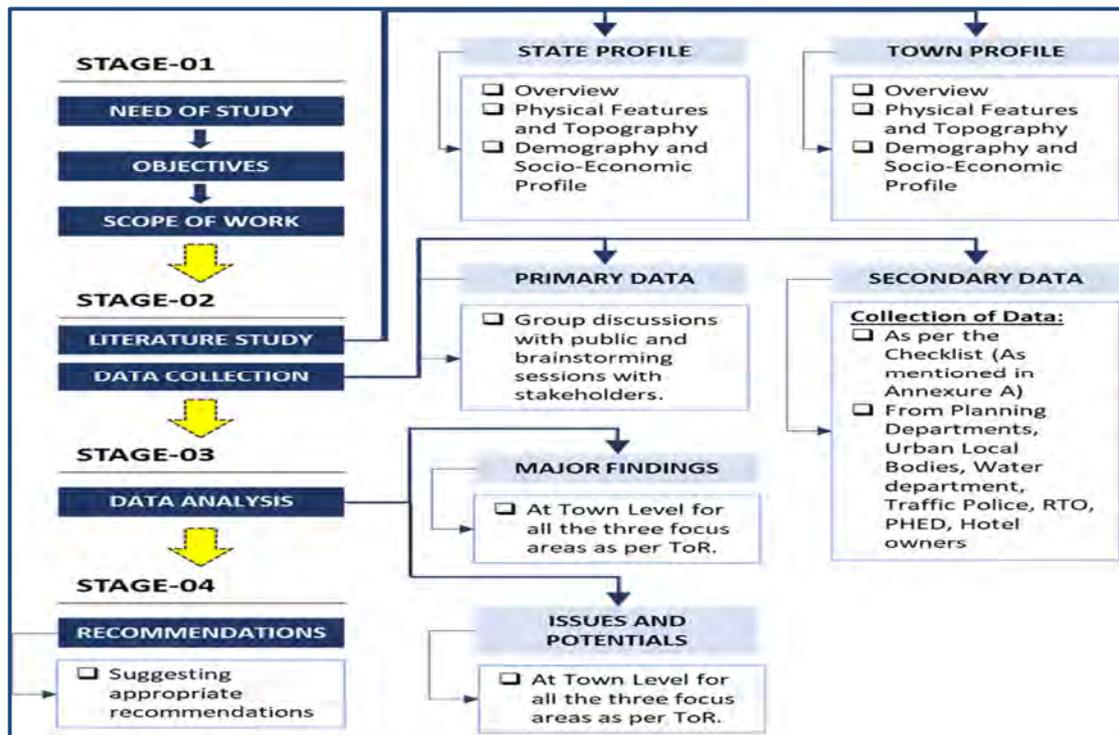


Figure 2: Methodology for the study

1.2. About the State

1.2.1. Geographic and Environmental Context

Uttarakhand, located in northern India, is a Himalayan state known for its mountainous terrain, rich biodiversity, and religious significance. Bordered by Himachal Pradesh to the west, Uttar Pradesh to the south, China to the north, and Nepal to the east, Uttarakhand spans a geographical area of 53,483 square kilometers. It is divided into 13 districts, and topographically into two broad regions: Garhwal and Kumaon.



Figure 3: Map of Uttarakhand

Approximately 86% of the state's land area is mountainous, while about 64% is covered by forests, making it an ecologically fragile yet resource-rich region. The state is the source of many major rivers, including the Ganga and Yamuna, and has several important glacial lakes and natural springs. However, the terrain also makes infrastructure development and service delivery challenging, especially in remote areas.

1.2.2. Demographic and Socio Economic Profile

As per the 2011 Census, Uttarakhand's population stood at 10.08 million, with a decadal growth rate of 18.8% slightly above the national average. Out of the total urban population of 30% i.e.30,49,338, 53% (16,18,731) is the male population and 47% (14,30,607) is the female population.

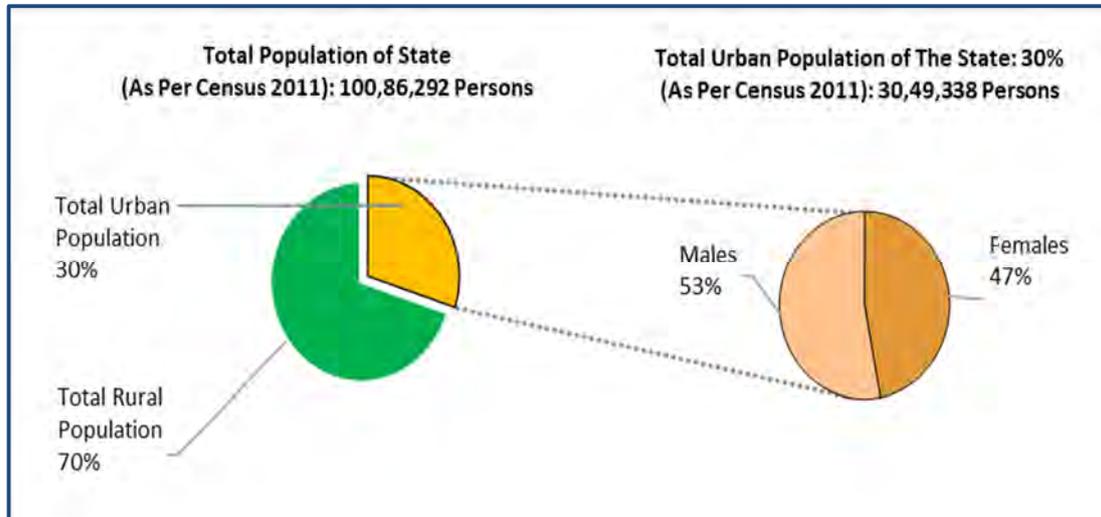


Figure 4: Population-Split of Uttarakhand (Census 2011)

The Urban Area of Uttarakhand has an Average Literacy Rate of 84.45% which is higher than the Average Literacy Rate of the state i.e. 78.82%. The urban area has an average sex-ratio of 884 females over 1000 males which is lower than the average sex-ratio of the state i.e. 963 females per 1000 males.

Religiously, the state is predominantly Hindu (over 82%), but it also has Muslim (13.9%) and Sikh (2.3%) minorities. Languages spoken include Hindi (official), Garhwali, Kumaoni, Urdu, Punjabi, and Nepali, reflecting a culturally diverse populace. As per Census 2011, 38% of Uttarakhand's population is working, with 74% as Main Workers of whom 36% are cultivators and 52% engaged in other non-agricultural activities.

Uttarakhand's economy has diversified since its formation in 2000. It now ranks among the better-performing hill states in India, with a Gross State Domestic Product (GSDP) of approximately ₹3.3lakh crore (2023–24). Key economic drivers include hydropower, horticulture, tourism, pharmaceuticals, and small-scale industries.

1.2.3. Urbanization Trends and Challenges

Urbanization in Uttarakhand is uneven and concentrated in specific nodes like Dehradun, Haldwani-cum-Kathgodam, Haridwar, Roorkee, and Nainital. These towns serve as gateways to the hills and pilgrimage destinations, resulting in seasonal population surges and pressure on basic services. The towns selected for this assessment are Nainital, Champawat, Almora, Pauri, Mussoorie, and Haldwani-Kathgodam which represent a cross-section of Uttarakhand's urban typologies: from tourist hubs to administrative centers to commercial gateways.

The overall urbanisation rate, is around 30.2% of Uttarakhand which is comparable with the national average of 31.2% (as per Census 2011). With total 105 urban local bodies (ULBs) today, it faces common challenges:

- Inadequate solid waste management infrastructure, especially during tourist seasons.
- Seasonal water shortages and dependency on gravity-fed or spring-based supply systems.
- Urban transport bottlenecks due to narrow roads, limited public transport, and parking shortages.
- Ecological vulnerability to landslides, forest fires, flash floods, and earthquakes.

Initiatives under Atal Mission for Rejuvenation and Urban Transformation (AMRUT), Smart Cities Mission, and Swachh Bharat Abhiyan have led to some infrastructure upgrades, particularly in Dehradun, Haridwar, and Haldwani. However, smaller towns still rely on outdated systems with limited institutional or technical capacity.

2. Nainital Town

Nainital Town (SIUD, Study of Challenges faced by six towns of Uttarakhand: Nainital, 2025) is Located in the Kumaon Division of Uttarakhand, India. It falls in the Nainital Tehsil of the Nainital District in the State of Uttarakhand India. A beautiful lake-hill town situated around the Naini Lake which about 4.6% of the total area of the Town (11.73 sq. km.) i.e. 0.54 sq. km. (City Development Plan: Nainital Revised under Jawaharlal Nehru National Urban Renewal Mission (JNNURM), 2007) Nainital experiences temperatures ranging from 28°C to 7°C and is colder than the rest of the hilly areas of the Kumaon Division.

2.1. Demography and Socio-Economic Profile

As per Census 2011, Nainital has a total population of 41,377 persons. Out of which 52% (21,648) is the male population and 48% (19,729) is the female population in the Town.

👉 Nainital's population density has increased from 35.2 PPH to 52.05 PPH from 2011 to 2024.

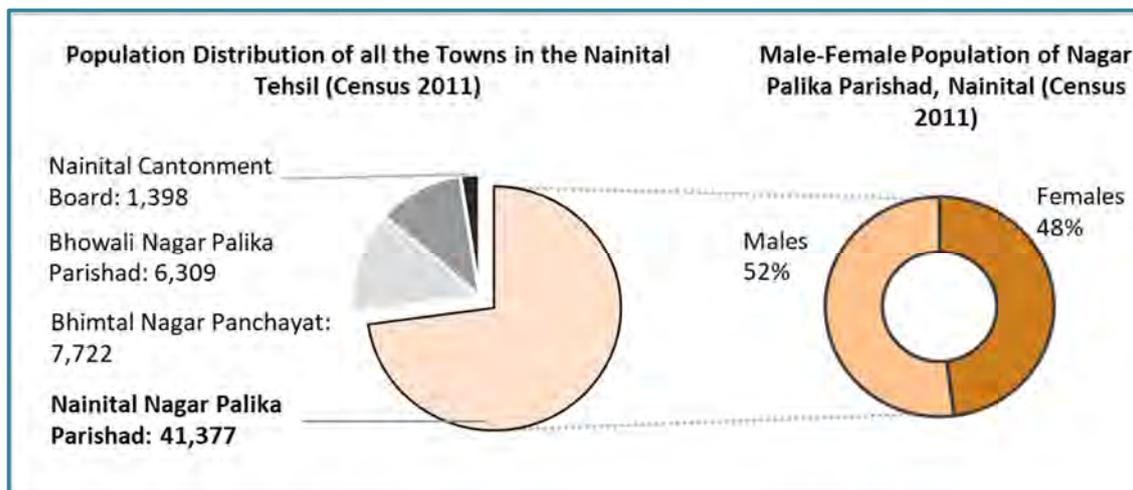


Figure 5: Population distribution of Nainital

Nainital Town has 911 females per 1000 males. Thus, making the sex-ratio of Nainital Town to be lower than the sex-ratio of Nainital District i.e. i.e. 934 females

per 1000 males. The average literacy rate of Nainital Town (92.90%) is higher than the average literacy rate of Nainital District (89.47%).

As per census 2011, 28% (11,583) of population is Schedule Caste (SC) and 1% (280) of population is Schedule Tribe (ST). Hinduism was the majority religion constituting 85.61%, with Muslims forming the second constituting 11.91%. As per Census 2011, 32.3% (13,385 persons) of Nainital’s population is engaged in work, with 90.6% as Main Workers with 98% in non-agricultural jobs and 9.4% as Marginal Workers.

As per data provided by the Tourism Department, on an average annually more than 7 lakh tourists visit Nainital Town. There is a huge influx in the number of Tourists in Nainital Town during summer season i.e. in the months of May and June. Thus, making these two months as the peak tourist season for Nainital Town. Since 2011 to 2023 the average number of tourists inflow experienced in the month of May is more than 1 Lakh, while for the month of June it is recorded to be even more than 2 Lakhs. Seasonal variation has a profound socioeconomic impact. During peak tourist months (May–June), the town accommodates over 10,000 daily visitors, increasing the population significantly.

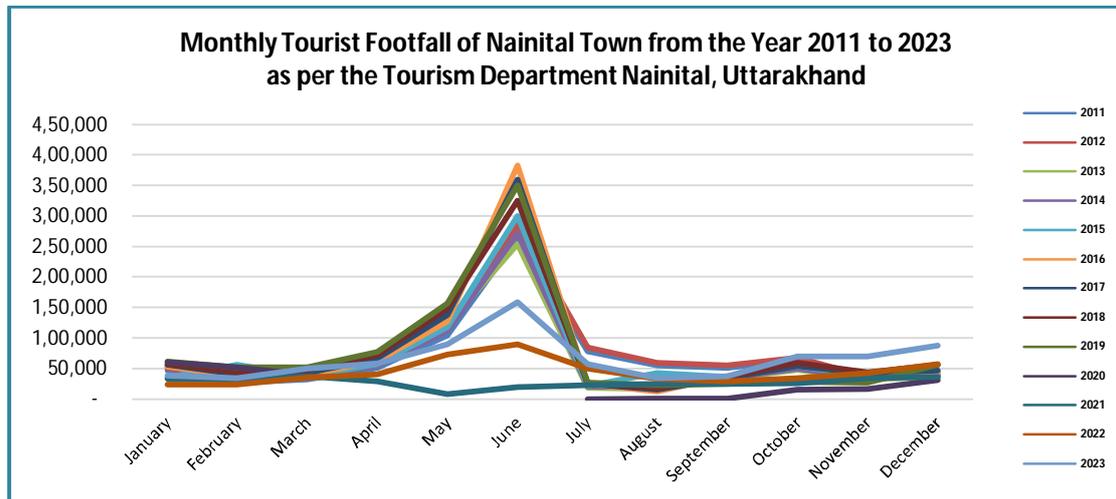


Figure 6: Monthly Tourist Footfall of Nainital Town from the year 2011 to 2023 as per the Tourism Department Nainital, Uttarakhand

At present the total area of the town has not increased since 2011 and has a total area of 11.73 sq. km. (Census India, 2011). While the total number of wards have increased from 13 to 15. Nainital’s demographic evolution reflects a shift from traditional hill-town settlement patterns to a tourism-driven urban sprawl.

Table 1: Nainital’s Demographic data

Overview	As Per Census (2011)	As Per NPP, Nainital, 2024
Area of NPP, Nainital	11.73 sq. km.	11.73 sq. km.
No. of Wards in NPP, Nainital	13	15
Total Population of NPP, Nainital	41,377 Persons	Calculated Total Population of NPP, Nainital = Number of HH's X Avg. HH Size = 12,211 X 5 = 61,055 Persons
Total Number of Households (HHs)	9,329	12,211
Average HH Size	4.5	5
Population Density of NPP, Nainital	35.2 PPH	52.05 PPH
Tourists Visiting Nainital Town	In the Year 2011: 8,42,957 Average Number of Tourists Per Day: 2,309 Tourists	In the Year 2023: 7,84,497 Average Number of Tourists Per Day: 2,149 Tourists

2.2. Solid Waste Management

The town’s waste management is overseen by the Nagar Palika Parishad and a contracted private agency for collection, transportation, segregation and disposal of solid waste generated in the Town. Approximately 60% of this waste is non-biodegradable, 30% is recyclable, and 10% is inert or sanitary waste.

The waste management system follows a five step process: generation, collection, segregation, transportation, and disposal. The total volume of solid waste collected from Nainital Town by the NPP, Nainital is 24.4 MTPD (during off-season) and 31 MTPD (during on-season). A variation of about 27% is observed in the total solid waste generated in nainital town during on-season.

During tourist season, Nainital's waste generation increases from 24.4 to nearly 31 metric tonnes per day, with most of it being tourism-related waste like plastic and packaging.

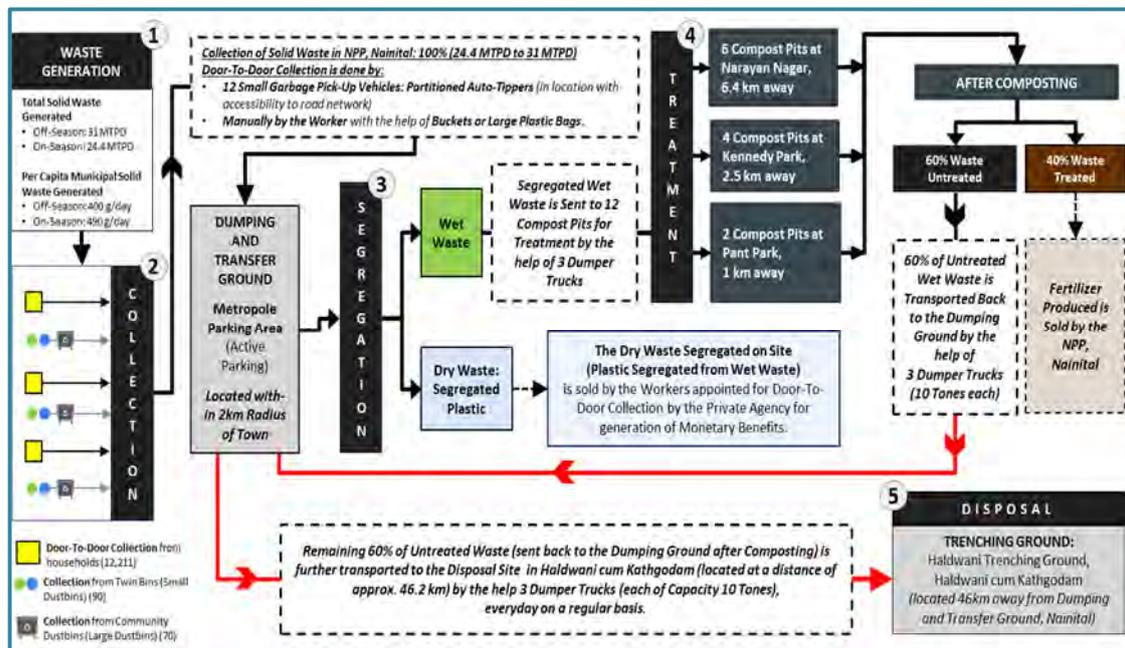


Figure 7: Flowchart of SWM in NPP, Nainital

As of 2024, 15 waste collection vehicles (including compactors and tippers) are operational across 15 municipal wards. There are total 160 community dustbins (70 large dustbins and 90 small dustbins/twin bins) in the Town. Approximately 239 sanitation workers (including sweepers and supervisors) are deployed with an average number of 16 sanitation workers in each ward, with cleaning schedules executed thrice daily in high footfall areas and twice daily in residential zones. Waste is initially deposited at temporary transfer stations like Metropole Ground and then

transported to a waste processing facility near Kathgodam, approximately 35 km away.

The segregated dry waste collected through door-to-door services by a private agency is sold by sanitation workers for income generation. The wet waste is sent to 12 compost pits located at Kennedy Park (2.5 km) and Pant Park (1 km) from the transfer site. Approximately 40% of this waste is converted into fertilizer, which is sold by NPP, Nainital. The remaining 60% of untreated wet waste is transported to the trenching ground in Haldwani-Kathgodam, located 46.2 km away, for final disposal.

2.2.1. Key Challenges in Solid Waste Management (SWM) in NPP, Nainital

- 1. Terrain Challenges:** Steep slopes and narrow paths limit vehicle access, relying on porters (“khaachis”) without formal support, leading to uncollected waste and illegal dumping.
- 2. Tourism-Linked Waste Surge:** Tourist influx increases waste by 27% in peak season, overwhelming infrastructure and causing visible littering in public areas.
- 3. No Source Segregation:** Despite twin bin distribution and fines, households largely mix waste, hampering recycling and composting efforts.
- 4. Inadequate Processing Facilities:** Lack of a scientific landfill and saturated trenching ground; compost unit capacity (2 TPD) is insufficient, causing open dumping near the lake.
- 5. Rise in Non-Recyclables:** Surge in multilayer packaging and food delivery waste, mostly non-recyclable and ignored by waste pickers, clogs drains and pollutes streets.
- 6. Weak Enforcement & Awareness:** Poor SWM rule enforcement, low user charge recovery, and limited public awareness reduce participation in waste management practices.

2.2.2. Proposed Solutions and Strategic Intervention

- 1. Relocate Dumping Site & Improve Access:** Shift dumping ground from Metropole Parking and set up decentralized collection points in hilly areas to ease logistics.
- 2. Tourist-Season Waste Management:** Introduce SWM cess for tourists; deploy extra sanitation staff during peak months in high-footfall areas.
- 3. Segregation & Public Awareness:** Promote door-to-door collection via Baini Sena; distribute color-coded bins and run sustained awareness drives, including school workshops.
- 4. Recycling & Composting Infrastructure:** Launch plastic recycling tech projects; install compact OWC machines and expand decentralized composting and MRF facilities.
- 5. Litter & Construction Waste Control:** Use CCTV, fines, and signage to curb littering; designate disposal zones for construction waste and enforce penalties.
- 6. Governance & EPR Enforcement:** Renew SWM contracts based on performance; strengthen monitoring, enforce plastic bans, and implement EPR norms.

2.3. Water Supply and Availability

The town's water supply system is jointly managed by the Uttarakhand Jal Sansthan (UJS) and Pey Jal Nigam (PJNU). Water is sourced from the lake and supplemented by tubewells near its periphery. It undergoes treatment at three pumping stations with a combined capacity of 23 MLD. Treated water is then stored in 28 reservoirs and distributed through a gravity-based

📌 Nainital is supplying 8MLD of water in non-tourist season & 10 MLD during Tourist season. The water demand calculated is 9.47 MLD and 11.45 MLD during non tourist & tourist season respectively, indicating significant gap in the water availability.

pipeline network dating back to 1898. Approximately 15% of water is lost during distribution. Water supply is rationed to avoid over-extraction, with 8 MLD supplied during off-season and 10 MLD during peak tourist months.

Water is supplied twice daily for 2.5 hours each session, and supply hours are extended in the tourist season. The town has 100% area coverage and 98% population coverage through piped connections. To prevent wastage and promote accountability, metering is required, although its current extent remains unclear. Water tariffs vary ranging from ₹50 to ₹500 per month based on annual building assessments or consumption via metered connections, with rates varying for gravity, low head, and high head supply methods.

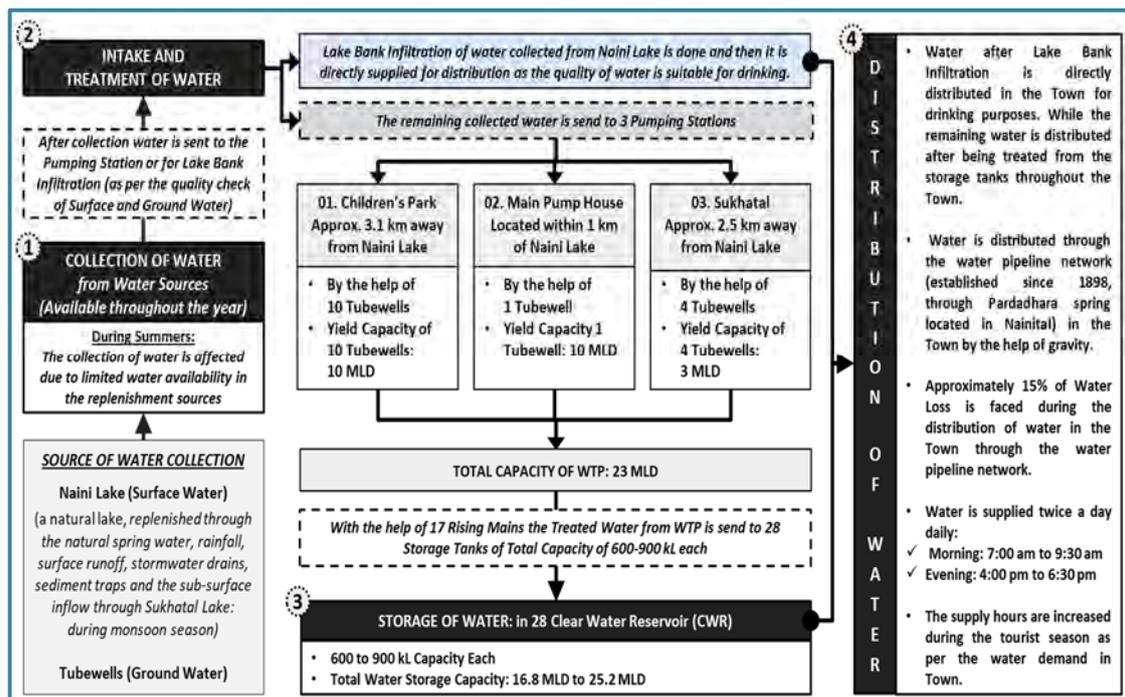


Figure 8: Flowchart of Process of water supply System in NPP, Nainital

In response to seasonal shortages and tourism pressure, policies like water rationing, tanker services, and promotion of storage practices have been implemented. As of 2024, Nainital has expanded its infrastructure with a 107 km network, 6,000

house service connections, 22 reservoirs with 9,456 kL capacity, and a 1 MLD softening plant. These collective efforts aim to ensure sustainable water management in the ecologically sensitive and tourism-driven town.

2.3.1. Key Challenges in Water Supply & Availability in NPP, Nainital

- 1. Overdependence on Naini Lake:** Excessive extraction, erratic rainfall, and limited storage lead to seasonal shortages; lake also suffers from pollution due to waste dumping and storm drain inflow.
- 2. Declining Water Quality:** Untreated wastewater, debris, and runoff degrade lake quality; current infiltration-based treatment is inadequate, risking supply of polluted water.
- 3. Rising Demand:** Growing population and tourist influx increase water demand, threatening groundwater reserves and system reliability without proper conservation.
- 4. Obsolete Infrastructure:** Ageing, unmapped pipelines cause leaks, contamination, and pressure loss, reducing supply efficiency and complicating repairs.
- 5. Shortage of Skilled Personnel:** Lack of trained staff delays response to faults, leakages, and maintenance, weakening infrastructure management.
- 6. Climate Change Impacts:** Changing weather patterns intensifies droughts and floods, worsening water availability.
- 7. Weak Governance & No Metering:** Absence of water meters and poor inter-departmental coordination hinder monitoring, and efficient water management.

2.3.2. Proposed Solutions and Strategic Intervention

- 1. Diversify & Conserve Water Sources:** Develop a Water Management Plan with real-time lake monitoring, predictive modelling, mandatory rainwater harvesting, recharge wells, and additional reservoirs.

2. **Improve Water Quality Infrastructure:** Upgrade infiltration banks, modernize STPs, implement sediment management, and set up water recycling units for non-potable use.
3. **Manage Rising Demand:** Continue supply rationing during peak months; run conservation campaigns via SHGs and NGOs, especially during tourist season.
4. **Upgrade & Map Infrastructure:** Create GIS-based water pipeline maps, ensure regular maintenance, digitize logs, and develop drought contingency plans.
5. **Build Technical Capacity:** Form state think tanks, and conduct regular training for UJS, PJNU staff, and community members on maintenance and crisis response.
6. **Promote Climate-Resilient Infrastructure:** Pilot dual-piping systems, conduct water audits, protect catchments, use hydrological models, and install early warning systems.
7. **Strengthen Governance & Monitoring:** Deploy smart meters with IoT sensors, automate leak detection, enforce homestay tariff norms, and launch awareness campaigns on water conservation and pollution prevention.

2.4. Urban Transport and Parking

Nainital faces significant transport and parking challenges due to its narrow roads, steep gradients, and influx of tourist vehicles. The Town comprises of 142.022 km length of internal road network. Out of this a major share of internal road network is maintained by the NPP, Nainital i.e. 134.474 km length. While only 5% of the internal road network i.e. 7.544 km is maintained by the PWD, Nainital.

Connectivity to Nainital from major cities is mainly through roadways, supported by the Tallital Bus Station, the Kathgodam Railway Station (36 km away), and Pantnagar Airport (70 km away). However, the entry of buses into the town is restricted due to congestion and limited road width. There are three primary entry points to the town via Tallital, Mallital, and the Zoo Road. All major traffic flows

through Mall Road, which also serves as the commercial and tourist core. Private vehicles, taxis, and buses crowd the main arterial roads. Pedestrian infrastructure is poorly maintained, with uneven sidewalks and encroachments in most commercial areas.

The parking infrastructure in Nainital is insufficient to handle the growing influx of vehicles. There are 9 major parking sites in the town with a cumulative capacity of 1,000 vehicles, including surface and under-construction multi-level parking. During peak tourist seasons, temporary parking areas

As per the Transport Department, over 2,100 vehicles enter the town daily during peak months, while the carrying capacity of the road network is only 600–800 vehicles per day.

are set up at Narayan Nagar, Rusi Bypass, and Sariyatal to accommodate an additional 3,500 vehicles. Tourists park their vehicles at these locations and are ferried into town via shuttle buses. Despite this arrangement, traffic congestion persists in high-footfall areas such as Mall Road, Tallital, and the High Court Road, driven by inadequate parking provisions, narrow roads, and the growing number of private vehicles. A new parking site for 500 vehicles is proposed near the Bhowali entry point to further alleviate seasonal pressure.

2.4.1. Key Challenges in Urban Transport & Parking in NPP, Nainital

- Poor Road Infrastructure:** Roads like SH-41 and NH-109 suffer from weak geometry, lack of signage, lighting, and frequent landslide-related disruptions, affecting safety and traffic flow.
- Inadequate Public Transport:** Limited e-rickshaw routes and unregulated taxi fares force dependence on private vehicles, increasing congestion.
- Seasonal Tourist Traffic Surge:** Tourist inflow of up to 12,000/day in peak season overwhelms transport and parking facilities.
- Chronic Congestion:** Narrow roads and restricted bus entry lead to regular jams in key areas like Mall Road and High Court Road.

5. **Parking Shortage:** Legal limitations on multi-level structures restrict parking capacity, leading to illegal roadside parking.
6. **Weak Enforcement:** Poor implementation of parking rules, unchecked encroachments, and lack of zoning worsen traffic issues.
7. **Lack of Traffic Management Systems:** Absence of signals, signage, and emergency response plans hampers traffic regulation and crisis handling.

2.4.2. Proposed Solutions and Strategic Intervention

1. **Road Infrastructure & Safety:** Redesign roads with geometry correction, signage, hazard mapping, and early warning systems; ensure periodic maintenance via inter-departmental coordination.
2. **Public Transport & Fare Regulation:** Prioritize ropeways, bus stands, mini-buses, and intra-city goods vehicles; implement digital taxi meters, mobile apps, and travel passes to reduce private vehicle use.
3. **Managing Tourist Influx:** Promote alternative destinations, tourist passes, and park-and-ride systems with shuttle services to reduce peak traffic pressure.
4. **Reducing Traffic Congestion:** Implement one-way loops, no-vehicle zones on Mall Road, vehicle entry limits, and real-time monitoring with rapid-response traffic teams.
5. **Parking Expansion & Digitization:** Install automated stack parking at Narayan Nagar/Rusi Bypass; link hotel bookings with parking slots; deploy smart apps and PPP-based shuttle systems with surge pricing.
6. **Regulatory Strengthening:** Form a special traffic cell, enforce speed/parking rules, remove encroachments, and adopt digital surveillance and violation reporting tools.
7. **Eco-Friendly Transport Solutions:** Promote EVs with incentives and charging stations, run eco-shuttles, and support walking, cycling, carpooling, and pollution awareness campaigns.

3. Champawat Town

Champawat (SIUD, Study of Challenges faced by six towns of Uttarakhand: Champawat, 2025) is a small yet culturally significant hill town located in the eastern part in the Lesser Himalayas region of Uttarakhand. Formerly the capital of the Chand dynasty, it now functions as a Nagar Palika Parishad (NPP) and district headquarters. The temperature in Champawat Town ranges from 30.3°C to 1.7°C. Some of the high mountainous areas even receive precipitation in the form of snowfall.

3.1. Demography and Socio-Economic Profile

As per Census 2011, Champawat Tehsil has 10% (4,801 persons) of its total population in the urban areas i.e. Nagar Panchayat, Champawat. The Nagar Panchayat, Champawat further has 53% (2,543 persons) of male population and 47% (2,258 persons) of female population in the Town. The population density was recorded at approximately 1,267 persons per square kilometer across its 5.4 sq. km jurisdiction.

👉 Low Density of 12.75 PPH with a population of 12,756 as per 2024.

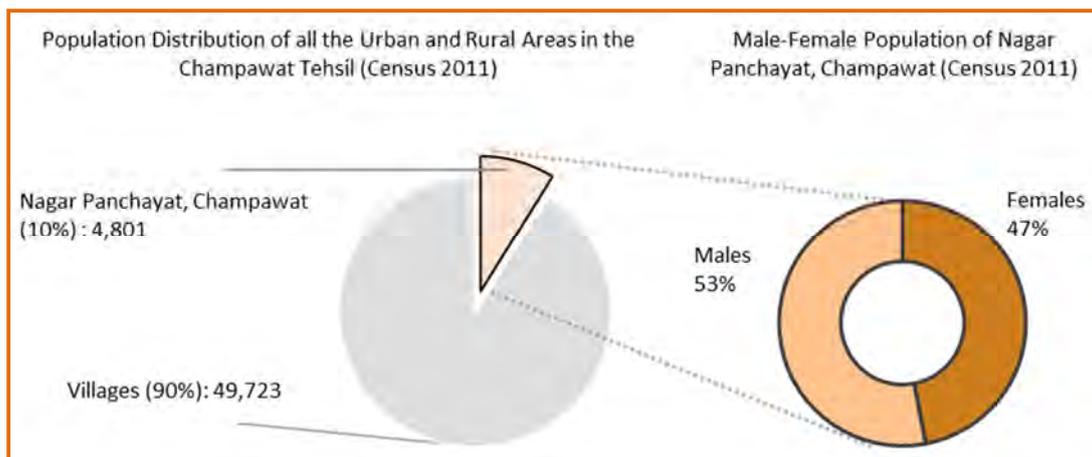


Figure 9: Population Distribution of the Urban and Rural Areas in the Champawat Tehsil

The sex ratio stood at 888 females per 1000 males, lower than the state average (963), indicating gender imbalance issues. The average literacy rate of Champawat Town (91.69%) is higher than the average literacy rate of Champawat District (79.83%).

Out of the total population of the town, 19% (893) of population is Schedule Caste (SC) and 1% (45) of population is Schedule Tribe (ST). It has a Hindu majority with 94.90% of Hindu population followed by 4.56% of Muslim population. Around 28.2% (1,356 persons) of Champawat’s population is engaged in work, with 95.3% as Main Workers (82% males, 18% females) and 4.7% as Marginal Workers (70% males, 30% females).

At present the total area of the town has increased from 5 sq. km. (Census India, 2011) to 10 sq. km. The Nagar Palika Parishad, Champawat has increased the number of wards from 4 (Census India, 2011) to 9 with a total population growth from 4,801 persons to 12,756 persons.

Table 2: Champawat Demographic Overview

Overview	Nagar Panchayat, Champawat As Per Census (2011)	Nagar Palika Parishad, Champawat (2024)
Area of NPP, Champawat	5 sq. km.	10 sq. km.
No. of Wards in NPP, Champawat	4	9
Total Population of NPP, Champawat	4,801 Persons	12,756 Persons
Total Number of Households (HHs)	1,172	2,586
Average HH Size	4	5
Population Density of NPP, Champawat	9.6 PPH	12.75 PPH
Tourist Population of NPP, Champawat	-	1500-2000 Persons Per Day

Champawat’s demographic profile reflects a pattern common in remote hill towns aging populations coupled with youth outmigration. This has implications for labor availability, demand for healthcare services, and the viability of community-based economic models. Census and municipal records indicate that informal housing clusters are growing on the town’s periphery, driven by demand from lower-income service workers and temporary migrants.

3.2. Solid Waste Management

The Solid Waste Management (SWM) system in Champawat Town is managed by the Nagar Palika Parishad, which oversees infrastructure, daily operations, and coordination with a contracted private agency. The town has a network of 35 dustbins (11 large and 24 small) spread across its nine wards, though most are uncovered, contributing to public hygiene concerns. A team of 45 sanitation workers, with an average of five per ward, ensures daily cleaning of roads in both commercial and residential areas. For waste collection and transportation, NPP provides six dumper trucks and two auto-tippers to the private agency, which has also appointed 25 sanitation workers (supervisors, drivers, and helpers) for door-to-door collection.

 Champawat generates 4.5 MTPD of waste, with 93.3% remaining unsegregated and 4,000 MT of legacy waste accumulated at the under-construction SWM plant.

Each day, approximately 4.5 metric tonnes of waste is collected from 2,586 households, community bins, and commercial areas. Waste collection is completed between 6:00 am to 8:00 am, and the user charges range from ₹20 to ₹100 per month depending on the property type. However, the waste is not segregated at the source. Instead, segregation is performed at the under-construction Solid Waste Management (SWM) Plant on Luluwapani Road. Only 6.7% of the total waste (mainly plastic and cardboard) is dry and segregated; the rest about 93.3% is untreated mixed waste. The existing compost pits are non-functional, and composting activities have been halted due to ongoing construction at the SWM plant.

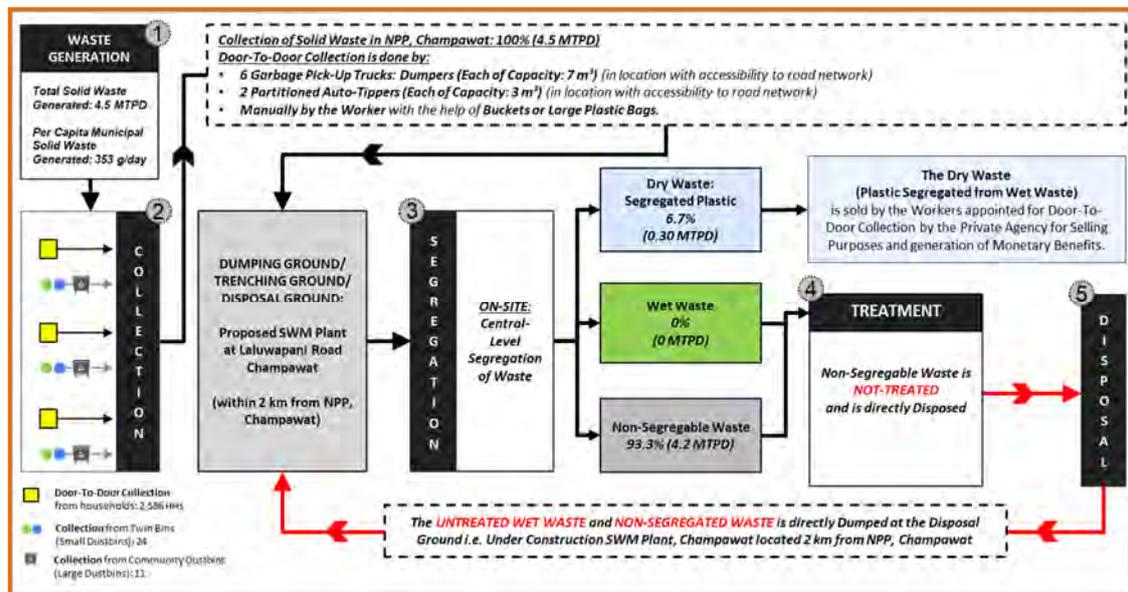


Figure 10: Flowchart of SWM in Nagar Palika Parishad, Champawat

Currently, the disposal method involves dumping the mixed, untreated waste at the under-construction SWM plant. This has led to heaps of solid waste accumulating on the site, with approximately 4,000 metric tonnes of legacy waste already built up.

3.2.1. Key Challenges in Solid Waste Management (SWM) in Champawat town

- 1. Geographical Constraints:** Hilly terrain and remote areas raise costs and hinder efficient waste collection and transport.
- 2. Rapid Urbanization:** Growing population generates approximately 4.5 tons of waste daily, overwhelming existing SWM infrastructure.
- 3. Tourism Influx:** Post-2022 tourist rise adds strain to waste systems, risking environmental degradation.
- 4. Lack of Waste Segregation:** 93.3% mixed waste limits recycling and composting, increasing untreated waste.

- 5. Limited Recycling Facilities:** Absence of recycling units forces informal disposal; dry waste is minimally recovered.
- 6. Inadequate Treatment Infrastructure:** The lone SWM plant is under construction but already used for dumping; 4,000 MT legacy waste accumulated.
- 7. Environmental Impacts:** Mismanaged waste leads to soil, water pollution and ecological damage.
- 8. Policy and Governance Issues:** Weak regulation, poor coordination, and limited funds hinder effective SWM execution.

3.2.2. Proposed Solutions and Strategic Intervention

- 1. Managing Urbanization:** Use smart bins, terrain-suited vehicles, zoning laws, and scalable pilot projects to modernize waste systems.
- 2. Overcoming Geographical Barriers:** Establish decentralized collection points and involve local communities for better coverage in remote areas.
- 3. Handling Tourist Waste:** Impose SWM cess on tourists, enforce bye-laws, and maintain digital inflow and cess data for accountability.
- 4. Promoting Source Segregation:** Distribute garbage bags, conduct door-to-door awareness, and implement monitoring with fines for compliance.
- 5. Boosting Recycling:** Encourage 3R practices, create compost pits, and promote household-level reuse to reduce landfill load.
- 6. Improving Treatment Infrastructure:** Complete SWM plant, install OWCs, MRFs, and transfer stations to manage and reduce legacy waste.
- 7. Reducing Environmental Impact:** Promote “Thaila ATMs” and “Garbage Cafés,” run green drives, and build eco-infrastructure like rain gardens.
- 8. Policy & Governance Reforms:** Enforce plastic bans, EPR schemes, inter-agency coordination, monitoring, and awareness through schools and Nodal Officers.

3.3. Water Availability and Supply

Champawat town relies primarily on the Kali River and its tributary Gadheras for water supply, managed by Uttarakhand Jal Sansthan (UJS) and Pey Jal Nigam Uttarakhand (PJNU). The water supply process includes four main steps: collection from surface sources, treatment at the Mudela Water Treatment Plant (3.44 MLD capacity), storage in 15 Clear Water Reservoirs (CWRs) with a total capacity of 2.77 MLD, and gravity-based distribution through a pipeline network.

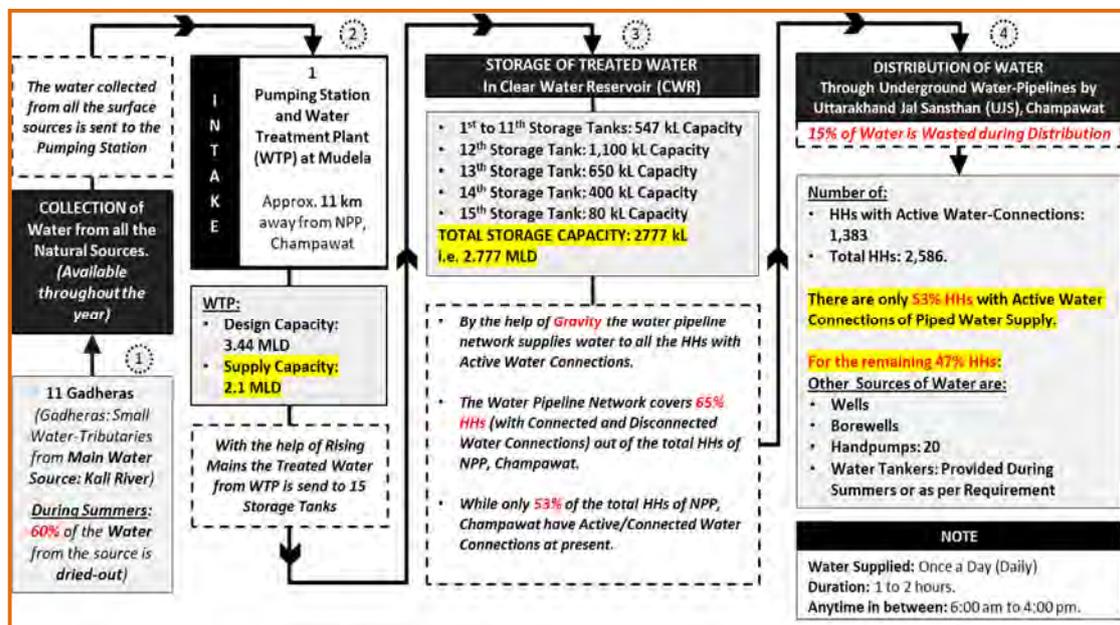


Figure 11: Flowchart of Process of Water Supply System in NPP, Champawat

Currently, about 53% of households in the town have active piped water connections, with the rest relying on wells, borewells, solar hand pumps, or water tankers. While pipeline coverage is at 65%, this still falls short of CPHEEO’s benchmark of 100%. Water is supplied once a day for 1-2 hours between 6:00 am and 4:00 pm. During summers, when 60% of natural sources dry up, UJS supplements supply through hired water tankers. Despite these limitations, Champawat currently has no water deficit, with demand and supply both at 2.36 MLD.

Water tariffs in Champawat are based on either annual building assessment or metered consumption. Charges vary by water distribution method such as gravity, low head, or high head with the lowest rate for gravity-fed supply. The UJS also provides subsidized connection registration for BPL families. Non-domestic metered connections have higher rates, with variations for industrial, business, and institutional users. Metered connections help encourage judicious use, but full metering and non-revenue water data are not yet available.

👉 UJS, Champawat covers 65% of the total HHs with pipeline connections but only 53% of the total HHs have active water connections at present.

Tourism has moderately increased in recent years, with 1,500-2,000 tourists visiting daily during peak months. However, due to infrastructure upgrades under the Koirala scheme, the town has not experienced water shortages since 2022. Government policies like the Shehri Vikas Yojana are further aiming to enhance 24x7 water supply through infrastructure expansion and rejuvenation of natural sources, ensuring resilience to population growth and seasonal tourist demand.

3.3.1. Key Challenges in Water Availability & supply in Champawat town

- 1. Pollution of Gadheras:** Wastewater discharge and siltation from heavy rains are degrading Champawat's primary water sources.
- 2. Dependency on Natural Sources:** Over 60% of natural sources dry up in summer, making the town highly vulnerable to water shortages.
- 3. Population and Tourism Pressure:** Rising population and tourist inflow are increasing water demand, risking supply disruptions.
- 4. Infrastructure Gaps:** Only 65% of households are connected to piped water; unmapped pipelines cause leaks, low pressure, and contamination.
- 5. Shortage of Skilled Staff:** Lack of trained personnel hampers timely detection and repair of water system issues.

- 6. Climate Change Effects:** Altered rainfall and rising temperatures are intensifying stress on local water resources.

3.3.2. Proposed Solutions and Strategic Intervention

- 1. Protecting Gadheras:** Enforce strict anti-dumping rules, install silt traps, and run awareness drives with NGO and community support.
- 2. Reducing Natural Source Dependency:** Conduct joint quality assessments, promote rainwater harvesting, reuse wastewater, and conserve forest buffers.
- 3. Planning for Urban Growth:** Investigate low piped water uptake; install town-wide water meters to track use and detect leaks.
- 4. Filling Infrastructure Gaps:** Map underground pipelines to enable faster leak detection and reduce contamination risks.
- 5. Capacity Building:** Train local staff regularly and form state-level technical support units to enhance water management skills.
- 6. Climate Change Preparedness:** Organize awareness programs on climate impacts and encourage community water conservation practices.

3.4. Urban Transport and Parking

As per the Draft Master Plan of Champawat 2041, the town's connectivity is primarily dependent on NH-9, which links Champawat to Tanakpur and Lohaghat, while SH-64 connects it to other regional towns like Nainital and Almora. The total road network spans 178.99 km, with arterial and sub-arterial roads comprising only 8%, and the majority being collector and local roads. While the road network ensures basic connectivity, it is often disrupted by narrow alignments, difficult terrain, and lack of maintenance. The town has a single bus station on NH-9, while the nearest railway and airport are located 74 km and 169 km away, respectively, limiting multi-modal access.

Traffic volume surveys conducted in 2023 show a daily vehicle load of over 13,000 PCUs across various entry and exit points, with projections rising to over 20,000 PCUs by 2041. Two-wheelers and private cars dominate traffic, and peak congestion hours are recorded between 10:00-11:00 AM and 4:15-5:30 PM. Cordon points like IC1 and IC2 experience the highest traffic pressure, and the Level of Service (LOS) across most major roads is expected to degrade significantly by 2041. With current travel speeds dropping to 12-18 kmph during peak hours, delays of up to 5 minutes are common on NH-9 and SH-64, highlighting the need for targeted upgrades in road infrastructure and traffic management systems.

 Champawat's road network is highly dependent on NH-9, with projected traffic volumes expected to exceed 20,000 PCUs/day by 2041.

Champawat has a total parking capacity of 220 vehicles, including permanent and temporary facilities. Two multi-level parking structures, one operational and another under construction along with a small surface parking area, cater to local and tourist vehicles. However, unauthorized parking, particularly at the bus station, remains an issue due to limited formal spaces for short-term use. While the municipality reports no current shortage due to tourism, rising vehicle ownership and seasonal visitor surges may soon create capacity gaps, making the case for strategic expansion and better regulation of parking infrastructure.

3.4.1. Key Challenges in Urban transport and Parking in Champawat town

- 1. Challenging Road Maintenance:** Frequent landslides and erosion in hilly terrain hamper road maintenance, causing unsafe travel conditions.
- 2. Limited Road Network:** Narrow, fragmented roads with only NH-9 and SH-64 as main routes result in congestion and poor connectivity.
- 3. Poor Public Transport:** Lack of reliable public transport forces dependence on private vehicles, increasing congestion and parking demand.

4. **Tourism-Related Pressure:** Rising tourist footfall post-2022 strains NH-9 and local roads, lacking a dedicated tourism traffic management plan.
5. **Growing Traffic Congestion:** Market areas along NH-9 face worsening congestion due to poor traffic control systems.
6. **Emerging Parking Issues:** Currently manageable, but anticipated tourist growth may lead to acute parking shortages in peak seasons.
7. **Complex Vehicle Registration:** Inter/intra-state vehicle flow complicates accurate traffic assessment and planning.
8. **Underused Parking Facilities:** Existing multilevel parking remains underutilized due to weak regulation and enforcement.

3.4.2. Proposed Solutions and Strategic Intervention

1. **Road Infrastructure Upgrade:** Redesign roads, install traffic signals, signage, drainage, and slope protection in hilly areas.
 2. **Maintenance & Resilience:** Conduct geological/seismic surveys; build retaining walls, use resilient materials, and plan emergency response.
 3. **Public Transport Expansion:** Introduce mini-buses, EVs, digital fare systems, and subsidized passes to boost public transport usage.
 4. **Tourism Traffic Management:** Develop six parking zones, enforce surge pricing, ban on-street parking, and distribute tourist traffic guides.
 5. **Traffic Congestion Control:** Build a bypass road, promote carpooling, install CCTV/signals, and improve transport-land use integration.
 6. **Address Parking Shortage:** Set up automated stack parking, use mobile reporting for illegal parking, and implement surge pricing.
 7. **Vehicle Entry & Emission Control:** Allow only registered, emission-compliant vehicles in central areas to reduce pollution.
 8. **Better Regulation & Monitoring:** Enforce penalties, deploy traffic staff, adopt smart parking, and conduct awareness campaigns.
-

4. Almora

Almora (SIUD, Study of Challenges faced by six towns of Uttarakhand: Almora, 2025), a historic hill town in Uttarakhand, sits at the heart of the Kumaon region and serves as a socio, economic hub for approximately 25 surrounding villages. Almora experiences temperatures ranging from 28°C to -3°C. It is colder than the rest of the hilly areas of the Kumaon Division.

4.1. Demography and Socio-Economic Profile

According to Census 2011, the town had a population of 34,122 persons. Out of which, 51% (17,358) is the male population and 49% (16,764) is the female population in the Town. The urban area has a sex ratio of 966 females per 1000 males higher than the district average of 943 indicating relatively balanced gender demographics.

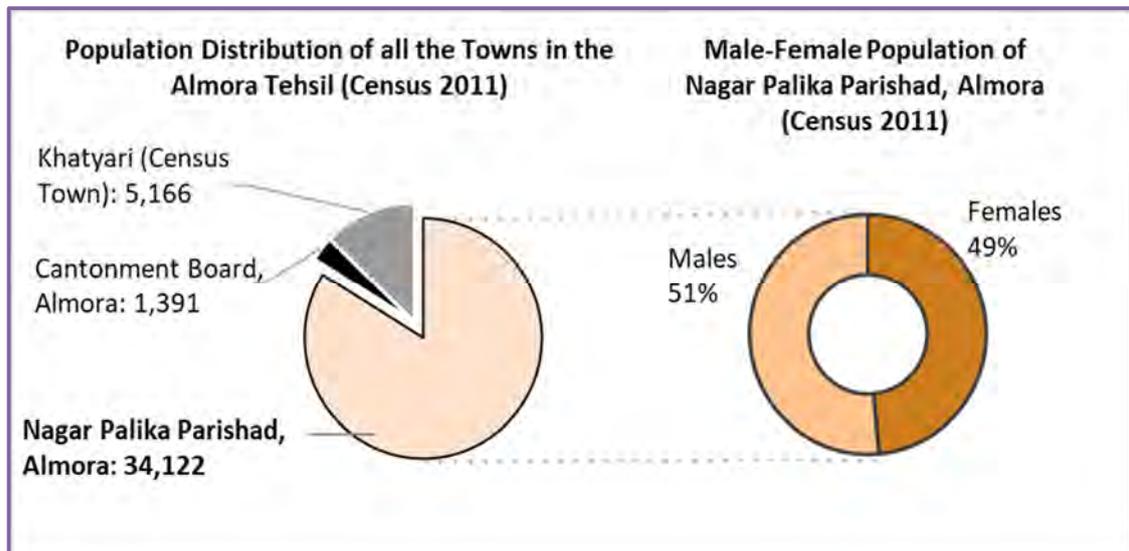


Figure 12: Population distribution of all the Towns in Almora Tehsil

Literacy in Almora is notably high, with the town registering a rate of 94.5%, far above the district average of 84.74%. Scheduled Castes constitute 16.4% of the population, while Scheduled Tribes account for 1%. Hinduism is the dominant religion, comprising over 90.84% of the population. Approximately 29.5% (10,057 persons) of Almora's population is engaged in work, with 93.2% as Main Workers with mostly (98.6%) in non-agricultural occupations and 6.8% as Marginal Workers.

📍 Almora's population for the year 2024 is 47,000 (as per Census data projection) but including cantonment, hospital, floating and tenant population it accounts to 87,119.

At present the total area of the town has not increased since 2011 which is 9.75 sq. km. (Census India, 2011). While the total number of wards have increased from 11 to 40.

Table 3: Almora's Demographic Overview

Overview	As Per Census (2011)	As Per NN, Almora, 2024
Area of NN, Almora	9.75 sq. km.	9.75 sq. km.
No. of Wards in NN, Almora	11	40
Total Population of NN, Almora	34,122 Persons	47,000 Persons (Census projected Population)
Total Number of Households	8,014	10,445
Average HH Size	4.3	4.5
Population Density of NN, Almora	35 PPH	40.95 PPH
Tourists Visiting Almora Town	-	Maximum number of tourists per day: 626 person/day Average number of tourists per day: 55 person/day

According to the data provided by the Tourism Department of Almora, Uttarakhand, a notable number of tourists have been experienced since the year 2019 to 2023 in Nagar Nigam, Almora. Since 2019 to 2023, the town has experienced maximum number of tourists in the months of June (i.e. 23,716 number of tourists on an average) and December (i.e. 17,830 number of tourists on an average).

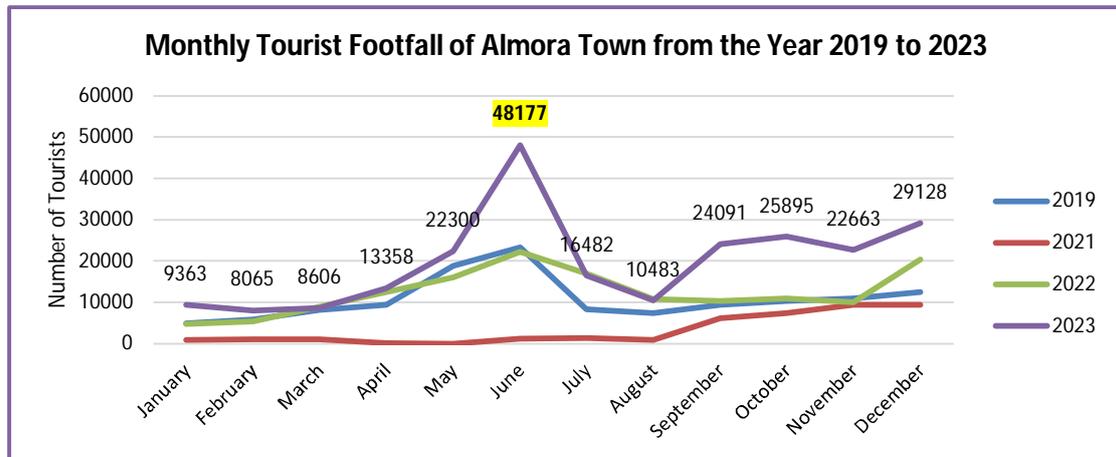


Figure 13: Monthly Tourist Footfall of Almora Town from the year 2011 to 2023

Almora’s demographic profile is shaped by its function as both a district headquarters and a regional hub for surrounding rural settlements. Its urban sprawl is a result of village-to-town migration, not industrialization. This urban-rural hybridization is visible in the social structure: neighborhoods retain caste-based clustering, and many families sustain dual livelihoods.

4.2. Solid Waste Management

Solid Waste Management (SWM) in Almora is handled by the Nagar Nigam, in collaboration with a private agency that manages collection, segregation, and disposal. The infrastructure includes 62 dustbins (47 surface cement and 15 underground), 11 garbage pick-up vehicles, and approximately 160 sanitation workers. Cleaning operations occur thrice daily in both residential and commercial

zones, regardless of tourist season, which is commendable given the town's terrain and fluctuating population.

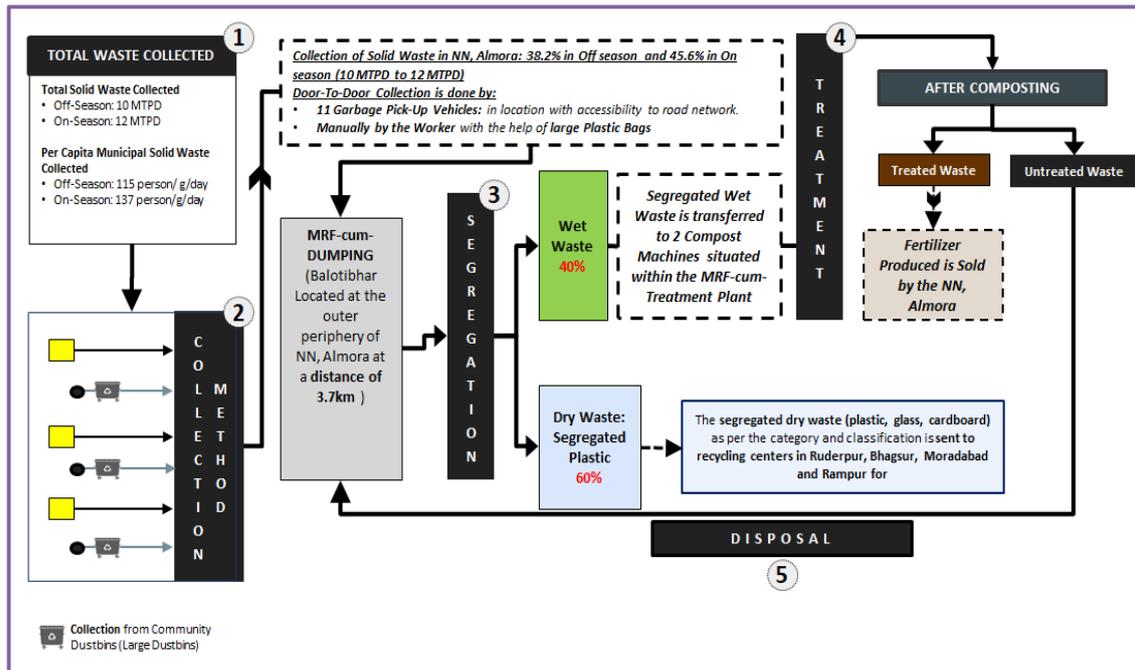


Figure 14: Flowchart of Solid Waste Management (SWM) in NN, Almora

Despite the structured system, Almora faces serious challenges. Waste collection efficiency is significantly low i.e. just 45.6% during peak tourist season and 38.2% in the off-season leaving a substantial portion of waste uncollected. Much of the uncollected waste ends up in drains, vacant plots, and near public toilets, turning these into garbage vulnerable points and raising public health concerns. The town lacks source-level segregation, with all segregation done centrally at the MRF-cum-Treatment Plant.

Almora generates 26.3 tonnes of waste per day during peak season, but only 12 tonnes are collected, resulting in just 45.6% collection efficiency.

The dry waste is segregated and sent to recycling centers in other cities, while wet waste is composted using machines installed at the treatment plant.

Approximately 40% of the composted material is converted into fertilizer, which is then sold. The remaining 60% of non-compostable waste is dumped at the MRF site, indicating the absence of a scientific landfill or waste-to-energy facility. User charges and penalties for non-segregation are in place, but enforcement is weak, diminishing their impact.

4.2.1. Key Challenges in Solid Waste Management (SWM) in Almora town

- 1. No Source-Level Segregation:** Most residents do not separate waste at origin due to low awareness and lack of enforcement.
- 2. Inadequate Treatment Facilities:** Only two compost machines operate in the town, insufficient for current waste volumes, leading to untreated and legacy waste buildup.
- 3. Persistent Illegal Dumping:** Despite fines and services, unregulated dumping and littering continue, degrading public and natural spaces.
- 4. Environmental Degradation:** Inefficient waste handling causes soil, water, and visual pollution, threatening Almora's ecological and tourism value.
- 5. Weak Implementation and Oversight:** Limited manpower, poor inter-agency coordination, and lax regulation enforcement hamper effective SWM.

4.2.2. Proposed Solutions and Strategic Intervention

- 1. Expand Waste Treatment Capacity:** Install in-vessel OWC machines, compost units, MRF centers, and waste transfer stations to decentralize and scale up processing.
- 2. Enforce Source Segregation:** Mandate household-level waste separation with color-coded bins, monthly bag distribution, and awareness drives via NGOs and SHGs.

3. **Curb Illegal Dumping:** Intensify monitoring during tourist seasons, impose strict penalties, and ensure regular cleaning of public areas.
4. **Promote Environmental Resilience:** Launch clean-up drives, eco-awareness programs, and develop green infrastructure like rain gardens to manage runoff.
5. **Improve Governance:** Ban small plastic bottles, enforce EPR policies, boost funding, and strengthen coordination through inspections and better regulation.

4.3. Water Supply and Availability

Almora Town's water supply system is primarily dependent on the Kosi River, which originates in the Baramandal region of the district. The river, crucial for both ecological balance and human consumption, faces seasonal variation experiencing drastic reductions in flow (up to 60%) during peak summer months. The water supply process includes four main steps: water collection, treatment, storage, and distribution. Collected mainly through a barrage and intake well, water is pumped to six treatment plants, stored in 12 reservoirs with a total capacity of 9.21 MLD, and distributed by Uttarakhand Jal Sansthan (UJS) through a well-developed pipeline network covering 95% of households.

☞ Almora draws its water from the Kosi River, but up to 60% of its flow reduces in summer, stressing urban water supplies.

Distribution is managed through a pipeline network laid by Peyjal Nigam and operated by Uttarakhand Jal Sansthan, covering 95% of households with water supplied for 1-2 hours. The treated water is stored in 12 Clear Water Reservoirs (CWRs) with a total capacity of 9.21 MLD. Current supply is 12.5 MLD in the off-season and 13 MLD in the on-season, meeting the demand of 11.78 and 11.84 MLD, respectively. This indicates a balance between supply and demand on paper, but qualitative insights reveal issues such as unequal distribution and intermittent shortages.

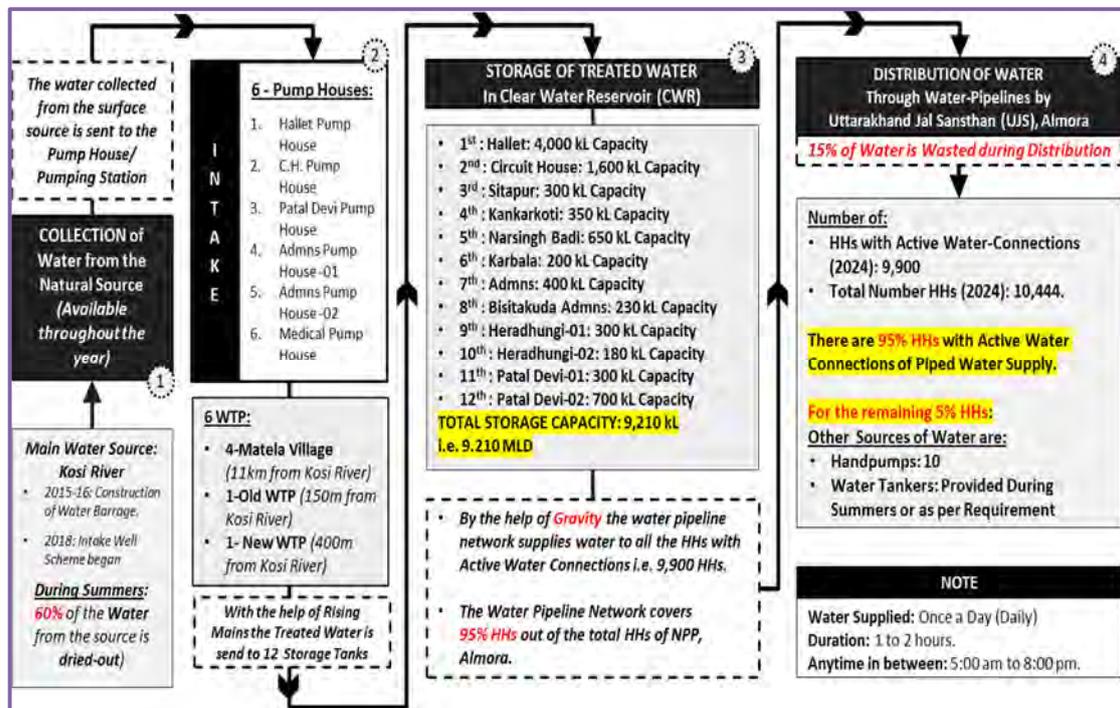


Figure 15: Flowchart of Process of Water Supply System in NN, Almora

Water tariffs in Almora are determined based on the annual assessment of buildings or actual metered consumption, with rates varying according to the method of water distribution. Subsidies are provided for BPL households, and tariff slabs are structured to reflect usage and infrastructure needs. Commercial and non-domestic users are charged at significantly higher rates.

4.3.1. Key Challenges in Water Availability & supply in Almora town

- 1. High Dependency on Kosi River:** Over-reliance on a single, climate-sensitive source with limited recharge and rising demand.
- 2. Aging Infrastructure:** Outdated pipelines (laid in 1992) suffer frequent leaks; repairs are slow and poorly mapped.
- 3. Challenging Terrain:** Hilly topography complicates pipeline expansion and increases costs.

4. **Contamination Risks:** Pipelines near drains and waste areas are prone to pollution, especially during rains.
5. **Manpower Shortage:** Limited skilled staff delays maintenance and affects operational efficiency.
6. **Weak Governance:** Lack of metering, poor data, and coordination hinder efficient water management.

4.3.2. Proposed Solutions and Strategic Intervention

1. **Diversify Water Sources:** Promote rainwater harvesting, groundwater recharge, and storage systems to ease pressure on the Kosi River.
2. **Modernize Infrastructure:** Create GIS-based pipeline maps, digitize records, ensure timely repairs, and plan for emergency supply.
3. **Terrain-Specific Solutions:** Use flexible pipelines and decentralized systems like local reservoirs for better access in hilly areas.
4. **Enhance Water Quality:** Upgrade treatment plants, relocate risky pipelines, restore water bodies, and conduct regular quality checks.
5. **Build Skilled Workforce:** Train UJS staff and local teams for effective system management and community outreach.
6. **Improve Governance:** Use smart meters, IoT monitoring, and enforce rules through coordinated stakeholder committees.

4.4. Urban Transport and Parking

Almora Town is well-connected through key national highways NH-109, NH-309A, and NH-309B, linking it to major cities and districts across Uttarakhand. Despite this strategic connectivity, the town faces infrastructural challenges due to its hilly terrain, with narrow,

👉 Almora is well-connected but faces major road safety and infrastructure challenges due to narrow, encroached roads and difficult terrain.

encroached roads lacking proper design, signage, lighting, and pedestrian facilities, leading to difficult and unsafe traffic conditions, especially during the rainy season.

Almora is accessible via road, rail and air, but road remains the most used mode of travel. It has three major bus stations including ISBT Almora, while the nearest railway station is Kathgodam, 36 km away. The Pantnagar Airport, at 70 km distance, serves as the only operational airport for the Kumaon region. While road connectivity is strong, infrastructure within the town is strained by increasing traffic from locals and tourists since Almora acts as a transit point for surrounding areas.

Parking infrastructure in NN, Almora is severely inadequate (400 four wheeler and 800 wheeler), with only three operational parking areas and most vehicles resorting to street parking, especially during tourist seasons. Five new parking projects have been proposed to ease this congestion. The town faces peak congestion on roads like Mall Road and Dharanaula due to through-traffic from tourists heading to nearby destinations such as Jageshwar and Binsar, as well as daily commuting from about 25 surrounding villages for education and employment further straining the town's transport and parking facilities.

4.4.1. Key Challenges in Urban transport and Parking in Almora town

- 1. Difficult Terrain and Poor Road Infrastructure:** Narrow, winding roads and frequent landslides hamper traffic flow and demand costly maintenance.
- 2. Inadequate Parking:** Only three functional parking lots cannot meet the growing vehicular demand, especially during peak tourist seasons.
- 3. Widespread On-Street Parking:** Lack of private parking forces residents to park on roads, increasing congestion and safety risks.
- 4. Tourism-Induced Traffic Pressure:** Tourist vehicles traveling to nearby destinations congest town roads during peak seasons.
- 5. Weak Regulatory Enforcement:** Poor implementation of traffic and parking rules results in illegal parking and road encroachments.

- 6. Environmental Degradation:** Rising vehicle numbers contribute to air and noise pollution, impacting health and the local ecosystem.

4.4.2. Proposed Solutions and Strategic Intervention

- 1. Expand Parking Infrastructure:** Develop five new parking sites and a multi-level facility near Dharanaula; promote digital payment and incentives for public transport use.
- 2. Upgrade Road Infrastructure:** Redesign roads with signage, lighting, safety barriers; conduct hazard risk assessments and install early warning systems.
- 3. Manage On-Street Parking:** Enforce in-building parking in new constructions, apply vehicle ownership limits, and introduce stack parking and smart systems.
- 4. Reduce Traffic Congestion:** Use traffic counters, implement one-way and timed entry systems, and set up diversion plans during peak hours.
- 5. Strengthen Regulation:** Form enforcement teams, use digital ticketing and monitoring tools, and involve community in governance through feedback channels.
- 6. Promote Eco-Friendly Transport:** Encourage non-polluting vehicles and cycling via tax benefits and awareness campaigns.

5. Pauri

Pauri Town (SIUD, Study of Challenges faced by six towns of Uttarakhand: Pauri, 2025), situated in the Pauri Garhwal district, is a key administrative and cultural center in Uttarakhand. Perched at an altitude of around 1,765 meters on the northern slope of Kandalia Hill along the Kotdwara–Srinagar road, Pauri is a serene town nestled in the Garhwal Himalayas of Uttarakhand. The temperature in Pauri town ranges from 25°C to 10°C.

5.1. Demography and Socio-Economic Profile

According to Census 2011, 81% of Pauri Tehsil's population, approximately 109,562 people, reside in urban areas, with Pauri Town housing a population of 35,900. Pauri has 51% (13,085 persons) of male population and 49% (12,350 persons) of female population in the Town.

👉 The total population of NPP, Pauri has increased by 47.5%, from 25,440 (Census 2011) to a projected 35,900 in 2024, and further to 64,817 when including floating, hospital, and school populations.

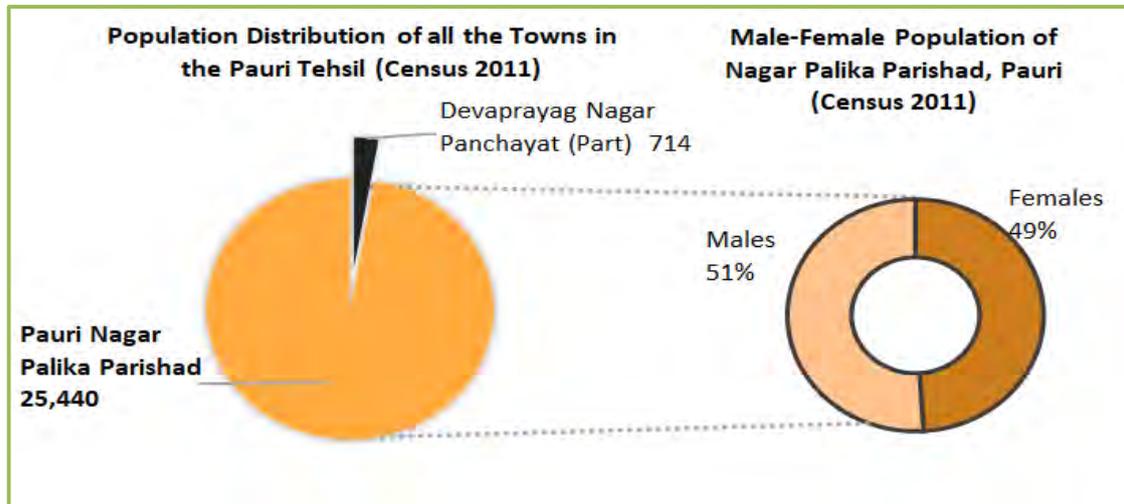


Figure 16: Population Distribution of the NPP Pauri Tehsil

Pauri has a sex ratio of 943 females per 1,000 males. Literacy rates are notably high, with an overall literacy of 92.20%, exceeding the district average of 82.02%. In Nagar Palika Parishad, Pauri, out of the total population (25,440 persons) of the town 16.61% (4,226) of population is Schedule Caste (SC) and 0.45% (114) of population is Schedule Tribe (ST). It has a Hindu majority with 91.08% of Hindu population followed by 6.64% of Muslim population. As per Census 2011, 26% of Pauri’s population (7,822 persons) is engaged in work, with 85.3% as Main Workers and 14.7% as Marginal Workers.

At present the area of NPP, Pauri, remains unchanged at 42 sq. km., divided into 11 wards, indicating no spatial expansion or alteration in governance divisions.

Table 4: Pauri's Demographic Overview

Overview	Nagar Panchayat, Pauri As Per Census (2011)	Nagar Palika Parishad, Pauri (2024)
Area of NPP, Pauri	42.00 sq. km.	42.00 sq. km.
No. of Wards in NPP, Pauri	11	11
Total Population of NPP, Pauri	25,435 Persons	35,900 Persons (Census projected Population)
Total Number of Households (HHs)	6,127	8,975
Average HH Size	4.5	5
Population Density of NPP, Pauri	6.06 PPH	8.55 PPH
Tourist Population of NPP, Pauri	NA	More than 11,700 per Annum <ul style="list-style-type: none"> • Summer (April-June): 50-70 tourists/day • Holidays/Festivals: 80-100 tourists/day

The tourist statistics for Pauri City demonstrate a fluctuating trend influenced by external factors such as the COVID-19 pandemic. In 2019, the city attracted 17,870 visitors, which slightly declined to 15,690 in 2020 due to initial pandemic impacts. Visitor numbers dropped significantly to 6,965 in 2021, reflecting global travel restrictions and health concerns. However, a steady recovery is evident, with 10,550 visitors in 2022, 11,700 in 2023, and 8,900 visitors by September 2024, indicating ongoing growth in tourism.



Figure 17: Details of Tourist influx in NPP, Pauri

Pauri’s population has remained largely static due to a combination of outmigration and low birth rates. The youth, particularly those with higher education, tend to migrate permanently for work or further studies. This creates a demographic skew: a high dependency ratio and reduced local innovation or entrepreneurship.

5.2. Solid Waste Management

The Solid Waste Management (SWM) in Pauri Town is managed by the Nagar Palika Parishad, with collection and transportation outsourced to a private agency. While efforts have been made to establish a systematic framework including the deployment of sanitation workers, vehicles, and collection bins the infrastructure remains inadequate. Only two community bins exist, and the waste collection workforce (60 from NPP and 44 from the private agency) is stretched thin, serving

nearly 9,000 households. Collection is done twice daily, but many interior areas remain underserved, leading to irregular pick-up and improper waste disposal by residents, such as open dumping and burning.

Waste segregation practices are minimal, with no effective segregation at the source despite earlier efforts like distributing dual-color bins to promote dry and wet waste separation. Presently, segregation is done informally at the Lower Chopra Dumping Yard by private agency staff, municipal sweepers, and rag pickers. However, this centralized system is inefficient and hampers proper recycling. Around 60% of the wet waste is dumped without treatment, while 40% of the dry waste is manually separated, with no composting due to non-functional pits and lack of a dedicated treatment facility.

👉 Pauri’s dumping ground has 7,636 metric tonnes of legacy waste, with 60% of current waste dumped untreated due to the lack of a composting plant.

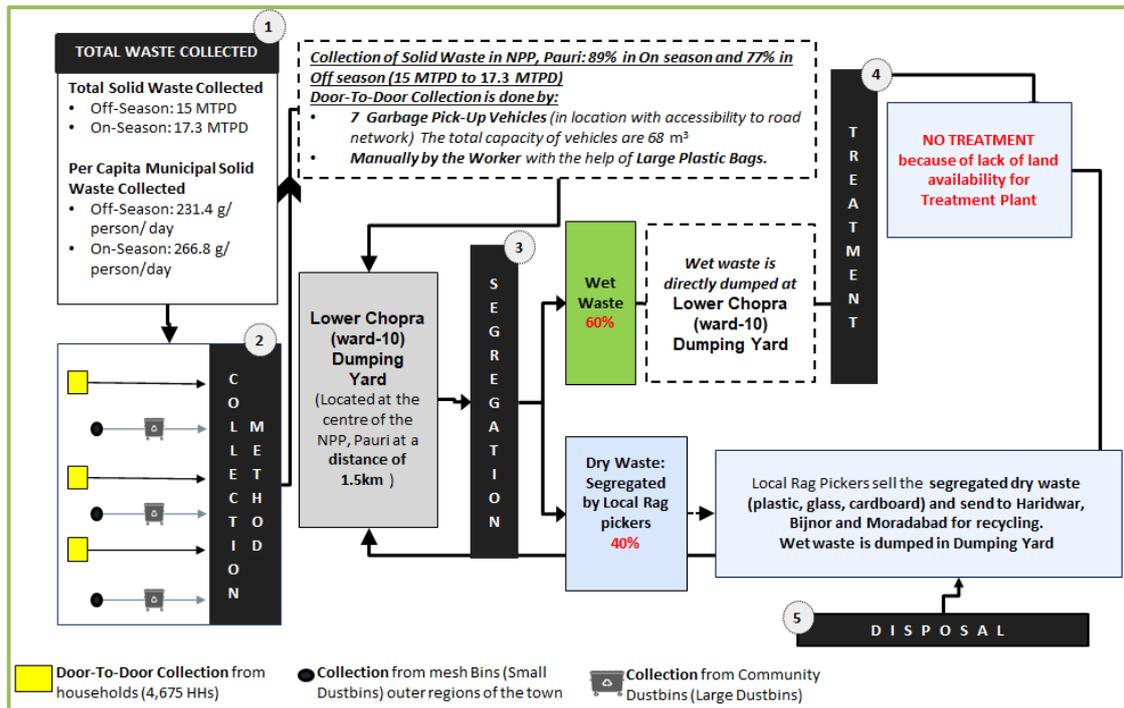


Figure 18: Flowchart of SWM in Nagar Palika Parishad, Pauri

The waste generated in Pauri ranges from 15-17.3 MTPD, with a collection efficiency of 77% in off-season and 89% during peak tourist season. A large portion of waste remains uncollected, contributing to unsanitary conditions. The current disposal practice involves direct dumping of mixed and untreated waste in the Lower Chopra Dumping Yard, which has accumulated over 7,600 MT of legacy waste. This has caused significant environmental concerns, including leachate, odor, and visual degradation of the hilly terrain.

Although NPP, Pauri has a system of user charges for different household and commercial categories, compliance and willingness to pay remain low. Additionally, the absence of penalties under SWM Rules 2016 for non-compliance weakens enforcement. The town urgently needs improved infrastructure, robust public awareness campaigns, strict monitoring, and dedicated waste treatment facilities to address its growing waste management challenges effectively.

5.2.1. Key Challenges in Solid Waste Management (SWM) in Pauri town

- 1. Widespread Illegal Dumping:** Despite fines and collection services, littering persists, harming public health and town aesthetics.
- 2. No Source-Level Segregation:** Bin distribution failed due to low awareness and resistance, hampering effective waste processing.
- 3. Lack of Treatment Infrastructure:** No waste treatment plant; waste is openly dumped in valleys, worsening pollution.
- 4. Resistance to User Charges:** Even nominal monthly fees are resisted, leading to increased open dumping.
- 5. Environmental Degradation:** Open burning releases toxic emissions, degrading air, soil, and water quality.
- 6. Terrain Challenges:** Hilly geography hampers efficient waste collection and transport.

7. **No Recycling/Composting Units:** Absence of facilities means all waste ends up in dumps, lowering processing efficiency.
8. **Weak Governance:** Poor enforcement, low funding, and coordination gaps hinder effective SWM implementation.

5.2.2. Proposed Solutions and Strategic Intervention

1. **Curb Illegal Dumping:** Identify hotspots, install CCTV, engage volunteers, and enforce strict penalties with awareness drives.
2. **Promote Waste Segregation:** Run household campaigns, offer incentives, penalize non-compliance post-awareness phase.
3. **Bridge Infrastructure Gaps:** Secure land for SWM plant; install OWC machines and temporary sorting/composting units.
4. **User Charge Acceptance:** Communicate charge usage, offer subsidies for low-income groups, and penalize non-payers.
5. **Environmental Protection:** Ban open burning, promote composting and waste-to-energy, and run cleanup drives.
6. **Terrain-Based Collection:** Use manual collection and small vehicles in narrow/remote areas; promote community-led efforts.
7. **Boost Recycling:** Encourage household recycling; build compost pits and monetize compost locally.
8. **Strengthen Governance:** Enforce plastic bans, improve coordination, appoint SWM nodal officers, and involve youth via campaigns and certified volunteering.

5.3. Water Supply and Availability

Pauri's water infrastructure is managed jointly by the Uttarakhand Jal Sansthan (UJS) and the Pey Jal Nigam Uttarakhand (PJNU). The town sources its water from the Alaknanda and Nayar rivers, tributaries, and springs. However,

seasonal variability particularly in summer when up to 60% of water sources dry up leads to acute shortages which is met through hand pumps and water tankers owned or hired by UJS.

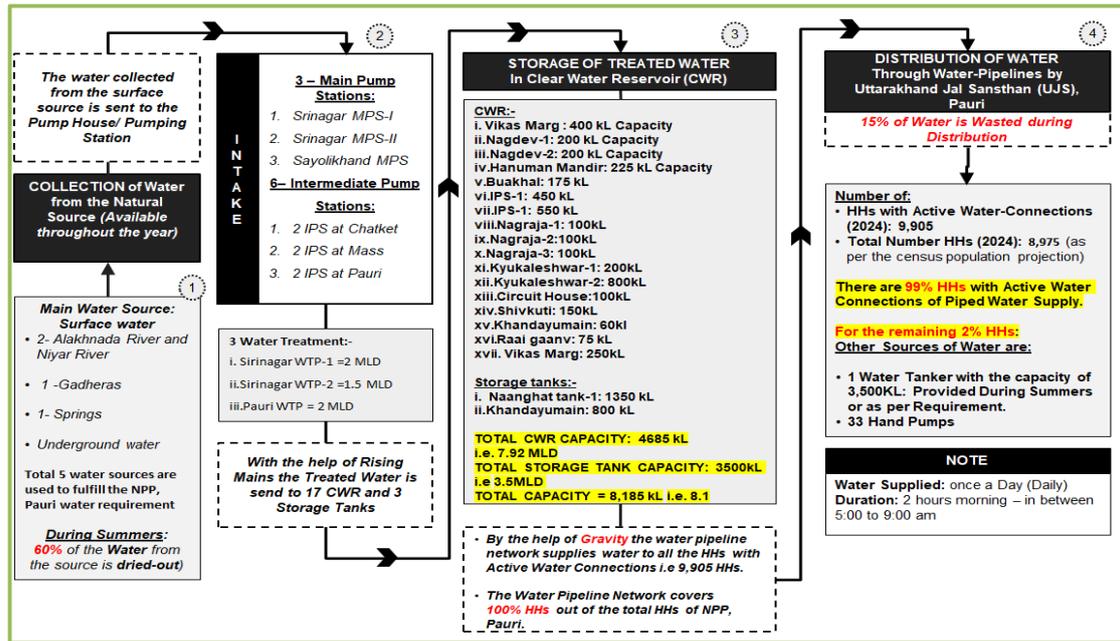


Figure 19: Flowchart of Process of Water Supply System in NPP, Pauri

Water from these sources is collected and treated at three main water treatment plants (WTPs) with a combined capacity of 5.5 MLD. Treatment involves coagulation with alum and pH correction using sodium hydroxide. The treated water is stored in 17 clear water reservoirs and three major storage tanks, collectively holding up to 7.6 MLD. Water is then distributed via gravity through a network of pipelines serving around 9,905 active connections, including 6,127 households within NPP Pauri. Due to inefficiencies, nearly 15% of water is lost during distribution.

👉 The water gap increases significantly during the on-season (summer) due to increased demand and reduced supply, leading to a 54.3% deficit.

Despite 100% pipeline coverage and access, water availability remains significantly below CPHEEO standards-per capita supply drops to just 61.7 LPCD in summer against the 135 LPCD benchmark. Supply is only 4 MLD in peak season against a demand of 8.75 MLD, indicating a 54.3% deficit. Further, non-revenue water remains unmetered and is roughly estimated at 15%.

UJS charges fixed water tariffs based on building assessments or consumption (for metered connections), with tiered rates depending on whether water is supplied through gravity or pumped systems. For tourism-related demands, the impact on water infrastructure is minimal, as daily tourist influx remains modest at around 80-100 people during peak seasons, supplemented by water tankers when required.

5.3.1. Key Challenges in Water Availability & Supply in Pauri town

- 1. Natural Source Dependency:** Reliance on rivers and tributaries that often dry up in summer, with over 60% becoming non-functional.
- 2. Challenging Terrain:** Hilly landscape complicates pipeline installation, limiting coverage and increasing maintenance costs.
- 3. Contamination Risks:** Pipelines near drains and waste zones raise chances of waterborne diseases due to poor filtration.
- 4. Manpower Shortage:** Lack of technical staff delays maintenance and reduces supply reliability.
- 5. Climate Impact:** Irregular rainfall and glacial melt are worsening water scarcity.
- 6. Weak Governance:** Absence of metering and monitoring leads to inefficiencies and makes conservation difficult.

5.3.2. Proposed Solutions and Strategic Intervention

- 1. Reduce Natural Source Dependency:** Promote rainwater harvesting, greywater reuse, and watershed management to diversify supply.

2. **Address Terrain Challenges:** Use HDPE pipes and GIS mapping for safe, cost-effective pipeline installation in hilly areas.
3. **Minimize Contamination Risks:** Replace and relocate old pipelines, install protective casing, and upgrade filtration systems.
4. **Strengthen Human Resources:** Build local technical teams and provide regular training for ULB staff and communities.
5. **Enhance Climate Resilience:** Introduce dual-piping, conduct water audits, and adopt IWRM with predictive planning tools.
6. **Improve Water Governance:** Use smart meters, data tracking, and strict enforcement to manage usage and prevent losses.

5.4. Urban Transport and Parking

Pauri Town is connected by two National Highways (NH-309 and NH-534) and one State Highway (SH-79), ensuring strong inter- and intra-state connectivity. NH-309 links Pauri with Haridwar, Srinagar, and Karnprayag, while NH-534 connects it to Kotdwar and higher Himalayan regions. SH-79 connects Pauri with Devprayag and nearby interior areas, supporting regional travel and religious tourism.

👉 Pauri town has strong highway connectivity but suffers from inadequate parking, limited public transport, and street congestion

Internally, the road network is maintained by the Nagar Palika Parishad and PWD, covering over 80 km. The main town bus stand provides road links to cities like Delhi and Kotdwar, while the nearest railway station (Kotdwar) and airport (Dehradun) are 101 km and 133 km away, respectively. Road travel remains the most convenient mode for reaching Pauri.

However, parking infrastructure is inadequate, with only 235 existing parking spaces across six locations, leading to traffic congestion and street parking. A multi-level parking facility (60 vehicles) is proposed, but more expansion is needed.

Limited public transport, heavy reliance on private vehicles, and stray cattle on roads further strain traffic conditions.

5.4.1. Key Challenges in Urban transport and Parking in Pauri town

1. **Inadequate Public Transport:** Only two local buses operate, pushing dependence on private vehicles and increasing congestion.
2. **Severe Parking Shortage:** Limited parking (235 spots) forces widespread on-street parking, clogging narrow roads.
3. **Poor Road Infrastructure:** Narrow, hilly roads with frequent landslides hinder traffic flow and road maintenance.
4. **Abandoned Cattle on Roads:** Stray cattle obstruct traffic and pose safety risks for commuters and themselves.
5. **Environmental Impact:** Rising vehicles contribute to air and noise pollution, affecting health and the region's ecology.

5.4.2. Proposed Solutions and Strategic Intervention

1. **Expand Public Transport:** Add local buses and shuttle services; promote ride-sharing to reduce private vehicle use.
2. **Improve Parking Infrastructure:** Build multi-level and stack parking; mandate parking in new buildings; discourage multiple vehicle ownership. Use real-time digital systems; integrate with hotels; develop seasonal peripheral parking.
3. **Upgrade Road Network:** Redesign roads with signage, barriers, and NMT paths; conduct risk assessments and install early warning systems.
4. **Manage Stray Cattle:** Build shelters, register cattle, and penalize negligence; partner with NGOs and police for enforcement.
5. **Reduce Environmental Impact:** Incentivize green mobility, monitor pollution, and promote eco-friendly travel behavior.

6. Mussoorie

Mussoorie (SIUD, Study of Challenges faced by six towns of Uttarakhand: Mussoorie, 2025), nestled in the Dehradun district, is a premier hill station with significant touristic and economic importance. Mussoorie, famously known as the “Queen of Hill Stations”. The temperature in Mussoorie town ranges from 26°C to 13°C.

6.1. Demography and Socio-Economic Profile

As per Census 2011, the town has a population of 30,118, with males comprising 55% (16,623) and females 45% (13,495). Mussoorie has a sex ratio of just 812 females per 1,000 males, one of the lowest in the region, pointing to significant gender imbalance.

👉 The population of the town for the year 2024 as per Census data projection is approximately 42,000, but considering significant floating, off-season tourist, boarding school, cantonment, hospital and tenant population it accounts to 77,524 during off- season.

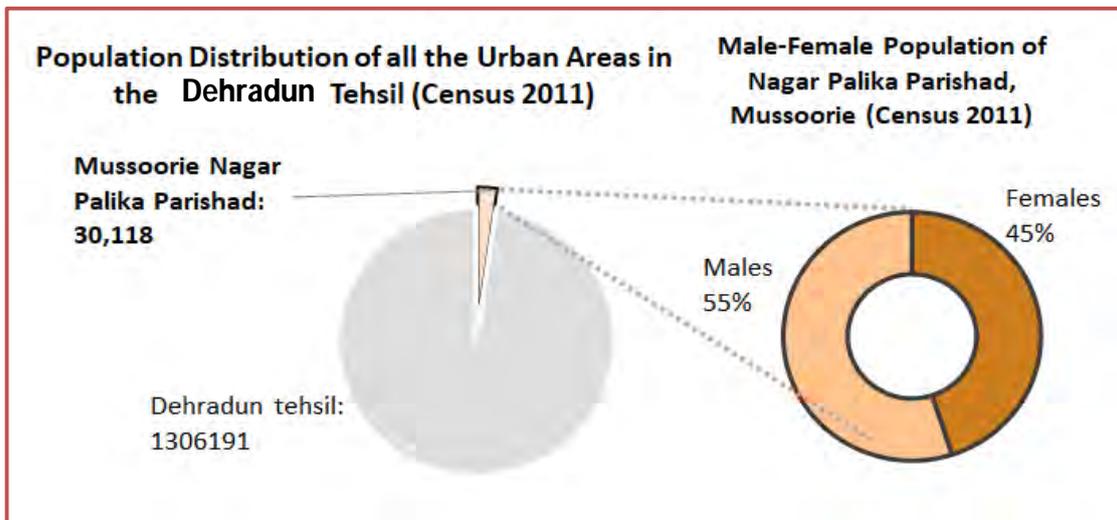


Figure 20: Population Distribution of Dehradun Tehsil

Literacy in Mussoorie is relatively high at 94.5%, surpassing the district average of 78.82%. Scheduled Castes make up 18.52% (5,578) and Scheduled Tribes 0.85% (256) of the population. It has a Hindu majority with 80.67% of Hindu population followed by 7.70% of Muslim population. As per Census 2011, 35.5% of Mussoorie’s population (10,692 persons) is engaged in work, with 90.4% as Main Workers and 9.6% as Marginal Worker.

At present the Mussoorie encompasses 64.74 Sq.km and divided into 13 wards. Mussoorie has a total of 8,400 households (HHs) with an average household (HH) size of 5.

Table 5: Mussoorie Population Overview

Overview	Nagar Panchayat, Mussoorie As Per census (2011)	Nagar Palika Parishad, Mussoorie (2024)
Area of NPP, Mussoorie	64.75 sq. km.	64.75 sq. km.
No. of Wards in NPP, Mussoorie	11	13
Total Population of NPP, Mussoorie	30,118 Persons	42,000 Persons (Projected by Census)
Total Number of Households (HHs)	6,245	8,400
Average HH Size	4	5
Population Density of NPP, Mussoorie	4.65 PPH	6.49 PPH
Tourist Population of NPP, Mussoorie	11.20 Lakh	14.7 Lakh by the year of 2023 On Season – 15,000-20,000 per day, and Off-season – 3,000 to 7,000 per day

Tourism in Mussoorie has shown fluctuating trends over the years. After steady growth till 2012, tourist numbers dropped in 2013 due to the Kedarnath floods but quickly rebounded in 2014. From 2015 to 2019, Mussoorie saw a sharp rise in visitors, peaking above 30 lakh. The COVID-19 pandemic led to a significant decline in 2020, followed by gradual recovery in 2021 and 2022. In 2022, the town recorded 14.7 lakh tourists, with peaks in May, June, and December, and dips during the monsoon months.

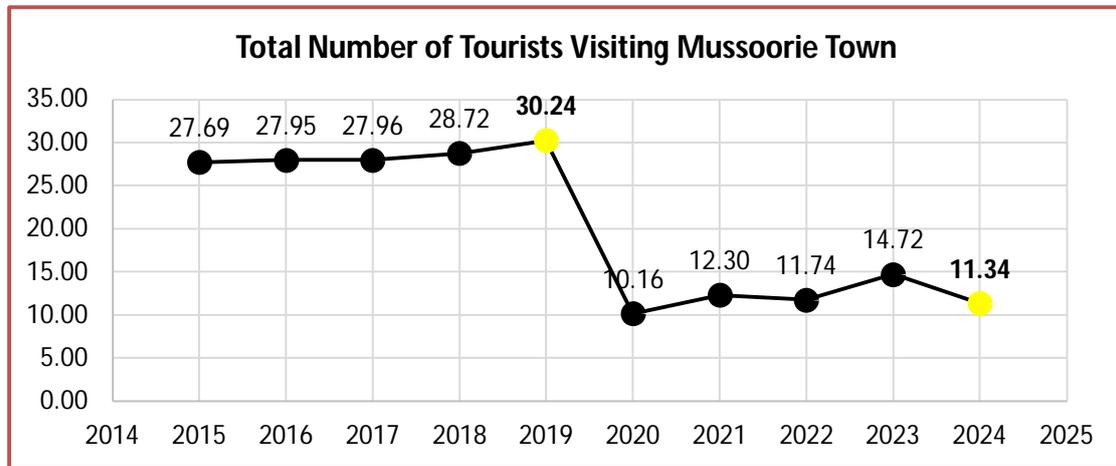


Figure 21: Annual Tourist Footfall of Mussoorie Town from the Year 2011 to 2024 as per the Tourism Department of Mussoorie, Uttarakhand

The town’s demography is shaped by seasonal influxes of tourists, with footfall reaching over 10 lakh annually, creating unique socio, economic dynamics and infrastructural pressures. Mussoorie’s demographic composition reflects a stark duality between its core permanent population and a transient workforce that fluctuates with the tourist seasons.

6.2. Solid Waste Management

Mussoorie’s Solid Waste Management (SWM) is jointly handled by the Nagar Palika Parishad (NPP) and KEEN, a private agency. Declared a “bin-free” town under the Swachh Bharat Mission 2.0, Mussoorie relies on individual bins maintained by

shop owners and vendors, particularly along commercial stretches like Mall Road, while fixed mesh bins are provided in outer areas. A workforce of 285 sanitation workers, including 108 appointed by NPP and 177 by KEEN, ensures daily cleaning across the town. The streets and public spaces are cleaned thrice a day, both during peak tourist seasons and off-seasons, ensuring consistency in hygiene standards.

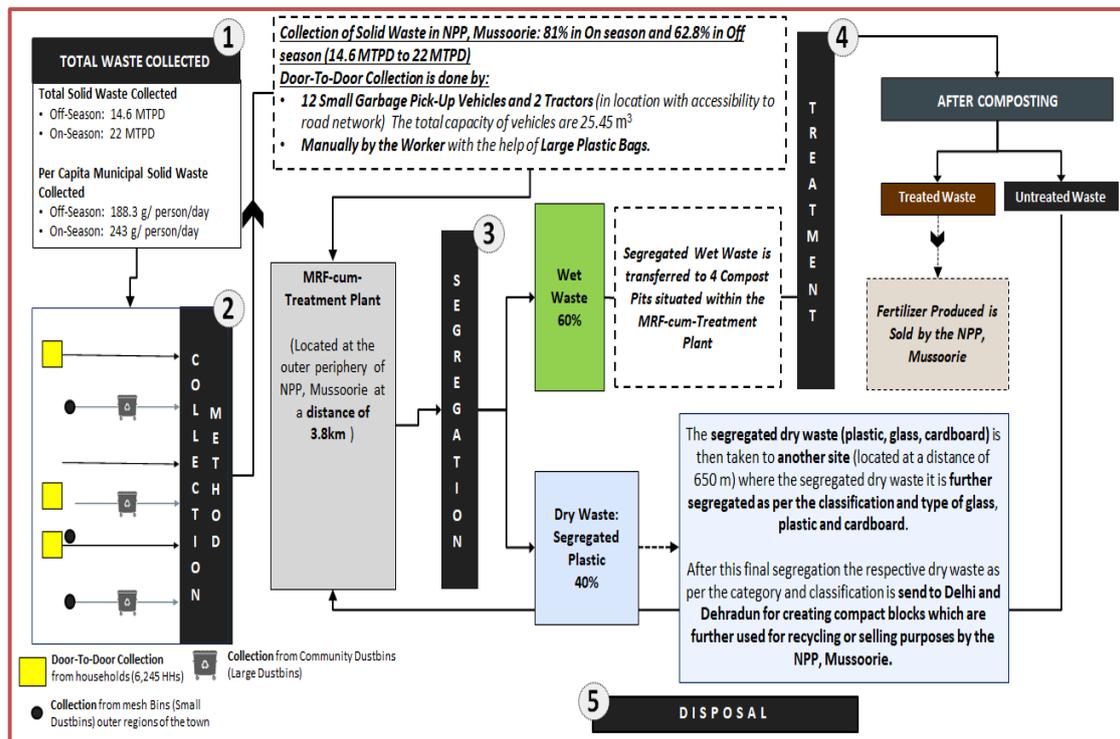


Figure 22: Flowchart of Solid Waste Management (SWM) In Nagar Palika Parishad, Mussoorie

A well-equipped fleet of 14 garbage pick-up vehicles with a combined capacity of 29.89 m³ facilitates door-to-door waste collection across 6,245 households. Waste is also collected manually in areas lacking

✎ The gap between waste generation and collection is approximately 19%, indicating that 5,157 kg/day of waste remains uncollected during peak tourist seasons.

road access. KEEN is responsible for a wide range of operations from hiring and paying sanitation workers to collecting user charges and transporting waste. NPP provides infrastructure support including bins, vehicles, and conducts composting of wet waste. Penalty clauses in the service contract ensure accountability, with fines imposed for lapses such as failure to collect waste, absence of uniforms, or non-segregation at source.

Despite these efforts, challenges persist. Waste is still being dumped at several locations drains, open plots, and around collector dustbins in Landour posing risks to public health. Waste generation fluctuates seasonally, rising from 14.6 MTPD in the off-season to 22 MTPD in tourist season. While collection efficiency ranges between 62.8% to 81%, a gap of uncollected waste remains, leading to accumulation and environmental degradation. Moreover, workers are often exposed to unsanitary conditions due to inadequate safety equipment, raising concerns about occupational health.

Segregation and treatment practices show promise. At the household level, 80–85% of residents segregate waste, supported by awareness initiatives and distribution of bin bags. The MRF centre handles 95% of collected waste, with 100% of wet waste processed for biogas generation and composting. Dry waste is further segregated and sent to Dehradun and Delhi for recycling. The town has also implemented tech-driven solutions like GPS trackers and QR codes for efficient tracking and accountability. However, the closure of old compost pits for plant construction and lack of medical waste management systems underscore the need for infrastructural upgrades and more stringent enforcement of safety and hygiene protocols.

6.2.1. Key Challenges in Solid Waste Management (SWM) in Mussoorie town

- 1. Tourist Influx Pressure:** Waste generation rises from 14.6 to 22 MTPD in peak season, overburdening SWM systems.

2. **Incomplete Waste Segregation:** 5% unsegregated waste, mainly from small shops, hampers processing efficiency.
3. **Illegal Dumping:** Poor awareness and weak enforcement lead to littering, especially in Landour and public areas.
4. **Stray Animal Nuisance:** Animals scatter waste from bins, causing contamination and health risks.
5. **Public Health Hazards:** Accumulated waste attracts pests, heightening disease risk for locals and tourists.
6. **Environmental Degradation:** Litter in green zones pollutes soil, water, and harms biodiversity.
7. **Governance Gaps:** Limited funds, weak inter-agency coordination, and enforcement reduce SWM effectiveness.

6.2.2. Proposed Solutions and Strategic Intervention

1. **Manage Tourist Waste:** Impose seasonal vehicle caps, plastic bans, and SWM cess; enforce carry-your-bin-bag rules.
2. **Improve Segregation:** Deploy inspectors, penalize violations, and upgrade bin infrastructure with targeted outreach.
3. **Control Dumping:** Monitor hotspots via NGOs, SHGs, police, and cameras; enforce fines with digital transparency.
4. **Stray Animal Control:** Use animal-proof bins, conduct sterilization drives, and maintain stray animal data.
5. **Public Health Safety:** Run pest control in hotspots and ensure health check-ups and gear for sanitation staff.
6. **Environmental Protection:** Organize clean-up drives, eco-awareness events, and install green infrastructure.

7. Policy & Governance Reform: Ban sub-1L plastic bottles, improve coordination, and engage communities via nodal officers and school programs.

6.3. Water Supply and Availability

Mussoorie town relies heavily on the Yamuna River and a network of 20 springs and Gadheras for its water supply. The system is managed jointly by Uttarakhand Jal Sansthan (UJS), which handles water supply, and Pey Jal Nigam Uttarakhand (PJNU), which oversees the infrastructure. The old water supply scheme, established in 1908, was largely dependent on gravity and pump-fed sources. Though it supplied 7.69 MLD, the system struggled to meet peak demand during tourist seasons, resulting in a seasonal shortfall of up to 8.09 MLD. The existing infrastructure included 20 water sources, 15 distribution reservoirs, and 7 pumping stations, with storage capacity nearing 29,000 KL.

To address the growing demand, the Mussoorie Water Reorganized Scheme was introduced in 2024. This new system sources water from the Yamuna River (30 km away) along with the existing natural springs and has significantly expanded capacity producing 12 MLD in the off-season and 14 MLD in the tourist season meeting demand without any reported shortages. The storage infrastructure was also upgraded, with three new reservoirs added to the existing six, raising the total storage capacity to 37,780 KL. With 10 pumping stations and over 6,500 private connections, the upgraded network now supplies water to 95% of households in the town.

 Mussoorie receives 12-14 MLD of water supply against a seasonal demand of 9-11 MLD, indicating adequate but seasonally stretched resources.

Water collection begins from the Yamuna and other sources, with treatment occurring primarily at the Bhediya Water Treatment Plant. Treated water is stored in 14 tanks across town and distributed using a gravity-fed pipeline system laid by PJNU. Although water is supplied for about four hours daily, extended hours are maintained during peak tourist months. Water losses are estimated at around 15%

during distribution. Currently, 5% of households rely on water tankers and community taps, especially during seasonal shortages or infrastructure limitations.

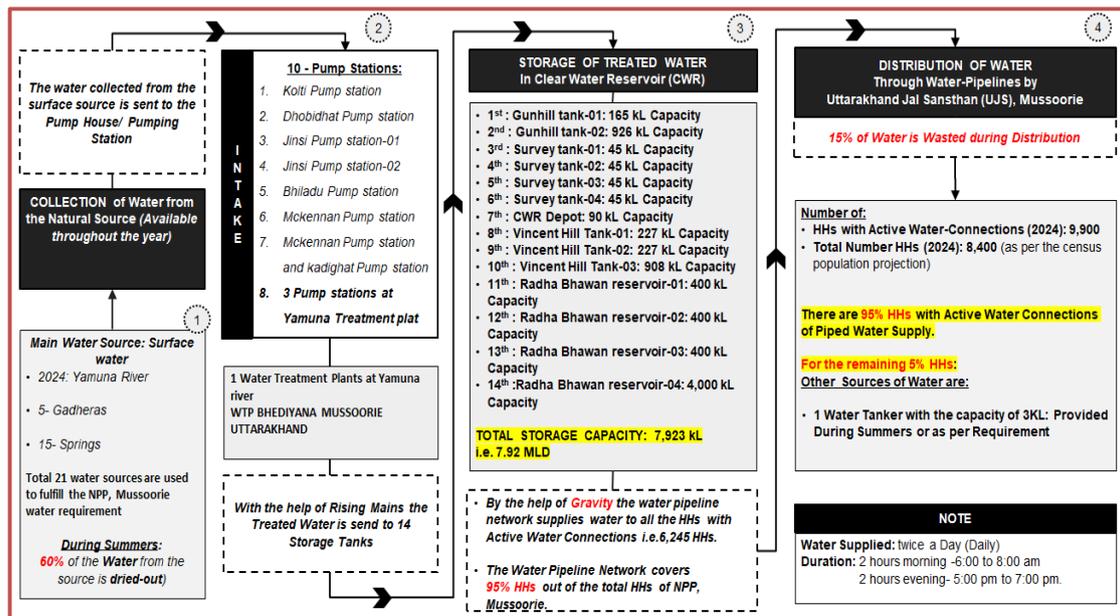


Figure 23: Flowchart of Process of Water Supply System in NPP, Mussoorie

Water tariffs are charged based on either the building’s annual assessment or metered consumption, with different rates for gravity, low-head, and high-head supply systems. Special provisions and reduced charges are available for BPL families. The tourism sector, including hotels and guest houses, supplements their water needs via UJS-owned or hired tankers. Despite a surge in tourist arrivals up to 20,000 per day during peak season officials report no major water supply disruptions since the reorganization of the scheme, indicating its effectiveness in meeting Mussoorie’s growing water demands.

6.3.1. Key Challenges in Water Availability & supply in Mussoorie town

1. **Overdependence on Natural Sources:** 60% of springs and rivers dry up in summer, affecting supply during peak tourist season.
2. **Monsoon Sewer Overflow:** Aging sewer tanks overflow during rains, polluting water sources and risking disease outbreaks.
3. **Tourism and Urban Pressure:** Rapid expansion of hotels and homes increases seasonal water demand, stressing the system.
4. **Infrastructure Gaps:** Only 53% of households have active piped connections; poorly mapped, leaky pipelines reduce efficiency.
5. **Workforce Shortage:** Lack of skilled personnel delays repairs and limits water quality management.
6. **Weak Governance:** No water metering leads to untracked consumption, theft, and planning challenges.

6.3.2. Proposed Solutions and Strategic Intervention

1. **Diversify Water Sources:** Implement rainwater harvesting, greywater reuse, and watershed protection to reduce pressure on natural sources.
2. **Upgrade Sewerage Systems:** Increase tank capacity, separate stormwater from sewage, and install overflow tanks in flood-prone areas.
3. **Regulate Urban Water Demand:** Use zone-wise water allocation, promote smart meters, and encourage water-efficient fixtures in tourism establishments.
4. **Strengthen Infrastructure:** Map pipelines via GIS, use sensors for leak detection, and upgrade to durable, pressure-managed networks.
5. **Enhance Technical Capacity:** Establish technical support units and train municipal staff for timely maintenance and service delivery.
6. **Improve Governance:** Install digital meters, audit regularly, penalize illegal use, and raise awareness on responsible consumption.

6.4. Urban Transport and Parking

Mussoorie's transport infrastructure is anchored by SH-36, which connects the town to Dehradun and plays a critical role in facilitating daily movement for both residents and tourists. Additionally, NH 707A enhances connectivity within and beyond the town. However, the hilly terrain, narrow roads, and lack of continuity in the road network contribute to congestion, particularly during peak tourist seasons.

The town is connected by road to major cities, with two main bus stations that are Library Chowk and Picture Palace serving as key transit points. Rail and air access is via Dehradun, with the railway station located about 35 km away and Jolly Grant Airport approximately 60 km from Mussoorie. The number of registered vehicles has grown significantly in recent years from 9.32 lakh in 2020 to 12 lakh in 2023 putting additional pressure on the existing road network. Key congestion hotspots include Library Chowk, Picture Palace Road, Kempty Falls Road, and Clock Tower, where limited road width and indiscriminate parking often cause traffic jams.

👉 Mussoorie's vehicle registration showed fluctuating growth, peaking at 12 lakh in 2023 before sharply dropping to 7.82 lakh in 2024, despite an overall upward trend reaching 301.10 lakh cumulatively.

Mussoorie's parking infrastructure is limited, with just 1,807 total parking spaces, including only 13 for buses. Key facilities like the Library Chowk Taxi Stand and the multi-level parking at Kinraig struggle to accommodate the growing demand. Most residents park along roads or within their premises, while the working population and tourists rely on a mix of hotel parking, roadside spots, or nearby private lots. During tourist seasons, this leads to overcrowding, illegal parking, and blocked access, underscoring the urgent need for enhanced parking management, structured facilities, and long-term traffic planning.

6.4.1. Key Challenges in Urban transport and Parking in Mussoorie town

1. **Seasonal Traffic Surges:** High tourist inflow in May and December causes severe congestion on Mussoorie's narrow roads.
2. **Lack of Public Transport:** Limited buses and taxis push reliance on private vehicles, increasing traffic and parking demand.
3. **Inadequate Parking:** Only 1,807 slots exist; hotel parking is limited, leading to rampant roadside parking and congestion.
4. **Narrow Road Network:** Colonial-era roads can't handle current traffic, with daily jams at Library Chowk and Kulri Bazaar.
5. **Maintenance Issues:** Landslides and monsoon damage disrupt roads like Mussoorie-Dehradun, affecting safety and mobility.
6. **Weak Traffic Regulation:** Poor enforcement enables illegal parking and encroachments, worsening road efficiency.

6.4.2. Proposed Solutions and Strategic Intervention

1. **Manage Seasonal Traffic:** Introduce tourist permits, restrict private vehicles, and promote Dehradun-Mussoorie bus services to ease peak congestion.
2. **Boost Public Transport:** Launch shuttle services and shared taxis; levy eco-taxes and offer free rides from eco-tax booths to reduce private vehicle use.
3. **Expand Parking Facilities:** Enforce parking in new buildings, promote stack and peripheral parking, and use digital systems linked to hotel bookings.
4. **Upgrade Road Infrastructure:** Implement adaptive traffic signals, real-time monitoring, and prioritize the Dehradun-Mussoorie ropeway project.
5. **Ensure Road Maintenance:** Use slope stabilization methods and durable materials; set up emergency protocols for landslide-prone routes.
6. **Strengthen Traffic Regulation:** Increase enforcement, impose stricter fines, raise awareness, and adopt smart tools for real-time parking tracking.

7. Haldwani cum Kathgodam

Haldwani cum Kathgodam (SIUD, Study of Challenges faced by six towns of Uttarakhand: Haldwani cum Kathgodam, 2025), located at the foothills of the Kumaon region in Nainital district, Uttarakhand. Known as the “Gateway to Kumaon,” it serves as the primary entry point to the region. It is also considered the financial capital of Uttarakhand, hosting significant commercial, economic, and industrial activity. The temperature ranges from 42°C to 8°C.

7.1. Demography and Socio-Economic Profile

According to the 2011 Census, the Nagar Palika Parishad (NPP) of Haldwani cum Kathgodam accounts for approximately 82% (2,01,461 persons) of the total Tehsil population. The male population stands at 1,05,580 (52%), while females comprise 95,881 (48%), reflecting a sex ratio of 908 females per 1,000 males lower than Nainital district's average of 934.

👉 Haldwani is one of the most populous urban center in Uttarakhand hills, with 5,24,708 residents, with 1,04,942 number of households.

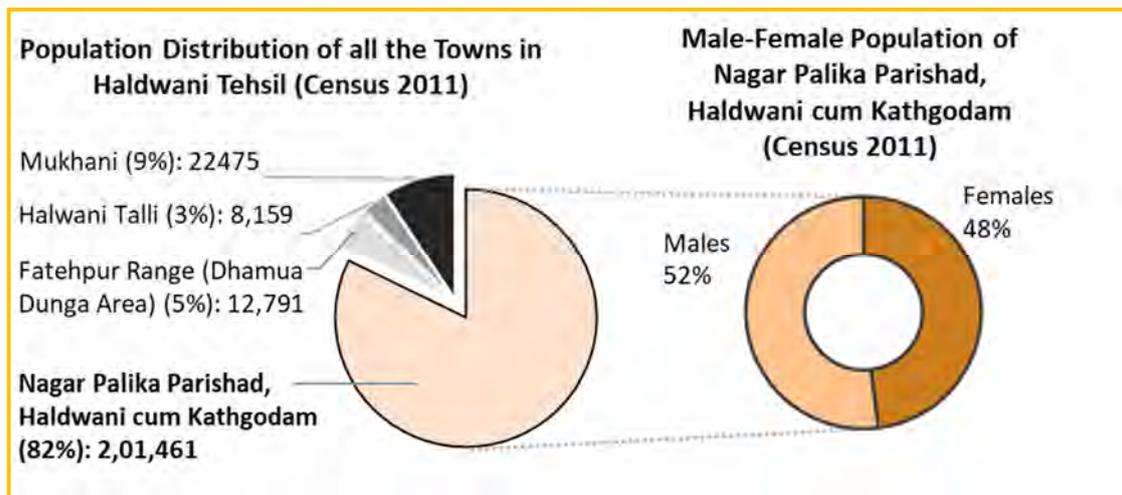


Figure 24: Population Distribution in the Four Towns in Haldwani Tehsil

The literacy rate of the town is recorded at 83.2%, which is slightly lower than Nainital district's average of 89.47%. Within the town's demographic makeup, Scheduled Castes (SCs) represent 10% (20,653) and Scheduled Tribes (STs) account for 1% (1,063) of the population. Haldwani-cum-Kathgodam is a predominantly Hindu, majority town, comprising 68.84% Hindus, 31.89% Muslims, 2.19% Sikhs, 0.89% Christians, and smaller percentages of Buddhists, Jains, and others. Around 32.3% of the population is engaged in work, mostly in non-agricultural sectors, while 67.7% remain non-working.

The total area of the town has increased 4 times i.e. 10.62 sq. km. (Census India, 2011) to 42.59 sq. km. due to the amalgamation of 27 wards (Ward Number 34 to 60) to the existing/old municipal boundary area (i.e. Ward Number 01 to 33) in the year 2018. This further lead to an increase in number of wards from 33 (Census India, 2011) to 60 with a total population increase from 2,01,461 persons to 3,74,558 persons (for the year 2011).

Table 6: Haldwani-cum-Kathgodam Demographic Overview

Overview	Nagar Palika Parishad, Haldwani-cum- Kathgodam As Per Census (2011)	Nagar Nigam, Haldwani-cum- Kathgodam (2021)
Area of NN, Haldwani cum Kathgodam	10.62 sq. km.	42.59 sq. km.
No. of Wards in NN, Haldwani-cum-Kathgodam	33	60
Total Population of NN, Haldwani-cum-Kathgodam	3,74,558 Persons	5,24,708 Persons
Total Number of Households (HHs)	1,172	2,586
Average HH Size	5	5

Population Density of NN, Haldwani-cum-Kathgodam	353 PPH	123 PPH
Number of Slums	9	22
Total Number of HHs in Slums	1,522	11,307
Tourist Population of NN, Haldwani cum Kathgodam	-	20,000-30,000 Persons Per Day

Haldwani-cum-Kathgodam's rapid urbanization, coupled with its role as a regional commercial and transport hub, underscores the need for infrastructure upgradation across essential services.

7.2. Solid Waste Management

The Solid Waste Management (SWM) system in Haldwani-cum-Kathgodam is managed by the Nagar Nigam, which has adopted the Bin-Free City model under the Swachh Bharat Mission 2.0. A total of five underground bins are installed at key locations, while dustbins are only selectively present in offices and public spaces. To promote source segregation, 15L twin bins were distributed at the household level, though segregation remains largely ineffective. Around 1,150 sanitation workers have been deployed across wards, with streets being cleaned twice daily. Solid waste collection and transportation are handled jointly by Nagar Nigam and a contracted private agency, which employs a workforce to manage door-to-door collection, segregation, and transportation of waste using 36 dedicated vehicles.

Currently, around 150 to 195 metric tonnes of solid waste is generated daily, with seasonal variation caused by an influx of floating population. Waste from residential and commercial areas is collected through a routine morning operation. However, segregation of waste at the source is nearly absent; instead, centralised segregation is carried out manually at the under-construction SWM plant near Guala River which is located just 3.4 km from the city, will also serve six other neighboring towns. About 43% of the total collected waste is dry and is sold for monetary

recovery, while the remaining 57% (mainly wet waste) is dumped untreated. Medical and institutional waste is handled separately by respective facilities or private agencies.

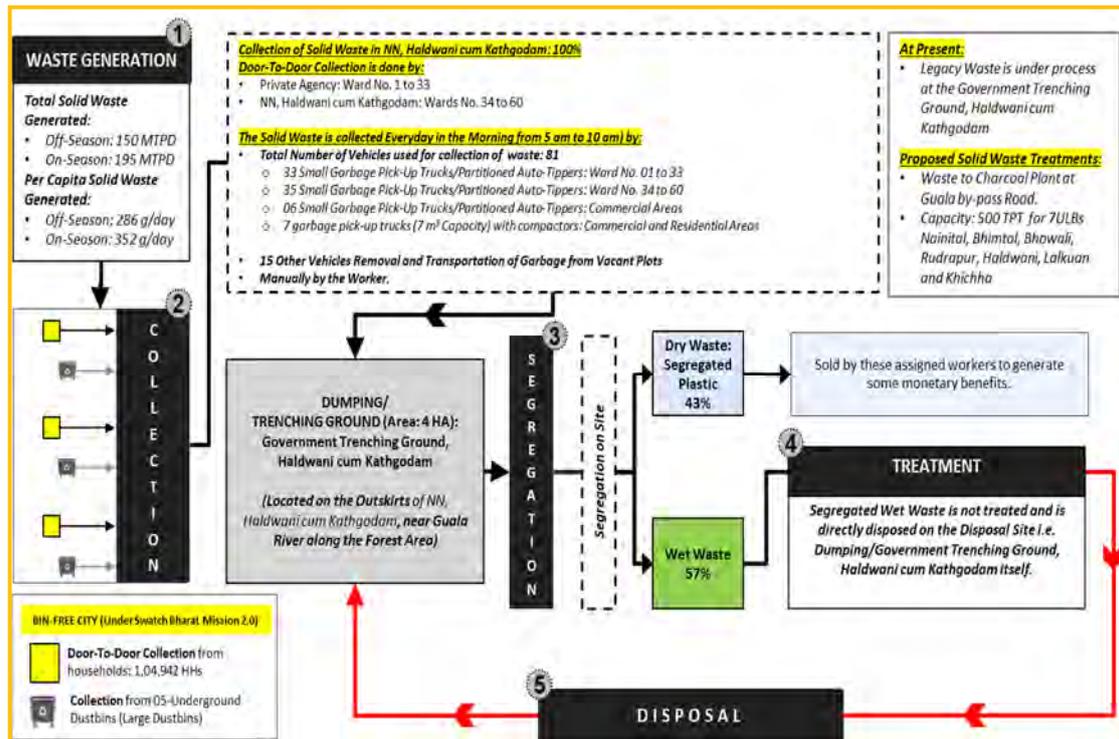


Figure 25: Flowchart of SWM in NN, Haldwani

The Nagar Nigam has implemented a user charge system for waste collection services, with rates varying between ₹40 and ₹500 per month depending on the type of premises. Additionally, 15 more vehicles are kept on standby for emergency waste removal from vacant plots. To strengthen community engagement, SHGs called “Baini Sena” have been mobilised to manage cleaning, raise awareness, and collect user charges. Plans for future enhancement include a

👉 Haldwani produces 150 tonnes of waste daily, with an additional 45 tonnes during tourist peaks and proposed a charcoal plant under construction to process waste sustainably.

Waste to Charcoal plant by NTPC and treatment of over 1.39 lakh metric tonnes of legacy waste.

Despite ongoing efforts, several challenges persist. Open dumping and burning of untreated solid waste at the trenching ground were observed during field visits. Government policies like the Solid Waste Management Rules 2016, SWM Bye-laws 2020, and the Swachh Bharat Mission 2.0 guide the town's waste management practices, but stricter enforcement, improved source-level segregation, and investment in treatment infrastructure are essential for long-term sustainability.

7.2.1. Key Challenges in Solid Waste Management (SWM) in Haldwani-cum-Kathgodam town

- 1. Urban Expansion Pressure:** Merger of 27 wards in 2018 expanded city limits nearly 4 times, straining SWM services in new and old areas.
- 2. Population & Tourist Surge:** Rapid population growth and tourist influx (up to 50,000/day) cause seasonal waste spikes, overburdening infrastructure.
- 3. Low Awareness on Bin-Free Model:** Lack of public knowledge on the bin-free system leads to misuse of public spaces and non-compliance.
- 4. Behavioral Resistance:** Habitual reliance on community bins hampers transition to door-to-door collection and segregation.
- 5. No Source-Level Segregation:** Households don't segregate waste, resulting in mixed waste that's hard to recycle or treat.
- 6. Lack of Recycling Infrastructure:** No dedicated recycling units; informal disposal reduces recycling and increases landfill burden.
- 7. Non-functional Waste Treatment:** One SWM plant under construction is misused as a dump yard, with 1.4 lakh MT of legacy waste accumulated.
- 8. Illegal Dumping & Health Hazards:** Open dumping near tracks and vacant plots causes pest infestation and disease risks.

- 9. Environmental Harm & Plastic Waste:** Open burning and plastic pollution damage air, soil, and water, threatening ecosystems.

7.2.2. Proposed Solutions and Strategic Intervention

- 1. Zone-Wise Planning & Audit:** Conduct ward-level waste audits and enforce SWM Bye-laws, 2020, with penalties for accountability.
- 2. Tourist Waste Management:** Levy SWM cess on tourists and deploy additional staff during peak seasons for effective waste handling.
- 3. Awareness on Bin-Free System:** Partner with NGOs/SHGs for door-to-door campaigns and street plays to educate residents.
- 4. Behavioral Change Promotion:** Use public outreach and peer-led models to instill responsible waste habits.
- 5. Source Segregation:** Engage groups like *Baini Sena* to monitor segregation, distribute color-coded bins, and train households.
- 6. Recycling & Composting:** Set up decentralized compost pits and mini-recycling units; promote 3R principles via community/school events.
- 7. SWM Plant & Legacy Waste:** Expedite SWM plant completion and scientifically treat 1.39 lakh MT of legacy waste.
- 8. Curbing Littering & Dumping:** Monitor hotspots with CCTV and teams; enforce regular cleaning and impose fines on violators.
- 9. Plastic Control & Eco-Initiatives:** Launch Thaila ATMs, Garbage Cafés, and ban open burning to mitigate environmental damage.

7.3. Water Supply and Availability

The water supply infrastructure in NN, Haldwani-cum-Kathgodam is divided between multiple agencies, with responsibilities assigned ward-wise. The city sources its water primarily from surface water (Guala River) and groundwater sources, with seasonal depletion up to 60% in summer months. Construction and maintenance of

the water supply network are currently being carried out under different schemes led by the Uttarakhand Pey Jal Nigam (UKPJN), Uttarakhand Urban Sector Development Agency (UUSDA), and the World Bank.

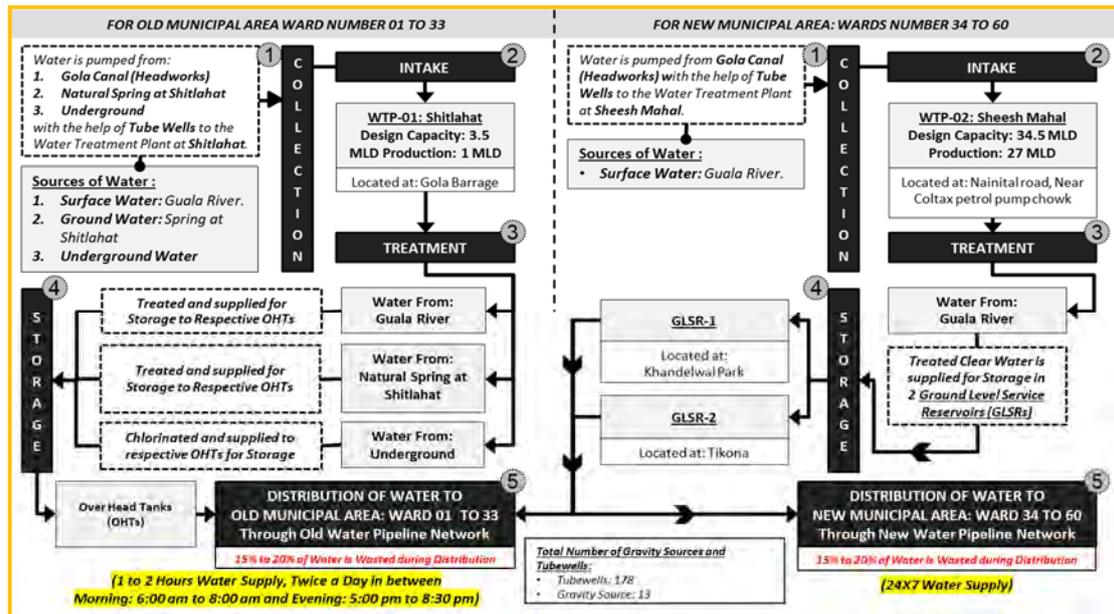


Figure 26: Flowchart of Process of Water Supply System in NN, Haldwani-cum-Kathgodam

The city’s water supply process is bifurcated into two areas: the old municipal area (Wards 1-33) and the newly added area (Wards 34-60). Wards 1-33 are served by WTP-01 (Shitlahat) with a lower capacity and shorter supply durations (1-2 hours twice daily), while the newer wards benefit from WTP-02 (Sheesh Mahal), offering 24/7 water supply. Despite these efforts, the city faces a demand-supply gap of 5.16 MLD and a per capita shortfall of 11 LPCD as of 2024. Water losses during distribution are 15–20%, primarily due to leakage and outdated pipelines.

Despite a supply of 70.26 MLD, Haldwani still faces a deficit of over 5.16 MLD, mainly due to aging infrastructure and seasonal source depletion.

Water tariffs in the city are fixed based on building assessments or metered consumption, with different rates for gravity, low head, and high head supply systems. UJS offers reduced registration fees for BPL households and charges monthly tariffs ranging from ₹176.40 to ₹817.50 based on property valuation. Metered water consumption rates vary between ₹10 to ₹15.63/kL for domestic connections and are higher for commercial and institutional users. However, full metering and pipeline coverage are yet to be achieved.

Tourist seasons and the drying of water sources further strain the system, with hotels depending on water tankers during peak months. To address this, the government has initiated projects like the Jamrani Water Supply Scheme and the Integrated Urban Infrastructure Development Project.

7.3.1. Key Challenges in Water Availability & Supply in Haldwani-cum-Kathgodam town

- 1. Overdependence on Natural Sources:** Water supply relies mainly on springs, Gadheras, and the Yamuna; nearly 60% dry up in summer, causing acute shortages.
- 2. Sewer Overflow in Monsoons:** Inadequate sewer capacity leads to frequent overflows, contaminating water sources and increasing health risks.
- 3. Urbanization and Demand Surge:** Rapid growth, especially in tourism, strains supply infrastructure, causing shortages and inconsistent service.
- 4. Infrastructure Gaps:** Despite 95% piped coverage, only 53% use it actively; unmapped pipelines and leaks reduce pressure and quality.
- 5. Shortage of Skilled Staff:** Lack of trained personnel delays repairs and hinders maintenance of the pipeline network.
- 6. Climate Change Effects:** Irregular rainfall and declining spring flow lower water availability during peak demand.

- 7. Weak Water Governance:** No effective metering or monitoring system leads to untracked usage, theft, and poor planning.

7.3.2. Proposed Solutions and Strategic Intervention

- 1. Reduce Dependency on Natural Sources:** Mandate rainwater harvesting, promote greywater reuse, and adopt watershed management through afforestation and pollution control.
- 2. Upgrade Sewer Infrastructure:** Increase sewer tank capacity, separate stormwater drains, use permeable surfaces, and install filters to prevent overflow and contamination.
- 3. Manage Urban Water Demand:** Zone-wise water allocation, build new reservoirs, enforce water-saving norms for tourism, and use smart meters with leak detection.
- 4. Optimize Infrastructure:** Use GIS mapping for pipelines, apply acoustic leak detection and pressure management, and incentivize piped water reconnections.
- 5. Build Technical Capacity:** Set up technical support cells and conduct regular training for staff and awareness workshops for residents.
- 6. Plan for Climate Resilience:** Implement IWRM with dual piping, catchment protection, hydrological modeling, and early warning systems for drought/floods.
- 7. Strengthen Water Governance:** Install smart meters, track usage data, reduce losses, and promote public awareness on conservation and metering.

7.4. Urban Transport and Parking

Haldwani-cum-Kathgodam has a well-developed road network that has expanded from 99 km (2011) to 983 km, covering almost the entire city. The road hierarchy includes 4 arterial roads

👉 The city lacks an organized public transport system, with 84% of trips made using private vehicles.

like NH-109 and SH-5, 5 sub-arterial roads, and 15 major collector roads, ensuring connectivity to nearby cities and hill stations.

The city has two railway stations Haldwani and Kathgodam and which is connected to Pantnagar Airport, 33 km away. Despite this connectivity, traffic congestion is increasing due to rising vehicle registrations and limited public transport options. Peak tourist seasons see up to 50,000 visitors per day, adding further strain on road infrastructure. Parking infrastructure includes 8 surface lots (805 vehicle capacity), 1 under-construction site, and 1 proposed basement facility, totaling around 1,105 spaces. Parking shortages are common, especially in old city areas. Residents and office-goers often use roadside or private premises, while tourists rely on limited public parking or park illegally along main roads.

Service Level Benchmark analysis reveals poor performance in public transport (LOS 22), parking (LOS 6), and ITS infrastructure (LOS 16). No specific state-level policy currently governs urban transport and parking in Haldwani, highlighting the urgent need for integrated planning and investment in transit, pedestrian infrastructure, and structured parking solutions.

7.4.1. Key Challenges in Urban transport and Parking in Haldwani-cum-Kathgodam town

- 1. Rapid Urbanization & Vehicle Growth:** Over 84% mode share is private vehicles, leading to road congestion and infrastructure stress.
- 2. Lack of Public Transport:** Absence of structured public transit forces reliance on private vehicles and taxis.
- 3. Traffic Congestion:** Peak-hour jams in key zones cause delays, fuel waste, and pollution.
- 4. Insufficient Parking:** Limited, unregulated parking causes on-street encroachment and pedestrian hazards.

5. **Tourist & Seasonal Traffic Surge:** High visitor flow during holidays and weddings overloads roads.
6. **Weak Enforcement:** Traffic rules poorly implemented, with frequent violations and minimal penalties.
7. **Pollution from Traffic:** Emissions from congestion harm health and environment, worsened by lack of green transport.

7.4.2. Proposed Solutions and Strategic Intervention

1. **Urban Road Planning:** Redevelop arterial roads, build ring-radial networks, and enforce zoning to limit sprawl.
2. **Public Transport Expansion:** Integrate land use with transit, enhance multi-modal links, and standardize taxi systems.
3. **Traffic Management:** Develop ring roads, manage hawkers, use digital surveillance, and promote EVs and carpooling.
4. **Smart Parking:** Implement surge pricing, stack systems, real-time monitoring, and residential permits.
5. **Tourist/Event Traffic:** Use seasonal plans, GPS guidance, and car-free zones; integrate parking with event platforms.
6. **Stronger Enforcement:** Use speed/red-light cameras, train traffic police, and fast-track violation penalties.
7. **Green Mobility:** Promote EVs, create low-emission zones, monitor emissions, and run awareness campaigns.

8. Conclusion

The Comprehensive compilation of research on 6 towns of Uttarakhand namely Nainital, Champawat, Almora, Pauri, Mussoorie, and Haldwani-Kathgodam presents a critical evaluation of three key urban sectors such as Solid Waste Management, Water Supply & Availability, and Urban Transport & Parking.

Each of these towns represents a unique urban typology within the state from high-density tourist hubs and commercial gateways to administrative centers in hill geographies. Through extensive field assessments, stakeholder consultations, and data analysis, the study identifies common and town-specific challenges. These include inadequate infrastructure, service delivery gaps, environmental pressures, governance deficits, and the overarching impact of climate change.

The study not only identifies challenges but also proposes implementable, context-specific solutions such as integrated solid waste systems, decentralized water management, capacity building, mobility planning, and technological interventions. The engagement of local stakeholders including municipal officers, engineers, planners, and state-level agencies ensured that the recommendations are grounded in practical realities and are aligned with the aspirations of urban local bodies.

In conclusion, the report highlights that overcoming urban challenges in Uttarakhand is not just a matter of infrastructure expansion but requires systemic reforms, community engagement, robust governance, and sustainability-focused planning. This study aims to serve as a foundation for future action, replication, and policy refinement in similar urban contexts across the Himalayan region.

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Kedarnath's Successful Plastic Waste Management Initiatives: Leading the Way for Sustainable Tourism

Jitender Verma,
Sub District Magistrate,
Dharchula, Pithoragarh, Uttarakhand

The iconic Char Dham shrines in the Himalayas have always held a special place in the hearts of millions of devotees. However, the issue of plastic waste and its impact on the environment has been a growing concern. The District administration of Kedarnath actively took up many steps in order to address the issue of waste management through various cleaning drives. In order to further enhance the activities, with the support of the local administration, natives distributors & shopkeepers, a pilot was initiated in April 2022 by District Administration, with a tech leader company in circularity and sustainability, to create a digitally enabled behavioral change scheme for pilgrims undertaking the yatra.

“I am proud to be a part of these efforts and witness the recent success of the digital Deposit Refund System (dDRS). This system has been instrumental in reducing plastic waste and has gained significant traction. The collaboration between local administrations and the expansion of the dDRS highlight important milestones in our collective journey to combat plastic pollution in this eco-sensitive region in the Himalayas.”

Over the past year, officials in Kedarnath have witnessed a considerable improvement in PET bottle collection, attributing the success to heightened awareness campaigns and the implementation of the dDRS. The project was able to distribute and ensure the usage of scannable QR stickers to all shops enroute the

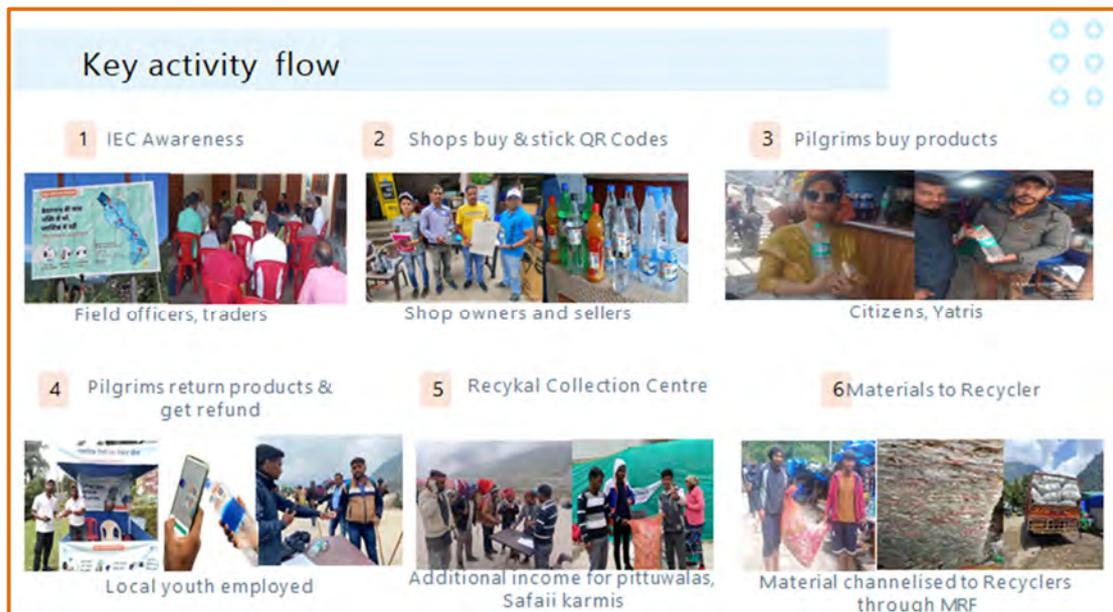
Kedarnath trek with the help of district administration which were placed on consumer goods packaged in plastic. Under the no-profit-no-loss model, yatris get Rs 10 refund by scanning a QR code on the wrapper of a plastic bottle, while Rs 10 penalty get imposed on the yatris who litters the bottle and that Rs 10 is awarded to the collector, with unclaimed deposits retained by the District Authority. The collaboration with Recykal, a Hyderabad-based cleantech startup, has proven instrumental in driving the effectiveness of this system. The distribution of codes at Kedarnath alone increased from 3.15 lakh in 2022 to 5.35 lakh in the current year, leading to a remarkable surge in the number of bottles collected, rising from 1.63 lakh to 4.1 lakh. As of 31st December 2024, Rs 19,00,000 is secured with the District Authority as unredeemed deposit under the dDRS.

Start date in KEDARNATH	May 6, 2022
Number of shops registered	834+
QR code distributed to shops (2022-till date)	5,00,000+
Percentage of bottles collected from customers	70% collection rate. (3,50,000)
Total Waste Collected in Mt (DRS+NON DRS)	36.5 MT+ plastic channelized

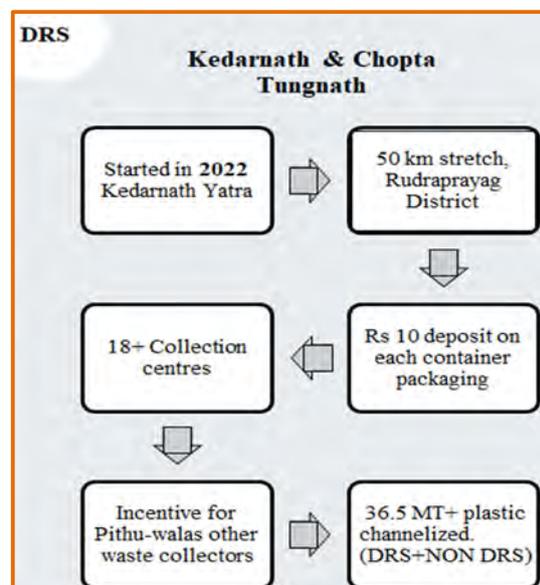
“I want to emphasize the significant local support we have received along the trek route for our waste management initiative. Our goal is to decentralize the entire process and eliminate the need for collection centers, ultimately striving for a no-waste shrine. It is heartening to see the community coming together to support this cause.”

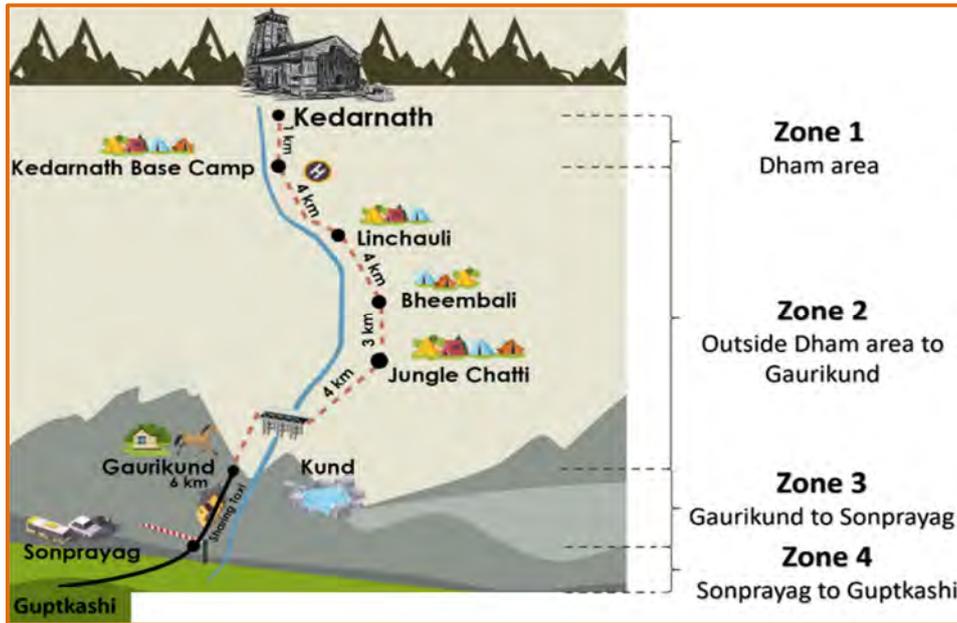
The authorities have also started working on expanding their initiative to address multi-layered plastics like food wrappers and packets, considering this a crucial step in our journey towards responsible waste management. They have been engaging with local hoteliers and business owners, urging them to install compacting machines along the yatra route. This played a pivotal role in facilitating responsible

waste management and will help minimize transportation needs, preserving the precious resources.



The commitment to sustainable waste management in the region extends beyond Kedarnath, encompassing the shrines of Gangotri, Yamunotri, and Chopta. In a parallel development, the recently concluded Char Dham yatra marked a significant milestone, with a staggering 54.2 lakh devotees visiting the four shrines, emphasizing the urgency for large-scale waste management initiatives. While the increased turnout presented its own set of challenges, such as a rise in waste generation, especially plastic waste, efforts to improve facilities for devotees are already underway.





Meanwhile, beyond the Himalayan region, following the footsteps of Uttarakhand, the Mumbai Chhatrapati Shivaji Maharaj International Airport (CSMIA) has been leading the charge in sustainable waste management. The installation of Reverse Vending Machines (RVMs) at the airport has contributed to the recycling of nearly 8,890 used plastic bottles, with plans to install three additional RVMs in the near future. CSMIA's commitment to achieving 100% single-use plastic-free status exemplifies the significant strides being made in addressing plastic waste on a broader scale.

The collective efforts to address plastic waste management in Kedarnath and beyond serve as a testament to the potential for meaningful change through collaborative initiatives. UDD Uttarakhand has won at the Urban Learnathon 2023 in the State/Parastatal Bodies category for its Plastic Waste Management initiative in Kedarnath using India's first dDRS. The success of the Digital Refund System and the increased collection of plastic waste underscore the pivotal role of community engagement and technological innovation in promoting sustainable and responsible tourism practices.

In conclusion, the achievements in Kedarnath's plastic waste management initiatives, along with the broader regional efforts, stand as exemplars of environmental stewardship and sustainable tourism. By harnessing the power of local engagement, innovative technologies, and holistic waste management strategies, Kedarnath sets a compelling precedent for other pilgrimage sites and tourist destinations globally. These initiatives not only contribute to environmental conservation but also enrich the overall pilgrimage experience, aligning with the broader ethos of responsible and sustainable tourism.

सबका साथ स्वच्छ केदारनाथ

QR Code प्लास्टिक बोतल खरीदें केदारनाथ को स्वच्छ रखें

अपने केदारनाथ जी, अपनी ज़िम्मेदारी

QR Code लगे बोतल ही खरीदें

खाली बोतल वापस करे

10 रूपए डिपॉजिट का रिफंड ले

सबका साथ स्वच्छ केदारनाथ through Deposit Refund System

An initiative by
UTTARAKHAND GOVERNMENT | **District Rudrapur** | **recykal Technology & Sustainability Partner**

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cfYd I epk; dks Hkh I fØ; Hkxhnhkj cukrk gA bl ds vrfjã] dN uxj fudk; ka }kjk
I koZtfud ikdka dk fodkl vkš dpjk çcaku ds fy, vkekfud rdudka dk mi ; ks Hkh
mYys[kuh; gA , d s gh dN JSB mnkj.k uhpsçLr¶ fd, x, gA

2. 'lgjh {ks= eai ; løj.k I jek.k gsqikdadh LFki uk

2.1. xkq/h ikdZ uxj fuxe] ngjknũ

2-1-1- i'BHfe

jk"vª fir k egkRek xkq/h ds I Eeku ea xkq/h ikdZ ds uke I s tkus tkuk okyk ngjknũ
dk ifl) xkq/h ikdZ fcfV'k dky ea cuk; k x; k] tksfd 'kkar ,oa , drk dk çrhd gA

2-1-2- I eL;k

'kgjh fudk; {ks=klrxr rsth l s gks jgs 'kgjhdj.k ds dkj.k [kyh txg dh deh gA bl dkj.k i; kbj.k ij Hkh udkjRed iHkko iM+jgk gA ok; q dh xqkoUkk ea Hkh deh LFkkuh; tyok; qdks iHkfor dj jgh gS l kFk gh tuLokLF; l Ecl/kh l eL; k, a Hkh c<+x; h gA

2-1-3- I ek/ku

uxj fudk; ka ds {ks=klrxr [kyh txg dks l rr~'kgjh fodkl] ykxks ea LoLFk thou 'kSyh viukus, oa 'kgj ds e/; gfjr LFkku fodfl r dj i; kbj.k l j{k.k ds nfrVxr ver; kstuk ds vlrxr ikdka dk fuekZk graq iLrko ikfjr fd; k x; kA

2-1-4- fO;kb;u

'kgjh {ks=ka ea uxj fudk; ikdZ ds j[kj[kko vkSj l qkkj ea egROIwZ Hkfiedk fuHkkrk gA uxj fuxe] ngjknw }kjk ver fe'ku ds rgr 'kgjh {ks=ka ds [kys LFkkuka ds fodkl ds mnas; l s xkakh ikdZ ngjknw dks 'kgjh gfjr LFkku@l keqkf; d ikdZ ds : i ea nks pj.kka ea fodfl r fd; k x; kA

2-1-5- {ks=Qy} ykx ,oaj[l&j[ko

ikdZ dk dgy {ks=Qy 58]952 oxZehVj gA iFke ,oaf}rh; pj.k ea th.kkS-kj graq: - 2-86 djkm+dh ykx l s fuekZk dk; Z, oafofHku 0; k; ke@[ksy midj.k LFkfi r fd; s x; s gA ikdZ dk j[k&j[kko Lo; a l sh l LFkkvka }kjk rFkk ikdZ ea fpYMu ikdZ ,fj;k dk l pkyu vkmVl kd Z, tBl h }kjk fd; k tk jgk gA

2-1-6- miyO'k l fp/k,a,oayHk

bl ikdZ ea yxHkx 4000 gkml gkYM vkPNkfnr gA rFkk iR; d fnu 1000 l s 2000 ykx bl ikdZ ea l j djus igprs gA ; g ikdZ nuokfl ; ka ds fy, , d il anhk LFkku gS tglW ij ykx 0; k; ke djuS l j djuS [ksyus rFkk vius nkrka vkSj ifjokj ds l kFk l e; fcrkus vkrs gA ikdZ ea , d vki u , ; j fte] cPka ds fy, [ksyus dk {ks= vkSj , d l n j cxhpk gS tks l Hkh vk; q oxZ ds fy, , d fogax LFkku gA bl izdkj xkakh ikdZ ngjknw 'kgj dk , d egROIwZ fgLI k gS tks fofHku mIs ; ka dks ij k djrk gS ftl ea eukjat u] 0; k; ke] l keftd xfrfofek; ka vkSj , frgfl d egRo 'kkfey gA

খুলনা ইকোজৈমিণ্টক I প/ক, a



Elephant Ride



Helicopter ride



GENERAL VIEW



MUSICAL FOUNTAIN FIXED

2.2. I Hkk ikdZ uxj fuxe] gY}kuh

uxj fuxe] gY}kuh ds }kjk I Hkk"ku xj fLFkr uskth I Hkk"k pæ cks ikdZ dk fuekZk dk; Z ver fe'ku ds rgr o"kZ 2022 ea : - 34-82 yk[k dh ykxr I s ikdZ dk I kñ; hñdj .k gsrq pkjnhokjh] xS/ vks Vñl dk fuekZk] cPpk ds [ksyus ds mi dj .k] fn0; kacka ds vuqphY I foëkk, a rFkk cksokuh vkfn dk; Z fd; s x; A

ikdZ dk {ks=Qy yxHkx 1000 oxZ ehVj gA bl ikdZ I s yxHkx 6000 gkml gkYM vkPNkfnr gksrsgs rFkk iR; d fnu de I s de 1000 ykx bl ikdZ ea I j djus igprs gA

; gkWykbcjñ dh I fo/kk miyC/k gA ikdZ ea yxk, x, vksk/kh; iksks ,oa gcZy ikska dk I j{k.k fd;k tkrk gA o"kkZ ty I j{k.k Hkh fd;k tkrk gS rFkk 'kkSoky; dk fuekZk Hkh fd;k x; k gA

orZeku ea ikdZ dk j[k&j[kko uskth I Hkk"k pæ cks dY;k.k I fevr }kjk Lo;a ds I d k/kuka }kjk fd;k tk jgk gA ; g insk ea I epk; I ghkkfxrk dk I cl s cgrjhu mnkgj .k gS tgka I epk; }kjk bl ikdZ dk j[k&j[kko fd;k tk jgk gA



3- o&V Vwo&Fk

3.1. e&hfj; y fjdojh Q&f fyVh uxj ikfydk ifj'kn~T; k&r&B

uxj ikfydk ifj'kn~T; k&r&B ¼tks k&eB½ ea LFk&fir e&hfj; y fjdojh Q&f fyVh ¼ e-
v&kj-, Q-½ ea lyk&LVd vif'k'Vka dks 34 J&.k; ka ea NVuh dh tk jgh g& rFk& bl l s uxj
ikfydk }k&jk vc rd : 0 1-15 dj&M+ l s vf/kd dh /kuj&f'k v&f& dh x; h g& bl l s uk
fl Q& ikfydk dh vk; ea of} g&srh g& l k&f gh i; k&bj.k l j{k.k , oa j&st&x&j l 'tu dk l k/ku
H&h g& bl iz kl dks in&sk ds 65 l s vf/kd uxj fud&k; ka ea foLr&f&jr fd; k x; k g& ikfydk
}k&jk lyk&LVd dp&js dks i&u%mi ; k&x g&sr&q i&k&d&ka ea lyk&LVd ds Q&uh&bj LFk&fir fd; s g&

3-1-1- lyk&LVd dp&js ds d&lj.k p&ql&r ; ka

T; k&f&r&eB ca&huk&F&kj g&ed&M l kfgc v&ks v&ksyh t&g s i; &V/u LFky&ka ds fy, e&f; 'k&gj g&
gky&k&f&d ; k=k&d&ky ds n&ks&ku 'k&gj ea i; &V/d&ka dh H&k&jh H&k&M+ g&srh g& ftl ds ifj.k&keLo: i
lyk&LVd dp&js dk m&Ri&kn&u vf/kd ek=k ea g&ls t&kr&k g& t&ks fd i; k&bj.k ds fy, [k&r&j&k g&
lyk&LVd dp&js dk l &x&g] H&k&M&k&j.k] e&kuo l d& l&kuo v&ks ifjogu bl 'k&gj dh LoPN&r&k v&ks
l &g&j&r&k d&ks cuk, j [kus ea p&u&ks&hi w&k& dk; Z l k&f&cr g&ls j&g&k g&

3-1-2- lyk&LVd dp&jk iz&V&ku g&sr&qv&f&kuo igy

uxj ikfydk ifj'kn~}k&jk o'k&z 2010 ea ,e-v&kj-, Q- dh LFk&ki uk dh xb&z ftl dk e&f; ;
y{; ?k&j&?k&j t&k&d&j 0; kol k&f; d {k&s=ka v&ks ?k&j&ka l s B&ks dp&js d&ks d&q&yr&ki&w&bd bd&ek dj&uk
F&k&ka , d= fd, x, dp&js d&ks f&Q&j e&v&f&j; y fjdojh Q&f fyVh ea ys tk; k t&kr&k F&k&j t&g&k&i j
i; k&bj.k fe= lyk&LVd l k&ex&h d&ks v&yx dj&ds d,Ei&DV dj&rs F&k& ; g igy f&v&d&k&A dp&jk
ç&ca&ku ç&F&k&v&ka d&ks c<k&ok n&s&s v&ks l e&g&k; ea lyk&LVd dp&js ds i; k&bj.kh; ç&H&k&o d&ks de dj&us
ds fy, y&k&x&w dh xb&z F&k&A uxj ikfydk ifj'kn~us o'k&ka l s bu ç&F&k&v&ka d&ks l Q&yr&ki&w&bd cuk,
j [k&k g& or&z&ku e&f e&v&hfj; y fjdojh Q&f fyVh ij l v&[k&k dp&jk , d= fd; k t&kr&k g&v&ks 34

vyx&vyx Jf.k; ka ea Nka/k tkrk gS rri'pkr~ dpjs dks d,EiDV djds 'kgj ds ckjg i q̄p̄Ø.k grq foØ; fd;k tkrk gS ftl l s uxj ikfydk dh vk; ea of) gks jgh gA ; g vfhkuo vif'k"V çcaku -f"Vdksk uk dny i ; kbj.k dks ykHk igppkrk gScfyd uxj ikfydk ifj"kn~dh foUkh; fLFkjr ea Hkh ; kxnku nsrk gA l kFk gh ikfydk }kjk Mksj VwMksj dMk , d= fd;k tk jgk gA ftl ea dMk mBkus dk 'kq̄d ¼; wtj pktZ ikfydk }kjk xFBr Loa l gk; rk l euka ds ek/; e l s ?kj&?kj tk dj ol yk tk jgk gA ftl ea ; wtj pktZ dh ol yh ea Hkh of) gpZ gS vksj l kFk gh efgykva dh Hkh vk; gks jgh gA

3-13- lykLVd dpjk izUku eadk; jr dkeZ

tkkheB uxj ikfydk orZku ea vius l d kekuka l s bl , e-vkj-, Q dk l pkyu dj jgh gA , e-vkj-, Q-dh LFkki uk o"z 2010&11 ea dh xbZ Fkh] ftl ea 7 l QkbZ depkj dh; jr gS ftl ga çfrnu 250 #i; s dk ikfj fed fn; k tkrk FkkA orZku ea , e-vkj-, Q l Wj ij 20 i ; kbj.k fe= dk; jr gS ftuea dk; jr çR; d dkeZ dks çfrnu 550 #i; sfeyrs gA

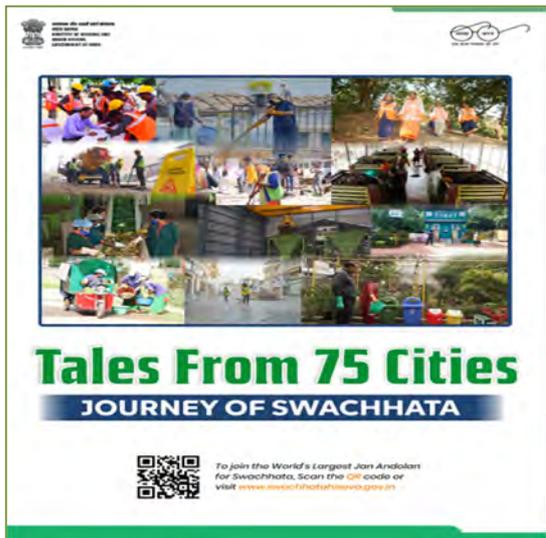
3-14- izkl lslQyrk

'kgj ea ykxw fd, x, vfhkuo ç; kl ka us i ; kbj.k ds ckjs ea fuokl ; ka ea tkx: drk c<kus ea l Qyrk çklr dh gA ftl ea uxj {ks= ds fo | ky; ka ds Nk=&Nk=kvka dh Hkfedk Hkh ykxka dks tkx: d djus ea dkjxj l kfcr gpZ gA bl ds ifj.kkeLo: i] dMk&dpjk QSykus dh çofUk ea dkOh deh vkbZ gS vksj ykx vc vius dpjs dk ftEenkhj l s fuiVku dj jgs gA 'kgj us i ; kbj.k ds vuqny okguka dk mi ; ks djds ?kj&?kj tkdj dpjk l xg.k ç.kkyh dks viuk; k gS tks fQj , d , e-vkj-, Q- dæ ij dpjs dks Nka/rk gS , d d,EiDVj e'khu dk mi ; ks djds bl s d,EiDV djrk gS vksj i q̄p̄Ø.k ; kx; olrpyka dks cprk gA bl 0; ki d dpjk çcaku ç.kkyh us i js 'kgj ea dpjs ds <j dh mi fLFkr dks çHkkoh <x l s l eklr dj fn; k gS ftl l s tkkheB , d dpjk&eja , oa dMku eDr 'kgj cu x; k gA

o"z 2010&11 ea Ldhabx foa'j xæ vksyh ds nksku i ; X/u foHkx ds l kstU; I s uxj ikfydk dks ,d d,EiDVj e'khu fu%ky'd çklr gpbz Fkh] ftl dh {kerk 150 fdykske çfr cM/y gš tks lykfLVd dpjs dks d,EiDV djus vksj vkl kuh I s ifjogu djus ea egRo iwKz Hkfredk fuHk jgh gA bl o"z 2025&26 dh 40 fnuka dh ; k=k ds nksku ikfydk }kjk yxHkx 2-60 yk[k lykfLVd 'khry@is ty dh ckr'ya ,d= dh xbz gA

3-1-5- iğLdkj ,oal Eku

- vtfod vif'k"V çcaku ds fy, uxj ikfydk ifj"kn- tks kheB dks o"z 2010&11 ea eq; ea-h fuezy uxj iğLdkj f}rh; rFkk o"z 2016&17 ea eq; ea-h fuezy uxj mR—"V iğLdkj I s l Eekfur fd; k x; kA
- bl l Qy iz kl dks LoPN Hkjr fe'ku ds 10 o"z iwKz gksus ds vol j ij vkokl u vksj 'kgjh dk; Z ea-ky;] Hkjr l jdkj] ubz fnYyh }kjk nsk ds 75 'kgjka l s LoPNrk grqfd; s x; s vffkuo iz kl ka dks "Tales from 75 Cities, Journey of Swachhata" iqr d ea Joshimath Community Driven Waste Management Success 'khr'kd ea izdkf'kr fd; k x; k gA



Joshimath's Community-Driven Waste Management Success

Joshimath, Uttarakhand is a gateway to numerous Himalayan treks and sacred pilgrim sites like Badrinath and Hemkund Sahib. With a population of around 16,709 that swells to nearly half a million during the pilgrimage season, the town faced significant environmental challenges, particularly in managing plastic waste. Recognising the urgency, Nagar Palika Parishad Joshimath, with the support of the local community, in 2010, implemented an innovative Material Recovery Facility (MRF), transforming the town's waste into a resource.

The MRF collects, segregates, and compacts solid waste, a task made even more challenging by the town's rugged terrain. With a dedicated team of sanitation workers, the project has empowered the local community by offering stable employment and generating income from the sale of recyclable materials. Initially starting with seven sanitation workers earning Rs 250 per day, the team has since expanded, with each worker now earning Rs 550 per day, reflecting the success of the initiative.

Regular plastic waste collection and processing have fostered environmental consciousness among residents, drastically reducing litter. The revenue generated from selling recyclable materials has not only provided livelihoods for marginalised workers but also bolstered the municipality's funds.

Since December 2022, over 1.3 million kilograms of inorganic waste have been compacted and sold, generating more than 1 crore in income. The compactor machine, gifted by the Tourism Department, has played a vital role, processing up to 150 kilograms per bundle of plastic waste, helping maintain Joshimath's pristine environment and reducing litter. This initiative has earned the town prestigious awards, including the Chief Minister Nirmal Nagar Excellent Puraskar during 2010-2011 and 2016-2017. Today, Joshimath has become a model for waste-free towns.

3.2. okV VwoMl ZyMl, uxj fuxe] : niġ

uxj fuxe] : niġ dh tul [; k 1]75]723 gSrFkk dgy 40 okMZ gA uxj fuxe] #æiġ }kjk ftyk izkkl u] uxj fuxe] ikVZuj ,oa l epk; ds l g; kx l s dHkh 'kgj dh l qjrk ea cnupek nkx jgsyxHkx 30 l ky iġkus igkMxat dM/s-ds <j dk dk; kdYi dj Mā l kbM dks ,d l tñj LFkku ea ifjofrġ dj ml LFkku ij o{kkjksi .k dj l kbV gfj; kyh l s vkPNkfrn fd;k tk jgk gA

3-2-1- Mā l kbV dksVvkuseal leuk dh x;h pqlr; lœdk fooj.k

- o"kkā l s tek gq dpjs dh fo'kky ek=k i; kōj.k ds -f"Vxr l ġf{kr rjhds l s Nkā/uš l ākkē/kr djus vks̄ fuiVkus ea pqlr;h dk l leuk djuk iM+jgk FkA
- dM/s-ds <j dk fuiVku çfØ; k ds nks̄ku feēh vks̄ Hknty çnlk.k l fgr i; kōj.k l anl.k.k dk tks̄[ke vfekd Fkk] ftl ds fy, dM+l ġ{kk mik; vks̄ fujarj fuxjkuh dh vko'; drk FkA
- dM/s-ds <j dks gVkus ds fy, i; klr èku vks̄ l ā kēku gkfl y djuk ,d cMā ckēkk FkA brus cMā iēkus dh ifj; kstuk ds foUkh; dks> ds fy, l jdkjh fudk; ka vks̄ futh Hkxhnhkja l fgr dbZ l ksrka l sēku t'v/kus dh vko'; drk FkA
- l epk; dk l efkz vks̄ Hkxhnhkjh gkfl y djuk pqlr;hi wkz FkA Mā l kbV ds vkl & ikl jgus okys fuokl h vDI j l ākkj ç; kl ka ds ckjs ea l ang djrs Fkš mlga l Hkkfor LokLF; [krjka vks̄ muds nšud thou ea 0; oēkkuka dk Mj FkA bu fparkvka dks niġ djus vks̄ l fØ; Hkxhnhkjh l fuf'pr djus ds fy, çHkkoh l pjk vks̄ l kepkrf; d t'vko egROI wkz FkA
- rdudh pqlr; ka ea vif'k"V dh fofoēkrki wkz vks̄ vDI j [krjukd ç-fr dks l Hkkyus ea l {ke mlur vif'k"V çl ādj.k çks̄ kšxfd; ka dh vko'; drk 'kkfey FkA bl ds fy,

çksj kfxdh çnrkrvka vksj vif'k"V ççaku fo'kskKka ds l kFk fo'kskKrk vksj l g; ksx dh vko'; drk FkA

3-2-2- vflhuo izkl

- ck; ks ekbfuax vksj ck; kjeFM, 'ku grq dpjs dks vvx djuş çkd ş djus vksj ml dk mipkj djus ds fy, mlur rdudhka dk blnkyA ck; ks ekbfuax us fjl kbfdy djus ; kx; l kefxz ka dks oki l ykus ea enn dh] tçd ck; kjeFM, 'ku }kjk feeh vksj ikuh ds çnkk.k ij fu; æ.k fd; k x; kA
- batbfu; MZ yMfQy grq vif'k"V dpjs dks l g{kr : i l s l Hkkyus ds fy, mfpr ykbuj vksj yhpç ççaku ç.kfy; ka ds l kFk batbfu; MZ yMfQy dh LFkki uk dh x; hA
- xhu doj vksj yMLdsiax grq ikfjLFkfrdh l rnyu dks cgky djus vksj l epk; ds fy, gfjr LFkku dh miyç/krk grq i M+yxkdj rFkk i kdZ fodfl r djus grq dM+ ds <j l s l qnj LFkku ea ifjorZu fd; k x; kA
- Mä l kbV ea dpjs dh ek=k ds vko'yu ds fy, Mku ds ekè; e l s fojkl r dpjs dk l oçk.k fd; k x; kA

3-2-3- 'Mey iæçk fgrdkjd ,oal g; kxh

- uxj fuxe ds vfekdkfj; ka }kjk l çkj ç; kl ka ds fy, fuxjkuh] foÜki ksk.k vksj fofu; ked l gk; rk çnku dhA
- futh {ks= dh Hkxhnhkj dhqy vif'k"V ççaku ds fy, l d këku] çksj kfxdh vksj fo'kskKrk çnku dhA
- uhfr vksj l LFkkr l efkz l çuf'pr fd; k fd vko'; d fu; e] fn'kk&funçk vksj l efkz ræ ekst m gla
- 'kgjh LFkkuh; fudk; ds vfekdkjh ifj; kst uk dk; kzo; u vksj foHkuu foHkxka ds l kFk l elo; dh nç[kjçk dhA

- swm foHkx ds vfeKdkjh }kjk Bkd vif'k"V çcaku dk; kã dk çcaku fd; k x; k vKš rdudhd I gk; rk çnku dh x; hA
- batfuf; j vif'k"V çcaku vKš I kbV I çkkj I s I çfkr çfu; knh <kps ds fuekZk dh fMtkbu vKš fuxjkuh dh x; hA
- Vkm uykuj 'kgjh fu; kstu vKš fodkl ifj; kstuk ea I çkkfjr I kbV dks , dh—r fd; k x; kA

3-24- ifj.ke

- dpjs ds <j dks I Qyrki d I kQ fd; k x; k] ft I I s I kbV , d LoPN] gfjr LFkku ea cny xbA
- enk vKš Hknt y I ankk.k ea mYys[kuh; deh vkbz I kFk gh Ma I kbV I s mRI tZu ea deh ds dkj.k ok; q dh xqkoUkk ea I çkkj gq/kA
- Ma I kbV dks I kQ djus I s jk"Vh; jktekxz ij ; krk; kr dh HkhM+de gq] ft I I s ifjogu çokg ea I çkkj gq/kA
- I kbV I s viokg ea deh ds dkj.k dY; k.kh unh ea ty dh xqkoUkk ea I çkkj gq/k] ft I I s tyh; thou vKš unh ij fuHk] I epk; ka dks ykHk gq/kA
- dpjs ds <j I s iklr LoPN LFkku us I epk; ds fy, LoLFk okrkoj.k , oa gfjr LFkku çnku fd; k] ft I I s thou dh I exz xqkoUkk ea I çkkj gq/kA

bl Ma I kbV I s 2]11]000 ehfv'd Vu dpjs dks gV; k x; k gA yhpš/ dks fu; fi=r dj Hknt y I ankk.k ds tkš[ke dks de fd; k x; kA I Qy tš&mi pkj vKš tš&[kuu ds çHkko ea xhugkml xš ea egRo iwKz deh vkbz gA bl dM+ds <j ds gV; s tkus I s tš&mi pkj ds ekè; e I s vif'k"V dh ek=k ea 35&40 ifr'kr dh deh vkbz gA

bl ds vfrfjDr iqpš.k ; kš; I kefxz ka dks iqpš klr dj vif'k"V dh ek=k dks de fd; k x; k] vif'k"V dks çs ds ctk; I d kèku ea ifjofrZ dj I dšy , dkukeh ea egRo iwKz

; ksnku fn; k gA bl dk; Z dks l Qyrk iwd l Eikfnr fd; s tkus l s jk"Vh; gfjr i kf/kdj.k vks; mUkjk[k.M inrk.k fu; U=.k ckmZ tS h l a.Fkkvka l s tkjh fn'kk&funz kka us Hkh l g; kx inku fd; kA

3-2-5- ijLdkj ,oal Eku

bl l Qy iz kl dks LoPN Hkkjr fe'ku ds 10 o"kz iwKz gkus ds vol j ij vkokl u vks; 'kgjh dk; Zea-ky;] Hkkjr l jdkj] ubZ fnYyh }kjk ns k ds 75 'kgjka l s LoPNrk gsrq fd; s x; s vfHkuo iz kl ka dks "Tales from 75 Cities, Journey of Swachhata" iUr d ea Rudrapur's Dumpsite Transformed into Green Oasis 'kr'kd ea izdkf'kr fd; k x; k gA

ekuuh; eq; ea-h mRd"Vrk ijLdkj gsrq o"kz 2024 ea ukfer fd; k x; k rFkk fo'o i; kbj.k fnol 2025 dks uxj fuxe : ni j ds bl vfHkuo iz kl dks ekuuh; eq; ea-h th }kjk 'kkl dh; Jskh ea l qnj yky cgrqkk izdfr ,oa i; kbj.k l j{k.k 2025 gsrq iFke ijLdkj inku dj l Eekfur fd; k x; kA



Rudrapur's Dumpsite Transformed into Green Oasis

In Rudrapur, Uttarakhand, a legacy dumpsite that had stood as a symbol of environmental degradation near the National Highway was transformed into a green oasis through a groundbreaking waste remediation project. Faced with this daunting challenge, the Nagar Nigam Rudrapur took decisive action, launching an ambitious 'Dumpsite Remediation' project under the Swachh Bharat Mission 2.0. This initiative was not merely about cleaning up; it was about reclaiming and transforming the land into a green, usable space that would breathe new life into the community.

The Nagar Nigam Rudrapur, faced with 211,000 metric tonnes of waste accumulated over decades, took action by employing biomining and bioremediation techniques to rehabilitate the site. The project involved separating and processing waste to recover recyclables, while contaminated soil was treated, and residual waste was contained in an engineered landfill with advanced liners. This ensured long-term environmental protection while enabling the land to be redeveloped safely.

Despite initial scepticism from the local community, consistent engagement and transparent communication helped build trust. Over three phases, between December 2020 and May 2024, the dumpsite was completely remediated, turning it into a vibrant green space for residents to enjoy. The transformation not only reduced soil and water contamination but also alleviated traffic congestion by creating additional public spaces near the highway.

Rudrapur's dumpsite remediation project stands as a powerful example of how public-private partnerships, innovation, and community involvement can turn environmental hazards into valuable public spaces, improving the quality of life for residents.

iFke ijLdkj & l qnj yky cgrqkk izdfr ,oa i; kbj.k l j{k.k 2025

4. I lefgd I gHfxrk

4.1. cSkh I suk }kjk Mj VwMj I ok, uxj fuxe] gY}kuh

'kgjh LoPNrk dks I 'IDr culrh ukjh 'IDr & uxj fuxe] gY}kuh cSkh I suk }kjk igy ftI dk vFKZ depkÅuh Hkk'kk ea ^cgu^ gS mUkjk[kM ea efgykva ds urRo okys vif'k"V çcaku dsfy, jkT; , oajk"Vh; Lrj ij Hkh cgn I Qy e,My I kfcg gA

'LoPN gY}kuh&I qnj gY}kuh* ds Lolu dks I kdkj djus o vketu dh uxj fuxe rd igp I qe djus ds mÍs; Is MKW tkxæa icy fl g jk'syk] rrekyhu ek- egkikj o Jh iedt mikè;k;] rrekyhu uxj vk;Dr] uxj fuxe] gY}kuh }kjk fnuka 31 vDVoj] 2022 dks çstDV ^cSkh I suk* dk 'kqkjEHk fd;k x; kA bl uokpkj ds rgr nhun; ky vA; kn; ; kstuk&jk"Vh; 'kgjh vktfhodk fe'ku ½NULM½ ds vLrxZ xFBr Lo; a I gk; rk I engka dh 570 efgykva dks okMbkj 57 okMka dk nkf; Ro I kA k x; kA

cSkh I suk }kjk fd;s x; s dk; kA ds QyLo: i u fl QZ gY}kuh 'kgj ea iHko'kkyh Qdz iMk- gS I kfk gh LoPNrk xrfof/k; ka ea dkQh I qkj gqk gS vif'k"V çcaku ds çkjs ea I koZfud tkx: drk c<h gA ukxfjd f'kdk; rka dk rjar I ek/kku fd;k tk jgk gS vkj uxj fuxe ds ?kj&?kj Is dpjk mBku 'kyd Is jktLo ea mYys[kuh; of) gq h gA dy feykaj] cSkh I suk igy us gY}kuh ds 57 okMka ea vif'k"V çcaku ea Økar yk nh gS ftI Is ; g bl {ks= ea , d okLrfod xæ&patj cuh gA

cSkh I ok ds dk;Z	Bkd vif'k"V izLU/ku ea efgykva dh Hkkxhkhkj ds rgr Mj VwMj ekfI d ; wtj pktZdyD'ku dk dk; A
I eL;k dk foj.k	<ul style="list-style-type: none"> vif'k"V çcaku dk;Z dsfy, ekuo I d keku dh deha LoPNrk depkfj; k@LoPNrk dk;Z dh U; ure fuxjkuhA dkbz bVjSDVo f'kdk; r fuokj.k ræ ughA

	<ul style="list-style-type: none"> • LoPNrk vfHk; ku ea ukxfjodka dh U; ure Hkkxhmkjha • de mi ; ksxdrkz 'kq'd l æg ; kuh døy 6 yk[k #i ; sçfr ekga
<p>l ek/ku dh ifjdYiuk</p>	<ul style="list-style-type: none"> • fofHku fu; eka vksj vfeifu; eka ea ifjHkkf"kr LoPNrk l æakh ftEenskjh dks cuk, j [kuka • l exz LoPNrk fuxjkuh ç.kkyh cukuka • çHkkoh f'kdk; r fuokj.k ræ cukuka • vktHfodk dsekè; e l sefgyk l 'kfädj.kA • turk }kjkl turk dsfy, turk l sl gdef uskvka dk fuekZk djuka • mi ; ksxdrkz 'kq'd ds l æg ea of)A • SBM-NULM ; kst ukvka dk vfHkl j .kA
<p>l ek/ku dk p;u</p>	<ul style="list-style-type: none"> • 'kgjh fodkl foHkkx eajkT; LoPN Hkkjr fe'ku PMU ds l kFk vk; kst r foHkku ppkZvka ds nkjku vksj SHG ds ckxs oj e.My l sl h[kus ds ckn] fuxe us ,d dne vksx c<us dk QS yk fd;k vksj fuxe ds l äwkZ LoPNrk fuxjkuh dk; Z dsfy, SHG dks 'kkfey djus dh ; kst uk cukbA • ;SSHG igys l sgh Hkkjr l jdkj dh Mh,-okb-&, u;- #y,-e- ; kst uk ds rgr iath-r gA • SHG dks çjir djus ds fy, mlga vkd"kd çk&l kgu nus dk fu.kZ fy;k x; kA • 27-10-2022 dks fuxe us csh l suk dk xBu fd;k rFkk uoæj] 2022 l s csh l suk us dke 'kq dj fn; kA
<p>fØ;kb;u dh fof/k</p>	<ul style="list-style-type: none"> • Lo;a l gk; rk l engka dks mi ; ksxdrkz 'kq'd l æg] fuxe ds fu;e] nLrkosthdj.k dk; Z ys[kk vksj tul ädz vkfn ij ç'k{k.k çnku fd;k x; k gA

	<ul style="list-style-type: none"> • Lo; a l gk; rk l eḡka dks mi ; kxdrkz 'kŷd l xg vks vl; LoPNrk fuxjkuh dk; k dsfy, okMZ forfjr fd, x, gA • l Hkh l nL; ka dks igpku i= tkjh fd, x, gA • Lo; a l gk; rk l eḡka dks l gk; rk ḡnku djus ds fy, fuxe us 5&6 ukMy vfekdjkh ukfer fd, gA • Lo; a l gk; rk l eḡka dks rRdky l gk; rk ḡnku djuḡ Lo; a l gk; rk l eḡka }kjk ḡkkr f'kdk; rka ds fuokj .k] Lo; a l gk; rk l eḡka vks l Qkbz deḡkfj; ka ds chp ḡgrj l ello; cukus ds fy, fu; .k d{k LFkfi r fd, x, gA • Lo; a l gk; rk l eḡka dks fnu&ḡfrfnu ds dk; ka ea l gk; rk ḡnku djus ds fy, fuxe }kjk ifj; kstuk ḡcāk d] i; bḡkd vks MkV , v/h v, i j v/ j ḡnku fd, x, gA • cḡkh l suk ukxfjdka l s ḡkkr f'kdk; rk xfy; ka ea l Qkbz dh fLFkr dh nḡud vkekkj ij fj i k v/ z d j rh gA • cḡkh l suk l ksr i FkD d j .k vks , dy mi ; kx lykFLVd ḡfrcāk ds ckjs ea tkx: drk i ḡk djus ea Hkh l gk; rk d j rh gA • cḡkh l suk fuxe dks l g; kx nḡs ds fy, , d l kFk ḡd okrkz Lohy Lrj ij tkx: drk dk; D e] l keḡgd vk-bzbz h- vfhk; ku vk; kḡtr fd, x, gA • fuxe ukxfjdka dks ḡgrj LoPNrk l ok ḡnku djus ds fy, viuh l ok Lrj dh ḡxfr ea Hkh l ḡkkj d j rk gA
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<p>pql&r; lœdk fooj.k</p>	<ul style="list-style-type: none"> • I QkbZ deþkfj; ka dk fojkœk] D; kœd mlga yxrk gS fd muds dke dh fuxjkuh fd l h rhl js i {k }kj k dh tk jgh gA • turk dh f'kdk; rka dk l e; c) fuokj.kA • I œnu'khy {ks=ka ea dke djuk dN Lo; a l gk; rk l eŋka ds fy, , d pql&h gA • igys dN gŋrka ds nŋsku 0; ogkj l œakh eqs mB& • mi ; kxdrkZ 'kŋ'd ds Hkœrku ds fy, turk dk fojkœkA
<p>eq; l Qyrk;</p>	<ul style="list-style-type: none"> • ; wtj pktZ l œg 6 yk[k #i; sœfr ekg l s cœdj 32 yk[k #i; sœfr ekg gks x; kA • œR; d SHG dks vks ru 14]000 #i; sœfr ekg fey jgs gA • vif'k"V œaku dh œHkoh fuxjkuh œgrj l QkbZ ea enn gA • efgykva dks vfrfjœ vk; œnku djds muds l 'kfœdj.k ea l gk; rk gA • fuxe }kj k l pkyr fofHku ; kstukva ds œks ea tkx: drk i œk gA • œHkoh vks bœjSDVo f'kdk; r fuokj.k rœ dh LFkki uk gA • fuxe dh l œk Lrj forj.k dks cœus ds fy, ; kstuk cukus ea enn feyhA
<p>ifj.ke l œ; Red ,oa xqloœRed</p>	<ul style="list-style-type: none"> • fuxe bu Lo; a l gk; rk l eŋka ds ekœ; e l s 85% ?kj ka rd l hœks i gœus ea l {ke gœkA • I QkbZ deþkfj; ka ds dke dh xqkoœkk cœus ea l gk; rk dh xbA • l Hkh ?kj ka vks xfy; ka l s 100% dpjs dk l œg gœkA • mi ; kxdrkZ 'kŋ'd l œg ea dbZ xœk of) A

	<ul style="list-style-type: none"> • Mksj & V&Mksj dpjk l xzj okguka dh igpp c<kbz xbz gA • 'kgj dh LoPNrk xfrfofek; ka ea l qkkjA • ukxfjd fuxe }kjk l pkfyr ; kst ukvka ds ckjs ea vfeld tlx: d gA • jktLo l 'tu ea of)A • Lo; a l gk; rk l engka dks vfrfjä vkt hfodk çnku dh xbA • ?kj & ?kj okguka dh igpp c<kbz xbA • ukxfjdka dh f'kd; rka dk l e; c) fuokj .kA • l exz LoPNrk fuxjkuh gkfl y dh xbA
<p>fd l h vl; fudk; ka }kjk vh; kl dks viuk; k x; k gS</p>	<p>c&kh l suk ds l Qy ekWly dks vl; fudk; ka ea l pkfyr gA fooj .k fuEuor-gS&</p> <ul style="list-style-type: none"> • l Eiwlz Lok; Uk l gdkfjrk l febr& uxj ikfydk ifj"kn}- T; ksrzB ea o"Kz 2023 l s 10 , l -, p-th- }kjk 09 okMka l s mi ; kxdrkz 'kq'd , d=hdj .k , oafuxjkuhA • Lo; a l sh l LFkk & uxj ipk; r] cuol k ea o"Kz 2022 l s 03 SHG }kjk 07 okMka l s mi ; kxdrkz 'kq'd , d= , oafuxjkuhA • Lo; a l sh l LFkk & uxj fuxe] dks }kjk ds rgr 01 SHG }kjk Dyhu Vkw ysl pfi ; u] 2024 ds rgr l koztfud@l kepki; d 'kkpky; ka dh Hkkjr l jdkj ds ekudkuq kj l oqk .kA • ohjkakuk l suk & uxj ikfydk ifj"kn}- fVgjh ea o"Kz 2024 l s 10 SHG }kjk 11 okMka l s mi ; kxdrkz 'kq'd , d=hdj .k , oafuxjkuhA • Lo; a l gk; rk l eng & uxj ikfydk ifj"kn}- cktig ea o"Kz 2023 l s 01 , l -, p-th- }kjk 13 okMka l s mi ; kxdrkz 'kq'd , d=hdj .k , oafuxjkuhA • 'kfdR okfguh l suk & uxj fuxe] dk'khi g ea 02 Qjogh 2023 l s 18

	<p>SHG }kjk 35 okMkã l smi ; ksxdrkz 'kq'd , d=hdj.k , oafuxjkuhA</p> <ul style="list-style-type: none"> • ukjh 'kfdR l suk &uxj fuxe] : nãg ea 02 Qjogh 2023 l s 04 SHG }kjk 20 okMkã l smi ; ksxdrkz 'kq'd , d=hdj.k , oafuxjkuhA • f=oSkh l suk &uxj fuxe] _f'kdsk ea 23 fl rEcj 2023 l s 20 SHG }kjk 40 okMkã l smi ; ksxdrkz 'kq'd , d=hdj.k , oafuxjkuhA • LoPNrk okfguh &uxj ikfydk ifj'kn}- Mkbokyk ea vDVncj 2024 l s 10 SHG }kjk 20 okMkã l smi ; ksxdrkz 'kq'd , d=hdj.k , oafuxjkuhA • Lo;a l gk; rk l eg &uxj ipk; r] fdPNk ea o'kz 2023 l s 01 SHG }kjk 20 okMkã l smi ; ksxdrkz 'kq'd , d=hdj.k , oafuxjkuhA • Lo;a l gk; rk l eg &uxj ipk; r l yrkuig] Å/kefl eg uxj ea o'kz 2023 l s 02 SHG }kjk 07 okMkã l smi ; ksxdrkz 'kq'd , d=hdj.k , oafuxjkuhA
<p>izkl lslh[k</p>	<ul style="list-style-type: none"> • çHkkoh fuxjkuh l s dpjk çcaku dk; Zea l qkkj yk; k tk l drk gA • fcuk vfrfjä fuosk ds çHkkoh dpjk çcaku çklr fd; k tk l drk gA • Lo;a l gk; rk l egka ds ekè; e l s xfBr l gdeĒ l eg {ks= dh puksr; ka dks de djusea enn djrs gA • rhl js i {k dh Hkkxhnhkj ds ekè; e l s Jfedka dh gMfkyka dks l Hkkyk tk l drk gA • ;kstukvka ds vfhkl j.k l s Lo;a l gk; rk l egka dks vfrfjä vk; fey l drh gA • , d , d h 0; oLFkk tks efgykvka dks vkRefuHkz cuk l drk gA • dpjk çcaku dk; Z dh rhl js i {k dh fuxjkuh vko' ; d gA

<p>dy ykr</p>	<ul style="list-style-type: none"> • uxj fuxe usLo; a l gk; rk l engka dks dgy ; wtj pktZ l xg dk 25 ifr'kr çkRl kgu nns dks fu.kz fy; k gA • uxj fuxe usbu Lo; a l gk; rk l engka ds ekè; e l s 40 yk[k #i; s çfr ekg ; wtj pktZ , d= djus dk y{; j [kk gA • vc rd ; wtj pktZ ds : i ea 2-86 djkm+#i; s 1/25 ifr'kr çkRl kgu dh dVks h ds ckn½ , d= fd, x, gA
<p>izkl dks ijLÑr fd;k x;k gS</p>	<p>bl mRd"V çFkk dks Hkkjr ljdkj ds vkfFkZd ekeyka ds ea=ky; dh os l kbV o"kZ 2023 ea çnf'kZr fd;k x;k gS rFkk jk"Vh; Lrj ds uskuy vcZu d,UDy 2023 ea vkokl u ,oa 'kgjh dk;Z ea=ky; }kjk bl ekMly dks vcZu yuFk,u vokMZ gsrqf}rh; ijLdkj l s l Eekfur fd;k x;k gS rFkk çkRl l suk dh bl çFkk dks nsk dh 'k"Z 50 igy ea Hkh 'kxfey fd;k x;k gA</p>
<p>fofM; lafyal</p>	<ul style="list-style-type: none"> • http://haldwaninagarnigam.com/Bani-Sena • https://twitter.com/SAdhikariSDO/status/1632622962787467265?s=20 • https://youtu.be/qK4JDEuuPec • https://www.amarujala.com/uttarakhand/nainital/baini-sena-got-second-prize-in-best-practice-in-the-country-nainital-news-c-8-1-hld1023-253164-2023-11-01 • http://haldwaninagarnigam.com/Bani-Sena
<p>vflkuo izkl izkl'kr fd;k x;k gA</p>	<ul style="list-style-type: none"> • https://www.pppinindia.gov.in/bestpractices/best-practice-detail/baini-sena-%28baini-means-sister-in-kumaoni-dialect%29 • bl l Qy iz kl dks LoPN Hkkjr fe'ku ds 10 o"kZ iwKZ gksus ds vol j ij vkokl u vksj 'kgjh dk;Z ea=ky;] Hkkjr ljdkj] ubZ fnYyh }kjk nsk ds 75 'kgjka l s LoPNrk gsrq fd; s x; s vflkuo iz kl ka dks "Tales from 75 Cities, Journey of Swachhata" iqr d ea "The Baini Sena Revolution Empower Women and Transforming the City Haldwani" 'k"Zd ea izkl'kr fd;k x;k gA

Category

STATE/ PARASTATAL BODIES

RUNNER UP

UADD, Uttarakhand

Formulation of Baini Sena for Various Urban Sanitation Solutions in Haldwani, Uttarakhand

Baini Sena - A women led initiative to ensure Sanitation

Collection of user charges and monitoring of sanitation/ solid waste management system



Learnathon Award in the category of State/Parastatal Bodies presented to representatives of UADD Uttarakhand

4.2. Lo; a l gk; rk l e g }kjk LoPNrk l ok, h uxj ikfydk ifj'kn}-ckxsoj

'kgjh LoPNrk dks l 'kDr cukrh ukjh 'kDr uxj ikfydk ifj'kn}-ckxsoj es l [kh ,fj;k yoy QMjsku dk efgyk Lo; a l gk; rk l e g {ks= ea LoPNrk ij /; ku dfaer djus okyk igyk efgyk l e g g\$ ftl ea 45 efgyk, a dpjk l xg.k dk dk; Z djrh g\$,oa 02 l qjokbtj dk; }r g\$ 20 vDVm}j 2016 l smu LFkkuka ij l ok nus ds fy, l efi r g\$ tgka Hkksksfyd ifjLFkr; ka ds dkj.k vif'k"V okgu igpus ea vl eFkZ g\$ mudk chko egRoikZ jgk g\$ ftl l s 11 okMka es LoPNrk ea l qkjk g\$ ukxfjd tkx: drk c<h ikfydk dk jktLo c<h vls efgykvka ds fy, LFkk; h vktfodk ds vol j feys g\$; g mUkjk[k.M dk i Fke ekMy dk tgka LFkkuh; efgyk, a Mksj & V&Mksj dpjk l xg.k ea i R; {k : i l s 'kkfey g\$

uxj fudk; dk foj.k	uxj ikfydk ifj'kn-ckxsoj] tul d[; k 25045] dgy okMka dh d [; k 11
vftuo izkl dk 'kifl	'kgjh LoPNrk dks l 'kDr cukrh ukjh 'kDr uxj ikfydk ifj'kn}-ckxsoj
dk; Z	Bkd vif'k"V izl/ku ea efgykvka dh Hkksxhinkjh ds rgr Mksj Vw Mksj dMk l xg.k ,oa ekf d ; utj pktZ dyD'ku dk dk; A
l eL; k dk foj.k	uxj {ks= ea fo"ke Hkksksfyd fLFkr ds dkj.k okMka ea dMk okgu dk l pkyu uk gkus ds dkj.k dMk l xg.k vl lko i rhr gks jgk Fkk ,oa uxj fudk; ka ea i ; kZr ekuo l d k/ku dh mi yC/krk ugra FkhA
l ek/ku ifjdYiuk dh	l [kh Lok; Rr l gdfjrk l fefr] jk"Vh; 'kgjh vktfodk fe'ku ds vlrxr xfBr efgyk Lo; a l gk; rk l e gka dks i ny ?kj&?kj tkdj dMk l xg.k g\$ i fjr fd; k x; kA ftl ea M&, u-; w, y-, e- ds dkfeZka fl Vh fe'ku e\$ustj rFkk l kepkf; d l xBudrkZ }kjk ; ksnku fn; k x; kA

<p>l ek/ku dk p;u</p>	<ul style="list-style-type: none"> • uxj ikfydk ifj"kn~ }kjk M&, u-; w, y-, e- ea iathdr Lok; Rr l gdkfjrk l febr dks vktfodk grq vif'k"V l æg.k grq p; fur fd; k x; kA • o"KZ 2017&18 ea uxj ikfydk ifj"kn~ ckxsoj }kjk 100 ifjokjka ds ?kjk l s l v[kk vif'k"V l æg.k grq iEke pj.k ea 18 efgykvka dks vuqflu/kr fd; k x; kA • ?kj&?kj l s dMk l æg.k grq uxj ikfydk ifj"kn~ ckxsoj ds }kjk ifr efgyk : 0 100-00 ifr fnu@ekf l d : 0 3000-00 dh nj l s Hkqxrku dh 0; oLFkk dks cuk; k x; kA
<p>fØ; kb; u dh fof/k</p>	<ul style="list-style-type: none"> • l oZ Eke l febr ds efgykvka dks xfrfof/k; ka dh tkudkj h nh x; h ft l ea l v[kk xhyk dMk dk iFkDdj.k okMzbf l ; ka dks xhys dMk dh [kkn cukus ds fy, i s jr fd; k x; kA • dMk l æg.k ds l kFk&l kFk ; wtj tkpZ dyD'ku Hkh blgha efgykvka }kjk fd; k tk jgk gA • dMk l æg.k grq bu efgykvka dks uxj ikfydk ifj"kn }kjk l g{kk midj.k miyC/k djok; s x; s gA
<p>pqlsr; ka dk fooj.k</p>	<ul style="list-style-type: none"> • dMk l æg.k ea efgykvka dks vuqflu/kr djus ds ckn Hkh efgykvka dh pqlsr; ka de ugha gA efgykvka }kjk dMk l æg.k ds dk; Z dks fud"V dk; Z l e>k tkus ds dkj.k efgykvka dks l ekt ea frjLdkj dk l keuk djuk iMrk FkkA dbZ ckj ; g frjLdkj dj mudks dMkkyh ds uke l s i qkjs tkus yxk tks muds eukcy dks de djrk , oabl dk; Z dks djus ds fy, eukn'kk dks cny nrkA

	<ul style="list-style-type: none"> okMkã ea dk;Z 'kq fd;s tkus ij dbZ ifjokj I v[kk ,oa xhyk dMk- feyk dj nrs Fk\$ ftI I s bu efgyk I æg.kdrkZ dks okMkã I s eq; ekxkã rd dMk-s dks fl j ij j[kdj <kuk iM-fk Fkk] ftI I s dbZ ckj buds vx oL= rd nfr'kr gks tkrs FkA ioZ'h; 'kgjh byk dka ds nqZë okMkã ea okgu dk I pkyu I Hko ugra gS rFkk dMk- ?kja I s fl j ij j[k dj I Med ekxZ rd igpukus ea dbZ ckj xehZ@I nhZ@cjl kr ds eks e Hkh ppxs'hi wkZ FkA
<p>eq; I Qyrk,a</p>	<ul style="list-style-type: none"> uxj ikfydk ifj'kn ds 11 okMkã I s Mksj Vw Mksj dMk- I æg.k I Hko gks ik; k gS tgka ij dMk- okgu dk tkuk vl Hko gA efgykvka }kjk Mksj Vw Mksj dMk- I æg.k dk dk;Z djus ds I kFk okMZ okfl ; ka dks Hkh xhyk ,oa I v[kk dMk- vvx djus ds fy, tkx: d fd;k QyLo: i ifjokjka ds 0; ogkj ea xhyk ,oa I v[kk dMk- vvx j[kus dk ifjorZu vk; k gS tks fd Bkd vif'kV izl/ku dh fn'kk ea ,d vge I Qyrk gA ;g dk;Z I febr dh efgykvka }kjk ikr% dky ea I Eikfnr fd;k tkrk gS ftI ds i'pkr~; s efgyk, a viuh nsud ?kjsyq dk; kã dk Hkh I Qyrk iwd I Eiknu djrh gA bl dk;Z ea dk;Z r efgykvka dh vkt'fodk ea I qkkj vk; k gS rFkk dMk- I æg.k ea efgykvka dh Hkxhnhkj Hkh c<h gS tks fd I ekt ea yfxd I ekrk dk I qkn I nsk iz kfjr gks jgk gS I kFk gh efgyk, avkFkZd : i I s I 'kDr gPZ gA xhyk ,oa I v[kk dMk- vvx&vyx dj dbZ okMkã ea dEi kã.V [kkn Hkh rS kj fd;k tk jgk gA

	<ul style="list-style-type: none"> okMkã ea Lo; a l gk; rk l engka ds efgykva ds bl BvHkhuo iz kl B l s LopNrk dk; e gS rFkk buds }kjk l Øked jksks dh jksdFkke gsrq fujlurj tu&tkx: drk ds dkj.k Hkh l epk; ea l Øked jksks ea deh vk; h gS rFkk ikfydk dk iR; ad okMZ LopN ,oa l tñj cu x; k gA bl vfhkuo iz kl dks o"z 2020 ea jk"Vh; 'kgjh dk; Z l LFku }kjk izdkf'kr fd; k x; k gA "How does urban India manage its waste? An almanac of waste management practices" 'khr'kd l s izdkf'kr fd; k x; k gA
<p>ifj.kk l ;Red ,oaxqloùRed</p>	<p>orëku ea 11 okMkã l s dMk+ l xg.k gsrq efgykva dh l ;k 18 l s c<ej 47 gk x; h gS rFkk 02 efgyk l ijokbtj dk; jr gA dMk+ l xg.k ds dk; Z ea efgykva dh Hkxhnhkj ea l ;k Red of) ntZ gpZ gS ,oa muds }kjk fd; s tk jgs xqokkRedrk dk; kã ds dkj.k vif'k"V izU/ku ea Hkh l qkkj vk; k gA</p>
<p>fd l h vU; fudk;k }kjk vH;kl dks viuk;k x;k gS</p>	<p>gka iFke pj.k ea ek= 100 ifjokjka l s dMk+ l xg.k dk dk; Z efgykva ds ek/; e l s ikjEHk fd; k x; k fdUrq vc bl dk; Z dks vU; 11 okMkã ea Hkh foLrkfjr fd; k x; k gA uxj ipk; r didk/ ds 1 okMZ ea 2 efgykva }kjk bl dk; Z dks fd; k tk jgk gA</p>
<p>izkl l slh[k</p>	<ul style="list-style-type: none"> efgykva ,oa iq "k ds fy, vyx&vyx dk; kã dk fu/kkZ .k l keftd igyw gS fdUrq vkt vk/kqud ; q; ea efgyk, a Hkh paksr; ka l s Hkja dk; kã dk fuozu djus ea l {ke gA de ykxr ea LFkkuh; Lrj ij vif'k"V izU/ku l ek/kku dk iz kl fd; k tk l drk gA

	<ul style="list-style-type: none"> t: jreUn efgykva dh vktfodk l æ) Zu fd; k tk l drk gS rFkk efgyk, a Hkh iR; sd {ks= ea iq "kka ds l eku dk; Z nkf; Roka dk fuoZu dj l drh gS cl muds vol j inku fd; k tkuk t: jh gA Lo; a l gk; rk l eg , d l æ Bu gS ft l ea efgyk, a , d nll js ds fy, l gkj curh gS rFkk efgykva dks vkr fuhkj cukus ds fy, Nks/Nks/s Lrj ij iz kl fd; k tk l drk gA
dy ykr	<ul style="list-style-type: none"> efgykva dks nfud ekus : 0 100 dh nj l s dy 47 efgykva dks ekfl d ekus : - 1]41]000-00 rFkk 02 l q jokbtjka dks 5]000-00 ifr ekg dy : 0 1]51]000-00 ¼ d yk[k bDdkou gtj ek=½ fudk; }kjk inku fd; k tk jgk gA okMkZ ds ftu {ks=ka ds efgykva }kjk dMk l æ g.k dk dk; Z fd; k tk jgk gA mu {ks=ka l s fudk; dks iR; sd ekg : 0 75]000-00 dh ekfl d vk; ; wtj pktZ l s iklr gks jgh gS tgka ij 'kq vkr ea ; wtj pktZ cgq de feyrk FkkA
f0; kb; u ds fy, dy l e; vof/k	03 ekg
izkl dks igLdr fd; k x; k gS\	<ul style="list-style-type: none"> uxj fudk; ckxsoj] jkT; , oa jk"Vh; Lrj ij Bkl vif'k"V izlUku ds fy, igLdr fd; k x; k gA LoPN loZk.k 2019 ea ckxsoj dh jk"Vh; Lrj ij 389 oha jcl FkhA jk"Vh; ioZ , oa vlr jkZVh; efgyk fnol ea bu efgykva dks fudk; ds vf/kdkfj; ka , oa tu ifrfuf/k; ka }kjk l eefur fd; k tkrk gA

	<ul style="list-style-type: none"> bl I Qy iz kl dks LoPN Hkkjr fe'ku ds 10 o"kZ iwWZ gkus ds vol j ij vkokl u vkS 'kgjh dk;Z ea-ky;] Hkkjr ljdkj] ubZ fnYyh }kjk nsk ds 75 'kgjka l s LoPNrk gsrq fd; s x; s vflkuo iz kl ka dks "Tales from 75 Cities, Journey of Swachhata" i qrd ea "Women Sakhi Self Help Group Empower Change by Transformation Waste Management in Bageshwar" 'kr'kd ea izdkf'kr fd; k x; k gA
<p>fofM; lafyal</p>	<p>https://abp.championsofchange.gov.in/content/730a-model-for-efficient-solid-wastemanagement-and-community-engagement/#</p>
<p>vflkuo izkl izdkf'kr fd;k x;k gA</p>	<p>How does Urban India Manage its Waste? An Almanac of Waste Management Practices 2020</p>



4.3. jkT; dk iq 'k Lo;a l gk;rk l eñ dk vRrefuHj e,My] uxj ipk;r] ykydka

- Bkd vif'k"V izl/ku ds {ks= e] nhun; ky vR; kn; ; kstuk&jk"Vh; 'kgjh vktfodk fe'ku ,oa LoPN Hkkjr fe'ku ds l eho; ds }kjk uxj ipk;r] ykydka ea iq "kka }kjk LFkkfir Lo;a l gk;rk l eñ dsek/; e l svfHkuo igy dh x; hA
- ykydka jkT; dh ,d Nks/h uxj ipk;r gSftl dk xBu 1978 ea fd;k x; kA ftl dh dñ vkcñh o"z 2011 dh tux.kuk ds vuq kj 7644 gA
- o"z 2022 l s inZ bl ipk;r ea Bkd vif'k"V çclëku dk dk; Z vkmVI kd Z ds ekè; e l s fd;k tk jgk Fkk rFkk ogka ij LFkkfir eSvfj; y fjdojh QSl fyVh dk l pkyu Hkh Bds ds ekè; e l s l pkyr fd;k tk jgk Fkk fdUrq Bkd vif'k"V çclëku ea uxj ipk;r dks l rksktud l Qyrk ughafey ik jgh Fkh rFkk uxj ipk;r dks Bkd vif'k"V izl/ku ds fy, vk; ds ctk; 0; ; djuk iM+jgk FkA
- Bkd vif'k"V izl/ku ds fy, inZ ea rSkr dkfedka }kjk dksZ fo'kksk : fp ugha yh tkrh FkA ftl l s dpjs dks ; gk&ogka Qnd tkrk rFkk dpjk fuLrkj.k tS s egROI wZ dk; Z dks xj ftEenkjkuk <a l s fd;k tkrk FkA
- rRi'pkr bl l eL; k ds l ekëku ds fy, uoEcj 2022 dks Jh jkgy dëkj fl g] vf/k'kk l h vf/kdkjh] uxj ipk;r }kjk funs'kky; ds Lohdfr }kjk Bkd vif'k"V izl/ku ds {ks= ea vRrefuHj ekMy ds mnas; l s iq "k Lo;a l gk;rk l eñ dk xBu fd;k x; kA
- ,d u; h igy dh 'kq vkr ds rgr] uS hrky ftys dh uxj ipk;r] ykydka us jkT; dk igyk i# "k Lo;a l gk;rk l eñ ^xyelgj^ dk xBu fd;k ftl ea dñ 10 l nL; ka dks j [kk x; kA
- ?kj&?kj l s Bkd vif'k"V izl/ku ds l pk: l pkyu ds fy, budks uxj ipk;r }kjk nks fVIj okgu ,oa l dñh xfy; ka l s dpjk l xg.k grq, d fjd'kk mi yC/k djok; k x; kA
- okgu dh l pkyu ds l kFk okgu ea Nks/h ejEer ,oa baku dk 0; ; okgu dh ftEenkjh bl l eñ dks nh xbZ rFkk okgu ea cMs ejEer dh ftEenkjh uxj ipk;r dks nh x; hA bl igy dks tu 2024 ea 'kq fd;k x; kA

- ?kj&?kj l s ,df=r dpjs ds fuLrkj.k ds fy, budks eS/hfj;y fjdojh Q&l fyVh] lykflVd dkeiDVj] lykflVd JMj rFkk dEikLV r\$ kj djus gsrq fiV miycek djok; s x; A tcf d bz fudk; ka ea dEiuh ds ek; e l s ; g dk; Z l pkyr dj 0; ; dk ogu fudk; }kjk fd; k tk jgk gA
- l e g dh vk; dk l tu 07 okMka vks 03 vlu; d,yksu; ka ds 1035 ?kja l s Mksj&V&Mksj vif'k"V l xg l s ikr mi; ksdrkZ 'kq d 'User Charges' ds 75 çfr'kr , oa eS/hfj;y fjdojh 1/2MRF1/2 l s vif'k"V l kexh dh fcØh l s mRiUu gkrh gA çR; d l nL; dh ekfl d vk; #0 16]000&20]000 gA mi; ksdrkZ 'kq d ds 'k\$ 25 çfr'kr ekujkf'k efgykvka ds Lo; a l gk; rk l e gka dks l xg mÍ\$; ka ds fy, vkoVr fd; k tkrk gA
- rkfydk 1 ds vuq kj] tw 2024 l sebZ 2025 dh vof/k ds nksku] uxj ipk; r ykydka }kjk foHkuu izkj dh vif'k"B iFkd dj l xg.k fd; s x; A bl nksku lykflVd dk d g l xg.k 6]844 fdykske fd; k x; ka bl l EiwZ vof/k ea l kexh dh fcØh l s : - 2]36]284 dh /kujkf'k ikr gA tcf d l e g dks; wtj pktZ l s d g : - 9]59]612 dh /kujkf'k ikr gA vr% d g /kujkf'k : - 11]95]899 ikr gA l e g }kjk ogu dh xbz ifjpkYu ykx d g : - 1]45]311 gS rFkk l e g }kjk dk; Z ea yxk; s x; s l nL; ka dh d g l ; k 5 Fkh vks i wZ o"Z ds nksku vks ru : - 2]10]117 ifr l nL; ikr gA Z rFkk ; g fj i k Z l k Q r g i j uxj ipk; r] ykydka dh Bkd vif'k"B izl/k izkkyh dh i kko'khyrk vks ukxfjd l gHkfxrk dh l dkjkrRed rLoh iLr d jrh gA



रिपोर्ट नं. 01

क्र.सं.	सामग्री	2024										2025					कुल
		जून	जुलाई	अगस्त	सितम्बर	अक्टूबर	नवम्बर	दिसम्बर	जनवरी	फरवरी	मार्च	अप्रैल	मई				
1	पक्का गत्ता (कि.ग्रा.)	234	226	410	296	172	115	420	199	359	335	309	246	3,319			
2	कच्चा गत्ता (कि.ग्रा.)	252	46	150	317	398	266	481	460	600	502	465	319	4,255			
3	प्लास्टिक (कि.ग्रा.)	424	472	747	527	963	642	294	388	449	526	877	536	6,844			
4	रस्दी (कि.ग्रा.)	58	99	0	0	89	59	36	0	34	22	132	0	528			
5	टीन (कि.ग्रा.)	25	30	95	96	24	16	119	21	51	39	47	60	624			
6	कॉच को बोटल (नग)	623	1,241	564	502	970	647	750	1,225	982	666	2,240	795	11,205			
7	कॉच का छोटी बोटल (नग)	812	0	1,354	1,120	1,469	980	1,133	1,406	1,935	1,195	980	1,707	14,091			
8	रेजुमीनियम (कि.ग्रा.)	0	0	0	0	0	0	3	1	3	6	0	0	13			
9	रेजुमीनियम कैन (नग)	460	240	640	181	275	183	575	0	0	0	0	13	2,567			
10	स्टील (कि.ग्रा.)	0	17	0	13	0	0	23	6	14	6	0	13	90			
11	लोहा (कि.ग्रा.)	0	19	88	20	0	0	121	74	16	7	9	11	364			
12	LD (कि.ग्रा.)	0	0	0	0	0	0	73	38	23	0	0	0	133			
13	दूध की पत्री LD (कि.ग्रा.)	0	0	0	0	0	0	21	0	0	0	32	80	133			
14	बल्ब, सी.एफ.एल. (कि.ग्रा.)	0	0	0	0	0	0	16	6	0	3	0	0	25			
15	स्कैम विक्रय से प्राप्त धनराशि का भुगतान	15,000	16,257	22,500	19,200	22,030	14,687	25,181	17,775	21,042	18,396	26,698	17,521	236,287			
16	समूह को यूजर वार्ज से प्राप्त धनराशि का भुगतान	28,352	79,718	75,709	75,435	80,880	80,115	97,218	83,732	82,527	91,772	90,879	93,275	959,612			
17	कुल भुगतान	43,352	95,975	98,209	94,635	102,910	94,802	122,399	101,507	103,569	110,168	117,577	110,796	1,195,899			
18	समूह द्वारा बहन की गई परिचालन लागत (बीजल, आशिक मरम्मत आदि)	0	10,912	14,466	11,812	12,050	16,902	12,529	12,600	12,800	13,810	14,890	12,540	145,311			
19	समूह को माह में प्राप्त भथा	43,352	85,063	83,743	82,823	90,860	77,900	109,870	88,907	90,769	96,358	102,687	98,256	1,050,588			
20	समूह द्वारा कार्य में लगाये गये सदस्यों को सख्या	5	5	5	5	5	5	5	5	5	5	5	5	5			
21	प्रति सदस्य प्राप्त धनराशि	8,670	17,013	16,749	16,564	18,172	15,580	21,974	17,781	18,154	19,272	20,537	19,651	210,117			

4.3.1. bl ekmy Isuxj 0;olFk eaifjorŷ] I dkj ,oamiyf0k

- iwłz ftEenkjh ,oa fu; fer : i Is ?kj&?kj Is dpjk I xg.k QyLo: i I Melka ,oa vU; LFkkuka eadpjk Qdus dh idfŷk ea deha
- mi ; kxdrkz 'kŷd ea of) gq h gSrFkk eVhfj; y fjdojh Qđl fyVh ea vf/kd I svf/kd dpjs dk I xg.k rFkk iwłz ftEenkjh ds I kFk dpjs dh NVuh] dpjk fjl kbfdy gsrq 0; ; ea of) rFkk dEi kV [kkn dk fuelz k fd; k tk jgk gA
- uxj ipk; r dk ?kj&?kj Is dpjk I xg.k ,oa eVhfj; y fjdojh Qđl fyVh ds I pkyu ea gkus okys 0; ; 'kŷ; gq/kA
- ;g igy u dŷy 'kgjh LFkkuh; fudk; dks foŷkh; dks> ds fcuk ċHkoh vif'k"V ċċaku dks c<kok nrh gđ cfYd LFkk; h vk; I tu ds ekē; e Is I epk; ea i#kka vks efgykva dh Hkkxhnhkj dks I ŷuf' pr djrh gA
- ;g Lokfero vks ftEenkjh dh Hkkouk ds I kFk vkthfodk] Lo&vk; I tu ds fy, , d I Qy e,My ds : i ea dk; Z djrh gA
- i#k Lo; a I gk; rk I egka }kjk I pkyr I kexh ol yh dæ uxj ipk; r }kjk dpjs ds dŷy ċċaku ea egroi włz Hkfiedk fuHkkrh gA
- ;g igy u dŷy ifjpkyy ykx r dks de djus ea enn djrh gđ cfYd vif'k"V inkFkka dh fcŷh ds ekē; e Is jktLo Hkh mRiUu djrh gA
- ;g ,d I Qy Lojstxkj oV&V&oyFk ,oa fVdkÅ I dŷy , dks kŷh ekmy gđ tks I Hkh fudk; ka ds fy, vuqj.kh; gA bl h Ōe ea uxj {ks= ds ykxka ,oa de pky; ka ds I g; kx Is o"l 2024&25 gsrq uŷhrky ftys ds ykydŷka uxj ipk; r dks LoPN jŷdæ ea yxrkj mŷkjk [k.M ea ni jh ckj igyk LFkku ċklr gqk gA
- ykydŷka ea i#kka dk Lo&I gk; rk I eg Lo&jstxkj vks tehuh Lrj ij vif'k"V&I &eku igy ds I Qy dk; kŷo; u ds fy, ,d e,My ds : i ea dk; Z djrh gA

5. fu'd'iz

mÜkj[k.M ds uxj fudk; ka }kjk iLr¶ uokpkj vk/kkfjr iz kl ; g n'kkz's gS fd LFkkuh; I d k/kuk¶ I epk; ka dk iHkkoh I ek/kku I Hko gA pks : nã g ea Ma I kbM dks gj&Hkjs LFky ea cnyus dk iz kl gkš gY}kuh dh cSth I suk }kjk efgyk I 'kfDr dj.k dh fel ky] ckxs'oj ea I [kh }kjk SHG ekWly ; k tkskheB] x<fpjksyh vks vU; LFkkuka ea fd;s x, LoPNrk vks i; kbj.k I j{k.k ds iz kl &gj igy I keftd I ekosku] i; kbj.kh; I argyu vks Lokoyæu dk I 'kDr mnkgj.k gA bu iz kl ka usu doy 'kgjh ifjn'; dks cnyk gš cfYd tul gHkkfxrk] [kkI dj efgykvka dh Hkxhmkjh I s I ekoskh vks I rr fodkl dk exz iz kLr fd; k gA ; s I Qy ekWly vU; uxj fudk; ka ds fy; s ij .kk I ks cu I drs gS vks 0; ki d Lrj ij nksjk, tk I drs gš ft I s *LoPN I qj vks I rr 'kgjh Hkkjr* dk I iuk I kdkj gks I dA

uŋhrky tuin dsxlekk {s-lə}leuxj dstkxiġk , oaVk.Mk eYykw ds tykifrz;ktukvæaty thou fe'ku dsvæxʔ mŋjk[ŋ] dk igyk IoT vŋkŋfjr l d j ik;yV iktŋV

fo'ky l Di aŋ

v/kh{k.k vfhk; Urk} ty l ŋ.Fkk} gY}kuh

dgra gŋfd tsekik ugha tk l drk} ml ij fu; æ.k ugha ik; k tk l drk gŋ mDr
l ŋDr dks pfj=kFkZ djus grq tuin uŋhrky ea iFke ckj ty thou fe'ku vŋrxʔ IoT
vk/kkfjr l d j rdudh dks ikbzyV iktŋV ds: i ea jktLo xte Vk.Mk eYykw , oa tksxiġk
dks tkMk x; k gŋ bl ds rgr l ftr ifj l a fRr; ka dh dk; Zdqyrk dh fLFkr dh fuxjukh ds
fy, IoT vk/kkfjr l d jka dk mi; ksx fd; k tk jgk gŋ IoT i kŋ kŋxdh; l s l ġf{kr ty dh
miyC/krk vŋŋ ty vki frz izkkyh rFkk uy ty duŋ'kuka dh dk; Zkhyrk l ŋuf'pr dh tk
l dh gŋ mDr grq xqkoRrk , oa is ty dh forfjr ek=k dks eki us grq dŋ cfu; knh l d jka
dh LFkkiuk dh x; h gŋ ; g jkT; ds vŋnj , d vuŋh igy gŋ bl iz ksx l s ; kstukvka dh
fŋ; k'khyrk dks iR; d fnu tkpk tk l drk gŋ mDr IoT i kŋ kŋxdh ds iz ksx l s xehz ds
eghuka ds nkŋku is ty l ġ{kk l ŋuf'pr gks ik; xhA

mijkdR i kŋ kŋxdh dks iz ksx djrs gq s jkeuxj fodkl [k.M dh tksxiġk , oa Vk.Mk
eYykw is ty ; kstuk tksfd ty thou fe'ku vŋrxʔ fufeŋ dh x; h Fkh} ea ty thou
fe'ku ds iæq{k rhu mnæs; ka dh ekŋuVfjæ grq LFkkfir fd; k x; k gŋ tksfd fuEukuŋ kj gŋ

- 1- ifr0; fDr ifrfnu 55 yhVj dh nj l s is ty miyC/k djk; s tkus grq fŋ; k'khy
is ty duŋ'ku inku djuka

2- ch-vkbz, l - 10500 DokfyVh ekudka ij 'kq' is ty miyC/k djk; k tkukA

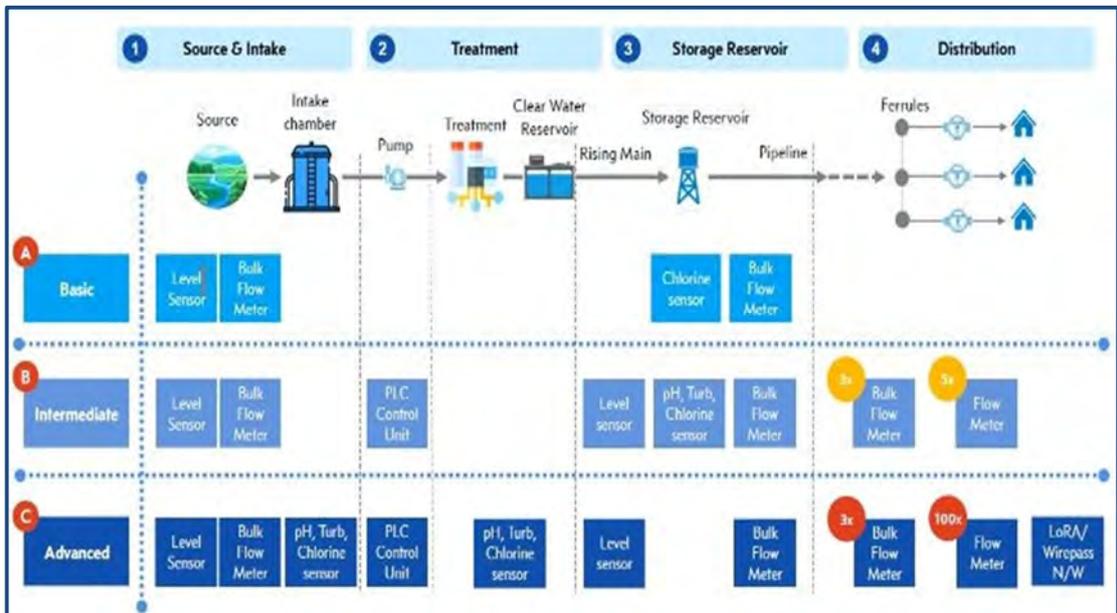
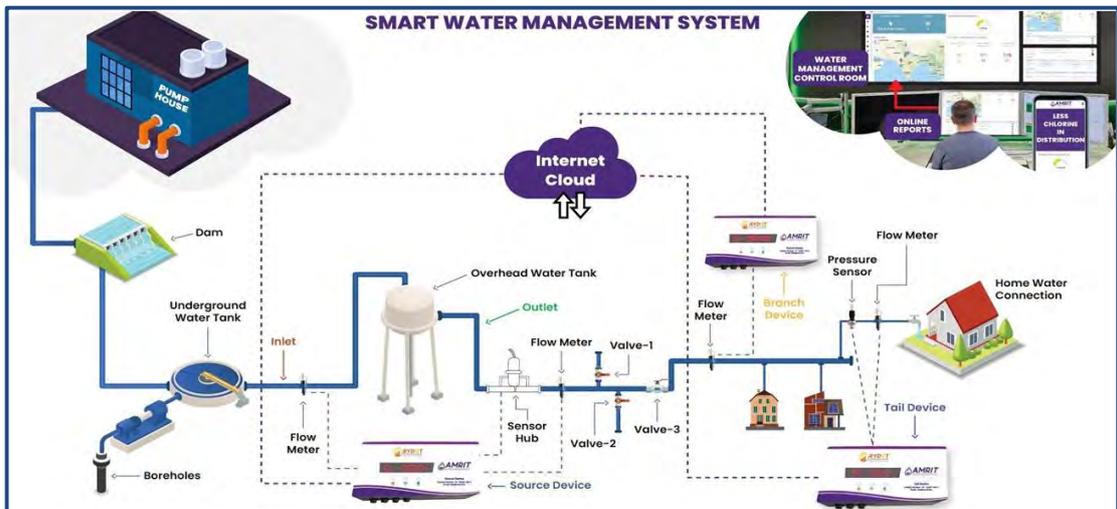
3- fufeZ ; kstuk l sfujUrj is ty miyC/k djk; k tkukA

mijkDr rhuka mnas ; ka dh l rf ekluVfjA grq fufeZ ; kstukvka ea iR; d mnA' ; ka dh ifirZ dh l R; rk dks tkpbus grq IoT vk/kfjr ekluVfjA fl LVe LFkfir fd; k x; k gS ftl ds vlrxZ ; kstuk ea fuEufyf[kr LFkyka ij l d l Z LFkfir djrs gq s l d j l s ikr gkus okys MKVk dks fjekV VfeZy ; fuV 1/4k-Vh; 1/2 ; fuV dh l gk; rk l s ykj xS/ os dks bLreky djrs gq s MKVk dks DykmM ij ikr fd; k tkrk gA ftl dk foj.k fuEukud kj gS

1- l k Z ; kstuk dk is ty l k l Z uydii gS ftl ij qyks ehVj LFkfir fd; k x; k gS ftl l s V; cwSy }kj ikr fd; s tkus okys is ty dh ek=k dk v/ ; ; u fd; k tkrk gA bl v/ ; ; u l s ; g irk pyr gSfd ifrfnu ; kstuk ds l k l s fdruk is ty dk mRiknu fd; k tk jgk gA ftl dk eh; ka du ; kstuk ds vlrxZ orZku fMek.M ds l kFk fd; k tkrk gA mDr l s ; g Kkr gk tkrk gSfd ; kstuk vlrxZ is ty dh ekax fdruh gS, oa is ty dk mRiknu fd; k tk jgk gS rfd ifr0; fDr 55 yhVj ifrfnu dh fMek.M dks ijk fd; k tk l dA

2- LVkst Vsl@okVj Vh/eW l ykV% fufeZ ; kstuk dk l k l Z V; cwSy gA vr% ; kstuk vlrxZ fd l h okVj fQYVjsku dh vko' ; drk ugha gS i jUrq Dykjsku , oa mRikfir ty dh xqkorrk l fuf'pr djus grq 05 l d j LVkst Vsl ea LVkj okVj dh tkp grq vf/k"Bkfi fd; s x; s gS tks fd forfjr fd; s tkus okys is ty dh DokfyVh dks l fuf'pr djrs gS fd forfjr is ty ch-vkbz, l - 10500 ds DokfyVh ukM l ij gA vFkok ugha bl dk fj; y VkbZ MKVk iR; d 10 feuV ea ikr gkrk gS ftl ds vlrxZ is ty dh xqkorrk dks fu/kkZjr djus okys ekud tS s Hardness 1/4 kuh dh dBkjr k1/2 Turbidity 1/4 kuh dk xnyki u1/2 T.D.S. 1/4 kuh ea ?kfyr yo. kka dh ek=k1/2 Iron 1/4 kuh ea ykgs dh ek=k1/2 Residual Chlorine 1/4 kuh ea Dykshu dh ek=k1/2 vkfn dk MKVk ikr gkrk gA l kFk gh vkOj gM Vsl 1/4ks, p-Vh-1/2 ds vkmVyS/ ij qyks ehVj dk vf/k"Bki u Hkh fd; k x; k gS ftl l s ; g MKVk ikr gkrk gS fd cggy xte is ty ; kstuk eafdl xte eafdrk is ty l lykbZ fd; k tk jgk gA

3- forj.k izklyk bl ds vlrxt 50&50 ?kka dk , d fxM cukrs gq s iR; d fxM ea jlyks ehVj , oa izkj ehVj dk vf/k"Bki u fd;k x;k gS ftl l s iklr MKVk dks , ukfy l l djds ; g v/ ; ; u fd;k tkrk gSfd iR; d ?kj eafdrk yHVj is ty ifr0; fDr iklr gks jgk gS , oa fdrusehVj izkj gM ij duD'ku l s is ty iklr gks jgk gA



mijkDr fof/k l s iklr MkVk dks ty thou fe'ku ds vLrxZr fufeZr MSk ckMZ ds ek/;e l s IoT vk/kkfjr l d j ij nqkk tk l drk gS ,oa ;g tkudkjh Hkh iklr gksrh gSfd iR;sd ;kstuk ea ifrfnu ifr0;fDr fdruk is ty iklr gks jgk gS fiNys nl fnuka ea ifr0;fDr fdruk is ty iklr gpkj is ty dh xqkoUkk ds h jghA mDr dh ekluVfjxa l s ;g fujUrj Kkr gksrk jgrk gSfd ;kstuk f0;k'khy gS ,oa ;kstuk dk ykHk xkeokf l ;ka dks iklr gks jgk gS vFkok ughA ;kstukUrxrZ yxk;s x;s IoT vk/kkfjr ekluVfjxa l d jka dks fuEukuq kj n'kkz k x;k gA





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