Item No. 02 Court No. 1

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

(By Video Conferencing)

Original Application No. 606/2018

(**In respect of State of Andhra Pradesh**)

In re: **Compliance of Municipal Solid Waste Management Rules, 2016 and other environmental issues**

(Arising out of directions of the Hon'ble Supreme Court in W.P. No. 888/1996 and W.P. No. 375/2012)

Date of hearing: 17.11.2022

CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON
HON'BLE MR. JUSTICE SUDHIR AGARWAL, JUDICIAL MEMBER
HON'BLE PROF. A. SENTHIL VEL, EXPERT MEMBER

Present: Dr. Sameer Sharma, Chief Secretary to Government, Govt. of Andhra Pradesh
Sri. Neerabh Kumar Prasad, Spl. Chief Secretary to Government, Environment Forest Science & Technology Department, Govt. of AP
Smt. Y. Srilakshmi, Spl. Chief Secretary to Government, Municipal Administration and Urban Development Department, Govt. of AP
Sri. Guljar, Secretary to Government, Finance Department, Govt. of AP Sri . G K Dwivedi, Principal Secretary to Government, Panchayat Raj & Rural Development Department, Govt. of AP
Sri. Symala Rao, Principal Secretary toGovernment (FAC), Water Resources Department, Govt. of AP
Sri. Vijay Kumar Gsrkr, Member Secretary, A.P. Pollution Control Board, Vijayawada
Sri. Pravin Kumar, Commissioner and Director of Municipal Administration(CDMA), Vijayawada
Sri. Kona Sashidhar, Commissioner, Panchayat Raj Department, Govt. of AP
Sri. Sampath Kumar, Managing Director, Swachha Andhra Corporation
Sri. Venkata Reddy, Director of Mines & Geology, Dept. of Mines & Geology, Govt. of AP
Sri. M. Siva Reddy, Joint Chief Environmental Engineer, A.P. Pollution Control Board, Vijayawada
With
Mr. TVS Raghavendra Sreyas, Advocate

ORDER

1. The issues of solid as well as liquid waste management are being monitored by this Tribunal as per orders of the Hon'ble Supreme Court

order dated 02.09.2014 in *Writ Petition No. 888/1996, Almitra H. Patel vs. Union of India & Ors.,* with regard to solid waste management and order dated 22.02.2017 in W.P. No. 375/2012, reported in (*2017) 5 SCC 326, Paryavaran Suraksha vs. Union of India,* with regard to liquid waste management. Other related issues include pollution of 351 river stretches, 122 non-attainment cities in terms of air quality, 100 polluted industrial clusters, illegal sand mining etc. have also been dealt with earlier but we propose to limit the proceedings in the present matter to two issues of solid waste and sewage management.

2. In continuation of earlier orders on the subject, the compliance status was last reviewed by the Tribunal on 04.08.2022 in the presence of Chief Secretary, Andhra Pradesh.

3. The concluding part of the said order is as follows:-

"1to25……xxx……xxx

26. The presentation by way of 11th Quarterly report filed by the Chief Secretary, Andhra Pradesh on 29.07.2022 shows following data:

SUMMARY OF STATUS

A: Solid Waste Management					
Quantity of waste generation in the State (in TPD)	*Waste Processed (in TPD)*	*Gap in generation and Processing (in TPD)*	*Quantity of waste being disposed in landfills (in TPD)*	*Quantity of Legacy waste in the State*	*Status of Bio-mining*
6890	*Existing: 3729 Awarded: 1980 Proposed: 1155*	*3755*	*3755 (unprocessed)*	*85 lacs MT [> 1 lac population = 64.52 lacs MT]*	*Completed at Vijayawada and Tirupati and in progress at Vishakhapatnam, Kurnool, Dharmavaram and Ananthapur*

B): Sewage Management					
Quantity of sewage generation in the State	*Treatment capacity (in MLD)*	*Current Gap in treatment (in MLD)*	*Utilization of treated sewage in*		
			Agriculture/ Horticulture	*Industrial purpose*	*Any other purpose*

(in MLD)			*purpose*		
1503.20	*Existing Capacity: 535.45 Being Treated: 382.81 Under construction: 507.17 Under tender: 35.60*	*967.75 (gap may be 424.98 MLD only after completion of 507.17 MLD works and tendering and execution of 35.60 MLD*	*119.9 MLD is utilized*		

27. It is seen from the data presented by the Chief Secretary there are still huge gaps in management of solid as well as liquid waste.

28. In solid waste management, there is a gap of 3755 TPD. Waste processing facilities are inadequate. Compost produced at individual and community level and its usage and linkages with end users/processors need to be monitored. Timelines for compliance beyond statutory outer limit need to be squeezed to respect the statutory mandate and directions of the Hon'ble Supreme Court and this Tribunal. 98.17% of segregated waste is collected which needs to be processed rather than allowing it for disposal at landfill sites. Wet waste (bio-degradable waste) processing is yet to be done for 88 ULBs. Approach adopted to set up 30 MW power generation plant by feeding 2400 TPD of waste and clubbing 41 ULBs needs to be considered for other clusters. There is already proposal for setting up of 7.5 MW waste to energy plant at Rajahmundry. Works of biomining appear to be inordinately delayed. In order to set up waste processing facilities, reclamation of land by biomining may be an added advantage. We note that out of 123 ULBs, work has been completed in 02 ULBs, work is in progress in 02 ULBs and in 17 ULBs work is awarded and tenders are invited. This shows that progress is at slow place.

With regard to liquid waste management, the gap in treatment is reported to be 424.98 MLD. This is subject to completion of 507.17 MLD works and completion of tendering and execution of 35.60 MLD. Thus, present gap in sewage management is 967.75 MLD. Distinction between urban and rural waste and their treatment has to have definite execution plan. Septic tanks and Soak pits systems need to safeguard ground water safety, particularly in rural areas. We do not find substantial progress in sewage management. 61 STPs in 35 ULBs are under construction and for other ULBs proposals are referred to NRCP, SBM 2.0 and AMRUT – 2. This is not a desirable situation as it may be continued violation in terms of Water Act and the directions of the Hon'ble Supreme Court.

29. Till the gap is bridged, unprocessed solid waste and untreated liquid waste will continue to remain source of degradation of environment and damage to public health, including deaths and diseases which the society can ill afford. Hence, the urgency of the situation for good governance ensuring emergent measures in public interest to protect the environment and public health and discharge of Constitutional obligation.

31. ***It is a matter of concern that even after 48 years of enactment of Water (Prevention and Control of Pollution) Act, 1974 and expiry of timelines for taking necessary steps for solid waste management in terms of Solid Waste Management Rules, 2016 and binding direction in the judgment of the Hon'ble Supreme Court and this Tribunal in Almitra H. Patel vs. Union of India & Ors. and Paryavaran Suraksha vs. Union of India, supra, huge gaps still exist. Are there insurmountable difficulties for State authorities or lack of will and determination? We find it difficult to believe the first. In our view, it is lack of good governance and determination responsible for the situation which needs to be remedied soonest****.*

32. We have suggested change in approach in realizing that remedial action cannot wait for indefinite period as is being proposed by the Administration. Sources of funding are laid down in the orders of the Hon'ble Supreme Court. Responsibility of the State is to have comprehensive plan to control pollution which is its absolute liability, which is not being understood. If there is deficit in budgetary allocations, it is for the State and state alone to have suitable planning by reducing cost or augmenting resources. By way of suggestion, one may consider harnessing traditional knowledge and community involvement. People must be involved in the problem by appropriate awareness and strategies to encourage public participation and contribution. At the cost of repetition, health issues cannot be deferred to long future. Long future dates which, breach of which is established from the track record of last several decades, is not convincing solution. There is no accountability for the past breaches. It is poor substitute for compliance. This approach may project lack of concern or not realizing the grim ground situation crying for emergent remedial measures on priority. There is no time for leisure, reflected in timelines proposed for bridging the acknowledged gaps. Claimed success by some local bodies in setting up waste processing plants and harnessing benefits of bio-CNG/power energy[1] may need to be looked into and if found useful the same need to be followed with suitable modifications.

33. It is the mindset and determination to act in a mission mode which can produce results.

34. ***Segregation of the solid waste at source and its earliest processing nearest to the point of generation with defined destination is imperative. In particular, adequate compositing/vermicomposting/bio-methanation centers need to be set up and upgraded nearest to the source of generation of wet solid waste, listing people's involvement****. Waste generators can themselves be required to process the waste under guidance and handholding by the Administration, with the assistance of identified*

[1] Indore's Waste to Energy model leads the world, 72 countries set to follow! : https://www.financialexpress.com/lifestyle/indores-waste-to-energy-model-leads-the-world-72-countries-set-to-follow/1695816/
India's cleanest city Indore turns waste into bio-CNG, money : https://energy.economictimes.indiatimes.com/amp/news/oil-and-gas/indias-cleanest-city-indore-turns-waste-into-bio-cng-money/87826232

empaneled service providers. This may perhaps reduce planned expenditure.

35. ***Similarly, sewage can be required to be processed by conventional cost-effective methods atleast at several identified locations with least expenses. Decentralized treatment plants can be explored, apart from imposing condition of ZLD on industries, group housing societies etc. Reduced load can be processed partly with the help of water using commercial establishments requiring water for their processes enforcing consent conditions in CTEs and CTOs whereby State's financial burden can be reduced****. In this context, the draft Notification of MoEF&CC dated 25.02.2022[2] etc. and the relevant part of the draft Notification in context of sewage and solid waste management is reproduced below:*

"xxx .....xxx.....xxx

C. Management of sewage/waste water, Reuse and recycle of treated wastewater by dual plumbing system

10. Dual Plumbing System shall be implemented - one for supplying fresh water for drinking, cooking and bathing etc. and another for supply of treated water for flushing.

11. Only treated water shall be used for flushing.

12. In no case, sewage or untreated waste water generated within the project area shall be discharged through storm water drains or otherwise into water bodies nor discharged/injected into the ground water by any mode.

13. Subject to Clause (3) of this notification, the project authority may opt or avail to common off-site treatment facility, as feasible, for treatment with reuse & recycle of corresponding quantity of treated water through the dual plumbing system for flushing and other non-potable use.

A. For projects with built up area of 5,000 sq.mtrs. to 20,000 sq.mtrs. –

i. In areas where there is no municipal sewage network,

a. Either Onsite Sewage Treatment Systems with capacity to treat 100% waste water may be installed with appropriate tertiary treatment system with disinfection for black & grey water. Such treated water should be used with dual plumbing system for flushing and other non-potable use;

[2] https://www.compfie.com/wp-content/uploads/2022/03/01032022_EHS_02.pdf

OR

b. *In case of usage of septic tank, only black water shall be discharged in the septic tank. Grey water may be treated through natural treatment systems or other secondary treatment as feasible. Such treated water should be used with dual plumbing system for flushing and other non-potable use;*

   The excess treated water should conform to the general discharge norms of CPCB/MoEF&CC.

ii. In areas where there is municipal sewage network

a. *Either Onsite Sewage Treatment Systems with capacity to treat 100% waste water may be installed with appropriate tertiary treatment system with disinfection for black & grey water. Such treated water should be used with dual plumbing system for flushing and other non-potable use;*

OR

b. *The project authority may opt to discharge only black water in such municipal sewage network subject to availability of trunk sewer line. For this purpose, two separate pipeline network– one for black water discharge and other for collection of grey water shall be installed. Grey water may be treated through natural treatment systems or other secondary treatment as feasible. Such treated water should be used with dual plumbing system for flushing and other non-potable use;*

B. For projects involving built-up area of 20,000 sq. mts. or more –

14. Subject to Clause (3) of this notification, Onsite Sewage Treatment Plant with capacity to treat 100% waste water generated within the project area through tertiary treatment shall be installed. Treated waste water shall be reused on site for landscape, flushing, HVAC, fire-fighting, and other end-uses.

15. The adequacy of the Sewage Treatment Plant (STP) shall be certified by an independent expert and a report in this regard shall be submitted to the authorized agency.

16. Discharge of excess treated wastewater outside the premises, after treatment in STP, should meet the discharge standards as notified by CPCB/MoEF&CC from time to time.

17. Wastewater and treated water quantification system through metering/sub-metering shall be installed.

18. Sludge from the onsite sewage treatment shall be collected, conveyed and disposed as per the Central Public Health and Environmental Engineering Organization (CPHEEO) Manual, Ministry of Housing and Urban Affair, on Sewerage and Sewage Treatment Systems.

19. Where Common Sewage Treatment Plan facility has been availed, it shall be ensured that treated waste water is recycled back to respective building for reuse.

D. Solid Waste Management

20. Subject to Clause (3) of this notification, onsite solid waste management facility should be developed and a formal contractual arrangement shall be ensured with authorized recyclers/concerned municipal agency for disposal of all non-biodegradable waste.

21. Subject to Clause (3) of this notification, where there is no alternate arrangement for disposal of biodegradable waste, Organic waste composter/Vermiculture pit with a minimum capacity of 1.0 kg/150 sqm. of built-up area/day shall be installed & operated."

Such establishments include malls, industrial estates, automobile establishments, power plants etc. Treated water can also be used by playgrounds, railways, bus stands, local bodies, universities etc. to save potable water for drinking. The treated sewage can be utilized for industrial/agricultural/other non-drinking uses like washing railway wagons/yards, buses, roads, water sprinkling. Several such models reportedly exist[3].

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[3] https://www.newindianexpress.com/cities/chennai/2019/jul/31/chennai-industries-to-now-use-treated-sewage-water-2011837.html
https://timesofindia.indiatimes.com/city/surat/surat-water-reuse-model-goes-global/articleshow/85668103.cms
https://www.aninews.in/news/national/general-news/surat-generating-massive-revenue-by-selling-treated-water-to-industries20201217051127/
https://swachhindia.ndtv.com/surat-generating-massive-revenue-by-selling-treated-water-of-river-tapi-to-industries-54411/
https://m.timesofindia.com/city/ahmedabad/amc-offers-rs43/kl-treated-wastewater-for-industries/amp_articleshow/87169850.cms https://theprint.in/india/governance/nagpur-to-become-the-first-indian-city-to-treat-and-reuse-90-of-its-sewage/180493/

https://www.business-standard.com/content/press-releases-ani/india-s-1st-and-largest-ppp-on-waste-water-reuse-completed-in-record-time- during-pandemic-bags-ficci-water-award-2020-121022500841_1.html
https://mpcb.gov.in/sites/default/files/focus-area-reports-documents/NMC_%26_KTPS_success_story_28052019.pdf
https://cpcb.nic.in/success-stories/upload/1501156301.pdf
http://cpheeo.gov.in/upload/uploadfiles/files/engineering_chapter7.pdf

*36. Thus, it may be necessary to brain storm with available experts and other stake holders in the State at different levels, evolve models which can be fast replicated, initiate special campaigns with community/media involvement in the larger interest of protecting environment and public health with determination for prompt action. Such brain storming sessions may enable capacity enhancement of the regulators and the processes. Campaigns and community involvement may result in reducing the financial and administrative load on the administration.***"***

xxx……xxxx……xxxx

37. ***We hope in the light of interaction with the Chief Secretary, Andhra Pradesh will take further measures in the matter by innovative approach, stringent monitoring at appropriate level, including at the level of the District Magistrates (who execute the District Environment Plans) and the Chief Secretary, ensuring that the gap in waste generation and treatment is bridged at the earliest, shortening the proposed timelines, adopting alternative/interim measures to the extent and wherever found viable****.*

The Chief Secretary may consider designating a Senior Nodal Officer at the rank of ACS to regularly assess the progress in bridging the gaps in sewage and solid waste management and establishing stock taking at district level. Existing and upcoming STPs need to have linkages with industries and other bulk users including Agriculture/horticulture for using treated sewage. Legacy waste sites need to be remediated and reclaimed areas utilized for setting up of waste processing plants so to process day-to-day waste generation. More and more green belts/dense forests need to be set up to mitigate adverse impact of waste. Based on the gained experience, standardized processing and treatment methodologies be replicated for areas of other Corporations, Municipalities and Panchayats.

Laid down statutory norms need to be complied as per prescribed timelines and directions in the judgments of Hon'ble Supreme Court and this Tribunal, including directions in orders dated 25.4.2019, 28.2.2020 and 14.12.2020 and other orders in individual cases. In the light of observations in paras 13, 18 and 21 above, accountability be fixed for erring officers and compensation collected and utilised, as already directed.

Present proceedings in relation to State of Andhra Pradesh are closed but we direct the Chief Secretary to designate a nodal officer of the rank of Special Chief Secretary for due execution of action plan with definite timelines. He may tying up with executing agencies and for financial backups to bridge the gap in solid and liquid waste management.

*Closure of these proceedings will not affect the remedy of the aggrieved parties to take fresh remedies as per law, as and when situations so require.***"**

4. Thereafter, in the light of order dated 01.09.2022 passed in the case of West Bengal, the Tribunal noted that the compensation was required to be levied for negligence and failure of the State resulting in continuing damage to environment and public health on polluter pays principle for restoration measures. Order dated 01.09.2022 passed in the case of West Bengal is as follows:-

> *"5……xxx……xxx……xxx*
>
> ***"Conclusion about quantum of compensation***
>
> *49. In the light of above and considering damage to the recipient environment, we hold that apart from ensuring compliance at the earliest, compensation has to be paid by the State for past violations. The amount of compensation is fixed @ Rs. 2 crore per MLD (at which rate compensation has been levied against Noida and DJB in OA No. 1002/2018, Abhisht Kusum Gupta vs. State of Uttar Pradesh & Ors, referred to in para 48 above for detailed reasons mentioned therein). As noted earlier, g**ap in generation and treatment in West Bengal, as per data furnished is 1490 MLD. Thus, under this head, liability of the State of West Bengal is to pay compensation of Rs. 2980 crores, rounded off to Rs. 3000 crore in view of continuing damage**. F**or failure to process solid waste, unprocessed legacy waste being 1.20 crore MT, compensation is assessed @ Rs. 300 per MT (at which approximate rate compensation has been awarded in OA No. 286/2022 against Municipal Corporation, Ludhiana, for the reasons given therein). This works out to Rs. 366 crore but adding 134 crore for continuing addition of unprocessed waste @ 13469.19 TPD, the total amount is rounded off to Rs. 500 crore. Thus, final amount of compensation under the two heads (solid and liquid waste) is assessed at Rs. 3500 crores which may be deposited by the State of West Bengal in a separate ring-fenced account within two months, to be operated as per directions of the Chief Secretary and utilised** for restoration measures, including preventing discharge of untreated sewage and solid waste treatment/processing facilities, as per appropriate mechanism for planning and execution that may be evolved, within three months. If violations continue, liability to pay additional compensation may have to be considered. Compliance will be the responsibility of the Chief Secretary.*
>
> *50. Award of above compensation has become necessary under section 15 of the NGT Act to remedy the continuing damage to the environment and to comply with directions of the Hon'ble Supreme Court requiring this Tribunal to monitor enforcement of norms for solid and liquid waste management. Moreover, without fixing quantified liability necessary for restoration, mere passing of orders has not shown any tangible results in the last eight years (for solid waste management) and five years (for liquid waste management), even after expiry of statutory/laid down timelines. Continuing damage is required to be prevented in future and past damage is to be restored.*

Directions for further follow up

51. Further, six monthly progress reports may be filed by the Chief Secretary with the with a copy to the Registrar General of this Tribunal by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/OCR Support PDF and not in the form of Image PDF. Copies thereof may be furnished to the NMCG, MoUD and CPCB and also be placed on the website of the State Government.

A copy of this order be forwarded for compliance to the Chief Secretary, West Bengal, Secretary, Ministry of Housing and Urban Development, MoEF&CC, GoI, National Mission for Clean Ganga and CPCB.

On report being filed with the Registrar General of this Tribunal, the same may be placed before the Bench, if found necessary.

*If any grievance survives, it will be open to the aggrieved parties to take further remedies as per law.***"**

5. Accordingly, notice was directed to be issued vide order dated 07.09.2022 to the State of Tamilnadu and other States/UTs where the proceedings were earlier closed to respond to the proposal for further directions on the pattern of order dated 01.09.2022 in the case of West Bengal.

6. In response to the above, the Chief Secretary, Andhra Pradesh has filed response on 08.11.2022 and he with other Senior officers of the State is present in person by VC as noted in the appearance. We have interacted with them and considered the response which is as follows:-

"*I have personally guided the stakeholder departments/agencies by conducting review meetings every week by involving experts and ensured bridging of entire gap of 3161 TPD in solid waste processing by adopting cluster approach, treatment of sewage by adopting in-situ bioremediation technology as interim measure, starting of bio mining in all ULBs and also tied up funds to the tune of Rs. 1445 Crs for completion of ongoing and planned STPs and to the tune of Rs.352 Crs for completion of bio-mining of all legacy dump sites.***"**

7. The status of compliance mentioned as follows:-

"*(i) It was submitted to the Hon'ble NGT on 04.08.2022, that the Legacy Waste in 123 ULBs is quantified @ 85.00 Lac Tons & Bio-mining is completed in 2 ULBs i.e., Vijayawada & Tirupati Municipal Corporations and cleared 8.52 Lac Tons of Legacy Waste.***"**

8. Solid waste gap is mentioned to be 3161 TPD. Sewage treatment and processing gap is mentioned as follows:-

"

Quantity of Sewage Generation (in MLD)	***Treatment Capacity (in MLD)***	***Current Gap in Treatment (in MLD)***
1503.20	*Existing Capacity: 535.45 Being Treated:382.81 Under Construction : 507.17*	*967.75* *(After completion of 507.17 MLD ongoing STP works and tendering & execution of STPs with 35.60 MLD the residual gap will be 424.98 MLD only)*

"

9. The source of funding is mentioned as follows:-

> ***"****9. I submit that with reference to the direction of the Hon'ble Tribunal for tying Financial Backups to bridge the Gap in Sewage Management, it is humbly submitted that in the ULBs with above 1.00 lac population funds are tied-up under AMRUT, One Time Special Financial Assistance (OTSFA), Asian Infrastructure Investment Bank (AIIB), HUDCO, SMART CITY etc., and the State Government has consented for release of Proportionate State Share. Similarly, in the ULBs with below 1.00 lac population, an amount of Rs.694.00 Crores is sanctioned by Government of India & Rs.751.00 Crores sanctioned by State Government for Construction of STPs (Total Rs.1445.00 Crores) and thus tying up of Funds is complied with.****"***

10. From the above, it is seen that 382.81 MLD is being treated out of 1503.20 MLD sewage generated which leaves a gap of about 1100 MLD. There are ongoing projects as mentioned or yet to be taken up projects to bridge this gap of 1100 MLD. On the pattern of State of West Bengal, the State of Andhra Pradesh is liable to pay compensation of Rs. 2500 Crores by way of deposit in a ring-fenced account, with liberty to transfer the available funds for any source on the pattern of order in the case of West Bengal. However, during interaction, it is stated that instead of this Tribunal passing such direction, the State itself is willing to give undertaking to set apart more amount than this which may obviate the

need for orders of this Tribunal. In this regard following precise statement is made:

> *"It is submitted that to cover the present gap of 888.75 MLD in Sewage treatment in the State of Andhra Pradesh, an amount of Rs 2881 crores has been sanctioned as follows: 188 Sewage Treatment Plants with a capacity of 545.92 MLD which are under construction at various stages with an amount of Rs 1436 crores. These have been sanctioned under AMRUT 1.0, One Time Special Financial Assistance (OTSFA), Asian Infrastructure Investment Bank (AIIB), HUDCO, SMART CITIES etc., with sanction of proportionate State Government share. This amount of Rs 1436 crores is received into separate account dedicated for STP's. 225 Sewage Treatment Plants with a capacity of 670 MLD with an amount of Rs. 1445.00 crores are sanctioned under SBM 2.0. Of this the Government of India has sanctioned Rs.694.00 crores and also released Rs.150.00 crores to the State. The State has also sanctioned the balance Rs.751.00 crores, being its share for completing these STPs. They are under tendering. It is clear that the state of ANDHRA PRADESH has provisioned for Rs. 1445.00 Crores in a ring-fenced manner dedicated to waste water treatment in a phased manner and the state of AP is committed to it."*

11. In view of above, we refrain from directing levy of compensation if an amount of Rs.2500 crore is made available by the State in a separate ring-fenced account by adjusting the amount available or otherwise. Such arrangement must be made within one month.

12. To uphold rule of law and mandate of the Constitution, the current situation of gap in waste management needs to be improved. Apart from scientific handling of the solid waste, the sewage needs to be scientifically treated and treated water be utilized. Such utilization can be made in agriculture/horticulture purposes.

13. The State may also study the orders passed in respect of other States so that observations therein to the extent relevant for the State may also be duly followed. For example, following observations in the case of State of Madhya Pradesh:-

> **"***1to30…..xxx……xxx……xxx*

31. Dump sites in operation as well as the legacy waste dump sites occupy huge area of valuable public lands. They remain source of air, water and land pollution resulting in damage to environment and public health. They emit intolerable smell and cause hazardous and unsafe environment for inhabitants in the vicinity. Their life is hell which is denial of their constitutional and human rights. In terms of money also, huge loss is caused to public health and environment. This situation is not acceptable in a civilized society governed by rule of law. For victims of situation, there is no governance. In recent order of the Tribunal dated 18.08.2022 in RA No. 21/2022 in OA No. 286/2022, two scientific studies on the subject of extent of environmental damage have been referred to. These are reproduced below:

> ***"7. ...****Legacy waste dumpsites are serious threat to public health and also source of generation of greenhouse gases. The Tribunal considered the issue of quantification of loss to environment by legacy waste dump sites inter alia in OA 514/2018 and OA 519/2019. Orders passed show that as per expert studies, loss for such failure, due to release of pollutants in air atmosphere, release of leachate into ground /surface water and soil, due to pollution from the landfill site, damage cost associated with climate change due to carbon di-oxide and methane, damage caused due to aesthetics loss, price depreciation due to disamenity cost etc., is huge running in hundreds of crores. Some of the orders showing this are quoted below:*
>
> ***Order dated 23.03.2020 in O.A. No. 519/2019***
>
> *"xxxx.....xxx.....xxx*
>
> *18. We may observe that non-compliance of rules relating to waste disposal results in damage to the environment and public health. Any failure needs to be visited with assessment and recovery of compensation for such damage from the persons responsible for such failure.* ***A study was recently got conducted by CPCB, under orders of this Tribunal requiring such a study by a joint Committee comprising CPCB, NEERI and IIT, Delhi about the monetary cost of damage caused to the environment on account of existence of legacy waste dump site at Gurgaon (Bandhewadi) vide order dated 05.03.2019 in O.A. No. 514/2018. The report of the CPCB filed on 13.02.2020 is that damage on account of the said legacy waste dump site was Rs. 148.46 crore, on account of damage to the air quality, soil and water quality, climate change and disamenity (aesthetic)****. The damage has been assessed in terms of impact on health due to release of pollutants in air atmosphere, release of leachate into ground /surface water and soil, due to pollution from the landfill site, damage cost associated with climate change due to carbon di-oxide and methane, damage caused due to aesthetics loss, price depreciation due to disamenity cost etc.*

19. *Thus, monetary cost of every legacy dump site is expected to be huge depending upon the location, quantity and quality of waste and area covered, its proximity to water body/ stream and human habitation etc. Needless to say that there is huge cost for non-compliance of provisions relating to waste management – Solid as well as Liquid. Loss to the environment and public health is taking place not only on account of delay in clearing legacy waste but also for not complying with other provisions of the Rules resulting in huge gap in generation and processing of waste. It may be necessary to determine such cost for delay in clearing legacy waste at every dump site as well as for delay in complying with other rules and failure to treat sewage and recover the same from the persons responsible for action in the matter.* ***Let the Committee comprising CPCB, NEERI & IIT Delhi carry out similar study as mentioned in Para 18 above to assess the amount of damage to environment on account of dump sites in Delhi within two months."***

Order dated 29.01.2021 in O.A. No. 519/2019

"6. Accordingly, status report dated 28.01.2021 has been filed by the CPCB as follows:-

"2.0 Action Taken :-

In compliance of Para 19 of aforesaid Hon'ble NGT's Order, *Joint committee comprising of following members has been formed:*

- *Dr. S. K. Goyal, Chief Scientist and Head, NEERI Delhi Zonal Center*
- *Dr. G .V .Ramanna, Professor, Department. of Civil Engg., IIT-Delhi*
- *Ms D. Sinha, DH- UPC-II, CPCB*
- *Mr. P. Agarwal, Scientist-E, CPCB*

Report on ***"Assessment of amount of damage to environment on account of dumpsites in Delhi"*** *as prepared by Joint committee is placed at* ***Annexure-A.*** *Amount of Damage to Environment due to three dumpsites of Delhi to be levied on Municipal Corporations of Delhi is given in the following table:*

S. No.	***Name of Municipal Corporation***	***Name of Dumpsite***	***Damage Cost assessed, (Rupees)***
1.	*NDMC (North Delhi Municipal Corp.)*	*Bhalswa*	*155.9 Crore*
2.	*EDMC (East Delhi Municipal Corp.)*	*Ghazipur*	*142.5 Crore*

3.	*SDMC (SouthDelhi Municipal Corp.)*	*Okhla*	*151.1 Crore*

xxx……xxx……xxx

7. Report of inspection conducted by the joint Committee comprising of the CPCB, NEERI and IIT Delhi is filed with following summary and conclusion:

*"**5.0 SUMMARY & CONCLUSION :***

i. Hon'ble NGT in OA No. 519/2019 constituted a Committee comprising of CPCB, NEERI & IIT Delhi to assessment of damage to environment due of dump sites in Delhi within two months.

*ii. Baseline information was collected by Committee through Questionnaire sent to three concerned Municipal Corporations (MCs). As per the information provided by the MCs, bio mining is being carried out at all three sites. **However, about 6% of waste has been bio-remediated at the three sites**. Further, fresh waste is being dumped at all three dumpsites.*

iii. Potential sources of air pollution at the sites include handling of fresh waste, Bio mining of legacy waste, Methane and other Green House gases from the Dumpsite , transportation of fresh waste & screened fractions, Odour & Fire accidents. Potential sources of water pollution at the sites includes Leachate which is being generated at all the three dumpsites

iv.** Air Pollution control measures taken at site includes mainly includes sprinkling of water. It has been informed by the authorities that smog guns are being procured for control of air pollution. **No concrete measures for leachate collection and treatment have being taken at the three dumpsites. Leachate is partially being recirculated for stabilization of waste and the remaining is being discharged into nearby surface water drains. Actual details regarding quantity of leachate used/ discharged not provided by the concerned authorities

v. Concentration of TDS, TSS, COD & BOD in leachate exceeds the stipulated norms at all the three dumpsites. Concentration of Heavy metals is within the stipulated norms with

the exception of lead which has marginally exceeded the permissible limits at Ghazipur. Assessment of Ambient Air, Surface & Ground Water quality is based on monitoring data of CPCB for the past three years. Zone of impact has been considered to be 5 km and information related to monitored stations located within and beyond this radius has been compiled and analysed. In addition, information provided by Delhi Pollution Control Committee regarding ground water monitoring has been taken into consideration.

vii. ***As per air quality monitoring data, PMio & PM25 concentrations exceeded the prescribed values at all monitored stations upto 5 km distance & beyond from the Dumpsite sites****. SO2 & NH3 concentrations are within the prescribed values at all monitored stations.* ***Benzene has exceeded the stipulated limited at one station and NOx has exceeded the permissible limit at 7 monitored stations.***

viii. ***As per the water quality monitoring data, concentration value of Arsenic, Chromium, Copper, Chloride, TDS, Fluoride, Cadmium and Iron exceeded the permissible limits at specified locations of Surface & Ground Water locations. Besides COD was detected at several stations monitored.*** *As heavy metals (except iron) concentration in leachate was within specified norms and Chloride and TDS were within the permissible drinking water limits (BIS 10500) at most stations monitored, further analysis was done in terms of COD & Fe concentration levels and following are the observations:*

- ***High level of COD & Fe reported in Ground water at all three sites in Ground water which may be due to leachate from the dumpsite***
- ***Very High level of COD, Chloride, TDS, TSS, Turbidity reported in surface water body (Bhalswa lake) located within a radius of 0-1 km from Bhalswa site, which may be due to leachate from the dumpsite***
- ***High COD values reported in surface water body (Sanjay Lake) located at a distance of 3-5 km from Ghazipur site. Owing to the distance from the site, actual impact due to***

dumpsite can be confirmed based on the hydrogeology of the region and contaminant transport modelling

- ***Fluctuating trend in Iron & COD concentration in ground water observed within 5 km radius at the three sites. Overall increase in Iron and COD levels observed with increase in distance from the dumpsites, indicating, marginal impact on ground water quality due to dumpsite within 5 km distance from dumpsite***
- ***Ground water outside 5 km radius have reported higher value of COD & Fe than stations located within 5 km radius, indicating minimal impact of dumpsite on ground water quality. Local factors are contributing in deterioration in water quality at these stations***
- ***As several sources of water pollution including open drains observed in these regions, actual impact of the local sources as well as that of the dumpsite can be confirmed based on the hydrogeology of the region and contaminant transport modelling***

ix. *There are currently 37 Continuous Air Quality monitoring locations in Delhi, of which 10 are located within a distance of 5 km from the dumpsites.*

x. *Range in variation in PM2.5 & PM10, NOx & Benzene concentration levels within 5 km overlaps the range observed for stations located at distance greater than 5 km from dumpsites. Fluctuating trend is observed in NOx /Benzene concentration levels vis-a-vis distance from the dumpsite.*

xi. *Several local factors such as drains, road dust, vehicular pollution, C&D waste etc. also contribute towards air & water pollution in the region.*
As per analysis of air and water quality carried out, deterioration in environmental quality cannot be attributed directly to the various activities happening at the dumpsites. ***As further detailed investigations are required to assess actual impact of the dumpsite related activities on the environment (air, water & soil quality), interim cost of damage to***

environment is based on the Environmental Compensation to be levied for violation of Solid Waste Management Rules, 2016. Cost of damage to environment has been calculated based on the Environmental Compensation to be levied for violation of Solid Waste Management Rules and has been assessed as Rs.155.9 Crore (for Bhalswa), Rs. 142.5 Crore (for Ghazipur) and Rs. 151.1 Crore (for Okhla).

xii. *Source apportionment studies are required to assess the actual impact of air pollution sources at dumpsite on air quality in the region.*

xiii. *Detailed hydrogeological investigations and containment transport modelling is required to assess the impact of dumpsites on surface / ground water."*

8. As shown above, in O.A. No. 514/2018, damage to the environment was assessed at Rs. 148.46 crores for Air pollution, Water pollution, Soil pollution, Climatic (GHG emissions) and Aesthetics has been taken into consideration in the report and damage cost to environment is estimated at Rs 148.46 crores. The report has following conclusions:-

"7. Results & Conclusion

The report focuses on identifying and estimating monetary losses (in 2019 Rupees) on the environment due to the operation of Bandhwari municipal dumpsite. The damage was assessed with a consideration that there is no major polluting industries existing in nearby vicinity other than the dumpsite. The study estimates a total incurred damage of about ₹ 148.46 Crore due to externalities from Bandhwari dumpsite. The breakup is shown in Table 22. The cost for damages includes drivers of externalities like greenhouse gas emissions, air pollution, water pollution, soil pollution and aesthetic loss.

***Table 22:** Break Up of Monetary Estimation of Damages (reported in 2019 values)*

Environment	***Estimated Damage Cost in Lakhs, INR***
Air	*Nil*
Water	*2900*
Soil	*31**
Climatic (for last 5 years)	*7,000*
Aesthetic	*4,946*

Total	***14,846***

**Soil value is not considered in total, to avoid double-counting, as it based on total quantum of heavy metal from leachate which is considered in water as well.*

*The valuation of damages is done for greenhouse gas emissions using social cost of carbon approach recommended by USEPA. The social cost of carbon is indirect measure of loss in economy due to emission of CO_2 and is contributing by 73% of total damage due to Bandhwari municipal dumpsite. Air pollution damages are not valued as the emissions hardly breach the limits and the area in which emissions are higher, no population exposure is there. Further, the leachate contaminated groundwater and soil damages are valued using cost transfer method and Extern report valuations. Groundwater sample analysis shows lead and nickel exceeding the BIS standards at sampling locations near the dumpsite. Groundwater beneath the dumpsite showed high contamination due to heavy metals such as Cr, Cu, Pb & Ni. Physiochemical characteristics such as BOD, COD, SS, N, P of the treated leachate showed higher concentration and have contributed to half of the total damage cost in water environment. The leachate is valued for the damages which it can cause due to contamination of soil and water. The damages to water are considered as overall damages. The total quantum of heavy metals due to leachate is fixed and is used for valuation for both soil and water, however, higher damages are seen for water and hence considered in total. Aesthetic losses due to dumpsite are valued using hedonic pricing method. GHG emissions are a part and parcel of any dumpsite. If proper control systems are kept in place these emissions can be controlled and may be utilized as well and hence maximum damages can be averted. Leachate also should be controlled and treated scientifically.***"***

Use of reclaimed land occupied by legacy waste sites

32. As already mentioned earlier, legacy waste dump sites have resulted in huge damage to the environment and population in the vicinity of such dump sites who have suffered in safety, health and comfort. For compensating them for such damage, one third of land occupied by legacy dump sites (on reclamation) needs to be reserved for dense forest and in the process of afforestation, Campa Funds can be utilized in accordance with the provisions of Compensatory Afforestation Fund Management and Planning Authority Act, 2016 (CAMPA Act). One third of reclaimed land out of the said dump site needs to be reserved for integrated waste management facilities. Remaining one third can be used for any other purpose, consistent with the above purposes, including a part of it being utilized for monetizing, if funding is required for tackling the legacy waste. Legacy waste clearance has to be in minimum further time as laid down statutory timelines have already expired and serious damage is taking place. It may be noted that remediation of legacy sites may be one time affair and such situations should not arise in future. User of land, to be reclaimed, needs to be declared in advance so that further steps can be taken in that direction. This is in line with order of this Tribunal

dated 11.10.2022 in OA No. 300/2022, In re: News item published in News 18 dated 26.04.2022 titled "Delhi: Massive Fire at Bhalswa Dump Yard, Fourth This Year; 13 Fire Tenders on Spot". Relevant part thereof is quoted below:-

> *"xxx ……xxx……xxx*
>
> *37. Restoration measures will include scientific disposal of the accumulated garbage as per statutory Rules and environmental norms, fire control and mitigation measures, construction of boundary wall/bio-fencing by trees and shrubs/ afforestation, plantation, leachate treatment facility. Course of action planned and executed at other places[4] where legacy waste dumpsites are reported to have been remediated may also be studied. Ground Water Authority may examine the extent of leachate flow into the ground water on which remedial action may be taken.*
>
> *38. It is to be ensured that current waste is not added to legacy waste dumpsites. After collection, the same be taken to the destination such as Integrated Waste Management Facility or stand alone Waste Management Facilities such as Composting Centres, C&D Waste Centres and RDF Units, Waste to Energy Units, Cement Factories, Road Construction and filling up identified low lying areas, as per norms. This requires careful planning and execution with the involvement of senior level officers instead of leaving the task to junior officers as appears to be currently happening. Precautions in light of report of the Committee headed by Justice S.P. Garg, retired Judge, Delhi High Court need to be taken forthwith. To control foul smell and improve aesthetics, turfing of landfill sites must be done forthwith either in the form of a boundary walls with necessary entry and exit gates or fencing by plantations of at least three rows of native fast growing and tall native trees requiring minimum water in the periphery of landfill sites as well as complying with other criteria for development of facilities at such sites following the provisions under the Schedule I of MSW Rules, 2016. A clear action plan with defined course of action needs to be drawn up after brain storming and studying the remediation processes adopted at other places. Consequences of overshooting timeline against identified officers/service providers may be specified and enforced. The Committee may consider undertaking visits to appropriate sites.*
>
> *39. One of the crucial links in management of remediation work based on bio-mining and bio-remediation is the utilization and disposal of rejects like inert, RDF, stabilized bio-earth. Segregated fractions and components which are in high quantity be safely utilized and disposed. Bulk users of RDF, three waste to energy projects should utilize the RDF and if required enhance their capacity without compromising environmental norms and public safety.*
>
> *40. To compensate the affected citizens of the area, the authorities are under obligation to develop dense forest in at*

[4] such as Indore and Ahmedabad

least on one third of the land occupied by the dumpsite, after the sites are cleared. One third can be utilized for setting up Integrated Waste Management Facilities or other like infrastructure. The remaining one-third can be utilized for any other purpose, including raising of funds consistent with environment concerns without affecting the use of the two-third, as earlier mentioned. The authorities may explore setting up a tourism and recreational centre with the involvement of an appropriate agency on PPP or Hybrid Annuity Model or other mechanism so that investment is made which is allowed to be recovered from the tourists visiting such centres. Creation of an appropriate water body may be considered as part of such recreational centre. Possibility of setting up an Interpretation Centres at all the three sites to facilitate study for creating awareness for the citizens may also be considered.

41. Community involvement including the Welfare Associations, Educational Institutions, Volunteers, corporates, charitable and other social organisations and individuals may be explored. Such involvement may be explored for plantation drives also. There is also need to strengthen the Control Room and set up Grievance Redressal Mechanism accessible to the citizens to extend immediate help in emergencies within a month."

33. The further execution plan thus, would include setting up of requisite waste processing plants (centralized and decentralized) for remaining 83 TPD and remediation of 33 lakh MT left out legacy waste. Bio-remediation/bio-mining process need to be executed as per CPCB guidelines and the stabilized organic waste from biomining as well as from compost plants need to comply with laid down specifications. Other material recovered during such processes is to be put to use through authorized dealers/handlers /users. Instead of creating more dumping sites for waste generated on day-to-day basis, waste processing plants of adequate capacity should be set up so that no further legacy waste is generated. It may be worthwhile to take into consideration guidelines on the subject issued by the Ministry of Urban Development, GoI titled "Waste to Wealth" on 2.10.2017 under Swachh Bharat Mission.[5]

xxx……xxxx……xxx

38. Sewage can be processed by cost-effective methods at least at several identified locations with least expenses. Decentralized and the prefabricated/modular treatment plants can be explored, apart from imposing condition of ZLD on industries, Group Housing Societies etc. Reduced load can be processed partly with the help of water using commercial establishments requiring water for their processes enforcing consent conditions in CTEs and CTOs whereby State's financial burden can be reduced.

39. In this context, the draft Notification of MoEF&CC dated 25.02.2022[6] *etc. and the relevant part of the draft Notification in context of sewage and solid waste management is reproduced below:*

[5] http://cpheeo.gov.in/upload/5abc86de40012WastetoWealth2Oct.pdf

[6] http://www.indiaenvironmentportal.org.in/files/file/Building%20Construction%20Environment%20Regulations%202022.pdf

"xxx

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C. Management of sewage/waste water, Reuse and recycle of treated wastewater by dual plumbing system

10. Dual Plumbing System shall be implemented - one for supplying fresh water for drinking, cooking and bathing etc. and another for supply of treated water for flushing.

11. Only treated water shall be used for flushing.

12. In no case, sewage or untreated waste water generated within the project area shall be discharged through storm water drains or otherwise into water bodies nor discharged/injected into the ground water by any mode.

13. Subject to Clause (3) of this notification, the project authority may opt or avail to common off-site treatment facility, as feasible, for treatment with reuse & recycle of corresponding quantity of treated water through the dual plumbing system for flushing and other non-potable use.

A. For projects with built up area of 5,000 sq. mtrs. to 20,000 sq. mtrs. –

i. In areas where there is no municipal sewage network,

a. Either Onsite Sewage Treatment Systems with capacity to treat 100% waste water may be installed with appropriate tertiary treatment system with disinfection for black & grey water. Such treated water should be used with dual plumbing system for flushing and other non-potable use;

OR

b. In case of usage of septic tank, only black water shall be discharged in the septic tank. Grey water may be treated through natural treatment systems or other secondary treatment as feasible. Such treated water should be used with dual plumbing system for flushing and other non-potable use;

The excess treated water should conform to the general discharge norms of CPCB/MoEF&CC.

ii. In areas where there is municipal sewage network

a. *Either Onsite Sewage Treatment Systems with capacity to treat 100% waste water may be installed with appropriate tertiary treatment system with disinfection for black & grey water. Such treated water should be used with dual plumbing system for flushing and other non-potable use;*

OR

b. *The project authority may opt to discharge only black water in such municipal sewage network subject to availability of trunk sewer line. For this purpose, two separate pipeline network– one for black water discharge and other for collection of grey water shall be installed. Grey water may be treated through natural treatment systems or other secondary treatment as feasible. Such treated water should be used with dual plumbing system for flushing and other non-potable use;*

B. For projects involving built-up area of 20,000 sq. mts. or more –

14. Subject to Clause (3) of this notification, Onsite Sewage Treatment Plant with capacity to treat 100% waste water generated within the project area through tertiary treatment shall be installed. Treated waste water shall be reused on site for landscape, flushing, HVAC, fire-fighting, and other end-uses.

15. The adequacy of the Sewage Treatment Plant (STP) shall be certified by an independent expert and a report in this regard shall be submitted to the authorized agency.

16. Discharge of excess treated wastewater outside the premises, after treatment in STP, should meet the discharge standards as notified by CPCB/MoEF&CC from time to time.

17. Wastewater and treated water quantification system through metering/sub-metering shall be installed.

18. Sludge from the onsite sewage treatment shall be collected, conveyed and disposed as per the Central Public Health and Environmental Engineering Organization (CPHEEO) Manual, Ministry of Housing and Urban Affair, on Sewerage and Sewage Treatment Systems.

19. Where Common Sewage Treatment Plan facility has been availed, it shall be ensured that treated waste water is recycled back to respective building for reuse.

D. Solid Waste Management

20. Subject to Clause (3) of this notification, onsite solid waste management facility should be developed and a formal contractual arrangement shall be ensured with authorized recyclers/concerned municipal agency for disposal of all non-biodegradable waste.

21. Subject to Clause (3) of this notification, where there is no alternate arrangement for disposal of biodegradable waste, Organic waste composter/Vermiculture pit with a minimum capacity of 1.0 kg/150 sqm. of built-up area/day shall be installed & operated."

Maintaining sources of clean water (rivers, storm water drains and water bodies – lakes, wetlands etc.) free from treated or untreated sewage, channelizing treated sewage for non potable purposes

40. We also find that sanctity and significance of natural storm water drains needs to be maintained. Storm water drains, if left unpolluted, can be source of drinking water for humans, birds, animals or aquatic life and discharge of sewage or even treated water which is not of standard of drinking water, seriously affects such drinking water resource adversely affecting their health. They are not to serve as sewage carrier. The Tribunal has comprehensively dealt with this issue on 03.08.2022 in OA No. 1002/2018, Abhisht Kusum Gupta vs. State of Uttar Pradesh & Ors. Thus, in the State, rivers, streams, ponds and lakes should be maintained for their pristine quality.

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42. As already observed, there is need for planning to prevent sewage (treated or untreated) entering the potable water resources. Instead, the same is to be suitably treated and channelized for non-potable purposes – agriculture, industrial or others. By way of illustration, we may refer to certain models which can be considered at appropriate locations. The same have been mentioned in order of this Tribunal dated 11.10.2022 in M.A. No. 43/2022 in OA No. 41/2020, Pushpendra Kumar vs. Nagarpanchayat, Kadaura & Ors., as follows:

"5. In this regard, we have drawn their attention to Seechewal Model[7], Karnal Technology of sewage treatment and zero discharge and manual on sewerage and sewage treatment systems- 2013 (chapter7), issued by the Central Public Health & Environmental Engineering Organisation (CPHEEO), Ministry of Urban Development, GoI, which provide for inexpensive and simple methods of treatment of waste water, its utilization for irrigation and other secondary purposes. The said models are briefly described as follows:-

[7] https://www.civilsdaily.com/news/seechewal-model-of-wastewater-management/

Seechewal Model

- *Provides for use of treated waste water for irrigation in order to conserve precious surface fresh water and ground water. The process involves passing waste water through four well for cleaning the waste water and thereafter use of such treated water for irrigation. The process can be undertaken by communities through collective approach.*

Karnal Technology Of Sewage Treatment & Zero Discharge.

- *Involves growing trees/plants on ridges with one meter wide and 50 cm height and irrigated by treated effluent in furrow. The technique utilizes entire bio mass present in waste water and provides nutrient to soil and plants. By this method forest plants/trees can be grown which can be used for firewood and timber. By this technique no chance of pathogen, heavy metals or organic compounds enter the food chain. Tree species like Eucalyptus, Leucaena can be grown.*

Central Public Health & Environmental Engineering Organisation (CPHEEO)

Manual on Sewerage and Sewage Treatment Systems – 2013 (Chapter 7)

- *Provides various case studies of utilization of treated sewage and its reuse as cooling water in power plant, in airport, in petroleum refinery, fish culture (like at Mudiali, Kolkata), road washings, ground cooling, boilers and also in agriculture. In agriculture the suitability of treated sewage is dependent upon soil, salt tolerance of the crop, intake of minerals and climate conditions. Sewage conforming to specified norms can be applied to selected species of food crops into soil by strip, basin or furrow irrigation. Sprinkler irrigation could be used with treated sewage. During rainy and non irrigating seasons, the treated sewage can be held in lagoons or undertaking irrigation in additional land/waste land including resorting to artificial recharge of ground water."*

The above models may help in planning that medium and small towns and the Rural areas need not focus on high cost technology in the first instance. Central Public Health and Environment Engineering Organization (CPHEEO), Ministry of Housing and Urban Affairs dealt with the matter in its instructions titled "Municipal Used Water Treatment Technology for Medium and Small Towns"[8] in September 2022.

[8] https://sbmurban.org/storage/app/media/rr-final-signed.pdf

43. Restoration measures with respect to sewage management *need to include identification of sites for setting up of sewage treatment and utilization systems, upgrading systems/operations of existing sewage treatment facilities to ensure utilization of their full capacities, ensuring compliance of standards, including those of fecal coliform and setting up of proper fecal sewage and sludge management in rural areas. STPs need to have co-treatment facilities of septage rather than having isolated FSTPs. Guidelines of SBM - U 2.0 may be referred to in this respect. For urban areas, SBM-U 2.0 provides co-treatment of fecal sludge at STPs with sewage for which exclusive funding provisions are made under ringfenced accounts.*

Utilisation of already set up STPs

44. We have found that even where STPs of adequate capacity have been set up, the capacity is not fully utilized and standards of water quality not always met. This aspect needs to be looked into on continuous basis by a centralised mechanism which may be set up preferably within a month.

45. Sewage treatment facilities adopted in terms of septic tank/soak-pit/FSTP particularly for rural areas and villages may be reviewed in view of health, hygiene and the guidelines of MoUD.

Need to consider change in approach for administrative processes

46. We have suggested change in approach in realizing that remedial action cannot wait for indefinite period nor loose ended time lines without accountability can be a solution. Responsibility of the State is to have comprehensive time bound plan with tied up resources to control pollution which is its absolute liability. If there is deficit in budgetary allocations, it is for the State alone to have suitable planning by reducing cost or augmenting resources. People must be involved in the problem by appropriate awareness and strategies to encourage public participation and contribution. At the cost of repetition, health issues cannot be deferred to long future. Long future dates breach of which has taken place frequently in the past without accountability is not a convincing solution. It is poor substitute for compliance within laid down timelines for long past. This approach may project lack of concern or not realizing the grim ground situation crying for emergent remedial measures on priority. There is no time for leisure, reflected in timelines proposed for bridging the acknowledged gaps.

47. It is the mindset and determination to act in a mission mode which can produce results.

48. Thus, it may be necessary to brain storm with available experts and other stake holders in the State at different levels, evolve models for both solid and sewage management which can be fast replicated, initiate special campaigns with community/media involvement in the larger interest of protecting environment and public health with determination for prompt action. Such brain storming sessions may enable capacity enhancement of the regulators and the processes. Campaigns and community involvement may result in reducing the

financial and administrative load on the administration. The Chief Secretary may also entrust responsibility to senior secretaries to monitor waste management for establishments governed by non-municipal entities like Defense, BHEL, or others.

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Adhering to the timelines

50. Since the issue has been pending since long and there are adverse effects of continuing delay on environment and public health, it cannot be a matter of satisfaction that some steps are taken till the entirety of the problem is tackled on war footing. Planning has to be to resolve the problem without any further delay, in shortest possible time. Whatever timeline is laid down, it should not be breached. If breached, adverse consequences for such failures must follow on the designated accountable officers instead of loose-ended processes.

Community involvement

51. Another important subject is community involvement not only for IEC activities but also for planning and execution of waste management activities. Welfare associations, corporates, religious, educational and charitable institutions can play their role. The District Environment Plans must have authentic and updated database which can be helpful for policy making and execution of projects. Regularly monitor of bridging of gaps in sewage and solid waste management in 52 districts is required by the Chief Secretary through a suitable nodal officer, preferably of the rank of Additional Chief Secretary.

Further observations to explore implementation mechanism

52. In the light of observations in para 27 to 51 above, it appears that there is need for paradigm shift in handling of the situation. The nagging problem of waste management stares the administration in the face and remains unresolved to the detriment of environment and public health. First change required is to set up a ***centralized single window mechanism for planning, capacity building and monitoring of waste management at the State level****. Of course, local authorities have to do their duty and stocktaking at the district levels may continue but subject to supervision and control of such mechanism.* ***It should be headed by an officer of the rank of Additional Chief Secretary with representation from concerned departments – Urban Development, Rural Development, Environment and Forest, Agriculture, Water Resources, Fisheries and Industries.*** *The mechanism should be working on fulltime basis. Its functions should include preparing a comprehensive blue print, periodic review of progress in bridging the gaps in sewage and solid waste management and establishing, continuous interaction with the stakeholders, including experts and institutions, concerned departments, community members and all other stakeholders. There must be a continuous training programme for those involved in execution of waste management projects. It should be responsible for selecting service providers and simplifying procedures for fixing terms of engagement. Best practices are to be evolved and followed.*

53. Mechanism be considered to engage service providers by due diligent process who may execute work relating to solid and sewage management simultaneously throughout the State – all districts, cities and towns. Selection of service providers may be done taking into account of his past performance and number of projects and capacity to handle successfully.

54. "Integrated Solid Waste Management for local Governments a practical guide"[9] brought out by Asian Development Bank published in 2017 details out solid waste management, planning and segregation of waste categories, waste collection methods, waste processing, waste to energy and diversion land fill development, operation and its management of landfill and also including contract issues by involving public private partnership. The document has been prepared based on the experience and the practices followed in several Asian Countries. The Govt of Madhya Pradesh may look into and consider this report to handle solid waste generated, particularly the cost effective technologies mentioned in the report.

Need for compliance of statutory duties by specified authorities under SWM Rules and monitoring by NMCG and MoUD for centrally assisted/sponsored schemes

55. Under the Solid Waste Management Rules, 2016, statutory authorities for various actions have been specified. ***Under Rule 5****, a Central Monitoring Committee (CMC) is to be constituted headed by the Secretary, MoEF&CC with representation from Ministries of Urban Development, Rural Development, Chemicals and Fertilizers, Agriculture, CPCB, State PCBs/PCCs, Urban and Rural Development Departments, Urban Local Bodies and Towns from the of the States, FICCI, CII and subject experts. The CMC is to meet once in a year.*

The Ministry of Urban Development has to coordinate with the States/UTs ***under Rule 6*** *for periodic review and formulation of National Policy and strategies and taking other measures.* ***Under Rule 7****, the Department of Fertilizers, Ministry of Chemical and Fertilizers have to provide market development assistance for compost and promote marketing of such compost.* ***Under Rule 8****, Ministry of Agriculture has to evolve mechanism for utilization of compost.* ***Under Rule 9****, Ministry of Power has to decide compulsory purchase and tariff issues.* ***Under Rule 10****, Ministry of New and Renewable Energy Sources has to facilitate infrastructure creation and provide for subsidy.* ***Under Rule 11****, the concerned Secretaries of Urban Development have to prepare State Policy and Management strategies and the Town Planning Department has to ensure setting up waste processing and disposal facilities and take other enumerated actions.* ***Under Rule 12****, the District Magistrates have to identify suitable lands and review performance of local bodies.* ***Under Rule 13****, the Secretaries of Panchayats have also to perform similar duties.* ***Under Rule 14****, CPCB is to coordinate with State PCBs and formulate standards of ground water, ambient air quality, noise, etc.* ***Under rule 15****, local authorities have to prepare solid waste management plans, collection of waste and coordination with the other stakeholders for enumerated steps.* ***Under Rule 16****, the SPCBs/PCCs have to enforce*

[9] https://www.adb.org/sites/default/files/institutional-document/324101/tool-kit-solid-waste-management.pdf

*the rules and monitor compliances. **Under Rule 17**, there are duties of private bodies, including the manufacturers to be monitored by the State Bodies. **The timelines are provided in Rule 22** for various steps. Last timeline of 5 years from the Rules expires on 7.4.2021. There is also provision for audit and submitting of annual report **under Rule 24**. Since there has been large scale non-compliances of the said rules, all the concerned authorities need to review the progress and perform their responsibility in accordance with law. The MoEF&CC has to finally monitor compliance, as already mentioned.*

56. In view of continuing huge gap in solid and liquid waste generation and treatment, it is high time that Ministry of Housing and Urban Development (MoUD) and National Mission for Clean Ganga (NMCG) who have programmes like Swachh Bharat Mission (SBM – Urban 2.0)[10], AMRUT 2.0[11], Swachh Bharat Mission (Grameen)[12] and River Cleaning, appropriately monitor compliance of waste management norms by concerned States/UTs and take remedial action on their part. Central Funding and State budgetary provisions need to be adequately allocated and apportioned keeping in view of environment compensation which is based on the restoration work estimate. While granting/disbursing funds to States/UTs, execution mechanism for centralized tendering at the State level to overcome delays at each city/town level may be considered. This may facilitate timely utilization of funds. MoEF&CC and CPCB may continue monitoring as per MSW Rules and the Water Act. MoUD and NMCG may also note the gaps reported by the States and UTs in solid and liquid waste management. MoUD may further consider to render proper financial and technical support to States and UTs and also keeping in view of Environment Compensation (EC) either directed by the Tribunal or States having given statements to ringfenced EC at their own level.

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Reasons for not levying compensation on State of MP

60. The Chief Secretary Madhya Pradesh fairly accepts that there is gap of about 1500 MLD in sewage generation and treatment. In normal circumstances, the State would be liable to pay compensation of Rs. 3000 crore at the scale of compensation fixed in other States. However, it is pointed out that in Madhya Pradesh, already more than Rs. 9000 crores stands allocated on the subject. There are ongoing sewerage projects for 465 MLD for which amount of Rs 2366 crore stands ring-fenced. Further, amount of Rs 7388 crore stands ring-fenced for sewage treatment facilities which is approved by State cabinet under the AMRUT 2.0 and SBM 2.0 schemes. Out of the said amount, Rs 4657 crore is the State share while Rs 2731 crore is Government of India's share, in a phased manner. It is submitted that even if GoI fails to comply with its commitment of Rs. 2731 crore, the State of Madhya Pradesh would abide by its commitment of Rs 4657 crore for the treatment of wastewater in a scientific manner. Thus, the State has made provision for Rs. 9688 crores in a ring-fenced manner for wastewater treatment. In these circumstances, there does not

[10] https://sbmurban.org/storage/app/media/pdf/swachh-bharat-2.pdf
[11] https://mohua.gov.in/upload/uploadfiles/files/AMRUT-Operational-Guidelines.pdf
[12] https://jalshakti-ddws.gov.in/sites/default/files/sbm-ph-II-Guidelines_updated_0.pdf

*appear to be a case for levy of compensation but the State will be bound by this stand and allocation of funds and must make meaningful progress in the matter in next six months.***"**

14. In the light of above discussion, let further remedial measures be taken urgently, addressing following among other critical issues:

i. Verification of impact of bioremediation of drains on reduction of BOD and Fecal Coliform to save unnecessary expenditure if no positive impact is taking place.

ii. Ensuring utilization of treated sewage avoiding its discharge in rivers and other water bodies to the extent possible. The STPs should have well defined performance-based O&M mechanism.

iii. Unprocessed current solid waste should not get mixed up with legacy waste sites. The fractions/components emerging out of bio-remediation and biomining processes should be properly managed.

15. The status report on the subject of Waste Management in State of Andhra Pradesh as on 31.03.2023 may be placed on record by the Chief Secretary, Andhra Pradesh on or before 15.04.2023 by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/OCR Support PDF and not in the form of Image PDF. If found necessary, the matter will be taken up thereafter.

A copy of this order be forwarded to the Chief Secretary to Government, Govt. of Andhra Pradesh by email.

Adarsh Kumar Goel, CP

Sudhir Agarwal, JM

Prof. A. Senthil Vel, EM

November 17, 2022
O.A. No. 606/2018

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