

Chennai Metropolitan Development Authority



Seminar on Waterways in Chennai

4th & 5th March 2010

Proceedings and Recommendations



Chennai Metropolitan Development Authority

Thalamuthu– Natarajan Building,

1, Gandhi-Irwin Road,

Egmore, Chennai-600 008

Tel: 2841 4855, Fax: 2854 8416, e mail: mcmda@vsnl.com

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Seminar on Waterways in Chennai

held on 4th and 5th March 2010 at Chennai.

Proceedings and Recommendations

1. Chennai Metropolitan Area (CMA) which lies along the Bay of Bengal is traversed by three Rivers (viz., Kosathaliyar, Coovum and Adyar) and Buckingham Canal. In spite of the fact that the CMA has a long drainage and extensive water storage system of tanks and reservoirs, it suffers from annual flooding of developed urban areas. At present most of these water bodies are not in their original state. Encroachments by way of slums have reduced the width of rivers/canals, discharge of raw sewage / sullage and dumping of solid wastes in them have caused pollution beyond acceptable limits; absence of periodic desiltation has added to its problems.

2. Emphasis on improvements to macro and micro drainage systems is made in the Second Master Plan (SMP) for CMA. Unless due attention is paid to solve the problems and to rejuvenate these waterways, irreparable loss to its system will occur, not only causing severe physical damage during flood disasters, but also posing continued environmental hazard to the people of this metropolis.

3. The principal stakeholders of macro and micro drainage systems in the CMA are Public Works Department (PWD), Corporation of Chennai (CoC), Chennai Metropolitan Water Supply & Sewerage Board (CMWWSSB), Revenue Department, Tamil Nadu Slum Clearance Board (TNSCB), Local Bodies, Tamil Nadu Pollution Control Board (TNPCB) and Directorate of Environment (DoE).

4. The seminar on 'Waterways in Chennai' was organized by the Chennai Metropolitan Development Authority (CMDA) in Chennai on 4th and 5th March, 2010 to take stock of the situation and to discuss the future actions to be pursued for sustainable development of waterways in Chennai. The seminar was structured with five Technical Sessions on the broad topics viz. (i) Chennai Waterways and Environment, (ii) Improvement to Waterways – Experiences of other Cities (iii) River and Drainage system in the CMA, (iv) Water Bodies and Metropolitan Environment and (v) Studies on Chennai Drainage System - Rivers, Canals, Creeks Estuaries, Lakes, apart from the Inaugural Session and the Valedictory Session.

5. Thiru Vikram Kapur, IAS, Member Secretary, CMDA, in his Welcome Address in the Inaugural Session, stated that the city of Chennai is a coastal metropolis whose water bodies form an integral part of its landscape. With the growth of urbanization, despite the best efforts of the Government and citizens, these precious water bodies are facing onslaughts in the nature of encroachments and pollution. The Adayar Poonga Project, being implemented, seeks for eco-restoration of Adyar estuary and it is one of the efforts for restoration of eco system of the rivers in Chennai.

6. Tmt. Susan Mathew, IAS, Additional Chief Secretary and Vice Chairperson, CMDA in her Presidential Address, outlined the various studies conducted in the past for the improvement of the macro and micro drainage systems in the CMA. Listing the important policies and strategies and the plan of action envisaged in the Second Master Plan (SMP) for CMA, she informed that as a follow-up action of the SMP, six committees have been constituted in CMDA and the Infrastructure Committee deals with the macro and micro drainage aspects of the CMA. She noted that the main purpose of the seminar was to take stock of the existing conditions and to discuss the future actions to be taken.

7. Thiru Paruthi Ellamvazhuthi, Hon'ble Minister for Information and Urban Development and Chairman, CMDA inaugurated the seminar and delivered the Inaugural Address. He highlighted the actions taken by the Government, in the recent past on slum clearance and improvement, and for cleaning up of rivers under the City River Conservation Project (CRCP). He stated that in the last budget session of the Tamil Nadu Assembly (2009-10) the Government announced 50% additional FSI for EWS housing developments with dwelling units upto 30 sq.m., and 30% additional FSI for LIG housing developments with dwelling units to 50 sq.m. To those who would lose their huts in the process of implementation of infrastructure projects, the Transfer of Development Rights (TDR) upto 20sq.m.would be awarded. The Chennai River Restoration Trust was constituted by the Government to clean up and restore the rivers in Chennai. He hoped that in the seminar, the delegates from Government Departments, Agencies, and Local Bodies, academicians, experts research scholars, NGOs etc. all of whom are interested in the better development of the Chennai Metropolitan Area, would actively participate in the deliberations and offer their valuable and constructive suggestions, and the ways and means to improve the waterways will be discussed, considering also the experiences of other cities. He hoped that the seminar would come up with recommendations to restore the waterways to make Chennai clean, beautiful, and admirable.

8. In the five Technical Sessions, twenty three speakers made presentations on twenty-four topics. The seminar was well received by all the stake holders and was attended by 198 delegates (excluding the officials of CMDA who have participated). It has brought together policy makers, experts, researchers, practitioners, executors and implementers, NGOs, officials of Government Departments and Agencies in the connected fields of waterways development, flood alleviation and pollution prevention, rehabilitation and resettlement etc., and also a few interested citizens of Chennai.

9. The recommendations of the seminar were consolidated and presented read out by Tmt. Susan Mathew, IAS, Additional Chief Secretary and Vice Chairperson, CMDA, and a copy of the same was handed over to the Hon'ble Minister for Information and Urban Development Government of Tamil Nadu and Chairman, CMDA, and to the Worshipful Mayor of Corporation of Chennai, in the Valedictory Session. The recommendations are listed below:

- (1) Rivers are a living eco-system. They are lifelines of the people, closely linked with culture and tradition. Their restoration, making them environmentally beneficial, has become more imperative than ever, now.
- (2) Rapid urbanisation and resultant load on infrastructure and untreated discharge of sullage and sewage into the rivers have added to the problems of rivers.
- (3) In the last few years, taking stock of the situation, certain efforts have been taken to improve Chennai's river-environment; now we have a road map for river conservation.
- (4) The priorities, and phasing of the plan implementation to achieve the goal should be clearly listed, and the role of the stakeholders clearly defined. The sequence of actions to tackle the problem may be –
 - (a) flood alleviation
 - (b) prevention of pollution to the waterways
 - (c) cleaning up of the waterways by removing encroachments & obstructions,

and

- (d) restoration / improvements to the waterways and its continued maintenance.
- (5) River conservation is a long term project, and it has to be phased out as short term, medium term and long term measures
- (6) Flood is not a curse. It is a natural phenomenon.
- (7) Floods are opportunities to augment ground water recharge to be facilitated by construction of check dams, filter wells, and underground tunnels/storage reservoirs, if the soil conditions and slopes permit.
- (8) Storage capacity in lakes and other water bodies has to be increased.
- (9) Wherever possible, the rivers should be widened, with submergible areas at middle level which may be developed as recreational areas, walk ways and bio-diversity zones to prevent encroachments.
- (10) Flood plains should be developed along the waterways in the areas outside the towns and cities, adopting the retention model, as a solution against flood hazards; these flood plains could be developed as parks or green belts for recreation such as camp sites.
- (11) The feasibility of converting the middle stretch of the Buckingham Canal as a water storage reservoir in the long run may be examined.
- (12) A river basin has to be taken as a planning unit and not the river alone.
- (13) In Chennai, there are systemic deficiencies in sewage collection and disposal which need to be addressed with a time-frame.
- (14) Efforts have been taken under Chennai City River Conservation Project (CCRCP) to reduce the pollutants in the sewage let into the waterways by Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB). These efforts have to be continued.
- (15) All unauthorized discharges causing pollution to waterways have to be stopped. No sewerage or sullage without treatment shall be allowed to be let out into water courses. The pollution levels in waterways should be closely monitored by the Tamil Nadu Pollution Control Board (TNPCB).

- (16) The major lakes identified for storage of potable water are to be clearly defined, and strongly regulated to prevent any pollution. Periodical de-weeding, and introduction of fish culture to improve the water quality should be also be tried.
- (17) In large urban local bodies, decentralized system of sewerage treatment may be tried for cost effectiveness. Advance action to locate and acquire the lands required for Sewage Treatment Plant (S.T.P) sites shall be taken by the CMWSSB.
- (18) Conventional system of solid waste disposal at dumping sites cause pollution to ground water. The method of scientific landfills should to be adopted in all such land fill sites.
- (19) Resettlement and Rehabilitation (RR) are resorted to in the cases of slums along waterways, only because they cannot be allowed to continue therein considering environment and safety against floods. In such R & R schemes a holistic approach with all infrastructure, including education facilities, adequate transport facilities, and livelihood activities, shall be ensured.
- (20) The departments owning the lands along the watercourses shall take action to protect them from encroachments.
- (21) Eco-engineering should also be adopted as a solution to bring the nature back and rejuvenate the rivers.
- (22) As the availability of land for R & R of slum dwellers is a constraint in Chennai, the available regulatory concessions such as additional FSI of 50% for EWS housing, TDR, and premium FSI should be optimally utilized to increase the supply of housing for the target group.
- (23) Appreciating the private initiative at Coimbatore by 'Siruthuli', an NGO, it is recommended that corporate sector participation, and general public participation, in planning and improvement of lakes and rivers should be encouraged.

- (24) Cleaning up of rivers and conservation of water bodies should be thought of as a movement with the participation of all stakeholders including the general public.
- (25) In our country, no single agency owns the waterways or takes the responsibility for their maintenance. In Chennai, CMDA may take the lead role bringing in all the stakeholders together to address the problem of waterways and for their restoration.
- (26) Cities Development Initiative for Asia (CDIA) commissioned study (viz. Pre-Feasibility study support for waterways rehabilitation and solid waste management in Chennai) has recommended an institutional set up for planning, coordination and monitoring of waterways conservation, which may be examined and a permanent set up constituted.
- (27) Adequate public awareness about the hazards of pollution of water bodies and the remedial measures has to be created by organizing community education campaigns.
- (28) The innovative techniques employed in the Sabarmati River Water Front Development were recorded. Recognizing that flow in the rivers will dilute and reduce the pollution, ways and means to have increased flow in the rivers in Chennai (as tried in Sabarmati) may be examined.
- (29) The experiences of Bhopal Lake Development Project presented were recorded. Integrated conservation and management plans for lakes including catchment areas are to be prepared and implemented. No Construction Zones in the upstream of the lakes identified have to be clearly demarcated as may be recommended by the PWD / CMWSSB and developments regulated.
- (30) Use of sewage for power generation and recycling of waste water should be encouraged.
- (31) Accurate contour map for designing storm water drainage needs to be prepared for the Metropolitan Area.

- (32) Agencies such as the Chennai Port Trust, who have benefited from interventions/changes in the course of rivers in Chennai, should contribute financially for their restoration / conservation.
- (33) Recording the efforts of implementation of the Adyar Poonga Master Plan, it was recommended that such pilot projects should be replicated and more such environmentally healthy eco-parks should be developed, to serve large sections of the population. Getting the citizens involved is important, 'Saving Waterways' should become a people's movement.
- (34) River-front development plan should also aim at creating more recreational open spaces, as its percentage is very low in Chennai.
- (35) Area development plans prepared at micro level such as Detailed Development Plans should contain plan for ground water recharge at least in large premises such as schools and public places.
- (36) Sustainability measures should form part of the Integrated River Restoration Plans.

10. Thiru Paruthi Ellamvazhuthi, Hon'ble Minister for Information and Urban Development Government of Tamil Nadu and Chairman, CMDA in his valedictory address has thanked all the chairmen of the technical sessions, the speakers who made the presentations, and the other delegates who participated. He noted that our country is endowed with adequate natural resources. History shows that the people of Tamil Nadu were pioneers in conservation of river water for irrigation and other purposes; the Kallanai (stone masonry dam across the Cauvery river) constructed by the Chola King Karikalan is a standing proof. Through better management, and practices, waterways' conservation and their optimum utilisation could be achieved. Dumping of solid waste along waterways, discharging untreated sewage into the rivers and water bodies, and dumping of plastic wastes into the water bodies are to be avoided. The success of a scheme depends on the people's cooperation during its implementation and maintenance. Children should be made aware of the significance of environmental conservation so that we mould them into a generation of responsible and competent citizens. He hoped that all the Government departments and agencies concerned including CMDA would take into account the valuable suggestions made and recommendations arrived at in this Seminar while formulating projects / schemes.

11 The Worshipful Mayor of the Corporation of Chennai in his special address in the Valedictory Session stated that there are 22 water courses in the Chennai City including Captain Cotton canal, Virugambakkam channel and Veerangal Odai . The Hon'ble Chief Minister of Tamil Nadu, recently, during inauguration of a flyover, has stated that he will be very happy on the day when the Coovum river is restored environmentally to a level at which our children can jump into the river, swim and play. The Government have initiated action to restore the Coovum river. There were about 11,000 huts that encroached on the Coovum banks; out of which 5,000 huts have been shifted and the households rehabilitated providing alternate accommodation in storeyed tenements. The remaining 6,000 huts and the auto workshops near Chintadripet would be shifted to the places identified for the purpose. The river margin lands from where the huts were evicted have been developed as parks; to cite a few, the development of park at Chintadripet at a cost of about Rs.1.5 crores, and development of park along Sivananda Salai on the cleared Coovum river margin. The Velachery Lake would be taken over from PWD by the Chennai Corporation and would be developed for tourism with boating facilities. Similarly the lake at My-lady Garden would be developed for boating. Chennai Corporation has 947 km long storm water drains out of which 142kms. were constructed in the last 3 ½ years to alleviate drainage problems. Along with PWD it is executing macro and micro drainage schemes now costing Rs.1447.91 crores under JNNURM. Projects under execution include short cut canals connecting Virugambakkam Canal with Coovum, Maduravoyal lake with Coovum, Pulianthope area with Otteri nalla, Velachery Lake with Buckingham canal (through Tharamani). Once all these schemes are implemented, a major part of the Chennai City would be free from floods. Referring to the rain water harvesting through the improvement of existing temple tanks carried out by the Corporation of Chennai, he recommended that the rain water harvesting should form an integral part of water management system in Chennai. Observing that many recommendations have been arrived at after detailed discussions in the last two days in the Seminar, he promised that all the recommendations relating to Chennai Corporation would be considered and appropriate action would be taken for the benefit of the people of this metropolis.

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**Seminar on
Waterways in Chennai**
**Held on 4th & 5th March 2010 at Hotel Park Sheraton,
No.132, TTK Road, Alwarpet, Chennai – 600 018.**

Programme

First day 4th March 2010

Inaugural Session

10.00 am

Welcome Address	Thiru Vikram Kapur IAS, Member-Secretary, CMDA
Presidential Remarks	Tmt. Susan Mathew IAS, Additional Chief Secretary & Vice Chairperson, CMDA
Inaugural Address	Thiru Parithi Ellamvazhuthi, Hon'ble Minister for Information, Government of Tamil Nadu & Chairman, CMDA
Vote of Thanks	Thiru V. Kannusamy, IAS, Chief Executive Officer, CMDA

Session – 1

11:30 to 01:15 pm **Urban Development and Management: Indian Experience**

Chairman	Thiru R. Balakrishnan, IAS , Chairman, Tamil Nadu Pollution Control Board
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Brief Introduction by Panelists

- | | |
|--|---|
| • Chennai City River Conservation Project- Efforts of CMWSSB to reduce pollution in Chennai City Waterways | Thiru. G.Elangovan ,
Engineering Director,
Chennai Metropolitan Water Supply and
Sewerage Board |
| • Tamil Nadu Pollution Control Board and abatement of pollution in water ways | Thiru R. Ramachandran
Member-Secretary, Tamil Nadu Pollution Control
Board |
| • Tamil Nadu Slum Clearance Board – Resettlement and Rehabilitation of objectionable slums on waterways | Thiru T.K.Ramachandran, IAS
Managing Director, Tamil Nadu Slum Clearance
Board |
| • Tambaram - Pallavaram Municipal Sewerage project - An overview | Thiru S.Reghunathan
Chief Engineer, Directorate of Municipal
Administration |

- Chennai Rivers –Citizen’s Expectations
- Converting the problem of flooding into potential for water source

Dr. Nandhitha Krishna
CPR Foundation, Chennai.

Dr. S. Mohan. Director,
National Institute for Technical Teachers
Training Education and Research, Chennai.

Discussion

Rapporteur

Tmt N. Usha,
Deputy Planner, CMDA

Session – 2

02:00 to 04:30 pm **Improvements to Waterways – Experiences of Other Cities**

Chairman

Thiru Vikram Kapur, IAS
Member-Secretary, Chennai Metropolitan
Development Authority.

Brief Introduction by Panelists

- Sabarmathi River Water Front Development
- Bhoopal Lake development project
- Efforts of Siruthuli in cleaning up water bodies in Coimbatore District
- National River Conservation Project
- San Antonio River front development
- Cooum River Sub-basin Development
- Role of German Agency for Technical Cooperation (GTZ) in Water Ways Development

Thiru Jagdish Patel,
General Manager (Tech),
Sabarmathi River Water Front Development
Corporation Limited, Ahmedabad

Thiru Aniruddhe Mukerjee, IAS
Transport Secretary,
Govt. of Madhya Pradesh & Managing Director,
M.P.R.T.C. Bhopal

Thiru K. Mylswamy
Project co-ordinator, Siruthuli, Coimbatore.

Thiru Yogesh Sharma
Chief General Manager,
Construction and Design Services
Uttar Pradesh Jal Nigham, Ghaziabad.

Thiru Phanindra Reddy IAS
Managing Director & Chief Executive Officer,
Tamil Nadu Urban Infrastructure Financial
Services Ltd.

Thiru. Phanindra Reddy, IAS
Nodal Coordinating Officer, Cooum Sub Basin
Restoration and Management, Chennai.

Thiru Dirk Walther,
German Agency for Technical Cooperation,
New Delhi.

Discussion

Rapporteur

Thiru M. Sivashanmugam,
Senior Planner, CMDA

Second day 5th March 2010

Session – 3

10:00 to 11:30 am **River and Drainage System in CMA**

Chairman

Thiru S. P. Ambrose, IAS (Retd.),

Brief Introduction by Panelists

- Waterways in Chennai **Thiru T. Kanthimathinathan**
Executive Engineer, Public Works Department
- Drainage System in Chennai Metropolitan Area **Thiru John Olof Vinterhav**
Senior Land Management Specialist,
CDIA, Manila
- Macro Drainage Systems in CMA **Thiru M. Dheenadayalan,**
Formerly Advisor (Schemes) GoTN, Senior
Consultant, Institute of Remote Sensing,
Anna University, Chennai.
- Flood Risk Mapping for Chennai City and its suburbs using ALTM Technology **Dr. R. Ramalingam**
Director, Institute of Remote Sensing,
Anna University, Chennai.

Discussion

Rapporteur

Thiru S. Selvadurai

Deputy Planner, CMDA

Session – 4

11:45 to 01:15 pm **Water bodies in Metropolitan Environment**

Chairman

Thiru Debendranath Sarangi, IAS

Principal Secretary,
Department of Environment & Forest,
Govt. of Tamil Nadu

Brief Introduction by Panelists

- Adyar Poonga Development **Thiru Joss Brooks,**
Consultant to Chennai Rivers Restoration Trust,
Chennai.
- Landscaping along River Margins **Thiru K. Raghuraman,**
Landscape Architect, Chennai.
- Ground Water Recharge Potentials in CMA **Dr. N. Varadaraj,**
Regional Director, Central Ground Water Board,
Chennai.

Discussion

Rapporteur

Thiru M. Selvakumar,

Senior Planner, CMDA

Session – 5

02:00 to 04:00 pm **Studies on Chennai Drainage System – Rivers, Canals, Creeks, Estuaries, Lakes.**

Chairman

Dr. K. Thanasekaran,
Centre for Environment Studies.
Anna University, Chennai.

Brief Introduction by Panelists

- Studies and research related to Coom.
- Pollution status of the Adayar & Coom Rivers
- Sustainability Measures for water resources Management
- Flood Management of Adyar Basin

Dr. K.M. Sivakholundu,
Scientist - F and Head – CEE, National Institute of Ocean Technology, Chennai.
Dr. Navaneetha Gopala Krishnan, Director,
Centre for Environmental Studies, Anna University, Chennai.
Prof. K.Srinivasan,
Civil Engineering Department,
Indian Institute of Technology –Madras
Ms. S.Suriya
Centre for Water Resources,
Anna University, Chennai.

Discussion

Rapporteur

Tmt. M. Geetha,
Deputy Planner, CMDA

Valedictory Session

04:30 pm

Presentation of Main Recommendations of the Seminar

Tmt. Susan Mathew IAS,
Additional Chief Secretary &
Vice Chairperson, CMDA

Special Address

Thiru Ma. Subramaniam,
Worshipful Mayor,
Corporation of Chennai.

Valedictory Address

Thiru Parithi Ellamvazhuthi
Hon'ble Minister for Information,
Government of Tamil Nadu &
Chairman, CMDA

Vote of Thanks

Thiru B.S. Ravindran,
Chief Planner, CMDA

National Anthem