

Living in the Coast Series 4

Living in the Coast
URBANIZATION

Government of the People's Republic of Bangladesh
Ministry of Water Resources
Water Resources Planning Organization (WARPO)

Living in the Coast
URBANIZATION

Mohiuddin Ahmad

June 2005

Program Development Office
Integrated Coastal Zone Management Plan

Living in the Coast
URBANIZATION

Date of publication
June 2005

Published by
PDO-ICZMP
Saimon Center (5th Floor)
House 4A, Road 22
Gulshan 1, Dhaka 1212
Bangladesh

Tel: (880-2) 9892787, 8826614
Fax: (880-2) 8826614
E-mail: pdo@iczmpbd.org
Web: www.iczmpbangladesh.org

Cover and layout
Rounakul Islam

PDO-ICZMP (Program Development Office for
Integrated Coastal Zone Management Plan)
Water Resources Planning Organization (WARPO)
Ministry of Water Resources
Government of the People's Republic of Bangladesh

PDO-ICZMP project is jointly financed by the governments of
Bangladesh, the Netherlands and the United Kingdom

ISBN: 984 8540 03 2

PDO-ICZMP project has initiated a series titled *Living in the Coast* to enhance knowledge base on communities, issues, development processes and dynamics of the coastal zone in Bangladesh. This document is the fourth in the series with focus on issues and trends of urbanization.

Mohiuddin Ahmad has prepared the document. WARPO and PDO professionals have reviewed the draft. Md. Sayed Iftekhar and Rounakul Islam provided valuable assistance. M. Rafiqul Islam, Md. Liakath Ali, Abu M. Kamal Uddin, Khurshed Alam, Akhter Hossain Bhuiya, Md. Shahjahan Mian, Muinur Rashid and Begum Rehana Akhter gave suggestions for improvement.

PREFACE

One of the emerging trends in the coastal zone, as elsewhere in the country, is growing urbanization. At present, less than a quarter of the population are urban dwellers. As many as one half of the population will live in urban areas by the middle of the century. This will invariably lead to a complex socio-economic environment and will necessitate interventions in infrastructures and services to live up to expectations. An update of the state of urbanization is indeed necessary to comprehend the concerns and to deal with these in a proper perspective.

This document heavily draws on several PDO-ICZMP documents, particularly Working Paper WP004 entitled 'Perceptions of Direct Stakeholders on Coastal Livelihoods' and Working Paper WP021 entitled 'Urban Poor in the Coastal Zone'. Various literature including the BBS ones have been extensively used for analysis. It has been attempted to use latest published data.

The main objective of this document is to understand the trends of coastal urbanization in Bangladesh and the issues concerns that confront us. Such an understanding is critically important for evolving a viable strategy for urban development, which needs special attention.

SUMMARY STATISTICS

| Urban indicator | Coastal zone | Bangladesh | Reference |
|---------------------------------------|--------------|------------|------------------|
| SMA (no.) | 2 | 4 | Census 2001 |
| City Corporation (no.) | 3 | 6 | Census 2001 |
| Pourashava (no.) | 74 | 253 | LGED, 2002 |
| Population (million) | 8.5 | 30.5 | Census 2001 |
| Population (%) | 23 | 23 | Census 2001 |
| SMA population (million) | 4.7 | 16.1 | Census 2001 |
| Population growth rate, 1961-2001 (%) | 5.9 | 6.1 | Census 2001 |
| Average size of HH (no.) | 5.0 | 4.9 | Census 2001 |
| Sex ratio (male/100 female) | 114 | 117 | Census 2001 |
| Tap water access (%) | 16.7 | 25.5 | Census 2001 |
| Sanitary latrine access (%) | 69.5 | 67.3 | Census 2001 |
| Sanitary latrine access in cities (%) | 52.3 | 69.9 | LGD, 2004 |
| Electricity access (%) | 66.8 | 70.9 | Census 2001 |
| Employment in manufacturing (%) | 13 | 17 | Census 1999-2000 |
| Unemployment (%) | 3.21 | 3.05 | Census 2001 |

CONTENTS

| | |
|--|------------|
| LIST OF TABLES..... | II |
| ACRONYMS..... | III |
| GLOSSARY | IV |
| 1. INTRODUCTION | 1 |
| Definition | 1 |
| History of urbanization | 1 |
| 2. URBAN AREAS | 3 |
| Industrial and commercial infrastructure | 3 |
| Major urban centers | 7 |
| Administration | 9 |
| Problems and issues | 9 |
| Risks and hazards..... | 112 |
| 3. POPULATION | 13 |
| Population growth..... | 13 |
| Demographic characteristics..... | 14 |
| Social stratification | 15 |
| Urban poor | 15 |
| Floating population..... | 167 |
| Street children..... | 17 |
| 4. SERVICES | 19 |
| Drinking water | 19 |
| Sanitation | 20 |
| Electricity..... | 21 |
| Housing..... | 21 |
| 5. LIVELIHOOD..... | 23 |
| Occupational pattern | 23 |
| Industry | 24 |
| Tourism..... | 26 |
| Unemployment | 26 |
| 6. DEVELOPMENT PROJECTS | 27 |
| Government interventions..... | 27 |
| NGO interventions..... | 28 |
| 7. FUTURE SCENARIO | 29 |

Assumptions29
Future population.....29
Mega urban centers30
Opportunities31
Demand for jobs and services32
8. CONCLUSION33
REFERENCES35

LIST OF TABLES

Table 1: Urban areas in the coastal zone5
Table 2: People’s perception of poverty15
Table 3: Main occupation of slum dwellers23
Table 4: Coastal Zone population (million).....30

ACRONYMS

| | |
|-----------|---|
| ADAB | Association of Development Agencies in Bangladesh |
| BBS | Bangladesh Bureau of Statistics |
| BCC | Barisal City Corporation |
| BMDf | Bangladesh Municipal Development Fund |
| BPC | Bangladesh Parjatan Corporation |
| CBN | Cost of Basic Needs |
| CCC | Chittagong City Corporation |
| CDA | Chittagong Development Authority |
| CMI | Census of Manufacturing Industries |
| CPA | Chittagong Port Authority |
| CZ | Coastal Zone |
| DANIDA | Danish International Development Agency |
| DFID | Department for International Development |
| DPHE | Department of Public Health Engineering |
| DOSS | Department of Social Services |
| DTW | Deep Tube Well |
| EPZ | Export Processing Zone |
| HH | Household |
| KCC | Khulna City Corporation |
| KDA | Khulna Development Authority |
| LFS | Labor Force Survey |
| LGD | Local Government Division |
| LGRD | Local Government, Rural Development |
| LGED | Local Government Engineering Department |
| MPA | Mongla Port Authority |
| NGO | Non Government Organization |
| Non-CZ | Non Coastal Zone |
| PDO-ICZMP | Program Development Office – Integrated Coastal Zone Management Plan |
| PDSCL | Perception of Direct Stakeholders on Coastal Livelihood |
| SIDA | Swedish International Development Agency |
| SMA | Statistical Metropolitan Area |
| Tk | Taka |
| UN | United Nations |
| US | United States |
| UNDP | United Nations Development Program |
| UNICEF | United Nations Children’s Fund |
| WARPO | Water Resources Planning Organization |
| WASA | Water and Sewerage Authority |

GLOSSARY

| | |
|-------------|--|
| Bagda | Brackish water shrimp |
| Biri | Indigenous cigarette |
| Chhai | Shanty |
| Chowkidar | Watchman |
| Fouzdar | Military Governor |
| Hat-bazar | Market place |
| Jhupri | Shanty |
| Launch ghat | Launch terminal/landing station |
| Mastan | Terrorist/muscleman |
| Mazar | Mausoleum |
| Pourashava | Municipality |
| Taka | Bangladesh currency |
| Thana | Administrative unit under a district; renamed as upazila |
| Tokai | Child garbage collector |
| Upazila | Geographic-administrative unit under a district comprising several unions |
| Ward | Administrative and electoral unit of City Corporation or <i>Pourashava</i> |

1. INTRODUCTION

In many parts of the world, coastal areas are densely populated, mostly urbanized and are the most developed stretches of land. Though many parts of the coastal zone of Bangladesh still reflect a rural setting, extensive urbanization in terms of population concentration, infrastructures and services have taken place in few centers.

Definition

BBS defines urban areas as “developed areas around (i) an identifiable central place where (ii) amenities like paved roads, communication facilities, electricity, gas, water supply, sewerage, sanitation, etc usually exist, (iii) which are densely populated and a majority of the population are non-agricultural and (iv) where community sense is well developed.” There are four different types of urban areas in the country (BBS, 2003):

- Megacity (metropolitan area having population above five million);
- Statistical Metropolitan Area (City Corporation and adjacent areas having urban characteristics);
- *Pourashava* or municipality (incorporated and administered by the government as urban area under the *Pourashava* Ordinance, 1977); and
- Other Urban Area (upazila headquarters and the development centers which have urban characteristics).

History of urbanization

Urbanization is perhaps as old as human settlement. In early days, urban centers developed around royal courts, ports and trade centers. Many of these centers have continued for centuries and some had vanished because of natural (disaster) or political (shifting the court) reasons.

Chittagong is quite an old town. Chittagong port was highlighted globally when the Arab merchants established themselves in the town in the ninth century as a business community. The port and the town area of Chittagong were widely known as Chatigaon or Chatgaon. According to the Buddhist version, it is distortion of Chait-Kyang or Chaitya-gram, i.e., the land of the *Chaityas* (Buddhist monuments). It was named as Chittagong when it came under the possession of British East India Company in 1760 (Establishment Division, 1979).

Historian Abul Fazl referred to a country and a fort named Bakla in the region now named as Barisal. It was included in Raja Todar Mal’s assessment of 1581.

Ralph Fitch who visited Bakla (Bacola) in 1586 mentioned that it had very fair houses, high buildings and big streets. Melchoir da Fonseca traveled through the area in 1599 and stayed in the city of Bakla for some time. Subsequently, Bakla disappeared and Barisal came to prominence (Establishment Division, 1980).

Under *Mughal* rule, Jessore rose to prominence in the 17th century, as a *Fouzdar* (military Governor) was appointed with headquarters at Mirzapur on the Kobadak River. The East India Company opened a court at Murli in 1781. The town was crowded with indigo factories since 1811 (Establishment Division, 1979).

The present day urban centers refer to the modern notion of municipalities. The colonial government introduced municipal administration through a charter in 1793 in Calcutta, Madras and Bombay with provisions for “appointing Justice of Peace and to levy taxes on houses and to engage watchman (*chowkidar*) and scavengers”. In 1842, a bill named Bengal Act of 1842 was passed for the constitution of municipalities (LGED, 2002). In the territory presently comprising Bangladesh, the colonial government started founding municipal institutions for urban areas in the 1860s in the name of municipal committees (bigger ones) and town committees (smaller ones).

2. URBAN AREAS

In the coastal zone of Bangladesh, urban areas include two SMAs (Chittagong and Khulna), three City Corporations (Barisal, Chittagong and Khulna), 74 *Pourashavas* in all districts and in many upazila headquarters and a host of 'other urban areas' (all other upazila headquarters). Names and locations of urban centers in the coastal zone based on 2001 Census are presented in Figure 1 and Table 1.

The oldest municipal committee was set up in Jessore and Chittagong (1864) followed by Cox's Bazar and Satkhira (1869). The most recent municipality is Shariatpur (1983), followed by Lakshmipur (1976) and Barguna (1973). After independence of Bangladesh, all municipal and town committees were renamed as *Pourashava*. It may be mentioned that the coastal zone has the oldest (Jessore, founded in 1864) and the smallest (Tungipara in terms of area, 132 ha; Banaripara in terms of households, 1300) *Pourashava* of the country (LGED, 2002; BBS, 2003).

Some small urban centers below the district level once rose to prominence. For example, Nalchhity, presently an upazila center, was declared a municipality along with Jhalokati in 1875. Debhata is presently an upazila in Satkhira district. It became a municipality in 1876, and later in 1955 its municipal status was abolished because there were not many people.

The urban expansion has occurred only in terms of population size, devoid of urban facilities, let alone urbanism. Data since 1901 indicates that three cities in the country, Dhaka, Chittagong and Barisal, have never changed their rank throughout the century. This is indicative of regional primacy (Ahmed, 2004). Khulna, once a small town under Jessore district, rose to prominence since the sixties.

Industrial and commercial infrastructure

Several district headquarters have BSCIC Shilpa Nagari (industrial estate). These are state-sponsored enclaves mainly for small and medium industries with some infrastructure facilities like road, water and power. However, such facilities are lacking in some estates.

There are designated industrial areas in large cities. Chittagong industrial area mainly spreads over a large area that includes Bhatiari and Barabkunda. Besides, Nasirabad and Panchlais have concentration of light industries. An EPZ has developed near the port. In Khulna, most of the industrial establishments are

Figure 1: Urban areas in the coastal zone

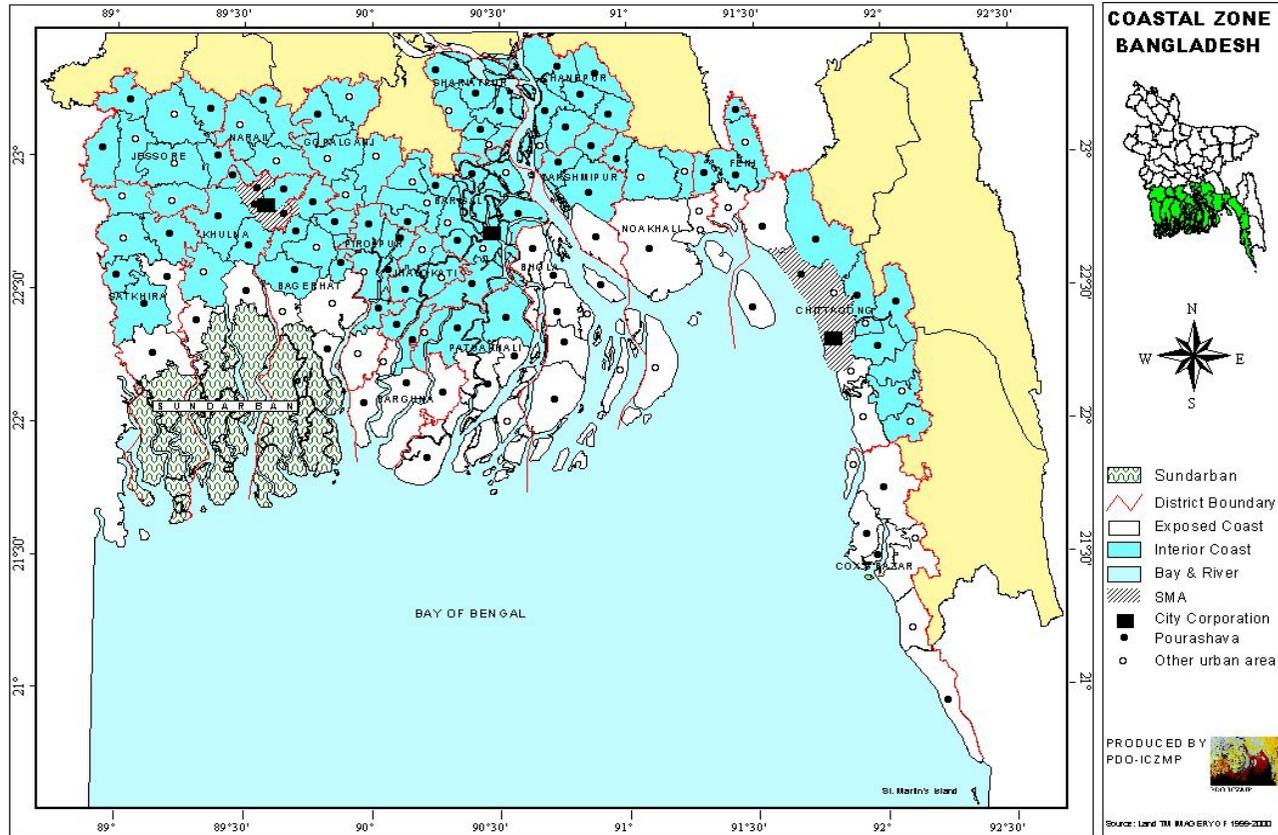


Table 1: Urban areas in the coastal zone

| District | City Corporation | Pourashava | Other urban area |
|-----------------|----------------------------|--|---|
| Bagerhat | | Bagerhat Mongla Morrelganj | Chitalmari Fakirhat Kochua Mollahat Rampal Sarankhola |
| Barguna | | Amtali Barguna Betagi Patharghata | Bamna |
| Barisal | Barisal | Bakarganj Banaripara Gournadi Goila Mehendiganj Muladi | Agailjhara Babuganj Hizla Wazirpur |
| Bhola | | Bhola Burhanuddin Char Fasson Daulatkhan Lalmohon | Manpura Tazumuddin |
| Chandpur | | Chandpur Chengarchar Faridganj Hajiganj Kachua Matlab Shahrasti | Haimchar |
| Chittagong | Chittagong (also a SMA) | Baroirhat Fatikchhari Mireswarai Patiya Rangunia Raozan Sandwip Sitakunda | Anowara Banshkali Boalkhali Hathazari Karnafuli Lohagara Satkania |
| Cox's Bazar | | Chakaria Cox's Bazar Maheshkhali Teknaf | Kutubdia Ramu Ukhia Pekua |
| Feni | | Daganbhuiyan Feni Parshuram | Chhagalnaiya Fulgazi Sonagazi |
| Gopalganj | | Gopalganj Kotalipara Muksudpur | Kashiani |

| District | City Corporation | Pourashava | Other urban area |
|------------|------------------------|---|---|
| | | Tungipara | |
| Jessore | | Jhikargachha Jessore Keshabpur Manirampur Noapara | Abhaynagar Bagherpara Chaugachhia Sharsha |
| Jhalokati | | Jhalokati, Nalchhity | Kanthalia Rajapur |
| Khulna | Khulna (also a SMA) | Paikgachha | Batiaghata Dacope Dumuria Dighalia Khanjahan Ali Koyra Fultala Rupsha Terokhada |
| Lakshmipur | | Lakshmipur Raipur Ramganj Ramgati | |
| Narail | | Kalia Narail | Lohagara |
| Noakhali | | Basurhat Chatkhil Chaumohani Kabirhat Noakhali | Hatiya Senbag |
| Patuakhali | | Bauphal Galachipa Kalapara Patuakhali | Bashmina Dumki galachipa Mirzaganj |
| Pirojpur | | Mathbaria Pirojpur Swarupkati | Bhandaria Kawkhali Nazirpur Zianagar |
| Satkhira | | Kalaroa Satkhira | Assasuni Debhata Kaliganj Shyamnagar Tala |
| Shariatpur | | Bhedarganj Damudya Naria Shariatpur Zanjira | Gosairhat Palong |

located at Khalishpur. A shrimp hatchery industry has developed in the urban fringe of Cox's Bazar. Jessore-Khulna highway has been developing as an industrial hub because of its proximity to national highway, railway and the Mongla Port. BSCIC Industrial Estate in Jessore is located at Baliadanga. In Barisal, BSCIC Industrial Estate is located at Kaunia.

Commercial activities are mostly related to port, shipping, industry and agriculture. Major urban centers have delineated commercial hubs. These hubs are catered by a host of forward and backward linkage activities and establishments like banks and insurance companies, clearing and forwarding agents, warehouses and hotels.

In Chittagong, the main commercial hub is Agrabad Commercial Area. Among other centers are Sadarghat, Khatunganj, Chakbazar and Reazuddin Bazar. In Khulna, Khulna Bazar, Daulatpur and Khalishpur are main commercial centers. A new commercial zone is now developing along Khan-e-Sabur Road. In the greater Noakhali district, Choumuhoni has been the largest commercial center that caters the entire south-central coastal zone for wholesale trading. Puranbazar in Chandpur town is another prominent commercial center. In Barisal, Natun Bazar is the main commercial center that caters trading of rice and fish. Jessore Bazar in Jessore is the principal commercial center for *khejurgur* (date-sugar), rice, tobacco, vegetables, etc

Major urban centers

Chittagong

Chittagong is the second largest city of Bangladesh and is the commercial capital of the country. Chittagong city has the country's main seaport close by and the existence of the port meant that the city has been a gateway to the Bay of Bengal for traders. The Chittagong Municipality was established in 1864. It was upgraded to Municipal Corporation in 1982 and to City Corporation status in 1990. Out of the total SMA (Statistical Metropolitan Area) of 986 km², Chittagong City Corporation (CCC) area is 210 km² (BBS, 1997). CCC population is 2.15 million (Census 2001, adjusted for net undercount). It has 41 wards (administrative and electoral constituencies).

The Chittagong Water and Sewerage Authority (WASA) is there for domestic water supply and sewerage.

Chittagong Development Authority (CDA) was set up for physical planning and development of the urban area. It has so far developed few housing enclaves, roads and markets.

The Chittagong Export Processing Zone (EPZ) has an area of 255 hectares and is ideally located close to the main business center, the seaport and the airport. It

accounts for highest investment and export among all six EPZs of the country (Ministry of Finance, 2004). Another EPZ will start soon in the premises of Chittagong Still Mills.

The first attempt to develop an administrative and policy making system for the port of Chittagong was taken when a Port Trust was constituted on 15 May 1888. The Port Trust was reconstituted in July 1960 as a semi-autonomous body. To cope with rapid development and expansion of the port after the independence of Bangladesh 1971, the Government promulgated the Chittagong Port Authority (CPA) Ordinance in 1986 and the management of the port came under the CPA headed by a Chairman and three Members. The CPA is under the Ministry of Shipping.

Khulna

Khulna is the third largest city in Bangladesh and the second largest in the coastal zone. It has a history of about one hundred years. The city originated as a market town and seat of administration. During the early days, tobacco and sugarcane were traded here and it had a shopping link with Calcutta. Khulna was declared a municipality in 1884, became a railway link in 1885, district headquarters in 1961, and a city corporation in 1991. Industrialization took place in the 1960s.

Out of the total SMA area of 267 km², Khulna City Corporation (KCC) area is 70 km². KCC population is 0.84 million. It has 31 wards. Situated in flat terrain with industrial activity in and around the city, it acts as a gateway to the nearby seaport of Mongla. The city core, which is about one-quarter of the total city area, is densely populated with mostly multi-storied residential and commercial buildings. The rest of the city is a mixture of urban and peri-urban areas. There are several low income housing areas and slums located throughout the city.

Khulna WASA is relatively new. Khulna Development Authority (KDA) was set up for physical planning and development. It has so far developed two housing areas, some roads and markets.

Mongla Port, the second largest seaport located 48 km south of Khulna city was developed initially about 18 km up at Chalna, which was opened to foreign vessels as an anchorage in December 1950. The anchorage was shifted to Mongla in 1954 as the place could accommodate sea-going vessels with greater draughts. The Mongla Port Authority (MPA) administers the port.

Barisal

Barisal is the third largest city in the coastal zone. Barisal municipality was founded in 1876 and upgraded to a City Corporation in 2000. Barisal City Corporation (BCC) has an area of 40 km² and a population of 0.34 million. BCC has 30 wards.

Barisal is the hub of river transport network, which connects millions of people of the region with Dhaka and other parts of the country.

Jessore

Jessore is the fourth largest city in the coastal zone and the oldest municipality of the country established in 1864. It covers an area of 26 km² and has a population of 0.33 million. It has nine wards. Though it is a city by definition, it is yet to be recognized as a City Corporation.¹

Benapole, the largest land port of the country, is about an hour's drive from Jessore and is of great economic importance to the city in terms of business and employment.

Administration

Major urban centers are administered by elected councils. The chief of the council is Mayor in a City Corporation and Chairman in a *Pourashava*. Each urban area is divided into several wards and each ward elects a Commissioner. Besides, there is provision for ten percent additional women Commissioners. All City Corporations and *Pourashavas* are local government institutions and are affiliated to the Ministry of LGRD & Cooperative.

Maintenance of law and order in the city is the responsibility of the Metropolitan Police Commissioner and the Chief Metropolitan Magistrate. The Home Ministry performs the function of control and coordination of both these institutions.

The office of the Deputy Commissioner maintains land records and collects land revenue. This office also carries out procedural operations if land is to be acquired for any public use.

The District and Sessions Judge under the Ministry of Law is the head of the judicial administration at the district level including the urban areas within its jurisdiction.

Problems and issues

Pollution is a major problem of urban areas. Of various types of pollution, pollution with oil is more coast-specific. Oil spills pollute coastal waters and ultimately intoxicate the soil. Negative impacts on flora and fauna are substantial, causing degradation of the ecosystems and also severe economic damage. This is more extensive around sea and river ports of Chittagong, Mongla, Khulna, Barisal and Chandpur. Hundreds of ships visiting Bangladesh's main port are taking advantage of tax laws and poor enforcement to dump pollutants into the

¹ BBS defines a city as an urban center with over 100,000 people. So far, Divisional headquarters have been declared as City Corporation.

sea. Pollution is reaching dangerous level, but the Chittagong port lacks the laws and logistical backup to stop the dumping of harmful waste by many of the average 1,600 local and foreign vessels that use the port every year.

Water pollution is increasing around industrial areas. A complex mixture of hazardous chemicals, both organic and inorganic, is discharged into the water. Large cities drain enormous amount of domestic effluents. Chittagong and Khulna do not have adequate wastewater treatment facility, and are major sources of water quality degradation. One of the most polluting is the ship-breaking industry along Chittagong-Kumira coast. Stringent rules and regulations to prevent pollution have been enacted. However, enforcement remains a problem. Recently, separate Environment Court has been established that sometimes penalizes polluting ships.

Air pollution in urban area is another environmental issue. Khulna is one of the most polluted cities in Bangladesh. The air environment of Khulna has been deteriorating rapidly during the last couple of years especially due to migration of highly polluting banned vehicles from Dhaka with 2-stroke engine. The residents of Khulna frequently complain about headache, eye and throat irritation and breathing problem. The situation is worsening with the increase of population and economic development.

Some problems and issues, such as lack of sanitation, traffic congestion, power shortage, lack of piped water supply, haphazard dwelling, etc are common to all urban centers. However, some problems are accounted for typical natural and economic environment of particular cities.

Many parts of Chittagong city suffer from drainage congestion. Chaktai Khal used to drain most of the water. This has been completely silted up and suffered encroachment. The city's panoramic view has been mostly due to its green hills. Indiscriminate cutting of hills to collect earth for various construction purposes has been causing severe damage to environment.

Khulna has virtually no sewerage system. Lack of freshwater for domestic and industrial purpose is a major concern.

Water and sanitation remains a major problem in Barisal. Arsenic contamination in groundwater is high and surface water treatment facility is absent.²

Cox's Bazar has flourished as a tourist destination. But unplanned growth of structures has already damaged its natural scenic environment to a large extent. The beach sand has become filthy and water is polluted. Water pollution heightens because of plying of mechanized fishing boats.

² Surface water treatment for domestic purpose is absent in the entire coastal zone.

Risks and hazards

The coastal zone is a zone of multiple vulnerabilities. The contributing elements are several risks and hazards that are increasing. Major risks and hazards in urban areas are summarized below.

- **Earthquake:** The coastal districts are less vulnerable to earthquakes than the rest of the country. Recently, however, earthquake incidents occurred in the Chittagong area several times. The Chittagong earthquake of 27 July 2003 occurred with a magnitude of 5.6 in Richter scale. Moheshkhali Island of tectonic origin has hills of tertiary age and has also experienced earthquakes in recent times.
- **Salinity:** Water and soil salinity is a common hazard in many parts of the coastal zone. In the southwest region, surface water salinity has been accentuated by the reduction in the dry season upland flows entering the Gorai distributaries. Salinity now reaches as far as Khulna city, affecting the supply of clean water for domestic and industrial use. A number of industries in Khulna are facing shortage of fresh water during the dry season. As a consequence, no new heavy industry was set up in the recent years in the Khulna region despite increasing infrastructure facilities (road, sea-port, etc.). Groundwater salinity is also high in Noakhali.
- **Water logging:** Water logging is especially experienced in the southwest (Khulna-Jessore) and south-central (Noakhali-Lakshmipur) areas. Noakhali town remains waterlogged for most part of the monsoon season.
- **Arsenic:** Arsenic contamination is common in many parts of the coastal zone, but mainly in Barisal, Khulna, Gopalganj, Chandpur, Noakhali, Satkhira and Lakshmipur.
- **Land erosion:** Land erosion is a common natural phenomenon. Embankment systems are posing a continuous problem in the coastal areas. This exposes interior lands to the threats of cyclone surges and salt-water intrusion. River erosion has taken a serious turn in several urban centers including Chandpur and Bhola. Comprehensive erosion control or protection plan does not exist.
- **Climate change:** Climate change is expected to increase the intensity of cyclones, resulting in the penetration of storm surges further inland, causing higher damages. Coastal polders offer the first line of defense against sea level rise. But maintenance of sea dykes of polders will involve higher cost.

3. POPULATION

According to 2001 population census, 36.83 million people live in the coastal zone of Bangladesh. Among them, 8.52 million people live in urban areas.³ They are 23 percent of the coastal population and 28 percent of total urban population of the country. Of total urban population of the coastal zone, 4.7 million live in two SMAs, Chittagong and Khulna, who together comprise 56 percent of coastal urban population and 13 percent of total coastal population.

Among the coastal districts, Khulna has the highest proportion of urban population (53.3%), followed by Chittagong (50.3%), while Satkhira has the lowest proportion of urban population (7.2%), followed by Patuakhali (8.5%). Two-third of the coastal urban population lives in four districts: Chittagong, Khulna, Barisal and Jessore.

Population growth

Urban population in Bangladesh has increased at an annual exponential rate of 6.1 percent during the inter-census period of last forty years (1961-2001). This has been much higher than the overall national population growth of 2.2 percent

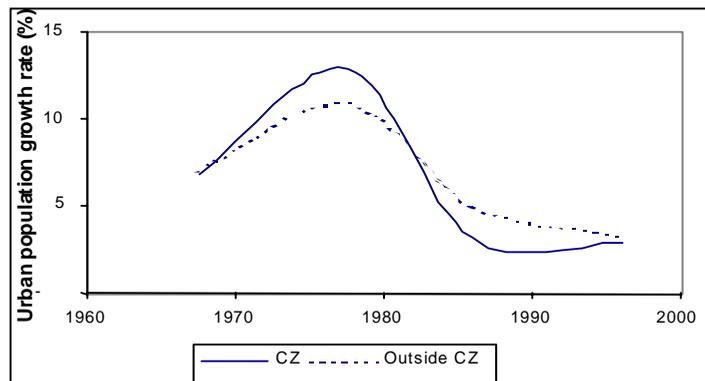


Figure 2: Population growth rate

during the corresponding period. Urban population growth has been slightly lower in the coastal zone with annual growth rate of 5.9 percent. During this period the share of the coastal urban population to total urban population of the country has declined from 33 percent in 1961 to 28 percent in 2001, which means

³ Adjusted for net undercount as per BBS guideline. Adjusted population data (separately for male and female) are available for districts and rural-urban data for the country as a whole. Net error rates (undercount) for different localities are: national 4.98%, rural 4.54%, *Pourashava* 5.81%, other urban 3.73% and SMA 7.67% (BBS, 2003).

that urban population has been growing at a slower rate in the coastal zone than outside the coastal zone.⁴

Rapid growth in urban population is due to rural-urban migration as well as area reclassification. This mainly happened in the 1970s and the 1980s (Figure 2). Rural-urban migration within the district among all districts of Bangladesh is the highest in Chittagong, followed by Khulna and the lowest in Shariatpur, followed by Gopalganj (BBS, 1997).⁵

Demographic characteristics

The major contributing factor behind rapid growth in urban population is migration. Figure 3 shows that rural to urban migration is the most dominant trend among all forms of migration (BBS, 1997).

Average number of members in coastal households is slightly lower in urban areas (5.0) than in rural areas (5.2),

but a bit higher than the country average for urban areas (4.9). Average size of urban households is high in Cox's Bazar, Feni and Noakhali districts (5.5 or more) and relatively low in Satkhira and Bagerhat districts (4.5 or less). Conceivable explanations for lower household size are:

- ◇ many male members migrate to urban areas for economic reasons leaving behind other members of the family in the village; this phenomenon contributes also to higher urban sex ratio⁶;
- ◇ joint families with large number of members are less visible in urban areas; joint family culture rotates round large agricultural holdings that still persists in rural areas; and

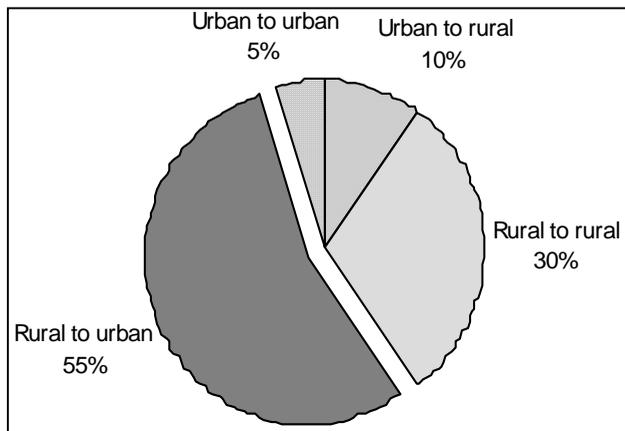


Figure 3: Direction of internal migration

⁴ Higher urban growth rate outside the coastal zone is mainly due to massive urbanization of Dhaka, which experienced a 6.6 percent annual population growth during this period.

⁵ Based on inter-census data, 1981-1991.

⁶ Sex ratio is the number of male population per 100 females.

- ◇ the culture of having small nuclear families is a manifestation of urban way of life.

Urban sex ratio is 114 compared to rural (101) in the coastal zone, but lower than the country average for urban areas (117). Urban male population is more than female population in all coastal districts except Shariatpur. Urban sex ratio is the highest in Chittagong (119), followed by Cox's Bazar (118), Barisal (117) and Jessore (116). Urban centers in these districts have large numbers of male in-migrants catering for different activities and services.

Social stratification

Urban areas manifest sharp contrast among its populace. Some are poor some are rich. Some live in posh enclaves, some reside in slums. BBS in its literature uses a conventional stratification of households as 'poor' and 'non-poor'. According to Household Investment Survey 1998-99, 47 percent of urban households in the country are poor (BBS, 2002a). Based on this criterion, there are four million urban poor in the coastal zone (estimate for 2001).

According to the Poverty Monitoring Survey 1999, poor households are defined as those living on hand to mouth, do not have any savings, or do not possess any land (BBS, 2002b). According to the survey of Perceptions of Direct Stakeholders on Coastal Livelihoods (PDSCL)⁷, the urban respondents have defined poverty in terms of a set of qualitative indicators, which are indicative of a particular state of affairs (PDO-ICZMP, 2003). This is shown in Table 2.

Table 2: People's perception of poverty

| Indicator | Responses | |
|------------------------|--------------------------|------------------------------------|
| | Poor | Non-poor |
| Asset | No | Yes |
| Occupation | Daily/seasonal labor | Regular/multiple job |
| Economic participation | One person in the family | More than one person in the family |
| Income | Hand to mouth | Enough |
| Saving | No | Yes |

Urban poor

Poverty is lower in urban areas than rural areas. Household Income and Expenditure Survey shows higher incidence of urban poverty in the coastal zone

⁷ The survey was undertaken by PDO-ICZMP in May-August 2002.

(see Figure 4). Khulna tops the list, which ranks only next to Rajshahi division (BBS, 2003a).⁸

Among the urban poor, women are poorer and among the poor women, the widowed/divorced are the poorest (BBS, 2003a). Most of the urban poor are recent immigrants from rural areas. Analysis of data of Chittagong and Khulna SMAs, which have highest number of slums

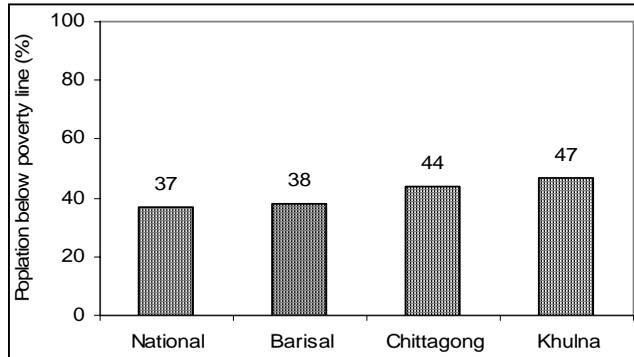


Figure 4: Incidence of urban poverty

among the coastal districts shows that the slum-dwellers come mainly for economic reasons (70%). Among other reasons are social, such as, being uprooted, driven out, abandoned, etc. (15%) or natural disasters like erosion (8%). The pattern is similar in the country as well. But people in the coastal zone migrate for economic reasons at a higher proportion than the country, which is indicative of severe lack of opportunities in the coastal zone except few urban areas that pull intending workers from other areas (Figure 5).

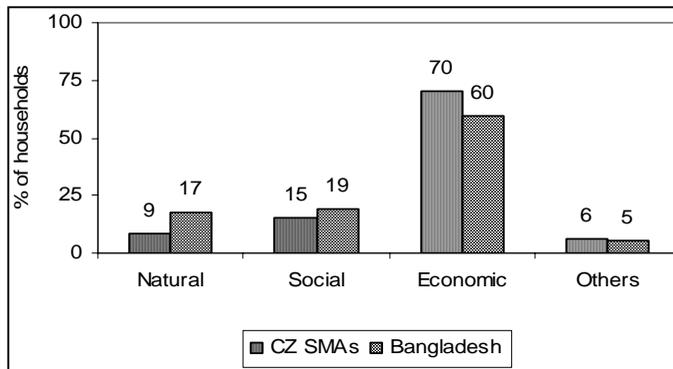


Figure 5: Reasons for migration

⁸ Poverty measures are based on CBN method using minimum nutritional requirement of 2122 kcal/ person/day.

Floating population

Floating population is an integral feature of urban areas in the country.⁹ Among the urban dwellers, the floating population is the poorest of the poor. The number of floating people enumerated in the BBS census (BBS, 1999) was 32,081 in the country. Among them 71 percent live in four SMAs (Dhaka, Rajshahi, Chittagong and Khulna) and 20 percent of the floating population live in Chittagong and Khulna SMAs. Sex ratio is very high among the floating population, 661 in Khulna SMA and 427 in Chittagong SMA, compared to 320 for all floating people in the country.

Street children

Street children are perhaps the most vulnerable section of the society who suffers from human deprivations of all forms. Many children are forced to live and earn on the street due to their vulnerable and distressed situation. They are mostly run-away or abandoned children. A study done by the Department of Social Services and supported by UNDP explains the precarious situation of the street children in three cities: Khulna, Barisal and Jessore (DOSS, 1999). About one-third of them are 8-10 years old. They are mainly involved as *tokai* (collector of rags, bone, paper, etc), vendor (fish, vegetables, etc), rickshaw/van puller and beggar. Those who work under employers are compelled to work longer hours and are tortured by employers. They urinate/sheath on roadside or use public toilet. Police and *mastans* (terrorist/muscleman) often assault them. The plight of the street children may be better understood with the help of a couple of life stories (see Box 1).

⁹ Floating population is the homeless and transient population. They are vagrant category of rootless people who have no permanent dwelling units whatever worse these are and they are found on the census night 00:00-05:00 AM at the bus stands, railway stations, *launch ghats*, *hat-bazars*, *mazars*, staircase of public/government buildings, open space, etc.

Box 1: Childhood robbed

Story of Kalu

Kalu is a boy of 16. He was born in a brothel at Daulatpur. He was raised by a foster-mother, another inmate of the brothel. At the age of 12, his foster-mother took him to a hotel to work as a bearer. He worked for two years and then was kicked out for stealing money.

Kalu started begging. One day a terrorist called him and trained him the skill of two fingers (pick-pocketing). But he failed and was caught and beaten by the people. His terrorist boss then trained him in stealing, and to handle pistol and gun. Kalu became a thief. And started stealing rice, onion, wheat, etc. from the market.

Kalu became a member of a terrorist gang. He ran away from the gang and started rickshaw pulling after the gang leader was killed in a feud. But shortly he was forced to join another gang. He remains a thief and cannot find a way out.

Kalu gets food, clothes and shelter from the gang leader in return of all he steals.

Story of Rahima

Rahima is a girl of 13. She came to Jessore city from Shariatpur. She is an abandoned child of a broken family. Her father divorced her mother and remarried when she was three. Her mother also remarried and lives in Dhaka.

Rahima started working as a housemaid at the age of seven. She worked for two years. Her employer left and her stepmother took away all her income and drove her away from the house.

She moved to Dhaka and met two men who offered her a job of office cleaning at Tk. 10 per day. She used to sleep in the corridor of the office and the other two men inside the office room.

One night they raped her, gave her Tk. 400 and drove her away from the office. Then she befriended a girl who took her to a brothel. One day she ran away, but eventually started her life as a sex worker. She earns up to Tk 200 per night. She spends the night at market places and mastans often force her to have sex with them without payment.

Source: DOSS, 1999 (edited)

4. SERVICES

The City Corporation and the *Pourashava* have a rather limited mandate and budget for carrying out the responsibilities of managing some basic civic services like street-lighting, conservancy, sewerage, city beautification, maintenance of city roads, mosquito eradication, etc. They collect municipal taxes and conservancy charges, which provide the principal source of finance for them.

The Power Development Board, the Titas Gas Co Ltd. and the oil companies are responsible for the supply of electricity, gas and fuel. All these agencies come under the control and coordination of the Ministry of Energy and Mineral Resources.

Health services are mainly provided by hospitals run by the Health Ministry. The City Corporation has its own Health Services and hospitals which supplement the services provided by the government and the NGOs. There are a number of NGO-run clinics in addition to private clinics, which run on a commercial basis.

The Ministry of Education, supplemented by the services provided by the City Corporation, NGOs, and the private sector, substantially provides educational facilities.

The situation of urban areas has been appraised here in terms of selected human development indicators that correspond to internationally acknowledged basic amenities of life one should have access to, that is, potable water, sanitation, energy and housing.

Drinking water

In Chittagong and Khulna cities, WASA has been constituted for domestic water supply and sewerage. In other urban areas, it continues to be the responsibility of the municipal authorities. The conventional notion of urban water supply refers to piped water supply. This is still very low in Bangladesh with only 26 percent households having access to tap water (Census 2001). This is even lower in the coastal zone (17%).

In eight coastal districts out of 19, less than five percent urban population use tap water for drinking, and in two districts (Patuakhali and Shariatpur) it is even less than one percent. Among the coastal districts, Satkhira has the highest proportion of urban households with access to tap water (34%), followed by Barguna (32%), Chandpur (29%) and Chittagong (26%). Khulna, being the second largest urban center in the coastal zone, has only four percent coverage of tap water supply (BBS, 2003).

Tube wells are a major source of drinking water in urban areas. About 78 percent coastal urban households use tube well as source of drinking water (shallow 63% and deep 14%). Conventionally tube wells were considered as a dependable source of drinking water. But with increasing arsenic contamination, particularly in the shallow aquifer, the context has changed. This problem is more pronounced in the coastal zone. Besides, salinity in groundwater is a major concern for many areas. The problem is more acute in Khulna and Noakhali. About six percent coastal urban households still use open water sources including pond (Figure 6).

The Chittagong Water & Sewerage Authority (WASA) is there for domestic water supply and sewerage, only meeting one-fourth of the total demand for water of the city, supplying water in only 13 wards. The present production capacity is 144 million litres per day against

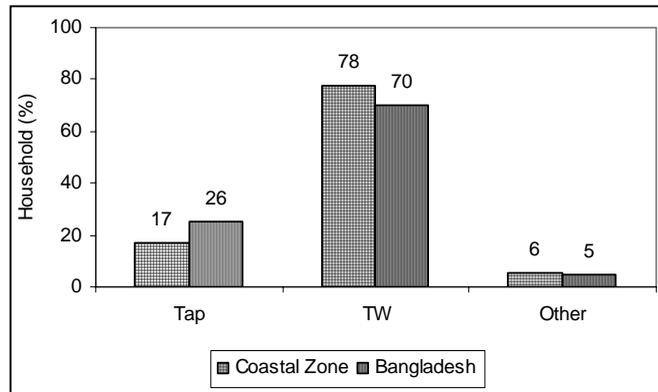


Figure 6: Source of drinking water in urban areas

the total demand of 454 million litres (The Independent, 30 March 2003). Chittagong has no sewerage system. Households rely on septic tanks, pit latrines or have no sanitation facilities.

Khulna WASA is yet to be functional. About 33 percent households throw waste either into nearby drains or low lands or elsewhere. Lately, some local NGOs have come up with a program of on-payment door to door collection of household garbage, which covers about 17 percent of the households of the city (Murtaza, 2001).

Sanitation

Sanitation is crucial for healthy living that includes hygienic latrine facilities, proper management of solid waste and proper disposal of household wastewater and storm water (Local Government Division, 2005). Proportion of urban households possessing sanitary latrines is slightly higher (70%) in the coastal zone than in the country (67%).¹⁰ Extent of sanitation is, however, much higher

¹⁰ National Sanitation Strategy defines a hygienic latrine, which is fixed with a pit designed for confining the faeces, sealing of the squatting whole, and a provision for a vent pipe for release of gases. The design may vary depending on hydro-geological conditions.

among urban households compared to rural households in the coastal zone (urban and rural together 46%). Sanitation coverage is the highest in Pirojpur (86%), followed by Jhalokati (84%) and Barisal (82%) and the lowest in Bagerhat (32%), followed by Cox's Bazar (53%). About 11 percent urban households have no latrine at all in the coastal zone compared to seven percent urban households in the country as a whole.

State of sanitation is poor in big cities in the coastal zone (Local Government Division, 2004). In six City Corporation areas of the country, 70 percent households have sanitary

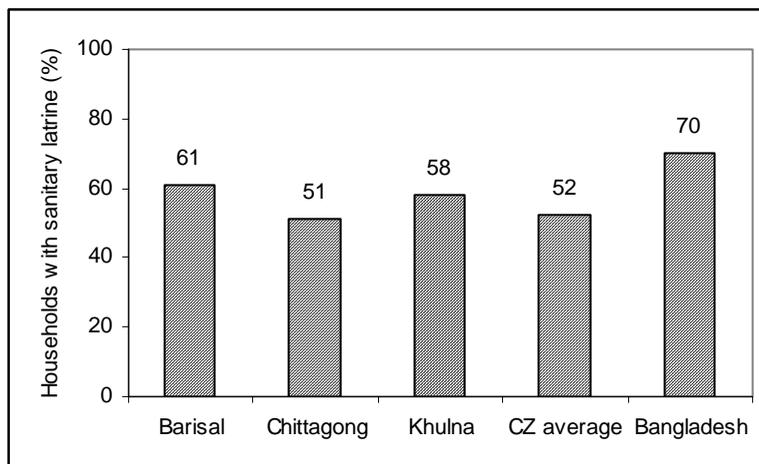


Figure 7: Access to sanitary latrine in city corporation areas

latrine. This is only 52 percent for three city corporation areas in the coastal zone, Barisal, Chittagong and Khulna (see Figure 7).

Electricity

In the coastal zone, only 32 percent households have electricity connection. In urban areas, this proportion is much higher, 67 percent. However, this is lower than the national figure of 71 percent. Household electricity connection in urban areas is relatively high in Chittagong, Feni, Jessore, Khulna and Barisal (over 70%) and very low in Shariatpur, Bhola, Narail and Cox's Bazar (40% or less). Although households are connected with the electricity grid, supply of power is often interrupted in many urban centers because of load management.

Housing

Housing conditions in the coastal zone are generally poor. Majority people (43%) use straw and bamboo as roof material in coastal urban areas compared to outside the coastal zone (23%). In the coastal zone, 16 percent urban households have cemented roof compared to 19 percent outside the coastal zone. On the other hand, 41 percent have roof made of tile/c.i. sheet in the coastal zone compared to

58 percent outside the coastal zone (BBS, 1997)¹¹. Within the coastal zone, there are more houses with cemented roof in Jessore, Khulna and Chittagong (more than 20% urban households) and very few in Bhola, Lakshmipur, Barguna and Shariatpur (less than 5% urban households).

While human settlements evolved historically along watercourses (rivers) in the rural areas in endogenous manner, planned townships are made from time to time. This is true for locating administrative and service agencies, economic and social infrastructures and human settlements. Parts of major urban centers like Chittagong and Khulna have followed this pattern. Still many establishments as well as human habitation are developing in a haphazard manner resulting in congestion. One major byproduct of urbanization is slum dwellings.

Poor people live in impoverished neighborhoods with no or little access to amenities of life. Many of them are recent immigrants from rural areas and have been crowding in slums.¹² Majority of them lives in makeshift houses called *jhupri*¹³ and *chhai*¹⁴. It has the following characteristics:

- ◇ predominantly very poor housing structure;
- ◇ very high housing density;
- ◇ poor sewerage and drainage or even no such facility;
- ◇ inadequate, unhealthy drinking water supply;
- ◇ unhealthy atmosphere;
- ◇ little or no paved road; and
- ◇ inhabited by poor, uneducated and below poverty level people

According to a BBS survey carried out in 1997, there are 2,991 slums in the country of which 630 are located in the coastal zone (BBS, 1999). The coastal slum population in 1997 was 28 percent of total slum population in the country.

¹¹ These data are of 1991. Relevant data of 2001 census are not yet available.

¹² BBS defines a slum as a cluster of compact settlements of five or more households, which generally grow very unsystematically and haphazardly in an unhealthy condition and atmosphere on government and private vacant land. Slums also exist in the owner based household premises.

¹³ *Jhupri* has a ceiling, which is less than four feet and is made of very cheap construction materials like straw, bamboo, grass, leaves, polythene, gunny bags, etc.

¹⁴ *Chhai* is a half arch shaped small structure open in front and rear sides. It has very low height so that the inhabitants enter it by scrawling and can hardly sit upright inside it.

5. LIVELIHOOD

Occupational pattern

Urban areas are often characterized by industrial, commercial and service activities. According to Labor Force Survey (LFS) 2002-2003, self-employment in various trades is the predominant source of livelihood for urban population in the coastal zone (Figure 8).¹⁵ Self-employment is more pronounced in Patuakhali, while regular service is more prominent in Chittagong and day labor in Khulna. This occupational pattern is similar to that of urban areas of Bangladesh as a whole (BBS, 2004).

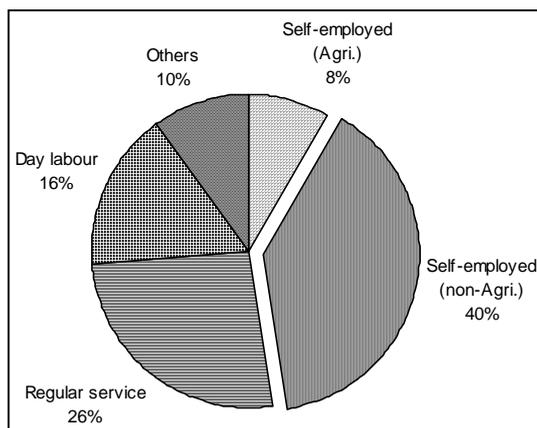


Figure 8: Occupation pattern

Poor people live on daily wages or are employed with longer-term contracts or are engaged in various kinds of self-employment (PDO-ICZMP, 2003). Ten major occupations of the slum dwellers are ranked in terms of number of persons engaged (Table 3). Predominant sources of livelihood are services, industrial labor, construction labor, rickshaw pulling, trading and the work of housemaid.

Table 3: Main occupation of slum dwellers

| Rank | Chittagong SMA | Khulna SMA | Bangladesh |
|------|----------------------|-------------------------|----------------------|
| 1 | Service | Trading | Rickshaw puller |
| 2 | Industrial laborer | Industrial laborer | Industrial laborer |
| 3 | Rickshaw puller | Rickshaw puller | Trader |
| 4 | Construction laborer | Service | Service |
| 5 | Trader | Housemaid | Construction laborer |
| 6 | Housemaid | Construction laborer | Housemaid |
| 7 | Porter | Porter | Porter |
| 8 | Hawker | Hotel/restaurant worker | Hawker |
| 9 | Agriculture laborer | Hawker | Cottage industry |
| 10 | Cottage industry | Agriculture laborer | Agriculture laborer |

Source: PDO-ICZMP, 2003

¹⁵ Livelihoods are defined in terms of main source of income.

Industry

Districts with higher extent of urbanization are also more industrialized (in terms of sectoral share of GDP) and more well off (in terms of GDP). For example, Chittagong has the highest number of urban population in the coastal zone and also has the highest amount of GDP. Khulna ranks second in these respects and Jessore ranks third. The relative share of industry in GDP is highest in Chittagong (36%), followed by Jessore (24%), Khulna (21%), Feni (20%), Cox's Bazar (19%) and Barisal (18%).

Manufacturing industries are mainly located in urban or peri-urban areas. The coastal zone is poorly endowed with manufacturing establishments having 15 percent of medium and large manufacturing units in the country. However, in terms of gross value added, these establishments are at par with the country. Total value of all coastal manufacturing establishments is estimated at taka 55 billion, which is 23 percent of total gross value added of all manufacturing establishments in the country. According to the Census of Manufacturing Industries (CMI) 1999-2000, there were 3,756 medium and large establishments in the coastal zone of which 62 percent are located in Chittagong district alone, followed by 16 percent in Khulna and 8 percent in Chandpur.¹⁶ Most poorly endowed districts are Bhola, Patuakhali, Pirojpur, Barguna, Bagerhat, Lakshmipur and Noakhali (less than 10 establishments each).

Coastal manufacturing establishments are of bigger size where average number of employed persons per establishment is 148, compared to 106 in the country. However, majority of the establishments are medium scale,¹⁷ as 51 percent of them have less than 50 workers each. Only two percent employ more than one thousand workers each. These are mostly located in Chittagong.

Over one half of a million persons are employed in these establishments. Employment of urban workforce in medium and large establishments is lower in the coastal zone (13%) than in the country (17%).¹⁸ Chittagong district alone accounts for 76 percent of total persons employed in coastal manufacturing establishments, followed by nine percent in Khulna and four percent in Jessore. The largest enterprise in terms of employment is a jute textile unit in Jessore with 7,702 persons engaged, closely followed by a *biri* factory with 7,314 workers.

¹⁶ All manufacturing establishments with 10 or more persons engaged were within the scope of this census. Thus, it excludes small enterprises that employ less than 10 persons by definition.

¹⁷ Establishments with less than 50 but not less than 10 workers.

¹⁸ It is assumed that all medium and large manufacturing industries are located in urban areas.

Smaller enterprises are mainly located in Narail, Pirojpur and Barguna, averaging 10 to 25 workers per unit (BBS, 2004).

In the manufacturing sector, garments industry has bulk of the share in employment, particularly in Chittagong. This sector employs large number of women (see Box 2).

Box 2: Story of a factory worker

I am 32 years old. I am from Sitakunda and now live in Chittagong city. I am a day laborer and work in a factory. I have to work in shifts and now my turn is night shift. There is no problem to work at night, as my husband is also a worker of the same factory. He understands my situation. The factory owner prefers to employ female workers as they work sincerely and can be paid less. They never go for strike and are not involved in any political work. It is also easy to recruit. They can be hired and fired any time.

I was the only earning member in my parents' family as I was their eldest child. I used to go to the hill to cut wood and sell in the market. I got married first time with a rich fisherman when I was 16. But I noticed that he wants to marry again and again. He had his first wife with many children. I had a son. Though I was his wife but I had to stay with my parents and I had to work for them. He was reluctant to provide expenses for my son and me. I was upset with him. So I got a divorce. I had to forgo denmohor (emolument) of 60,000 taka to keep my son with me. I am married again. But my present husband also has a wife and some children. But they live in their village home and I live with my husband in a rented house close to the factory we work.

I had an accident in the factory. My saree was caught in the machine. Suddenly I felt pain at my neck. It was a serious injury and I had to stay in hospital for two weeks. Company gave some money, but not in full amount. Because I was not on duty officially. I started one hour earlier than my shift starts. I wanted to do more work, but company never sees the point.

Source: PDO-ICZMP, WP004

Tourism

Some major tourist spots are located in the coastal zone. Among the most prominent ones are urban-based beach resorts in Cox's Bazar and Khulna-Mongla urban enclaves catering tourism to Sundarban. Direct employment in the tourism sector in the country is over 100,000 and indirect employment maybe more than 200,000 (BPC). Many of them work in these two areas. Besides, Kuakata in Patuakhali district is steadily developing as a major tourist destination. Most of the workforce is employed in hotels and restaurants, transportation and production and sale of handicrafts.

Unemployment

According to the Labor Force Survey 2000, extent of unemployment is higher in urban areas than in rural areas.¹⁹ In the coastal zone, 23 percent of the population is urban-dwellers, while 35 percent of the unemployment persons of 15 years age and over live in urban areas, compared to 28 percent in the country as a whole. Urban unemployment is higher for male than female. Urban unemployment is slightly higher in the coastal zone (3.21%) than in the country (3.05%). Among the greater districts, urban unemployment is the highest in Patuakhali (13.8%), followed by Noakhali (4.5%) and Barisal (3.8%), while it is lowest in Chittagong (2.3%), followed by Khulna (2.9%).²⁰ Areas with high industrial development have less unemployment (BBS, 2004a).

¹⁹ According to BBS, unemployed person is one who is involuntarily out of any gainful employment during the reference period (one week preceding the day of enumeration).

²⁰ Estimates are based on LFS data and computed for population of working age (15-59).

6. DEVELOPMENT PROJECTS

Government interventions

To eradicate poverty in the urban areas, government has taken up several initiatives through different departments. Many of these are national programs for urban areas with coverage in some coastal districts. Main sectors in which they have interventions are health, education, infrastructure development, micro-credit, alternative income generating activities, water and sanitation, etc. Some of these initiatives have been briefly described here as examples. However, there are many more ongoing projects with coverage in urban areas.

Local Partnership for Urban Poverty Alleviation

The project on Local Partnership for Urban Poverty Alleviation supports community level activities to upgrade living conditions of the poor. It has two components: Local Partnership for Urban Poverty Alleviation supported by UNDP; and Support for Basic Services in Urban Areas supported by UNICEF. The first component is from December 1999 to December 2006 with a budget of 20.4 million US\$ and that of the second component is from January 2001 to December 2005 with a budget of 307.6 million taka. LGED is the implementing agency. The United Nations Center for Human Settlements (Habitat) is the UN implementing agency. In the coastal zone, the project covers Chittagong, Khulna and Barisal City Corporations and Noakhali, Jessore, Barguna, Feni, Bhola, Gopalganj and Cox's Bazar *Pourashavas*.

Environmental Sanitation, Hygiene & Water Supply

The project on Environmental Sanitation, Hygiene & Water Supply in Urban Slums & Fringes is implemented by DPHE and funded by UNICEF. It aims to reduce the incidence of diarrhea diseases, parasitic infection and other water-borne and water-related diseases specially among children and women in urban slums in five City Corporation areas and nine district-level *Pourashavas* by providing safe water facilities, improved sanitation and personal hygiene. The budget of the project is Tk. 280 million and is stretched over a period of 1997-2006. In the coastal zone, the project covers Chittagong, Khulna and Barisal City Corporations and Noakhali, Jessore and Patuakhali *Pourashavas*.

Water Supply, Sanitation, Drainage and Waste Disposal

DPHE with assistance from DANIDA is implementing the project on Water Supply, Sanitation, Drainage and Waste Disposal Project in Municipality, Thana and Growth Centers in 11 districts including eight in the coastal zone, such as,

Barisal, Pirojpur, Jhalokati, Patuakhali, Barguna, Lakshmipur, Noakhali and Feni. The project started in 1997 and will be completed in 2006. The total budget of the project is Tk. 2,530 million.

Rehabilitation and Upgrading of Water Supply System

DPHE is implementing the project on Rehabilitation and Upgrading of Water Supply System in *Paurashavas*. The project period is July 1997-June 2005 and is financed by the Government of Bangladesh with a cost of taka 334.2 million. Project locations are Cox's Bazar, Chandpur, Barisal, Pirojpur and Jessore. Main objectives are to regenerate tube wells, to increase water pressure in the supply network and to decrease waste of water.

Day Care Center for the Children of Working Mothers

The project on Day Care Center for the Children of Working Mothers at District Town (2nd Phase) is being implemented in seven districts including two in the coastal zone, Jessore and Feni. The Department of Women's Affairs is implementing the project under a GoB fund of taka 43.5 million. The project period is from July 2001 to June 2006. General objective of the project is to facilitate women's participation in income earning activities by providing day care services and secure shelter for the children of women with low income.

Municipal Development Fund

To promote planned urban development providing civic amenities to the people, Bangladesh Municipal Development Fund (BMDF) has been created. BMDF was set up as a government-owned company to bring improvement in the infrastructure of City Corporations and *Pourashavas* all over Bangladesh including those in the coastal zone. The activities of the company began with an initial capital of Taka 7.8 billion provided by the government and the World Bank (Daily Star, 5 May 2005).

NGO interventions

Besides government initiatives, NGOs are also providing services to the urban poor. Their interventions are mainly in the areas of education, health, water and sanitation, credit, training, awareness raising, capacity building, etc. A few NGOs are exclusively involved in urban programs and some NGOs have coverage both in urban and rural areas. These programs are basically targeted to poor women, rickshaw pullers, small traders, drug-addicted youth, adolescent girls, persons with disability, garment workers, pregnant women, slum dwellers, wage laborers, widows, children, etc.²¹

²¹ Activities are named in accordance with the terminology used in the ADAB Directory of NGOs.

7. FUTURE SCENARIO

Population is increasing. It is increasing at a faster rate in urban areas. It is likely that population will increase at a declining rate in the future assuming reduced fertility and improved service delivery in rural areas. Population projections based on different assumptions lead to different scenarios. Here, a set of assumptions has been made that sets the framework for developing a future scenario for urban areas in the coastal zone.

Assumptions

Assuming a declining growth rate of coastal population, annual growth rate will drop from 1.36 percent (1991-2001) to 0.71 percent in 2050 (World Bank, 1994).²² Same projections suggest that sex ratio will be 100 for all areas and 105 for urban areas in 2050. It is also assumed that the average size of households will decline to 4.0 in 2050. It is likely that disparity in demographic features between the coastal zone and the country will disappear by this time.

There will be less child labor, as more children will pursue education. On the other hand average life expectancy will increase, health conditions will improve and upper limit of the working age will go up. These factors will offset one another. Thus workforce (economically active population) will continue to be 53 percent of the total population as before.

Urban population growth rate varies according to stages of urban development. Currently (1991-2001) the growth rate is 3.73 percent in Chittagong SMA, 2.96 percent in Khulna SMA and 2.04 percent in other urban areas. Because of future developments, a harmonization in growth rates in different areas will happen. It is likely that other urban areas will gradually catch up in pulling more in-migrants and the current direction of migration to few areas like Chittagong and Khulna will reach a stage of saturation. It is assumed that urban population growth rate will reach a figure of 3.0 percent in 2015 and gradually decline to 2.0 percent in 2050. Population growth will follow a linear trend in between the periods.

Future population

Based on all these assumptions, the projected population of the coastal zone in 2005 stands at 38.8 million and that of urban population at 9.5 million. Total coastal population will be 60.8 million in 2050 and urban population will be as

²² Assumptions are based on World Bank projection of 0.71% annual growth in Bangladesh during 2025-2050 (World Bank, 1994). Here, declining growth in a linear fashion has been considered.

high as 30.2 million (see Table 4, Figure 9). Coastal urban population will increase to 29 percent in 2015 and 50 percent in 2050.

Table 4: Coastal Zone population (million)

| Year | Total | Urban | | | | Rural | Workforce | | |
|------|-------|-------|----------|------------|--------|-------|-----------|-------|-------|
| | | Total | Ctg. SMA | Khulna SMA | Others | | Total | Urban | Rural |
| 2001 | 36.8 | 8.5 | 3.4 | 1.3 | 3.8 | 28.3 | 19.5 | 4.5 | 15.0 |
| 2005 | 38.8 | 9.5 | 3.9 | 1.5 | 4.1 | 29.3 | 20.6 | 5.1 | 15.5 |
| 2010 | 41.3 | 11.0 | 4.6 | 1.7 | 4.7 | 30.3 | 21.9 | 5.9 | 16.1 |
| 2015 | 43.9 | 12.8 | 5.4 | 2.0 | 5.4 | 31.1 | 23.3 | 6.8 | 16.5 |
| 2020 | 46.4 | 14.8 | 6.2 | 2.3 | 6.2 | 31.7 | 24.6 | 7.8 | 16.8 |
| 2030 | 51.5 | 19.3 | 8.1 | 3.0 | 8.1 | 32.2 | 27.3 | 10.2 | 17.1 |
| 2040 | 56.3 | 24.5 | 10.3 | 3.9 | 10.3 | 31.9 | 29.8 | 13.0 | 16.9 |
| 2050 | 60.8 | 30.2 | 12.7 | 4.8 | 12.8 | 30.6 | 32.2 | 16.0 | 16.2 |

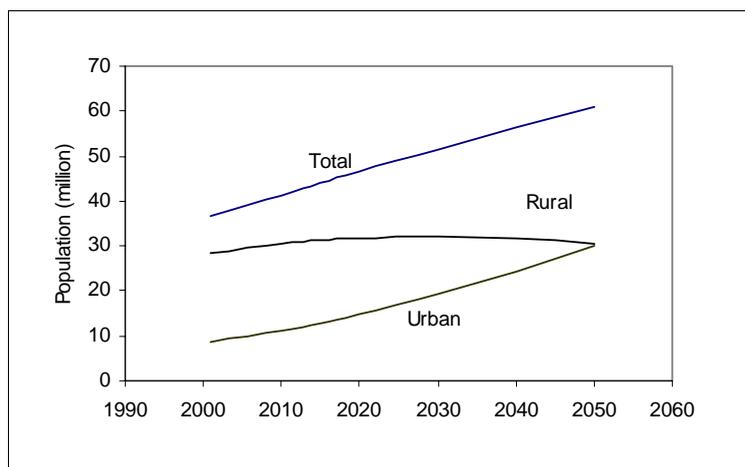


Figure 9: Population scenario in the coastal zone

Mega urban centers

Chittagong metropolitan city is likely to expand beyond its present borderline to include Hathazari, Sitakunda and Karnaphuli upazilas, which are already parts of the SMA and where industries, EPZs and commercial activities are concentrated. Similarly, Khulna city will soon expand incorporating Khanjahan Ali, Dighalia and Rupsha upazilas within its fold, although these areas are currently included

in Khulna SMA. In the coming decades, Chittagong and Khulna are destined to grow as mega city.²³ Chittagong SMA will become a megacity by 2015. Its population will increase to about 13 million in 2050, while Khulna will have approximately five million people by that time. Jessore-Khulna and Jessore-Benapole corridors are gradually developing as an industrial-urban zone. Chittagong SMA alone will account for over one-fifth of the total coastal population by the middle of the century. This means more squatters and slums, more street children and more pressure on urban infrastructures and services unless these issues are addressed properly.

Opportunities

The coastal zone contains distinctive development opportunities that add a wider dimension to its urban development. This is already visible in various sectors.

- A hatchery industry has developed over the years in the urban fringe of Cox's Bazar to respond to shrimp and fish culture. *Bagda* hatcheries are mostly concentrated in Cox's Bazar that largely meets the demand of the *bagda* farms elsewhere in the country.
- Fish processing (including fish drying) has an expansion potential. Fish drying is mainly concentrated in Cox's Bazar, Chittagong and Khulna. About 600 small enterprises are engaged in this process. Recently, few enterprises started fish drying using hygienic methods, which has large potential for marketing at home and abroad.
- Bulk of the external trade is carried through Chittagong Port and Mongla Port. Total volume of imports and exports through Chittagong and Mongla in last 20 years increased by 110 percent and 30 percent respectively. In line with expanding trade relationship with other countries and growing national economy, increased opportunity exists for both the ports. These potential will be manifold if agreement is reached for cargo handling for landlocked countries like Nepal and Bhutan through these ports. With recent commissioning of the Rupsha Bridge in Khulna, the economic importance of Mongla Port has increased manifold. According to trade forecasts, volume of international trade will increase by 227 percent between 2000/01 and 2016/17 (CPA web, 2002).
- Based on existing port facilities, opportunities exist for further industrial development in and around Chittagong and Khulna. Two EPZs are located in

²³ A megacity is defined as one having a population over five million.

the coastal zone and another two are being developed. There is scope for more.

- Potential exists in additional networks of road and railway. One of the proposed routes of the Asian Highway linking Myanmar/Thailand goes through Chittagong and Cox's Bazar.
- Tourism is another important economic activity, though its present contribution to GDP is not significant. It is one of the fastest growing sectors. According to projections, its contribution to GDP will be at least 4-5 percent by 2020. Arrival of international tourists will stand at 0.9 million and may well exceed 1.3 million by 2020 (BPC). A significant proportion of them will visit major destinations in the coastal zone. The landscape of Cox's Bazar town has undergone drastic changes in recent years to cater services to tourists, both foreign and local. In the coming years this trend is likely to continue and will create many jobs in tourism and other linked industries.

Demand for jobs and services

People mainly migrate to urban areas for economic opportunities. This presupposes creation of additional jobs for the increasing workforce, which will almost quadrupled by the middle of the century (see Table 4). Average annual demand for additional jobs will be over 0.23 million during this period. Much of the employment opportunities are presently industry and port-centric. This is likely to increase with commissioning of the proposed deep seaport.

As corollary to urban development, the problem of municipal waste, industrial waste, air pollution, water pollution and housing congestion will heighten. This needs massive investments in urban infrastructures, industries and services in a planned manner. Environmental management itself will propel demand for new jobs.

8. CONCLUSION

Urban areas are generally administered by the local government (City Corporation or *Pourashava*) whose main spheres of intervention are various municipal services, such as, water supply, sanitation, street lighting, roads and licensing (for businesses, vehicles, etc.). In many urban centers, most of these services are confined only to administrative hubs and residential enclaves of the rich and the middle class.

About half of the urban population is poor. They are not only poor in terms of income, but also in terms of services, which they are supposed to receive as urban dwellers in terms of widely accepted human and social development indicators. Many of them live in dehumanized conditions in the slums.

It may be mentioned that most of the urban dwellers are recent immigrants. The poor often come from poverty-stricken rural areas, and the relatively better off come for better services (health, education for children, protection against personal insecurity) and opportunities (business and job) that are lacking in rural areas. They migrate from areas of problems and deficits to areas of opportunities and surplus. Even if their dreams of a better life are shattered, many of them cannot go back as they have already reached a point of no return after exhausting all means of livelihood in a rural setting.

Targeting programs and activities exclusively to the urban poor is, however, a recent phenomenon. There are area-specific activities that are targeted to slum dwellers, as well as issue-specific activities addressing needs of the poor in the field of education, health and water and sanitation.

One important issue is to address the problems of the urban poor who crowd in slums. The more intrinsic issue is to address the causes that create slums, that is, abject poverty and pauperization in the villages. A healthy urban environment cannot be attained in isolation. This calls for a holistic approach to poverty reduction.

REFERENCES

- ADAB, 2000.** Directory of NGOs. Association of Development Agencies in Bangladesh. Dhaka.
- ADB, 2000.** Urban sector Strategy 2000, Final Report. Ministry of LGRD & Cooperatives. Government of Bangladesh and Asian Development Bank.
- Ahmed, A.I. Mahbub Uddin, 2004.** Weber's Perspective in the City and Culture, Contemporary Urbanization and Bangladesh. Bangladesh e-Journal of Sociology. Vol. 1, No. 1. January 2004.
- Asiatic Society of Bangladesh, 2003.** Banglapedia, National Encyclopedia of Bangladesh. Dhaka.
- BBS, 1997.** Bangladesh Population Census 1991. Volume 3. Urban Area Report. Dhaka.
- BBS, 1999.** Census of Slum Areas and Floating Population 1997, Volume 1. Dhaka.
- BBS, 2002.** Statistical Pocketbook Bangladesh 2001. Dhaka.
- BBS, 2002a.** Household Investment Survey 1998-99. Dhaka.
- BBS, 2002b.** Report of the Poverty Monitoring Survey 1999. Dhaka.
- BBS, 2003.** Population Census 2001, National report (Provisional). Bangladesh Bureau of Statistics, Dhaka. July 2003.
- BBS 2003a.** Household Income and Expenditure Survey 2000. Dhaka, March 2003.
- BBS, 2004.** Report on Bangladesh Census of Manufacturing Industries (CMI) 1999-2000. Bangladesh Bureau of Statistics, Dhaka. June 2004
- BBS, 2004a.** Report on Labor Force Survey 2002-2003. Bangladesh Bureau of Statistics, Dhaka. December 2004.
- BPC, undated.** Bangladesh Tourism Vision 2020. Bangladesh Parjatan Corporation.
- DOSS, 1999.** A review of Existing Services Relating to Street Children (Khulna, Barisal and Jessore). ARISE, BGD/97/028, Department of Social Services. Dhaka.
- Establishment Division, 1980.** Bangladesh District Gazetteers Bakerganj. Government of the People's Republic of Bangladesh. Bangladesh Government Press, Dhaka.

- Establishment Division, 1979.** Bangladesh District Gazetteers Jessore. Government of the People's Republic of Bangladesh. Bangladesh Government Press, Dhaka.
- Establishment Division, 1975.** Bangladesh District Gazetteers Chittagong. Government of the People's Republic of Bangladesh. Bangladesh Government Press, Dhaka.
- Finance Division, 2004.** Bangladesh Economic Review 2004. Ministry of Finance, Government of the People's Republic of Bangladesh.. June 2004.
- Islam, Nazrul, 2005.** Urban Poverty in Bangladesh, in Stream of the Light. Community Development Library. Dhaka, 2005.
- Local Government Division, 2004.** *Jatyo Sanitation Procharabhijan Sankranto Tathyaboli* (information on national campaign for sanitation). Ministry of LGRD & Cooperative. July 2004.
- Local Government Division, 2005.** National Sanitation Strategy (draft). Ministry of LGRD & Cooperative. February 2005.
- LGED, 2002.** Pourashava Statistical Yearbook of Bangladesh 1998-99. Secondary Towns Infrastructure Development Project-II, LGED. Dhaka, February 2002.
- Murtaza G, 2001.** Environmental Problems in Khulna City, Bangladesh: a Spatio-Household Level Study. GBER Vol. 1 No. 2.
- PDO-ICZMP, 2002.** Perceptions of Direct Stakeholders in Coastal Livelihoods. Working Paper WP004, September 2002. Dhaka.
- PDO-ICZMP, 2003.** Urban Poor in the Coastal Zone. Working Paper WP021. Program Development Office for Integrated Coastal Zone Management Plan, Ministry of Water Resources, Dhaka. August 2003.
- PDO-ICZMP, 2003a.** Coastal Livelihoods – situation and context. Working Paper WP015, June 2003. Dhaka.
- PDO-ICZMP, 2004.** Living in the Coast – Problems, Opportunities and Challenges. June 2004. Dhaka.
- Planning Commission, 2004.** Unlocking the Potential – National Strategy for Accelerated Poverty Reduction. Government of Bangladesh, Dhaka. December 2004.
- World Bank, 1994.** World Population Projections. Washington, D.C.