Preservation of Lakes in the City of Bangalore

Report of the committee constituted by the Hon'ble High Court of Karnataka to examine the ground realities & prepare an Action Plan for preservation of lakes in the city of Bangalore.
(26th February 2011)

Report submitted on 26/02/2011 by the Committee, appointed by the Hon'ble High Court of Karnataka vide its order dated 26/11/2010 in WP.No 817/2008 & others.

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Sd/- Sri K.S.Prabhakara, IAS Secretary, Revenue Department, GoK	Sd/- Sri A.S.Sadasivaiah, IFS (retd) Chairman Karnataka State Pollution Control Board
Sd/- Sri P.B.Ramamurthy,IAS Chairman Bangalore Water Supply & Sewearge Board	Sd/- Sri I.B.Srivastava, IFS Principal Chief Conservator of Forests, Karnataka State
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PREFACE

Hon'ble the Chief Justice and a Companion Judge, while hearing a Public Interest Litigation, were pleased to constitute a Committee consisting of Ten Members headed by the Chairman, High Court Legal Services Committee, to suggest the required steps and measures to be taken for preservation and restoration of lakes in and around Bangalore and to submit its report.

In this regard, earlier, Laxman Rau Committee (1988) had dealt with the very issue of preservation of lakes in clear terms, but the efforts of the Government, Forest Department, BBMP, BDA, Karnataka State Pollution Control Board and LDA, could not match the requirement of the day.

Bangalore is on a course of rapid expansion, transforming itself from a metro to a Mega City. During this process, the worst hit are the lakes of the region, which are put to misuse, threatening the water security, ecology and environment of the region. The estimated population of Bangalore by the

year 2020 would be around 120 lakhs and it demands a very proactive regulation, planning and execution system in place, to face the challenges of water scarcity and to keep the City habitable.

The Committee has met as frequently as required and deliberated on various facets of the problem of lake conversion and the action required to mitigate the same. The Committee further sought the views of the experts and experienced people in lake conversion while finalizing its report. It has also examined the root cause and ground realities and prepared the action plan for preservation and restoration of lakes in and around Bangalore.

After umpteen meetings and discussions with its members and experts from various walks of life, the Committee is of the view that:

- Much accelerated efforts are required for surveying the lake areas as per records and removal of encroachments, protecting the lake areas through fencing and watch & ward, stopping sewage entry into the storm water drain and its treatment, opening up of encroached/ blocked raja kaluves and branch kaluves, etc;

- Since new areas are getting added to the City, under the guise of expansion, thoughtful advance planning is required in these peripheral areas of the City, which are fortunately not much spoiled.

- Concrete steps will have to be taken to secure all the raja kaluves and drains, to keep adequate buffer as envisaged under the Zonal Regulations surrounding the lakes and raja kaluves, to keep in place Under Ground Drainage (UGD) and sewage treatment in time, to keep strict vigil over the lake lands and to prevent encroachments.

- As it is aptly said "a stitch in time, saves nine", these timely measures will help in non-recurrence of problems that we face in core Bangalore to-day.

I must express my deep appreciation for all the assistance and suggestions rendered by each one of the members and all others and profusely thank them for spending their valuable time and sharing their expertise and knowledge in finalizing the report.

Hope and trust this report will be a mirror for preservation and restoration of lakes, not only in Bangalore but also wherever it is required.

Bangalore,
Now camped at Dharwad.

Date: 21/02/2011.

N K Patil

(N.K.PATIL)
JUDGE, HIGH COURT OF KARNATAKA,
& CHAIRMAN, HIGH COURT LEGAL
SERVICES COMMITTEE, BANGALORE.

8. Strategy for preservation of Bangalore lakes:

1) Lake area should not be diverted for any other purpose as lakes have an increased and important role to play vis–a-vis lakes in rural areas, like ground water recharge, climate moderation, act as lung spaces, water for various purposes, urban recreation etc. The City has lost many important lakes due various diversions already.

2) Lake area is to be surveyed with total station as per the village map and records. Encroachments, if any, are to be removed. As part of survey, boundary stones in concrete are to be fixed in 3 to 4 corners of the survey, to facilitate easy future re-survey work of the lake as and when required. It is suggested to record Latitude & Longitude values of the corner stones so fixed by using Differential Global Positioning System (GPS) of sub-meter accuracy. It is relevant in the background of ever escalating land value in Bangalore city and consequent vested interests to grab public lands adjoining private lands. Geographical Information System (GIS) is to be established for the lakes of Bangalore City for planning and monitoring purpose.

3) Lake preservation is not limited to lake area itself, but very much dependant on catchment area and the drains that bring rainwater in to the lake. Raja kaluves, branch kaluves are to be surveyed and encroachment therein evicted. The buffer prescribed for primary, secondary & tertiary drains in valleys as per Zonal Regulations has to be religiously implemented, more so in areas which are not developed yet, to facilitate appropriate storm water drains, sewerage lines, inspection paths etc., as when the area comes up for development/urbanization. Advance action in this manner is imperative, if the unplanned development of Core area Bangalore City is not to recur in future.

4) The present norm of 30 mt buffer surrounding leagal boundary lakes is a must to preserve the lakes and if the buildings are allowed too close to lakes,

it will affect the lake environment adversely. The buffer limits, needs to be reviewed and it is suggested to increase the 30 mt buffer progressively by 2mt per every 5 ha of increase in lake area beyond 40 hac. This will facilitate development of buffer surrounding the lake in the form of tree parks, walking path without reducing/compromising lake area for creation of such facilities.

5) Lake preservation has to be integral to Layout Development by BDA and Layout approvals by development and planning authorities like BIAPA, MICÁPA, Nelamangala Planning Authority, Hosakote Planning Authority etc., as eventually these areas will be part of Bangalore city. BDA should not acquire lake area at the time of notifying the area for development and allot sites in the lake area as was done in many a layout development previously. Instead they have to properly get all the lakes, raja kaluves, drains surveyed and marked on the ground as per village records with boundary stones and make provisions for buffers as laid out in their norms. The area that has to be kept for parks as amenity in the BDA Layouts, can be earmarked surrounding the lake area, so that it serves the conservation of lakes and public recreation as well. Storm water drains and UGDs are to be laid out, before the sites are allotted, lest the problems of core Bangalore are bound to occur even in new areas.

6) Core operations like survey, removal of encroachments, fencing, watch and ward, clearing of blocked and encroached raja kaluves & drains, waste-weir repairs, de-silting to the extent absolutely required are to be taken up on priority.

7) Effective Lake area should not be reduced by converting lake area into parks, children play grounds, widened bunds etc. The de-silting has to be minimized to remove only sludge portion with minimum depth near foreshore reaching maximum depth at the bund. The present saucer shaped de-silting should be given up as it is cost prohibitive and leads to huge bund making and creating storage capacity beyond the need. Saucer shaped deepening of lake bed will

affect the wetland formation in the foreshore region of the lake, which is essential to filter the water that enters the lake and important from ecological point of view. Exception to this can be restoration of lakes, with adequate anticipated inflow during rainy season, where deepening is suggested keeping in view impounding more water to recharge the depleting ground water and to mitigate the flash floods.

8) Unless sewage entry is restricted, based on the experience of lakes developed so far, no lake improvement is to be taken up except survey, removal of encroachments, fencing and watch & ward. There is no point in de-silting and other developments, if lake continues to receive polluted water. Diverting sewage is not an option in the absence of other inlets into the lake to bring rainwater. Diverting sewage is leading to drying of lakes as in case of Doddabommasandra lake, Agara lake etc. BWSSBs action plan to separate the sewerage entry in to storm water drains directly and consequently in to the lakes will be in place only by 2014/2015. This being the case the agencies developing the lakes may have to invariably go far a Sewage Treatment Plant for an individual lake/for a group of interconnected lakes in consultation with BWSSB to ensure that they fit into their larger plan of sewage treatment. **Lake restoration is to be taken up based on lake series/sub-series and not in isolation, to have better results and impact.**

9) Some of the lakes of Bangalore are prominent for their ecology due to local and migratory birds, aquatic fauna and flora. Lakes of this nature are to be improved keeping this aspect in focus so that after the development lake is not subjected to increased disturbance in the area. Such lakes may be identified and notified under Wetland (Conservation and Management) Rules, 2010.

10) Annual field inspection by higher authorities of the custodian organizations and annual jamabandi of lake records by revenue department & lake custodian organizations are to be carried out.

11) Selected lakes are to be developed for augmenting water supply to city as the City can't draw water from Cauvery beyond its allocation to the City, which it will exhaust once Cauvery water supply Stage IV, Phase II is completed by 2011. Sewage entry into the selected lakes has to be stopped totally and tertiary water treatment has to be installed.

12) Lake management committees have to be constituted with representatives from Resident Welfare Associations/NGOs.

13) Traditional users of the lakes like Dhobis/fisherman interests are to be taken care of. If lake is used traditionally for washing clothes, dhobi ghats are to be constructed when the lake is taken up for development.

9. Action Plan

a) Preservation and restoration of lakes in BBMP area.

There are 189 lakes in BBMP area, out of which 129 are with BBMP, 44 with BDA, 11 with LDA and 5 with KFD. The summary of lakes developed, being developed and to be developed is furnished hereunder. All these lakes are to be developed by the end of 2014.

Sl. No	Department	Already Restored	Restoration in Progress	Proposed for Restoration	Total lakes In custody
(a)	BBMP	13	18	98	129
(b)	BDA	7	6	31	44
(c)	LDA	9	-	2	11
(d)	KFD	2	0	3	5
	Total	**31**	**24**	**134**	**189**

11) Acknowledgements:

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The Committee keeps on record the active participation in deliberations, suggestions and assistance from Sri V.Balasubramanian, IAS (retd), Chairman, Task Force for Protection of Government Lands; Sri R.M.N.Sahai,IFS, DG, EMPRI; Dr.U.V.Singh,IFS,CCF,LDA; Sri Guruprasad, CE, Minor Irrigation;Sri M.N.Jayaprakash, SEO, KSPCB; Sri B.V. Sathish, CE, Lakes, BBMP; Ms Vanashri Vipin Singh, IFS, DCF, Bangalore Urban Division; Sri A.Udaya Kumar, EO, KSPCB; Sri Amarnath, DCF, BDA; Sri V.C.Kumar, EE, BWSSB; Sri Ravi, EE, BBMP; Sri V. Anand;DEO, KSPCB.

The Committee has organized an interactive session on 11/01/2011. Dr Nandini, Chairperson, Dept of Environmental Sciences, Bangalore University; Sri C.N.Babu, CE (retd); Sri K.S.Ramaswamy, Chairman, TAC, LDA; Capt S. Prabhala,Chairman, Bangalore Environment Trust; Major Pramod Kapur (Retd), Koramangala Initiative; Ms Purnima Kumar, Research Associate, ATREE; Sri Jai Manjunath, Sepcon Systems; Sri M.Sekhar, IISc, Bangalore; Sri Sumesh Dudani, IISc, Bangalore; Sri R.Ramamurthi, Environmentalist, Bellandu, B'lore; Sri Boshy Khanna, DNA News Paper; Sri Sunil Dutt Yadav, Advocate have attended the session and offered their valuable suggestions; the committee is grateful to them.

The Committee extends its special thanks and appreciation to Sri Leo Saldanha, Convenor, ESG, Bangalore and Dr Subramanya, Professor, UAS, GKVK for their valuable suggestions, particularly concerning Ecological Restoration of Lakes, dealt in the report under chapter (9) and Annexure (XIII). Our thanks are due to Sri Y.D.Manmohan, Senior Consultant, STUP, for having provided the required support at various stages.

The Committee thanks one and all, who have assisted it in the task of Report preparation