

# Impacts of Unplanned Urbanization on the Socio–Economic Conditions and Environment of Pabna Municipality, Bangladesh

Md. Yahia Bapari<sup>1</sup> Md. Enamul Haque<sup>2</sup> Dr. Mir Khaled Ikbal Chowdhury<sup>3</sup> Md. Jahidul Islam<sup>4</sup>

1.Lecturer, Pabna University of Science & Technology

2.Assistant professor, Pabna University of Science & Technology

3.Associate professor, Dept. of Economics, Pabna University of Science & Technology

4.Lecturer, Dept. of Social work, Pabna University of Science & Technology

## Abstract

Urbanization plays a significant role to progress and develop the human civilization because it radically changes the basic foundation of the ingredients of social, economic, political and cultural structures of a society and the country as well. Sustainable development can be acquired with the implementation of successful urban planning but a city or town even a country can be gradually unsuitable for living if the urbanization process is unplanned and haphazard. This study was based on the process of unplanned urbanization in Pabna municipality of Bangladesh and also dealt its effects on the current socio – economic conditions. The study showed that Pabna municipality is gradually developed owing to the unplanned urbanization yet many solemn and highly risky problems are perceiving and detecting for both human and environment such as overpopulation, haphazard housing service, health burdens, urban poverty, crime, child labor, erratic education system, mismanagement of waste, deforestation, air, water, sound and soil pollutions, carbon emission, environmental hazards, traffic jam, mis– and unemployment, improper drainage system, inadequate entertainment facilities, drug abuse, vulnerable ecosystem, medley lifestyle and culture etc. Finally, the study made some highly effective suggestions and policy recommendations for escaping from these conditions by which Pabna municipality would be familiar as a model urban region in Bangladesh.

## 1.0 INTRODUCTION

The role and contribution of urbanization is undeniable to build up the present human civilization from the ancient period of time. Urbanization changes the social and economic aspects and also effects on population migration towards urban areas which are seemed to be real development centers of numerous fascinated opportunities for highly qualified civic life because the urban areas are considered to be true coordinator of both economic and demographic growth (Dociu & Dunarintu, 2012). A powerful and irreversible process is the urbanization which takes so many time to build up the todays' modern civilized world. Only 3% area of the world had been urbanized for 10,000 years from the starting point of human settlement to 1,800 AD and it was 14% after a century (Annez & Buckley, 2010). The United Nations announced in 2007 that people have passed a long transition period of urbanization where 50% of the world population has been living at the first time in cities from rural areas and it is predicted that only 66% of the world population will be urbanized in 2050 (UN, 2011).

Bangladesh is one of the highly populated countries in the world where urban population has been rising over time due to the migration from rural sector to industrial or service sector in searching for employment opportunities and leading qualified living status (Zaman et al., 2010). A historical transition has been taking place in 2000 – 2010 for the group of low income countries like Bangladesh because at first in the history of these countries the urban population growth rate is increasing faster than rural sector (Khan, 2008). By no criterion, Bangladesh can be called an 'urban nation', with only 28.4 per cent of the population lived in cities in Bangladesh in 2011 while 52.1 percent was the world's urbanization (Islam et al., 2013).

Developed and standard urbanization is the center point of human expectations in the twenty-first century because it is treated by many economists as a center and bearer of economic development and poverty reduction. For this reason, researchers, experts and urban and development planners are providing various effective suggestions for making environment friendly, hygienic and balanced urbanization. Therefore, making the city life toward development, cosiness, environment friendly and viable is now the demand of time.

## 1.1 JUSTIFICATION

Pabna is one of the oldest municipal cities in Bangladesh where population is increasing and unplanned urbanization creates enormous pressure on this low lying piece of land which is highly vulnerable to monsoon flood (Mamun, 2014). Like any other cities in Bangladesh the heaven and risky touches of urbanization are observing in the Pabna municipality for which almost all sectors videlicet education, health and various social and economic indices and cultural and political thinking are gradually becoming develop day by day. But, Civic decay, environmental hazards and natural camities are spectacularly observing almost all areas of the pabna city. It is obvious that the future of Pabna municipality largely depends upon the urbanization process

which has begun in such a way that will convert it as like the Dhaka city in the near future and become unfit for habitation. Therefore, it is time to continue research with the urbanization process in the Pabna municipality and to take necessary steps in this regard now.

## **1.2 OBJECTIVES**

The objectives of this study are to focus the socio – economic consequences of the current urbanization process in Pabna municipality of Bangladesh, to identify the factors that are more responsible for unplanned urbanization over the study area and to make some highly effective policy recommendations which can improve the current haphazard situation of the study area.

## **1.3 LITERATURE REVIEW**

Uttara et. al., (2012) showed the impacts of urbanization on the various components of environment in the perspective of India and its metropolitan cities in which it is explained that the uncontrolled urbanization hampers the ecosystem, atmosphere and climate, lithosphere and land resources, hydrosphere and water resources and biosphere of the metropolitan cities in India.

Miao & Wu (2015) showed a positive association between socioeconomic status and health is well documented and how this relationship varies with urbanization level is less clear in the context of China.

Rouf & Jahan (2013) attempted to understand the complex process of urbanization as spatial and temporal patterns in Bangladesh.

## **2.0 METHOD AND MATERIALS**

Secondary data are used to analyze the study that have been collected from different published materials namely Bangladesh Bureau of Statistics (BBS), the publication of World Bank, statistics of Pabna city building, relevant writings of some scholars. After collecting these data, it has been processed manually and then analyzed for making a perfect study to the readers and researchers.

## **3.0 URBANIZATION IN PABNA, PARTICULARLY IN THE PABNA MUNICIPALITY**

Pabna is one of the oldest districts of Bangladesh which lies between 23<sup>0</sup>48' and 24<sup>0</sup>21' north latitudes and between 89<sup>0</sup>00' and 89<sup>0</sup>44' east longitudes. Like any other regions viz. Rajshahi, Khulna, Chittagong and Dhaka, Pabna has an experience of a mentionable touch of urbanization given in Table (01):

This is also shown in following figure (1).

Pabna municipality was established as Paurashava in 1876 by the British governor and renamed as Pabna Paurashava in 1972. It has an area of 29.02 sq. kilometers with having 15 wards, 46 mahallas and 29,928 holding members (PMR, 2016). Almost all of the citizens of the municipality enjoy various facilities viz. modern transport, trade and commerce, pure water, qualified sanitation, education and entertainment, medical services and health centers, technical and technological and industrial opportunities, Gas and electricity supply, modern networking systems, banking and financial utilities, residential service etc. All of these phenomena are the syndromes of urbanization that is not being implemented on the right track. As a result, haphazard and erratic development is observing which is scheduled as an unplanned urbanization.

## **4.0 IMPACTS OF UNPLANNED URBANIZATION ON THE SOCIO – ECONOMIC CONDITIONS IN THE PABNA MUNICIPALITY**

Due to the unplanned urbanization, human lifestyle and environment are severely neglected in implementing the unequal distribution of civic facilities and step – motherly policies of infrastructure oriented development planning and resulting that the current socio – economic and environmental conditions of Pabna municipality are being affected seriously.

### **4.1 Chaotic housing and services**

One of the most important basic human needs is housing like food and cloth which makes available of the shelter, safety and perceptions of belonging to a person (Ahsan & Islam, 1999) and inadequacy of housing is treated as the vital visible indicator of poverty in the urban settlements. Around one quarter of urban housing units are temporary structures and more than one – third broke the building rules and regulations in the developing countries like Bangladesh (Sharma, 2014). The housing demand of Pabna municipality is increasing over time due to the increasing of population and migration of people from rural to urban area for which housing service is the visible phenomenon of people's living in a hygienic place. Many developer companies have been arisen to build house and hostel for urban upcoming settlements. Therefore, the housing situation becomes haphazard, erratic and unsatisfactory in the pabna city.

#### **4.2 Health encumbrances**

Numerous new diseases such as communicable diseases namely syphilis, leprosy, dengue haemorrhagic fever, gonococcal infection, malaria, measles, typhoid, whooping cough and typhus and non – communicable diseases are cancer, road accident, high blood pressure, cardiovascular, respiratory and injury have been arisen in Pabna municipality due to the unplanned urbanization. Non – communicable diseases are becoming a concern in the Pabna city and these are associated with the rising dietary consumption of fats, smoking and other behavior that accompany the affluent lifestyle (Armstrong, 1993). Gastric and cervix have been reduced but coronary heart disease, lungs, breast, colon, rectum, pancreas, obstruction to lungs and injury caused by accident have been increased due to the rapid modernization without maintaining proper planning.

#### **4.3 Urban poor, poverty and inequalities**

Poverty is a state of individuals where they have inability of choices and preferences and to meet their basic needs. It is one of the major problems of urban areas. There is developed human settlements in detached way in the Pabna municipality where the extremity of poverty is the common view and the people are struggling hard in order to be survived. Many people often live in the streets or parks, beg for food and do any sorts of works to support themselves. Due to the unplanned urbanization some people are gathering huge property while in the same time there increases in the vulnerable groups in the Pabna city.

#### **4.4 Migration and Population growth**

At the primary stage of urbanization, population increases due to the rural to urban migration then the urbanization improves the medical and health care services that decreases the maternity and infant mortality rates which contribute to increase population. Despite this, if the urbanization process takes place in proper way then people become busy with their respective works and for this population rate starts decreasing in greater extent that is learned from the developed countries in the world. But if this urbanization develops without proper planning, it must increase in population and at a time it becomes impossible to control this trend that is seen in case of Pabna municipality where the current population is about 199,006 including male and female are 103,483 and 95,523 respectively (PMR, 2016) which is increasing over time for mainly two basic reasons: 1. The process of migration and 2. Unplanned urbanization.

#### **4.5 Concentration of industries**

Although there is not enough industry in Pabna municipality but despite this there is some industries according to the survey in 2016, the total number of large, medium and small industries are 04, 45 and 291 respectively (PMR, 2016). The most important thing regarding this is that the industries have got developed here are centralizing the city which drastically polluted the environment of its surroundings basically by the fumes and garbage of the industries that is now seen as a major barrier in case of balanced development of the city.

#### **4.6 Vulnerable transport system**

Development of the transportation system is one of the major determinants of the urbanization process (Ahmed & Islam, 2014). Regarding this the existing transportation system of Pabna municipality are not developed enough to manage the situation. There are various types of vehicles in Pabna municipality like rickshaw, van, motorbike, autobike, taxi, CNG, truck, bus, microbus, minibus, private car, motor vehicles, three wheelers etc. with that here is central and BRTC bus terminal and several truck terminals also. The worse fact is that still today here is not developed rail facilities that would be possible under proper urbanization process.

#### **4.7 Traffic jam**

Traffic jam is one of the major problems almost all the cities of Bangladesh including Pabna municipality. There are various sizes of cars move in Pabna city that is increasing acute traffic jam and bringing human sufferings as the roads are not well spacious to manage the situation although the authority of Pabna municipality are trying hard and soul to reduce these sufferings for the city dwellers. To deal business occupying footpath, no special car parking system, more vehicles and do not maintaining traffic rules and regulations are mainly responsible for creating traffic jam. Air pollution, noise pollution, waste of time, emitting carbon and greenhouse gas are the vital effects of traffic jam that causes respiratory disease to the city inhabitants. The lack of proper legal and administrative framework, inadequate technical skills, and financial resources are also responsible for traffic congestion (HABITAT, 1996).

#### **4.8 Haphazard development in networking system**

This is the era of information and technology. So, the sound and speedy network system in all the modern planned cities and even in villages are now observing. Here in Pabna municipality this services are available that can be used by the modem and broadband system though all kinds of modem can't get its connection in this city.

Besides, there is a limitation of broadband connection as there are two companies regarding this namely (1) Pabna Cable Visin (PCV) and (2) Square Company who are running their monopolistic business in the city and they give priority on gaining profit rather thinking the welfare of the residents. Afterwards, the network system is not available to the dwellers of pabna city though it is the major condition of ensuring network facilities to the people of the planned city.

#### **4.9 Inappropriate infrastructure**

Infrastructure indicates of both social and economic infrastructures together that are not enough in pabna municipality. Many lucrative and attractive infrastructures have been constructing alongside the other cities of Bangladesh but these are being haphazardly and erratically. The development of infrastructures in this city don't follow the proper planning technique. For this reason, these are creating various problems in pabna municipality and bringing great sufferings in public life. Most of the roads of the cities are not well spacious and broken that hampers the city dwellers in large extend. Due to this existing situation it kills valuable times of the people, causes terrible road accident and even agglomeration by water on roads due to the rain. The financial institutions have got developed in the city but not enough efficiently. The social infrastructures are very weak and negligible than required which are always affecting our child and adolescent from flourishing their mental development.

#### **4.10 Mismanagement of waste**

The existing conditions for waste management and pollution free environment are not enough for building a planned urbanization in Pabna municipality. Here is no proper waste management system which ultimately pollutes the air and environment. In pabna city, due to various reasons the city is now afflicted with the organic and inorganic wastes, dirt and garbage that are shown in table (02):

There is no enough waste management systems in the municipality and for this the domestic wastes, wastes of mills and factories, various shops are reposed on the road sides. The drainage systems are also very poor and the waste are reposed on its sides while cleaning and even in many festivals especially during the Eid ul Azha the wastes are reposed here and there.

#### **4.11 Air pollution**

Various harmful gases, chemicals and smoke emit from households, mills, factories and vehicles which are polluting the air and causing many diseases like allergy and respiratory diseases etc which hamper the health condition.

#### **4.12 Water hazard**

In the pabna municipality, all the citizens don't get pure water because the central WASA supplies water which reaches to the residents by passing many drains and pipelines which are almost all the time filled with the dirty wastes and garbages. As a result, many water borne diseases has been seen in the study area.

#### **4.13 Noisy environment**

Another important problem of the unplanned urbanization is sound pollution. The main sources of sound pollution are aircrafts, industrial operations, highway, traffic, and construction activities. All sources are available in the pabna city and these are becoming more acute and dangerous and bringing various physical and mental problems of the inhabitants like high blood pressure, sleep disturbances, loss of hearing, stress, poorer work performance, headache, indigestion, ulcer and increases anxiety etc.

#### **4.14 Soil pollution**

Soil erosion is very important and growing weakness of unplanned urbanization which is seen in the Pabna municipality in the recent times due to deforestation and throwing wastes here and there in the road sides or open spaces. Soil pollution also damages the productivity of land in the municipal area.

#### **4.15 Climate and temperature**

In Pabna municipality, high hot weather travels over the summer season and very cold situation is seen during the winter season. The average annual temperature lies between 39°C to 9.6°C and average rainfall 1822 mm (BBS, 2011). But the temperature increases day by day. Finally it can said that the overall climate situation in Pabna city is still now tolerable for the residents.

#### **4.16 Carbon emission**

The most harmful phenomenon of the unplanned urbanization is the emission of carbon and carbon oriented substances from the different sources of the urban area. In the case of Pabna municipality, many transports namely, buses, mini buses, cars, motor vehicles, motor bike, truck, and industries are emitting carbon di oxide,

carbon monoxide, oxide of nitrogen, oxide of sulfur, hydrocarbons and their derivatives, lead and particulate matter that are contributing to various diseases like irritation and infection of eye, nose, throat and lungs. All these things are very risky for both human and environment.

#### **4.17 Deforestation**

In the pabna municipality, various mills and factories, shopping malls and residences are developed by cutting down the trees and jungles indiscriminately. For example, here has been developed “Monsurabad project” for residential area and new mills and factories of square group that are being ruined the habitants of many birds, creatures and animals.

#### **4.18 Fertility rates**

Women get employment opportunity in large extend in the city due to the urbanization. Now a days women are working outside the houses competing with the male counterparts and for this they are not taking more child as they remain busy with works outside the house. Here is more obvious that today they are now playing a prominent role while taking any decisions in case of family matters alongside the male counterparts.

Besides, the environment of the city are free from superstition and religious orthodoxy. The people of the city are fully awarded about controlling the birth. For this reason, the fertility rate regarding this are always moderate in the city.

#### **4.19 Child labor**

The financial condition of the people of the urban slums are very poor and they have no knowledge about the controlling of birth. For this reason, there is always large members of these families and the child of these families are involved in work before reaching their standard age. These child do their work in various teastalls, restaurants and machanix’s shops. In normal term, these are called child labor that only can be seen in a city due to the unplanned urbanization.

#### **4.20 City – centered and commercialization of Education**

There are 10 primary schools, 13 high schools, 7 Madrasas, and 14 colleges in the Pabna municipality. Moreover, a medical college, a university and a Cadet college are situated near the Pabna municipality but the literacy rate is 73.4% (PMR, 2016). But these are not well developed and scattered in different places. Besides, many educational institutions are built privately in the city area and they treated the education as business which is the anarchism of unplanned urbanization.

#### **4.21 Impact on occupation and income opportunities**

A great combination of various occupations is seen in the planned city where the income level of the people is enough to maintain their family and themselves. But, in the case of unplanned urbanization like Pabna municipality, this combination of occupations is relatively low which increases the income inequality over time. The medium and low income people are living in such an area where they face seriously the price rising problem of necessary goods.

#### **4.22 Family structures and Domestic relations**

The family structures and the internal, emotional and mental relationship of the people have been changing radically due to urbanization process which can change the whole society. In pabna municipality, due to the effect of urbanization the large extended families have been broken down and turned into a nuclear family and in the same time females are now working outside competing with the males counterparts and keeping significant role in taking any decisions of the family matters. On contrary that people are now greatly dependent on the available social networking fascilities which are significantly reduced the internal relationship within the relatives and even the closest neighbours. Urbanization negatively affects on the mental situation of child and the relationship between parents and child because parents are working outside the house and for this they can’t give enough time to their children. They are bringing up either in the day care center or contact with the workers of the houses that badly hampers their mental development and psychological adaptation, at a time, they become disappointment and feel loneliness and tieness that in many cases turn their lives vulnerable.

#### **4.23 Street hawking**

Due to the faster urbanisation in pabna city, there is creating more and more employment opportunities. For this, people are now started to come here in searching for work and involving in various activities like work in mills and factories, hotels, shopes and so on. Some others like to do pedlers business while in others doing helpmeet and sell cigarette, biri, various types of books etc. mostly by the side of the roads. on the other hand, pedlers go houses carrying vegetables and other necessary things that have turned the city life more philanthropic.

#### **4.24 Water logging problem**

Some parts of pabna city are very high while some others are very low. As for example, traffic bend, college bend, PCCS bend, Monsur ali college road etc. are regarded as higher regions of the city while the Mohisher Dipu, Eidgah para, Soitan para, Monsurabad, Mojahid club, Big bazar etc. are regarded as lower regions of the city. These lower regions always go under water during the rainy season and bring great sufferings of the people. The major causes of this is not being a lower region rather the existing drainage system is not developed enough to manage the situation. Besides, there is no management system to hold the extra water like retention pond during the rainy season. Another fundamental causes of this are insufficient canal and drains and Canal drains and ponds are going to occupiers.

#### **4.25 Improper drainage system**

The existing drainage system of this municipality is not well-developed. During the rainy season dirty water from the drain flows out on the road which bears various germs and diseases. Besides, service holders, school and college going students, rickshaw pullers, auto, and bus drivers face a great problem. At this time, the roads look like a canal and men and children catch fishes on the road. It happens because the drains are not so deep, wide and clean and resulting that lots of rubbish and messy things are amassed in the drain which fill the drain and create odor pollution.

#### **4.26 Mis- and unemployment**

There are so many professions in town where people work full time but bring comparatively less welfare for the society are truly called mis-employment. For example, we can say about alms. There are so many people are involved with this and maintain themselves but this never bring/ ensure welfare for the society. Again, there are so many works/ economic activities that can be called employment but the disguised unemployment are there. For example, the works basically the informal sector like the shoppes of fast food besides the roads, driving motorbike taxis, selling low – cost meals, collecting garbage and driving tuc – tucs (open taxis). For this reason, the unemployment and under employment are seen in pabna city.

#### **4.27 Insufficient medical facilities**

Medical service is the fundamental right of the people that should be more developed with the urbanization process. In pabna city, the medical facilities are getting better due to the urbanization but not enough to manage the situation. There are medical college and hospital, pabna sadar hospital, Simla hospital and small clinics in pabna city but there is lack of adequate facilities and skilled doctors. Besides, all sorts of treatment are not found here and hence, people rush to Rajshahi and Dhaka in order to get better medical facilities and treatments.

#### **4.28 Inadequate entertainment facilities**

Entertainment is the basic right of human being. Man can't live without entertainment and is the effective means of mental development. People gather to the entertaining places is the effective ideograph of developing socialization as they get enhance to learn lessons from the nature of people come to visit and establish brotherhood among them.

Here, in the pabna municipality, is not available sources of entertaining spots for people without a few numbers of parks and play grounds which are really insufficient than actual required. Besides, there occurs various occasional fairs and even more most of these spots have already gone under the grab of the influential and puissant people that tremendously decreased the entertaining facilities for the city dwellers. Due to these limitations of parks and play grounds children become greatly deprived of this facilities of outdoor games and started passing their leisure seeing TV, playing games in computers and using social networks that undoubtedly frustrating their mental development and this turn them into monotonous.

#### **4.29 Drug abuse and crime**

Due to unplanned urbanization the drug and crimes are increasing in the city and adversely affecting on the daily life, peoples' movement and even on the use of public transportation while moving from one place to another. The people do not go to live where these problems exist that's why it is seen in the city that there is developed sky touch residential facilities in a particular corner in the city while the slums develop in the other parts of the city. For this reason, the brotherhood and social ties within the people of the city are drastically lower than villages and there develop different income level, cost and security based areas in the city. There lies great difference between the migrated people from village to town and the city dwellers in case of health, income level, poverty, residence and standard of life that turn the migrated people into vulnerable and at time they involve in various crimes.

Here in pabna city, there is running the businesses of various drugs like Marijuana, Afim, Fensidil, Wine, Yaba and so on under secret and the consumers of these involve in various crimes like hijacking, looting,

stealing, dacoits, burglary, murder, arson, rioting, intentional acid throwing; kidnapping and rape. “High rates of urban population growth in the city have created serious problems viz. insufficient employment opportunities, pressure on social services, particularly education, health and housing and a rise in urban crimes” (Tapadar, 2012).

#### **4.30 Women empowerment and gender equality**

The empowerment of women are increased in pabna municipality and in the same time there is decreased in gender discrimination. Today, women are involved in various economic activities and they are doing their works in private and public offices, courts, industries, schools, colleges, universities, shopping malls even they are working as a social worker fully keep pace with the male. Indeed, pabna is now going ahead following the developed countries in the world.

#### **4.31 Development and diversification of trade and commerce**

Trade is considered as a growth engine for the development of any city. The trade and commerce of pabna municipality have increased more remarkably than earlier and hence pabna is now going ahead with the development of civilization. The communication system of this city are increased and therefore there is established good communication system with the other places of the country that have ushered a new era of trade and commerce of pabna city. For this reason, there is increasing income level and standard of life of the people of the city day by day.

#### **4.32 Impact on culture and lifestyle**

Two types of cultural conditions are seen in the pabna city: 1. the culture of local people and 2. the culture of the migrated people which is mainly the combination of rural and urban culture together. For this reason, there is increased in cultural separation day by day and in the same time the mix cultures are getting popular. In a word, it can be said that the culture of pabna city is getting westernized in particular. People are now interested in satellite and extraneous culture in large extend leaving their native culture and tradition that gradually decreases the value and morality of the people in the pabna city.

#### **4.33 Impact on youth development**

It has been seen in a case study that the number of stripling and young generation are most in pabna city and consideration the fact the authority of pabna municipality has developed various institutions like young development organization and young training center for them that can't be seen in the village environment.

The unplanned urbanization in the pabna municipality develops various institutions of social, political, economical and cultural, arises cost discrimination regions for habitation, develops real estate business by the developer companies namely Lotif real estate company and Rana group of industries, increases the scope of achieving knowledge and practicing research on science & technology which have strengthened the public awareness regarding their duties and responsibilities and the social integration and mobility so that people can lead superstition free life easily. Till now, in the pabna city, many people lead miserable and vulnerable life as the squatters.

Both unplanned and planned urbanization make the city efficient because in the city area, less effort is required to produce and supply fundamental services viz. fresh water and electricity and research and recycling programs are possible. Many People can live within a small land area in the city that is not seen in villages. Pabna municipality has achieved this type of efficiency level due to the heaven touches of the urbanization. High-tech industries earn valuable foreign exchange and lot of money in the pabna municipality that are the blessings of unplanned urbanization. Leading the life in the pabna municipality is much more comfortable and sophisticated compared to the villages.

### **5.0 POLICY RECOMMENDATIONS**

Pabna municipality can be turned into a planned, happy, affluent, habitable and festive city through maintaining proper planning such as:

1. Reformation of the overall infrastructures especially the institutional and administrative frameworks;
2. Implementing planned afforestation by pointing trees, making gardens and also planting trees alongside the pavements, site of the roads, or even on the roofs of houses and in this regard, fast – growing trees have to be pointed in order to supply fresh oxygen; safe life of human being, animals and creatures; absorb carbon dioxide; control the intensity of climate; prevent soil erosion and protect the environment from natural calamities and greenhouse effect;
3. ensuring new developments of residential buildings and shopping malls to take under consideration of the preservation of biodiversity, wetlands, valuable lands, watersheds and other resources viz. antiquities, reservoirs and forests;

4. Developing the efficient and effective governance based on the organizational unity;
5. Expansion of pavements for pedestrians, widening sidewalk and making rest place of the two sides of the road after some distances;
6. Implementing strict laws for protecting car parking, signboards, billboards etc.;
7. Making integrated, congestion free, environmental friendly and cost effective transportation planning;
8. Giving priority on walking on foot within the city and recovering pavements which still under the grab of influential people;
9. Forming mixed area from which residents can get all available amenities close in hand to reduce unendurable sufferings;
10. Decentralization of powers and responsibilities and ensuring effectiveness of the Pabna municipality;
11. Guaranteeing recreational facilities by building enough entertaining spots, play grounds and repairing old spots;
12. Ensuring waste management and pollution free environment by launching vehicle service for collecting waste and garbage from door to door and through these away from the town and establishing new Dustbin in a row on the road sides for 1 km;
13. Reforming existing drainage system and establishing new drains and retention pond to solve the water logging problem in the municipal area;
14. Implementation of the national poverty reduction policies for the urban poverty;
15. Introducing strict laws against child labor, social crimes and drug abuse to the city dwellers;
16. Increasing public awareness by arranging various seminars, workshops, training programs and celebrate several days on the occasions about the gruesomeness of environmental effects of unplanned urbanization;
17. Stimulating recycling process and ceiling carbon emissions and energy use; and finally
18. Generating diversity, beauty and health by sanctioning natural processes, taking steps for the biologically sterile environemnts and arranging the learning processes to use the enormous water, energy and nutrient resources that are the by-products of urban drainage, sewage disposal and other functions of processes of the Pabna municipality.

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Table 01: Level of Urbanization in Pabna.

Year	Level of Urbanization
1891	2.86
1901	2.88
1911	3.07
1921	3.23
1931	3.73
1941	4.34
1951	4.36
1961	5.1
1974	7.64
1981	11.82
1991	14.48
2001	15.67
2011	15.36

Source: Rouf & Jahan, 2013.

It is clear from the table (01) that the urbanization process was very low during the last decade of 19<sup>th</sup> century and the early two – third portion of the 20<sup>th</sup> century and rapid urbanization is happening during the last two decades of the 20<sup>th</sup> century and the current 21<sup>st</sup> century.

Table 02: Total amount of waste generated and dumped in last seven years.

Years	Waste generated (tons)	Waste dumped (tons)
2015*	18695.32*	1009.32*
2014	17600.67	9205.26
2013	15100.05	8303.75
2012	14837.64	8011.74
2011	14647.45	8055.55
2010	14479.55	7818.30
2009	14183.90	7800.05

Source: Conservancy department of Pabna municipality and field survey. \*Estimated.

The table 02 shows the continuous amount of waste generated and dumped in tons for the pabna municipality.

**Figure 01: Level of urbanization in the Pabna district of Bangladesh.**

