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AGENDA FOR URBAN CONCERN

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The bells they toll for us all

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YOU must have heard of sitting on a tree branch and cutting it. If the cruel, conniving and corrupt annexation of the wetlands of Dhaka, and for that matter in other large urban centre of the country, continue we will also be able to experience the fate of the senseless, thoughtless, irresponsible, reckless and heedless, in short, stupid.

The alarm bells have to be rung because this unabated insanity will cost lives, impair physical and human growth, and most adversely impact on the future generations for no fault of theirs.

Water grabbers, for want of a better term, are greedy, aggressive and exploitive. Their club is open to mainly some unscrupulous developers, devious government officers and immoral law enforcers. There are specific laws and even instructions from the highest government office but they care a hoot, for they are a powerful combination. They are the intellectual sinners.

The fact that others, save BELA and some conscientious citizens, are doing nothing qualifies them all for membership of the scheming group.

The conversion of wetlands in Dhaka has already caused an acute shortage of potable water and severe drainage problems. It is affecting the ecology and the livelihood of many. One need not be a cognoscente to understand the slow visual poisoning of a city four hundred years old as a capital.

As is the consequence of our other misdeeds, the poor will once again be the most disadvantaged, not that others will live happily ever after. The bells are tolling for all and sundry.

Do we need any more motivation to take punitive measures against the guilty, to restore the appalling damage to an acceptable level and to conserve the remaining wetlands as well those that may be reclaimed?

While Environmental Impact Assessment and similar tools have been used for long to gauge the probable effect/s of any physical change on the environment and the people worldwide, Dhaka continues to maintain its frenzied rate of urbanisation without any such operative evaluation.

In her paper today (abridged version of her doctoral thesis) Ishrat Islam explains the causes of the loss of wetlands and the actions necessary. She talks about our future. Let us start paying heed to those who are thinking about others. Let us be wise.

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BUET

Filled out wetland in Beraid, eastern fringe of Dhaka for a housing project

Wetlands of Dhaka: Alarming depletion

ISHRAT ISLAM

"THE world that we have made as a result of the level of thinking we have done thus far creates problems that we cannot solve at the same level as the level we created them at."

This very realization of Albert Einstein depicts the fact that this modern society, its fast pace of urbanization, advancement of technology, in many cases are intervening the intrinsic order of nature and the destructions it causes is often irreversible and replacement is beyond the capability of human species.

Wetlands are one of the most precious ecosystems on earth. By the time people realized the multiple value of wetland, an enormous portion of the treasure has been exhausted. Wetlands can be referred to as ecological safety valves which are designed by nature as reservoirs for mitigation of flood, as sinks for pollutants and toxicants and as regulators of recharge and discharge of ground water. Wetlands also act as stabilizers of local climatic condition particularly rainfall and temperatures through the overall hydrological, nutrient and material cycles. Wetland provide habitat for rare, endangered and commercially or recreationally important fish and wild life species. They are ideal sites for outdoor recreation and offer scenic beauty to urban landscape. According to the widely accepted definition set by the Ramsar Convention; wetlands include a wide variety of habitats such as marshes, peatlands, floodplains, rivers, and lakes, and coastal areas such as salt-marshes, mangroves, and sea grass beds but also coral reefs and other marine areas no deeper than six meters at low tide, as well as human made wetlands such as waste-water treatment ponds and reservoirs.

Wetlands of Dhaka and their conversion

A wise coexistence of man and nature is visible at the initial days of development of Dhaka. Until 1850, development of the city took place on the higher terrain and the encompassing rivers, networks of canals and the wetlands were harmoniously used for transportation, defence, fishing or agricultural purpose. Permanent wetland category of Dhaka includes rivers, lakes, ponds and other water bodies where water remains all around the year. Landscapes those retain water for certain period of the year are termed as temporary wetlands, such as floodplain, marshes, channels etc. This article primarily focuses on temporary wetlands of Dhaka.

Vast tract of wetland at close proximity to the central city has been attracting private developers since 1980s. After construction of the west flood embankment, unplanned development stretched rapidly toward the low lying areas adjacent to the embankment except the retention pond of 274 hectare area at Goran Chandbari. Land filling activity at the eastern fringe of Dhaka is continuing speedily violating all the laws and regulations. Designated flood zone at the south and west of Dhaka are also experiencing the similar fate. It should be kept in mind, even after completion of the Eastern Embankment, 12 percent of land should be kept as retention area for storm water storage (according to the study of JICA). It is evident from catastrophic floods in 1988, 1998 and 2004, that the poor discharge capacities of the existing drainage channel are responsible for longer duration of flood. City dwellers have already experienced the severity of rain flood during the month of September 2004. Entire city was collapsed at that time for poor drainage system of the city. Low-lying lands around Dhaka works as natural retainers of storm water, acts as natural drainage network and certainly help to keep balance in ecosystem.

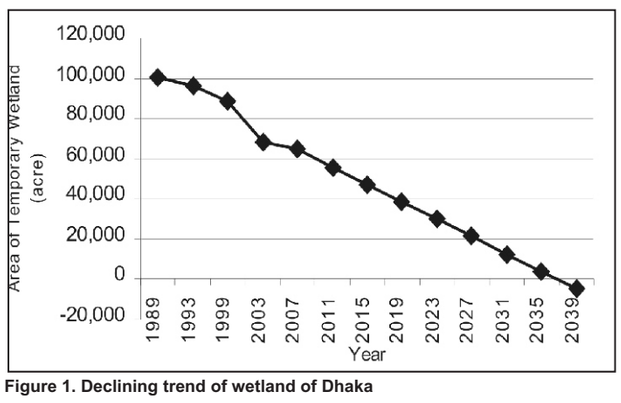

Figure 1. Declining trend of wetland of Dhaka

Trend of land development for housing and wetland related policies and acts

Dhaka Metropolitan Development Plan (DMDP) has demarcated main and sub flood flow zones of Dhaka City and prohibited any kind of land filling activity on those areas. DMDP has also identified possible location for retention pond areas. Locations of sample housing projects are plotted on the Flood Flow Zone policy map of DMDP, which clearly shows the contradiction between the existing housing development trends with the Flood Zone Policy of DMDP (Map 1). Number of housing projects area located on restricted flood flow zones and areas demarcated for retention pond. Land filling activities in those restricted areas are going on even after enactment of the Water Body Conservation Act 2000, which has prohibited any kind of development in wetland. Especially in the eastern fringe area, conversion of wetland is taking place at a very fast pace. Men's domination of nature and natural resources is actually domination of man by a more powerful man. Wetland tragedy in Dhaka is no exception. The process of transfer of ownership of wetlands from the local farmers to the private developers is a story of aggression and exploitation. The fate of the wetland owners all around Dhaka, in Ashulia, at eastern fringe or Baghair at the south, is almost identical. As a planner, we assume, 'social justice' as one of the prerequisites of a sustainable society. But our administration, concerned authorities and legal system failed to protect the basic right of its citizen, the security of their property.

National Environment Policy, National Land Use Regulation also stated policies on wetlands. Water Body Conservation Act 2000 states that natural water bodies mean the places which are demarcated in the Master Plan as river, canal (khaal), depression areas (beel), lake, stream or wetland or places which are declared as 'flood flow zones' by the local government notification and such places should also include the land which retains storm water. This law prohibits any kind of development on these areas.

Despite all these rules, regulations and policies, conversion of wetland is continuing in a devastating manner. No attempt has yet been taken to demarcate the boundary of the retention ponds areas and other wetlands. The delay of completion of 'Detail Area Plan' for Dhaka is another major issue. There are few instances where the land filling activities were prohibited through legal action such as Modhuloti Model Town, Uttara Model Town in Ashulia by Jamuna Group. Bangladesh Environmental Lawyers Association (BELA) played an important role in this respect. But these actions are very limited in number and powerful real estate companies are converting hundreds of acres of wetland every year.

Existing land development trend for housing can be summarised as follows:

(i) Wetland and high value agricultural land are in vulnerable position due to uncontrolled conversion to urban use.

(ii) Such land development is more oriented to speculative motive. Large portion of the future population of Dhaka will be migrated poor who cannot afford to buy a serviced land.

(iii) Significant portion of filled out land will remain vacant and unproductive for long period of time.

(v) Input of real estate sector in the national economy cannot be ignored but its benefit reaches small segment of the society. This sector requires proper guideline to ensure effective contribution to the society.

(vi) Existing land development trend is contradictory to the 'environmental' and 'social equity' goal of the city. Exercise of power to acquire land from local people by the private land development companies is an absolute violation of human rights.

(viii) Considering all the aspects, question arises whether it is justified to drain out wetland for housing development which has high agricultural and ecological values.

Rate of Loss of Wetland in Dhaka Metropolitan Area (1989-1999-2003)

Landsat TM/ETM satellite images of different time periods (1989, 1999, 2003) have been used to study the trend of loss of wetland in Dhaka. In these studies flood plains, marshes, storm water storage areas where water is found during the wet seasons are considered as temporary wetlands. Map 2 and Table 1 shows the coverage of temporary wetland in DMDP area during the years 1989, 1999 and 2003. It can be easily understood the gradual shrinkage wetland over the periods.

It is evident from analysis, if the current rate of loss of wetland continues, by the year 2037 all temporary wetlands of Dhaka will be disappeared (Figure 1). It is alarming to find that yearly rate of loss of wetland during 1999-2003 periods is 5.67 percent where as during 1989-1999 period; yearly rate of loss was 1.23 percent. Despite the enactment of the Water Body Conservation Act 2000, wetlands are disappearing everyday.

Loss of Wetland and its Impact on the City

(i) Impact of loss of wetland on flooding situation of Dhaka

Increased water level of the peripheral river system inundates the city. Floodplains can retain flood water and thus protect the higher terraces. Bangladesh Atomic Energy Commission and SWMC (Bangladesh Atomic Energy Commission and SWMC, 2002) carried out a study on Ashulia flood plain area to find the impact of land filling activity on the surrounding hydrology. Findings of the research states that;

a. The land development will increase the water level of the river, which may cause drainage problem in the areas.
b. Flow velocity of the river will also increase.

Every monsoon Dhaka City dwellers experience flood due to rain. Drainage system of Dhaka serves less than 25% of the urban area. The remaining areas drain through overland flow into adjacent water courses or depression areas and back swamps. Wetlands all around Dhaka act as natural retainer of storm water. After the completion of the Eastern Embankment Dhaka will turn into an island surrounded by wall all around. Pumping stations with enough retention pond area is a must for the survival of the city.

(ii) Decrease of Ground Water Recharge Area and Decrease of Ground Water Level

About 95 percent of water supplied for Dhaka is extracted from underground and average annual decline of ground water within the city area during 1995 to 1999 varied from 1.02m to 2.46 m. Lowland play significant role in ground water recharge function.

(iii) Impact of increase of impervious surface and destruction of natural drainage

Impact of urban development on hydrologic aspect of the site by each individual small change may not be significant but the aggregate effect of the land development process drastically change the physical characteristics of land surface which certainly influence the drainage pattern. Lowland has dominant role in drainage function. Lowlands act as detention storage areas.

(iv) Disturbance of local ecology and biodiversity due to loss of wetland

Wetlands have significant impact on local ecology and biodiversity. Wetlands like fertile flood plains have high agricultural value where crops are grown in the dry season. In the monsoon, these wetlands merge with the adjacent rivers and become fishing grounds. In case of Dhaka, it is a blessing that we have fertile agricultural land and fishing grounds close to the city. Through proper planning and technology these low lands can play a very significant role to cater the food demand of the city dwellers.

(vi) Adverse impact on local people and society as a whole

Due to forceful acquisition of wetland, local land owners are going through psychological trauma. Their age long dependency on wetland for livelihood and their tranquil homestead is now threatened by the intruders. Such hostility will have long term adverse social impact.

(v) Destruction of Aesthetically Pleasant Recreational Sites

Aesthetic appeal of wetland changes with seasons. Beauty of vast waterscape of Ashulia in monsoon is well experienced by the busy city dwellers. The same wetlands in the winter, turned into vast green or golden paddy fields and the tranquility of rural Bangladesh can be felt there. People of this delta have age long learning how to live with nature, which is now ignored in Dhaka the name of urbanization.

Some thoughts on conservation of wetland of Dhaka

- A variety of stakeholders with vested interests are involved with the wetland issue. Among the stakeholders are local wetland owners, developers, planning and legal institutes, NGOs, environmental organisations, political leaders, media, buyers of wetland plot and even citizens of Dhaka as well. Among the stakeholders 'developers' are the most powerful and organised. They always maintain necessary liaison with different organisations to continue the land filling activity uninterrupted. On the other hand, the stakeholder groups who want to protect the wetlands are acting in an incompetent and uncoordinated manner. Following issues should be given considered to undertake wetland conservation program:
- Political motivation to protect wetland.
- Research and planning should be done to explore various productive, commercial, recreational and environmental values of wetland.
- Overcoming the institutional weakness and corruption to ensure exercise of planning rules, regulation and acts.
- Construction of roads, embankments and other infrastructure often accelerates the process of conversion of wetland. Tongi-Ashulia road is such an example. The proposed plan of the Eastern Embankment act as a dominant factor for conversion of wetland of eastern fringe of Dhaka. Such planning decisions require sufficient research to secure environmentally sensitive areas.
- An inventory and demarcation of wetland of Dhaka in the light of an explicit, operational definition of wetland.
- All the stakeholders who are interested to save wetland required to work from a common platform.
- Original owners of wetland should have active role in the conservation process as they are the wise user and protector of wetland from generations.
- Media take active role to generate awareness regarding the value of wetland and can undertake a program to reject the advertisement of land development projects those are unauthorized. In such a case, coordination among media, regulatory and legal authorities is necessary.
- Children should be exposed to environmental education at the early years and should be trained to love and protect the nature.

Conclusion

It is a myth that today no wetland remains for conservation. As evident from the study Dhaka is still left with 19.3% of wetland, which requires immediate attention. Wetlands are like living beings. Once they are destroyed, they cannot be brought back to life again. Programme for restoration of wetlands of Dhaka can be termed as the life saving drug for the survival of our beloved city and its surrounds. Development authorities in collaboration with experts, NGOs, media personnel and civil society must undertake a dynamic role to protect wetland. Natural resource conservation always requires active participation of, and therefore must include, the local inhabitants.

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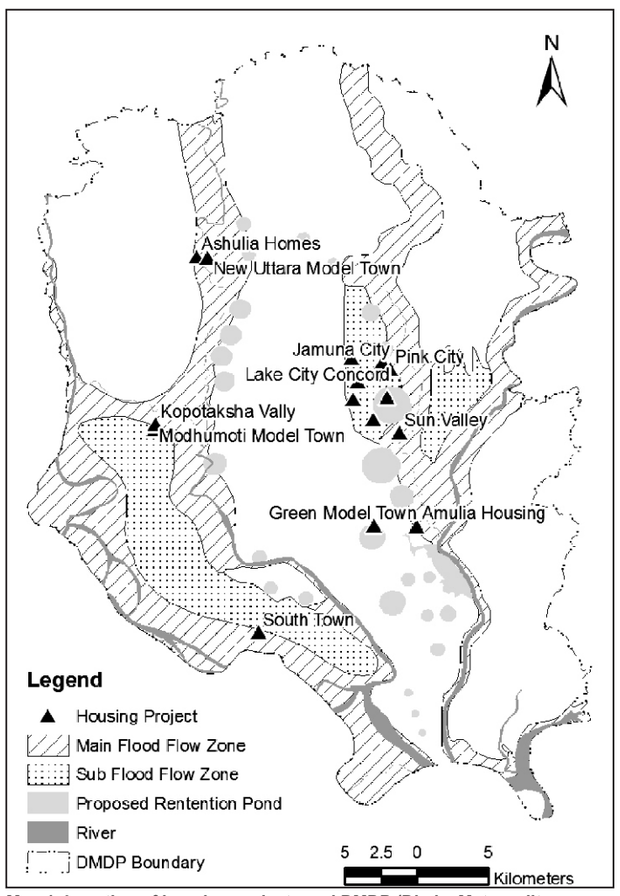
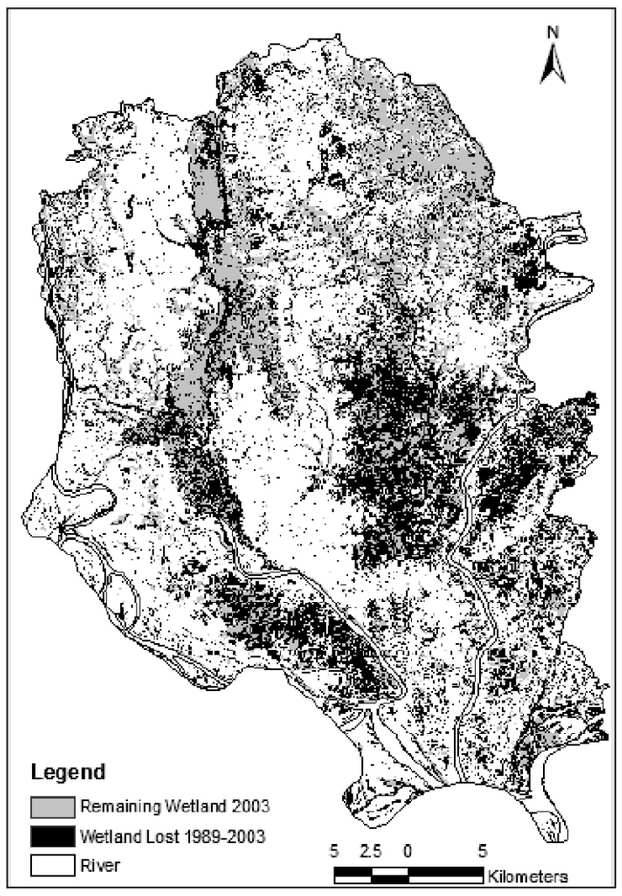


Map 1. Location of housing projects and DMDP (Dhaka Metropolitan Development Plan) area



Map 2. Loss of wetland in DMDP area 1989-2003

Death of wetland by sand filling in eastern fringe of Dhaka

Site of housing project in the restricted flood plain zone of Ashulia