

Best Practice A Perspective of “Clean and Green” Chittagong

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Chapter – 1.

1. Background of the City:

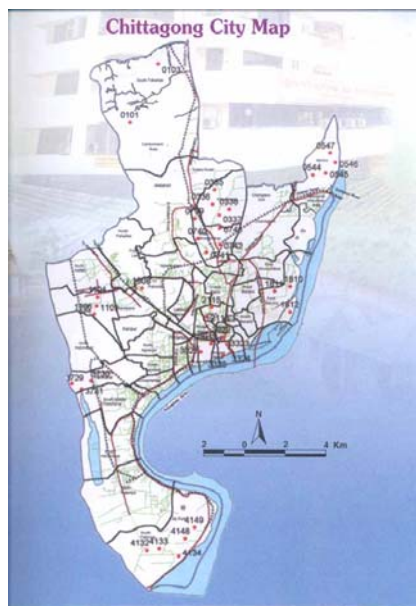
Chittagong is Bangladesh's second largest city, its major sea port and the heart of all commercial and business activities. As a result, the Government has declared Chittagong the "Commercial Capital" of the country. After the Independence of the country in 1971, the Port City of Chittagong earned a significant status by virtue of her diversified economic potentials as well as suitable geographical location in the South and South-East Asian region.

The city is surrounded by rich natural resources such as- Hilly Terrain, the Karnaphuli River and the Bay of Bengal which can be termed as the "Divine Gifts" for the city. The beautiful landscape of the Hilly Terrain lies at the north and north-west. The Karnaphuli River flows through east towards south-east and south and empties into the Bay of Bengal on the west. These are the city's main attractive features.

From the historical background it is known that, at the very beginning Chittagong City started to flourish with its Port Activities. Business people from all over the world especially people from the West and Middle-East visited this region on a regular basis for trade, commerce, tourism and for religious purposes. Once upon a time, Chittagong was popularly known as the "Queen of the East" to the foreign Tourists because of her beautiful Green Landscape and Natural Resources. The city is around 280 Km. south-east from the Capital city of Dhaka and 190 Km. north-west of the Beach City of Cox's Bazaar – the "Longest Beach in the world".

The majority of the people in Chittagong are involved in the import-export, trade-commerce and various related industrial and business activities. There are also the expected government sector occupations that we find in other port cities of the globe. Presently the city accommodates an International Airport, Sea Port, Engineering University, General University, TV station, Radio Station, Art College, Medical College/Hospitals, Museums, Eco-Park/Botanical Garden, Zoological Garden, Beach Facility etc. along with many other Civic, Historical/Archeological and Recreational spots. On the other hand, it should be mentioned here that around 40% of the Heavy Industrial activities of the country is located in the Chittagong city and adjacent areas. These include dry dock, dock yards, oil refinery, steel mills, paper mills, power plants, cement clinker factory, cable manufacturing, textile mills, garment industries, jute mills, tannery/skin and hide manufacturing, urea fertilizer factory, export processing zone (EPZ) etc. along with many other private sector medium and small size industrial activities in the city area.

Chittagong town started as a tiny Municipality in 1863 with a population of only 25,000. In 1864 (15 July), it was reconstituted as Chittagong Municipality. It was further upgraded to Chittagong Municipal Corporation (CMC) in 1982 and finally as Chittagong City Corporation (CCC) in 1990. At present the city occupies around 157 Sq. Km. (60 Sq. Miles) of land area, inhabited by 4.0 million (according to 2001 CCC Census) people approximately. CCC is governed by the City Mayor, who is elected for a 5 yr. term. There are 41 Wards in the city at present, where urban people vote and elect their Ward Commissioners for the same time span. Moreover, CCC has got positions for 14 Female Ward Commissioners to represent the respective Urban Communities (3 wards each) as female leaders of the city.



City wards are individual entities controlled by the Ward Commissioners where Word office, Primary School/ High School/ Colleges, Dispensary/Hospitals/ Maternity Hospitals, Markets/Sopping Centers, Mosques, Temples/Churches/ Pagoda etc. are present along with other urban and civic facilities.

During the last few years Chittagong city experienced rapid urban growth because of the significant growth/expansion of the port and other industrial developments. Therefore, people from the surrounding areas migrated into the city in search of employment and a better life. But the city was not prepared to accommodate this extra population in the city with its limited urban facilities within such a small span of time. As a result, a lot of urban environmental problems arose in the city. This included unplanned urban growth for example, lack of housing, traffic congestion, shortage of power and water supply, rapid growth of slum areas, water logging and drainage, unemployment, and environmental pollution (specially air pollution).

The CCC was very much aware of these urban problems and was optimistic to face the situation on the way to overcome the challenges within a short span of time. To mitigate and address these environmental pollution problems in the city, CCC under took a series of projects under the heading of “Cleaning and Greening” the city. These projects included civic awareness generation for household garbage management, healthy city program, encouraging healthy sanitation program, drainage development and preservation of natural canals, establishment of a CNG plant, a ban on polythene bags, implementation of plantation/greening programs, etc. throughout the city and worked very hard to achieve the ultimate goals. Now the Chittagong City is well known as the most “Clean and Green City” of the Country- and it has become a Model City for other major cities of the country. Moreover, it is significant to mention here that CCC won the Honorable Prime Minister’s “First Prize as the Clean and Green City” of the country in 2002-2003.

- **Geographical Location of the City:** Chittagong District is located in the extreme southeast of the country between 21*~54’ and 22*~59’ North Latitude and between 91*~17’ and 92*~14’ East Longitude. Chittagong city is located at the central part of the District map, which is around 157 Sq. Km. (60 Sq. Miles) in area at the present situation.

• **Climatic Information:**

Warm – Humid, Main Seasons: Summer (March – June), Monsoon (July - October) and Winter (November - February), Temperature: 34* C (Maximum) and 12* C (Minimum).

1.2.1. Population, Socio-economic and Human Health Data:

• **Contribution of Chittagong in accommodating National Urban Population Growth**

Population	1981	1991	2001
National Population	89,900,000	109,900,000	123,151,246
Urban Population	14,091,000	21,550,000	28,808,477
Percentage of National	15.7%	19.7%	23.39%
Dhaka SMA	3,440,000	6,537,000	9,912,908
Percentage of Urban	24.0%	30.0%	25.63%
Chittagong SMA	1,391,000	2,343,000	3,202,710
Percentage of Urban	10.0%	11.0%	13.34%
Khulna SMA	652,000	966,000	1,227,239
Percentage of Urban	5.0%	4.5%	8.48%
Rajshahi SMA	254,000	560,000	646,716
Percentage of Urban	2.0%	2.5%	2.16%
Other Urban Centers	8,354,000	11,144,000	-----
Percentage of Urban	59.0%	52.0%	-----

Source: Population Census, 1991 and 2001.

• **MDG Status of Bangladesh**

1. Infant Mortality Rate	46/1000 lb
2. Under 5 Mortality Rate	62/1000 lb
3. Maternal Mortality Ratio	380/100,000 lb
4. Antenatal Care	40%
5. Polio Vaccination	85%
6. Measles Vaccination	77%
7. Vitamin A Supplementation	84%
8. Iodized Salt Consumption	70%
9. Net Enrollment in the Primary School	87%
10. Adult Literacy Rate (15 + years)	40%
11. Access to Sanitation Facility	48%
12. Safe Drinking Water Source	75%

Source: State of the World's Children Report 2005, UNICEF.

2. Goals for developing Chittagong as the “Clean and Green” city:

2.1. The Goals:

- (a) Develop an Efficient Waste Management/Treatment and Recycling System.
- (b) Develop a Healthy Drainage and Sanitation System in the city.
- (c) Encourage Environment Friendly CNG for ensuring Clean Air.
- (d) Encourage Tree Plantation/Greening activity in the city.

2.2. The Way of Deciding Goals:

There are 10 (ten) different “Standing Committees” composed of Ward Commissioners and concerned CCC Officials working for deciding Urban Development Goals. The Standing Committees are for example- Standing Committee for **(a) Finance and Establishment, (b) Education, (c) Health, (d) Family Planning and Sanitation, (e) Urban Development and City Planning, (f) Audit and Accounts, (g) Public Works and Building, (h) Water and Power, (i) Social Welfare and Community Development, and (j) Women Affairs.** Besides this, there are 22 Advisors to the Honorable Mayor from different walks of life and profession like- Retired Senior Government Officials (such as the Ex-Chairman of Chittagong Port, Ex-Chairman of CDA, Retired Professor, Chief Engineers, etc.), Architects, Urban Planners, Doctors, Engineers, University Teachers, Lawyers, Businessmen, Politicians and Ex CCC Officials take part in the decision making process on different occasions to support the Honorable Mayor on behalf of the civil society.

2.3. Involvement of Private Sector in Deciding the Goals:

At present there are around 50 national and international Non-Government Organizations (NGO) involved in the different sectors of CCC (for example- UNDP, UNICEF, WHO, UNFPA, CARE, Waste Concern, Mamota, Niskriti, YPSA, etc.) along with the various private sector (local / foreign) investors working under the various urban development programs in the city. Besides these, all the 22 Advisors of the Honorable Mayor, Forum for Planned Chittagong (FPC), local Professional (Institute of Engineers, Institute of Architects, Bar Association etc.) and Political bodies along with the different NGOs working in Chittagong city are representing Private Sectors/Civil Society who are also involved with the decision making process of CCC directly or indirectly.

3. Outcome Indicators and Action Steps:

CCC has played a significant role so far in developing Chittagong as the most “Clean and Green City” of the country. National TV Channels, News Media/News papers and the top Social/ Political Elites of the country acknowledged Chittagong city as the Environment Friendly, Clean and Green city and a Model City for the other Divisional cities of the country.

◆ Goal -1. Develop an Efficient Waste Management/Treatment and Recycling System.

Output Indicator: Environmental Pollution was taking a critical shape in some densely populated areas because of the Unplanned Disposal of Household Garbage at different Dustbin/Dumping locations of the city.

Action Step 1: Initially Motivational Programs were carried out throughout the whole city on behalf of CCC regarding Household Garbage Disposal/Management among the community people - especially House Wives, House Maids, School Students etc.

Action Step 2: House wives and House maids were encouraged to sort out and collect the Valuable Inorganic items (like Plastic Shopping Bags, Plastic/Glass Bottles, Iron/Aluminum/Silver cans etc.) and to Reuse them or sell in the market with a good financial return.

Action Step 3: In view of encouraging Cleaning Workers of the city, CCC took a noble decision regarding Renaming of the Cleaning Workers as “Shebok (Helpers of City Cleaning Activity)” in 1994 those were termed as the “Sweepers” previously.

Action Step 4: Problematic central Dustbins were relocated/ redesigned at the suitable locations on the basis of people’s response/demand and adequate planning measures were undertaken to reduce Air, Water and Soil Pollution in those areas.

Action Step 5: People of the High Density Residential areas with Narrow Roads/Lanes are being motivated to operate “Rickshaw (Tri-cycle) Vans” for Garbage Disposal and to develop those residential areas as “Dustbin Free” zones. Some residential areas at the central location are already converted to Dustbin Free areas where there is no dustbin in the community at present.

Action Step 6: Plans have been undertaken by CCC for providing adequate Housing Facility for the City Cleaning Workers in the central city areas. New Multistoried Apartment Buildings are being developed to encourage them with all the Community Facilities like – Primary School, Health Centers/Services, Social Club/Religious Facility etc. for the “Sheboks”.

Treatment and Recycling:

Action Step 1: CCC is producing “Organic Fertilizer” from the Organic Garbage dumped regularly in the Trenching Ground/Dumping Stations. Initially CCC started the project experimentally with manual laborers and produced a small quantity of Organic Fertilizer for marketing. Observing a significant demand of this fertilizer in the market CCC is implementing a “Compost Plant” near the Dumping Ground for producing Organic Fertilizer industrially and hopefully it would go for production very soon.

Action Step 2: CCC has implemented a Garbage Treatment Plant near the Dumping Ground /Trenching Ground for producing “Fire Wood” from the Organic Garbage (Coconut remains, Paddy Straw, Hard Board/Ply Wood, Wood etc.). This Fire Wood is being successfully used for melting Bitumen required in the CCC’s road carpeting purposes.

Action Step 3: Household “Inorganic Waste” such as- Plastic/Glass Bottles, Iron, Aluminum, Silver, Polythene, Paper/Ply Board etc. are being Collected and Recycled by the various industrial activities in Chittagong. These efforts of CCC contributed the overall Garbage Management process in mitigating the Environmental pollution to a great extent.

◆ Goal -2. Develop a Healthy Drainage and Sanitation System.

Output Indicator: Water Logging/Flash Floods created Environmental Pollution eventually at the low lying areas in the city because of Drainage Failure during Monsoon period.

Action Step 1: Adequate planning measures were undertaken by CCC to develop an efficient Drainage System along the Primary and Secondary road network in the city areas during 1996 - 2001.

Action Step 2: CCC has undertaken necessary steps for developing Drainage System along the Secondary and Tertiary roads of the Flood prone areas of the city to ensure efficient/easy flow of rain water to the canals/river during monsoon.

Action Step 3: CCC has got special emphasis on the Protection/Preservation of Natural Canals in the city and adjacent areas- accordingly the important canals in the city are being preserved/ developed to facilitate the efficient Drainage system ensuring the natural flow of water to the Karnaphuli River ultimately.

Action Step 4: Cleaning and maintenance of the Drainage System is also a priority of CCC and cleaning activity is being carried out in each and every City Ward on a regular basis to mitigate Air, Water and Soil pollution at the same time.

Action Step 5: The Government of Bangladesh has imposed a “Ban on the Production and Use of Polythene Shopping Bags” in the country since 2003. As consequence, people are avoiding Polythene Shopping Bags and are using Paper, Cloth or Jute Bags/Packets instead of Polythene Bags at present. This government decision has contributed the overall Drainage scenario in the Chittagong city to a great extent.

Action Step 6: Recently CCC has undertaken adequate measures for developing the “Chaktai Canal” with Retaining Walls on the both sides, Walkways, Tree Plantation and Bridges (for linking the banks) on the same canal to ensure relief to the citizens residing beside the canal. Previously the canal was known as the “Sorrow of Chittagong” because of the Illegal Encroachment of the canal and Dumping of Garbage in the canal polluting the surrounding urban environment critically.

Sanitation -

Output Indicator: Undeveloped Fringe areas/Slum areas and Natural Canals in the city areas were experiencing Environmental Pollution because of the presence of Unhygienic “Open Latrines”.

Action Step 1: Motivational Programs were carried out in the Poor/Slum areas for the last few years to make people aware regarding the use of “Healthy Sanitary Latrines (Pit Latrines/ Water Sealed Latrines)” developed by CCC in association with different national/international NGOs (UNDP and other local NGO) working in Chittagong.

Action Step 2: Healthy “Pit Latrines” were supplied by CCC and related NGOs at a cheaper price (Tk. 700 i.e., US \$ 10 only) to encourage people for using these Pit Latrines in the Slum areas/ Poor communities of the city.

Action Step 3: The Slum Improvement Project (SIP) of CCC in assistance with UNICEF (worked in Chittagong from 1985 to 1995) was providing Sanitation facility (Pit Latrines at a Chipper price under Community Partnership) in the slum areas. Every household was participating in the development of their basic facilities (Latrines, Roads, Drains, Dustbins, Schools, Water Supply, Electricity Supply etc.) to establish their right on the services.

Action Step 4: At present the similar activities are being carried out by the “Support for Basic Service in Urban Areas Project (SBSUAP)” in the Chittagong city and adjacent areas since 1995.

Action Step 5: CCC has achieved around 90% Healthy Sanitation (with Pit and Septic Tank / Water Sealed Latrines) in the city and surrounding areas within the year 2005. Around 966 Pit Latrines were supplied to the Slum areas of Chittagong city and surrounding areas from 1991 to 2000 by the Slum Improvement Project (SIP) under CCC.

Action Step 6: Now CCC is planning to achieve 100% Healthy Sanitation in the city within the year 2010 and accordingly CCC (along with the local NGOs) is carrying out Motivational (as well as Eviction programs by the City Magistrate) Programs in the city for withdrawing the remaining Open Latrines within the time frame.

◆ **Goal -4. Encourage Tree Plantation/Greening Activity in the city.**

Output Indicator: City Environment was deteriorating especially because of Unplanned Hill Cutting, Deforestation and Haphazard Development activity in the city and surrounding areas during 1991 - 2001.

Action Step 1: Gardens/ Parks, Road Medians, Foot Paths, Road Islands, River Banks, Hill sides etc. in the city area were brought under Plantation Program from CCC during 1991-1992 after the 1991 devastating Cyclone and Storm Surge in Chittagong and the Coastal region.

Action Step 2: CCC appointed a 45 member team (comprising an Urban Planner, 1 Landscape Architect, 4 Executive Engineers, 8 Assistant Engineers, 1 Plantation Officer, 8 Garden / Plantation Supervisors and 22 Plantation Workers) for carrying out the Plantation/Greening Activity throughout the whole city.

Action Step 3: A Month long (1 June to 31 June) “Plantation Fair” is being organized by CCC from 1994 in the city every year to make common people aware and to motivate them towards Plantation of Tree Saplings on their Open Spaces/Roof Tops or Gardens.

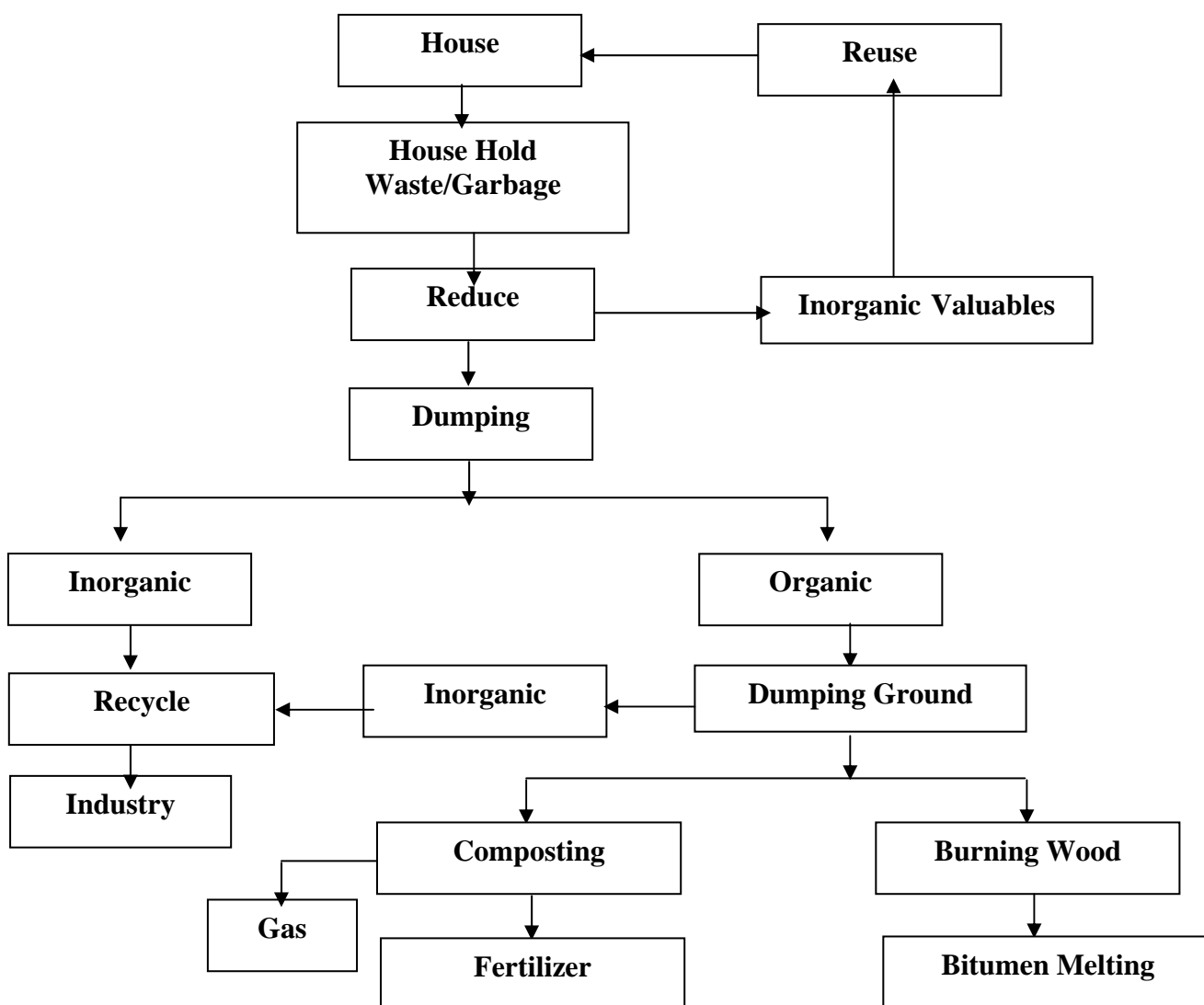
Action Step 4: A program on “Tree Plantation” was introduced in the academic Syllabus of the Schools under CCC to motivate and educate school children regarding plantation of tree sapling every year and to nurture it through out the whole year. At the end of the year, during the Final Examination students get a certain marks/grades on the basis of their performance from their Class Teachers for their efforts in Plantation Activity.

4. Implementation Process:

4.1. Motivation and Awareness Generation Programs: Motivational and Awareness Generation programs regarding Garbage Management - especially Reduce, Reuse and Recycle (3R) aspects, Dumping of Household Garbage in the specific Dustbin within a certain time (for example- before 7:30 AM and after 7:30 PM) of the day, Sorting of Inorganic particles (at home) from the Household Garbage and to collect it for Reuse, selling Inorganic materials to the hawkers/market with a good financial return, protecting the Drains/Canals from garbage dumping/illegal encroachment, Healthy Sanitation,

Environmental Protection and Plantation of Tree Saplings in the city. CCC is also carrying out Motivational programs through ward level Meetings, Newspaper Adds, Radio/TV Adds, through Mike Announcement etc. On the other hand, Community level meetings are also organized under the leadership of the Ward Commissioners/CCC Officials on various occasions for generating awareness among the people of different walks of life. These include House wives, House maids, School Children, Aged people, Female Garment workers in most of the cases, since they form the major part of the vulnerable groups and suffer badly during the environmental hazards. Moreover, there are some NGOs working on Solid Waste Management (Waste Concern), Sanitation and Health (UNICEF), Support for Basic Service in Urban Areas Project (UNDP) etc. are also working for the Civic Awareness Building as well as developing the Standard of Life in the city.

Household Waste Management System of CCC:



4.2. Management (Reduce, Reuse and Recycle) of Inorganic Items at the Household level: After the successful motivational programs from CCC and the concerned NGOs in the city for the last few years, people are now much aware about their living environment as well

as their Health and Hygiene to a great extent. At the same time, they have learnt by this time about the way/techniques of Reusing or collecting the Plastic Shopping Bags, Plastic Coke/Water Bottles, Glass Bottle, Iron/ Aluminum/ Silver cans, Old Cloths etc. At present there are a lot of Industrial activities already grown up in the city who purchase these Inorganic Items from the House wives or House maids for using these as raw materials for their industries with adequate financial return. Normally, Hawkers purchase these items from the houses on behalf of the industries. They are producing various Plastic Bags, Plastic Toys, Plastic Utensils for the household use, Glass Pots/Bottles, Iron Rods/Angles, Plane Sheets and Aluminum Cookeries from these Inorganic Household Garbage items. This initiative has helped in Reducing the Garbage volume to a great extent contributing the Environmental Protection efforts of CCC at the same time.

4.3. Production of Organic Fertilizer from Household Garbage: The Organic Household Garbage (composed of Vegetable remains, Fruit remains, Fish Scales, Bones, Green Coconut, Paddy Straw, Tree Branches/Leafs etc. mainly) normally dumped in the Trenching Ground. After 3 to 4 months of dumping the organic particles becomes decomposed and takes the appearance of soil almost. But the Green Coconut remains; Paddy Straw, Hard Board/Paper Board/Ply Wood, Tree Branches, etc. remain almost solid without major change. Considering the behavior pattern of these two different types of Organic Garbage in the Dumping Ground, CCC initiated the collection of Soil from the Dumping Ground manually (engaging people from the nearby slum communities) and marketed this soil experimentally as Organic Fertilizer within 10 Kg. and 20 Kg. packets. This Organic Fertilizer within few years of its production and marketing earned a remarkable popularity among the users in the city. This experience has led CCC for establishing a Composting Plant for producing Organic Fertilizer industrially. On the other hand, the remaining and comparatively hard Organic Garbage particles are being transferred to the Garbage Treatment Plant for producing “Burning Wood” to be used in the Bitumen Melting purposes, normally require in the road construction/carpeting and repair works of CCC. Therefore, CCC has developed a locally generated technology to utilize the Household Organic Garbage in two ways- “Organic Fertilizer” and “Burning Wood” with adequate benefits (economically as well as environmentally).

4.4. “Healthy City Program” and the Integrated Development approach: CCC in association with World Health Organization (WHO) initiated “Healthy City Program” in the two different City Wards to motivate respective people as well to develop these wards as Model Healthy Wards in all respect. Initially CCC organized monthly meetings with the Community Leaders (such as – Social Leaders, School Teachers, Religious Leaders, Senior Citizens, Female Leaders, various Professionals) to explore ideas about the needs and expectations of the respective societies. Then on the basis of the demands of the people living in the society CCC came forward with Physical Development activities like Improvement of Roads, Electricity Supply, Water Supply, Garbage Disposal, Sanitation and Drainage, Plantation programs etc. This physical development programs played a significant role in developing the Physical Environment of those communities to a considerable extent. After this, Social Development programs were carried out to organize community people to work together for the betterment of their society. This initiative of Healthy City concept contributed the society with better understanding and a great spirit of solving their problems within the community arrangements. Finally, the communities are now fighting for ensuring a Psychological Environment within the society/community fulfilling the mental demands of the people. The major aspects of which include Peace, Harmony and Comfort in the society –

where people would be able to lead a safe and peaceful life along with other partners in the community.

4.5. Decision Making Process: As CCC is a Local Government Municipal Organization of Chittagong city and since CCC is run under the leadership of a Mayor (who is an elected peoples representative), it is very natural and logical that the Administrative Procedure would be dominated and influenced by the City Mayor. Since the chair of the Mayor is a Political position, obviously there should be adequate Political Commitments towards the future Urban Development on the way of fulfilling peoples demand. At the same time, the Mayor should have adequate Visions for ensuring the welfare of the urban dwellers. Normally, the Mayor and the Ward Commissioner candidates place their Election Manifesto in front of their voters highlighting a lot of commitments regarding the future urban development programs prior to the election. After the election the Mayor and the Ward Commissioners (who are also elected representatives from the different City Wards) along with the respective Senior CCC Officials meet in the General Meeting (GM) once in a month at the CCC Meeting Hall to prepare the Administrative procedures and Plans on the way to proceed on with the Urban Development, Environmental Protection, Greening as well as Garbage Management projects. Moreover, the Standing Committees meet on various occasions to discuss the problems and issues in the city areas and place it before the GM (General Meeting)/Mayor in a coordinated manner. In most of the cases various development proposals/demands are normally forwarded by the Ward Commissioner on behalf of the local people. Finally, plans are under taken after necessary Field Survey, Feasibility Study/ Environmental Impact Assessment (EIA), Planning and Design, Cost Estimation, Cost Benefit Analysis etc. are carried out before placing the projects to the GM and getting the final approval.

4.6. The Citizen/Private Sector involvement: The City Mayor and all the 41 CCC Ward Commissioners along with the 14 Female Ward Commissioners are elected representatives of the city and are directly elected by peoples vote for the 5 (five) year term. Naturally, they will be directly involved with the common interest of the respective citizens on the way to perform their responsibilities at the Ward/City level as peoples representatives. Community people are also closely related with their leaders or Ward Commissioners and are contributing from their position. It should be mentioned here that, majority of the Schools, Colleges, Hospitals and Maternity Hospitals were established on the lands donated by the different persons/families or groups in the city. The funds for constructing those buildings/projects were allocated by CCC, where operation and maintenance were also the responsibility of CCC as the local government authority. In that case, CCC honored the land donors putting his or her name (or the name selected by the donor) with the name of the project on the way to encouraging people to participate in the city development activity. As consequence, a good number of Schools, Colleges, Hospitals, etc. were established in the city under this CCC policy frame-work. Similarly, people of different communities are participating directly or indirectly in the city Cleaning and Greening activities along with the regular development programs from the Public and Private sectors. British-American Tobacco (BAT) Company is participating in the Greening activities every year with adequate support (development as well as financial) for CCC. BAT presents thousands of Tree Saplings for distributing among the citizens and school children every year. On the other hand, Non-Government Organizations (NGOs) like- UNDP, WHO, UNICEF, USAID, Mamata, West Concern, CARE, Red Crescent Society etc. are working in the different sectors of the city development activity side by side with CCC development programs for the last one decade. At present there are a significant number (around 50) of International as well as Local NGOs are working in the city, that are directly or indirectly contributing the overall Urban

Development/Environmental Protection/Improvement programs in Chittagong. Therefore, these NGOs are working under the direct coordination of CCC and are playing a significant role in their respective fields regarding urban development and Socio-economic Reforms in Chittagong city at present.

4.7. An effective Monitoring and Feedback system: Honorable Mayor himself as the top most city representative oversees and Monitors the projects directly on a regular basis with the help of top level CCC Officials responsible for the proper implementation, operation and maintenance of the Urban Development/Environmental Protection projects. All these projects are supervised by the root level Supervisors, who inspect and supervise the activities of the same projects on a regular basis under the direct guidance of the Junior or Mid-Level Executives. These Executives normally visit various projects time to time and carry out the command of the Top-level Departmental Chiefs and obviously the Departmental Chiefs are controlled by the Honorable Mayor ultimately. Therefore, it can be mentioned here that “Cleaning and Greening” projects of CCC are also directly controlled by the Honorable Mayor in consultation with the respective Experts, Advisors and Local Representatives on the way to fulfill the hopes and aspirations of the common people living in the Port city of Chittagong.

4.8. Law Enforcement Systems: There are 2 (two) City Magistrates (Administrative Officers) deputed from the Central Government in the CCC to carry out the Law Enforcement System approved by the Government/Parliament of Bangladesh. Usually these Magistrates penalize the citizens/organizations involved in the unlawful or unauthorized activities like Garbage/ Construction Material Dumping on any place that can hamper the normal movement of residents or peaceful life of the city dwellers. Moreover, Food/Environmental Quality control in the Restaurants, Fast Food Shops, Bakeries, Sweet Item Producers, Clubs, Hospitals etc. in the city and surrounding areas is also an important responsibility of CCC. City Magistrates usually visit these business enterprises all on a sudden to check the standard of Environment/Product and take necessary legal actions against the business organizations involved in the illegal activities affecting the Urban Environment and Public Health especially. In some cases people store Construction Materials on the Roads/ road side Foot Paths disrupting the normal movement of the people. In that case they can seize all the Building Materials from the spot and punish the concerned citizens with Fine or Imprisonment even. On the other hand, CCC can demolish any unauthorized development (such as unauthorized Dustbin, Open Latrine, Canal/River Bank Encroachment, Road/Foot Path Encroachment, Unsafe/Unhygienic Building or Structure etc.), Encroachment of government property like Roads, Canals, River etc. through Eviction Programs under the leadership of City Magistrates. This Enforcement measure of CCC has played a significant role in developing the city in a controlled manner with a positive impact on the social life in the Clean and Green Chittagong.

5. Action Output and Outcome:

5.1. The Output and the Outcome.

Mass Education for Civic Awareness Generation: Education is a Backbone of a Nation. Taking this concept in the overall development philosophy, CCC authority preceded with the Awareness Generation programs (through Radio, TV, News Paper, Community Motivation, Meetings, Mike Announcements etc.) among the Urban Dwellers in Chittagong along with

the Mass Education Programs in the educational institutions side by side. On the way to provide Primary Education for the common people, CCC discovered a new horizon of Total and Integrated Education System that is essential for the Civic Awareness and Skill Development among the common citizens. Because a city is like a machine to live in and it requires better citizens for ensuring its efficient operation and maintenance too. So, initially CCC started to proceed with its Primary and Secondary School programs only. Ultimately the mission ended with the establishment of a full-fledged University under CCC. A lot of young people are coming out of these institutions every year with adequate academic knowledge and professional skills to devote themselves in the nation building activity. The CCC role during the last one and a half decade has contributed significantly in developing “Better Citizens” for the city as well as for the country through its Educational and Technical Training Programs.

Development of “Dustbin Free Communities”: The Sheboks are handling garbage from the High-density Residential areas (having narrow lanes where Conservancy Trucks/Vehicles can not enter) through Tri-wheeler Rickshaw Vans mainly. In most of the residential areas at present, this service is being carried out by the private sector agencies and NGOs; where people are paying for the services. Normally, CCC/NGO is providing the Rickshaw Van and the local people are paying some amount of money every month to meet up salary of the Van Puller and the Shebok (2 persons/community). These Rickshaw Vans collect garbage from the community and dump it to the main Dustbin from where the CCC Dump Trucks carry the same to the Central Dumping Yard. As consequence Dustbins are being removed from those areas and adequate employment opportunity is being generated in those localities for the unemployed poor. The CCC concept of utilizing cheaper manpower available in the country in an effective but professional manner and the planning to use the same resources (Human Resource) for the city cleaning activity has worked with positive results.

Healthy Sanitation on the way to achieving 100% Target: CCC is carrying out Motivational/Educational programs in the Slum Communities along with the local as well as international NGOs working in the city to discourage “Unhygienic Open Latrines” for the last one and a half decade almost. Yearly Sanitation Fair is being organized in the city by CCC since 1990 to educate and motivate common people specially the school children about Scientific and Healthy Urban Sanitation systems through Lecture Programs, Drama/Cultural Programs, Posters, Leaflets, News Paper Adds, Radio /Television Commercials etc. Moreover, basic components of “Pit Latrines” are being supplied from CCC (in assistance with UNDP, UNICEF and other local NGOs) at a cheaper rate to encourage and motivate poor slum dwelling people. As a result, CCC has earned satisfactory achievements regarding the use of Healthy Sanitation System in the city areas through successful motivational programs among the poor and slum dwelling people living in the peripheral areas mainly. Almost 90% of the Open Latrines have already been converted to Healthy “Pit or Septic Tank Latrines” by this time (2004-2005). Still the programs are being carried out to achieve the ultimate goals in the near future. In absence of a Sewerage System in the city, the natural canals as well as the river banks are the places where open latrines still exist and adequate planning support is needed to overcome the problem. Still CCC has made remarkable achievements in this sector so far and expects to achieve 100% Healthy Sanitation within next few years (2010).

“Polythene Shopping Bag” Free Chittagong city: Government of Bangladesh has imposed a Ban on the use as well as on the production of Polythene Shopping Bags/normal Polythene Bags/ Packets etc. since January 2003 in the country. This government “Ban on Polythene

Shopping Bags” has played a significant role on the overall Environmental Protection specially in mitigating the Drainage Congestion in the Chittagong city to a great extent. Previously Dustbins, Drainage system, Natural Canals, etc. in the city and adjacent areas were experiencing severe Air, Water and Soil Pollution because of the haphazard dumping of Polythene Shopping Bags/ normal Polythene Bags along with the household garbage. Polythene Bags were creating pollution both internally and externally (inside decay within the bags and blockade of drainage system with polythene bags externally) was a very common scenario in the city during the last decade. Polythene Bags/Packets were responsible for the three way pollution of Air, Water and Soil at the same time. This issue of environmental pollution was seriously addressed and placed to the urban dwellers through different media like Radio, TV, Newspaper and also through Motivational programs/Meetings to generate awareness among the common people. It took several years to motivate and to change their Behavior Pattern as well. Now people are habituated with the use of Paper Bags/Packs, Jute/Cloth Bags etc. replacing Polythene Bags in most of the cases. Therefore, it has resulted in a significant change in the overall urban environment improving the condition of Dustbins and Drainage system in the city. But there are some indirect use of Polythene still prevailing in the form of Packets of various Food items like Biscuits, Chips, Spices, Sugar, Salt, Snacks, etc. which can create a threat on our recent achievements earned through the Ban on Polythene Bags. In that case, since Jute is widely produced in Bangladesh, necessary measures can be undertaken for replacing Polythene Bags with cheaper Jute Fiber Bags/Jute Origin bags etc. manufactured under Hi-tech Industrial process which can be exported to the developed countries also to fight against pollution caused by Polythene Bags accordingly. On the other hand, Foreign Investors can also come forward to invest and for developing Appropriate Technology for producing “Organic Jute Products” on the way to fight Harmful Synthetic Fibers impacts on the environment.

5.2. Quantitative information on the immediate output and outcome:

Plantation Activities of CCC

Year.....	Location of Plantation Program	Number
1992.....	Sea Beach Area and Central City area	15300 Nos.
1993.....	Central City and Peripheral area	11650 Nos.
1994.....	Central City and Peripheral area	12700 Nos.
1995.....	Central City and Peripheral area	15000 Nos.
1996.....	Central City and Peripheral area	5650 Nos.
1997.....	Sea Beach area and CCC Schools	33000 Nos.
1998.....	CCC Schools and CCC Officer/Staff	12000 Nos.
1999.....	CCC Schools and Whole City area	17900 Nos.
2000.....	CCC Schools and Whole City area	11975 Nos.
2001.....	Whole City area and Roadside free spaces.....	14500 Nos.
2002.....	Road Islands and Roadside Free spaces	12000 Nos.
2003.....	Road Islands and Foot Paths	11300 Nos.
2004.....	Foot Paths and Road Medians	16750 Nos.
2005.....	Gardens, Parks and Road Medians	15500 Nos.

Source: CCC,2006.

5.3. Additional benefits apart from Environmental benefits:

During the last one and a half decade CCC has established/implemented many projects in the city and surrounding areas for ensuring an Integrated and “Peoples Friendly

Urbanization” in Chittagong. As a result of which CCC initiated a lot of Urban Development/Socio-economic projects throughout the whole city. After the implementation/establishment of these Socio-economic and Environmental Protection Projects in the city, CCC has achieved a lot of Socio-economic and Financial benefits along with other indirect benefits in return. Moreover, these projects have created a huge contribution to the society in the fields of Mass Education and Civic Awareness Generation, Economical Health Services, Sanitation and Hygiene, generation of Commercial/Business Activities, Employment Creation, Poverty Alleviation, Traffic Management and Mitigation of Traffic Congestion/Air Pollution in the city, etc.

5.3.1. Garbage Treatment/Recycling and Creation of Employment/Income Opportunity: CCC has created an example in performing the efficient Garbage Handling/Disposal and City Cleaning activities through manual workers since 1994. It is notable that, around 2000 Metric Tons of Garbage is being generated every day in the city. Experienced Conservancy Staff and Officers of CCC are handling the Household as well as other garbage efficiently. Around 1800 Staff and Officers are engaged under the Conservancy Department of CCC at present. It is notable that, because of the sincere and noble contribution of these Conservancy Staff and Officers, Chittagong City could achieve the present state of cleanliness and as a result of which the city became well known as the most “Clean and Green City” of the Country. Moreover, it is significant to mention here that, CCC won the Honorable Prime Minister’s “First Prize” as the “Clean and Green City” of the country in 2002-2003 as part of the Government recognition from the Topmost Level.

Recently (June, 2005) CCC has started the production of “Burning Wood” from the Organic Garbage particles with the help of locally developed technology. This Burning Wood is being used in the Bitumen melting purposes (which is an essential ingredient for the road carpeting/ repairing projects). On the other hand, this project has already created a new exposure for the poor/slum people to collect different Inorganic Garbage items from the household garbage and sell them in the market for Recycling/Reuse by the respective industries. It has created income opportunities for these poor classes and at the same time Recycling Industries (such as -Plastic Industry, Glass Industry, Steel Mills/Foundry Works, Mechanical Workshop, Paper/Board Industry etc.) are developing in the city where other people are getting employed with better earning opportunities. Other than this, there are already many private sector Business/ Commercial developments in the city side by side, who are engaged in the collection of Inorganic particles like Plastic Bottles/Bags, Glass Bottles, Other Glass items, Iron/Aluminum/ Silver Cans, Polythene, Hard Board/Paper Board, Ply Wood/Wood etc. from collectors directly and supply them to the related industries on the basis of their demand. These types of business or commercial activities are also engaging huge numbers of workers in the related fields. Moreover, the Garbage Recycling Plant under CCC has already generated adequate Employment /Income opportunities for the good number of poor and less privileged families living in the surrounding locality/communities. Around 60 male and female workers and staff are working directly in the same plant as CCC employees at present. Therefore, this Project has obviously opened up a new horizon of Income opportunity in front of the urban poor and unemployed working classes in the city.

5.3.2. Drainage and Sanitation for Human Health and Better Productivity: During the last few years CCC was directly involved with the implementation of “Secondary and Tertiary Roads” along with adequate Drainage developments throughout the whole city - especially in the flood prone/vulnerable peripheral areas of the city. Moreover, canals are the major arteries to ensure the efficient flow of rain water of the surrounding Residential or

Commercial/Industrial areas to the Karnaphuli river and ultimately to the Bay of Bengal. Accordingly CCC has excavated and still trying to preserve the “Chaktai Canal” with retaining walls during the last financial years to support the city dwellers living beside the canal with better environmental conditions. Moreover, CCC has plans to develop Road/Pedestrian Walkways with plantation of Tree saplings and Shrubs along the banks of the canal and also to link both the banks with Bailey/Steel Bridges for minimizing the Socio-economic Differences prevailing among the inhabitants of the two banks. This would obviously help the neighboring communities in developing an integrated peaceful social environment ensuring a planned and people’s friendly development in the same area.

The use of “Healthy Pit-Latrines” in the slum areas supplied by CCC and other local/foreign NGOs at a cheaper price helped a lot in reducing various diseases like Diarrhea, Cholera and other water borne diseases to a great extent. This healthy situation has contributed the poor Slum Dwellers with a huge financial savings in terms of Health Care expenses. At the same time, this favorable situation helped them with better Health, better Productivity and hence better Earnings at the same time. On the other hand, there are many Small Industrial activities already been developed in the city and surrounding areas those are producing Sanitary/Pit-Latrines and are providing a lot of workers (with employment opportunity) in these small industries. These industrial activities are flourishing as motivational programs on Sanitation are covering the surrounding Suburban and Rural areas gradually with the rise of Literacy rate and Awareness level among the common people in Chittagong.

5.3.3. CNG Plant for Clean Air and Public Health: CCC has taken adequate measures to mitigate Air Pollution and is working for ensuring Clean Air for the city dwellers with sincerity. Therefore, CCC established a CNG Plant (June, 2003) at the central location of the city to encourage the use of Gas in the Motorized Vehicles those were operated by Diesel, Petrol/Octane etc. previously (causing severe Air Pollution in the city). This is so far the biggest CNG Plant of its kind in the country. At present almost 70% -75 % of the vehicles are already converted and are run by CNG with a great savings of foreign currency every year used for the import of petroleum from abroad. At the same time, car owners and drivers are highly encouraged to use CNG in their vehicles which is cheaper (around 1/3 of the Petrol /Octane price) than other fuel in the market. On the other hand CNG Plant under CCC has created Job Opportunity for around 60 people comprising Engineers, Officers, Staff, Technicians and manual Workers etc. engaged for the regular operation and maintenance of the plant. It is significant to mention here that, Air Pollution because of the Diesel, Petrol/Octane run vehicles with the rise of harmful gases like Carbon-di Oxide (CO₂), Carbon Mono Oxide (CO), Sulphur-di Oxide (SO₂), Nitrogen Oxide (NO₂) etc. in the air was a big threat to Human Health in the urban areas. According to the Health Experts, diseases like High Blood Pressure, Headache, Lung Infection, Eye Infection, Cancer, Heart Disease etc. are caused because of Air pollution and especially the Children can be seriously affected by the air pollution. Therefore, the CCC initiative for establishing the CNG Plant would obviously contribute the overall Human Health scenario (increasing people’s productivity and curtailing health budget to a great extent) in the city.

It is significant to mention here that, Air polluting “Two Stroke Engine” Baby Taxies have already been withdrawn from the city roads since January 2004 after the establishment of CNG Plant. These Two Stroke Baby Taxies were run by petrol (with the mixture of Mobil) and were responsible for almost 60% of the Air Pollution in the city. With the establishment of CNG Plant under CCC, new Three Wheeler CNG Taxies were invited to replace those

Two Stroke Baby Taxies in Chittagong. These Taxies are Environment Friendly and Economical to a great extent as they are run by CNG and charge a lower (around 50%) fare than that of previous Two Stroke Taxies. Moreover, these new CNG Taxies are Comfortable and are almost free from Smoke/Gas emission; hence these CNG Taxies were accepted by the people of Chittagong city so gladly. At present, around 3,000 CNG Taxies are being operated in the city to support the Middle and Lower-middle Income citizens in the city. Now the Air Quality in the city has been improved to a considerable extent which is much better than that of previous time.

5.3.4. Urban Plantation/Greening for Sharing Experience and Making Profit/Business: Plantation Program is being carried out throughout the whole city for the last one and a half decade to Beautify as well as to protect the quality of Urban Environment in the city. Moreover, CCC has been organizing Month Long (1 June to 31 June) Tree Fair every year at the central open space of the city to encourage and motivate common people towards plantation activity since 1994. A good number (around 65) of Nurseries along with several Government Forestry Department Stalls (Coastal and Main Land), University/ Forestry Department Stall, Botany/Herbal/Scientific Stalls, Stalls of Private Nursery, Handicraft /Cottage Industry Stalls, related Business stalls etc. normally take part and make business during the month long Tree/Plantation Fair. Besides these, Open Discussion and Cultural Programs are organized in the fair stage throughout the whole month where Forestry Experts, Scientists, Environmentalists, University Teachers, Journalists, School/College Teachers, Social and Religious Leaders, School/College Students of CCC normally take part in the open discussion and Cultural program. Common people living in the city and adjacent areas normally get enough opportunity to acquire Technical/Scientific knowledge about the essential aspects of Plantation Techniques from the fair and usually purchase saplings for their houses and Roof Top Gardens at the same time. Therefore, both the groups/communities (common People as well as Nursery/Business owners) share their experiences during the month long Plantation fair and usually get financial as well as social benefit directly and indirectly from the fair every year.

6. Lesson Learned:

6.1. Community Participation and Poverty Alleviation: CCC has created an example in performing an efficient Garbage Disposal and City Cleaning activities through its Manual Workers and Cleaners - named as "Shabok" (Friends who help us in keeping the city clean) by CCC since 1994. It is notable that, around 2,000 Metric Tons of Garbage is being generated every day in the city and around 50% to 55% is being collected by CCC at present. The remaining is handled locally by the different community based organizations as these areas are not still under the Conservancy Zone of CCC. Experienced Conservancy Staff and Officers of CCC are handling the Household as well as other garbage produced in and around the central city areas for the last one and a half decade efficiently. The Sheboks are also handling garbage from the High-density Residential areas (having narrow lanes where Conservancy Trucks/ Vehicles can not enter) through Tri-wheeler Rickshaw Vans mainly. In most of the residential areas at present, this service is being carried out by the private sector agencies and NGOs mainly; where people are paying for the services. As consequence Dustbins are being removed from those areas and adequate employment opportunity is being generated in those localities for the unemployed poor. This CCC concept of utilizing cheaper manpower available in the country in an effective but professional manner and the planning of utilizing the Human Resources for the city cleaning activity has worked with positive results. Therefore, this plan can be replicated in other Major cities of Bangladesh successfully,

and at the same time this could be replicated in any of the thickly populated cities (having similar Socio-economic background) where Environmental Degradation is taking place at an alarming rate because of Household Garbage specially.

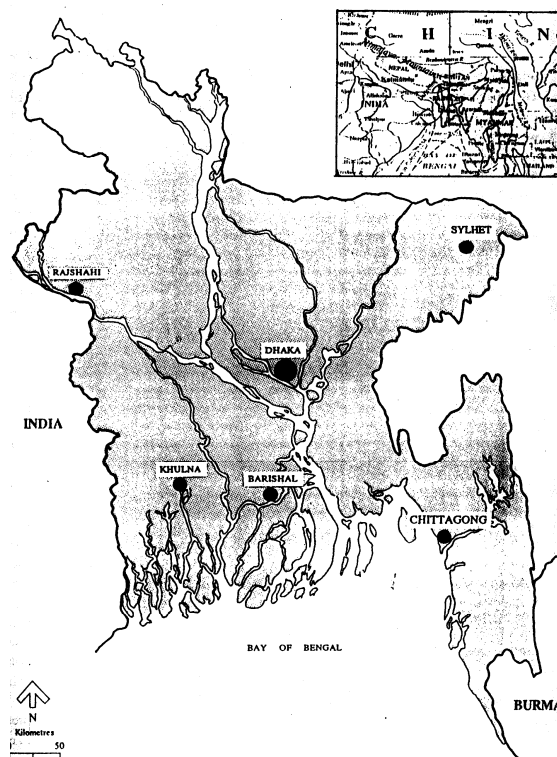
5.4. “Waste is not Waste – it is Resource”: Initially CCC started the production of Organic Fertilizer from the Household Garbage successfully and marketed it in Chittagong with popularity. Recently CCC has started to produce “Burning Wood” from the Household Organic Garbage particles with the help of locally developed Labor Intensive Technology. Gradually with this process CCC started sorting of Valuable and Environmentally Hazardous Inorganic particles from the Household Garbage which is a basic phenomena of Solid Waste Management also. Burning Woods are normally used for melting Bitumen which is an essential ingredient for the Road Carpeting or Road repair works mainly. On the other hand, sorting of Inorganic items from the household Garbage has already created a new exposure for the poor to collect and sell these different Inorganic Garbage items in the market for recycling by the related industrial activities. Besides this, the household garbage is undergoing sorting (by the house maids) at the house level and the Valuable Plastic/Glass Bottles, Plastic Shopping Bags, Iron/Aluminum/Silver cans etc. are being collected for Reuse or selling these to the hawkers mainly. As consequence, the Household garbage has already been reduced to a smaller volume (almost 1/3 of the previous volume). Therefore, Reduce, Reuse and Recycle of the household garbage are ensured through this locally generated manual process. Moreover, this Garbage Recycling Plant under CCC has generated Employment/Income opportunities for the huge number of poor and less privileged families living in the surrounding localities. Around 60 male and female workers and staff are permanently working in the Garbage Treatment Plant of CCC at present. These workers are using Gum Boots, Uniform and Musk for protecting themselves from injuries or health hazards. But the private sector workers engaged in the collection of Inorganic Garbage are in the big threat. Hopefully these Industrial activities would take necessary steps regarding health protection aspects of the Recycling workers and should try to flourish these recycling activities/industries with a more scientific and environment friendly manner. These activities are friendly with our socio-economic environment and are engaging workers with better income opportunities in this sector. Organic Fertilizer, Fire Wood, Valuable Inorganic Particles and Industrial Development/Employment opportunity – worked like blessings for CCC. Therefore, people say in Chittagong, “Waste is not Waste – It is Resource”. Therefore, this project can be replicated in all the remaining major cities of our country as well as underdeveloped and developing High Density cities having similar socio-economic background.

6.3. “Global Warming Situation” and Urban Plantation /Greening Programs: Plantation of Tree/Saplings program is being carried out throughout the whole city for the last one and a half decade to protect as well as to beautify the Urban Environment in Chittagong. Chittagong city was experiencing a critical problem of Unplanned Hill Cutting during the last one and a half decade almost. As a result, the Greeneries/Forests on the hill tops were severely affected because of the destructive activities in the hilly regions. To address these effects of Unhealthy Practice and to revive the Environmental Qualities of Chittagong, CCC under took Plantation Programs at the different locations of the city in 1991. A devastating Cyclone and Storm Surge in 29 April, 1991 affected the Chittagong City and the Coastal region with severe damage to life and national property. As consequence, most of the city roads, bridges/culverts, Port activity, Industrial establishments, Airport along with the other urban facilities were destroyed. During the Reconstruction activities CCC carried out plantation programs beside the newly constructed roads, embankments, railways and public

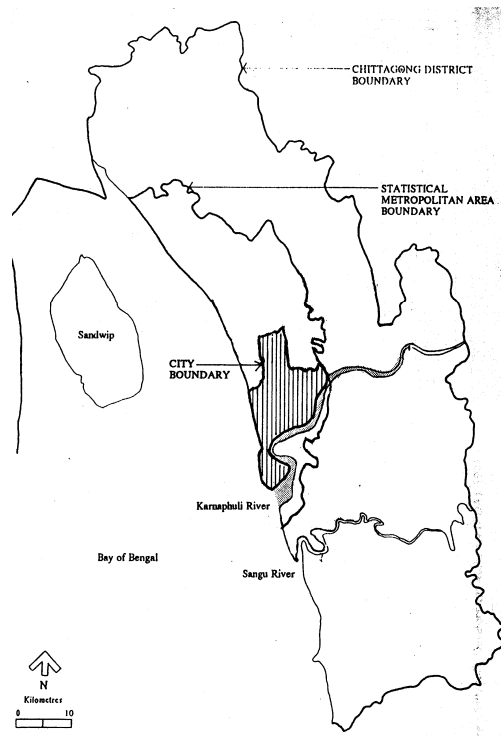
buildings mainly for protecting them from the future natural disasters. Besides these, City Beautification/Healthy City Program the Road Medians, Road Islands, Foot-paths, Parks/Gardens, Hill-sides, River Banks, etc. were brought under the Plantation program and were developed with different types of trees, plants, shrubs and bushes. To ensure an efficient operation and maintenance of the plantation activity, CCC engaged 45 Plantation Workers/Gardeners and officers throughout the whole city. So far CCC has carried out plantation activity successfully at different locations of the city. Moreover, CCC has been organizing “Month Long (1 June to 31 June) Tree/Plantation Fair” every year at the open space adjacent to Central Stadium in the city to encourage and motivate common people towards plantation activity since 1994. A good number of Nurseries (around 65 stalls of Plantation related activity)/stalls take part and make business during the Plantation Fair. Besides this, Motivational Lectures as well as Cultural Programs are organized on the stage of the Plantation Fair throughout the whole month. Normally Forestry Experts, Scientists, Environmental Experts, University/College Teachers, Journalists, Social/Religious and Community Leaders etc. take part in the Lecture Programs, while CCC School/College students perform in the Cultural Programs to attract common people in the fair. At the same time, CCC is carrying out a Motivational/ Educational Program regarding Plantation activity in the CCC school Curriculum to encourage students for nurturing saplings every year. Now Cutting Trees are strictly prohibited – if some one wants to cut his/her Matured tree for any satisfactory reason, he/she has to seek permission from the relevant authority. At the same time, there is a popular Slogan – “if you want to cut a single Tree, then you have to plant Two Saplings at the same place”. Therefore, Plantation Programs of this kind can be implemented and replicated in all the big cities of the globe to fight the present “Global Warming Situation” and to get rid of severe Natural Disasters worldwide.

7. Supporting Documentation:

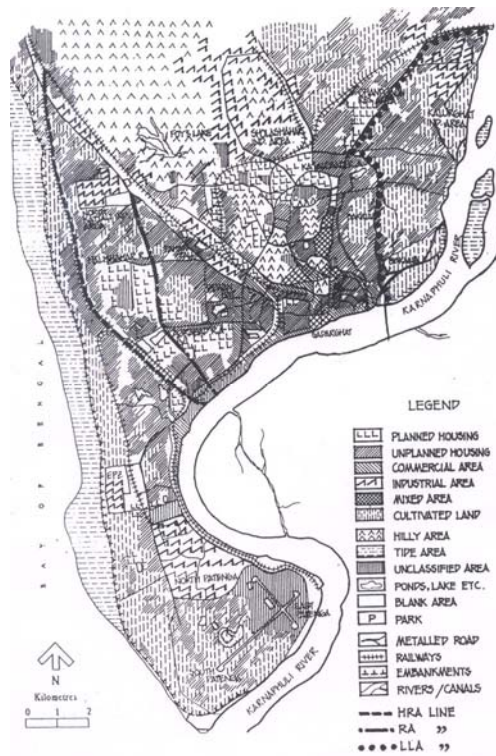
Bangladesh Map showing 6 (six) Divisional Headquarters



Location of Chittagong City within the District Map



Land-use Map of Chittagong City area



Chronological Development of Chittagong City

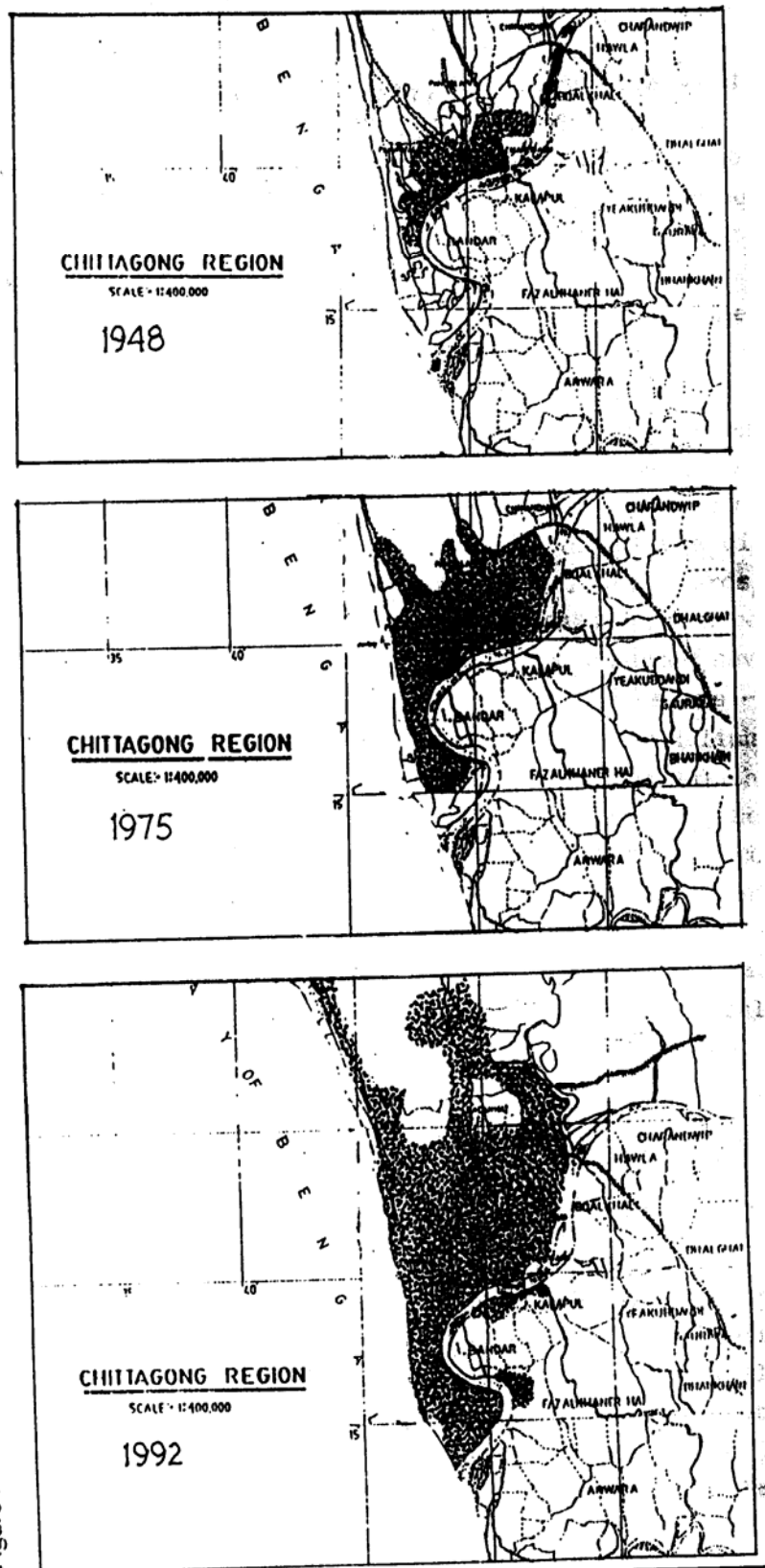
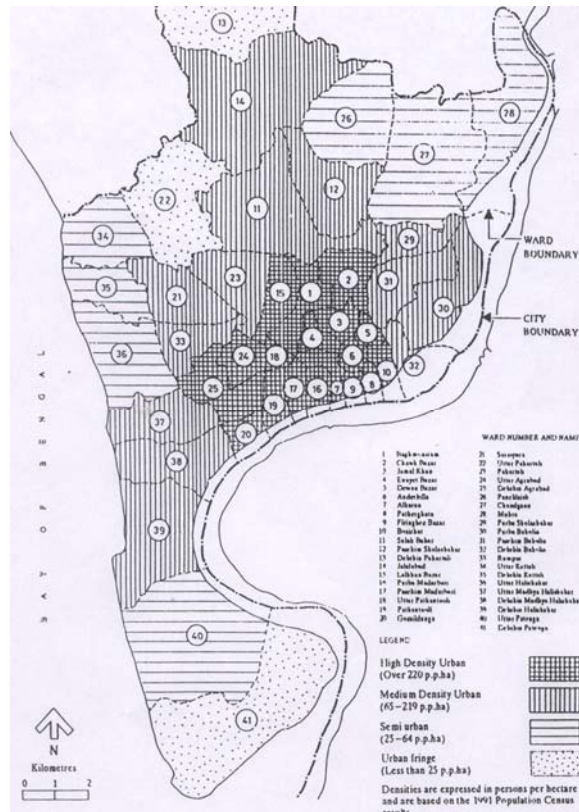
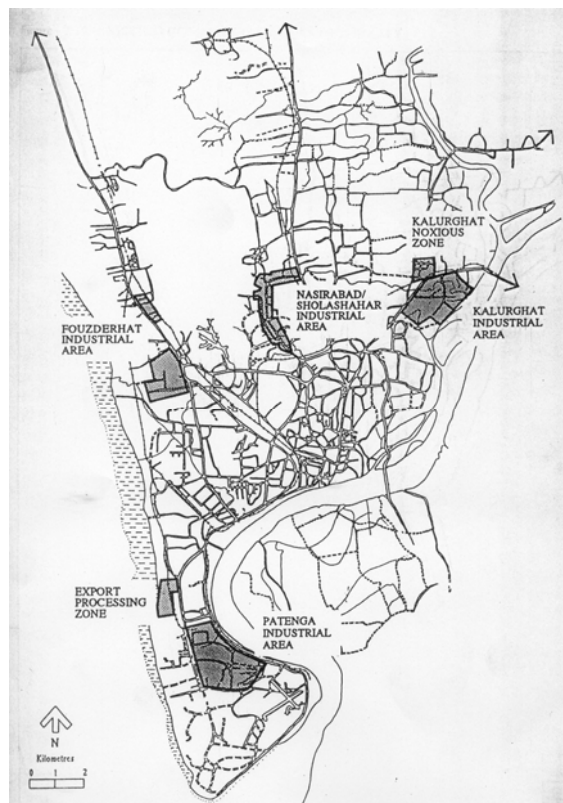


Figure 2.3 GROWTH PATTERN OF THE STUDY AREA.

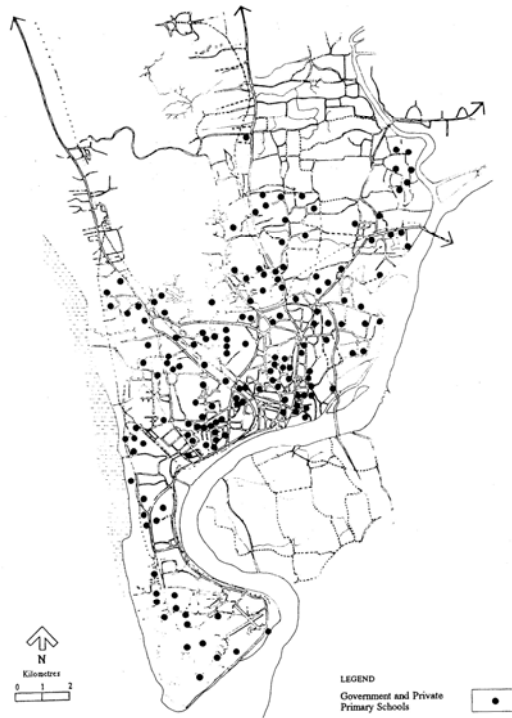
Population Density in the different City Wards



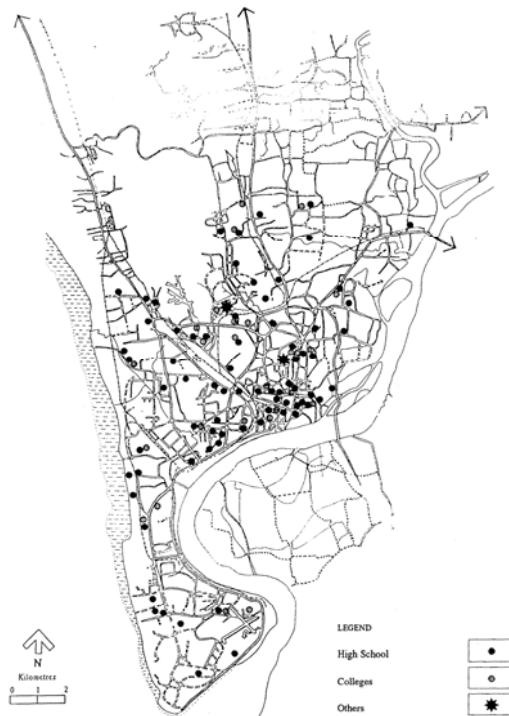
Location of Industrial Areas in the city



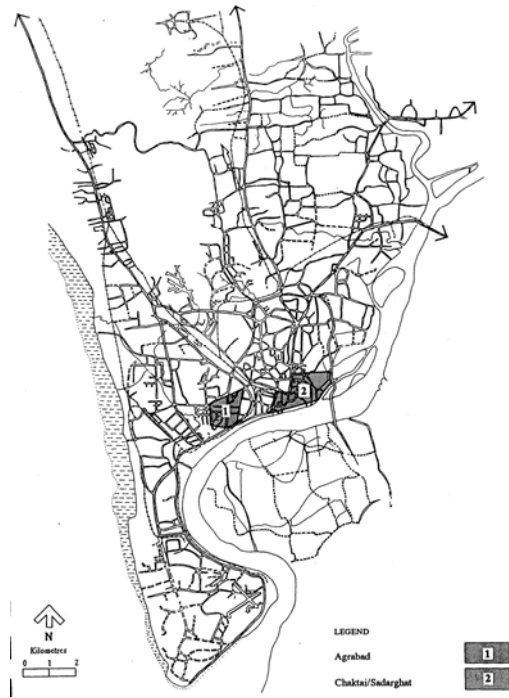
Location of Primary Schools in the city



Location of High Schools and Colleges in the city



Prestigious Commercial Areas of Chittagong City



Location of Squatter Settlement in the city



Conservancy Wards in the city

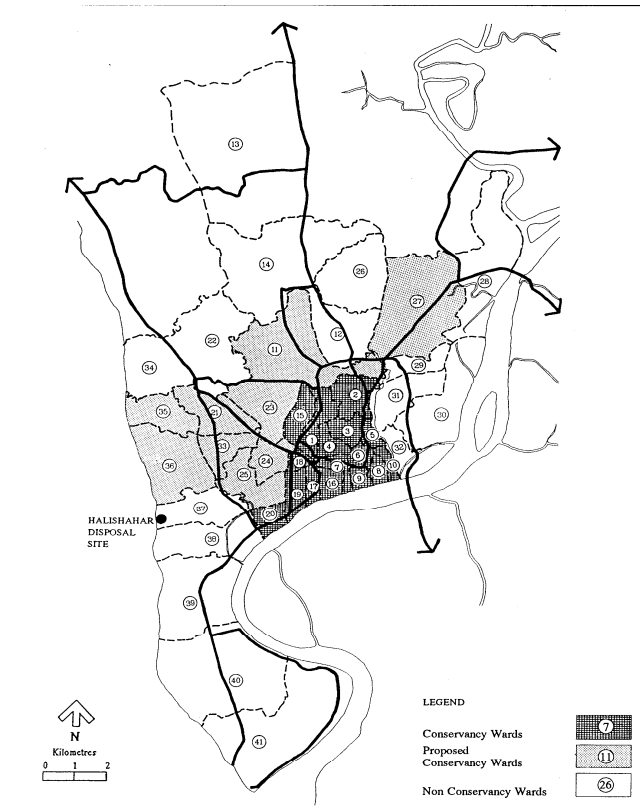
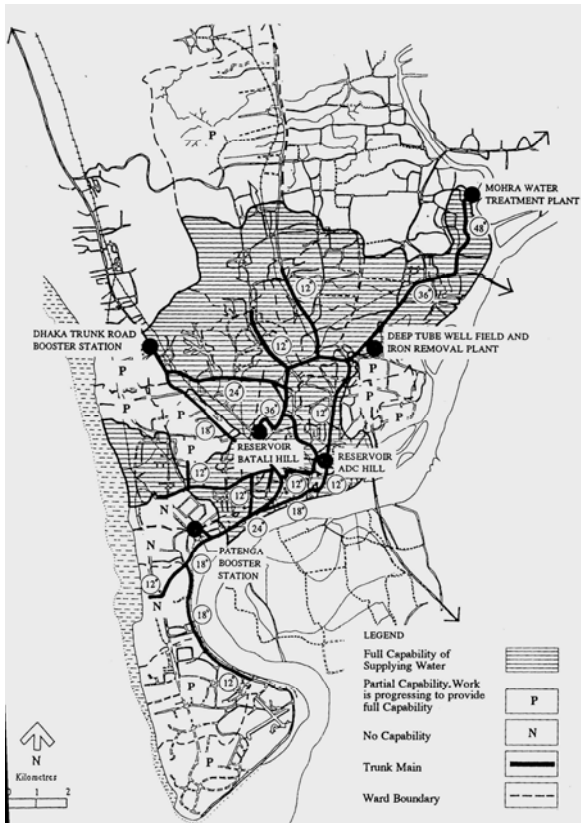
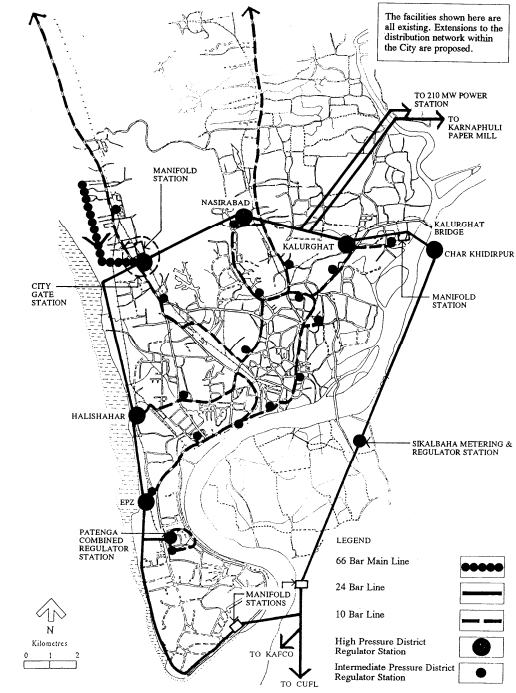


Figure 9.5 SOLID WASTE COLLECTION AND DISPOSAL WITHIN THE CITY

Water Supply System in Chittagong City

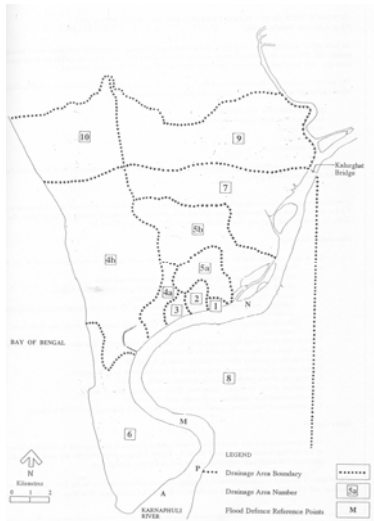


Gas Supply Network in the city



Areas normally experience Flash Flood during Monsoon Period

Major Drainage System in the city



Water Reservoir at the Hilly Area



Housing for the Poor beside the Hills



Plantation on the Road Median of the city



Student Participation in the Plantation Fair



Plantation at Sea Beach area.



Regular Cleaning Activity of the CCC Workers on the City Streets



Rickshaw Vans are used by the CCC Conservancy Workers for Collecting Household Garbage from the High Density Residential Areas



Organic Particles are being Processed for the Final Machining in the Garbage Plant



Burning Woods are produced from the Organic Garbage Partides



Annexure I

Definitions-

Baby Taxi (Two Strokes): Three wheeler motor vehicle run by Two Stroke Engines normally; it creates Air Pollution and Irritating Noise during Movement. It can carry three passengers at the back having a seat for the Driver at the front.

Big Vehicles: Normally Lorry, Truck and Buses are termed as big vehicles, in most of the cases these vehicles are old enough to run on the streets. Diesel/Petrol operated Bus/ Trucks etc. are responsible for the major part of Air Pollution in our Divisional cities at present. As these are 10 to 30 yr. old vehicles can not be converted to CNG for reducing air pollution even. Lorries are the newly added transport mode in Chittagong, normally used for carrying the Containers from the Chittagong Port.

Chittagong Port: Chittagong Port is the major Port of the country, which is supporting the Import, Export and Commercial /Business activities of the country. Around people.

College: In Bangladesh College Education usually starts after the completion of 10th grade/class of academic curriculum. Also there are intermediate College Educations up to 12th Grade/Class and some other colleges offer 3 yr. Bachelor and 4 yr. Bachelor (Honors) Degrees even.

Chaktai Canal: Chaktai Canal was termed as the “Sorrow of Chittagong” during the last few decades. It is around 7 Km. in length and is passing through the central high density areas of the Chittagong city and usually carry rain /drain water to the Karnaphuli river. During the rainy season Flash Floods were created in the surrounding areas because of insufficient maintenance/dredging of the canal and illegal encroachment by the locals residents residing beside the canal. Recently the canal has been restored /preserved with retaining walls on both sides with adequate dredging on the canal bed. Now it is like a blessing to the local people.

CNG Taxi: Newly added Three Wheeler motor vehicle to replace the old Baby Taxies, normally run by CNG (Compressed Natural Gas). This mode of transport is Economical, Comfortable and Less Polluting regarding Air and Noise Pollution.

Computer College/Institute: CCC established 5 (five) Computer Institutes/Colleges in the city to train up and develop skills among the unemployed youths mainly. Certificate (6 month) and Diplomas (1 yr.) on Computer Operation and Maintenance are offered from these institutions/ colleges on a regular basis. Almost 100% of the students coming out of these institutions are getting employed in the different sectors of the country and abroad.

Health Technology Institute: CCC has established a Health Technology Institute in the city in 2004 with the aim to Train up Health Technicians and for supporting the Health sector of the country with adequate junior level medical staff. On the other hand, this education/ training would obviously create new Employment exposure for the 10th. Grade level qualified unemployed groups.

High School: Normally High School education starts after the completion of Primary School education up to 5th. Grade/Class in Bangladesh. High School education is again divided into

two phases – such as Junior High School and High (Secondary) School. Junior High School is up to 8th. Grade/Class and High School is up to 10th. Grade/ Class.

Kalur Ghat Bridge: Kalur Ghat bridge is working the Rail and Road Bridge although it was designed as the Rail Bridge on the river Karnaphuli in 1936. As it was the only bridge on the Karnaphuli River previously, the bridge was converted to Road Bridge also keeping the provision of Train movement at the same time.

Karnaphuli River: Karnaphuli River is one of the most important rivers of the country which is accommodating the Major Port as well as the City of Chittagong on its North-western bank. Besides this the Kaptai Hydro-electric Project - the famous Power Plant of the country is located on its upstream. This river is known as the Life Line of Bangladesh as the 70% of the revenue earning is made from the Chittagong Port that is located on this river.

Marine Drive: The Marine Drive is around 22 Km. in length along the coastal belt of the city. It is under going development process at present and would contribute the city with the expansion of Tourist Facility, protection against Storm Surge and for facilitating Rapid Transport for the Chittagong Port at the same time.

Midwifery Institute: After the Establishment in 1994, the Midwifery Institute of CCC is contributing in producing good number of Trained Midwives every year for extending Maternity support to the Poor/Slum Dwelling people in the city. On the other hand this Institute is playing a significant role in mitigating Unemployment situation among the Less Privileged Female students read up to 10th. Grade/ Class. Most of the Midwives are getting employment as junior Health staff of CCC in different Maternity Hospitals and Health Centers at present.

Momota: A local NGO engaged in the Maternal and Child Health Care services and is playing a significant role side by side with the CCC Health activities in Chittagong. Momota has been working for more than a decade in Chittagong and has contributed a lot for the poor and slum people in the city.

Old Vehicles: The most of the Trucks and some Buses are old enough for being operated on the city roads at present. These trucks are around 20 to 30 years old and are almost unfit for the operation. But recently there are a lot of private companies in the city who are operating Public Transport with Brand new Buses and CNG Buses.

Patenga Sea Beach: Patenga Sea Beach is one of attractive Beach Facility in Chittagong city and in the surrounding region. CCC has got adequate planning to develop the beach with modern facilities and amenities to develop it as the International standard Beach of the South Asian region and to attract International Tourists here.

Plantation Fair: CCC has been organizing a month long (1 to 31 June) Plantation Fair every year at the Central Stadium premises since 1994. This fair is playing an important role in motivating the common people regarding plantation of tree saplings in their houses and roof tops. The Plantation fair includes Specialized Lecture Programs as well as various Cultural programs at the evening where CCC school/college students/teachers participate throughout the whole month.

Premier University: Premier University of CCC is one of the most successful Universities of the city established under private sector so far. It has got Government affiliation and operating 4 Faculties such as – Faculty of Computer Science and Engineering, Faculty of Business, Faculty of Law and the Faculty of English Literature at present. The Graduates coming out of this university every year are doing well in all respect compared to the graduates of other universities of the city.

Primary School: Primary School is the basic level of schooling for the beginners that provides formal education up to Grade/Class 5 (starts with Grade/Class 1 and ends at Grade/Class 5). The Primary education is free for all in Bangladesh. Moreover, government is providing adequate support for the poor families with Books and Stationary (free of cost), Food for Education program (providing adequate quantity of rice, wheat, milk, etc. every week), Free Female Education Program up to Grade/Class 12 (College level) etc. so that they can feel interested to send their children in the Primary schools.

Rickshaw: Rickshaw can be termed as the Tri-cycle manually run by a driver with paddles. This manual transport mode is very popular in Bangladesh and in India because of its Economical as well as Labor Intensive character. Only two passengers can sit on the back seat while the driver pulls the vehicle with paddles sitting on the front seat. There is a Hood on the back seat for the protection of its passenger from climatic conditions – sun and rain mainly.

Rickshaw Van: Rickshaw Van is also a kind of Tri-cycle that contains a carrier at the back and is normally used for carrying goods, luggage etc. at a short to medium distance. Some times the carrier remains covered for protecting the goods inside. The driver pulls the vehicle from the front seat with manual paddles like Rickshaws.

Secondary School: Normally the High Schools are also termed as Secondary Schools in other words since the final examination is commonly known as Secondary School Examination (SSC) at the general level.

Shabok: “Shebok” is a Bangla term initiated by CCC to identify its Cleaning Workers as the “Helpers of City Cleaning Activity” instead of “Sweepers” as it was called previously. This new name of Shebok inspired the concerned workers to a great extent and accelerated the cleaning activities throughout the whole city since 1994.

Shah Amanat Bridge: The only Road Bridge established in 1988 on the Karnaphuli River linking the important (proposed Asian Highway) Chittagong Cox’s Bazaar Road. This Bridge is playing a significant role in encouraging development activities on the other bank of the Karnaphuli River.

Standing Committee: “Standing Committees” are composed of relevant Ward Commissioners and concerned CCC Officials normally identify the problems and issues and places them to the Honorable Mayor/General Meeting on behalf of the city dwellers. The Standing Committees are for example- Standing Committee for (a) Finance and Establishment, (b) Education, (c) Health, (d) Family Planning and Sanitation, (e) Urban Development and City Planning, (f) Audit and Accounts, (g) Public Works and Building, (h) Water and Power, (i) Social Welfare and Community Development, and (j) Women Affairs.

Waste Concern: A local NGO with international reputation and has a wide contribution in the field of Solid Waste Management of Dhaka city throughout the last one decade.

Ward Commissioner: There are 41 Ward Commissioners and 14 Female Commissioners in the Chittagong city directly elected by the urban dwellers for the 5 yr. term. The Female Commissioners are elected from 3 Wards each, while the regular Ward Commissioners are elected from the single Ward only and are playing a dominating role in the Ward level Administration.

Annexure II

AUICK	: Asian Urban Information Center of Kobe.
B.A. Hons.	: Bachelor of Arts with Honors.
B.B.A.	: Bachelor of Business Administration.
BRTA	: Bangladesh Road Transport Authority.
BUET	: Bangladesh University of Engineering and Technology.
BWDB	: Bangladesh Water Development Board.
CARE	: A Non-government Organization.
CCC	: Chittagong City Corporation.
CCO	: Chief Conservancy Officer.
CDA	: Chittagong Development Authority.
CEO	: Chief Executive Officer.
CMCH	: Chittagong Medical College Hospital.
CPA	: Chittagong Port Authority.
CSE	: Computer Science and Engineering
CWASA	: Chittagong Water Supply and Sewerage Authority.
DoE	: Department of Environment.
FPC	: Forum for Planned Chittagong.
GoB	: Government of Bangladesh.
LGED	: Local Government Engineering Department.
LGRD	: Ministry of Local Government Rural Development and Cooperatives.
L.L.B	: Bachelor of Law.
NGO	: Non-Government Organization.
PDB	: Power Development Board.
PWD	: Public Works Department.
R & H	: Roads and Highway Department.
SIP	: Slum Improvement Project.
T & T	: Telephone and Telegraph Board.
UNDP	: United Nations Development Program.
UNFPA	: United Nations Population Fund.
UNICEF	: United Nations International Children's Emergency Fund.
UPHCP	: Urban Primary Health Care Project.
WHO	: World Health Organization.
YPSA	: Young Power for Social Advancement.

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