

**ADDENDUM TO THE MINUTES OF THE FIRST MEETING OF JOINT COMMITTEE
CONSTITUTED FOR COMPLIANCE OF THE ORDER DATED 12/01/2022 PASSED BY THE
HON'BLE NATIONAL GREEN TRIBUNAL (WZ), PUNE IN ORIGINAL APPLICATION NO.
68/2021 (WZ) TITLED AS VANSHAKTI & ANR VS. MUNICIPAL CORPORATION OF
GREATER MUMBAI & ORS.**

The Hon'ble NGT in the aforesaid matter vide order dated 12/01/2022 constituted an eight-member joint committee comprising of MoEF&CC, Regional Office, Nagpur, CPCB, Regional Office, Pune, Commissioner, MCGM, Collector, Mumbai Eastern Suburban Area, DCP of the area (to be designated by Commissioner of Police, Mumbai), Chief Wildlife Warden, Maharashtra, Director Environment, Maharashtra and the State PCB as members. The nodal agency for coordination and compliance will be the State PCB and the State Wetland Authority. Grievance in the application is against pollution of Powai Lake in the Eastern suburb of Mumbai and failure of authorities to take remedial action. The applicant mentioned that the sources of pollution are discharge of effluents and sewage, illegal reclamation for construction and dumping of debris. Copy of the said order dated 12/01/2022 of Hon'ble NGT is given at **Annexure-I**. Thereafter the Tribunal considered the matter based on the pleadings made by various respondents agencies and the Tribunal vide order dated 12/01/2022 mentioned that though certain initiatives are said to have been taken for restoration/revival of the lake and prevention of damage to the environment, the steps so far taken are not adequate and desired results are yet to be achieved. Also, mentioned that there is need to continue sustained efforts by the State authorities as well as civil society and to maintain constant vigilance. Further, to take coercive measures to enforce environmental norms by way of coordinated efforts of all the statutory regulators, wherever necessary. The operative directions of the Hon'ble NGT to the aforesaid joint committee in brief are as follows;

1. To prepare an action plan covering all aspects of environment in the light of earlier studies and plans, as may be updated in the light of current ground situation.
2. The action plan may provide for mode of execution, monitoring mechanism and budget allocation.
3. To take steps to ensure compliance of Wetland Rules, 1972 and other Environmental Rules, including, steps to prevent discharge of sewage or any other effluents and to monitor water quality to protect fish and other aquatic fauna and distinct sites of the marsh crocodile.
4. Mechanism for assessing water quality monitoring at strategic locations, exploring possibilities of installing aeration systems, prohibiting use of phosphate bearing detergents and other measures.
5. The Joint Committee may meet once every month to oversee the execution at least for one year and thereafter, at such intervals as it may find necessary

The Tribunal vide aforesaid order mentioned that the minutes of the meeting may be uploaded on the website of the State Wetland Authority. Also, mentioned that the Committee will be free to coopt/consult/associate any other expert/institution.

In compliance with aforesaid order of the Hon'ble NGT, the eight-member joint committee has been constituted by MPCB vide no. MPCB/RO/220222FTS0200, dated 02/02/2022 as below:

- (i) Regional director or his representative from MoEF&CC, Regional Office – Member
- (ii) Representative from CPCB, Regional Office, Pune – Member
- (iii) Municipal Commissioner, MCGM or his representative – Member
- (iv) District Collector, Mumbai Suburban District or his representative – Member
- (v) Deputy Police Commissioner (to be designated by Commissioner of Police, Mumbai) or his representative – Member
- (vi) Chief Wildlife Warden, Maharashtra – Member
- (vii) Director Environment, Maharashtra – Member
- (viii) Regional Officer, MPCB, Mumbai – Member Convener

First meeting of the joint committee was held on 16/02/2022 through video conferencing. List of participants present in the aforesaid joint committee meeting is given at **Annexure-II**.

Representative from MPCB, Mumbai welcomed all the members of the joint committee and invitee participants. He briefed about the issue of Powai Lake pollution and explained regarding constitution of Joint Committee for compliance of the order dated 12/01/2022 passed by the Hon'ble National Green Tribunal (WZ), Pune in Original Application No. 68/2021 (WZ) and also about the operative directions of the Hon'ble NGT to the joint committee.

Representative from CPCB, Regional Directorate-Pune briefed about the earlier study carried-out by CPCB for assessment of water quality of Powai Lake. Also, referring to the Hon'ble NGT matter vide order dated 12/03/2021 in OA No. 125/2017, Court on its own Motion vs. State of Karnataka, he briefed about the action plan which has been prepared and implemented with regard to remediation of Bellanduru Lake at Bangalore. Further, briefed about the indicative guidelines prepared by CPCB for Restoration of Water Bodies in compliance to Hon'ble NGT orders in O. A. No 325/2015 titled as Lt. Col. Sarvadaman Singh Oberoi Vs UOI & Ors. He suggested that such action plans may be referred while preparing action plan for Powai Lake.

Representative from MoEF&CC mentioned that the earlier study reports and analysis reports of Powai Lake shall be compiled, referred and made available to the joint committee for preparation of action plan for Powai Lake.

Representative from Dept. of Environment mentioned that besides the present Hon'ble NGT matter similar matter pertaining to the pollution and allied issue of Powai Lake is being dealt by Hon'ble High Court of Bombay wherein the Hon'ble High Court has issued stay order on the work of jogging track, around the Powai Lake which is proposed by MCGM. Accordingly, the action plan may be prepared as per order of Hon'ble NGT vide dated 12/01/2022.

Representative from Wildlife Department mentioned about the present discharge of sewage into Powai Lake and expressed that it should be restricted and discharge of sewage may be stopped completely. Also, expressed that all committee members may visit Powai Lake during the month of March, 2022 to verify the present situation.

Representative from MCGM mentioned about recent stay order by the Hon'ble High court of Bombay for work of jogging track around Powai Lake. He mentioned about the Expert Committee constituted by MCGM comprising of environmental specialist, environmental scientist, herpetologist, limnologist and a marine biologist for guiding the MCGM and oversee the process of making boardwalk using the Gabion technology Further mentioned that the proposed project of jogging track around the Powai Lake is environment friendly and MCGM shall be briefing through a presentation about the proposed project.

Representative from District Collector, Mumbai Suburban District mentioned that the joint committee may hear in the form of presentation from MCGM about the proposed project of developing jogging track around the Powai Lake before visiting the Powai Lake. Also, given instructions to MCGM to arrange for presentation to the joint committee.

Meeting concluded with vote of thanks to the dais.

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Annexure-II

S. no.	Name of the participants	Department
1.	Shri Suresh Kumar Adapa, Scientist 'E'	MoEF&CC, Nagpur
2.	Shri Nishchal C., Scientist 'D'	CPCB, Regional Directorate - Pune
3.	Smt. Nidhi Chaudhary, District Collector, Mumbai Suburban District	District Collectorate, Govt. of Maharashtra
4.	Shri Sunil Limaye, Principal Chief Conservator of Forest (Wild life)	Wildlife Department, Govt. of Maharashtra
5.	Shri Narendra Toke, Director	Environment Department, Govt. of Maharashtra
6.	Shri Jaywant Hazare, I/c Regional Officer	MPCB Regional Office, Mumbai
7.	Officers from MCGM	MCGM, Mumbai

Item No.01

(Court No. 1)

**BEFORE THE NATIONAL GREEN TRIBUNAL
SPECIAL BENCH**

(By Video Conferencing)

Original Application No. 68/2021(WZ)

Vanshakti & Anr.

Applicant(s)

Versus

Municipal Corporation of Greater Mumbai & Ors.

Respondent(s)

Date of hearing: 12.01.2022

**CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON
HON'BLE MR. JUSTICE SUDHIR AGARWAL, JUDICIAL MEMBER
HON'BLE MR. JUSTICE BRIJESH SETHI, JUDICIAL MEMBER
HON'BLE MR. SAIBAL DASGUPTA, EXPERT MEMBER**

Applicant: Mr. Mr. Zaman Ali, Advocate

Respondent(s): Mr. Aspi Chinoy, Sr. Counsel with Mr. Sameer Khale, Advocates
for R-1
Ms. Nidhi Choudhari, District Collector, Mumbai Suburban
District
Mr. Rahul Garg, Advocate for MoEF& CC
Mr. D.M. Gupte, Advocate for R-5 & 6
Mr. Mukesh Verma, Advocate for R-7
Mr. Aniruddha S. Kulkarni, Advocate for MPCB & State
Environment Department

ORDER

The Issue – Case of the Applicants

1. Grievance in this application is against pollution of Powai Lake in the Eastern suburb of Mumbai and failure of authorities to take remedial action. According to the applicants, the sources of pollution are discharge of effluents and sewage, illegal reclamation for construction and dumping of debris. The lake is home to scheduled species of wildlife as per Schedule to the Wild Life Protection Act, 1972 (WPA). The

statutory authorities have failed to discharge their obligation under the 'Public Trust' doctrine. The area of lake is 210 hectares as per Central Institute of Fisheries Education, with catchment area of 6.61 sq. kms. Powai Lake is one of immense ecological importance, home to several protected species of birds and animals and the water of the lake has many dependents for various purposes.

2. The applicant has impleaded Municipal Corporation of Greater Mumbai (MCGM), Maharashtra Tourism Development, Urban Development Department, Maharashtra Pollution Control Board, Maharashtra State Forest Department, Central Pollution Control Board, Ministry of Environment, Forest and Climate Change (MoEF&CC) and District Collector, Mumbai Suburban District as respondents.

3. It is stated that MCGM and Maharashtra Tourism Development have undertaken construction of a cycling and jogging track inside the boundaries of the lake. Powai Lake is well known to have a population of Marsh crocodiles, which is protected under Schedule-I of WPA and is listed as "vulnerable" on the IUCN Red List. There is thriving population of crabs, insects, worms, fish and their eggs, lizards, snakes, frogs and their eggs, birds and their eggs and nestlings (nesting), molluscs and rodents on which the birds and animals are dependent for food in Powai Lake ecosystem. According to the Urban Wetland/Water Bodies Management Guidelines, 2021 prepared by the National Mission for Clean Ganga, it is recorded that 40% of Powai Lake has disappeared. Powai Lake has faced deterioration of its water quality, which was recorded in a 2020 study titled "Past, Present and Future of Powai Lake, (Mumbai) and Revival through- Holistic Analysis. Dissolved Oxygen (DO) level in Powai lake, which is essential for survival of flora and fauna, has

had a declining trend at alarming rate since several decades. Water spread area of the lake has had a shrinkage trend due to the heavy pollution. The temporal satellite data of the years 1973 and 2014 with a gap of 31 years, as shown in the aforementioned 2020 study, indicates decrease by 26% of water spread area. Various storm water drains empty into the lake. The floating Water Hyacinth (or Hydrophyte Eichornia) has colonized water areas near these drains, which is a clear biological indicator that sewage is infesting these areas. This has an adverse effect on fisheries in Powai lake which has been associated with the increase in growth of aquatic weeds and water hyacinth due to serious water pollution. A 2018 study on the Fisheries of the lake, conducted by Central Institute of Fisheries Education, Versova, Mumbai, has recorded the effects of pollution in Powai Lake and its aquatic life. Highly polluted and deteriorated state of Powai Lake has been recognized as early as 1995, when Powai Lake was included in the National Lake Conservation Plan ("NLCP") by the MoEF&CC. A Detailed Feasibility Report (DPR) was prepared by MoEF&CC and sum of Rs. 6.62 crores was sanctioned as grant to Respondent No.1, in June 2001 for implementation of the scheme on priority. As per the audit report of restoration and cleaning work at Powai Lake prepared by the Comptroller and Auditor General of India for the period of July 2010 to February 2011, ("Report No. 21 of 2011-12"), it is reported that the project was declared completed by MoEF&CC and National River Conservation Directorate (NRCD) despite non-submission of project completion report along with final utilization certificate by the MCGM to MoEF&CC, and further, the final payment of the contractor was yet to be paid which indicated that the project was still ongoing. NLCP merged with National Wetland Conservation Programme, which has existed for the protection of wetlands since 1986,

to become a unified scheme National Plan for Conservation of Aquatic Eco-systems ("NPCA") in February, 2013. Guidelines for the Conservation of Aquatic Eco-systems, 2019, which is applicable for all water bodies, lakes and wetlands, either artificial or permanent, provides that the wetland is to be managed so that it is sustained in a sound ecological health, retains biodiversity and provides the expected ecosystem services in an efficient and effective manner. As per a Standing Committee on Water Resources Report dated 26.06.2016, Powai Lake was included in the NPCA and was approved a cost of Rs. 28.57 crores with Rs. 18.675 crores released till date. Water quality test of Powai Lake was carried out on 03.09.2021 and 16.09.2021 by procuring water samples from 5 different areas of Powai Lake and the results reveal that the water of the lake is not even upto the legal standards for bathing, or propagation of wildlife and fisheries, which it is currently being used for, let alone the standards for drinking water. In view of the grave threat posed by the administration of Glyphosate in Powai Lake ecosystem, on 13.09.2021 the Applicant No. 2 has made a representation to MCGM (Respondent No. 1), MPCB (Respondent No. 4), the Maharashtra Forest Department (Respondent No. 5), the Wildlife Wing of the Maharashtra Forest Department (Respondent No. 6), the Environment Department of Government of Maharashtra (Respondent No. 7), CPCB (Respondent No. 8) and MoEF&CC (Respondent No. 9), informing them about the toxicological side effects of the administration of Glyphosate on the flora and fauna of the lake ecosystem. Vide notice dated 16.09.2021, issued by the MPCB to MCGM, MPCB has taken notice of the long term adverse effects of the administration of Glyphosate on aquatic/marine life and environment, and has consequently directed Respondent No.1 to stop the spraying of Glyphosate Chemical in Powai Lake. Powai Lake has been

inventorised and mapped as a Wetland under the National Wetlands Atlas prepared by Space Application Centre (SAC), Ahmedabad for the MoEF&CC. In the case of *Vanashakti vs. Union of India (PIL No. 87 of 2013)* which pertained to illegal constructions in wetland areas, the High Court of Bombay passed an order dated 14.10.2013 directing that no reclamation and any kind of construction shall be allowed in wetlands areas as identified and covered under the Wetland Atlas prepared by the Central Government, without the leave of the Court.

4. The Applicants have submitted following short-term suggestions for restoration and conservation of Powai Lake, in addition to suggestions provided by domain experts in studies annexed to the present Application:

- (i) Creation of a sump near Powai Lake and diverting the sewage therein, to be transported to Bhandup Sewage Treatment Plant (STP), located at a distance of 5 kilometres from Powai Lake;
- (ii) Setting up of a dedicated website portal for progress on restoration of Powai lake;
- (iii) Installation of permanent online water quality systems at various locations inside Powai Lake that will inter alia provide accurate daily data of toxicity levels, BOD and COD levels, Dissolved Oxygen levels;
- (iv) Installation of phytoremediation platforms at all storm water outfalls and entry points of sewage into Powai Lake;
- (v) Installation of 24x7 CCTV monitoring cameras at locations frequented by people/tourists;
- (vi) Installation of warning signboards on hefty wines for polluting the lake;

- (vii) Creating basking islands in the lake to allow crocodiles to bask and provide grasslands on the edges of the lake for the crocodiles to lay eggs;
- (viii) Take steps to remove or control invasive species of fish that threaten the native fish species. Fisheries experts maybe roped in for the same;
- (ix) Maintain buffer zone of at least 50 meters around Powai Lake wherein no new construction activity of any kind is to be allowed except for the purposes of conservation of the Lake;
- (x) Utilisation of Natural Treatment Systems, specifically CW4Reuse technology, which has been identified in the aforementioned 2018 study titled "Science & Technology Agenda for Blue-Green Spaces Inspired by Citizen Science: Case for Rejuvenation of Powai Lake" as most suitable for Powai Lake and its surrounding urban area, in view of the need to improve blue-green balance. CW4Reuse technology is most suitable for expansion of green patches on the landward side of the lake-front and surface runoff can also be reduced due to its natural filtering effects;
- (xi) MCGM to take assistance from Powai Police Station to stop illegal commercial fishing activities inside Powai Lake,
- (xii) MCGM to consult Forest Department, IIT-Bombay, CPCB and NEERI for preparing a long-term Plan to maintain the pristine levels of Powai Lake. Such an Action Plan may include, demarcation of areas of polluted areas in Powai Lake, recommend restrictions on anthropogenic activities (e.g., fishing, religious rituals, cattle rearing), and

implement in situ methods for restoration measures such as using floating constructed wetlands;

(xiii) A dedicated Powai Lake Restoration and Conservation Department may be constituted to strictly monitor the progress of restoration and its maintenance thereafter

(xiv) Implementing recommendations of CPCB in its "Indicative Guidelines for Restoration of Water Bodies, 2019", which includes-

a) Physical treatment approaches such as Aeration, wastewater diversion, periodic de-weeding and sediment dredging, proper maintenance of drainage channels or feeder channels, which would help increase DO levels;

b) Chemical treatment approaches such as Flocculation to increase PH levels;

c) In- situ techniques such as using aquatic plants such as water hyacinth, use of aquatic animals and other biological techniques may be used to decompose, transform and absorb water pollutants.

5. The applicant has filed copies of studies/media reports/photographs including:-

1. Media report titled "Member of HC appointed panel seeks to halt reclamation work near Mumbai's Powai lake" published on 20.08.2021 in Hindustan Times.

2. Paper titled "Diversity and Distribution of Macrophytes in Powai Lake, Mumbai" presented by researchers from Central Institute of Fisheries Education in 2014 at Conference "LAKE14: Conference on Conservation and Sustainable Management of Wetland Ecosystems in Western Ghats".

3. Report titled "Powai and its birds" published in 2021 by LIT Bombay
4. Relevant extracts from the report titled "Study of the Biodiversity of Indian Institute of Technology Bombay Campus" published in October, 2009 by World Wildlife Fund (WWF)
5. Relevant extracts from Urban Wetland/Water Bodies Management Guidelines, 2021
6. Report titled "Past, Present and Future of Powai Lake, [Mumbai] And Revival Through – Holistic Analysis" published in 2020 in Journal of Emerging Technologies and Innovative Research
7. Photographs of such excessive weed growth and Water Hyacinth on Powai Lake on 14.08.2021 and satellite image depicting areas of Powai lake covered in water hyacinth
8. Media report titled "Over 50,000 Ganesha idols immersed in Mumbai" published on 28.09.2015 in The Hindu
9. Report on background of Powai Lake by researchers from World Wildlife Fund (WWF) in 2011
10. Study titled "Science & Technology Agenda for Blue-Green Spaces Inspired by Citizen Science: Case for Rejuvenation of Powai Lake" published on 08.09.2021 in Sustainability Journal
11. Relevant extracts from the study titled "Fish Community Structure and Trophic Status - A Measure of Ecological Degradation: A Case Study from Powai Lake Mumbai" published in 2018 in International Journal of Ecology and Environmental Sciences
12. Media reports titled "Illegal fishing still plagues Powai lake" dated 11.06.2017 and titled "Poachers responsible for

crocodiles' dwindling population at Powai: Activists" dated 07.04.2016 published in DNA India

13. Media report titled "Pollution leads to decline in native fish population in Powai lake" dated 25.06.2016 published in Hindustan Times
14. Relevant extracts from the study titled "Ecological impacts of common carp and the African sharp tooth catfish: A review" published by Department of Aquaculture and Fisheries Science, Lilongwe University of Agriculture and Natural Resources
15. Study titled "State of Water Quality of Two Tropical Urban Lakes Located at Mumbai Megacity" published in 2015 in International Journal of Science and Research
16. Paper titled "Strategy for Conservation and Management of Urban Lakes in Mumbai" presented at the 16th World Lake Conference in 2016
17. Latest report dated March 2014 on Powai Lake Conservation Project under National Lake Conservation Plan published by Environment Department of Government of Maharashtra
18. Relevant extracts of "Report No. 21 of 2011-12" by Comptroller and Auditor General of India
19. Relevant extracts from the Tenth Report of the Standing Committee On Water Resources, Ministry Of Water Resources, River Development And Ganga Rejuvenation titled "Repair, Renovation and Restoration of Water Bodies- Encroachment on Water Bodies and Steps Required to Remove the Encroachment and Restore the Water Bodies" for the years 2015-2016
20. Media report titled "BMC unveils plan to revive Powai lake by 2019" dated 19.03.2016 published in DNA News

21. Relevant extracts from the stud titled "The environmental impacts of glyphosate" published in June, 2013 by Friends of the Earth Europe
22. Relevant extracts of National Wetlands Atlas: Maharashtra by Space Applications Centre (ISRO) and Maharashtra Remote Sensing Applications Centre (MRSAC)
23. Media report titled "As heavy rains lash Mumbai, city's Powai lake starts overflowing" dated 12.06.2021 published in Asia News International
24. Media reports titled "Crocodile kills man at Powai lake" dated 27.08.2021 published in Hindustan Times
25. "Advisory on Conservation and Restoration of Water Bodies in Urban Areas".

Procedural History

6. The matter was taken up by the Tribunal on 01.10.2021 and notice was issued to the respondents. Thereafter, on 26.11.2021, the Tribunal noted pendency of *PIL No.23928/2021* against cycling and jogging tracks around "Powai Lake" and vide interim order dated 01.11.2021 restrained the concerned Official Respondents from putting up the proposed cycling and jogging tracks. The matter was deferred to today to enable the parties to file their respective versions.

Version of the Respondents

7. Reply has been filed by some of the contesting respondents to which a brief reference may be made. The MCGM acknowledges the pollution of the lake due to buildings and habitations and inability to remedy the situation inspite of efforts made. Relevant extracts from the reply are reproduced below:-

“4. Regarding the paras/ portions of the Application dealing with the need to revive and protect Powai lake from the ingress of sewage and Hyacinth growth:

- (a) Powai Lake is an MCGM created, human-made lake, planned as an anti-famine measure for Mumbai City (then Bombay). It was sanctioned by the Standing Committee in November 1889 and built by the Municipal Corporation by 1891. The water in Powai Lake has been severely polluted and after several unsuccessful attempts to purify it, the water finally declared unfit for drinking purposes in 1893. The issues related to the poor quality of water still persist today coupled with excessive silting, sewage ingress and extended hyacinth growth, leading to eutrophication of the lake water. Hereto annexed and marked as Exhibit 'A' is the copy of Affirmation by MCGM that, Powai Lake water is not used for drinking purpose.
- (a) Powai Lake exists in an urban setting and several structures have been built on the immediate periphery of the lake including IIT hostel blocks, IIT accommodation buildings and canteen, the Renaissance Hotel and Convention Centre, the Lakeside Chalet Mumbai Marriott, and leased properties of HE department. In the present situation, only about 2 km (20% only) out of the 10.2 km circumferential of this public asset i.e. Powai Lake is accessible to the general public. As stated above IIT has made a motorable lake front road along the periphery of the part of Powai Lake adjacent to its property which is not open to public as community space. The IIT, the Renaissance Hotel and other private Lessees have, in the absence of lake front access, virtually monopolized the lake front and in effect prevented proper access to the Powai Lake even to MCGM Staff. Furthermore, the existing kuccha pathway along the Renaissance compound wall is being misused by lumpen elements and drug abusers. Due to the lack of a proper pathway access and unlit areas, illegal and anti-social activities are suspected to be carried out along the banks of the lake.
- (b) The Public Project of Rejuvenation and Reinvigoration of the Physical and Natural Environment of Powai Lake, Mumbai" is being undertaken by MCGM at Powai Lake to enable a sustainable rejuvenation and reinvigoration of the lake - its water, biodiversity and adjacent physical environment.
- (c) MCGM has been putting all efforts to improve Powai Lake and its surrounding for quite a long time. Several measures are being implemented to alleviate the natural environment of Powai Lake and improve the quality of the lake water. One of the major challenges is to increase the dissolved oxygen levels (DO) and reduce the bio-chemical oxygen demand (BOD) for the sustenance of the aquatic life. MCGM has installed a barge mounted sub-surface aerator with two aspirators and intends to further install seven non- invasive, single Jet Floating Aerator type fountains which shall assist in transferring oxygen from the atmosphere into the water through enriched water droplets. These will beautify and

revive the lake itself. Hereto annexed and marked as Exhibit 'B' The chart of BOD/COD and Do levels in Powai Lake per MCGM-SCADA.

- (d) MCGM has initiated several interceptors and rerouting measures to prevent sewage ingress into the lake. This Sewage ingress has led to the proliferation of rapidly growing hyacinth, estimated at 290,000 cu mtrs, hindering the survival of aquatic life due to reduced sunlight penetration, and leading to water loss through transpiration. Hyacinth areas are also breeding grounds for mosquitoes and mosquito-related illnesses. Water hyacinth, up to 5% of the water surface, can be tolerated because it purifies water by absorption of sewage. But currently, the hyacinth is occupying more than 20% of the water area, rendering it necessary to remove the hyacinth cover. MCGM has been carrying out regular programs for the removal of hyacinth.*
 - (e) With the above-mentioned three measures in place i.e. improved aeration to increase dissolved oxygen levels, sewage ingress interception and removal of hyacinth, the quality of water will be substantially improved, and consequently the flora and fauna will be able to survive and thrive, vastly rejuvenating the natural environment of Powai Lake.*
 - (f) As the above mentioned environmental projects for water improvement are underway, the lake surrounds need to be remodeled to gain access for maintenance and upkeep, and for the community as a public recreation space. Presently the IIT Mumbai, the Renaissance Hotel and other private Lessees have, in the absence of lake front access being made available, virtually prevented access to the Powai Lake front. Furthermore, the existing kuccha pathway along the Renaissance compound wall is being misused by lumpen elements and drug abusers. The proposed walkway is essential for the proper safeguarding and maintenance of Powai Lake inasmuch as it will enable MCGM's maintenance Department and staff to have ready access to all portions of the lake front. MCGM staff can then take steps to prevent sewage being dumped into the lake either directly by culverts/pies or by joining sewage pipes through storm water drains.*
- (5) Regarding the proposed walkway and cycle path around the edge of Powai lake:*
- (a) There is a dearth of community recreation spaces in the eastern suburbs of Greater Mumbai, and there is practically no major community open space in this part of the city. At less than 2 sq.m. per capita, public developed open space is a much sought-after resource in Mumbai. In the suburbs, with over 10 million populations, this number falls down even lower, to less than 1 sqm per person. Powai Lake, with its 10.2 km of waterfront, offers an opportunity to create a large community open space for the citizens of Mumbai. The perimeter of the lake is roughly three times the length of*

Marine Drive and five times that of Worli Sea Face. Powai Lake, after rejuvenation, has the potential of becoming a major community open space. The Respondents submit that by developing the proposed walkway along the periphery of the Powai Lake, the Respondents will create an ecological destination which is accessible to the common citizen/ public.

- (b) *The Respondents say and submit that the proposed cycle path and walkway closely follows the alignment of the existing motorable lake front road of IIT Mumbai and thereafter the Renaissance Hotel compound wall and pathway. Hereto Annexed and Marked Exhibit C is a Google map view of the entire Powai Lake showing the existing promenade, the portion adjacent to the IIT Mumbai property, the portion adjacent to the Renaissance hotel property and the portion that is adjacent to the MCGM Deer Park and Garden.*
- (c) *The proposed walkway will be situated substantially in the Natural Area beyond the perimeter of Powai Lake. Only some limited portions fall in areas which are covered by water during the monsoon season and the few months thereafter. The installation of the walkway does not entail any reclamation or construction. As set out hereinafter in order not to impede the flow of water into the lake as also the flow of lake waters during the monsoon months, the walkway is to be developed using gabion technology, which is porous and does not prevent the flow of water. The Gabion Technology consists of placing PVC coated galvanized iron wire mesh baskets in place, containing stones of various sizes, without any joinery, fixing or cement mortar. These wire baskets containing stones of diverse sizes are merely placed on the surface, without there being any foundation, or other means used to fix it to the earth. On top of the gabion wall there will be a thin layer of cement board/synthetic composite board and macadam/ tar to enable walking/ cycling. There is no dumping of debris into the lake, nor any reclamation in the lake. Gabion technology does not involve any construction or reclamation. In the absence of cement or mortar, the gabion wall is porous and the gaps between the gabion stones allows and does not prevent the flow of water. Gabions also provide refuge for small aquatic life and have the potential of becoming a breeding ground for small and micro aquatic life. The Applicants allegations of reclamation, dumping of boulders and construction in the lake and its immediately surrounding areas are accordingly false and are denied.*
- (d) *For the development of the walkway, no trees are proposed to be cut. Whenever required the walkway and cycle track will be separated' to go around trees. Only seasonal rank vegetation will be removed. The Applicant's allegation of cutting / uprooting of trees are factually incorrect and is denied. A detailed numbering of trees falling in the vicinity of the alignment of the proposed walkway has been carried out for recording purposes and with a view to protecting the trees in - situ. Only trees which have been uprooted due to Cyclone Tauktae and stormy monsoon conditions will be removed after*

taking due permissions. In the rarest of rare occasions, if felling of a particular tree is absolutely unavoidable, the same will be done only with prior approval of appropriate authority.

(e) *The MCGM has constituted an Expert Committee comprising an Environmental specialist, environmental scientist, herpetologist, limnologist and a marine biologist to guide the MCGM and oversee the process of making boardwalk using the said Gabion technology. The Committee of Experts comprises the following notable experts*

- *Dr. Rakesh Kumar, Environmental Scientist, CSIR (Chairperson)*
- *Dr. Deepak Apte, Environment Specialist and Marinez (Member)*
- *Dr. PramodSalaskar, Environment Specialist on Powai Lake (Member)*
- *Shri. KedarBhide, Herpetologist (Member)*
- *IIT Bombay Representative, Prof. D. N. Singh (Member)*
- *Shri. Hydraulic Engineer, MCGM (Secretary)*

The committee has had periodic meetings and is currently guiding the project work.

(f) The MCGM will soon make available an online platform, with the history of Powai Lake, detailing out the proposals which addresses the concerns of the citizens in a Frequently Asked Questions format. The platform will provide an overview of the project. The MCGM is committed to making the process inclusionary in nature and encourages public participation. The MCGM has and will address further concerns and issues, if any, in a diligent manner, as the project, at its core, is for holistic public access to the lake front area.”

8. The stand of the Collector, Mumbai Suburban District in the capacity of Member Secretary, State Wetland Authority is that the issue of cycling track inside the boundary of Powai Lake is pending before the Bombay High Court, as already mentioned. The lake is a wetland as per National Wetland Atlas. The State Wetland Authority has constituted an expert committee headed by Secretary, Environment Maharashtra to check the compliance status. However, the lake has not yet been notified as ‘wetland’ under the Wetlands (Conservation and Management) Rules, 2017 (the Wetland Rules, 2017). The expert Committee is in the process of finalization of its report.

9. The stand of the State PCB is that flowing of sewage from Perubagh *nalla*, Culverter No.6&7 and IIT open *nalla* into Powai lake was noticed on visit to the lake on 17.12.2021 by the officials of MCGM. MCGM officials informed that the work of diverting the sewage line to main sewer line is in progress. Around periphery of Powai lake, the cycling and jogging track gabion work about 100 mtrs is completed at compound of Renaissance Hotel, Powai lake. It is further informed that presently the work of gabion is stopped. Ganesh idol immersion in Powai lake is at Ganesh Ghat and Pawarwadi. They have provided artificial pond for idol immersion in 'S' Ward area. Domestic effluent from the unsewered nearby area located around the periphery of Powai lake is entering into lake through two *nallas*. Also, 18 gates are provided at SWD around the periphery of lake. Due to leakages at gate no.6 & 7 some meagre quantity of effluent is observed entering the lake. Respondent-Board has issued directions u/s 33A of the Water (Prevention & Control of Pollution) Act, 1974 and u/s 31A of the Air (Prevention & Control of Pollution) Act, 1974 to MCGM vide letter dated 15/12/2021 to take necessary precautionary measures to avoid ingress of treated/untreated sewage into Powai Lake & divert to nearby STP and strictly follow the guidelines for idol immersion dated 12/05/2020 issued by Central Pollution Control Board. Officials of the Respondent Board at Mumbai have collected water samples of Powai Lake on 16/12/2021. The analysis results of said samples compared with -the primary water quality criteria for bathing water, which shows that the parameters are almost within limit, except marginal exceedance observed for BOD parameter (3.2 mg/l) at Ganeshgat location.

10. CPCB has stated that regulations have been issued on the subject of idol immersion only in artificial tanks/ponds with liner made with well graded/highly impervious clay or eco synthetic liner, after removing all flowers, leaves and artificial ornaments. Lime or alum or any other equivalent coagulant should be added in designated temporary lined pond/tank as pre-treatment option for ensuring settling of solids. Water quality as per monitoring carried on 18.04.2017 was found to be as follows:-

- “a. The Physico- chemical and microbiological characteristics of water samples of lake shows that the measured pH value was ranging from 8.2 to 8.7 and the conductivity was ranging from 320.5 to 344.2 μ S/ cm, which indicate the presence c normal range of dissolved solids in ionized form.*
- b. The Dissolved Oxygen (DO) were ranging from 0.0 mg/l to 5.4 mg/l, TDS was ranging from 308 mg/l to 328 mg/l, COD were ranging from 96 mg/l to 496 mg/l and the Biochemical Oxygen Demand (BOD) were ranging from 7 mg/l to 150 mg/l. The results are indicating that there is organic contamination in the lake.*
- c. Other parameters measured were Total hardness, Chlorides, Sulfates, Alkalinity, Ammonia; Fluoride etc. are also present. The values were higher and water quality was poor. The reasons for the poor quality of water may be attributed huge discharge of sewage from surrounding population, immersion of Idols during festivals and other anthropogenic activities.*
- d. The water of the Lake is not being used for any purpose other than recreation. If compared with standard limit of use category. The water of the lake is fit for only irrigation.*
- e. The microbiological characteristics of water samples of lake reveals that the measured Total Coliform values were ranging from IT MPN100ml to >1600 MPN/100ml and the Faecal - Coliform values were ranging from 1600 MPN/100ml, which indicate the presence of Total and Faecal Coliform may be due to the wastewater coming from drains”*

11. There are indicative guidelines for restoration of water body issued by the CPCB. There is a further statement that the conservation plan was prepared and funds were sanctioned for implementation. The State PCB also passed a scheme for restoration of water bodies.

Consideration by the Tribunal

12. We have heard learned counsel for the applicant, MCGM, CPCB, State PCB, MoEF&CC and the Collector in person, perused the record and given our due consideration to the issue.

13. There can be no dispute about need for restoring and maintaining the lake to its pristine position. No untreated sewage can be allowed to be discharged. The statutory mandate of Water (Prevention and Control of Pollution) Act, 1974, principles of 'Sustainable Development', 'Public Trust' doctrine as well as other statutory provisions applicable, including the Municipal Corporation Act and the Rules need to be complied. MCGM has to exercise its statutory powers to prevent discharge of sewage. The Wetland Authority under the Wetland Rules, 2017 has to ensure compliance of statutory plan for demarcation of prohibited and regulatory areas around the lake. Reference in this regard may also be made to judgements of the Hon'ble Supreme Court in Paryavaran Suraksha v UOI, (2017) 5 SCC 326 and M.K. Balakrishnan vs. UOI, (2017) 7 SCC 805. The Wildlife Department is required to take action in terms of the WPA. The State PCB and the CPCB have to take action as regulators to prevent and remedy environmental norms. Apart from specific statutory provisions of Water, Air, WPA, EP Acts and Rules, powers under Section 133 of the Cr.P.C, sections 268 to 271 IPC and Section 3 of the PMLA Act, 2002 read with the Schedule to the Act can also be invoked wherever necessary. There is thus no inadequacy of powers available with the statutory regulators.

Conclusion and Directions

14. As shown by the pleadings referred to above, ground situation is far from satisfactory. While the issue of track pending before the High

Court needs no comment at this stage, as that aspect can be dealt with in the said pending proceedings, there is need to deal with the unremedied pollution, having potential for damage to the environment and the wildlife. Water quality of the lake can lead to killing of fish, affecting the crocodile nestling sites, dependent of fish. Though certain initiatives are said to have been taken for restoration/revival of the lake and prevention of damage to the environment, the steps so far taken are not adequate and desired results are yet to be achieved. There is thus need to continue sustained efforts by the State authorities as well as civil society and to maintain constant vigilance. There is also need to take coercive measures to enforce environmental norms by way of coordinated efforts of all the statutory regulators, wherever necessary. Primary responsibility remains of the MCGM, the Wetland Authority and the Forest Department (Wildlife Division). Local Police may also have to take responsibility. Similarly, the Environment Department of Maharashtra has also to take pro-active action. Since the primary issue is of compliance of laid down norms by the statutory regulators, all that is required is to issue directions to the said authorities to perform their duty. It may be necessary to constitute a Joint Committee for coordinated action.

15. Accordingly, we constitute an eight-member joint Committee comprising of MoEF&CC, Regional Office, Nagpur, CPCB, Regional Office, Pune, Commissioner, MCGM, Collector, Mumbai Eastern Suburban Area, DCP of the area (to be designated by Commissioner of Police, Mumbai), Chief Wildlife Warden, Maharashtra, Director Environment, Maharashtra and the State PCB. The nodal agency for coordination and compliance will be the State PCB and the State Wetland Authority. Meeting of Joint Committee may be held preferably within two weeks.

Except for site visit, the Committee may meet in person or through video conferencing, as may be required. The Committee may prepare its action plan covering all aspects of environment in the light of earlier studies and plans, as may be updated in the light of current ground situation. The plan may provide for mode of execution, monitoring mechanism and budget allocation. The Joint Committee may meet once every month to oversee the execution at least for one year and thereafter, at such intervals as it may find necessary. The minutes of the meeting may be uploaded on the website of the State Wetland Authority. It will be open to the applicant or any other citizen to give their suggestions/representations to the Committee for its consideration. The Committee may particularly take steps to ensure compliance of Wetland Rules, 1972 and other Environmental Rules, including, steps to prevent discharge of sewage or any other effluents and monitor water quality to protect fish and other aquatic fauna and distinct sites of the marsh crocodile. It may have mechanism for assessing water quality monitoring at strategic locations, exploring possibilities of installing aeration systems, prohibiting use of phosphate bearing detergents and other measures required to be taken. The Committee may refer the action plan and relevant directions of the Tribunal passed in OA No. 125/2017, *Court on its own Motion vs. State of Karnataka* vide order dated 12.03.2021 with regard to remediation of Bellanduru lake at Bangalore. The Committee will be free to coopt/consult/associate any other expert/institution.

The Application is disposed of. If any grievance survives, it will be open to the aggrieved parties to take remedies in accordance with law.

A copy of this order be forwarded to the MoEF&CC, Regional Office, Nagpur, CPCB, Regional Office, Pune, Commissioner, MCGM, Collector,

Mumbai Eastern Suburban Area, Commissioner of Police, Mumbai, Chief Wildlife Warden, Maharashtra, Director Environment, Maharashtra and the State PCB by email for compliance.

Adarsh Kumar Goel, CP

Sudhir Agarwal, JM

Brijesh Sethi, JM

Saibal Dasgupta, EM

January 12, 2022
Original Application No. 68/2021(WZ)
AB