

# National Mission for Clean Ganga - NMCG

**Format for submission of Monthly Progress Report (MPR) in the NGT Matter O.A.**

**No. 673 of 2018 (in compliance to NGT order dated 24.09.2020)**

**NGT has disposed-off the said matter vide its Order dated 22<sup>nd</sup> February 2021**

## State of GOA

### Overall status of the State:

- I. Total Population: Urban Population & Rural Population separately.  
Urban Local Bodies (ULBs') Population : 4,82,355 (*Census 2021*)
- II. Estimated Sewage Generation (MLD): **52.09 MLD** (*Urban area only*)

### III. Details of Sewage Treatment Plant:

- Existing no. of STPs and Treatment Capacity (in MLD): **09 STPs' with 78.35 MLD capacity**
- Capacity Utilization of existing STPs: **46.27 MLD**.
- MLD of sewage being treated through Alternate technology: In state of Goa where sewer network is not available, Septic-tank- Soak-pit arrangement is adopted. Many Hotels and residential buildings (*with 50 rooms / flats & above*) have their own Treatment Plant (*as mandated under the TCP Act 2010*). Sulabh toilets (PWD) are provided for group of houses/community and Bio-toilets have been provided under Open Defecation Free (ODF) policy in the State.
- Gap in Treatment Capacity in MLD: **Negligible**.
- No. of Operational STPs': **10 nos.**
- No. of Complying STPs': **10 nos.**
- No. of Non-complying STPs': **NIL**

### Details of each existing STP in the State

| No. | Location                  | Existing STP Capacity | Capacity Being Utilized | Operational Status of STP | Compliance Status of STP |
|-----|---------------------------|-----------------------|-------------------------|---------------------------|--------------------------|
| 1.  | Shirvodem, Navelim.       | 20 - MLD              | <b>15.90 - MLD</b>      | Operational               | Complied-with            |
| 2.  | Vasco                     | 20 – MLD              | <b>06.55 - MLD</b>      | Operational               | Complied-with            |
| 3.  | Durbhat                   | 01 – MLD              | 0.40 – MLD              | Operational               | Complied-with            |
| 4.  | Goa Medical College (GMC) | 1.35 MLD              | 0.50 – MLD              | Operational               | Complied-with            |

|                                                                                      |                          |                  |                                                                           |                                                   |                      |
|--------------------------------------------------------------------------------------|--------------------------|------------------|---------------------------------------------------------------------------|---------------------------------------------------|----------------------|
| 5.                                                                                   | Sancoale                 | 01 – MLD         | 1.00 – MLD                                                                | Operational                                       | Complied-with        |
| 6.                                                                                   | Sanquelim                | 0.8 – MLD        | 0.15 – MLD                                                                | Operational                                       | Complied-with        |
| 7.                                                                                   | Tonca,<br>Panaji         | 12.5 – MLD       | <b>08.81 – MLD</b>                                                        | Operational                                       | Complied-with        |
| 8.                                                                                   | Tonca,<br>Panaji         | 15 – MLD         | <b>04.75 – MLD</b>                                                        | Operational                                       | Complied-with        |
| 9.                                                                                   | Shirvodem-<br>Navelim    | 6.7 – MLD        | <b>06.70 – MLD</b>                                                        | Operational                                       | Complied-with        |
| <b>10.</b>                                                                           | <b>Patto,<br/>Panaji</b> | <b>2 MLD</b>     | <b>1.51 MLD</b>                                                           | <b>Operational<br/>&amp; under trial-<br/>run</b> | <b>Complied-with</b> |
| <b>Total</b>                                                                         |                          | <b>80.35 MLD</b> | <b>46.27 MLD</b> <i>Last-month, capacity being utilised was 45.09 MLD</i> |                                                   |                      |
| <b>Note : The status of existing STPs’ from sr. nos. 7 to 10 are provided by PWD</b> |                          |                  |                                                                           |                                                   |                      |

**Details of under construction STPs in the State**

| No. | Location      | Capacity of the plant in MLD | Physical Progress (in %)                                                                                                                                             | Status of I&D or House sewer connections                                 | Completion Timeline                   |
|-----|---------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|---------------------------------------|
| 1   | Kavlem, Ponda | 15 –MLD                      | <b>Civil works and Electrical / Mechanical works completed. Sewer-network is completed &amp; commissioning is in-progress</b>                                        | <b>House Sewer-connection works started and the work is in-progress.</b> | <b>Completed and under trial-run.</b> |
| 2   | Colva         | 7.5 – MLD                    | <b>93% (no change since last-month)</b> of sewer-network is completed. STP trial-run and work of effluent disposal line is completed, including testing & trial-run. | <b>Release of house sewer-connection is in-progress.</b>                 | <b>March 2024</b>                     |
| 3   | Mapusa        | 5.4 – MLD                    | <b>98% (no change since last-month)</b>                                                                                                                              | House Sewer-connection works started and the work is in-progress.        | <b>March 2024</b>                     |
| 4   | Baga          | 5.6 – MLD                    | 100% completed.                                                                                                                                                      | House Sewer-connection works started and the work is in-progress.        | <b>Completed</b>                      |
|     |               |                              |                                                                                                                                                                      |                                                                          |                                       |

|   |          |          |                                                                                                                                                                        |       |                      |
|---|----------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------------------|
| 5 | Porvorim | 20 – MLD | <b>30% (+10% change since last-month)</b> of civil works of STP has been completed. Around <b>87% (+3% change since last-month)</b> of the sewer network is completed. | ----- | <b>December 2025</b> |
|---|----------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------------------|

#### **Details of proposed STPs in the State**

| No.       | Location         | Capacity of the STP proposed in MLD | Status of Project<br>(at DPR Stage/ Under Tendering/ Work to be Awarded)                                                      | Likely Date of Completion                          |
|-----------|------------------|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| 1.        | Undir, Bandora   | 15 – MLD                            | STP work could not be started due to local issues. Around 65% (no change since last-month) of the sewer-network is completed. | 16-months time-period required from start of work. |
| 2.        | Curti, Ponda     | 08- MLD                             | STP work could not be started due to local issues. Around 92% (no change since last-month) of the sewer-network is completed. |                                                    |
| <b>3.</b> | <b>Curchorem</b> | <b>7.5 MLD</b>                      | <b>Land for STP has been procured. Around 60% of the sewer network is completed.</b>                                          |                                                    |

\* Above data does not include any packaged treatment plants /sulabh-toilets and Bio-toilets

#### **IV. Details of Industrial Pollution:**

- No. of industries in the State: 8,611
- No. of water polluting industries in the State: Nil
- Quantity of effluent generated from the industries in MLD:
- Quantity of Hazardous Sludge generated from the Industries in TPD:
- Number of industrial units having ETPs: 209
- Number of industrial units connected to CETP: State does not have any CETP
- Number and total capacity of ETPs (details of existing/ under construction / proposed)
- Compliance status of the ETPs: 207
- Number and total capacity of CETPs (details of existing/ under construction / proposed) : State does not have any CETP
- Status of compliance and operation of the CETPs : Not Applicable in view of above.

| Town | No. of industries | Industrial discharge | Status of ETPs | Status of CETPs<br>(existing, under construction & proposed) |
|------|-------------------|----------------------|----------------|--------------------------------------------------------------|
|------|-------------------|----------------------|----------------|--------------------------------------------------------------|

**V. Solid Waste Management:**

- Total number of Urban Local Bodies and their Population: *As referred in MPR for the month ending September 2022.*
- Current Municipal Solid Waste Generation: **766 tons per day (TPD)** – *as per the waste characterization report, 2018.* Solid waste treatment plant with 250 tons per day capacity is fully operational at Saligao which caters to the waste being generated from coastal-stretch of North Goa district among other selective areas.
- Number, installed capacity and utilization of existing MSW processing facilities in TPD (*bifurcated by type of processing e.g.- Waste to Energy (Tonnage and Power Output), Compost Plants (Windrow, Vermi, decentralized pit composting), biomethanation, MRF etc., (related to 'centralised' solid waste sorting, baling and onward processing facilities operated by the Goa Waste Management Corporation (GWMC)* **Refer Annexure – A.** Status from Urban Local Bodies (ULBs') is referred at Annexure E while, status from village panchayats is referred at Annexure F.
- Action plan to bridge gap between Installed Capacity and Current Utilization of processing facilities (if Gap > 20%): **Refer Annexure – B** (*related to setting-up of common waste-treatment facilities including Hazardous / Biomedical / Construction and Debris / E-waste facilities*).
- No. and capacity of C&D waste processing plants in TPD (*existing, proposed and under construction*): State has proposed 500-TPD capacity C & D waste processing plant at Cudchirem in Bicholim, North Goa district.
- Total no. of wards, no. of wards having door-to-door collection service, no. of wards practicing segregation at source (*village Panchayat-level*): *As referred in Annexure F.*
- Details of MSW treatment facilities proposed and under construction (*no., capacity, and technology*): **Refer Annexure – B.**
- No. and area (*in acres*) of uncontrolled garbage dumpsites and Sanitary Landfills.: **N.A.**
- No. and area (*in acres*) of legacy waste within 1-km buffer of both sides of the rivers: **Nil.**
- No. of drains falling into rivers and no. of drains having floating racks/screens installed to prevent solid waste from falling into the rivers: **Nil.**

**Status of ULB wise Management of Solid Waste**

| ULB                                                    | Total MSW generation in TPD | Total MSW being processed in TPD | Existing MSW facilities | Utilization Capacity of the existing MSW facilities | Proposed MSW Facilities & Completion Timeline |
|--------------------------------------------------------|-----------------------------|----------------------------------|-------------------------|-----------------------------------------------------|-----------------------------------------------|
| As referred in MPR for the month ending-November 2020. |                             |                                  |                         |                                                     |                                               |

**VI. Bio-medical Waste Management:***As per Annual report*

- Total Bio-medical generation: 2,992 kgs. per day (*bio-medical waste*) / 17,179 kgs. per day (*sanitary waste*).
- No. of Hospitals and Health Care Facilities: **Refer Annexure – C.**
- Status of Treatment Facility / CBMWTF: Common Biomedical waste treatment facility is operational at Kundaim.

**VII. Hazardous Waste Management:**

- Total Hazardous Waste generation:
  - (a) Incinerable waste : 39,379.80 TPA
  - (b) Land-fillable waste : 3,385.21 TPA
  - (c) Recyclable waste : 33,095.57 TPA
  - Total : 77,056.58 TPA.
- No. of Industries generating Hazardous waste :**1,628 nos.**
- Treatment Capacity of all TSDFs :**16,846 metric tons per year.**
- Avg. Quantity of Hazardous waste reaching the TSDFs and Treated: **Currently, majority of the HW-generated is disposed through Inter-State movement by recycling / utilization / disposal at common secured landfill site / common incinerator / co-processing to neighbouring States under valid agreement.** Landfilable waste (about 250 MT) is being disposed-off (*since March 2021*) through a secured landfill site set-up in common HW facility at Pissurlem.
- Details of on-going or proposed TSDF :**The State has set-up Common Hazardous Waste Treatment Facility at Pissurlem Industrial Estate and phase-I is operational.** While, Phase-II is 92% completed.

**VIII. Plastic Waste Management:**

- Total Plastic Waste generation: **80.66 Tons per day (TPD)** – *as per the waste characterization report, 2018.*
- Treatment/ Measures adopted for reduction or management of plastic waste: Establishment of Common Material Recovery facility (MRF) as well as Baling facilities at Cacora and Bicholim (02) nos.).

**IX.** Details of Alternate Treatment Technology being adopted by the State/UT: **The State has set-up Plastic-to-Fuel plant at Pernem Municipal Council (North Goa).** However, currently, it is not-working and under repairs.

**X.** Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment: **There is no industrial discharge within any of the polluted river-stretches.**

- XI. Details of Nodal Officer appointed by Chief Secretary in the State/UT: **Secretary, Environment is a Nodal Officer to be assisted by Director, Department of Environment & Climate Change (DoE & CC), Goa.**
- XII. Details of meetings carried under the Chairmanship Chief of Secretary in the State/UT: **The State, in compliance to the NGT Order in a matter of 606 of 2018 (SWM-related matters & Ors.), has constituted the State Level Committee (SLC) under the Chairmanship of Chief Secretary who takes the review on regular-basis.** Last such review (*i.e. 23<sup>rd</sup> SLC-Goa meeting*) was taken in the month of April 2022. As per the latest NGT Order dated 31<sup>st</sup> May 2022, the State of Goa, through the Chief Secretary, has to appear before the NGT, Principal Bench through VC on 02<sup>nd</sup> March 2023. 24<sup>th</sup> SLC-Goa meeting is scheduled on 8<sup>th</sup> November 2022.
- XIII. Latest water quality of polluted river, its tributaries of polluted river; **refer Annexure – D.**
- XIV. Ground water regulation: (a) Ground Water Act, 2002 is enacted in the State of Goa, (b) Ground water extraction is being monitored, (c) It is mandatory to register all the ground water structures in the State, (d) Commercial ground water extraction is levied with water tax, (e) Goa is declared as ‘Safe zone’ under the Ground water development by the Central Ground Water Board (CGWB), (f) guidelines issued by the Central Ground Water Board (CGWB) is implements. **Compliance – 100%, Target – Target – achieved.**
- XV. Good irrigation practices being adopted by the State: Water User Associations (WUAs’) are formed to economise the use of water. - Expected level of compliance: 80%, **Actual compliance: 65% (No change since September 2021).**
- XVI. Rain Water Harvesting: Industries, through the Department of Industries, Trade & Commerce (DITC) are being encouraged to adopt to rainwater harvesting. Due to excessive rainfall (*i.e. 160 inches per year*) shortage of land and groundwater being in ample quantity. Not many takers. In addition, the Town and Country Planning (TCP) Department has made roof-top rainwater harvesting mandatory for multi-dwelling units as well as residential-cum-commercial complexes. - Expected level of compliance: 50%, **Actual compliance: 20% (no change since January 2021).**
- XVII. Demarcation of Floodplain and removal of illegal encroachments - Expected level of compliance: 100%, **Actual compliance: 100%, Target: Achieved**(Demarcation completed).
- XVIII. Maintaining minimum e-flow of river: Rivers are perennial. **There is no issue of e-flow in major rivers.**
- XIX. **Plantation activities along the rivers:** *No change since last-month.*
- XX. **Development of Biodiversity Park:** *No change since last-month.*
- XXI. **Reuse of Treated Water:** *No change since last-month.*

**XXII. Model River being adopted by the State** & Action Proposed for achieving the bathing quality standards: River Sal and River Valvonti. Polluting drains joining the river have been identified, treated / filtered. De-weeding and desilting is being proposed including aeration of the stored water. Expected level of compliance 100 %. **Actual Compliance by Water Resources Department (WRD) - 100%. Target – achieved.**

**XXIII. Status of Preparation of Action Plan:** All the action plans prepared for eleven polluted river-stretches have been approved by CPCB (*i.e. in case of priority criteria – III : 01 stretch – Sal river*) and RRC-Goa (*i.e. in case of priority criteria IV & V : remaining 10-stretches*). Accordingly, Action Plan Strategies (APs), *referred in these action plans*, are being regularly reviewed by the Secretary, Environment in the capacity as Chairman, RRC-Goa.

**Further, the Action plans to address the coastal and marine pollution have already been submitted to the CPCB, New Delhi in September 2021** in respect of six coastal-rivers and have been reviewed by the RRC-Goa and accordingly the compliance to CPCB's comments, *received thereafter*, are being addressed by stakeholder departments-concerned. The Goa-PCB has already communicated to the CPCB with a request to 'De-list' 05 river-stretches out of 11 river-stretches based on the compliance to Bathing water quality standards from a period from May 2019 to April 2021. Subsequently, the CPCB, based on water-quality (*i.e. Biochemical Oxygen Demand – BOD*), of rivers for years 2019 and 2021, has compiled / revised the polluted river stretches in August 2022. Accordingly, it has been reported that State of Goa has reduced number of such stretches (*i.e. 06 nos.*) as compared to 11 nos. which were based on data compiled during 2016 – 17. The said draft-report is being perused and verified as per the CPCB's request prior to finalise the same. **Goa State Pollution Control Board (GSPCB) has responded to the CPCB informing about the mismatch in the water-quality data in the revised six polluted river-stretches (refer Annexure G).** Chairman, RRC-Goa has reviewed the progress on 9<sup>th</sup> September 2022 (*i.e. 30<sup>th</sup> RRC-Goa meeting*) and has scheduled to review further on 11<sup>th</sup> November 2022.

**XXIV. Regulation of Mining Activities in the State/UT:** It is being monitored as per Hon'ble Supreme Court Directives through the Department of Mines and Geology (DMG).

**XXV.** Action against identified polluters, law violators and officers responsible for failure for vigorous monitoring: Ground water and river waters are monitored under Goa Ground Water Act, 2002 and Goa Irrigation Act, 1973 respectively by Ground Water and Canal Officers respectively. : Expected level of compliance: 100%, **Actual compliance: 100%, Target – achieved.**

## **Annexure A**

**Solid waste sorting, baling and onward processing facilities operated by the Goa Waste Management Corporation (GWMC).**

|          |                                                          |                             |
|----------|----------------------------------------------------------|-----------------------------|
|          | <b>Total Waste generation is 766 TPD</b>                 |                             |
|          | <b>Capacity</b>                                          | <b>Total Waste Capacity</b> |
|          |                                                          |                             |
| <b>1</b> | <b>Existing Capacity Municipal Councils/Corporation</b>  | <b>200</b>                  |
| <b>2</b> | <b>Existing Village Panchayat Treatment Facility</b>     | <b>35</b>                   |
| <b>3</b> | <b>GWMC Saligao Facility (250 TPD +20%)</b>              | <b>300</b>                  |
| <b>4</b> | <b>GWMC Cacora Facility (100 TPD + 25%)</b>              | <b>125</b>                  |
| <b>5</b> | <b>Village Panchayat MRF, GWMC Baling Stations etc.,</b> | <b>110</b>                  |
|          | <b>Total Existing Capacity</b>                           | <b>770</b>                  |

**Note: Currently there are no Gaps between Solid waste management Facilities capacity and generation in State of Goa.**

## Annexure B

**Note: Facility at Sr. no. 1 & 2 are proposed to be constructed considering the future increase in waste generation and not for any present gap in MSW treatment.**

|   |                                                                                                      |              |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                       |
|---|------------------------------------------------------------------------------------------------------|--------------|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 1 | <b>Integrated Solid Waste Management Facility- Bainguinim</b>                                        | Capacity:    | 100 TPD (+25%)             | <ul style="list-style-type: none"> <li>Revised RFQ approved and floated on 13/09/2022 &amp; opened on 20/12/2022.</li> <li>Technical scrutiny has been completed and 3 bidders were shortlisted. After Inspection of facilities, the bidders were called for presentations before the Expert Committee in the month of May. Post the presentations and evaluation, successful bidders will be issued RFP's. Currently final RFP formulation is in process. <b>RFP shall be floated tentatively in February-2024 due to changes in financial model.</b></li> <li>A Civil Appeal No. 4983 of 2021 with interlocutory application no. 105533 of 2021 (application for stay) has been instituted in Hon'ble Supreme Court of India by Bainguinim Citizen Forum V/s GWMC &amp; others. Hearing was on 17/11/2021 &amp; 21/04/2022 and case has been admitted in Supreme Court.</li> </ul> <p><b>(No Change)</b></p>                                                                    | <b>Proposed timeline to be decided post-verdict of Hon'ble Supreme Court case.</b>    |
|   |                                                                                                      | Catering to: | Tiswadi & Ponda Talukas    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                       |
| 2 | <b>Solid Waste Management Facility – Verna (250 TPD + 20%)&amp; 250 TPD Waste to Energy Facility</b> | Capacity     | 250 TPD (+20%)             | <ul style="list-style-type: none"> <li><b>Awaiting environmental clearance (EC) from Goa-SEIAA.</b></li> <li>Pre-feasibility study for setting up of Waste to Energy completed by IVL Swedish Research Institute, Sweden and report submitted.</li> </ul> <p>GWMC vide email dated 10/07/2023 and letter dated 08/08/2023 had requested Goa-SEIAA to relist the proposal of SWMF Verna on Parivesh Portal in sorder to reply to queries raised by Goa-SEAC as GWMC received the information from Goa Industrial Development Corporation (GIDC) which GWMC was awaiting. The proposed was relisted on Parivesh Portal on 28/09/2023 with status as 'under examination of SEAC' on the portal. However, there was no option on the portal to address the queries which were requested earlier on portal hence GWMC submitted the reply to the queries offline as per Goa-SEAC's request which was enclosed vide letter dated 28/09/2023 to Goa-SEIAA.</p> <p><b>(No Change)</b></p> | Upon grant of Environmental Clearance (EC), GWMC shall float tender for SWMF 250 TPD. |
|   |                                                                                                      | Catering to  | Mormugao & Salcete Talukas |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                       |

|   |                                                                                             |                                                          |                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                               |
|---|---------------------------------------------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | <b>Construction &amp; Demolition Waste Management Facility – Bicholim</b>                   | Capacity: 500 TPD<br><br>Land:44,478 sqm<br>Catering to: | State of Goa                                                   | <ul style="list-style-type: none"> <li>Demarcation from Dy. Collector- Bicholim and ISLR was scheduled on 31/01/2024. However, the same was stopped by locals during demarcation. ISLR has fixed next demarcation in month of February along with police protection.</li> <li>Meanwhile GWMC has also initiated process for identifying an alternate land for C&amp;D facility in Tuem and has also proposed to take over the land in Survey no.120 &amp; Sy. No. 125 in Tuem Village, which is the revenue dept land / govt land for setting of C&amp; D waste facility. In in regard GWMC has requested Revenue dept. to handover the said land to GWMC and simultaneously GWMC has applied for NOC from TCP and Forest Department and is awaiting final NOC for TCP &amp; Forest. GWMC has sent reminder letters to TCP &amp; Forest for grant of NOC.</li> <li>This proposed C&amp;D waste facility in Tuem, will be additional facility to the one proposed at Curchirem which is necessary due to increase in quantum of C&amp;D waste and for reduction of cost of transportation etc.</li> </ul> <p>Meantime, Collector North Goa has notified an abandoned laterite quarry in Tuem Village for deposition C&amp;D waste for backfilling and subsequently deposition of waste by various agencies has already started and around 256 trips of trucks have been deposited at site.</p> | GWMC was to float tender for setting up C & D Waste Management Facility by December-2021 but due to delay in site clearance from Revenue Department and construction work towards the same has not commenced. |
| 4 | <b>Common Hazardous Waste Treatment Storage and Disposal Facility (CHWTSD)</b>              | Capacity                                                 | 25,000 TPA<br>Secured Landfill (SLF) & 1.5 ton/hr incinerators | <ul style="list-style-type: none"> <li>Phase 1: Completed</li> <li>Phase 2: 99% completed (<i>No change</i>) (<i>only administrative block office finishing work is remaining which will be completed post monsoons however plant is functional</i>) (<i>No change</i>)</li> <li>Work towards Boiler, Incineration system (Phase II) is completed</li> <li>Incinerator has been commissioned.</li> <li>Application for consent to operate for incinerator received from GSPCB.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <p>TSDF commissioned on March 2021.</p> <p><b>Incinerator commissioned.</b></p>                                                                                                                               |
| 5 | <b>Design-Build and Operate an E-Waste Management (Collection, Storage and Dismantling)</b> | Capacity                                                 | <b>15 - TPD</b>                                                | <ul style="list-style-type: none"> <li>Work Order is issued to the contractor dated 27/08/2021.</li> <li>Since 27/08/2021, the operator has started collection of e-waste from ULBs/RLBs and the same is disposed scientifically to authorized recyclers.</li> <li>GIDC has sub-leased the plot to CAM Industrial Services.</li> <li>Construction licence from GIDC received on 26/12/2022. Construction of retaining wall and foundation of main site has commenced. Construction is in progress.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <p>Collection of e-waste has started from 27/08/2021.</p> <p><b>Dismantling facility will be completed and commissioned by December- 2024</b></p>                                                             |

## Annexure C

### **Total Number of Hospitals & healthcare facilities:**

- The State of Goa has 50 public healthcare facilities (*excluding veterinary & dispensaries*) with a total bed capacity of 3159.
- Total number of non-bedded facilities under public healthcare systems are 14 dispensaries.
- Goa has 102 facilities under the category of private healthcare with a total bed capacity of 2443.
- The total beds currently available under both public and private sector are 5602.
- Goa has one dental college under public healthcare and 251 dental clinics across the state under private health care system.
- The state also has 5 veterinary hospitals and 25 clinics under public facilities and 27 pet clinics under the category of private facilities.
- Apart from bedded facilities in private sector the state also has approximately 482 non bedded facilities (excluding dental clinics) that cater to consultations, observation, diagnostics and select treatment.

## Annexure D

### Water-quality data for month of January 2024

| <b><u>DATA of 11 Polluted River Stretches for Major Rivers of JANUARY 2024</u></b>      |                                |               |                                                                                                   |
|-----------------------------------------------------------------------------------------|--------------------------------|---------------|---------------------------------------------------------------------------------------------------|
| <b>1.RIVER CHAPORA NEAR ALORNA FORT, PERNEM</b>                                         |                                |               |                                                                                                   |
| <b>Sr.No.</b>                                                                           | <b>Parameters</b>              | <b>Jan-24</b> | <b>Limit for class C rivers as per CPCB classification based on designated best use of rivers</b> |
| 1                                                                                       | pH                             | 7.23          | 6.0-9.0                                                                                           |
| 2                                                                                       | Dissolved Oxygen (mg/l)        | 6.6           | 4 mg/l or more                                                                                    |
| 3                                                                                       | BOD (mg/l)                     | BDL           | 3 mg/l or less                                                                                    |
| 4                                                                                       | Total Coliform (MPN/100ml)     | 3300          | 5000 or less MPN/100ml                                                                            |
| 5                                                                                       | Fecal Streptococci (MPN/100ml) | 230           | -                                                                                                 |
| <b>Remarks: All parameters are within permissible limit for the month of January 24</b> |                                |               |                                                                                                   |

| <b>RIVER CHAPORA NEAR SIOLIM BRIDGE</b>                                                      |                                |               |                                                                                                 |
|----------------------------------------------------------------------------------------------|--------------------------------|---------------|-------------------------------------------------------------------------------------------------|
| <b>Sr.No.</b>                                                                                | <b>Parameters</b>              | <b>Jan-24</b> | <b>Limit for SW II rivers as per CPCB classification based on designated best use of rivers</b> |
| 1                                                                                            | pH                             | 7.8           | 6.5-8.5                                                                                         |
| 2                                                                                            | Turbidity(NTU)                 | 4.19          | 30 NTU                                                                                          |
| 3                                                                                            | Dissolved Oxygen (mg/l)        | 6.7           | 4 mg/l or more                                                                                  |
| 4                                                                                            | BOD (mg/l)                     | BDL           | 3 mg/l or less                                                                                  |
| 5                                                                                            | Fecal Coliform (MPN/100ml)     | 1700          | 100 or less MPN/100ml                                                                           |
| 6                                                                                            | Fecal Streptococci (MPN/100ml) | 240           | -                                                                                               |
| <b>Remarks:Fecal Coliform is exceeding the permissible limit for the month of January 24</b> |                                |               |                                                                                                 |

| <b>2.RIVER TIRACOL AT KERI, PERNEM</b> |                   |               |                                                                                                 |
|----------------------------------------|-------------------|---------------|-------------------------------------------------------------------------------------------------|
| <b>Sr.No.</b>                          | <b>Parameters</b> | <b>Jan-24</b> | <b>Limit for SW II rivers as per CPCB classification based on designated best use of rivers</b> |
| 1                                      | pH                | 7.65          | 6.5-8.5                                                                                         |

|                                                                                              |                                |      |                       |
|----------------------------------------------------------------------------------------------|--------------------------------|------|-----------------------|
| 2                                                                                            | Turbidity(NTU)                 | 3.28 | 30 NTU                |
| 3                                                                                            | Dissolved Oxygen (mg/l)        | 7.6  | 4 mg/l or more        |
| 4                                                                                            | BOD (mg/l)                     | BDL  | 3 mg/l or less        |
| 5                                                                                            | Fecal Coliform (MPN/100ml)     | 1300 | 100 or less MPN/100ml |
| 6                                                                                            | Fecal Streptococci (MPN/100ml) | 200  | -                     |
| <b>Remarks:Fecal coliform is exceeding the permissible limit for the month of January 24</b> |                                |      |                       |

| <b>3.RIVER SINGUERIM, CANDOLIM SIDE</b>                                                      |                                |        |                                                                                          |
|----------------------------------------------------------------------------------------------|--------------------------------|--------|------------------------------------------------------------------------------------------|
| Sr.No.                                                                                       | Parameters                     | Jan-24 | Limit for SW II rivers as per CPCB classification based on designated best use of rivers |
| 1                                                                                            | pH                             | 7.66   | 6.5-8.5                                                                                  |
| 2                                                                                            | Turbidity(NTU)                 | 9.73   | 30 NTU                                                                                   |
| 3                                                                                            | Dissolved Oxygen (mg/l)        | 4.4    | 4 mg/l or more                                                                           |
| 4                                                                                            | BOD (mg/l)                     | BDL    | 3 mg/l or less                                                                           |
| 5                                                                                            | Fecal Coliform (MPN/100ml)     | 2300   | 100 or less MPN/100ml                                                                    |
| 6                                                                                            | Fecal Streptococci (MPN/100ml) | 130    | -                                                                                        |
| <b>Remarks:Fecal Coliform is exceeding the permissible limit for the month of January 24</b> |                                |        |                                                                                          |

| <b>RIVER SINGUERIM, NEAR GANPATI TEMPLE</b>                                                   |                                |        |                                                                                          |
|-----------------------------------------------------------------------------------------------|--------------------------------|--------|------------------------------------------------------------------------------------------|
| Sr.No.                                                                                        | Parameters                     | Jan-24 | Limit for SW II rivers as per CPCB classification based on designated best use of rivers |
| 1                                                                                             | pH                             | 7.65   | 6.5-8.5                                                                                  |
| 2                                                                                             | Turbidity(NTU)                 | 4.96   | 30 NTU                                                                                   |
| 3                                                                                             | Dissolved Oxygen (mg/l)        | 6.6    | 4 mg/l or more                                                                           |
| 4                                                                                             | BOD (mg/l)                     | BDL    | 3 mg/l or less                                                                           |
| 5                                                                                             | Fecal Coliform (MPN/100ml)     | 1300   | 100 or less MPN/100ml                                                                    |
| 6                                                                                             | Fecal Streptococci (MPN/100ml) | 230    | -                                                                                        |
| <b>Remarks: Fecal Coliform is exceeding the permissible limit for the month of January 24</b> |                                |        |                                                                                          |

| <b>4.RIVER ZUARI AT MADKAI JETTY</b> |  |  |  |
|--------------------------------------|--|--|--|
|--------------------------------------|--|--|--|

| Sr.No. | Parameters                     | Jan-24 | Limit for SW II rivers as per CPCB classification based on designated best use of rivers |
|--------|--------------------------------|--------|------------------------------------------------------------------------------------------|
| 1      | pH                             | 7.51   | 6.5-8.5                                                                                  |
| 2      | Turbidity(NTU)                 | 1.99   | 30 NTU                                                                                   |
| 3      | Dissolved Oxygen (mg/l)        | 5.0    | 4 mg/l or more                                                                           |
| 4      | BOD (mg/l)                     | BDL    | 3 mg/l or less                                                                           |
| 5      | Fecal Coliform (MPN/100ml)     | 2400   | 100 or less MPN/100ml                                                                    |
| 6      | Fecal Streptococci (MPN/100ml) | 540    | -                                                                                        |

**Remarks:**Fecal coliform is exceeding the permissible limit for the month of January 24

| RIVER ZUARI AT BORIM BRIDGE |                                |        |                                                                                          |
|-----------------------------|--------------------------------|--------|------------------------------------------------------------------------------------------|
| Sr.No.                      | Parameters                     | Jan-24 | Limit for SW II rivers as per CPCB classification based on designated best use of rivers |
| 1                           | pH                             | 7.33   | 6.5-8.5                                                                                  |
| 2                           | Turbidity(NTU)                 | 1.8    | 30 NTU                                                                                   |
| 3                           | Dissolved Oxygen (mg/l)        | 8.0    | 4 mg/l or more                                                                           |
| 4                           | BOD (mg/l)                     | BDL    | 3 mg/l or less                                                                           |
| 5                           | Fecal Coliform (MPN/100ml)     | 940    | 100 or less MPN/100ml                                                                    |
| 6                           | Fecal Streptococci (MPN/100ml) | 790    | -                                                                                        |

**Remarks:**Fecal Coliform is exceeding the permissible limit for the month of January 24

| 5.RIVER ASSANORA AT ASSANORA |                                |        |                                                                                            |
|------------------------------|--------------------------------|--------|--------------------------------------------------------------------------------------------|
| Sr.No.                       | Parameters                     | Jan-24 | Limit for class C rivers as per CPCB classification based on designated best use of rivers |
| 1                            | pH                             | 6.30   | 6.0-9.0                                                                                    |
| 2                            | Dissolved Oxygen (mg/l)        | 6.3    | 4 mg/l or more                                                                             |
| 3                            | BOD (mg/l)                     | BDL    | 3 mg/l or less                                                                             |
| 4                            | Total Coliform (MPN/100ml)     | 2200   | 5000 or less MPN/100ml                                                                     |
| 5                            | Fecal Streptococci (MPN/100ml) | 140    | -                                                                                          |

**Remarks:** All parameters are within permissible limit for the month of January 24.

| 6.RIVER VALVANTI AT SANQUELIM                                                            |                                |        |                                                                                            |
|------------------------------------------------------------------------------------------|--------------------------------|--------|--------------------------------------------------------------------------------------------|
| Sr.No.                                                                                   | Parameters                     | Jan-24 | Limit for class C rivers as per CPCB classification based on designated best use of rivers |
| 1                                                                                        | pH                             | 7.70   | 6.0-9.0                                                                                    |
| 2                                                                                        | Dissolved Oxygen (mg/l)        | 7.6    | 4 mg/l or more                                                                             |
| 3                                                                                        | BOD (mg/l)                     | BDL    | 3 mg/l or less                                                                             |
| 4                                                                                        | Total Coliform (MPN/100ml)     | 3400   | 5000 or less MPN/100ml                                                                     |
| 5                                                                                        | Fecal Streptococci (MPN/100ml) | 110    | -                                                                                          |
| <b>Remarks: All parameters are within permissible limit for the month of January 24.</b> |                                |        |                                                                                            |

| 7.RIVER KHANDEPAR, OPA, PONDA                                                                         |                                |        |                                                                                            |
|-------------------------------------------------------------------------------------------------------|--------------------------------|--------|--------------------------------------------------------------------------------------------|
| Sr.No.                                                                                                | Parameters                     | Jan-24 | Limit for class C rivers as per CPCB classification based on designated best use of rivers |
| 1                                                                                                     | pH                             | 7.25   | 6.0-9.0                                                                                    |
| 2                                                                                                     | Dissolved Oxygen (mg/l)        | 8.2    | 4 mg/l or more                                                                             |
| 3                                                                                                     | BOD (mg/l)                     | BDL    | 3 mg/l or less                                                                             |
| 4                                                                                                     | Total Coliform (MPN/100ml)     | 9400   | 5000 or less MPN/100ml                                                                     |
| 5                                                                                                     | Fecal Streptococci (MPN/100ml) | 490    | -                                                                                          |
| <b>Remarks: Total Coliform parameter is exceeding permissible limits for the month of January 24.</b> |                                |        |                                                                                            |

| RIVER KHANDEPAR, CODLI                                                                                |                                |        |                                                                                            |
|-------------------------------------------------------------------------------------------------------|--------------------------------|--------|--------------------------------------------------------------------------------------------|
| Sr.No.                                                                                                | Parameters                     | Jan-24 | Limit for class C rivers as per CPCB classification based on designated best use of rivers |
| 1                                                                                                     | pH                             | 7.07   | 6.0-9.0                                                                                    |
| 2                                                                                                     | Dissolved Oxygen (mg/l)        | 8.0    | 4 mg/l or more                                                                             |
| 3                                                                                                     | BOD (mg/l)                     | BDL    | 3 mg/l or less                                                                             |
| 4                                                                                                     | Total Coliform (MPN/100ml)     | 9200   | 5000 or less MPN/100ml                                                                     |
| 5                                                                                                     | Fecal Streptococci (MPN/100ml) | 140    | -                                                                                          |
| <b>Remarks: Total Coliform parameter is exceeding permissible limits for the month of January 24.</b> |                                |        |                                                                                            |

| 8.RIVER BICHOLIM BARAZAN NAGAR, BICHOLIM                                         |                                |        |                                                                                            |
|----------------------------------------------------------------------------------|--------------------------------|--------|--------------------------------------------------------------------------------------------|
| Sr.No.                                                                           | Parameters                     | Jan-24 | Limit for class C rivers as per CPCB classification based on designated best use of rivers |
| 1                                                                                | pH                             | 6.62   | 6.0-9.0                                                                                    |
| 2                                                                                | Dissolved Oxygen (mg/l)        | 5.4    | 4 mg/l or more                                                                             |
| 3                                                                                | BOD (mg/l)                     | 2.7    | 3 mg/l or less                                                                             |
| 4                                                                                | Total Coliform (MPN/100ml)     | 3500   | 5000 or less MPN/100ml                                                                     |
| 5                                                                                | Fecal Streptococci (MPN/100ml) | 170    | -                                                                                          |
| Remarks:All parameters are within permissible limits for the month of January 24 |                                |        |                                                                                            |

| 9.RIVER MANDОВI AT TONCA MARCELA                                                       |                                |        |                                                                                                |
|----------------------------------------------------------------------------------------|--------------------------------|--------|------------------------------------------------------------------------------------------------|
| Sr.No.                                                                                 | Parameters                     | Jan-24 | Limit for class SW II rivers as per CPCB classification based on designated best use of rivers |
| 1                                                                                      | pH                             | 7.21   | 6.5-8.5                                                                                        |
| 2                                                                                      | Turbidity(NTU)                 | 3.80   | 30 NTU                                                                                         |
| 3                                                                                      | Dissolved Oxygen (mg/l)        | 5.0    | 4 mg/l or more                                                                                 |
| 4                                                                                      | BOD (mg/l)                     | BDL    | 3 mg/l or less                                                                                 |
| 5                                                                                      | Fecal Coliform (MPN/100ml)     | 260    | 100 or less MPN/100ml                                                                          |
| 6                                                                                      | Fecal Streptococci (MPN/100ml) | 94     | -                                                                                              |
| Remarks:Fecal Coliform is exceeding the permissible limit for the month of January 24. |                                |        |                                                                                                |

| 10.RIVER TALPONA AT CANACONA                                                      |                                |        |                                                                                            |
|-----------------------------------------------------------------------------------|--------------------------------|--------|--------------------------------------------------------------------------------------------|
| Sr.No.                                                                            | Parameters                     | Jan-24 | Limit for class C rivers as per CPCB classification based on designated best use of rivers |
| 1                                                                                 | pH                             | 6.62   | 6.0-9.0                                                                                    |
| 2                                                                                 | Dissolved Oxygen (mg/l)        | 7.2    | 4 mg/l or more                                                                             |
| 3                                                                                 | BOD (mg/l)                     | BDL    | 3 mg/l or less                                                                             |
| 4                                                                                 | Total Coliform (MPN/100ml)     | 1100   | 5000 or less MPN/100ml                                                                     |
| 5                                                                                 | Fecal Streptococci (MPN/100ml) | 110    | -                                                                                          |
| Remarks: All parameters are within permissible limits for the month of January 24 |                                |        |                                                                                            |

| 11.RIVER SAL AT KHAREBAND,MARGAO                                                                                                                                                 |                                |        |                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------|------------------------------------------------------------------------------------------------|
| Sr.No.                                                                                                                                                                           | Parameters                     | Jan-24 | Limit for class SW II rivers as per CPCB classification based on designated best use of rivers |
| 1                                                                                                                                                                                | pH                             | 7.19   | 6.5-8.5                                                                                        |
| 2                                                                                                                                                                                | Turbidity(NTU)                 | 3.04   | 30 NTU                                                                                         |
| 3                                                                                                                                                                                | Dissolved Oxygen (mg/l)        | BDL    | 4 mg/l or more                                                                                 |
| 4                                                                                                                                                                                | BOD (mg/l)                     | 5.3    | 3 mg/l or less                                                                                 |
| 5                                                                                                                                                                                | Fecal Coliform (MPN/100ml)     | 4600   | 100 or less MPN/100ml                                                                          |
| 6                                                                                                                                                                                | Fecal Streptococci (MPN/100ml) | 790    | -                                                                                              |
| <b>Remarks:</b> Biochemical Oxygen Demand and Fecal coliform is exceeding the permissible limit and Dissolved Oxygen is below the permissible limit for the month of January 24. |                                |        |                                                                                                |

| RIVER SAL AT MOBOR                                                                                   |                                |        |                                                                                                |
|------------------------------------------------------------------------------------------------------|--------------------------------|--------|------------------------------------------------------------------------------------------------|
| Sr.No.                                                                                               | Parameters                     | Jan-24 | Limit for class SW II rivers as per CPCB classification based on designated best use of rivers |
| 1                                                                                                    | pH                             | 7.72   | 6.5-8.5                                                                                        |
| 2                                                                                                    | Turbidity(NTU)                 | 2.89   | 30 NTU                                                                                         |
| 3                                                                                                    | Dissolved Oxygen (mg/l)        | 6.0    | 4 mg/l or more                                                                                 |
| 4                                                                                                    | BOD (mg/l)                     | BDL    | 3 mg/l or less                                                                                 |
| 5                                                                                                    | Fecal Coliform (MPN/100ml)     | 780    | 100 or less MPN/100ml                                                                          |
| 6                                                                                                    | Fecal Streptococci (MPN/100ml) | 140    |                                                                                                |
| <b>Remarks:</b> Fecal Coliform parameter is exceeding permissible limit for the month of January 24. |                                |        |                                                                                                |

NOTE:

1)BDL- Below Detection Limit



## Annexure E

### Remediation of Legacy waste as in January 2024

| Sr. No. | Name of the Local Body            | Location of dump                                    | Volume as per estimate | Volume remediated till date | Qty of RDF Disposed (m3) | Qty of Inert/ Compost Disposed(m3) | Status of Work                                                                                                            |
|---------|-----------------------------------|-----------------------------------------------------|------------------------|-----------------------------|--------------------------|------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| 1       | Corporation of the City of Panaji | Campal- Attachment Point No. 290                    | 7,555                  | 5,305                       | 3,168                    | 2,070                              | <b>Completed</b><br>Start date - March 20/<br>Completed date- Feb 21                                                      |
| 2       | Corporation of the City of Panaji | Behind SBI, EDC, Patto- attachment Point No. 287    | 2,524                  | 2,606                       | 308                      | 2,239                              | <b>Completed</b><br>Start Date- March 21/Completed date-June 21                                                           |
| 3       | Corporation of the City of Panaji | Near Divja Circle, Panaji- Attachment Point No. 288 | 1,018                  | 569                         | 89                       | 424                                | <b>Completed</b><br>Start date-May 21/completed date -June 21                                                             |
| 4       | Margao Municipal Council          | Sonsoddo dump site, Margao                          | 2,31,240               | 1,72,179                    | 58,650 (ongoing)         | 77,723                             | <b>Remediation Work completed,</b><br>Remediation start date-Dec 19/ completed date- Mar 23<br>(RDF disposal in progress) |
| 5       | Mormugao Municipal Council        | Headland Sada dump site, Mormugao                   | 83,661                 | 96,530                      | 37,729                   | 52,673                             | <b>Completed</b><br>Start date-Feb 20/Completed date- June 2020<br>(RDF disposal pending)                                 |
| 6       | Mapusa Municipal Council          | Assagao Dump site, Mapusa                           | 1,32,684               | 1,55,333                    | 62,476                   | 58,481                             | <b>Completed</b><br>Start date-Feb 20/completed date- June 2022                                                           |
| 7       | Cuncolim Municipal Council        | Dumpsite at Cuncolim IDC                            | 3,617                  | 4,955                       | Pending                  | 1,683                              | <b>Remediation Completed</b><br>Start date-Feb 22/completed date-May 2022                                                 |

|              |                                   |                                                                    |                 |                                            |                    |                 |                                                                                                                                                                                                                                                |
|--------------|-----------------------------------|--------------------------------------------------------------------|-----------------|--------------------------------------------|--------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              |                                   |                                                                    |                 |                                            |                    |                 | <i>(RDF disposal in progress)</i>                                                                                                                                                                                                              |
| 8            | Canacona Municipal Council        | Dumpsite at Garbage Treatment Plant at Dumane Shristhal            | 493.21          | ~3129<br>(Final survey qty. not submitted) | 844<br>(ongoing)   | ~510            | <b>Remediation Work in progress</b><br>Work Start date- May 21.<br>(Stopped after the monsoon and could not start further due to site hindrances).<br>Started again on- Apr-23/<br>completed date- May 23<br><i>(RDF disposal in progress)</i> |
| 9            | Corporation of the City of Panaji | Curca- Attachment Point No. 289                                    | 7,455           | ~8900                                      | ~2264<br>(ongoing) | Pending         | <b>Remediation Work in progress</b><br>Start date-Mar 23/ Completed on- May 23<br><i>(RDF &amp; Inerts and compost disposal in progress)</i>                                                                                                   |
| 10           | Bicholim Municipal Council        | Adjacent to the garbage Treatment Plant, Lakherem in Sy. No.109/0. | 3,165           | ~3,400                                     | Pending            | ~2256           | <b>Remediation Work completed,</b><br>Start date-May 22/ Completed date- Mar 2023<br><i>(RDF disposal pending)</i>                                                                                                                             |
| 11           | Pernem Municipal Council          | At garbage Treatment Plant of Pernem Municipal Council             | 210             | 317                                        | Pending            | 119             | <b>Remediation Completed</b><br>Start date-Dec 2022/Completed date-Dec 22<br><i>(RDF disposal pending)</i>                                                                                                                                     |
| <b>Total</b> |                                   |                                                                    | <b>4,73,622</b> | <b>4,53,223</b>                            | <b>1,65,528</b>    | <b>1,98,178</b> |                                                                                                                                                                                                                                                |