

# Management of Growth and Planned Development of Dhaka City: The Necessity of Proper Enforcement of Planning Standards

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## **Introduction**

Using the provisions of the Town Improvement Act 1953 (better known as the TI Act), *Rajdhani Unnayan Kartripakkha* (RAJUK) has been made the legitimate authority to prepare land use plans and oversee plan implementation, control development and manage the growth of Dhaka City. The major aim is to ensure planned development; promoting a healthy urban environment, preventing development of conflicting land use etc.—above all, ensuring the sustainable development of Dhaka City. At present RAJUK has a few legal tools to control the land use and growth of the city. They are: i) Dhaka Metropolitan Development Plan (DMDP) 1995, comprising a Structure Plan, an Urban Area Plan and Detailed Area Plans ii) Town Improvement Act 1952 iii) Building Construction Rules 1996 and, iv) the recently approved Building Construction Rules 2006. These tools were never used adequately to control and manage the development of the city; instead, the development deviated from the master plan in many cases. At the same time in the absence of strict enforcement and vigilant monitoring, many landowners have constructed buildings violating the plans approved by RAJUK. RAJUK is not sufficiently equipped with the capacity to foresee the consequences of development and issues building permits almost indiscriminately. Before issuing building permission RAJUK hardly considers the long term consequences of that construction. Corruption also has resulted in the issuance of inappropriate land use clearance and building permits. As a result, Dhaka has developed in chaotic fashion with consequent problems of unmanageable scale.

This paper provides an overview of the planning laws for development control as applicable for Dhaka City, and then focuses on the institutional capacity of RAJUK for managing urban growth and enforcing planning standards. One particular residential development project in the private sector, the Japan Garden City, is considered as a case study and policy guidelines to develop an effective mechanism of growth management is suggested.

## **Theoretical Framework**

Local governments (municipalities) or city development authorities have traditionally adopted land use policies to limit population growth of the city. They prepare plans that designate land uses and population distribution with desired density in different zones.

Such plans are based on assessments of how many people the city can accommodate and the quality of the environment to be provided for the people. The zoning ordinance translates the land use provisions of the master plan. In the case of Dhaka City, the DMDP provides the land use proposals and development mechanism for the city. Most of the towns/cities of the world have their zoning plans that limit the location options for most activities. The purpose of a growth-control policy is to control the undesirable side effects of growth, for instance, pollution, congestion, crime, the loss of a small-town atmosphere (O'Sullivan, 1996). But the question is what is the *optimum size of a city/town*?

With the increase of population agglomeration the size of city grows, market of products expands, economic activities increase but this process has a trade-off between the environmental quality and pollution. O'Sullivan (1996) thinks, large cities can exploit scale economics in production, retailing and public goods. On the cost side, the larger city has higher housing prices, longer commuting distancess, more pollution, congestion and crime.

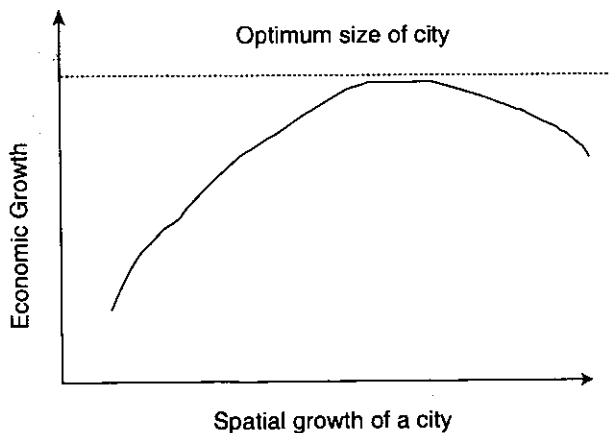


Fig. 1. Relation between Urban Growth and Economic Growth

### Growth Management

Growth management is generally defined as the regulation of the amount, timing, location and character of development. Since the late 1960's hundreds of cities, counties and towns in the United States have instituted growth management programs (Gallion and Eisner, 1986). Growth management can be a technique to control the growth of urban population and spatial growth and development, both horizontal and vertical, of urban communities. The growth management plan is the bridge between planning and desired development. Gallion and Eisner (1986) believe that the growth management plan is the best means designed to bring about logical implementation of the long-range proposals of the comprehensive plan. Zoning thereafter becomes the legal vehicle that permits development to proceed in those areas where growth management finds it appropriate and timely. Therefore, growth management is to be the vehicle for implementing plan

proposals by creating timing and directional guidelines based on the ability of the community to absorb growth. The following figure explains the technique to maintain the same gross density desired in the plan with different building height.

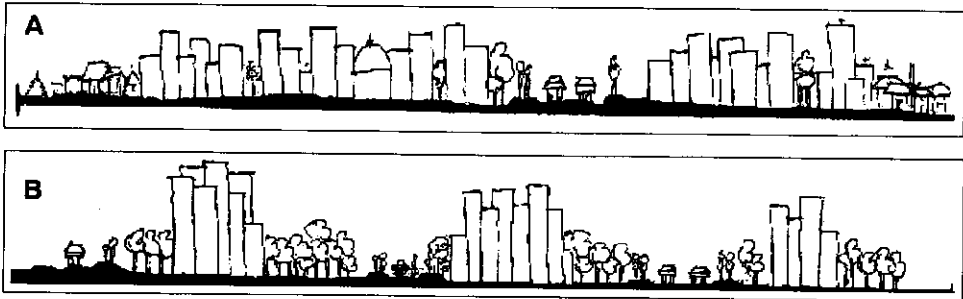


Fig. 2. A and B are thematic sketches that demonstrate a particular size of land developed through two different development control mechanisms. In both cases density is the same but building height is different. Second option preserved more natural environment and open spaces.

### Measures practiced for development control in world around

For controlling density and growth management Scandinavian planners had adopted 'new settlements like beads on a string along public transport routes—a light rail system in the case of Copenhagen, a new underground railway (tunnelbana) in Stockholm. The most celebrated case was Stockholm, where the famous 1952 General Plan of Sven Markelius and Göran Sidenbladh developed systematic pyramids of density around the stations, and also provided service and other jobs in district centres around these same stations, with the idea that as many as one third would find jobs in the places where they lived (Hall 1992; Hall 1997). Planners in UK worked for 'New Towns'; Ebenezer Howard proposed the model of 'Garden City', decentralization and deconcentration of employment opportunities and housing. Swedes did the same in their Stockholm satellite towns of the 1950s and 1960s.

O'Sullivan (1996) argued for two growth control policies—urban service boundaries and limits on the number of building permits issued.

- *Urban Service Boundary*, as a means to control population growth, is to limit the land of the city. If a city refuses to extend urban services (e.g., sewers, roads, schools, parks) beyond an urban service boundary, it limits growth to the area within the boundary. Who gains and who loses from the service boundary?
- *Building Permit* is an alternative option of controlling population growth of a city. Some cities of United States adopted this option to control the growth by limiting the building permits issued by the local government. By limiting the number of new dwellings built per year, a city can control its growth rate.

Each of the techniques shown in the Fig. 3 must be evaluated on the basis of legal, economic and social perspectives in the local context. The techniques must be carefully reviewed so that they would ensure sufficient legislative imperatives for implementation. American and European cities adopted various techniques to control growth according to their needs. Zoning ordinances may be formulated according to local need. Height control

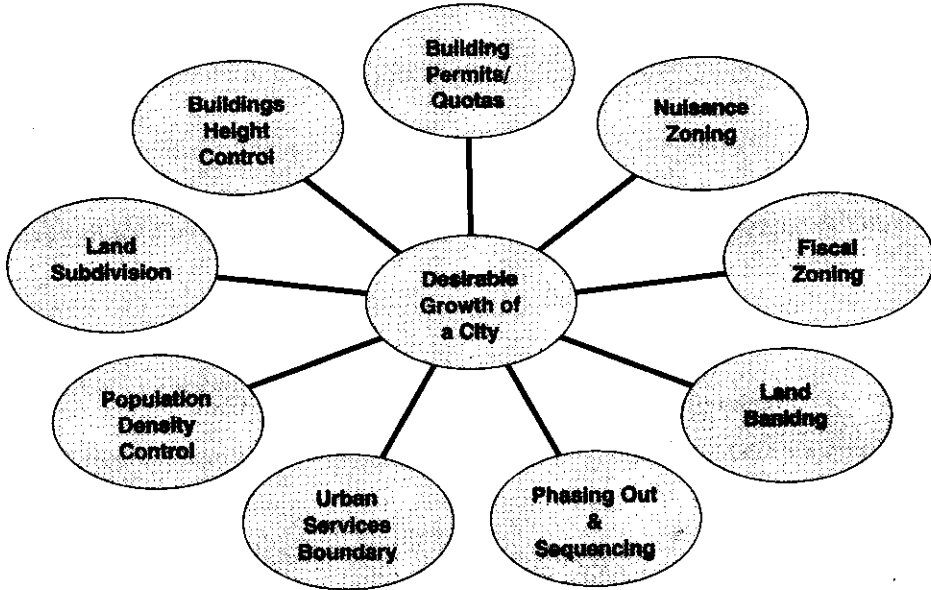


Fig. 3. Techniques Used for Growth Management of Cities of the World

is always a means of maintaining a certain density. Subdivision regulations help to control population agglomerations. Smaller plots would accommodate more people in an area than bigger plots.

### Growth Management Legislation in Bangladesh

Developing countries are struggling with insufficient and ineffective laws and regulations for development control. Perhaps they are struggling to meet the immediate needs and 'keeping body and soul together' rather than finding a solution for ensuring a better living environment. At present we have a few legal instruments that ought to be used for controlled development of the towns and cities of Bangladesh. Though these legal instruments are not enough, our city management authorities do not widely use even these few instruments. Success of laws depend on how much effectively they are practised. Statutory rules control land use according to planning standards. It is based on land use policies including local plans, such as control of residential density, road standard, maintenance of infrastructure and services. The acts and the master plans of the cities are the principal legal instruments, which force and exercise planning control and standards. The land use of metropolitan Dhaka should follow the provisions of the city Master Plan. Housing, commercial and industrial project buildings need land use clearance and building permits. These must be in conformity with the land use provisions of the Master Plan.

#### *Density Control Rules in DMDP plan*

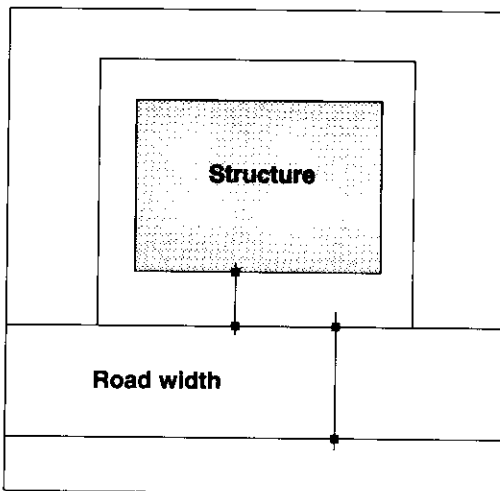
Density control is generally one of the preferred development management tools as densities define the overall size or bulk of construction while also expressing the demand

that an area places on its infrastructure. DMDP (1995) volume II, Urban Area Plan, sets forth the following guidelines for development management,<sup>2</sup>

- Current RAJUK practice of allowing six storey buildings in *planned developed areas* should continue: if high densities are to be permitted anywhere, it should be in areas where existing infrastructure provision is highest. The practice is also appropriate in the context of anticipated density increases in existing area.
- In spontaneous growth areas, development up to six stories should only be permitted where it would not over-burden infrastructure networks. Where water and sanitation can be adequately provided on site by tube well and septic tank (with DWASA agreement) then development up to this maximum could be allowed, other considerations notwithstanding.

#### *Building Construction Rules 1996*

These rules superseded the previous Building Construction (BC) rules of 1984. These rules seek to control development plot-by-plot and case-by-case. It controls development by imposing conditions on set backs, site coverage, construction of garages, access to plot, provision of lift, land use of that particular plot and height of building. Restricting the height of a building in BC Rules 1996 helps to control the density of an area and above all manage the growth of the city in some way (RAJUK, 1996). Provision of building height stated in section 12 of BC Rules 1996 is illustrated below :



“Maximum Height of a Building =  
 $2 \times \{ \text{width of the adjacent road} + \text{front open space (distance between front property line and building)} \}$ ”

Fig. 4. Section 12 of BC Rules 1996.

#### *Dhaka Metropolitan Building Construction Rules, 2006*

The Dhaka Metropolitan Building Construction Rules 2006 superseded the earlier set of rules issued in 1996 for the Dhaka Metropolitan Area and provide more authority to RAJUK, clear-cut responsibility to monitor the development of the city, spread out the

responsibilities to various actors, spell out the responsibilities of building designers, structural engineers, site supervisors and their penalties etc. One of the most significant improvements is the introduction of Floor Area Ratio (FAR). To manage the growth of the city it provides rules of building coverage area, allowable floor space and relation among building height – road width and plot size. Effectiveness of the new rules would depend on how successfully implementation of these rules can be effected by RAJUK in a transparent way and keeping themselves away from corruption.

#### *Land Development Rules for Private Housing 2004*

This is a legal instrument for controlling land development in private sector housing. It provides procedures and guidelines for land development protecting the environment. It also spells out the percentages of land that must be kept for community facilities, amount of land to be sold out, school sites, road hierarchy and importantly planning standards, for example, allocation of land per 1000 population.

#### *Bangladesh National Building Code 1993*

Though the Bangladesh National Building Code (BNBC) 1993 has not been notified by gazette of the Government of Bangladesh, it is a comprehensive document that can be turned into legally binding codes of development in urban areas of Bangladesh. It covers planning administration and enforcement, general building controls and regulations, requirements for different uses, fire protection, building materials, design and services. Importantly, it also considers building use (occupancy classes), density and building height.

### **Building Permission**

Processing of building permission involves two stages:

#### *Land Use/ Planning Clearance*

Generally, planned residential areas of RAJUK like Gulshan, Banani, Uttara, Dhanmondi and other private housing areas that already have the approval of RAJUK as residential areas are not subject to 'land use clearance' from RAJUK. For other areas obtaining land use clearance is mandatory before submitting plans for construction. Generally land use clearances are of two types:

- i) Direct land use permission can be given if the criteria of land use in certain area matches the criteria and standards set by the master plan for that area,
- ii) Land use permission given through the TI Act 75(I)/(II) if proposed land use is not compatible with master plan directives.

Land use clearance is the step to check if the proposed use of land conform to the prepared plan of RAJUK. Ideally this clearance assures planners that land will be used as per the plan of the city. RAJUK control all the development activities using the provisions of the Town Improvement Act, Building Construction Rules and Land Use Regulations within the area under its jurisdiction. Any use of land or any type of construction needs

approval or clearance from RAJUK and Authorized Sections are responsible for issuing those land use clearances.

Field survey and interviews with developers suggest that negligence in duty, poor inspection and reporting and political influence have made the Authorized Section a dreaded part of the organization. People claim that files/plans are not approved properly and sites are not inspected as per given parameters. The unnecessary harassment or foot dragging or misplacing specific files or putting up objections on files are most common practice in the Authorized Section. The overall performance of this section is not up to the mark.

### *Building Permit*

Building permit issuance is the step where the applicant apply fulfilling the requirements like detail plans, sections, elevation etc. of the proposed building as per the Building Construction Rules. After a series of checks and clarifications the application is referred to the Building Construction Committee for approval or rejection. In some cases the process of plan or building construction approval or clearance is delayed due to some undefined circumstances and lead people to take alternative solutions. Misuse of power and rules by the Authority as claimed by the clients create unnecessary harassment and delay. The provisions of the Rules clearly define that the plans should be forwarded for clearance or approval within 45 days and any objection made in the plan must be notified within 30 days after submission for approval. In fact the process sometimes takes more time than specified in the Rules and in many cases it takes years to get the approval. RAJUK's Authorized Section is carrying out the development control function and is responsible for issuing land use clearance or approval for building plans under the provision of TI Act.

### **Development Control Problems**

Development control is largely hampered by various reasons. We can summarize the problems of development control in the following ways:

- Existing planning rules are not exercised properly.
- In RAJUK very few planners are working for a city of more than 12 million people with so many constraints. RAJUK can set up decentralized zonal offices dividing the city in different zones. For demarcation of zones they may think of using the ward boundaries in the DCC area and union boundaries outside the DCC but within the RAJUK areas. If it is considered that one planner should work for one lakh population, Dhaka City needs at least 120 planners for its planning and growth management.
- lack of regular supervision of concerned officials
- insufficient number of building inspectors
- absence of database management system and new technology in regular practice

### **A Case Study of Japan Garden City**

Japan Garden City is a private high rise apartment housing complex on a chunk of land measuring approximately 9.78 acres at 24/A Tajmahal Road (Ring Road), Block 'C',

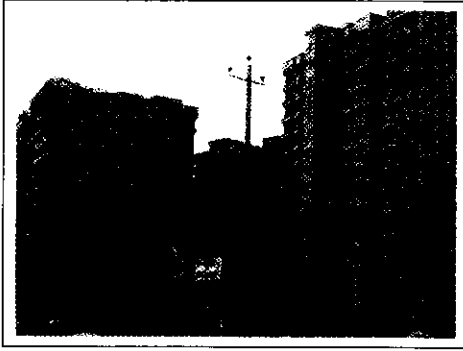


Fig. 5. Japan Garden City (Front Side)

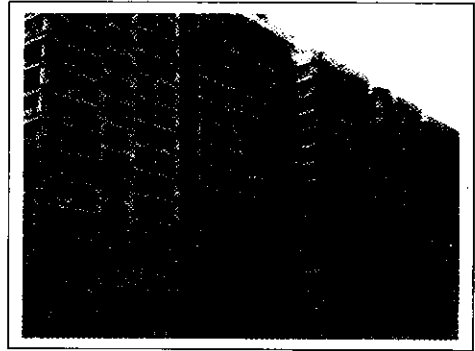


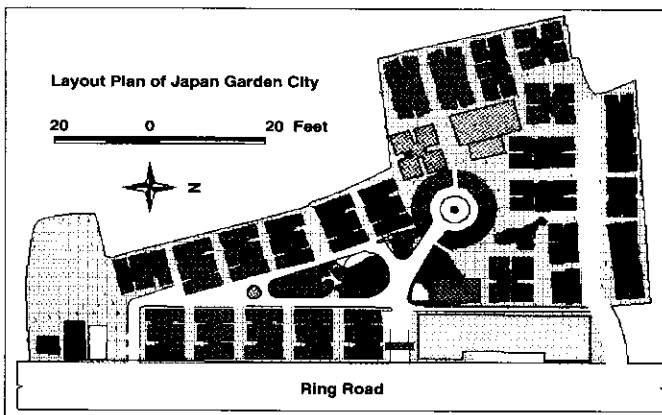
Fig. 6. Japan Garden City (Side view)

Mohammadpur, Dhaka. As the company claims in its brochure, only 43 percent of the area is used for residential and commercial purpose and the rest 57 percent for beautifying the environment with a host of recreational facilities. In reality it is a congested, extremely high rise residential complex of 27 16-storied buildings in monumental scale.

1,803 flats for residential use and an ancillary service building with hospital, commercial and other services are part of the complex. The company estimates that this complex will house about 2,490 cars. The flats will house more than 9,000 people and ancillary services will attract another 1,000 people, leading to a population of 10,000 in an area of 9.78 acres. The gross density will be around 1,020 persons per acre which is more than three times the UNCHS standard<sup>3</sup>.

### Violation of Planning Standards

The master plan (Fig. 7) shows a playground, lake, garden and fountain at centre of the project area. Field survey found that, this place is nothing but the circulation area of traffic movement. Except one play field in front of the school there is no other open spaces for 10,000 people. The question is: is only one school play ground of 1.25 acres enough for 10,000 people and at least 1,803 children of the community (if it is assumed that each



Source : Brochure of Japan Garden City Limited 2006

Fig. 7. Layout Plan of Japan Garden City



family would have one child). 27 high rise buildings of 16 stories each constructed very close to the other at distances ranging from 8 to 10 ft. (Figs. 4, 5 and. 6) violate setback and height restriction rules. As a result the huge number of high-rise buildings will convert the area into a high-rise slum.

Table 1 shows a comparison of planning standards according to the Land Development Rules for Private Housing 2004 and provisions in the Japan Garden City. Column 2 of Table 1 presents the area that should be allocated in a private residential area per thousand population. The maximum gross density is 350 persons per acre. Column 3, presents the land allocated for different purposes in the Japan Garden City, where the number of flats is 1,803 and the gross density is around 1,000 persons per acre. Column 4 shows the land area in Japan Garden City per thousand population while Column 5 shows the actual provision as a percentage of required provision for each facility. What is clear is that the amount of land allocated for different types of facilities is much below the required minimum except for commercial use.

**Table 1.** Comparison of Land Use Allocation in Japan Garden City with Land Use Standards According to Private Housing Land Development Rules 2004.

Items (Land Use)	RAJUK Standards*	Provisions in Japan Garden City**		
	Facilities (Acres per 1000 persons)	Area in Acre	Facilities (Acres per 1000 Persons)	Actual Provision as a percentage of required Provision***
Col. 1	Col. 2	Col. 3	Col. 4	Col. 5
Educational (with playground)	0.34	0.05	0.005	1.47
Health Care	0.08	0.00	0.00	0.00
Community Organizations	0.04	0.09	0.009	22.50
Recreation (playground and Park)	0.20	1.25	0.125	62.50
Commercial	0.04	0.70	0.07	175.00
Road	0.34	3.19	0.310	91.17
Net Residential area	1.00	4.50	0.45	45.00
<b>Person per Acre</b>	<b>350</b>			<b>1020</b>

\* Land Development Rules for Private Housing 2004

\*\* Field Survey 2006

\*\*\* (Col.4/Col.2)x100

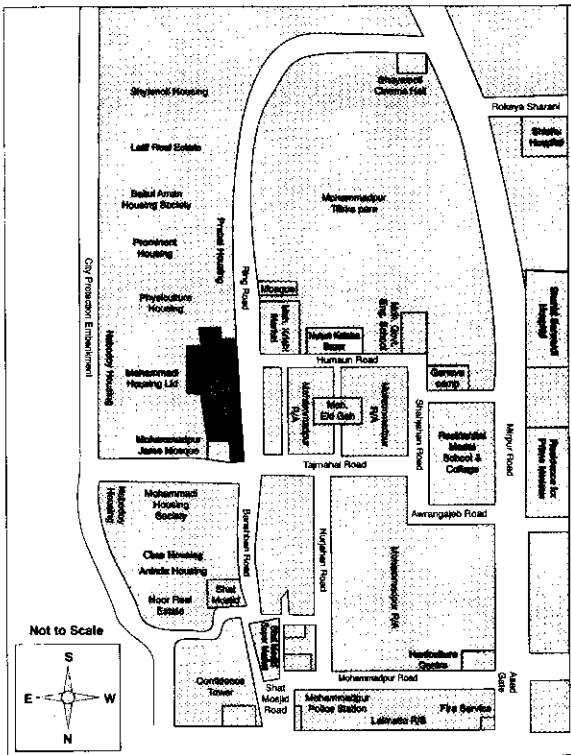
At full development stage, the area will have a population density that is three times the density prescribed in Land Development Rules 2004. Population of this area will also become dependent on other areas for meeting their socio-economic needs (i.e., education, health, recreation, community organization etc.). Although the plan for Japan Garden City

was approved before the Land Development Rules 2004 came into force, the implications of expected density and building height for surrounding areas should have been given due consideration.

*Pressure on surrounding areas* and on infrastructure will be tremendous. There are densely populated areas around this project area. Mohammadpur residential area contains more than four times the population it was actually designed for. Besides, a dozen private residential areas have developed around Japan Garden City project. Chan Housing, Nobadoy Housing, Ananda Housing, Maohammadia Housing Society, Pisciculture Housing, Prominent Housing, Baitul Aman Housing, Latif Real Estate, Shyamoli Housing etc. are overpopulated with six storied buildings without any open space. Gross density is in the highest order. Japan Garden City will be a big addition to the existing stock and population.

*Utility services* will be under tremendous pressure. Along with residential use, the mass intervention of commercial activities like air conditioned shopping centres with amenities such as lifts, escalators etc., doctor's chambers and diagnostic clinics, health and ladies club, community centre, food court, daily bazaar, retail shops etc. will produce extra pressure upon the utility services in the study area.

*Environmental and aesthetic* aspects were heavily ignored for making profit. Buildings are close enough to obstruct sunlight to nine or ten floors of adjacent buildings. Repetitive



Source: Field Survey 2006

Fig. 8. Location Map of Japan Garden City

design of high-rise building blocks will fail to create well defined spaces resulting in an overall monotonous composition which will create no interest in the city fabric. Dampness and shadow will have negative impact on psychology of the residents.

### Strategic Level Proposals

1. Strategic growth option: Three (among eight) options proposed as the *long term strategy* in the report of 'Strategic Growth Options – Dhaka 2016' (DMDP 1993. p-51) need to be implemented. The three priority options are: *Limiting Dhaka's growth, Developing new satellite city, Sub-regional dispersal*. A national urban strategy would direct or foster urban development in centres other than Dhaka.
2. The Task Force on Urbanization (1991) also emphasized growth and development of medium-sized cities, turning new district towns and other small towns into production centres attractive to rural out-migrants and limiting the growth of large metropolitan cities of Bangladesh. It will reduce the pressure of Dhaka city.
3. Well planned public capital investment in the adjacent urban centres may encourage further population agglomeration in those centres and a *counter urbanization*<sup>5</sup> may be started to ease the problems of big cities like Dhaka.

### Local Level Proposals

1. RAJUK should recruit enough planning professionals in its regular set-up of institutional capacity building. To provide planning service to the urban dwellers, more than a hundred planners should work in different zones of the city. For demarcation of zones RAJUK may think of using the ward boundaries in the DCC area and union boundaries outside the DCC but within the RAJUK areas so that they can look after the plan and manage the growth of the city.
2. Planning standards and planning principles should be enforced and practised as prescribed in the planning laws.
3. RAJUK's building permission process should be more simple and transparent. Adequate database, cross checking of data, frequent field supervision, provision of accountability, provision of strong penalty in case of default etc. should be regularized and made compulsory.

### Conclusion

The population of Dhaka City has already crossed the 10 million mark and it is expected that this trend will continue due to the concentration of investment in the city and absence of any policy for strengthening small and medium-sized towns of the country. It is really disappointing that RAJUK has failed to steer the growth of the city in a planned way through proper implementation of planning rules and regulations. Moreover, it took RAJUK several decades to formulate Private Residential Land Development Rules (2004) and Dhaka Metropolitan Area Building Construction Rules (2006). Dhaka is already a megacity and it is quite unlikely that these rules will have any impact on the built-up portions of the city. There is, however, time for RAJUK to check haphazard growth in the fringe areas and control in-fill development in central areas through proper implementation of the above rules. There is no alternative but to maintain planning

standards and manage the growth as per the plan to keep the city livable. The success of any law depends on its proper implementation.

### Notes

- 1 A city size below which growth produces more benefits than cost but above which the reverse occurs. Urban analysts argued that as urbanization continues after its optimum size, the benefits associated with the concentration of population into large cities are outweighed by the costs imposed by growth.
- 2 DMDP (1995) volume II: Urban Area Plan, Part 2, p-6
- 3 United Nations Centre for Housing and Settlement suggested 300 population per acre for a livable area.
- 4 Considering five persons in a family, 1,803 flats will have 9,015 persons, gross density will be 922. It will exceed 1,000 if we consider commercial activities, ancillary services etc.
- 5 A process of population deconcentration. Counter urbanization was first widely appreciated in the USA in the early 1970's, where population statistics showed metropolitan areas, especially large metropolitan areas, were losing population by net migration to non-metropolitan areas.

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**Note:** Two maps used in this article were prepared by Nelopal Odri and Monwaar Hossain.