Impacts of environmental laws on land development and developers in Dhaka City, Bangladesh

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Abstract: The fast paced land and housing development projects in Dhaka City since 1980s had generated irregularities in developers' real estate projects and policy deviations in the Dhaka Metropolitan Development Plan (DMDP). This paper explores the causes of the irregularities and reasons that trapped many buyers in the developers' unauthorised housing projects and violation of some regulations. The study argues that the untimely promulgation of laws, namely: The Natural Water Body, Open Space, Park/Play Ground Preservation Rule 2000, Private Housing Project Land Development Rules 2004 (PHPLD Rules 2004), and Real Estate Development and Management Act 2010 (REDM Act 2010) could be largely responsible for the present crisis. This paper suggests that modification of the DMDP policies and relevant laws should be urgently undertaken in order to bring about solidity and smooth functioning of the land and real estate market in Dhaka. The study also suggests that an independent assessment agency could be commissioned to assess the situation and minimise the risks of buyers and the irregularities of developers by disseminating the relevant information to respective agencies and concerned persons.

Keywords: real estate developers; laws; irregularities; landlocked; Dhaka; Bangladesh; sustainable environment.

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1 Introduction

Rapid urbanisation has been considered as one of the prevalent causes of cultivable land loss (Lopez et al., 2001), habitat destruction (Alphan, 2003), and declining natural vegetation cover. Transformation of rural lands to urban areas is currently occurring at an unprecedented rate in recent human history and is having a prominent effect on the natural functioning of ecosystems (Turner, 1994). Although urban areas currently cover only 3% of the Earth's land surface, their speedy expansion has affected the environment at both local and global scales (Liu et al., 2002; Herold et al., 2003) and to some extent enhanced climate change (Grimm et al., 2000). Change of land use due to human activities is at this time proceeding more quickly in developing than in developed countries, and it has been projected that by 2020, most of the world's mega cities will be found in the developing countries (UN-Habitat, 2008/2009). In order to lessen the detrimental effects associated with urbanisation on the environment and keep the optimal ecosystem functioning, formulation of appropriate laws and regulations is extremely important taking into consideration rational economic, social and environmental concerns (Long et al., 2007).

Rules and regulations on urbanisation and planning can be seen as regulatory procedures for controlling land use development in line with a plan (Clarke, 1994). However, in many cases particularly in developing countries, laws and regulations are relatively not present in planning and housing literatures especially from environmental points of view, except perhaps in relatively specialised studies on housing standards (Karn, 1993). Control development should be considered in the planning to check the undesirable side effects of land development growth, for instance pollution, congestion, social crime, environmental disaster, and loss of social solidarity. In this regard, Keivani (2009) pointed out poor institutional inabilities are posing threat to implement regulations and manage natural resources of the developing country cities. However, efficient regulations could be found only where costs would imply better benefits (Malpezzi and Mayo, 1997). For example, with a view of getting better benefits, India introduced its Land Ceiling Act in 1976, which has significantly contributed to curb the land price and land use speculations (Acharya, 1987). Moreover, considering the importance of rules and regulations, the role of laws in advancing sustainable development had been highlighted by the Rio Declaration on Environment and Development (McAuslan, 1994). However, Keivani and Werna (2001) illustrated that the severe underdevelopment of institutional capacities and human and material resources coupled with complex social,

political, cultural and economic interactions between various agents and structures of provision create major obstacles to the efficiency of private land markets in developing countries.

Dhaka is the capital of Bangladesh with present population of 13.4 million and an annual urban growth rate of 4.4% (UN-Habitat, 2008/2009) compared with the annual average 1.43% for the whole country (BBS, 2005). It is expected to become the fourth largest city in the world by 2025 with population of 22 million. Megacity Dhaka is also characterised by limited land supply for its huge population considering geographical and physical constraints, and thus, has been experiencing huge investment in land since early 1980s with poor legal support. However to date, the environmental and socio-economic sustainability of Dhaka, has received relatively little attention in the city's development planning arenas, notwithstanding the disruption of urban management as a result of spatial encroachment and environmental degradation (Begum, 2007). Moreover, urban management has been further disordered in Greater Dhaka due to the diminishing restricted areas for flood zones, wetlands and retention ponds brought about by the weaknesses of its laws (Alam and Ahmad, 2010). This has resulted in widespread social and environmental problems across the city, such as recurrent flooding, uncontrolled growth of slum areas, unsustainable exploitation of environmental resources, and mismanagement of limited land resources, which had largely stemmed from the absence of appropriate laws (Hasan and Mulamoottil, 1994). Such situation has allowed powerful land developers to take advantage of and benefit from the inadequate regulations. As a result, deviations from the DMDP[1] policy led to enormous irregularities by developers that trapped more than two hundred thousand buyers and blocked about 700 billion BDT (Bangladeshi currency – Taka) investments in the sector (BLDA, 2009) along with increasing prices of land plots and apartment along with speculations among buyers as well as developers. Therefore, this paper attempts to determine and assess the existing law enforcement problems, regulatory constraints and externalities that crippled the sector.

2 Study area

Dhaka is one of the oldest cities in South Asia, and its existence at present as the largest city of Bangladesh has been consistent over a period of nearly 400 years. Located centrally in the country, it is surrounded by ring of rivers where it has been enjoying most of the physical, economic and social advantages, and thus, has been receiving primary impulses for its steady growth. Topographically, the area is flat with surface elevation that ranges from 1 to 14 meters with most urban areas located at elevations ranging from 6 to 8 m (FAP 8A, 1991). It is surrounded by four major rivers, namely: the Buriganga, Turag, Tongi and Balu that flow to the south, west, north and east, respectively. These rivers are primarily fed by local rainfall and also receive runoff from the considerably larger Ganges, Brahmaputra and Meghna rivers.

Geomorphologically, the city is located at the downstream of Ganga-Brahmaputra river basin (Ahmed, 1993 cited in Roy and Islam, 2007). A dominant feature of Dhaka and its surrounding areas is the mostly low-lying areas and low proportion of highland that is free from inundations during annual floods. More particularly, towards its west and south lie the flood plain of Buriganga river, while to the east is the flood plain of Balu River. These three characteristics make the edge of the city prone to flooding of up

to 2 to 4 m for about four months in a year. Thus, the aerial expansion of the city has been dominated largely by the physical configuration of the landscape, particularly the river system and the height of land in relation to the flood level (Asaduzzaman and Rob, 1997). The surrounding wetlands/lowlands, rivers and areas with potential threats to flooding should have been considered as significant barriers to the physical expansion of the city away from the central area. However, real estate developers from both public and private sectors are expanding their land and housing development project[2] activities in all directions to the areas surrounding the city through lowland filling without considering flood vulnerability and thus, to certain extent are violating the existing laws.

Dominant growth trend of housing projects in the environmentally critical areas of Dhaka and violation of rules and regulations is due to the increasing economic activities and overwhelming growing population demands. Acquisition of land for housing especially in areas close to city centre is nearly impossible due to limited land area, making residential expansion into the peripheral areas inevitable. After 1980s, the pace of land conversion into land and housing development projects has increased manifolds until the establishment of the PHPLD Rules 2004 and Detailed Area Planning 2010. Although, before the PHPLD Rules 2004 a number of laws relevant to land development had already existed, however, such laws were unable to protect the unscrupulous development of the environmentally critical area of Greater Dhaka.

For this study, focus is made on the DMDP/RAJUK[3] planning area which covers 1,528 km^2, of which Dhaka City Corporation (DCC) covers 290 km^2, Dhaka Metropolitan Police area (DMA) covers 390 km^2, and other five municipalities of the DMDP area such as Narayangonj, Kadam Rasul, Gajipur, Tongi and Savar. Although Dhaka generally means the central city, i.e., the jurisdiction of DCC and some adjoining built-up areas, for this present paper, the study area covers the planning area of RAJUK.

3 Methods of the study

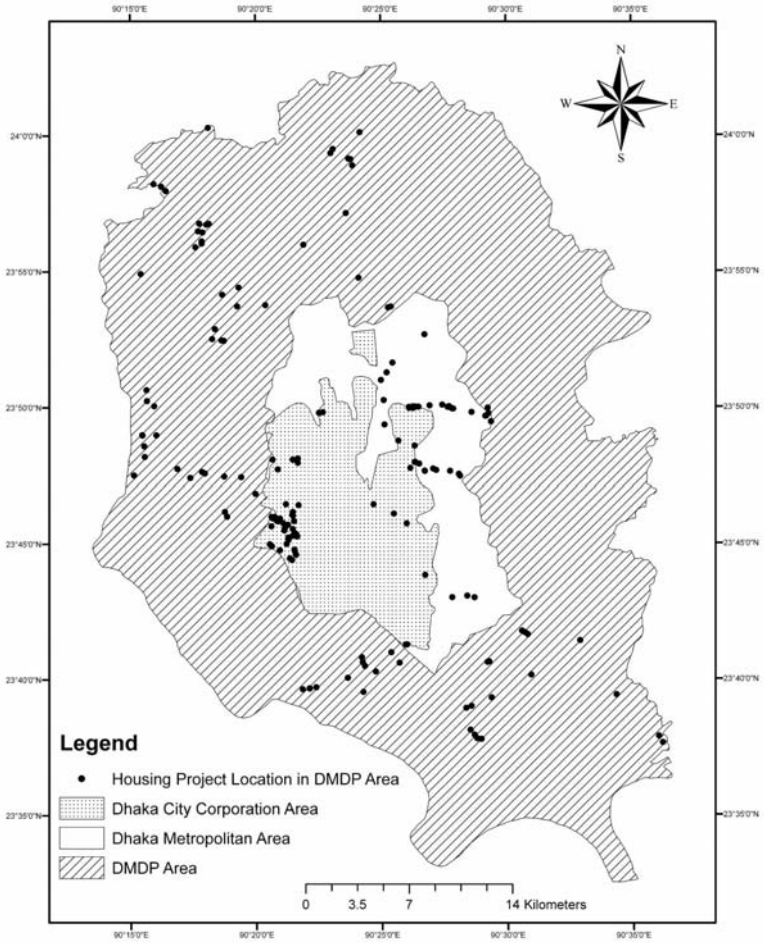
This research study is part of a doctoral research conducted at AIT by the lead author. The article is based on data and information collected for that research study from January to April 2008. This study is primarily focused on exploring the factors that led to the rapidly increasing land and housing development projects and their effects on the restricted areas of Greater Dhaka. Furthermore, one of the objectives of the research study is to look into the recent trends and patterns of housing development projects in the DMDP area against the backdrop of existing environmental laws.

Moreover, the present study also analysed the existing problems in plot selling by reviewing the recently formulated laws and the corresponding enforcement problems. Thus, primary and secondary data were collected from different sources such as: survey, information from relevant agencies, available literatures, official reports, reviews on existing laws, plans, RAJUK land use maps, and available newspaper clippings on topics related to the housing market crisis.

In order to identify the project locations relevant to the research study and the level of land conversion in the DMDP restricted areas, a list of projects and the addresses of their locations was compiled from various sources like RAJUK, Bangladesh Land Development Association (BLDA), Real Estate Housing Association of Bangladesh (REHAB), REHAB fairs and exhibitions, and advertisements. For the analysis of the GPS data with GIS tools in accordance with the objective of the research study, three

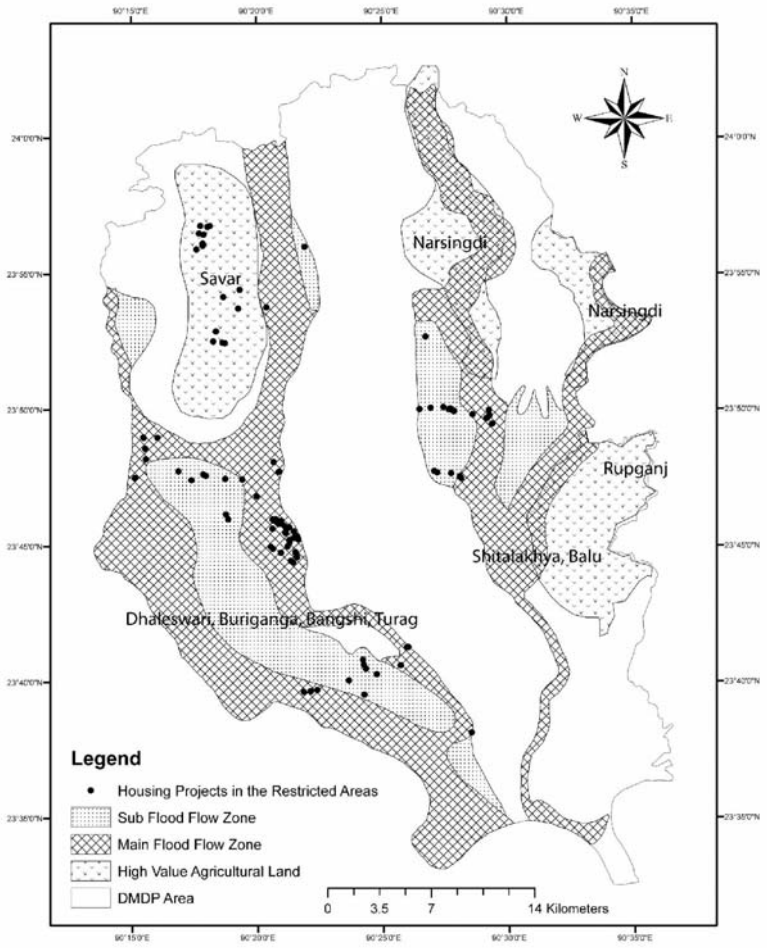
different types of maps were collected from RAJUK, namely: Dhaka Structure Plan (1995–2015) map, flood flow zone (FFZ) map, and high value agricultural land map. After collecting the list, a GPS survey was conducted from January to April 2008 on 181 housing projects to find out their exact locations in the prepared map of Greater Dhaka as shown in Figure 1. A hand-held GPS instrument was used to get the GPS point data for the survey. In addition, on-site field visits were also carefully conducted to physically observe the conditions of the overall housing development projects in the DMDP area. After collecting the GPS points of the housing projects' locations in the DMDP area, geo-referencing was carried out in order to prepare the GIS map. The prepared map which is shown in Figure 2 indicated that there are a number of projects located in the FFZ and in high value agricultural land.

Figure 1 Location of land and housing development projects in the DMDP area



Source: Field survey (January to April 2008)

Figure 2 Location of land and housing development projects in the restricted areas



Source: Field survey (January to April 2008)

Information regarding land area, location and approval status was very limited as most of the information could be obtained only from RAJUK. Since only 56 projects are registered with RAJUK and have submitted their project area information, therefore, various techniques were used to get additional information regarding the land area acquired by each housing project. While collecting the GPS point, land area data was also collected from local people. Aside from data on land area that were also collected from the developers' offices, site offices of the projects and prospectus during REHAB fairs and exhibitions. Moreover, data on each project land area were also cross-checked with the local people during the field visit and GPS survey. After completing the geo-referencing, we counted the number of projects located in flood zones and in high value agricultural lands, and calculated the area occupied by the projects.

The analysis of the research study is a mix of qualitative and quantitative methods making use of the data gathered from both primary and secondary sources. The GPS data were analysed using the GIS software. The qualitative analysis was logically done by descriptive method while the quantitative data were analysed using the computer software Microsoft excel and the statistical package for social sciences (SPSS) software for descriptive statistics. Finally, the overall situation was examined with respect to the newly formulated laws and the data have been integrated and presented as tables and figures as elaborately presented in this paper.

4 Rapid growth of land and housing development projects

The rapid land development for housing projects in Dhaka's peripheral areas is governed by a combination of geographical, environmental and socio-economic factors. The present population of Dhaka is 13.4 million and the considerable growth of the housing development projects had occurred in response to large-scale rural–urban migration and population influx which had been estimated to be about 0.3–0.4 million people per year (World Bank, 2007), of which about 60% of the population have migrated from rural areas (Islam, 1991).

The economic growth of Dhaka is another factor that contributed to the rapid conversion of its peripheral and lowland areas. For example, Dhaka's gross domestic product (GDP) was approximately 11,312 million BDT[4] in 1976, 129,665 million BDT in 1992 and 162,490 million BDT in 1995. Currently, the GDP of Dhaka is 354,240 million BDT and the city's share of the national economy is 19% (BBS, 2005). Moreover, Dhaka supports more than 40% of country's industry (Dewan and Yamaguchi, 2009), thus, the presence of different multinational companies and the Dhaka export processing zones (EPZ) at Savar as well as in the Gazipur industrial belt of Greater Dhaka altogether created pressure into the DMDP fringe lands resulting in their conversion into planned residential land and housing development projects.

Land and housing development projects in Dhaka have been intensified by private developers immensely after the construction of the 32 km flood embankment along the Buriganga and Turag rivers in 1992 (Chowdhury et al., 1998) and three bridges across the Buriganga river until 2009. According to the RAJUK Chairman, an ongoing study by RAJUK has identified about 200 land and housing development projects in DMDP area of which 26 projects are approved while 176 housing projects are unauthorised. He also pointed out that by the time that their study would be completed, the number of unauthorised housing projects would be much more (*The Daily Prothom Alo*, 2010). Thus, a large number of housing development projects towards the northwest and south directions of the outskirts of Dhaka (Figure 1) have markedly influenced the transformation of lowlands to landfills. On the other hand, the proposed construction of 100-meter wide road and eastern bypass projects also significantly encouraged the positioning of land and housing development projects in the eastern fringe floodplains. Due to population growth and increasing economic activities, the annual demand for housing in Bangladesh is between 300,000 and 500,000 units (REHAB, 2008). Dhaka needs at least 4 million new housing units over the next 20 years, where only about 50,000 new housing units could be supplied by the formal public sector (RAJUK, 2008).

The massive demand for housing in Dhaka has encouraged fast development of a nascent real estate sector. Importantly, many developers do not have enough experience

in land market. The absence of specific rules and the weaknesses of controlling agencies led to the emergence of more than 200 land developers which have generated more than 300 land and housing development projects in the RAJUK area (BLDA, 2009). Furthermore, BLDA (2009) estimated that approximately more than 700 billion BDT had already been invested in the real estate sector where about one-third of such investment came from foreign remittances (World Bank, 1981, cited in Chowdhury, 1992) while another 20% to 25% representing black money of GNP have also been invested in this sector (Chowdhury, 1992). In view of the limited housing supply from the public sector, which had gradually turned as a limited supplier for elite and higher class of the society rather not as a facilitator (National Housing Policy, 1999), the private developers had seen the opportunity to lead the role of supplying and targeting the huge demand for housing in urban Dhaka.

The high demand for housing in any available urban land in Dhaka has given rise to the soaring prices of land during the last few decades and resulted in the diminishing patches of empty lands within city limits. The unusual price increases had immensely facilitated the proliferation of land and housing development projects, which had also contributed to land speculations among buyers and developers. Islam (2008) showed that developers could easily make 6.7 times profit out of their investments especially in the current land area of about 104,402.43 ha which is in the highlands with elevation of 6 m and far above the requirements of land for housing until 2015. However, the prohibitive prices of land in Dhaka restrict the majority of population to have access to land markets. In such context, it can be concluded that the current trend of land development is more oriented towards speculative motives rather to satisfy the housing needs. It has been noted that the present increasing rate of land price in Dhaka is astonishingly much higher than in the contemporary world cities, where the city's rate of increase of land price was approximately 200% from 1990 to 2007 (Seraj, 2007). Based on the present study, the average rate of increase of the city's land from 2007 to 2009 was 84% in the high income area, which could be one of the major contributory factors for the boom of developers' projects that led to certain project irregularities largely emanating from land speculations in the low income fringe wetlands/lowlands.

Similarly, Hoek-Smit (1999) showed in her study that high land price of 2 to 3 million BDT per katha[5] could be paid to the high income areas and 1 million BDT per acre (60 katha) for the low income fringe areas. Therefore, the considerable low price of land in the peripheral areas had encouraged the developers to buy land from fringe areas and maximise high profits through land speculations. A plot of 3 katha in the lowest income area for example, would still command a price of BDT 3 million which is ten times the annual income of high income households (Hoek-Smit, 1999).

In such a situation, people of different income groups usually pay the value of their plots in instalment over 15–20 years. However, even after such period, most of them could hardly receive their plots because of some developers' irregularities, such as violations of DMDP policies by developing projects in restricted areas and non-approval of some projects due to certain newly promulgated differing laws, such as the Natural Water Body, Open Space, Park/Play Ground Preservation Rule 2000; Private Housing Project Land Development Rules 2004 (PHPLD Rules 2004); and Real Estate Development and Management Act 2010 (REDM Act 2010).

5 Present problem

The urban housing land delivery system of Dhaka is varied, consisting mainly of two groups, namely: the formal and informal sectors. In the formal sector, private real estate developers sell ready-made apartments and sub-divided plots with infrastructure facilities in their land and housing development projects. Developers are supposed to hand over the sold plots within certain stipulated time, but more often than not, the developers barely comply with the stipulated time as well as provide the required facilities. This study noted that 82.27% of the plot buyers could not receive their plots within the time set from the developers due to incomplete land filling, levelling and plotting as well as inadequate infrastructures and insufficient provisions for services, besides delay in land titling. Fraudulence in developers' activities is widespread with enormous anomalies both in housing development projects and in plot selling. The general plot buyers are the worst-hit victims of the developers' dreadful activities, due to lack of clear guidelines and regulating laws. The irregularities responsible for the crisis in this sector can be divided into two categories:

1 developers' irregularities with buyers

2 deviations from the DMDP stated policies.

Some brief features of the developers' irregularities with buyers and non-compliance of the policies are indicated in Table 1.

In view of the abovementioned developers' irregularities and deviations from the environmental critical area protection policies, vast amount of filled land have turned into landlocked areas due to government's interventions, non-approval of projects, and litigation against the developers of the different projects.

Greater Dhaka is surrounded by ring of eight rivers, namely: Buriganga, Shitalakhaya, Turag, Balu, Bangshi, Dhaleswari, Tongi, and Meghna. Two-thirds of the DMDP areas are characterised as flood zone which could remain under water during monsoon (June–October) from the overflow of such rivers. Generally, lowlands/wetlands of the surrounding rivers serve as storage of the storm and flood waters. In order to protect Dhaka from flooding, DMDP demarcated the FFZ into two categories based on the river flow, namely:

1 Dhaleswari, Buriganga, Bangshi, Turag river main FFZ and sub-FFZ

2 Sitalakhaya, Balu river main FFZ and sub-FFZ.

Any kind of development is strictly prohibited in the DMDP flood zones to minimise vulnerability to future floods (DMDP, 1995–2015). However, according to the GPS survey conducted for the first author's doctoral research from January to April 2008, a total of 101 land and housing development projects have converted 11,020.64 ha of land from such restricted areas (Table 2, Figure 2), of which 10,128.33 ha are from the main FFZ and sub-FFZ while 892.31 ha of high value agricultural land had been transformed into housing projects in Greater Dhaka, contravening the DMDP policies.

Table 1 Brief features of developers' irregularities and policy deviation

*Developers' irregularities with buyers**	*Developers' violations of the DMDP policies*
• Delay in plot registration and handing over of plots	• Contravention of FFZs and flood retention ponds of Dhaka Structure Plan 1995–2015, and housing development projects located in ecologically sensitive areas.
• Unnoticed change of plot location	
• If plot buyers change his/her mind not to buy, he/she does not get the money back	• Violation of PHPLD Rule' 2004, where developers do not keep provisions within housing projects for infrastructures like drainage, road and open space, play ground, waste and sewage treatment plant.
• Abrupt increase of plot value	
• No appropriate land filling	
• One-sided deed favours the developer	
• Unnoticed suspension of development work	• Non-compliance with the Water Body Preservation Act 2000.
• Not concern of buyers' objections	
• Incomplete land development and non-transfer of plots even after full payment	• Violation of Environmental Conservation Act 1995.
• Buyers cannot see the approved lay out plan, land documents and project approval	• Illegal encroachment of drainage channels.
• Plots are handed-over without infrastructures and basic services	• Deviations from approved plan and selling as plots, pieces of land intended for community facilities such as religious, educational space and play ground

Note: *Ministry of Housing and Public Works (MOHPW, 2008), summarised from numerous public complaints

Source: Field survey (2008)

Table 2 Land conversion by housing projects in the DMDP restricted areas

Location of project according to DMDP	*Number of projects and amount of land converted*	*Share of total (100%) conversion*
Dhaleswari, Buriganga, Bangshi Turag river main FFZ	51 (3,628.74)	32.93
Dhaleswari, Buriganga, Bangshi Turag river sub-FFZ	14 (823.48)	7.47
Shitalakhya, Balu river main FFZ	09 (2,844.94)	25.81
Shitalakhya, Balu river sub-FFZ	12 (2,831.17)	25.69
High value agricultural land in Savar	15 (892.31)	8.1
Total	*101*	*11,020.64 (100)*

Source: Field survey (2008)

Such situation is also a complete violation of the existing Water Body Preservation Act 2000, Environmental Conservation Act 1995, DMDP Main Flood Flow Zone and Sub-Flood Flow Zone and Retention Pond Protection Policy and High Value Agricultural Land Policy. This is the reason why according to RAJUK, a total of 176 housing projects did not get approval and plots could be not handed to the buyers since 2004. The present field survey found that approximately 11,020.64 ha of land has been turned into landlocked areas and had become unproductive as a result of illegal soil and sand filling by unauthorised housing development projects. The BBS (2005) data also showed that in

Greater Dhaka, agricultural land has gradually decreased to 16,599.19 ha in 2000–2005 (Table 3) due to various urbanisation pressures mostly coming from private real estate led illegal land and housing development projects.

Table 3 Land utilisation statistics of Greater Dhaka

Year	*Amount of land not available for cultivation in acres (ha)*	*Amount of land decreased from previous year (ha)*
2000–2001	287,044.53	-
2001–2002	288,259.11	1,214.58
2002–2003	290,688.26	2,429.15
2003–2004	302,834.01	12,145.75
2004–2005	303,643.72	809.71
Total	-	*16,599.19*

Source: BBS (2005, pp.301–305)

However, one of the major causes for the rapid decrease of agricultural lands is conversion for housing purposes by different groups; developers, cooperatives or individuals. Since significant level of irregularities and deviations have already taken place, it will be very difficult to overcome the failing conditions in the absence of specific laws and weak enforcement. The developers have already reached to the point of no return after massive land filling of the lowlands for their housing projects. The available laws and possible loopholes are shown in Table 4.

Gradually, attempts have also been made to apply the plans and laws in the country during the different regimes. After the promulgation of PHPLD Rules 2004, real estate sector had experienced multi-faceted problems as none of their projects received approval since the promulgation of PHPLD Rules 2004 and due to the incomplete DAP. In view of the decreasing number of unauthorised land filling which had turned many lands into landlocked areas, increasing vulnerability to future floods and increasing irregularities, the government has suspended issuance of applications to develop housing projects until the DAP[6] is completed. However, considering the availability of cheap land in fringe areas, developers have continued to carry out developing projects through land filling, violating the existing laws that contributed to the delay in the handing over of plots to more than 200,000 buyers with uncertainties about receiving their plots as no project approval had been issued since 2004. Thus, local money lending banks that disbursed approximately 70% as loans to developers' funds, middle class buyers and foreign remittance earners' lands are mostly affected as they could lose the money that they invested in this sector before this law came into effect. According to RAJUK (2008), as of April 2008 only 28 housing projects have been approved for construction while more than 300 housing projects have actually been undergoing development until the present. The fact is most unauthorised projects even without submitting application for approval to the RAJUK, had sold out their plots through attractive advertisements. For example, one project had sold out 1,100 plots within three days from 24–27 November 2007 through lucrative advertisement, however until now the buyers still have not yet received their plots (*The Daily Prothom Alo*, 2008). Most buyers are usually unaware of the reasons about the delay in handing over of their plots and the provisions in the DMDP laws on various land uses. As a result, buyers are trapped in such developers' irregularities.

Table 4 Weaknesses of existing laws

Laws	*Year of promulgation*	*Weaknesses*
Town Improvement Act (TIA Act 1953)	1953	The enforcement that ensures prescribed land use as per the TIA Act has become weak because such land is privately owned
Bengal Canal Act	1957	Although deals with canals, but no detailed guidelines
Municipal Ordinance	1977	Five municipalities under RAJUK area developed master plan and empowered to prepare land use plan for their respective municipalities, which according to TIA Act 1953, overlaps with the Master Plan of RAJUK
The Dhaka City Corporation (DCC) Ordinance	1983	DCC is also empowered to accordingly prepare its own master plan, which also overlaps with the areas that come under the Master Plan of RAJUK as per TIA Act 1953
Dhaka Metropolitan Development Plan (1995–2015)	1995	DMDP comprises 1 Structure Plan (1995–2015) 2 Urban Area Plan (1995–2007) 3 Detailed Area Plan (DAP), but does not provide detailed guidelines on FFZs, agricultural land and water bodies as the DAP is still incomplete. Therefore, people of the DMDP area are living under uncertainty about their future land use.
Environment Conservation Act	1995	Since it emphasises mainly on industrial and transport pollution control, it has no guidelines and provisions for punishment of violations in environmentally sensitive areas
The Natural Water Body, Open Space, Park/Play Ground Preservation Rule	2000	No gazette notification of natural water bodies on the mouza map, while debate on water body definition prominently continues, while the private developers implement their projects in low-lying areas. However, the Bangladesh Environment Conservation Act 1995 amended in 2010, clearly defined such water bodies. Punishment for violation imposes a fine of US $700 (approximately) which is very insignificant for developers to stop any violations.
Private Housing Project Land Development Rule' 2004	2004	Although the rule focused on social, physical and environmental standards for housing projects, no provision of punishment is imposed for unauthorised development in restricted areas.
Public-Private Partnership Flat Housing Policy 2008 on public vacant land	2008	If this is implemented, most of the public vacant lands will soon be developed by the private developers, thus importantly, the poor will have no access to these projects.
Real Estate Development and Management Act 2010	2010	The act focused on developers' irregularities in handing sold plots, registration, transfer and land development, and not concerned with the ecologically critical areas and no provision for punishing the violators. No price control mechanism in the law

Source: Review of different laws and Haque (2004)

At present, there is no gazette regarding flood zones, water bodies and prime agricultural land, therefore developers have been carrying out unauthorised land conversion taking advantage of the cheap lowland areas at fringes in the absence of the Detail Area Plan. RAJUK has in fact filed a total 41 cases, of which 30 cases are for violations of 'The Natural Water Body, Open Space, Park/Play Ground Preservation Rule 2000', eight cases for violations of both 'The Natural Water Body, Open Space, Park/Play Ground Preservation Rule 2000' and PHPLD Rule 2004, and three cases for violations of PHPLD Rules 2004 (RAJUK, 2008). RAJUK also warned a total of 56 project developers to comply with the DMDP policy (*The Daily Prothom Alo*, 2010). Interestingly, all the cases had been filed after the projects had already filled their development land areas and sold out most of their sub-divided plots even without getting approval.

Furthermore, many projects have been found without infrastructures and basic services. Virtually, due to the litigation processes and non-approval of their projects, many developers stopped their development activities at the middle of the work with full/partial land filling since land filling is the only way to make the land appropriate for housing development. During the field survey, it was found that 41% of the housing projects had been filled up to about three meters while 20.5% of the projects have been filled up by more than seven meters to increase the projects height and make the area higher from the normal flood level. Nevertheless, more than 85% of the projects remained incomplete and without the basic infrastructures and services but the partial land filling.

Thus, almost all incomplete housing development projects had been turned into landlocked areas for nearly 15–20 years without any productivity. As large parcels of land came under litigation and any development had been frozen due to the imposition of laws, such situation had resulted in the sharp increase of land prices, which at present could be 1 to 2 million BDT/katha at fringe areas and 6 to 30 million BDT/katha in the city proper, an obvious outcome of the said under supply. Moreover, while the court has not yet settled the cases, the buyers are consequentially trapped and the environmental and economic sustainability of Dhaka is endangered. The situation has also compelled some buyers to depend only on few developers under absolute monopoly. In this regard, Gafur (2008) pointed out that 95% of the business in the real estate housing sector is controlled by ten companies which could be quite alarming for the real estate market and the country's economy as a whole.

Due to the weak laws and enforcement, this sector has affected the development of the national economy. According to BLDA, every BDT invested in housing adds 78 paisa (100 paisa equal to 1 BDT) to the overall GDP of Bangladesh, which alone has forward and backward linkages with as many as 269 industries considering that housing development projects rank third among the country's 14 major industries that significantly contribute to the country's economy (*The Daily Star*, 2008). Recently, the government has announced to disburse 7 billion BDT as housing loan through the banks. However, due to the non-approval of many hosing development projects, market performance remains under severe constraint, and without appropriate legal support numerous buyers from this sector will not be able to get any benefit from this 7 billion BDT loan grant.

6 Regulatory constraints

In dealing with the violations and irregularities, four important legal supports had been established, namely:

1 Environmental Conservation Act, 1995

2 The Natural Water Body, Open Space, Park/Play Ground Preservation Rule, 2000

3 PHPLD Rules 2004

4 REDM Act 2010, where the government had incorporated fines and punishment for non-compliance of such laws.

For example, the punishment for violation of the 'Environmental Conservation Act 1995' is imprisonment for a term not exceeding five years or fine not exceeding BDT one hundred thousand or both and importantly, this law does not include violation of the DMDP restricted areas. For violation of 'The Natural Water Body, Open Space, Park/Play Ground Preservation Rule 2000', punishment is only five years of imprisonment or 50,000 BDT fine, although in reality these fines and punishment bear little significance on dishonest developers. On the contrary, the law is still raising the debate on the definition of water body. According to the law, 'any natural water reservoir is called water body'. However, most developers argued that there are three types of water bodies: where water is stored during

1 flooding

2 monsoon

3 dry season, emphasising that where water is stored even during dry season should be defined as water body.

The debate is still on and the government is using its existing definition for its argument against the developers.

On the other hand, the PHPLD Rules 2004 had been formulated to control and guide the land development housing projects through its main features which stipulate that: developer should be the owner of 100% land before the project's approval; 30% of land should be preserved within the project for social, physical and environmental infrastructures; developer should provide sewerage, wastewater and waste treatment plant inside the project area; population density should be 350 for 0.4046 ha and no advertisement for plot selling prior to the project's approval. While discussing with the developers during the site survey, it was learnt that such provisions are very difficult for many of them to comply with especially the construction of sewerage and waste treatment plant as this would require big capital investment. In general, the developers opined that many of the conditions are difficult to follow, as these tend to favour only the large developers.

At present, the 'REDM Act 2010' ushers new hope for buyers to get away from the developers' irregularities as it provides guidelines on:

1 plot/apartment safety and timely handover

2 transparent financial transactions

3 clear legal transactions.

Generally, plot/apartment buyers have to pay the plots on instalment for 15–20 years, after which payment is supposed to be complete. However, in most cases buyers are not able to receive their plots even after complete payment and in the end lost everything after being trapped by dishonest developers. As developers are the ones preparing the deed or agreement, they have the tendency to make the clauses favouring them, thus buyers cannot file cases against the developers in court. Having observed such irregularities, some civil society organisations have demanded for the immediate promulgation of REDM Act 2010 to stop grave harassment of the property buyers. The Law's main clause is that 'punishment for defrauding a client by developer is non-bailable'. Other main clauses are included as follows:

1 if any person who starts and continues his/her real estate business without getting his/her registration approved under development control authority of RAJUK is subject to two years imprisonment and fine of one million BDT

2 advertisement of a project without prior approval would be fined five hundred thousand BDT and five years imprisonment

3 publishing advertisement and starting project activities without approval from the development control authority would be subjected to two years imprisonment and one million BDT fine

4 fine of 500,000 BDT or one year imprisonment would be imposed in case of failure to provide utility services

5 500,000 BDT fine or one year imprisonment for:
   a unnoticed plot or apartment allotment cancellation
   b mortgage of plot or apartment

6 violating contract, if developer sells the plot to other buyers could mean three years imprisonment and 1 million BDT fine

7 violation of approved plan and cheating with affected land owner also means three years imprisonment and two million BDT fine.

However, developers are strongly opposing the clauses of the REDM Act 2010 as a whole, and propose to amend the clause 'punishment for defrauding a client by developer is non-bailable'. The developers claim that they have been suffering due to the PHPLD Rules 2004 and incomplete DAP as approval of housing projects after 2004 has been suspended and will face high competition among developers themselves due to the implementation of REDM Act 2010.

Meanwhile, based on the PHPLD Rules 2004, RAJUK could earn 3000 BDT/0.4046 ha as project approval fees and also other fees for each project like 25% layout amendment fees and 50% for approval of increasing additional areas of the project. RAJUK has not availed of such fees for more than seven years since the promulgation of PHDLD Rules 2004. Similarly, the Department of Environment (DOE), which also set clearance as well as annual renewal fees, has also not been getting advantage from such fees for the same period during the suspension of the approval of housing development projects (Table 5).

Table 5 DOE clearance fee

Amount of investment (in 000BDT)	*Clearance fees (in BDT)*	*Yearly renewal fees (in BDT)*
100 to 500	1,500	375
500 to 1,000	3,000	750
1,000 to 5,000	5,000	1,250
5,000 to 10,000	10,000	2,500
10,000 to 200,000	25,000	6,250
200,000 to 500,000	50,000	12,500
500,000 >	100,000	25,000

Source: DOE (2008)

Furthermore, under PHPLD Rules 2004, it is mandatory to obtain clearance from ten different agencies in order to get approval of any housing project. However, the data had shown that only few housing projects have applied and received clearances out of approximately 300 projects (Table 6). Practically, the process of acquiring clearance from ten different agencies following different procedures is quite cumbersome. While discussing this concern with developers, it was learnt that most projects received conditional clearance, subject to fulfilment of the conditions in the future also pave the way for developer irregularities.

Table 6 Housing projects received clearances from different agencies

Organisations	*Housing projects applied for clearance*	*Number of housing projects received clearance*
Dhaka Water Supply and Sewerage Authority	25	11
TITAS GAS 20 6 Dhaka City Corporation	-	6
Dhaka Traffic Coordination Board	-	2
DESA/REB*		No record
Geological Directorate	30	11
Telephone and Telegraph Board	18	9
Water Development Board		Information could not collect
DOE	27	2

Note: *Dhaka Electric Supply Authority/Rural Electrification Board

Source: Field survey (2008)

On the other hand, the DMDP area of 1,528 km^2 comprises the Dhaka City Corporation (DCC) and five other municipalities. The DCC and such municipalities have their own Master Plans and accordingly they have their own land use plan, which could be conflicting with the RAJUK Master Plan. Land and housing development projects mostly emerge at the peripheral areas where there appears to be lack of coordination among local level administration hindering the efficient enforcement of laws. Although public, private and individual-household sectors are importantly responsible for land development activities in Dhaka, interestingly, the Private Housing Projects Land Development Rules 2004 was formulated to apply only to private developers and as the title of the Law

clearly indicates, it reflects the government's dual policy towards this sector that create some weaknesses for effective enforcement of the law.

As a result of above complexities, the whole housing land market is under uncertainty, where the buyers already paid the properties but developers could not deliver the plots due to the non-approval of their development projects, and where large amount of land had turned into landlocked areas. Moreover, RAJUK, DOE and other agencies are also missing the benefits from the large amount of revenues from this sector.

Nevertheless, in order to bring order and stability in the land and housing development projects updated information of this sector would be necessary. Until 2008 only 56 out of more than 300 land projects had been registered with RAJUK implying that many developers and their projects are not even registered (RAJUK, 2008). To bring things in the proper order, it is essential to have all development project registered either with RAJUK and REHAB or BLDA. Dhaka also does not have effective market information system about the developers' companies and their projects as well as their track records. In India, an independent assessment agency which is the ICRA-NAREDCO (National Association of Development Council)[7] is providing vital information to buyers to help them in their decisions to purchase properties as well as financing some agencies to extend credits to prospective buyers and developers. Besides, the ICRA-NAREDCO's grading system leads to healthy competition as it acts as a performance check, by equipping buyers with information about the pricing and quality of the projects. Establishing such an agency in Bangladesh would ensure quality of the projects in the sector and curb irregularities given the enormous unauthorised land and housing development projects in the RAJUK area.

7 Concluding remarks

Since demand for housing in Dhaka is still on the rise and the government has not been responding thus far in the supply side, the promulgation of incongruous laws could only harm the general buyers. Large investments are already made in this sector and nearly two hundred thousand buyers had been trapped by the dishonest developers. Recently, plot and flat development and registration had almost stopped in the real estate sector, therefore, some amendments may have to be done with the DMDP, The Natural Water Body, Open Space, Park/Play Ground Preservation Rule, 2000, PHPLD Rules 2004 and The REDM Act 2010, taking into consideration appropriate suggestions from planners, environmentalists, geographers, sociologists and researchers. At present, the real estate sector in Dhaka is heavily suffering from unfavourable image problem. To address such image crisis and to stop the irregularities and deviations from the DMDP policies, formulation of laws with exemplary punishment in terms of fines and imprisonment like the REDM Act 2010 should be carried out and immediately and effectively enforced as deemed necessary. The recently completed DAP is severely facing difficulties from mighty developers' and should be urgently implemented and gazette notification of flood zones, high value agricultural land, lakes, and ponds should be done in order that buyers can get out from the developers' trap. Moreover, it has also been noted that at present RAJUK has only four planners for its 1,528 km^2 area of responsibility and catering to 13.4 million people, where experts opined that a minimum of 360 planners should have been ideal along with decentralisation of development control agency is required for overseeing the development control of its vast area. Many of the irregularities related to

land speculations, could also be controlled through the formulation of an Urban Land Ceiling Act. Finally, strict enforcement of the amended laws and constant monitoring of the situation by powerful, competent and capable authority are urgently needed to challenge the predicaments. RAJUK's involvement in planning, development and development control activities turned to a centre of corruption (Islam, 2001). A Separate high powered regulatory authority where the chief executive should hold the position of minister status only for development control could be a better option for effective regulation control and efficient coordination with relevant agencies for urban management in Dhaka. With strong political commitment it can also curb the enormous irregularities and can keep the restricted areas free from encroachment.

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Notes

1 Dhaka Metropolitan Development Plan (DMDP) comprises three components, namely:
   - Dhaka Structure Plan (DSP 1995–2015)
   - Urban Area Plan (UAP 1995–2005)
   - Detailed Area Plan (DAP) which has not yet been completed since its inception in 2004).

2 Land and housing development projects mean land development by public and private sector where the public sector receives land by acquisition and the private developers purchase/grab and develop the land into subdivisions as plots and then obtain approval from RAJUK for plot selling. Thus, it is expected that planned residential development takes place with adequate social, physical and environmental infrastructures.

3 Rajdhani Unnayan Katripakkha (RAJUK or the Capital Development Authority) is a regional agency for planning, development and development control of the 1,528 km^2 DMDP area or Greater Dhaka.

4 I US $ = 69 Bangladeshi Taka (approximately).

5 Katha is a unit of land area in Bangladesh, where 1 katha = 0.0067 ha.

6 DAP = Detailed Area Plan.

7 ICRA is an independent Information and Credit Rating Agency established in 1991, which has been promoted by a number of leading public sector banks and financial institutions, such as IFCI, State Bank of India, Unit Trust of India, General Insurance Company of India, Export-Import Bank of India, etc. (Sengupta, 2006).