

- Mangroves are presently in degraded form as seen from their height and canopy shapes. The diversity is good though *Rhizophora* species are near extinction. At some places, the degradation of mangroves like *Avicennia* has given way to noxious species like *Acanthus*. At the bottom of fishing ponds, the mangroves have been cut down as can be seen from the remnant stumps. The pond constructed for fishing has obstructed the flow of tidal water, resulting in destruction of mangroves.

Recommendations:

1. All the areas where mangroves are present i.e. in the creek region and in the holding pond region etc. should be effectively protected. Some important mangroves species like *Rhizophora*, which are on the verge of vanishing from the region, should be planted under expert advice.
2. The NMMC should take all possible steps for protecting the mangroves.



Fig.8. Stagnated water in fishpond, bund on left foreground, stumps of harvested mangroves and seedlings of *Avicennia* are visible.



Fig. 9. Abundance of *Avicennia* seedlings promise regeneration of mangroves under protection.

DECLARATION OF THE COMMITTEE

Contents in this report and recommendations herein are approved unanimously amongst the members of the committee and there were no any sort of dissentions.

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ACTION PLAN

FOR IMPLEMENTATION OF RECOMMENDATIONS

Sr. No.	Action	Agency
1	Handing over Storm/tidal water Holding Pond at Sector 18, Airoli, Navi Mumbai	CIDCO, NMMC
2	Restoration of degraded mangroves around holding pond & within the illegal fish ponds at Airoli – Sector 18	NMMC, Forest Deptt.
3	Protection of Mangrove Areas long the creek side at Airoli node	NMMC
4	Regeneration of mangroves in CRZ-I area near Airoli Bridge- abandoned jetty	NMMC, CIDCO, Forest Deptt.
5	Assistance for mangrove afforestation (Develop nursery for mangrove seedlings)	NMMC, Forest Dept. & others concerned
6	Satellite mapping of Mangroves all along the TTC Creek within/ around NMMC limits	NMMC through MRSAC, Nagpur
7	Removal of illegal fishponds near holding pond at sector- 18, Airoli & restoration of natural drainages.	CIDCO, NMMC
8	Develop the holding pond area as mangrove park	NMMC
9	Beautification of area surrounding holding pond as recreational park	NMMC
10	Plantation of mangroves in the degraded areas adjoining sector 10, 11, 12, 13, 18, 19 of Airoli	NMMC
11	Cleaning of refuse dumps along the creek boundary at sector 10, 11, 12, 13, 18, 19 of Airoli & holding pond	NMMC
12	Providing public toilets at the proposed park site (near Bus stop)	NMMC
13	Ensure functioning of STP at Airoli as per MPCB guidelines	NMMC , MPCB
14	Desilting of Aeration tank at Airoli STP	NMMC
15	Ensure efficient Maintenance of equipments at Airoli STP & provide alternate arrangement for breakdowns/power failures	NMMC
16	Removal of abandoned Jetty at Airoli Bridge	CIDCO
17	Restoration of Jetty site & mangroves at the jetty site near Airoli- Mulund Bridge	CIDCO, NMMC

6.2.17 Maintenance of STP: All the equipment of STP, including the lining of the pond should be repaired and maintained properly.

6.2.18 Removal of abandoned Jetty at Airoli Bridge: CIDCO should be directed to remove the shed and other material lying near the bridge/jetty and take steps to beautify the area/restore the area to its original shape in a time bound manner.

6.2.19 Restoration of Jetty site: After demolition of the existing unwanted structures at the above jetty site, the area above HTL should be developed into a park and area below the HTL should be planted with mangroves

6.2.20 Action Plan: Action Plan supported with Bar chart should be submitted by CIDCO and NMMC to MPCB for implementation of the recommendations. Progress report should be submitted by CIDCO and NMMC on regular basis.



- 6.2.5 Assistance for mangrove afforestation:** The NMMC should involve Forest Department or other concerned agencies for conservation and propagation of mangroves.
- 6.2.6 Satellite mapping of Mangroves:** NMMC should document the status of mangroves by acquiring satellite image of the coastal region of Navi Mumbai.
- 6.2.7 Illegal fishponds:** Since the fishing ponds are illegal, they should be dismantled immediately. The barren areas thus remaining behind should be opened, by making trenches if necessary, for free movement of tidal water and be planted with mangrove species that exist in the vicinity.
- 6.2.8 The area around the holding pond should be developed into a park.**
- 6.2.9 Beautification of area surrounding the holding pond:** The area surrounding the holding pond should be beautified by shade trees and ornamental bushes. The possibility of designing of jogging track should also be considered.
- 6.2.10 Plantation of mangroves:** A row of *Rhizophora* should be considered for plantation along the borderline of holding pond towards waterfront. From the partial reclamation area opposite sector 15, a wooden walk-way on wooden stilts should be planned to reach about 10 m. inside the pond. This walkway will serve as a bird watching point for nature enthusiasts.
- 6.2.11 Cleaning of refuse dumps:** NMMC should take immediate steps to stop dumping of refuse & municipal solid waste and clean up the entire area of the existing debris and waste, especially along the banks of the pond. This cleaning should be done to reach the original pitching of the bank.
- 6.2.12 Providing Public toilets:** Open defecation should be stopped forthwith. NMMC should be responsible for cleaning and maintaining these areas by stepping up vigilance. The NMMC should consider setting up of public toilets at suitable locations and the waste from the toilets should be connected to the city sewage system.
- 6.2.13 Functioning of STP:** Functioning of STP at Airoli should be efficient and be done by technically competent personnel as per guidelines of MPCB. The NMMC should device a monitoring mechanism to ensure efficient and round the clock functioning of STP.
- 6.2.14 Desilting of Aeration Tank:** The aeration tank of STP should be desilted. The silt removed this way should be disposed off in the at the solid waste disposal site.
- 6.2.15 Disposal point of STP :** The disposal point for the treated wastewater should be properly designed and located in consultation with expert agency such as NIO, Goa.
- 6.2.16 Operation of STP:** The sewage flow meters and energy consumption meters should be installed for STP and proper record should be maintained. Monthly returns should be submitted to the MPCB.

- 6.1.** In response to a letter from Hon'ble Shri Gajanan Kirtikar, M.L.A., Maharashtra, MPCB constituted a Committee of Experts to study the Airoli creek, Mangroves and holding pond environs and suggest an action plan for improvement of environment of that region.

The committee visited the sites in question and observed the state of environment. Problems deleterious to the Airoli environment were identified as- cutting of mangroves, Fishing activity affecting movement of tidal water in the smaller channels of the creek, dumping of solid wastes, rubble and refuse along the banks of the holding pond, poor to non-functioning of the sewage treatment plant and abandonment of a piece of land that was reclaimed to facilitate construction of the Airoli-Mulund bridge.

The Committee was informed by authorities from NMMC that transfer of Airoli land from CIDCO to NMMC was still not effected; hence, though budgetary provision is made by NMMC for necessary activity to protect mangroves and beautify holding pond environs, they couldn't act on the issue. CIDCO authorities, on the other hand, claim that the transfer of land has been done which they have again reiterated vide their letter No. CIDCO/Vasahat/ 2005/1768 dtd. 15.06.2005.

6.2 RECOMMENDATIONS:

The committee has recommended the following line of action to improve the environment of Airoli creek region and protection & conservation of mangroves.

- 6.2.1 Handing over of the land:** All the legal formalities pending if any, about handing over the area in question to NMMC by CIDCO should be expedited and NMMC should pursue the matter.
- 6.2.2 Restoration of degraded mangrove areas:** The NMMC, with the help of expertise available from Forest Department as well as from other sources should undertake a programme of protection and restoration of mangroves. Beautification plan should be considered for preservation and improvement of mangroves that are already in existence in the area. All along the boundary of the pond, wherever the mangroves are degraded, plantation of mangroves should be undertaken. While plantation of mangroves, natural zoning of mangroves should be considered as a guideline.
- 6.2.3 Protection of Mangrove Areas:** The NMMC should take all possible steps for protecting the mangroves. All the areas where mangroves are present i.e. in the creek region and in the holding pond region, etc., should be effectively protected. Some important mangroves species like *Rhizophora*, which are on the verge of vanishing from the region, should be planted under expert advice.
- 6.2.4 Regeneration of mangroves in CRZ-I Area:** The area below the HTL falling in CRZ I should be reserved for regeneration of mangroves and plantation of mangroves may also be undertaken in this area, as per expert advice.

- A huge area of land that was reclaimed for storage of material for construction of the bridge appears to remain as such after completion of construction of the bridge. The area that appears as an abandoned plot is likely to be encroached upon in course of time.

Recommendations:

1. The area should be developed into a park.
2. The area below the HTL falling in CRZ-I should be reserved for regeneration of mangroves and plantation of mangroves may also be undertaken in this area, as per expert advice.
3. The NMMC should involve Forest Deptt. or other concerned agencies for conservation and propagation of mangroves.
4. CIDCO should be directed to remove the shed and other material lying near the bridge/jetty and take steps to beautify the area/restore the area to its original shape in a time-bound manner.
5. Action Plan supported with Bar chart should be submitted by CIDCO and NMMC to MPCB for implementation of recommendations. CIDCO & NMMC should submit Progress report to MPCB on regular basis.



Fig. 10. The abandoned jetty & the other structures that were used for construction of Airoli bridge

5.7 IMMERSION OF GANPATI IDOLS IN AIROLI CREEK:

- The NMMC representative pointed out to the Committee that during the Ganpati festival, immersion of idols in Airoli creek is done near Airoli Bridge, which causes pollution due to plaster of paris, clay, various chemicals, plastic bags etc. He requested the Committee to impart some guidelines on this issue.

Recommendation:

A partition in a limited area of creek used for immersion of Ganesh Idols may be erected as a temporary measure this year. Soil in this partitioned area should be removed (desilting) about a week after the last immersion, so as to avoid contamination of the creek. Testing of water and sediments on both sides of the partition should be done. A long-term strategy should be worked out on the basis of results of this year's action.