

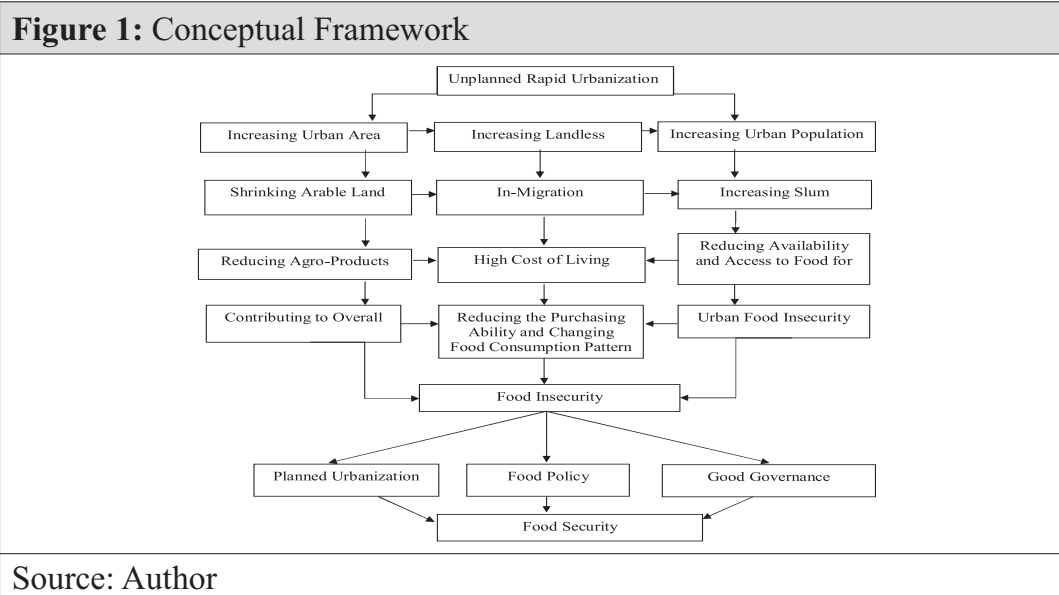
EFFECTS OF UNPLANNED RAPID URBANIZATION ON FOOD SECURITY IN BANGLADESH AND WAYS AHEAD

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INTRODUCTION

Urbanization is the concentration of 2,000 or more populations leading to transformation of land for residential, commercial, industrial and other purposes. It is also the physical growth of existing urban areas resulting from migration. A country is considered urbanized when over 50% of its population lives in the urban areas and engages in non-agricultural activities. In Bangladesh urban population is 28%¹ of total population and rate of urbanization is 3.1%². Urban population growth is generally far more rapid than total population growth, with about half the urban growth accounted for by migrants from the rural areas.³ The consequences of rapid urbanization are related to employment, housing, sewage, water, fire, social welfare, role of government, political mechines and food security.

Urbanization necessitates encroachments upon agricultural, forest or wet lands to absorb the increasing population which could otherwise be used for food production. Conceptual Framework of Unplanned Rapid Urbanization and Food Security are shown in figure 1.



1. <http://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS> accessed on August 12, 2013.
2. http://www.indexmundi.com/bangladesh/demographics_profile.html accessed on March 07, 2013.
3. http://wps.aw.com/aw_todarosmit_econdevlp_8/4/1112/284700.cw/index.html accessed on October 10, 2013.

UNPLANNED RAPID URBANIZATION IN BANGLADESH

History and Trends of Urbanization in Bangladesh

Historically, Dhaka and Chittagong were the two dominant urban centres in 1872.⁴ Dhaka grew as an urban centre in the Sultanate period and rose into prominence in the Mughal period when it enjoyed the position of a provincial capital. In 1961, slightly more than 5% of the population lived in the urban areas. In the 1961-74 periods, 36 urban centers recorded a growth of more than 50% in population size. The 1991 census recorded 11 urban centers with a 50-112% increase from 1981 to 91 and 22% of the country's population was urban. Urban population in Bangladesh has grown to 27% in 2008. At present the total urban population of Bangladesh is nearly 46 million.⁵ The four largest cities –Dhaka, Chittagong, Rajshahi and Khulna accommodate 54% where Dhaka alone contains 37% of urban population.⁶

Urban development is taking place along major corridors⁷, such as the Dhaka-Chittagong highway corridor or Dhaka-Sylhet, Dhaka-Mymensing and Dhaka-Rajshahi, or Dhaka-Khulna corridor, etc. Due to high proximity to any one of the existing urban centers, almost all rural habitats in Bangladesh will ultimately assume an urban character.⁸ The proportion urban would possibly cross the 50% mark by 2040 and the 60% mark by the year 2050 when the total urban population would rise above 100 million.⁹

CAUSES OF UNPLANNED RAPID URBANIZATION

Growth of Population and Urbanization

The population density of Bangladesh of 2011 census was 1015¹⁰ and now is about 1156 people per km²,¹¹ and its urban population density is on average 1,800

4. Ahmed, Sharif Uddin 2003, Dhaka, *A study in Urban History and Development 1840-1921*, Dhaka, p12.
5. <https://sites.google.com/site/bdguiber/home/6-english/bangladesh/emerging-bangladesh/-urbanization-in-bangladesh> accessed on March 08, 2013
6. Rahman, Hossain Zillur 2011, *Urban Bangladesh- Challenges of Transition* - Power and Participation Centre, p6.
7. Rahman, Dr Hossain Zillur, interviewed by author, Dhaka, on April 10, 2013.
8. <http://www.google.com.bd/interstitial?url=http://cusdhaka.org/bulletin-articles/towards-an-urbanized-bangladesh-looking-beyond-2050> accessed on March 08, 2013
9. *ibid*
10. http://www.bbs.gov.bd/WebTestApplication/userfiles/Image/Census2011/Bangladesh_glance.pdf accessed on August 16, 2013.
11. http://www.google.com.bd/publicdata/explore?ds=d5bncppjof8f9_&met_y=sp_pop_grow&hl=en&dl=en&idim=country:BGD:PAK:IND#!ctype=l&strail=false&bcs=d&nselm=h&met_y=en_pop_dnst&scale_y=lin&ind_y=false&rdim=region&idim=country:BGD:IND:PAK&ifdim=region&tstart=-299484000000&tend=1309888800000&hl=en_US&dl=en&ind=false accessed on August 16, 2013.

people per km². Bangladesh has the highest levels of population density on a landmass of 147,570 square (sq) kilometers (km) with 14,97,72,364 population¹² and 1.37% growth rate¹³. The population density of Bangladesh will rise from 2,700 to 4,500 per sq mile by 2050.¹⁴ Dhaka City is one of the most densely populated urban areas in the world, with a density of 26,000 residents per km².

Climate Change and Urbanization. In Bangladesh 20 million to 30 million climate change refugees are expected by 2050.¹⁵ The International Organization for Migration says about 70% of the slum dwellers have come to Dhaka because of climate-change adversity.¹⁶ The climate change has impacts on agriculture which ultimately affect urban areas for instance, influencing food availability and price. With one meter sea level rise, 10% of Bangladesh's land is believed would be flooded.¹⁷ The sea level rise will be a prime cause of migration of coastal population.

Pull & Push Factor. The primacy of big cities in educational, health care, higher quality public services and the opportunity to earn higher wages pull rural people to the cities. Similarly, the rural society pushes its people toward urban areas because of serious unemployment or growing landlessness and natural calamities like cyclone, famine, flood and river erosion. About 3.3 million women are employed as garment workers¹⁸, and the mass migration of largely very poor women is seeing a cultural shift. According to official statistics present unemployed manpower of Bangladesh are 2.6 million.¹⁹ Unemployment Rate was 5% in 2012 and about 40% of the labor force work only a few hours a week, at low wages.²⁰

Urbanization Policies in Bangladesh

In absence of clear-cut policies, shopping malls, hospitals, clinics, schools and coaching centers etc have mushroomed in the residential areas in total disregard for healthy living. The draft National Urban Sector Policy, 2011 for Bangladesh²¹ emphasized ensuring regionally balanced urbanization through decentralized development and hierarchically structured urban system, but not

12. http://www.bbs.gov.bd/WebTestApplication/userfiles/Image/Census2011/Bangladesh_glance.pdf accessed on August 16, 2013.

13. *ibid*

14. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2740702/> accessed on August 11, 2013.

15. http://www.thestar.com/news/world/2013/02/16/climate_change_forcing_thousands_in_bangladesh_into_slums_of_dhaka.html accessed on August 11, 2013.

16. *ibid*

17. <http://www.warpo.gov.bd/rep/liv/living4.pdf> accessed on March 10, 2013

18. http://en.wikipedia.org/wiki/Bangladeshi_RMG_Sector accessed on July 19, 2013.

19. bdnews24.com July 06, 2011

20. Bangladesh Unemployment rate, index mundi, as of February 21, 2013.

21. National urban sector policy (Draft)-2011-aihr.info/library/category/10-Materials-of-Workshop-on-...Top of Form Bottom of Form accessed on March 08, 2013

published. As such there is an uncontrolled Shift of populations from dispersed to more dense settlement in rural areas and dense to more dispersed settlement in existing urban areas

AN OVERVIEW OF FOOD POLICY AND FOOD SECURITY IN BANGLADESH

Food Security

‘Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life’.

Food Policy

The goal of the first national food policy adopted in 1988 is to achieve food security for all people by increasing food production and attaining self-sufficiency. The data on undernourishment indicate that about 20% of the population consumes less than 1,805 kcals/day instead of 2122 kcals/person/day to be food secured. MDG is to halve, between 1990 and 2015, the proportion of people who suffer from hunger²² and reduce the number of undernourished people to half by the year 2015.²³ The efforts of BRRI and BARI and other institutions have helped to considerably increase crop yield per unit of land gradually.²⁴

Unfair Price of Agricultural Produces

The farmers do not have either Farmer’s Association or Farmer’s Co-operative to bargain for fair prices of their produces. They are thus forced to sell their produces at low prices to intermediaries. Government should procure at least 10% of the total produces directly from the farmers.²⁵ For fixing the prices of farmers’ produces government should form “Agricultural Prices Commission”.

Availability of Food

Availability refers to the physical presence of adequate food supplies; for instance, the physical ability of a particular area of land to produce food. In general,

22. http://ibtra.com/pdf/journal/v2_n1_article4.pdf accessed on August 15, 2013.

23. http://www.sid.gov.bd/wp-content/uploads/2013/02/Millennium_Development_Goals.pdf accessed on August 15, 2013.

24. The Financial Express, *Loss of agricultural land*, May 13, 2013

25. http://www.google.com.bd/url?sa=t&rct=j&q=&esrc=s&source=web&cd=5&ved=0CEAQFjAE&url=http%3A%2F%2Fwww.banglajol.info%2Findex.php%2FBJAR%2Farticle%2Fdownload%2F5886%2F4620&ei=1BwMUuDxA6qK7Aaa0ICQAQ&usg=AFQjCNEw-ldZlBMuWIOS0_QJOfctx6ZpWQ&bvm=bv.50723672,d.d2k accessed on August 15, 2013.

adequate availability of food depends on effective agricultural production. Food availability is ensured by adequate domestic production, net food imports, aid and national food stocks.

Accessibility to Food

Food security is almost always a matter of “access” instead of “availability”. Accessibility of people within a particular country or region refers to the ability to actually receive or the financial means to purchase adequate food. Economic access to food refers to the ability to acquire the required food through earnings and transfers. Millions of people across Bangladesh fail to have adequate food during the Ramadan due to the price hike.²⁶

Causes of Hunger

Lack of income is the main cause of food insecurity, closely followed by lack of land and natural calamity. For instance, cyclones and floods in 2007 estimated to have affected the food security of 25 million people. Food production, availability, income and prices go through a kind of intra-annual cycle with high food availability and low price during harvest period and low food availability and high price before the harvest of main crops.²⁷

Salinity Intrusion and its Impact on Food Production

More than 30% of the cultivable land in Bangladesh is in the coastal area. About 1.0 million ha of arable lands are affected by varying degrees of salinity. Farmers grow mostly low-yielding, traditional rice varieties during the wet season. Most of the lands remain fallow in the dry season (January-May) because of soil salinity and the lack of good-quality irrigation water. Palm oil, soybean oil and sunflower oil production - the last two particularly in the saline-infected south-west region - can be more beneficial than production of rice.²⁸

26. Priyo News, *Floating people: Eid or no Eid it makes no difference*, August 26, 2011.

27. Kabir, Mahfuz, *Conceptualization and Measurement of Food Security: the Context of Bangladesh*, BISS Journal, January 2005, Dhaka, p64

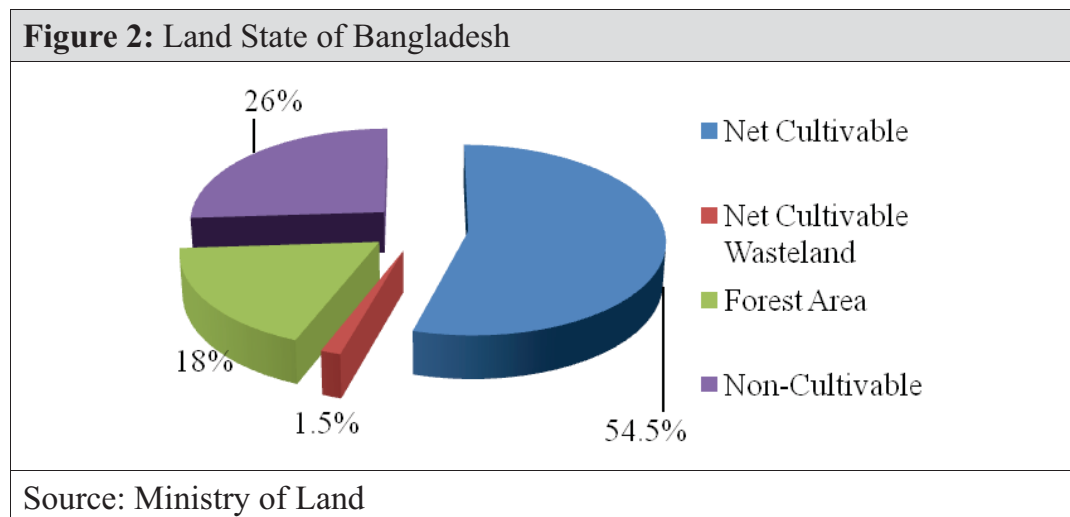
28. The Financial Express, *Loss of agricultural land*, May 21, 2013

29. <http://static6.businessinsider.com/~~/f?id=4ae0921e00000000003e392b&maxX=600> accessed on May 11, 2013.

EFFECTS OF UNPLANNED RAPID URBANIZATION ON FOOD SECURITY

Effects of Unplanned Rapid Urbanization on Availability of Food

State of Land in Bangladesh. The land state of Bangladesh is shown in figure 2.



Bangladesh has 8.774 million hectares of cultivable land, of which 88% is cultivated, so there is a limited scope to expand the cultivated area.³⁰ Intensive double (59%) and triple (22%) cropping increases the effective crop production by 150%.³¹ Between 1983 and 1997, the area of cultivable crop-land declined by almost 14% while the area for homestead increased by 20%; adjacent ponds and other residential uses increased by another 20%, consuming over 300,000 acres of crop-land.³² The Land under cereal production in Bangladesh was 5 million hectares in 2010, according to a World Bank report published in 2012.³³

Land-man Ratio in Bangladesh. The Agricultural land in Bangladesh was 70.29% of land area in 2009³⁴ and 58.60% as of 2011.³⁵ Arable land (hectares per person) reduced from 0.17 to 0.05 between 1961 and 2011³⁶.

30. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2740702/> accessed on August 15, 2013.

31. *ibid*

32. *ibid*

33. <http://www.tradingeconomics.com/bangladesh/land-under-cereal-production-hectares-wb-data.html> accessed on June 10, 2013.

34. <http://www.tradingeconomics.com/bangladesh/agricultural-land-percent-of-land-area-wb-data.html> accessed on June 10, 2013

35. <http://www.indexmundi.com/facts/bangladesh/arable-land> accessed on March 07, 2013

36. *ibid*

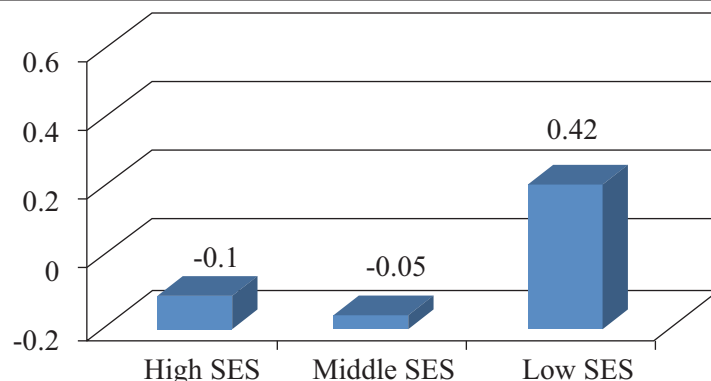
Rising of Slums. There are 7 million homeless³⁷ and 4.48 million households absolutely landless in Bangladesh.³⁸ Landless families often end up in the slums of Dhaka and other cities.³⁹ Around 35% of the populations of six major cities live in slums with limited or no access to services.⁴⁰ As much as 40% of Dhaka's population almost seven million lives in tiny hovels in slums.⁴¹ It is projected that an estimated 80 million people will be living in urban areas by 2020 and 40-60% of them will be in the slums.⁴² The slums are severely crowded, with 4-5 people living in houses of just over 100 sq feet.⁴³ Due to an acute demand for land and high land prices, the slums are moving towards the city's peripheries on agricultural land in the search for cheap shelter. In Korail slum in Mohakhali one lakh people live in 90 acres of land.⁴⁴

Unplanned Urban Habitation and Rapid Loss of Arable Land. In Bangladesh 80,000 ha of agricultural land per year are going out of crop production.⁴⁵ Major factors responsible for land loss are urbanization, human settlement, building of infrastructure, and river erosion. A vast tract of arable land across the country is losing due to unplanned urbanization keeping a negative impact on the agriculture sector of the country.

Population Growth and Habitual Reduction of Land. It needs not be mentioned that at the root of the loss, the number one factor is the increased demand for land as a result of increasing population. The low socio-economic status (SES) people contribute maximum in population growth as shown in figure 3.

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37. Digital Journal, October 21, 2011, *Homelessness to be a crime in Bangladesh?* <http://digitaljournal.com/article/313136> accessed on August 21, 2013.
 38. Shakhawat Hossain, *New Age*, June 08, 2009
 39. BANGLADESH: Landless numbers on the rise, *reliefweb*, June 08, 2010
 40. http://www.google.com.bd/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCgQFjAA&url=http%3A%2F%2Fwww.northumbria.ac.uk%2Fstatic%2Fpowerpoint%2Fbeppts%2Fhuraera_jabeen&ei=GI8OUvujNsvmtQbEwoHQA&usg=AFQjCNEN5G5BUcEZ8LowCf2q39GMuWWqEQ accessed on July 05, 2013.
 41. http://www.thestar.com/news/world/2013/02/16/climate_change_forcing_thousands_in_bangladesh_into_slums_of_dhaka.html accessed on August 11, 2013.
 42. http://www.eminence-bd.org/index.php?option=com_content&view=article&id=106&Itemid=90 accessed on July 01, 2013.
 43. *ibid*
 44. Ministry of Housing and Public Works, *World Habitat Day 2012*, Dhaka, October 01, 2012, p6.
 45. http://www.google.com.bd/url?sa=t&rct=j&q=&esrc=s&source=web&cd=5&ved=0CEAQFjAE&url=http%3A%2F%2Fwww.banglajol.info%2Findex.php%2FBJAR%2Farticle%2Fdownload%2F5886%2F4620&ei=1BwMUuDxA6qK7Aaa0ICQAQ&usg=AFQjCNEw-lDZIBMuWIOS0_QJOfctx6ZpWQ&bvm=bv.50723672,d.d2k accessed on August 15, 2013.

Figure 3: Contribution of People of Different SES in Population Growth



Source: Author

As per 2011 population census, the number of homesteads stood at 32.18 million. The total land area occupied by homesteads between 1996 and 2008 rose from 353000 acres to 677000 acres.⁴⁶ Due to population growth at the rate 1.48%⁴⁷ habitual reduction of land is 0.48%⁴⁸ for roads and other infrastructures. Rohingya issue is exerting further pressure on land of Bangladesh.⁴⁹

Infrastructure Development and Rapid Loss of Arable Land. Despite the recent slowdown in population growth and lower fertility rate, Bangladesh would have to feed additional 2.25 million mouths each year. At the same time net cultivable land has declined at the annual rate of 0.4% during FY81-FY05,⁵⁰ and the rate of loss of crop land may have accelerated in recent years due to more rapid urbanization, industrialization, and construction of houses/homesteads and roads.

Unplanned Urbanization and Land Use. Unplanned urbanization is plaguing the cities of the country and is leading to land-grabbing of arable and shallow water-bodies. Lavish and duplication of land use is rather more prevalent in middle and high socio-status people and in government and non-government

46. The Financial Express, *Credible data on arable lands*, Editorial, December 18, 2012—op.cit

47. http://www.google.com.bd/url?sa=t&rct=j&q=&esrc=s&source=web&cd=9&sqi=2&ved=0CFkQFjAI&url=http%3A%2F%2Fwww.bpatc.org.bd%2Fhandouts%2FAgriculture_Bangladesh.ppt&ei=BZIMUrvsKKPF7AaF9oD4Cg&usg=AFQjCNGCyQer95pVNc-HBS0rDBE8i_DNcw&bvm=bv.50723672,d.d2k accessed on August 01, 2013.

48. Rahman, Kazi Obaidur, Joint Secretary, Ministry of Agriculture, Govt of People's Republic of Bangladesh, interviewed by the author, Dhaka, on August 22, 2013.

49. Islam, interview, loc.cit.

50. <http://www.thefinancialexpress-bd.com/index.php?ref=MjBfMTJfMjZfMTJfMF8xODNfMTU0NTAw&feature=c3BIY2lhbHNOZXdz&na=QW5uaXZlc nNhc nkgSXNzdWUgMjAxMiAoM3JkIEluc3RhbG1lbnOpKFBhcnOgT25lKO> accessed on October 12, 2013.

organizations.⁵¹ Most of the slum dwellers (77%) have relation in village with their share of dwelling.⁵²

Houses and Flats. Most of the people of Bangladesh aspire to have a plot/flat in Dhaka/major cities. As a result Housing and flats business are flourishing beyond control on agricultural/wet land. So, instead of farming land owners keep the land vacant to sell at high price as housing plot or commercial space. For instance, the land price in Dhanmondi area has increased by 1222% between 1983 and 2005.⁵³

Segmenting Cultivable Land. In 1971 the population was 70 million and the area of cultivable land was 99 lakh hectares, but in 2008 land plummeted to 66 lakh hectares.⁵⁴ So it stands out that within the last 37 years the number of people got doubled but the area of land has reduced to two third. The same size of land was divided and sub-divided generations after generations and accordingly demarcation was made by isles and only for this, almost 10% of arable land is being wasted equivalent to Bogra district.⁵⁵

Demands and Supply of Food: The projected demand and supply of food in Bangladesh is shown in Table-1.

Table-1: Projected demand and supply of rice in BD (.000 MTon)		
Year	Demand of Rice	Supply of Rice
2015	29200	29669
2020	33200	32159
2025	37500	34588
2030	42000	36881
Source: BBS		

Effects of Unplanned Rapid Urbanization on Accessibility to Food

Employment and Income of Slum Dwellers: Reasons⁵⁶ of urban vulnerable segment for coming to slum as % of total households is shown in figure 4 where meager income and for job account 59.5% of in-migration.

51. Rahman, interview, loc.cit

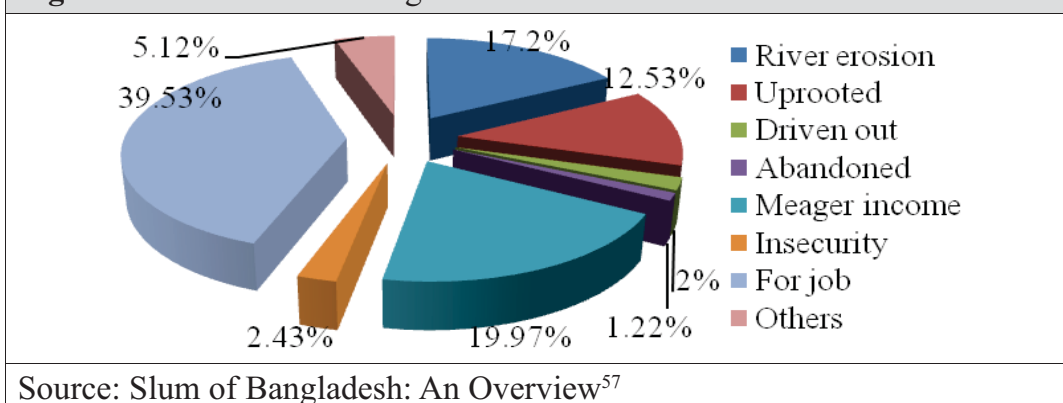
52. Islam, Nazrul, Professor, Chairman CUS, interviewed by the author, Dhaka, on August 15, 2013

53. Moniruzzaman, Sarwar Jahan K.M. 2007, *Urbanization in Bangladesh- Pattern, Issues and Approaches to Planning*, Bangladesh Institute of Planners, Dhaka, p33.

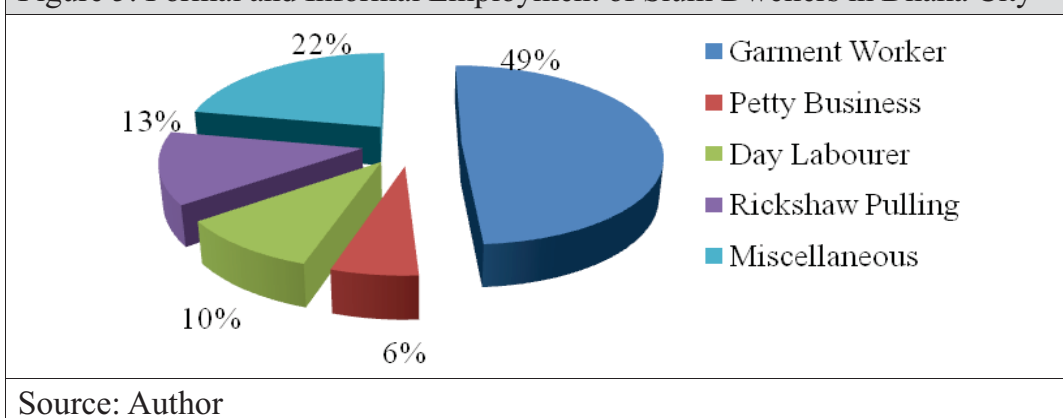
54. The Daily Star, *Food Security of Bangladesh*, September 13, 2008

55. Ahmed, Nasir Uddin, Joint Secretary, Ministry of Land, Govt of People's Republic of Bangladesh, interviewed by the author, Dhaka, on August 22, 2013

56. <http://economicsbd.wordpress.com/2011/03/06/a-brief-history-of-economics/> accessed on August 11, 2013.

Figure 4: Reason for Coming to Slum

More than 90% of the income earners are engaged in informal activities such as rickshaw pulling, transport work, hawking, day labor, small factory work and construction.⁵⁸ Females are found in formal sector such as garments factories and in informal sector such as maidservants (Figure 5). Per day per capita income of them is taka 49.31.

Figure 5: Formal and Informal Employment of Slum Dwellers in Dhaka City

Accessibility of Urban Vulnerable Segment to Food: Global Food Security Index 2012 placed Bangladesh at the 81st position with 34.6 points⁵⁹ out of 105 countries. Consumer Price Index and inflation during FY 2011-12 on food items was 10.47%.⁶⁰ In slum 61% of income is spent for food and still per capita maximum affordable expense per day is only taka 30.

57. A-brief-history-of-economics, loc.cit

58. General Economics Division 2013, *National sustainable Development Strategy (2010-2021)*, Planning Commission, GoB, Dhaka, p69

59. http://www.thefinancialexpress-bd.com/more.php?news_id=139876&date=2012-08-11 accessed on June 11, 2013.

60. Economic adviser's Wing 2013, *Bangladesh Economic review 2012*, Finance Division, Ministry of Finance, GoB, Dhaka, p26.

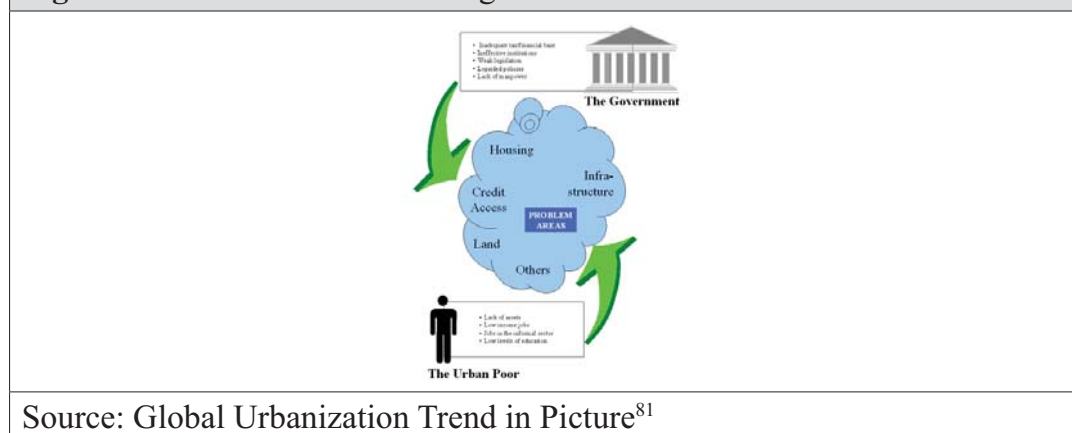
Positive Effects of Planned Urbanization

Over the past 60 years, there is a strong association between economic growth and urbanization⁶¹ and most of the world's poorest nations remain among the least urbanized nations. For instance, 25 percent of South Korea's total population live in Seoul, accounting for almost 50 percent of the country's GDP.⁶² In Bangladesh urbanization contributes to more than 60% of the GDP. Urbanization also contributes in higher literacy rates, quality of education, better health, cultural and political development, demographic structure, including balancing the sex ratio in urban areas. Its increasing contacts with the rest of the world have enhanced opportunities in the diplomatic, economic, information, intellectual, cultural and sports arena. The slum dwelling changes economic status 3% as high change, 44% as moderate change and 53% as little better (Source - Author). It also improved their social status: 20% as no change, 30% as little better, 40% as moderate change, 7% as high change and 3% as very high change (Source: Author). The women are specially benefited as they (27%) can participate in household decision making process where 30% male and the remaining 43% mutually (Source: Author).

Negative Effects of Unplanned Urbanization

Unplanned urbanization is rapidly converting agriculture land and forests into built-up areas, occupying parks and open spaces, and put heavy demands on utilities and services. It is accompanied by water logging, water pollution, traffic congestion, air and noise pollution, solid waste disposal, black smoke etc. Urban Problems in Bangladesh is shown in Figure 6.

Figure 6: Urban Problems in Bangladesh



Source: Global Urbanization Trend in Picture⁸¹

61. <http://rstb.royalsocietypublishing.org/content/365/1554/2809.full> accessed on July 12, 2013.

62. Morshed, Adnan, The Daily Star August 5, 2013, *How compact cities can save Bangladesh*
<http://www.thedailystar.net/beta2/news/how-compact-cities-can-save-bangladesh/> accessed on October 12, 2013.

Urbanisation increases crime and violence, drug trafficking and corruption and prostitution. Unplanned rapid urbanization not only causes food insecurity but also adversely affect the environment. For instance, Dhaka is expanding towards Gazipur at the cost of destruction of forest.⁶³

Urbanization: Problem or prospect for Bangladesh

Urban areas in totality contribute 60% of GDP in Bangladesh.⁶⁴ About 9% of the Bangladesh's population live in the Dhaka contributing 36%⁶⁵ and 3% in Chittagong contributing 11%⁶⁶ of the country's GDP. So, planned urbanization is a prospect for Bangladesh devising the ways to mitigate negative effects of unplanned urbanization.

WAYS AHEAD BALANCING URBANIZATION AND FOOD SECURITY

Population Control

Family planning services should be geared to arrest population growth through field level workers and NGOs. Motivation and awareness programmes in print and electronic media, internet, face book, through local imams, and scroll of cable TV connection should be exploited in this regard.

Community Living

In Bangladesh 77.50% live separate, 6.3% in apartment and 16.2% in joint/barrack house.⁶⁷ The construction of multistoried building for community living in urban areas will save a good extent of lands. It can be in the long term agenda for rural areas also. Some laws may be enacted for restraining desiring people to build residential houses, mills and factories on the cultivable lands.

De-Urbanization and Shrinking Cities

De-urbanization contributes to net migration from large to small urban centers or from urban to rural areas. With advanced transport and communication facilities a proportion of new investment in industry and services could locate

63. Akhter, Mohammad Shakil, Prof. Dr. Head of Department of Urban and Regional Planning, BUET, interviewed by the author, Dhaka, on August 17, 2013.

64. Islam, interview, loc.cit.

65. <http://blogs.worldbank.org/endpovertyinsouthasia/bangladesh-alternative-urbanization-urbanization> accessed on August 12, 2013.

66. *ibid.*

67. http://www.bbs.gov.bd/WebTestApplication/userfiles/Image/BBS/Socio_Economic.pdf accessed on August 15, 2013.

in rural areas. Telecommuting and internet allow work to be done and incomes earned in rural areas, even if the work is for a city-based enterprise. This is the best understood as the urbanization of rural areas. It will require the development of infrastructure and services and encourage the labor force in agriculture.

Land use Policy⁶⁸ and Protection of Arable Land

The land use policy 2001 should be reviewed with the relevant experts, professionals, and farmers' representatives and put into operation immediately to stop further loss of arable land with the provision of regular monitoring and evaluation. Khas lands that are arable should be distributed to landless farmers and used exclusively for agricultural purposes. Efficient land use leaving luxury of unnecessary space in the premise of establishment is needed to ensure food security.⁶⁹ It is high time for land zoning to protect the abuse of land.⁷⁰ Master plan should be made for all existing and future cities/towns and strict compliance must be ensured.⁷¹ Industrial zone should be declared in district level to control migration for employment and facilities should be available to control pull factor.⁷²

Infrastructure Development Policies

Tall buildings are no longer a luxury in a country crisscrossed by rivers and with limited land space and facilities but faced with the problem of population explosion. Bangladesh should have a population density plan and accordingly allow construction of high-rise building with a vision that ensures the quality of life incorporating infrastructure and service facilities.⁷³ This role should be played by city corporation in the form of metropolitan government as followed in Bangkok, Kuala Lumpur etc under mayor having inbuilt capability instead of development authority like Rajuk, CDA, KDA etc.

68. http://www.hdrc-bd.com/pcs_pdf/3%20Land/01.%20Towards%20a%20Feasible%20Land%20Use%20Policy%20of%20Bangladesh.pdf accessed on August 16, 2013.

69. *ibid*

70. Islam, interview, loc.cit

71. Talukder, Kamal Uddin, Joint Secretary, Ministry of Housing & Public Works, interviewed by the Author, Dhaka, on September 01, 2013.

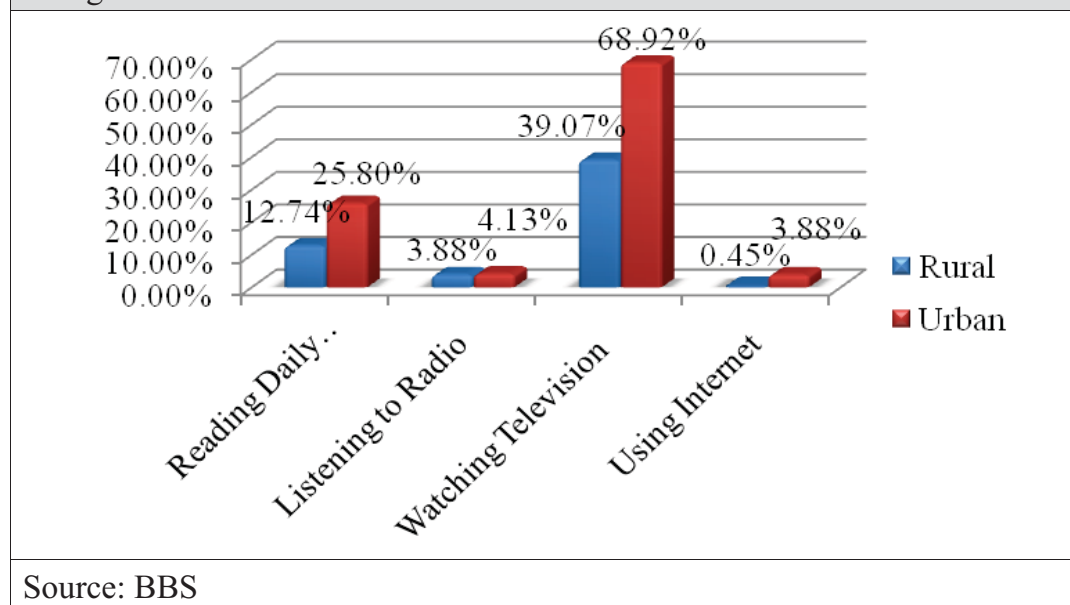
72. *ibid*

73. Islam, Md Sirajul, Chief Town Planner, Dhaka South City Corporation, interviewed by the Author, Dhaka, on September 01, 2013

Media Campaign

In Bangladesh 51.80% of population are illiterate⁷⁴ and 30% cannot read news paper.⁷⁵ Exposure to media⁷⁶ is shown in figure 7.

Figure 7: Reading Newspaper, Listening to Radio, Watching Television and Using Internet



So, television should be the main means together with other communication and social networks to create awareness on family planning, community living and farming, land use, urbanization, food production including saline tolerant crops, food distribution and food habit etc.

Fair Price of Produces

Government should procure at least 10% of the total production directly from the farmers. Storage faculties at the same time may be established in rural areas following the experience of SHOGORIP⁷⁷ that is likely to allow the farmers to store their produces and sell the same at better prices when the demand is high. Alternatively, government might encourage establishing farmers'

74. http://www.bbs.gov.bd/WebTestApplication/userfiles/Image/Census2011/Bangladesh_glance.pdf accessed on August 16, 2013.

75. Islam, interview, loc.cit

76. <http://www.bbs.gov.bd>, loc.cit

77. <http://books.google.com.bd/books?id=TbHQXvBwH04C&pg=PA11&lpg=PA11&dq=SHOGORIP+meaning&source=bl&ots=0iC7Syb-i6&sig=gfoGv-p6nqjpB6IENJONubR27z0&hl=en&sa=X&ei=7dFIUtvXJ4rJsgavtIHgCg&ved=0CCsQ6AEwAA#v=onepage&q=SHOGORIP%20meaning&f=false> accessed on June 26, 2013.

cooperatives to ensure fair price of their produces. Formation of “Agricultural Prices Commission” by the government is also suggested for fixing the prices of farmers’ produces.

Food Planning and Monitoring Unit

The Food Planning and Monitoring Unit of the Ministry of Food should play appropriate role on issues relevant to food. Another approach would be to use public stockpiles on quantity of stocks required and the amount to release at any stage. Importantly, food stocks in the granary are not by themselves enough to ensure food security, the key is ensuring that poor people have access to food.

Increasing Area of Cultivable Land

Bangladesh can give more effort for forestation to maximize the use of islands to the best suited manner through R&D. The siltation and sedimentation can raise soil level up against sea level rise due to greenhouse effect. Community based cultivation may pave the way to save the lands being wasted by isles. The massive cultivations on isles can produce other crops. Bangladesh needs to carry out feasibility study for extensive cultivation in Chittagong Hill Tracts.

Sea Food and Saline Water Crops

Bangladesh needs blue growth to increase sea awareness and inculcate sea food habit to reduce pressure on cereal food through media.⁷⁸ There are fishes of 475 species in the Bay of Bengal and 6.6 million MT fishes are caught each year of which Bangladesh’s fishermen catch only 0.29 million MT.⁷⁹ Bangladesh should check fishing trawlers of other countries within 50 meters depth and increase catching fish by steel boats instead of wooden boats. The effort should be continued to increase Saline tolerant crops production using nuclear biotechnology. Cash crops can also be produced to import cereal food in exchange.

Leasing Land: Prospect of Global Connectivity

Bangladesh with its highly skilled professionals and experienced agricultural labor force may embark on leasing land abroad as steps towards ensuring food security. Bangladesh has opened discussions with countries in Africa and with Cambodia with a view to leasing land to grow food for import.

78. Alam, Mohammad Khurshed, Rear Admiral, (C) ndc, psc, BN (Retd), Additional Secretary, MOFA, interviewed by the Author, Dhaka, on June 27, 2013.

79. Ministry of Foreign Affairs, *Commemoration Ceremony of 30th Anniversary of the 'United Nations Convention on the Law of the Sea (UNCLOS) 1982' 1982-2012*, Dhaka, December 10, 2012, p39.

Urban Agriculture and Forestry

The urban dwellers can rely on urban agriculture for part of their food consumption or income as they sell high-value crops or non-food crops or raise livestock for sale. The fellow land and the rooftop can be used for such purpose. Bangladesh should do land zoning around cities keeping arable land for food produces in line with green belt in England and South Korea facilitating availability and accessibility at lower price.⁸⁰ As much as 80% of the world's total Green House Gas emissions are attributable to cities.⁸¹ One of the ways to deal with this is to create a green belt in elusive peri-urban ring and public parks in urban areas. The plantation of fruit trees will serve dual purposes of saving ecology and contributing to food security.

Homestead Food Production Program

Individuals throughout the entire country were suffering from malnutrition in 1990s and Barisal Division was shown to be one of the most vulnerable divisions in Bangladesh. Helen Keller International's (HKI) Homestead Food Production Program (HFPP) began as a pilot Home Gardening project among 1,000 households in Barisal Division in 1989.⁸² By September 2009, food availability and purchasing power at the household level increased to a great extend. So, similar project should also be implemented in other divisions in future.

Research & Development

Increasing thrust shall have to be given on R&D in genetic engineering, arresting degradation of soil and water, improved management techniques for higher production as well for environmental sustainability and post harvest loss minimization etc. Definite priority is needed on long-term agro-ecological characteristic based production planning, higher investment in consumptive use of water along with irrigation water use efficiency, rural electrification, use of renewable energy in agriculture, mechanization and market infrastructure development . Human resource development for agricultural research and their retention with provision of incentives should also be pursued.

80. Islam, interview, loc.cit

81. Morshed, loc.cit.

82. Due to Cyclone Sidr in November 2007, the original completion date was extended to September 30, 2009.

Good Governance

Good Governance is a priority action for planned urbanization.⁸³ Decentralization is closely associated with the 'Good Governance' agenda. Competing interests clustered around local level resources and power base can act as much to exclude as to include and power exercise at local level can be more concentrated, elitist and ruthlessly applied than at the national level.⁸⁴ The municipal government should be provided effective leadership in planning the overall development of a town and in responding to economic, social and environmental problems.⁸⁵

Priorities for Decentralized Rural Development

Development will bring food security only if it is people centered, if it is environmentally sound, if it is participatory and if it builds local and national capacity for self-reliance.⁸⁶ Development in four fronts is strategically important: rural infrastructure, rapid diffusion of technology, spread of education and prudent financial institutions.⁸⁷ Migration must be managed creating employment in urban growth centers and infrastructure development in holistic and cosmetic view.⁸⁸

Decentralization of Administration

Bangladesh has in built administrative hierarchy with divisions, districts, upazila and so on. Big cities can function as nucleus of small and medium cities for development of specific industries, public services and residential functions and a more unified infrastructure network linking the big and small cities.

CONCLUSION

Urbanization began for the security of food grains but unplanned urbanization is transforming arable land for other purposes posing threat to food security itself. The unmatched urban growth takes place due to in-migration caused by push and pull factors mainly in search of employment and better life respectively. But the cities cannot accommodate the influx of people and give rise to urban slums expanding outwards in prime agricultural land. Population growth puts additional demand on food, occupies land for usual habitats and

83. Islam, interview, loc.cit

84. Koonings Kees and Kruijt Dirk 2009, *Mega Cities, The Politics of Urban Exclusion and Violence in the Global south*, Zed Books, London, p112.

85. Davey, Kenneth J. 1996, *Elements of Urban Management*, the World Bank, Washington, D.C.

86. Speth, op.cit, p27

87. Food Strategy in Bangladesh, op.cit, p218

88. Khan, Abu Alam Md Shahidul, Secretary, Local Government Division, Ministry of LGRD & Cooperatives, interviewed by the Author, Dhaka, on September 01, 2013

exerts extra pressure on urbanization. Planned urbanization contributing to GDP to a great extent is essential for prosperity. Bangladesh should exploit vast potentials of blue growth to increase sea awareness and inculcate sea food habit. Good Governance should be established particularly for implementing land use, urbanization and food policies including public food distribution system. There are four pathways to food security: increasing production; development of value chains; market reform and land security.

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