

# Emerging Issues of Land Management in Bangalore Metropolitan Area

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**Abstract:** Comprehensive planning, operations and management with sustainable maintenance are possible only by adopting the integrated approaches with the help of Land Use Planning that is Master Plans and its implementation. The master plans are statutory documents intended to guide the development of the city through the land use and regulations. The plans are also required to render itself effective in addressing the environmental issues such as climate change, conservation of water bodies, preservation of sensitive lands, Parks and open spaces, etc. The sensitive zones and the conservation areas require intervention through a mix of technical, managerial and community based initiative. In this paper, the role of the revised master plan 2015 in preservation and conservation of the sensitive lands earmarked in the master plan is reviewed. The steps taken up by the Authority in attempting the implementation of the proposal is discussed. The learning's from this implementation are useful for carrying out improvements enabling better implementation of plans in the future.

**Key Words:** Master Plans, Land Use, Zoning, Regulations, Sensitive Zones

## I. BACKGROUND

Bangalore Metropolitan Area, India, is characterised by the integral presence of water bodies (lakes/tanks) both manmade and natural, with over 400 in the region and over 183 tanks within the City Corporation limits respectively. The city has witnessed unprecedented growth at 3.25 per cent in the previous decade, while registering a 4.46 per cent annual growth rate in the past decade. The growth has led to a sprawl and indiscriminate use of land, encroachment of water ways/water bodies. The neglect by the authorities coupled with the letting of the sewage and waste water into the water courses have led to environmental degradation and loss of resources.

Over the past decade, there have been series of policy and practice interventions adopted by the Government leading to the conservation and rejuvenation of the tanks with varied success. The efforts have been in the direction of:

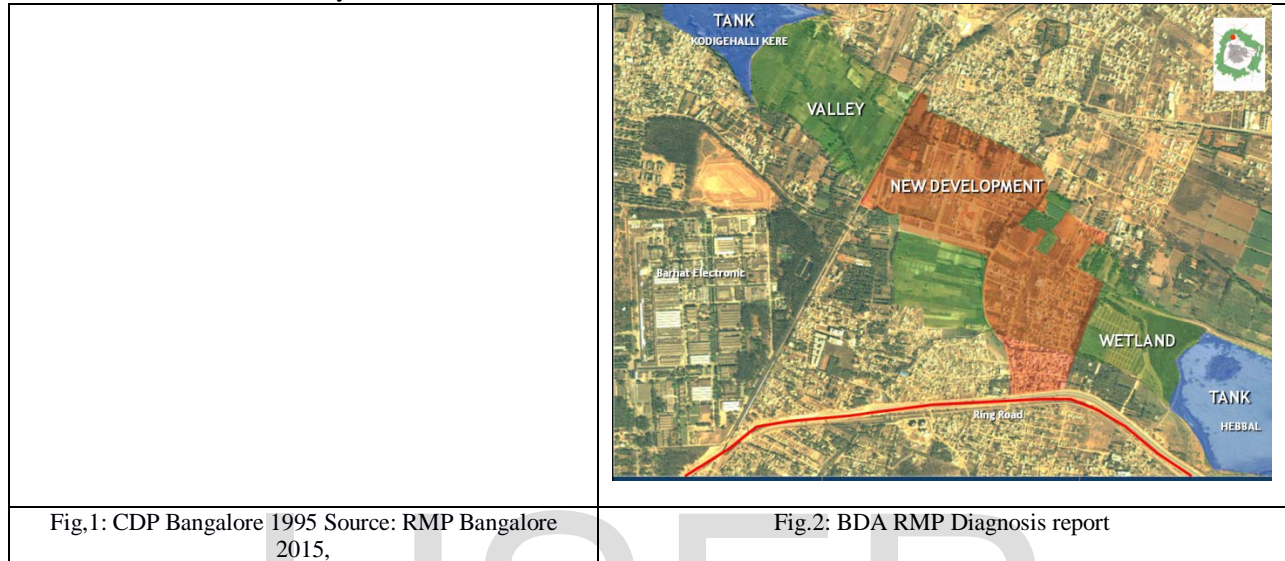
- a) Better land use management and integration of open spaces. This being tackled through the formal land use plan documents such as the Master plan and protection from encroachments through use of legal instruments.
- b) Better storm water management allowing the tanks to act as detention ponds and prevent flooding.
- c) Integrating the tanks with the urban water supply system with provision of utilising the tanks for storage of re-cycled water and supply reservoirs.
- d) Improvements to surrounding urban environment and urban ecology/ bio diversity.

## II. MASTER PLAN

Under the Karnataka Town and Country Planning (KTCP) Act 1961, the Master Plan is prepared by the Planning Authority and is carried out once in 10 years. The Comprehensive Development Plan's (Prior to the amendment of the act in 2004, the Master plans were called as Comprehensive Development Plan(CDP) has been prepared for the time period 1984, 1995 ending 2011. The latest and the revised are the 2003-2007 for the 2015, known as the Revised Master Plan 2015. In the Comprehensive Development Plan document of Bangalore, 1995, due to the constraints of mapping (due to the lack of the remote sensing data) in the dry seasons, there was failure to map the lakes/ water bodies and the drainage, valleys, wetlands as well as natural drainage channels. The data available in the revenue survey maps were incorporated as features in the base map of the plan and the land use proposals were drawn upon the available data. For example, the water body/ tank areas are shown as the green / open spaces. The areas between the tanks which are low lying and normally act as wetlands area were also zoned for the various

development such as residential, commercial, PSP and Industrial areas. The tanks and water bodies form the percentage of open spaces stipulated in the CDP.

During the Plan period, based on the CDP 1995, large number of developments has taken up. The permissions granted include the areas where marshy /wetlands were present. With implementation of the Outer ring road of Bangalore, about 33 % of the land area was added in less than 10 years. The resultant impact of the urbanisation is the disturbance caused to the catchment areas, the encroachment of the valleys/ on the drains leading to increased flood like situations in the city.



### III. ENVIRONMENT IN THE RMP 2015

The environment as a sector is discussed with a concern to preserve city's natural environment, development of the parks and green spaces, sewage, drainage and solid waste disposal systems, air, noise visual an ecological processess. However, the Master plan (MP) restricts itself to the environmental aspects related to the land zoning. The MP provides for Protected Land Zone which includes lakes, valleys, tanks and national parks and forests to be preserved as natural areas. Heritage zone is also highlighted for conserving the Natural heritage. The plan gives special emphasis on increased green cover and preservation of historical and cultural heritage by earmarking areas for green areas, protected land, restricted development land and agricultural land zones. The environment and natural resources are demarcated spatially demarcate to allow for limited intervention or no development as well as preventing encroachments to the restricted areas.

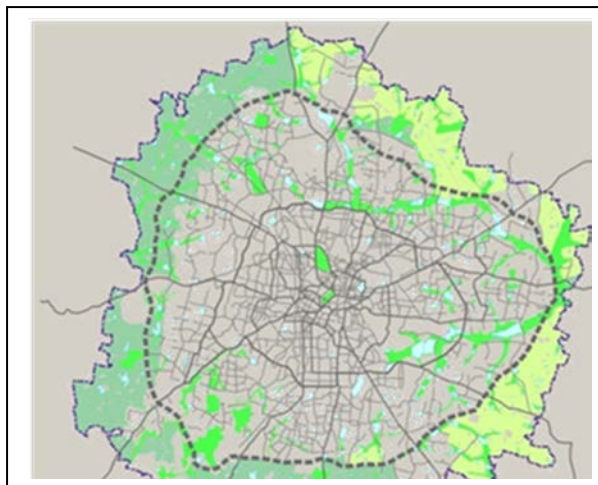


Fig.3: lakes and Valleys

#### IV. IDENTIFICATION OF TANKS AND VALLEYS:

Based on the remote sensing studies and analysis of the topography, the areas which are low lying and form the linkage areas between the tanks are demarcated as the valley areas. The detailed maps prepared are useful for the achieving the major goal of protecting the lakes and natural drainage channels. The total area including the valleys inside the conurbation is about 71.27 km<sup>2</sup> (9.1% of the total conurbation area). Open spaces, parks and playgrounds form about 12.5 Sq.kms (1.7% of the conurbation area).

#### V. OWNERSHIP OF THE LANDS

While the tanks/water bodies and the drains belong to the Government (BBMP/Forest/ BDA/ etc), the lands in the catchment areas within the watershed, the connecting land areas forming the valley/ wetland areas often belong to the private (owners). The demarcation of land for particularly for the preservation purposes through regulation has impacted the development rights of the owners of these lands. The change of land use zone from that of the earlier CDP to the RMP2015 has forced the respective land owners to lose the rights for development. In many instances, the Permissions/approvals for development have been accorded on the basis of the earlier CDP 1995. The permissions already granted could not be revoked as the regulations of the master plan are applied prospectively. During the preparation of the revised master plan, the draft plan published for the comments and suggestions as per the stipulations of the act, received several objections to the classification of the valley zone and its subsequent zoning regulation restrictions.

#### VI. RMP 2015 PROPOSALS FOR LAND MANAGEMENT

##### A). *Proposed Land Use Map:*

The water bodies are demarcated in the proposed land use maps along with the identified drains. The areas coming under low lying areas, marshy areas are indicated as the sensitive zone. The

Figure 2: RMP Bangalore 2015; Source: BDA RMP 2015

Attempts are made to keep the valley areas continuous as indicated in green. The regulations for the sensitive zone are that: The drains within the valley area are provided with a buffer of “no-development” depending on the size of the drains and categorised as the primary, secondary and tertiary drains. In addition to the identified valley areas, drains have stipulated buffers depending on the significance, such as Primary, Secondary and Tertiary with 50m, 25m, and 15m respectively. Further, there is also caveat that includes the drains identified on the village/revenue survey maps are also required to be provided with the buffers in case the development plan misses the identification

of it. The permissions accorded earlier (to the coming of effect of RMP 2015) are allowed to be taken up, while the fresh developments are subjected to the new regulations.

*B) Issue of Notices:*

After the approval of the master plan, public notices were issued to the concerned parties having their lands in the valley / sensitive area. Similarly the notices for the lands coming under the buffer zone have been issued. The land owners have been identified through the survey numbers falling under the zone and the Right Tenancy Certificate (RTC) data has been linked for the issue of notices.

*C) Permission and Sanctions:*

Based on the CDP 1995 and within its valid period, many developments were given approval. A few cases where the permissions were sought much earlier to the coming of the RMP 2015 and were in process were allowed through the intervention of the court. (The judicial cases related to the valley –P. Dayananda Pai vs State Of Karnataka, 2008 ). Going by the principle of Dejure, the developments have been allowed with provision of a buffer of 30 m as a non-buildable zone. (The 30 m buffer is measured from the Full Tank Level of the water body). Though the concept of valleys and its preservation is necessary for the sustenance of the water bodies, the Master plan does not spell out the on how it could be implemented, by using means other than the regulation. The authority has also not been able to impress upon the Judiciary on the importance of the preservation of wetland and explain its stand in supporting a larger environmental cause.

In response to the numerous applications to the BDA seeking the permissions to develop in the valley /sensitive zone, BDA has constituted a committee comprising of Officials and specialists to review the applications and enable BDA to grant sanctions. The committee has limited mandate of scrutiny of application as well as to accord permissions. Permissions granted would enable the land to be zoned as per the regulations (i.e adjacent main land use). The development would then follow the sanction and plan approvals as stipulated in the Zonal Regulations. As of November 2014, there were over 550 applications, barring two applications on the basis of the size of the parcel and the procedures, approvals were given with some conditions insisting on the drainage, recharge, disposal of waste, etc. The introduction of the approvals from the committee has only added to one more layers in the procedure for the obtaining permission to develop impacting both the increased costs and time for processing.

*D) Applicability of the Drain Buffer on the Given Piece of Land: Evaluation:*

A Test case for the implementation of the Buffer for a given site is taken up and demonstrated.

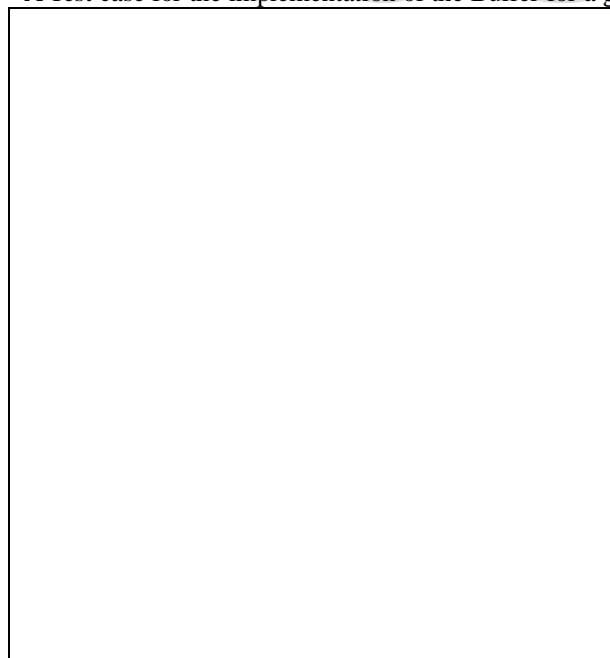

	
Figure 4: Boundaries of the Water Bodies Identified.	Figure 5: Village-Site boundary, Source: Ides consulting

Fig.6: The Village Map Superimposed over the Survey Map; Source: Ides Consulting	Fig. 7: Proposed Land use Map, RMP 2015, BDA

## VII. KEY ISSUES OF RMP 2015 ON LAND MANAGEMENT

The key issues in the RMP 2015 land use regulation for the sensitive zone identified in the Master Plan are the following:

1. The entire water sheds are mostly in the BBMP area and management of the land use and permission for building activity is managed by the BBMP.
2. The storm water drains and the lake bed area and their ownership are required to be certified by the Revenue Department. The clearance of the encroachments is also the responsibility of Revenue Department/ District administration.
3. The marshy wetlands or lands in the sensitive zone belong to private ownership –changes in the zonal regulations with respect to the land use and the extent of development have impacted the development potential adversely.
4. The regulations have impacted the land market. As they have very little development potential without obtaining the permissions for change of sensitive zone to other zone, complicated procedures which are time consuming is to be followed.
5. Often before the inspections are carried out on the field, the land is levelled and is raised disturbing the original ground as well the percolation possibility of the ground water recharge.
6. The land owners who lose the development right must be facilitated with either monetary compensation or development rights.
7. Once the buffers and non-buildable areas are insisted in the plans, they have to be effectively maintained as open spaces and support ground water recharge.
8. In the interest of the ecosystem conservation, the sensitive areas along with the water bodies and other lands must be conserved in an integrated manner. Greater control on the land use is necessary.
9. The sensitive lands and the water bodies along with drains and its buffers can contribution of open spaces within the Master Plan, if designed and implemented well.

10. In case of constructed drains coming under the Ring –I and II (mainly within the Ring roads) of the Master Plan, the buffers are not insisted.

#### VIII. DISCUSSION:

The reservations for the proposals in the Master Plan are followed with the regulations applicable to achieve the proposal objective as well as mobilise the land for the said purpose. As in case of Parks being earmarked in the Master plan, the lands belonging to the private owners must be acquired as per procedures within 5 years of the plan notification. Failing which the private owners have full right to seek change of land use. In the case of sensitive lands, the following options are available with the authority:

1. Acquisition of land: The right to fair compensation and transparency in Land acquisition, rehabilitation (RCFTLA) Ordinance ( 2015) stipules multiple of minimum twice the market value of the land to be acquired. Acquisition of these lands will not possible due to budgetary constraints and the quantum of finance required.
2. The Transfer of development right for the entire area can be issued to the Land losers. The large TDR that will get generated will have to be sent to designated receiving areas. The given low utilization of the TDR and FAR in the city currently does allow this to be feasible.
3. Working out detailed schemes which allow for land pooling, re-allocation and adjustment to create a proposals that will enhance the project viability and the participation of all players.
4. Do nothing scenario, where the land parcels falling under the sensitive zone is allowed for change. The current trend of allowing the development in the wetland areas will destroy the ecological values impacting the long term sustenance of the city.

#### IX. CONCLUSIONS:

An imposition of blanket ban on any development to be carried out in the sensitive land zone is not feasible as it is not only against the interest of the land owners also impacts the land markets functioning. Compensation through monetary means or otherwise or through the issue of development rights to the owners are not viable options. The demarcation of the sensitive areas needs to be done after detailed studies and in consultative manner with the persons impacted by the proposals. The land losers must be involved in any scheme that is proposed in order to enable them to realize the potential economic benefits. The ability to allocate, re-allocate and re-adjustment of land to enable implementation is possible by utilizing planning techniques and use of necessary implementation mechanism/instruments.

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#### BIOGRAPHIES



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