

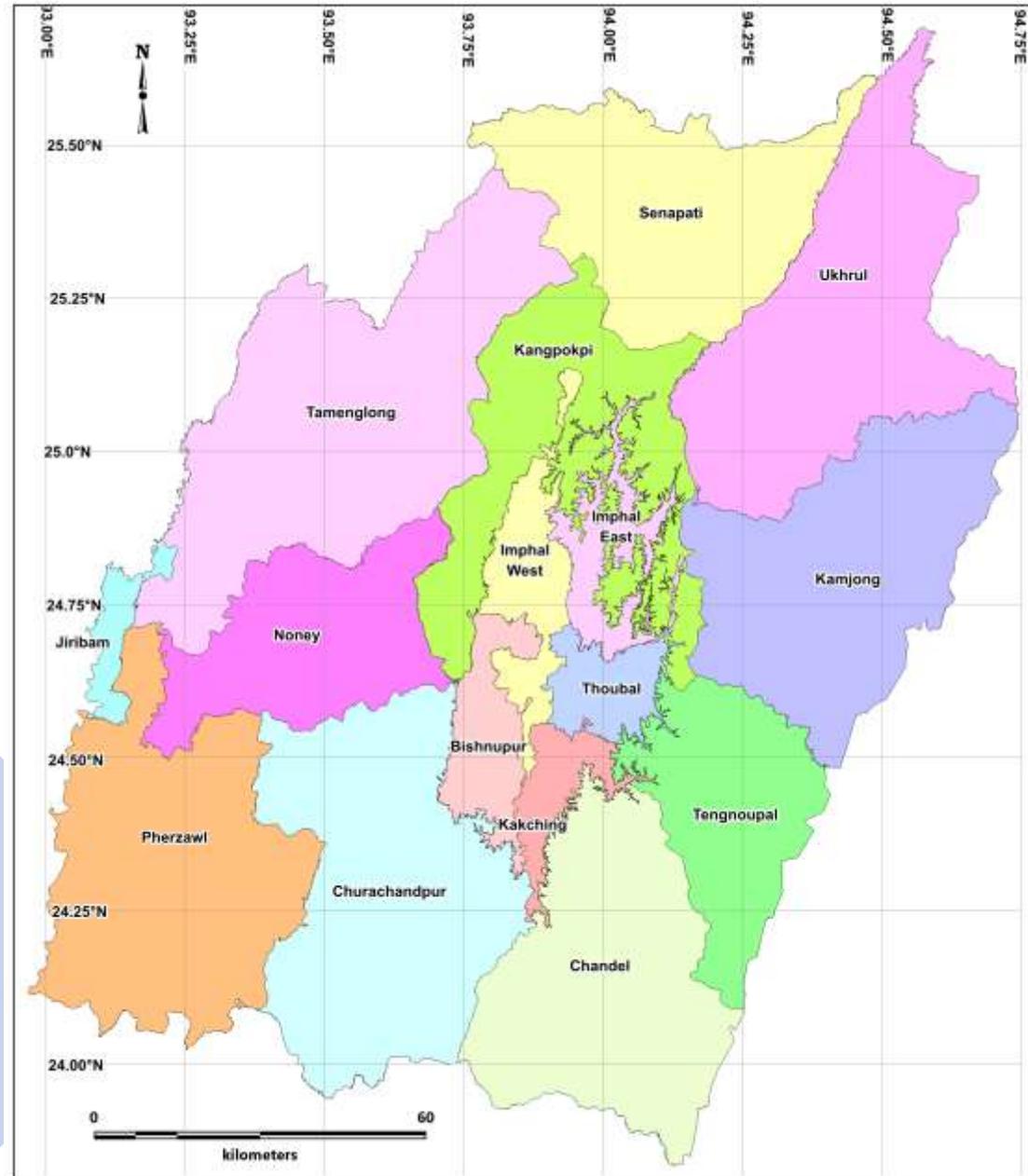


STATUS OF SOLID WASTES & LIQUID WASTE MANAGEMENT IN MANIPUR IN COMPLIANCE OF HON'BLE NGT DIRECTIONS IN OA 606 OF 2018



Government of Manipur

State Profile



Total Geographical Area = 22,327 square kilometres

Area under Valley = 10 %

Area under Hill = 90 %

Total Population = 28,55,794 (2011 Census)

= 35,69,743 (2021 Projected)

16 Districts (10 Hill Districts and 6 Valley Districts)

- 27 ULBs in Urban Areas
Population : 7,44,924 (2011 Census)
9,31,155 (2021 projected)
- 161 Gram Panchayet in Rural Area
- 8 Autonomous District Council in Hill Districts

Solid and Liquid Waste Management – Summary of Status

(A) Solid Waste Management

	Quantity of Waste Generated (TPD)	Waste Processed (TPD)	Gap in Generation and Processing (TPD)	Quantity of Legacy Waste (Tonnes)	Status of Bio-mining
Urban (27 ULBs)	290	203	87	1,00,000	Work Started
Rural and Hills	633 (Estimated)	<ul style="list-style-type: none"> 90-95% of total waste is wet waste which is processed at source through back yard or home composting and used for feeding to pig and other domesticated animals Dry wastes transferred to the nearby ULBs 			

(B) Liquid Waste Management

	Quantity of Liquid Waste Generated (MLD)	Liquid Waste Treated (MLD)	Gap in Generation and Treated (MLD)	Utilization of Treated Sewage		
				Agriculture / Horticulture	Industrial	Any other purposes
Urban (27 ULBs)	86	21	65	Agriculture	No	--
Rural and Hills	30	Faecal Sludge and Septage Management at Rural and Hill area				

2 (two) STPs of total 17 MLD for Nambul River Project under NRCD and 3 (three) STPs of total 49 MLD for Imphal Sewerage Phase II under NDB are targeted for commission by December 2022 and December 2024 respectively to bridge the gap of waste water management

MANIPUR STATE : Solid Waste and Liquid Waste Management

URBAN AREA IN VALLEY DISTRICTS

Total Population : 9 Lac (2021 projected)
Total Area : 179 Sq. Km.
Population Density : 5,028 person / Sq. Km.

Solid Waste

Generated : 290 TPD
Managed and Processed : 203 TPD
Gap as on 30.11.2022 : 87 TPD
i.e. 30 %

Liquid Waste

Generated : 85 MLD
Treated : 21 MLD
Gap as on 30.11.2022 : 64 MLD i.e. 77 %
Nambol Project (NRCD) : 17 MLD [by 31.12.2022]
Imphal Phase II (NDB) : 49 MLD [by 31.12.2024]

Budgetary provision of Rs. 224.9 Cr upto 2022-23 to fill the gap as

- **Rs. 21.50 Cr [under MAHUD],**
- **Rs. 81.59 Cr [under PHED],**
- **Rs. 97.72 Cr [under Environment & Climate Change],**
- **Rs. 7.73 Cr [under Tribal Affaires and Hills Development],**
- **Rs. 16.36 Cr [under Rural Development & Panchayati Raj]**

RURAL AND HILL

Total Population : 26 Lac (2021 projected)
Total Area : 22,149 Sq. Km.
Population Density : 117 person / Sq. Km.

Solid Waste

Generated : 633 TPD [estimated]
Managed and Processed: 570 TPD (i.e. 90%) is wet waste and processed at source through composting and feeding to animals, remaining dry wastes are collected by nearby ULBs
Gap as on 30.11.2022 : 60 TPD (Approximately) i.e. 4.7 %

Liquid Waste

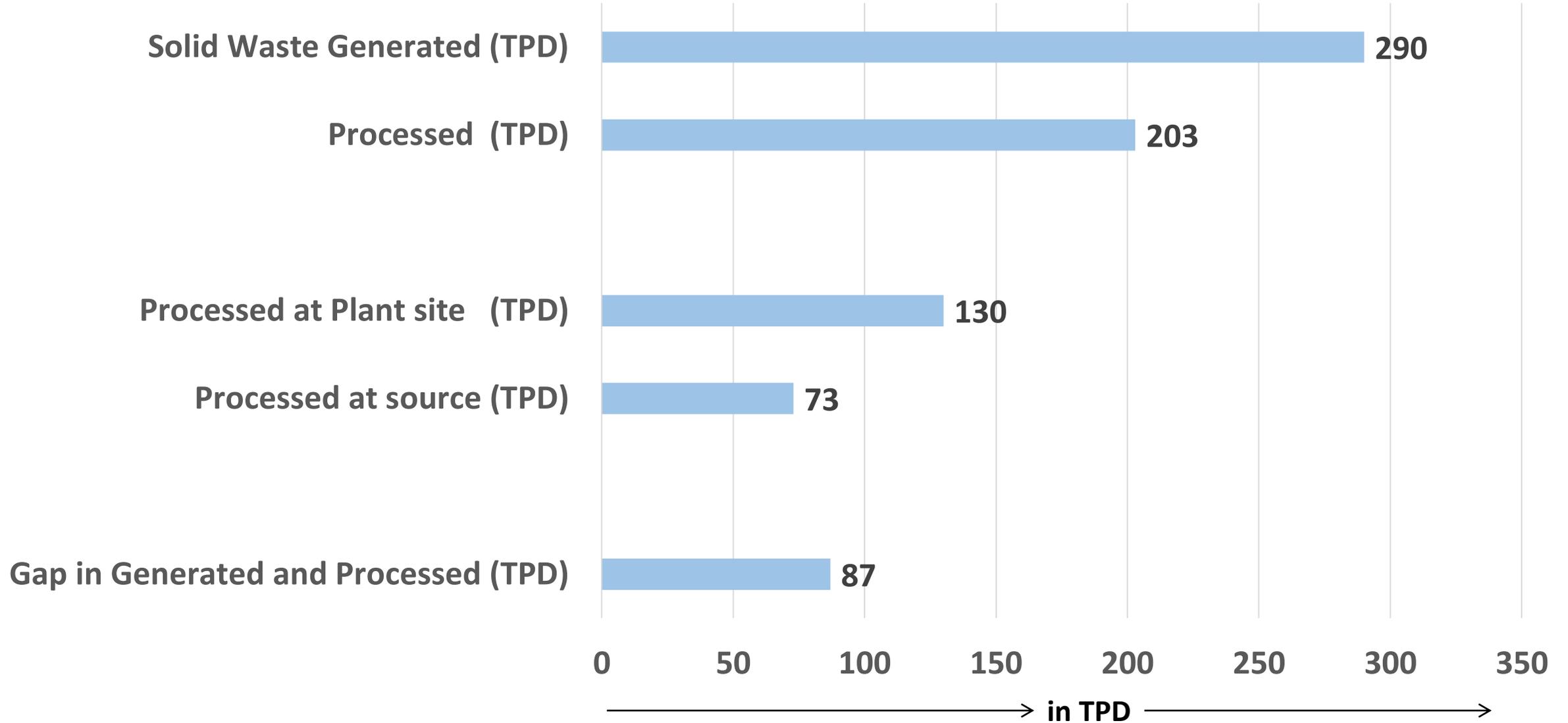
Generated : 30 MLD [estimated]
Treated : NIL
Gap as on 30.11.2022 : 100%

Solid Waste Management – Administrative set up

Institutions / Authorities for Solid Waste Management

- **Urban Area** : MAHUD (Municipal Administration, Housing and Urban Development) oversees the function of Municipal Corporation / Councils;
- **Rural Districts** : Department of Rural Development and Panchayati Raj (RD & PR);
- **Hill Districts** : Department of Tribal Affairs and Hill Development through District Autonomous Council (ADC);
- **NGOs / SHGs involved in Solid Waste Management** : 18 [eighteen] registered and skilled NGOs
55 SHGs and village level committees

Solid Waste Management – Urban Area



Solid Waste Generation and Management – in Urban Area

Solid Waste Collection & Management at 27 ULBs :

Status of Waste Management	2019 [last appearance at Hon'ble NGT]	2022 [current]
Total Solid Wastes Generated	284.33 TPD	290 TPD
Total Wastes Collected	132.98 TPD	217 TPD
Processed at source through backyard compost and feeds for animal husbandry, piggery, etc.	No data available	73 TPD
Total processed by ULBs	121.31 TPD	130 TPD
Gap in Solid Wastes Generated and Processed	No data available	87 TPD

Solid Waste Generation and Management – in Urban Area at Districts

District Name	Name of ULB	2021 Projected Population	Solid Waste Generated (TPD)	Processed / Managed at Plant site (TPD)	Processed at source (TPD)	Total Processed	Gap in between Generated and Processed	
							in TPD	in %
Imphal West	8 ULBs	4,64,885	172	81	34	115	56	33%
Thoubal	6 ULBs	1,24,070	37	6	17	23	14	38%
Imphal East	2 ULBs	16,753	5	2	3	5	0	0%
Kakching	3 ULBs	61,070	18	8	6	14	5	28%
Bishnupur	7 ULBs	1,16,664	35	10	14	24	12	34%
Jiribam	1 ULB	9,218	23	23	0	23	0	0%
Total	27 ULBs	7,92,660	290	130	73	203	87	30%

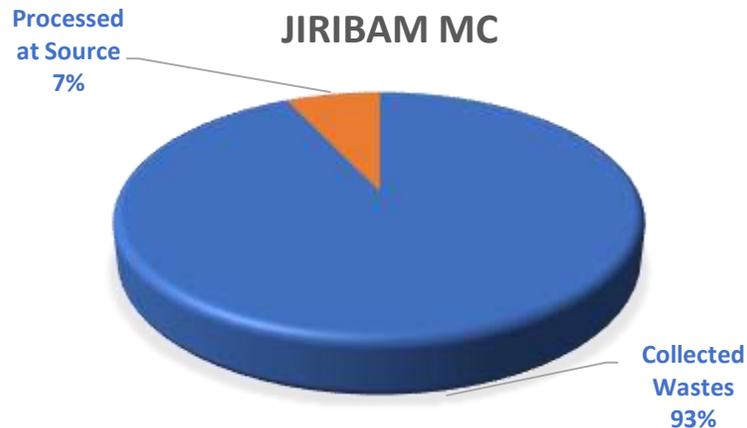
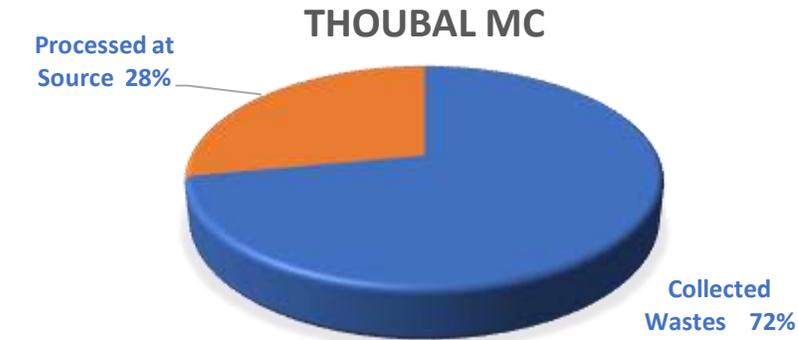
Committed for 100% collection and 100% process of the generated wastes in urban area will be made by June 2023 and scientific processing of legacy waste for 1 lakh MT will start by December 2022

Solid Waste Generation and Management – Model ULBs

Solid Waste Management at Imphal City and 3 model ULBs :

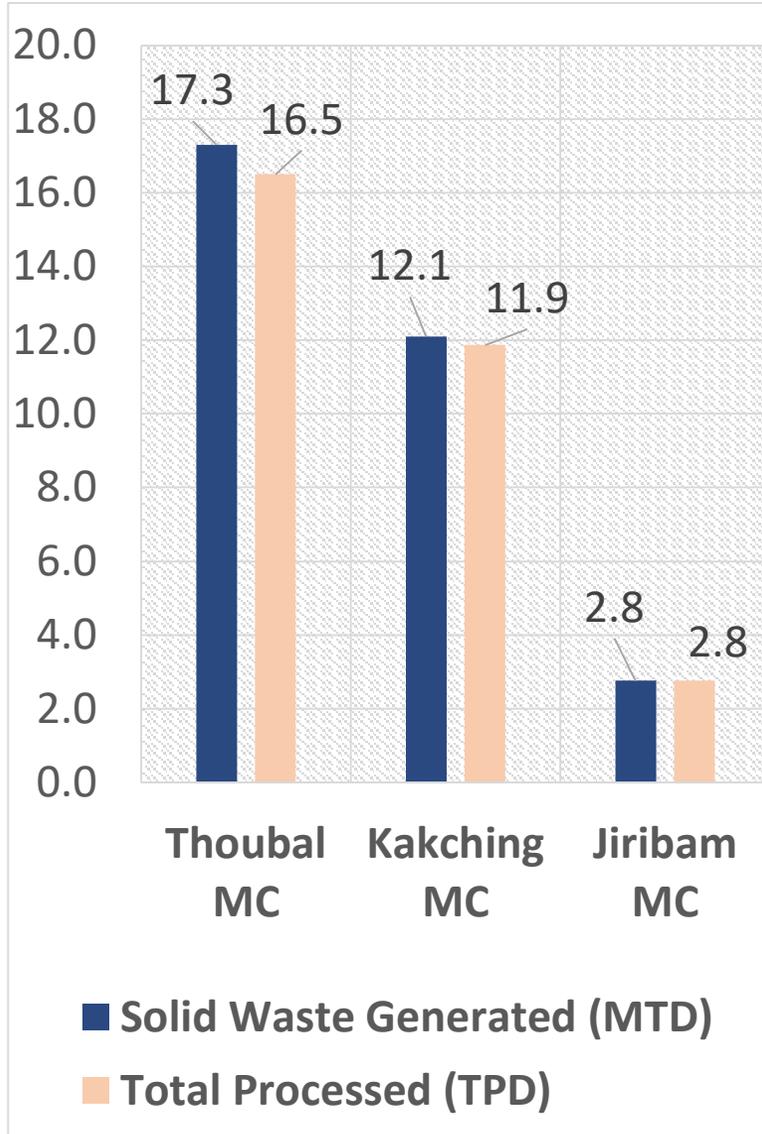
Out of 27 Towns (ULBs), 3 (three) Towns are notified as **Model Town** for compliance of Environmental Norms, viz

1. Jiribam MC [7,343 as per 2011]
2. Kakching MC [32,138 as per 2011]
3. Thoubal MC [45,947 as per 2011]



Solid Waste Generation and Management – Model ULBs

Solid Waste Management at 3 model ULBs :

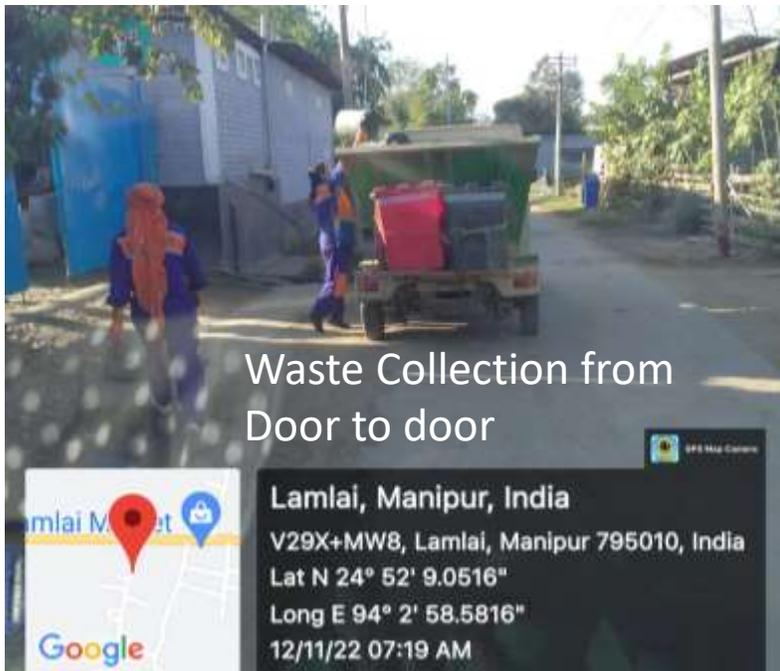


ULBs	Projected Population 2022	Waste Generated [estimated] (in TPD)	Waste Collected (in TPD)	Waste Processed and Managed (in TPD)	Gap in Solid Waste Generation and Processed (in TPD)
Thoubal MC	57,678	17	17	17	0
Kakching MC	40,344	12	12	12	0
Jiribam MC	9,218	3	3	3	0

Committed for

- replication in all the ULBs for proper management of Solid Wastes; and
- 100% collection and processing of generated wastes by June 2023

Solid Waste Management – Collection of wastes



Solid Waste Management – Segregation of wastes



Solid Waste Management – Facilities in Urban Area



Glass bottle House for Sanitary workers Room



Segregation of wastes at Plant site



Segregated metal wastes



Integrated Solid Waste Management System



Rotatory Sieving screen for compost

Solid Waste Management – Awareness Campaign



Efforts towards effective segregation at source and door to door collection

- Designated 8 NGOs for door to door collection in 27 ULBs
- Distributing twin bins for segregation of dry and wet waste at the source
- Enforced all household for encourage as member for door to door collection
- Continuous sustainable awareness campaign



Solid Waste Management in Rural and Hill Area

- Action Plan for Solid Waste Management at Rural and Hill Area in Manipur has been prepared;
- About 90-95% of total solid waste generated in rural and hill area are wet wastes and food wastes are used for piggery, poultry feeds and also for backyard or home composting due to availability of vast lands;
- The rest 5-10 % of dry waste are collected and managed by the nearby ULBs;
- Inert wastes generated are sent to the recyclers through nearby ULBs;
- No issue for solid waste in rural and Hilly regions in the State;

Solid Waste Generation – in model GPs as pilot

- Out of 161 GPs, 18 GPs [3 each of 6 valley districts] are notified as **Model Gram Panchayat** for compliance of Environmental Norms;
- All the 18 GPs has own notified waste management site in the GP itself;

Name Of District	Sl. No.	Name of G. P	Area in sq.km	Population	Waste Generated
Imphal East	1	Luwangsangbam	5	8,698	2.61
	2	Top Dusara	7	4,539	1.36
	3	Thongju Pt-I	1	5,038	1.51
Imphal West	4	Langjing	5	6,060	1.82
	5	Bijoygovinda	2	3,897	1.17
	6	Sagolband Sapam Leikai	1	4,964	1.49
Thoubal	7	Charangpat	6	6,962	2.09
	8	Khangabok Pt-I	10	7,456	2.24
	9	Tentha	10	9,087	2.73
Kakching	10	Hiyanglam	16	7,220	2.17
	11	Mayeng Lamjao	15	4,877	1.46
	12	Waikhong	13	7,938	2.38
Jiribam	13	Hilghat	14	7,168	2.15
	14	Dibong	3	4,983	1.49
	15	Sonapur	5	9,121	2.74
Bishnupur	16	Keinou	18	7,191	2.16
	17	ThangaPt-II	8	7,536	2.26
	18	Saiton	5	4,321	1.30
		Total	144	1,17,056	35.12

Solid Waste Generation – Model Villages in Hill Districts

Out of total 2111 villages in Hill Districts, 30 villages [3 each of 10 Hill districts] of below **3,000 population** are notified as **Model Hill Village** for compliance of **Environmental Norms**, viz

Name of District		Name of Village	Population of village (as per 2011 Census)	Total Waste Generated	Name of District		Name of Village	Population of village (as per 2011 Census)	Total Waste Generated
Churachandpur	21	Rengkai	8,293	2.49	Senapati	16	Katomei Village	2,308	0.69
	2	Hiangtam Lamka				17	Oinam Hill Village	4,328	1.30
	3	Tuibong	8,085	2.43		18	Song Song Village	7,230	2.17
Pherzawl	4	Pherzawl	1,558	0.47	Tamenglong	19	Tamenglong	12,000	3.60
	5	Parbung	2,545	0.76		20	Tamei	2,600	0.78
	6	Tanlon	1,352	0.41		21	Tousem	2,170	0.65
Chandel	7	Chandel	8,964	2.69	Noney	22	Noney	4,000	1.20
	8	Chakpikarong	6,500	1.95		23	Nungba/Rongdai	4,100	1.23
	9	Sugnu Tribal Area	2,897	0.87		24	Khoupum	5,800	1.74
Tengnoupal	10	Tengnoupal	2,158	0.65	Ukhrul	25	Ulhrul	68,064	20.42
	11	Moreh	16,750	5.03		26	Hungoung	10,785	3.24
	12	Machi	19,865	5.96		27	Halang	2,878	0.86
Kangpokpi	13	Kangpokpi	10,000	3.00	Kamjong	28	Kamjong	10,560	3.17
	14	Saikul	9,000	2.70		29	Phungyar	16,539	4.96
	15	Motbung	8,500	2.55		30	Khamlang	485	0.15
Total								3,69,314	78.99

Solid Waste Management – processed at source through home composting (Rural & Hill Area)



Home Composting Pit



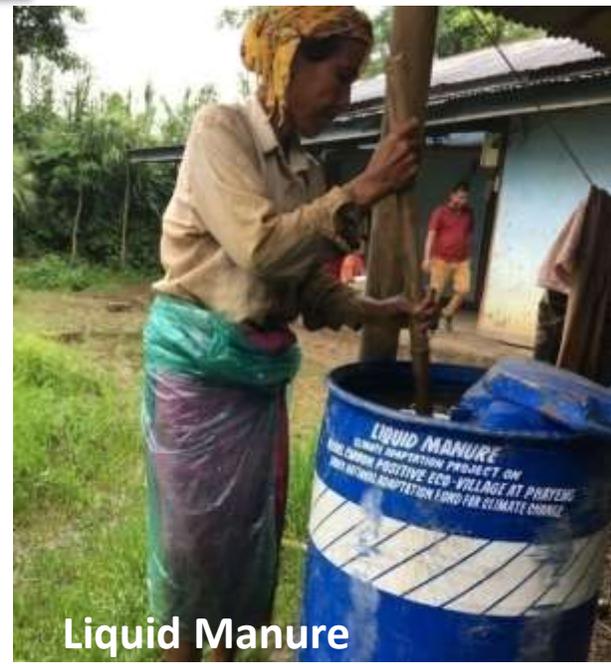
Sheaving of Compost



Vermi Compost Pit



Wet Wastes for Composting



Liquid Manure



Vermi Compost Pit

Solid Wastes Management – in Rural and Hill Area



Mass Cleaning of River



Food Wastes to Piggery



Compost at Co



Door to door
Collection of
dry waste



Plastic bottle
collection Point



Composting Pit at Individuals

Liquid Wastes Generation and Management

State	Sewage Generated in MLD	STP and other treatment facilities	Total Treated in MLD	Gap
Manipur State	115 MLD	<p>6 (six) STPs viz. 1 (one) Existing STP, 2 (two) STP under construction, 3 (three) STPs has finalized tender process as</p> <p>27 MLD (existing at Lamphel, functional with 69,429 meter of sewer line) 16 MLD (completed 90% of construction work under NRCD project) 1 MLD (completed 70% of construction work under NRCD project) 27 MLD (Tender has been finalized under Imphal Sewage Project Phase II) 16 MLD (Tender has been finalized under Imphal Sewage Project Phase II) 6 MLD (Tender has been finalized under Imphal Sewage Project Phase II)</p> <p>Bio-engineering viz. constructed wetland / pond, phyto-remediation, etc. as</p> <ul style="list-style-type: none"> • 36 MLD (DPR submitted for Bio-engineering solution under NRCD) • 225 KLD (DPR submitted for Faecal Sludge and Septage Management under NRCD and SBM 2) • 60 KLD for ETP (Effluent Treatment Plant) under NRCD 	21 MLD	94 MLD

Liquid Wastes Management Facilities



16 MLD STP at Maibam Leikai under NRCD Project



1 MLD STP at Iroisemba under NRCD Project



27 MLD STP at Lamphel

**Quality of Treated Water at existing 27 MLD STP
as on 30.11.2022**

pH	= 7.4
TSS	= 26 mg/l
COD	= 38 mg/l
BOD	= 12.5 mg/l
FC	= 150 NPN / 100 ml

Source : Manipur Pollution Control Board and PHED

Other Activities for Solid and Liquid Wastes Management

- Bio-mining of 1,00,000 MT **legacy waste** has been started, completing by November 2023;
- As per **Rule 11** of Solid Waste Management Rules, 2016, the **Manipur Plastic Policy 2022** was notified on 20th June 2022 and **Municipal Solid Waste Management Policy 2022** was notified on 8th September 2022
- As per **Rule 12** of Solid Waste Management Rules, 2016, all DCs have **identified and notified suitable lands for waste management** at their districts
- As per **Rule 15** of Solid Waste Management Rules 2016, LBs / Local Authorities have prepared **Solid Waste Management Plans**;
- **Treatment of major catchment** are under different projects like under KfW Funded project, Green India Mission, JICA funded project, etc.
- **Cleaning of Imphal river** stretches under State Plan
- **Rejuvenation of Nambul River** (polluted stretch of 9.14 km under Priority II of CPCB) in Imphal City since 2019 collecting liquid waste from 72 urban drains and treating through STP
- **Bio-remediation** and Improvement of 5 (five) water bodies in Imphal City during 2021-22 and 2022-23;

Thank you