DHAKA METROPOLITAN
DEVELOPMENT PLAN (DMDP)
1995-2015

DETAILED AREA PLAN (DAP)

PART - XI

JUNE 2010

RAJDHANI UNNAYAN KARTRIPAKKHA (RAJUK)
DHAKA

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তারিখ, ০৮ আষাঢ় ১৪১৭ বঙ্গাব্দ/২২ জুন ২০১০ খ্রিস্টাব্দ

এস, আর, ও নং ২৩২-আইন/২০১০। - যেহেতু Town Improvement Act, 1953 (E.B.Act XIII of 1953), অতঃপর উক্ত Act বলিয়া উল্লেখিত, এর section 73 এ প্রদত্ত ক্ষমতাবলে সরকার, রাজধানী উন্নয়ন কর্তৃপক্ষ এর এখতিয়ারাধীন ১৫২৮ বর্গকিলোমিটার (৫৯০ বর্গমাইল) এলাকায় Master Plan এর আওতাভুক্ত Detailed Area Plan (DAP) for Dhaka Metropolitan Development Plan অত্র মন্ত্রণালয়ের প্রজ্ঞাপন নং গৃওপূম/পরি-৩/১(২৩)/২০০৬/১৭০, তারিখ ২৪ সেপ্টেম্বর, ২০০৮ এর মাধ্যমে প্রকাশ করিয়া উহার উপর সর্বসাধারণ কর্তৃক আপত্তি বা সুপারিশ উক্ত section এ নির্ধারিত সময়সীমার মধ্যে

যেহেতু উক্ত সময়সীমার মধ্যে প্রাপ্ত আপত্তি বা সুপারিশ বিবেচনা করিয়া সরকার উক্ত Section এ নির্ধারিত সময়সীমার মধ্যে কতিপয় সংশোধনীসহ উক্ত Plan টি অনুমোদন করিয়াছে;

Act Nfi Section 74 4fi sub-section (1) Nfi Master Plan (Detailed Area Plan for Dhaka Metropolitan Development Plan) Nfi

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Dhaka Metropolitan Development Plan (DMDP) 1995-2015: Detailed Area Plan (DAP)

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Dhaka Metropolitan Development Plan (DMDP) 1995-2015 : Detailed Area Plan (DAP) prepared by the Rajdhani Unnayan Katripakkha (RAJUK) under the Ministry of Housing and Public Works, Government of the People's Republic of Bangladesh.

DHAKA METROPOLITAN DEVELOPMENT PLAN (DMDP) 1995-2015: DETAILED AREA PLAN (DAP)

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ABBREVIATION AND ACRONYMS

ACTP	Assistant Chief Town Planner
ATP	Assistant Town Planner
BAPA	Bangladesh Poribesh Andolon
BBS	Bangladesh Bureau of Statistics
BDC	Bangladesh Development Company
BELA	Bangladesh Environmental Lawyers Association
BIP	Bangladesh Institute of Planners
BIWTA	Bangladesh Inland Water Transport Authority
BIWTC	Bangladesh Inland Water Transport Corporation
BMD	Bangladesh Meteorological Department
BOT	Build Operate Transfer
BPDB	Bangladesh Power Development Board
BRAC	Bangladesh Rural Advancement Committee
BSCIC	Bangladesh Small and Cottage Industries Corporation
BTCL	Bangladesh Telecommunication Company Limited
BUET	Bangladesh University of Engineering and Technology
CBO	Community Based Organization
CTP	Chief Town Planner
DCC	Dhaka City Corporation
DIT	Dacca Improvement Trust
DND	Dhaka-Narayanganj-Demra
DoE	Department of Environment
DPDCL	Dhaka Power Distribution Company Limited
DPHE	Department of Public Health and Engineering
DPZ	Detailed Planning Zone
FAR	Floor Area Ratio
FFZ	Flood Flow Zone
GIS	Geographic Information System
IAB	Institute of Architects, Bangladesh
JICA	Japan International Cooperation Agency
LGED	Local Government and Engineering Department
LPC	Landuse Permit Committee
LPP	Landuse Permit Planner
MoHPW	Ministry of Housing and Public Works
NGO	Non Government Organization
NUC	Nagar Unnayan Committee
REB	Rural Electrification Board
REHAB	Real Estate & Housing Association of Bangladesh
RHD	Roads and Highways Department
RMG	Ready Made Garments
SoB	Survey of Bangladesh
SP	Structure Plan
SPZ	Strategic Planning Zone
STP	Strategic Transport Plan
TGTDC	TITAS Gas Transmission & Distribution Company
TWG	Technical Working Group
UNCHS	United Nations Centre for Suman Settlement (Habitat)
UNDP	United Nations Development Programme
WASA	Water and Sewerage Authority
WDB	Water Development Board

PREFACE

Detailed Area Plan (DAP) is the third and final tier of DMDP (Dhaka Metropolitan Development Plan) 1995-2015. DMDP is a three tier plan package, viz. the Structure Plan, the Urban Area Plan and the Detailed Area Plan. The first two tiers of DMDP i.e. the Structure Plan (1995-2015) and the Urban Area Plan (1995-2009) were prepared in 1995 under the Project 'Preparation of Structure Plan (SP), Master Plan and Detailed Area Plan (DAP) - Metropolitan Development Plan Preparation and Management in Dhaka' under UNDP project No. BGD/88/052 and TAPP No. TA/ BGD/ 88 /052 with the technical assistance of UNCHS. The third tier of DMDP i.e. the Detailed Area Plan has been prepared by RAJUK under a separate project named "Preparation of Detailed Area Plan (DAP) for Dhaka Metropolitan Development Plan" following the strategies and guidelines mentioned in the Structure Plan and the Urban Area Plan. This is almost a six and a half year project launched in August, 2004 and completed in December, 2010. The total project cost is BDT 2494.66 Lac. The project was financed by RAJUK's own source.

The project was managed by a Inter-Ministerial Steering committee, a Technical Management Committee and a Technical Management Sub-Committee. One project director, four project managers, five assistant town planners, one GIS expert, one survey expert and other supporting staffs were the project personnel.

The DAP is prepared for RAJUK jurisdiction or DMDP area of 590 sq.mile (1528 sq. km.). In order to complete the task efficiently, RAJUK divided its control area into five groups and eleven locations and awarded five local consulting firms with the work. The contract was awarded to DDC Ltd. for Group A, Group A Ext. (Part D), Location 3,4 and 15; EPC Ltd. for Group B and Group B Ext. (Part-D); Gani Bangla Ltd. for Group C, Group C Ext. (Part-D), Location 9,11,16; Sheltech (Pvt.) Ltd. for Group E, Group E Ext. (Part-D), Location 1,2,10; BETS Ltd. for Location 5,6. For ease of work, the task of Group D was awarded to DDC Ltd., EPC Ltd., Gani Bangla Ltd. and Sheltech (pvt.) Ltd.

Group A covers three Paurashavas including Tongi, Gazipur and Kaliganj together with surrounding rural settlement and flood Plain areas of Balu, Sitalakkhya and Brahmaputra river. Group B covers Narayanganj, Kadam Rasul Paurashava and its surrounding areas including Dhaka- Narayanganj- Demra (DND) flood protected areas. Group C (Central Part) is surrounded by the river Buriganga, Sitalakkhya, Balu, Turag and Tongi Khal. Dhaka City Corporation (DCC) jurisdiction area is within Group C. Group C covers important establishments of capital Dhaka like Bangladesh Secretariat, Motijheel, Kawran Bazar commercial areas, International Airport, Old Dhaka etc. Group D covers Keranigonj and Zinjira. Rest of the area of this Group is mainly Dhaleswari flood plain. Group E covers Savar Pourashava, Export Processing Zone (EPZ), Turag flood plain. Location 9,11,16 covers the eastern fringe areas of Dhaka. Other locations are in different parts of Dhaka.

DAP projects population for the year 2015 as 18.43 Million on the basis of data generated from the population census 2001, which was 10.24 Million. The overall Annual Growth Rate is considered as 4.29%. The stages of DAP preparation included geo-referencing of mouza maps, different types of surveys, consultation with stakeholders, draft plan preparation, public hearing and final plan preparation. Socio-economic survey, physical feature survey, topographic survey and land use surveyes were done during the period of 2005-2006. The high tech digital GIS (Geographic Information System) data base was prepared for the very first time for Dhaka under the project. Quality checking of survey activities was done by Survey of Bangladesh (SOB). A series of consultation meeting was held with local government authorities (Wards & Pourashavas), Honorable Members of the Parliament of the RAJUK jurisdiction, concerned development agencies (RHD, LGED, WASA, WDB etc.), academics, professionals, socially concerned groups, study groups, business groups, etc.

Following this, draft final plan was prepared. As per section 74 of Town Improvement (TI) Act 1953, RAJUK carried out a two month long Public Hearing on the draft plan from October 3, 2008 to December 4, 2008. The Public Hearing was carried out through media coverage, press conference, web based publication and displaying of maps in RAJUK auditorium, PD (DAP) office and three other zonal offices of RAJUK. The comments given by general people and different organizations were documented in the prescribed format and these were addressed. A national seminar was held with academics, different professionals, BAPA, BELA, REHAB. Round Table Conferences were held in three daily newspaper offices.

A Review Committee to review the Draft Final Plan submitted by the Consultants was formed by the Ministry of Housing & Public Works (MoHPW) with Prof. Dr. Jamilur Reza Chowdhury, Vice Chancellor, BRAC University as convener. In order to assist the Review Committee in the task, a 16 member Technical Working Group (TWG) was formed with members from Urban and Regional Planning Department of BUET, Urban and Regional Planning Department of JU, Bangladesh Institute of Planners (BIP), Institute of Architects, Bangladesh (IAB), Urban Study Group and RAJUK.

A series of consultation meetings was held with the Honorable Members of the Parliament of RAJUK jurisdiction area to apprise them of the draft final DAP and obtain their valuable suggestions and recommendations. Almost whole of August and half of September, 2009 were spent on this consultation.

Ministry of Housing and Public Works constituted a DAP Review Committee with Prof. Dr. Jamilur Reza Chowdhury, former Vice Chancellor, BRAC University as convener to verify the compliance status of the recommendations made by the previous Review Committee. The committee reviewed the status of the Draft DAP in view of the recommendations of the previous Review Committee in four separate meetings held on 16-03-2010, 25-03-2010, 01-04-2010 and 11-04-2010 in RAJUK Board Room. The committee ultimately made 36 point recommendations to be followed by the consultants. Following the recommendations, consultants prepared final plans (maps and reports) and submitted to RAJUK. After approval in the Technical Management Sub-Committee, Technical Management Committee, Steering Committee of DAP and RAJUK'S board, the final plan was submitted to Ministry of Housing and Public Works for final approval. Ministry of Housing and Public Works sent the final plan to Ministry of Law for vetting and placed it in the Cabinet. The cabinet approved final DAP. Finally, Ministry of Housing and Public Works notified gazette of DAP under the SRO No. 232-law/2010 on 22 June 2010. The Reports and the Maps of DAP has been published on the website of RAJUK (www.rajukdhaka.gov.bd).

Eng. Md. Nurul Huda
Chairman, RAJUK.

Executive Summary

The project area of Location-3 is composed of five Unions of Keraniganj Upazila. These are Subhadda, Zinjira, Kalindi, Sakta and Basta Unions located on the southern side of the DMDP area. According to the Structure Plan, the area is divided into two zones: Peripheral Urban Development and Sub-Flood Flow Zone. Physical development is found all over the study area except southern part. The Detailed Area Plan does not encourage any development in the Sub-Flood Flow Zone prescribed in the Structure Plan. Physical development on the agricultural land has rather been discourage but in some particular places the principle has not been followed in violation of Structure Plan.

Some parts of sub-flood flow zone as stated in the Structure Plan 1995 such as Keraniganj Upazila is already developed (mostly eastern part) densely. So, the area has been proposed as residential area (adjacent with the proposed Jhilmill Model Town and Zinjira area) in the Detailed Area Plan but the adjacent low lying areas are earmarked to be preserved.

The Report contains seven chapters sequentially describing the Background of the project, Critical Planning Issues which influenced the plan preparation process, the Development Plan Proposals, Plan Implementation procedures, Follow up Actions required for the implementation of the Plan and lastly, Conclusion.

The Background section provides a description of the project objectives, brief background and purpose of the project. It states that the Plan has been prepared on the basis of Section 73 of Town Improvement Act which empowers RAJUK to prepare Land use plan for areas under its jurisdictions and it also designates RAJUK as the custodian of the Plan which extends to 2015. RAJUK's jurisdiction covers approximately 590 sq. miles comprising of 26 Strategic Planning Zones. For the purpose of preparation of Detailed Area Plan (DAP), the whole of RAJUK area has been divided into five groups. This section describes the salient features of the higher level plans: Dacca Master Plan 1959, Dhaka Metropolitan Area Integrated Urban Development Project, Structure Plan and Urban Area Plan. It also provides a brief description of the study area. The section ends with an analysis of the outcome of the Public Hearing on the Draft Final Plan. From the analysis it has been observed that most of the respondents are against wider roads. It has been observed that the affected people do not want to be evicted even against compensation but resettlement.

The next chapter describes critical issues that have bearing on the plan preparation process. It provides an analysis of the existing urbanization process and its problems, utility provisions, description of infrastructure, geo-physical condition and the problems of the area. The section ends with a list of projects undertaken for the project area by different line agencies of the government as well as those wished by the stakeholders.

Development Plan Proposals have been explained in Chapter-3. It describes the policy framework as provided in the higher level plans. Then it deals with the planning principles, standards and general development strategies adopted in the plan. Strategies have been described in broad heads like drainage, residential development, industrial development, mixed use development, transport and connectivity, Flood Flow Zone, water body and open spaces, amenities and community facilities, environmental management and support to hinterland. Infrastructure proposals have been grouped into proposals for Transport, Utility Services and Drainage. Transportation proposals provide a network of road ensuring sustainable development for the plan period and beyond. About 150 new roads have been proposed. If realized, they will be able to handle the trips projected to be generated in the study area. The roads of various widths have been proposed to maintain hierarchy and corresponding road sections have also been provided. Road section includes adequate space for pedestrian use and utility provisions. Land use proposal has been made on the basis of Land use Zoning. The proposed Land use Zones are: Urban Residential Zone, Rural Settlement Zone, Commercial Zone, Industrial Zone, Mixed use Zone, Flood Flow Zone. The summary of land allocation under each zone has been presented in a table. For convenience of description, the study area has been divided into ten Detailed Planning Zones each of which has been elaborated with a map for each zone. At the end of the Chapter an Integrated Plan has been provided.

Chapter-4 deals with plan implementation priorities and phasing. DMDP Structure Plan Phasing has been adopted in DAP. The DMDP phases are: (i) Short-term, (ii) medium-term and (iii) Long-term. In the DAP short-term has been

termed as phase-I, likewise medium-term phase-II and long-term phase-III. The plan period extends to year 2015. As such Phase-I covers upto 2010, Phase-II covers 2011-2015 and Phase-III extends beyond the plan period. In prioritizing various landuses, stakeholders' desire has been taken into account. Road priority has been fixed on the basis of need and enablement requirement. The section also describes the land use control procedures. Three tier permit procedure has been proposed in the plan. In the first tier it will be the function of Land use Permit Planner (LPP), at the mid level Landuse Permit Committee (LPC) and at the top level Nagorik Committee. Land use permit procedure has been explained through a flow diagram. For each category of land use zone there are certain uses which are their permitted uses and clearance for those uses can be obtained at the first tier. For landuses under conditional use it will be the function of second tier. If anyone wants to get a permit for new use or conditional use in that zone, it will be the function of third tier. However, if anyone is not satisfied with the decision of any tier, one can approach to the next tier for settlement and finally up to Court.

Chapter-5 deals with the project plan. The specific projects which is needed as an Action Area Plan and prescribed by the Consultants are incorporated here. Approximate project cost has been calculated in accordance to the project.

Chapter-6 deals with the list of Followup Actions that will be undertaken in future. The foremost one is strengthening of RAJUK's capacity to perform its development control function properly all over its jurisdiction. Plan implementation needs people's participation, especially, land development projects. The Consultants strongly feel that successful implementation of DAP depends on the Action Area Plans to be undertaken by RAJUK at the end of the Detailed Area Plan. Chapter-7 contains the Concluding remarks.

Chapter - 1
BACKGROUND

1.1 Introduction

The Dhaka Metropolitan Development Plan (DMDP) is a three-tier plan package, such as the Structure Plan, Urban Area Plan and Detailed Area Plan (DAP). The Dhaka Structure Plan (1995-2015) and the Urban Area Plan (1995-2015) were completed under DMDP package, approved and published in Bangladesh Gazette. The Detailed Area Plan prepared by the local consultants with experienced professionals from different fields like urban planning, architecture, engineering, social sciences, geophysical and environmental science is expected to serve the purpose of the Structure Plan and Urban Area Plan (UAP). On the basis of these ideas, RAJUK considers to expand its Detailed Area Plan activities in the urban fringe areas of the Dhaka Metropolitan city.

Dhaka, a centrally located and well-connected place offers great advantages and opportunities for industrial establishments and investments. DMDP study reveals that at the end of the plan period by 2015, Dhaka could provide more than 7 million labour forces. The city visualizes great prospect of non-formal economic activities as to continue and develop the fringe areas and beyond. As a result, the development of one sector will automatically create an impact on other sectors; therefore, it will be imperative to take all such factors into consideration in the process of Detailed Area Plan preparation.

Considering above factors especially to take care of indiscriminate land filling in designated flood flow and sub-flood areas, a total of 3.4 lakh acres (excluding restricted areas) were included for the planning of Detailed Area Plan. The Structure Plan identified 26 Strategic Planning Zones (SPZ) for Urban Area Plan with recommendation for preparation of Detailed Area Plan gradually covered all the SPZs in succession in conformity to the policies and guidelines contained in it.

1.2 Background

The major factor behind rapid urbanization in Bangladesh has been the rural-urban migration. This phenomenon was little known prior to the partition in 1947. The pace of urbanization slowly picked up speed and reached an unimaginable peak after the War of Independence. This unprecedented growth coupled with the unplanned growth of settlements made the preparation of new urban plan an imperative for fast growing towns. Plans were previously prepared for Dhaka and Chittagong by a British Consulting Firm way back in the year 1959. However, this plan though proved useful initially for the purpose of guided development of the cities was soon overtaken by events that could not be foreseen by anybody at the time of their preparation in the fifties of the last century. Dhaka became many times larger than the size visualized earlier and consequently the plans became superseded and useless as the instrument of development control. Necessity of preparation of an up-to-date urban plan became obvious even to the ordinary citizens. However, the bureaucratic red-tapism and a general lack of comprehension regarding plan preparation and implementation caused valuable time. Finally in early 1990s, a new plan was prepared by RAJUK with the assistance of UNDP/UNCHS. Dhaka Metropolitan Development Plan (DMDP) was finally prepared during 1992-95.

The DMDP is a plan, based on modern concepts which differ fundamentally from earlier practice of preparing end-state plans which became out-dated in a dynamic growth situation. The DMDP is a three tier plan package namely Structure Plan providing longer time guidance for growth of the cities followed by the Urban Area Plan with shorter time frame providing direction for implementation of the existing urban areas and their immediate surroundings exhibiting some development pressure. The Detailed Area Plan is based on actual survey and studies and covers individual parts of town where immediate intervention is needed.

The DMDP Consultants prepared the 1st two items in considerable details but did not prepare the DAP. However, though late, RAJUK embarked upon the preparation of Detailed Area Plan in one go, although initially the idea was to precede selectively taking the high pressure zones first and then gradually taking up lesser priority zones. This strategy was adapted since Structure Plan accepts and recognizes the uncertainty of future and leaves more detailed problems for resolution nearer the time they occur. This is more applicable for areas where growth of population and economic development cannot be determined with any degree of precision. But events in metro-Dhaka overtook this assumption and it is observed that in reality development has been initiated by private and individual developers in areas designated as low priority, flood flow zones and retention pond reserves. Naturally, it has become an imperative to prepare Detailed Area Plan for whole of metro-Dhaka and this bold decision by RAJUK may prove to be beneficial for the city in the long run.

The project of preparation of Detailed Area Plan of 5 sites grouped on the basis of geographical location and settlement pattern seek to prepare detailed spatial plans. This is the culmination of the "three tier plans" (1995-2015) of Dhaka Metropolitan Area as was originally envisaged.

1.3 Purpose of the Detailed Area Plan

The present status of the planning process demands a detailed analysis of the Strategic Planning Zone (SPZ) areas identified in the Structure Plan and Urban Area Plan. The policies on which the Detailed Area Plan prepared, are the recommendations made in the Structure Plan as policies and Urban Area Plan as guidelines. These Detailed Area Plans provided more detailed planning proposals for specific sub-areas of Dhaka Metropolitan areas. Objectives of the DAP can be visualized through the following points:

(1) To provide a detailed analysis of the area.

(2) Provide a reference document for land management activities, data management and dissemination. This will provide landuse maps and information at Mouza level (parcel) in a professional way.

(3) Provide a program for public sector investment aiming at the implementation of the plan.

(4) Suggests control and guidance for private sector landuse and development in the area of the plan.

(5) Provide planned development to ensure sustainable environment for DAP areas with the cooperation of other development agencies.

1.4 Objective of the Project

1.4.1 General Objectives

The general objectives of the consultancy services for the preparation of Detailed Area Plan for RAJUK Structure Plan area envisages:

- Implement Structure Plan and Urban Area Plan policies
- Guide and control urban development in an orderly manner in preferred areas of urban expansion
- Create an urban environment enabling citizens enjoy the services that suit urban living.

1.4.2 Specific Project Objectives

The objectives specified in the proposal to prepare the Detailed Area Plan are as follows:

- Implementation of Dhaka Metropolitan Development Plan 1995-2015
- Data Management and Dissemination
- Preparation of Multi-sector Investment Plan
- Ensuring Clarity and Security of Investment
- Providing Guideline for Development
- Ensuring Sustainable Environment

1.5 Custodian of the Detailed Area Plan

Rajdhani Unnayan Kartipakkha (RAJUK) is the custodian of the Detailed Area Plan. Duration prescribed in the Structure Plan for the implementation of this Detailed Area Plan is up to the year 2015. RAJUK will guide the other authorities to implement their projects according to the Detailed Area Plan and all the physical development activities will follow the proposals prescribed therein. RAJUK may make changes, amendments and alterations of this Detailed Area Plan as and when necessary.

Section 73 (1) of the Town Improvement Act, 1953 empowers RAJUK to 'Prepare a Master Plan for the Area within its jurisdiction indicating the manner in which it proposes that land should be used and (whether by carrying out thereon of development or otherwise) and the stages by which any such development should be carried out. At present three tier development plan in the form of Structure Plan, Urban Area Plan and Detailed Area Plans are prepared. DMDP has been published in the Official Gazette on August 4, 1997 (SRO N.1834-law/97) and has become a legal document for the guidance of development of Dhaka. Rajdhani Unnayan Kartripakkha is the custodian of DMDP; as such RAJUK is the custodian of the Detailed Area Plan prepared under it as well. As the custodian of all the three-tier of plans including the Detailed Area Plan prepared under the present project, RAJUK has the responsibility of development control of its jurisdiction area either by itself or with the co-operation of other agencies of the government responsible for carrying out development activities within RAJUK's jurisdiction.

1.6 Duration of the Detailed Area Plan and Amendment Options

Usually a plan is prepared for a period of 20 to 25 years. DMDP has been prepared for 20 years covering 1995-2015 periods. As such the Detailed Area Plan prepared under this project extends to year 2015. However, every plan requires periodic review and updating which is usually done every five years. The consultants propose that the plan should be reviewed at the end of 2015. At the same time initiative should be taken for review and updating of the plan accordingly at the end of year 2015, so that it can be extended for a further period of 10 years, i.e. 2025. Section 74 (2) of the Town Improvement Act empowers RAJUK to amend its plan from time to time. If development trend during the period 2015 to 2025 calls for the preparation of a fresh three tier development plan, RAJUK by dint of the authority conferred to it by Section 73 (1) of Town Improvement Act shall take initiative to prepare a new plan for its jurisdiction.

1.7 Format of Detailed Area Plan

a. Explanatory Report

The Explanatory Report provides an account of the design process, demographic and socio-economic data, sector wise and thematic maps, information on higher level planning context and a description of the Integrated Planning Map. The Report contains maps on a scale that is appropriate to the information they carry and convenient for inclusion in a Report (A4 and A3 size).

b. Integrated Planning Map

The Integrated Planning Map shows different layers of information like the cadastral base, administrative boundaries, geo-physical features (contour line, water bodies), infrastructures and existing/proposed land use.

Maps of following description form the component of Integrated Planning Map for the Detailed Area Plan:

Table-1.1: Required Maps with corresponding Scale

Sl No.	Map title	Scale
1	Base map (Study Area Map)	1:1980
2	Physical Feature Survey (Road and floor height)l)	1:1980
3	Physical Feature Survey (Road and structure type)	1:1980
4	Physical Feature Survey (Road and structure use)	1:1980
5	Landuse survey	1:1980
6	Topographic survey	1:1980

7	Field survey (original survey marking)	1:990
8	Utility Services (Thematic)	1:1980
	River/Khal/drainage	
9	Utility Services (Thematic)	1:1980
	Gas/Electricity/Water supply	
10	Comprehensive Detailed Area Plan	1:1980
11	Comprehensive Detailed Area Plan	1:3960
12	Identified projects in separate layers	1:990

Source: Terms of Reference (ToR).DAP

1.8 Description of the Planning Area

RAJUK's jurisdiction extends over approximately 1528 sq. km. (590 sq. miles) comprising of 26 Strategic Planning Zones. For the purpose of preparation of Detailed Area Plan (DAP), the whole of RAJUK area has been divided into 5 groups , included within these 5 groups were sited 11 locations for which initiatives to prepare DAP was taken earlier).

The study area of Keraniganj lies on the south of Dhaka Metropolitan Area and southern part of Buriganga River and northern part of Dhaleswari River. The area comprises part of SPZ-18 which is experiencing rapid growth in an unplanned and haphazard manner. It was expected that after the opening of the second Buriganga Bridge, a revolutionary development will take started in Keraniganj even without giving much importance to the Structure Plan proposals and policies.

The rivers Buriganga and Dhaleshwari bound the study area. It is a part of the active delta of the Buriganga - Dhaleshwari flood plain. It lies to the immediate southern side of Dhaka City across and is sharply demarcated by Buriganga River. Productive agriculture land is presently experiencing a tremendous centripetal force towards the city.

1.8.1 Administrative and Cadastral Boundaries

The study area (SPZ-18) contains part of Subhadda, Zinjira, Kalindi, Sakta and Basta Unions of Keraniganj Upazila with a gross area of about 4173.60 acres (according to the DMDP) including Jhilmill Model Town of RAJUK (162.50 acres) as prescribed in the Urban Area Plan. According to the Census Report 1991, total population of the study area was 66,375 persons. Only about 20% of the total area is urban and the rest is rural and sub-flood plains where seasonal agriculture is possible (single crop). There are 23 Mouzas fully and partly involved with the study area.

Among 23 mouzas of the study area, 11 mouzas are fully and 7 mouzas are partially involved and part of 5 mouzas has been eroded by the Buriganga River. About 138 acres of land from those 5 mouzas have been eroded between the year 1974 to 2000. The area stands on the southern part of the Dhaka Metropolitan Area. Total area of the Keraniganj Thana is 41235 acres (1991). With discussion with RAJUK the study area has been considered as 5,760 acres or 2057.14 hectares.

Table-1.2: Mouza wise area, population and household (area in acre)

J.L. No.	Name of Union/Mouza	Existing			Involved		
		Area	Household	Population	Area	Household	Population
Subhadda Union		**2,760**	**26,533**	**1,34,438**	**2462**	**25443**	**129380**
430	Kaliganj	53	4,349	21,170	53	4,349	21,170
431	Mirerbag	372	7,949	37,802	372	7,949	37,802
432	Chunkutiya	619	6,721	33,464	619	6,721	33,464
433	Subhadda	1,162	4,224	24,944	1,162	4,224	24,944
441	Ikuria (part)	319	1,343	7,106	218	1000	5000
442	Naiatola (part)	260	1,956	9.952	38	1200	7000

Jinjira Union		**604**	**19,597**	**1,06,426**	**519**	**19597**	**106426**
425	Mandail (eroded)	210	5,127	31,663	193	5,127	31,663
427	Dakpara	67	2,133	10,268	67	2,133	10,268
428	Char Ragunathpur (eroded)	75	1,573	8,420	26	1,573	8,420
429	Jinjira (eroded)	252	10,764	56,075	233	10,764	56,075
Kalindi Union		**1,676**	**4,823**	**27,705**	**1680**	**4823**	**27705**
420	Brahmankita (eroded)	719	1,452	8,488	693	1,452	8,488
421	Gadarbag	221	84	535	221	84	535
422	Atasur	201	67	463	201	67	463
423	Kalindi	84	407	2,514	84	407	2,514
424	Barisur	100	1,072	6,077	92	1,072	6,077
425	Gokpar	389	1,741	9,628	389	1,741	9,628
Sakta Union		**1,419**	**1,069**	**6,357**	**230**	**692**	**4958**
398	Malancha (eroded)	257	111	626	230	100	600
Basta Union		**1,528**	**888**	**5,478**	**598**	**560**	**3976**
53	Basta (part)	342		2451	10	-	-
416	Dhitpur (part)	431	156	864	159	100	600
417	Rayatandi	72	-	-	72	-	-
418	Boali (part)	540	194	1,087	243	100	800
419	Konakhola (part)	143	160	1,076	124	160	1,076
Teghuria Union		**264**	**4633**	**28290**	**261**	36	180
440	Teghuria (part)	445	351	2293	261	136	580
STUDY AREA		**7,987**	**52,910**	**2,80.404**	**5760**	**51115**	**272439**

Source: Bangladesh Population Census 1991. Zila:Dhaka. Community Series,
Note: N.A = Not available.

1.8.2 Geo-physical Profile

a. Geology

The Dhaka district conceives greater variety of soils than any other district of Bangladesh. This results from two major causes. First, the district lies at the hub of the province where three major rivers of the territory come together, each depositing its characteristic alluvial sediments. Secondly, considerable areas of older sediments have been uplifted, tectonically, then cut by valleys and have become weathered to varying degrees according to improvements in drainage conditions. In general, the soils closely reflect the properties of their parent materials. In the account which follows, therefore, the soils of the district are described under the headings of the six major hypsographic units within which the different parent material occur, viz.-i) Madhupur Jungle, ii) Arial Beel, iii) Ganges floodplain, iv) Old Brahmaputra floodplain, v) Jamuna floodplain and vi) Middle Meghna floodplain.

Keraniganj Thana is situated in the physiographic region of the Central Valley Flat. This region is characterized by stabilized river courses. There are levee formations along the rivers. Most settlements occur along the levees; settlements are sparsely distributed in the backwash areas behind the levees.

River Buriganga on the east and river Dhaleswari flowing on the west borders the Thana. The Buriganga originated from the Dhaleswari on the north and these two rivers again joins on the south (border of Munshiganj Zila). The Buriganga has an elongated meandering course, which is called the 'Dhaka Reach'.

Keraniganj has a thick cover of Holocene sediments and lies in the central part of the Bengal Basin. To the east lies the uplifted and highly oxidized Pliestocene sediments of the Madhupur Tract and to the south across the Dhaleswari River is the eastern most part of the slightly uplifted older Meghna estuarine and floodplain sediments of the Tippera Surface (Coleman, 1969). To the north and west lies the young Brahmaputra (Jamuna) floodplain sediments of the Recent Ganges-Brahmaputra Delta.

Tectonically Keraniganj falls within the north-eastern part of the Faridpur Trough (gravity low) of the Bengal Basin. The Faridpur Trough is bounded by the Barisal Gravity High in the east and southeast and a hinge zone in the west. In the northeast it finds its continuation in the Sylhet Trough. The Faridpur Trough is characterized by a general gravity low trending north-east. The basement is deeply buried here (about 8 to 10 Km. below mean sea level) (Guha, 1978).

In the Seismic Zoning Map of Bangladesh, Keraniganj falls in Zone II where the maximum intensity is not likely to exceed VIII (modified Mercalli Scale) and the suggested basic horizontal seismic co-efficient is 0.05 (Seismic Resistant Design of Structure, 1979).

The soils of the area are Quaternary Holocene (recent) alluvial deposits. The area is situated on the right-bank (south bank) of the Buriganga in Keraniganj Thana. Alluvial deposits are carried by Brahmaputra-Jamuna,

Ganges-Padma and Meghna rivers and their numerous tributaries and distributaries formed a large part of Bangladesh. Alluvial deposits of Bangladesh have been defined into several units in the Geological Map of Bangladesh (1990). Alluvial deposits range from flood sand to over bank silt and pounded clay.

The area under the current Report appears to have overlapping alluvial sand deposit (asd), alluvial silt deposit (asl) and alluvial silt-clay deposit (asc).

Alluvial sand unit (asd) is composed of light to brownish grey, coarse sand to fine silty sand and sand which is generally sub-rounded.

Alluvial silt unit (asl) is composed of light to medium-grey, fine sandy to clayey silt, commonly poorly stratified; average grain size decreases away from main channels; chiefly deposited in flood basins and inter-stream areas. Alluvial silt unit includes small back swamp deposits and varying amounts of thin, inter-stratified sand, deposited during episodic or unusually large floods. Included in this unit are thin veneers of sand spread by episodic floods over flood-plain silts.

Alluvial silt and clay unit is composed of medium to dark-gray silt to clay; colour becomes darker with the increase of the amount of organic materials. Included in this unit are flood-basin silt, back swamp silty clay, and organic-rich clay in sag ponds and large depressions. Ganges-Padma and Meghna rivers and their numerous tributaries and distributaries formed a large part of Bangladesh. Alluvial deposits of Bangladesh have been defined into several units in the Geological Map of Bangladesh (1990). Alluvial deposits range from flood sand to over bank silt and pounded clay.

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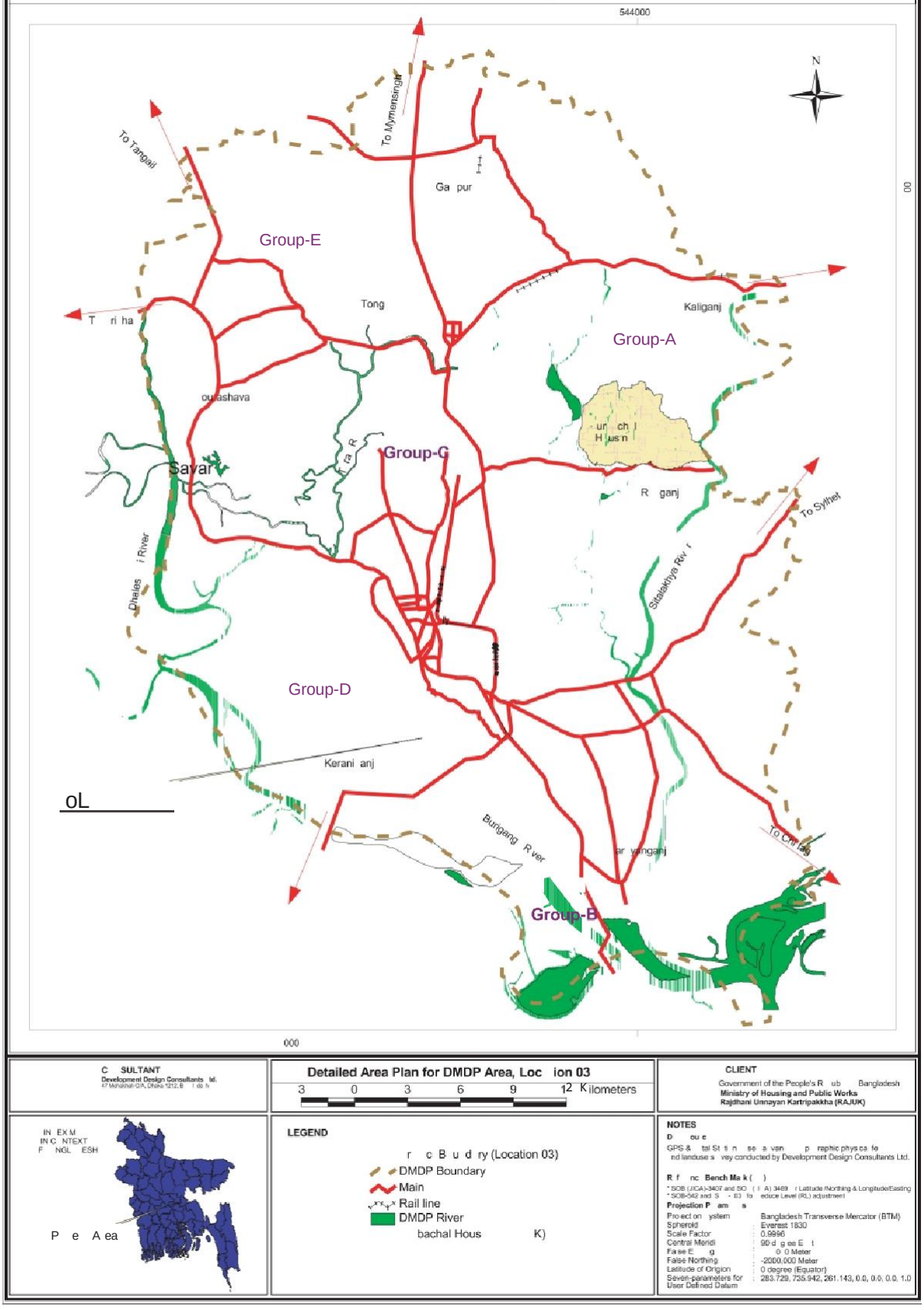
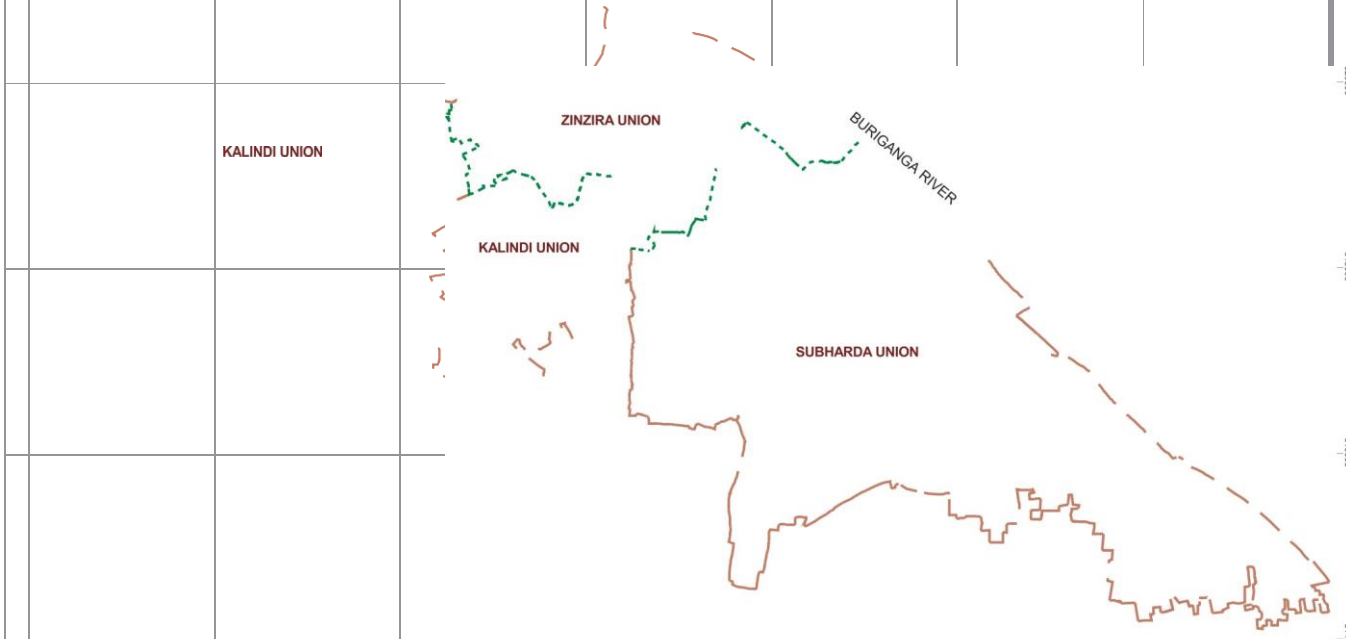
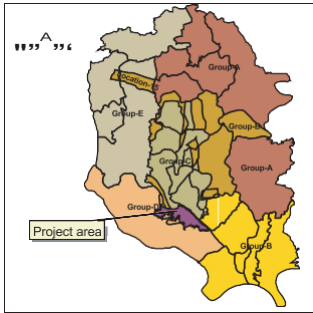
Alluvial sand unit (asd) is composed of light to brownish grey, coarse sand to fine silty sand and sand is generally sub-rounded.

MAP 1.1: LOCATION MAP OF PROJECT R I CONTEXT OF DMDP



MAP 1.2: ADM NISTRATIVE E UNDARY OF LOCATION-03





LEGEND

Administrative Boundary

Group boundary

Union Boundary

NOTES

aha Sort

GPS & Total Station based advanced topographic physical feature and landuse survey conducted by Development Design Consultants Ltd.

* SOB (JICA)-3407 and SOB (JICA)-3469 for Latitude /Northing & Longitude/Easting
* SOB-542 and SOB-6039 for Reduce Level (RL) adjustment

Bangladesh Transverse Mercator (BTM)
Everest 1830
0.9996
90xdegree East
500,000 Meter
-2000,000 Meter
0 degree (Equator)
263.729, 735.942, 261.143, 0.0, 0.0, 0.0, 1.0

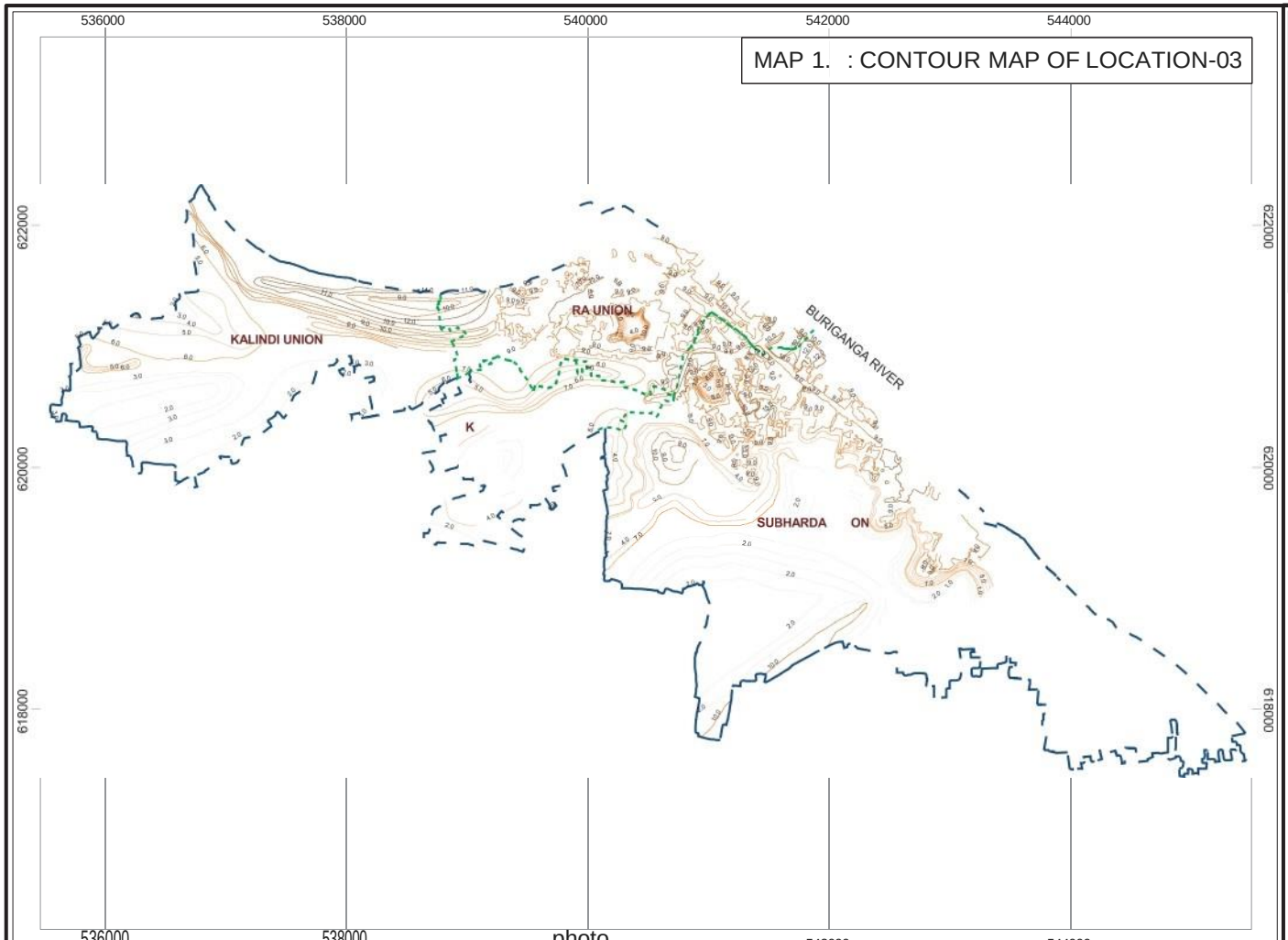
Detailed Area Plan for DMDP Area, Location43

1 0

CONSULTANT
Development Design Consultants Ltd.
47 Mohakhali C/A, Dhaka 1212, Bangladesh
Divine Associates Limited
House No. 6, Road No. 14 (New), Dhanmondi
Dhaka 1205, Bangladesh

CLIENT
Government of the People's Republic of Bangladesh
Ministry of Housing and Public Works
Rajdhani Unnayan Kartripakkha (RAJUK)

MAP 1. : CONTOUR MAP OF LOCATION-03



INDEX MAP
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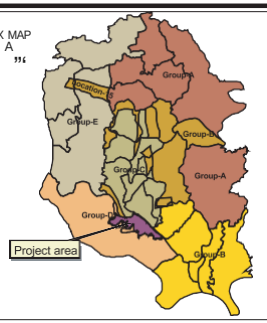


LEGEND

Admin boundary

• Group boundary

- Union Boundary

Contour Line (0.5 m interval)

0 - 3

3.1 - 5

5.1 - 7

7.1 - 10

10.1 - 15

NOWS

Bangladesh Transverse Mercator (BTM)
Everest 1830
0.9996
90 degree East
500,000 Meter
-2000.000 Meter
0 degree (Equator)
283.729, 735.942, 261.143, 0.0, 0.0, 0.0, 1.0

CONSULTANT — "'

photo

Detai"led ea an or D.DP Area, Local"ion-03

Source: Physical Feature Survey 2007

Alluvial silt unit (asl) is composed of light to medium-grey, fine sandy to clayey silt, commonly poorly stratified; average grain size decreases away from main channels; chiefly deposited in flood basins and inter-stream areas. Alluvial silt unit includes small back swamp deposits and varying amounts of thin, inter-stratified sand, deposited during episodic or unusually large floods. Included in this unit are thin veneers of sand spread by episodic floods over flood-plain silts.

Alluvial silt and clay unit is composed of medium to dark-gray silt to clay; colour becomes darker with the increase of the amount of organic materials. Included in this unit are flood-basin silt, back swamp silty clay, and organic-rich clay in sag ponds and large depressions.

The agricultural soils of the area derived from the weathering of sediments deposited by fluvial processes and are the major resources of the area. Soil forming processes are still continuing in the area. Non-calcareous grey floodplain soil and non-calcareous dark grey floodplain soil are the two soil types recognized in the area on the basis of grain size, clay content organic material, acidity, and soil structure.

Non-calcareous grey floodplain soils are characterized by a grey colour, fine brown mottling and prismatic to blocky structure (Statistical Yearbook of Bangladesh, 1989). They are seasonally flooded and have seasonal topsoil and nearly natural sub-soil. This type of soil occupies most of the study Area.

Soils on the settlement formations mostly followed the sand and silty sand. Two types of soil may be found in Keraniganj one is sand and silty sand, other is clay and silty clay. Physical properties of soil may be categorized into 4 groups. The characteristics of each group are as follows.

Group - A

Dominantly silty clay and clay, low permeability, high water holding capacity, high compressibility, poor drainage, level to depressed relief, medium to high plasticity.

Group – B

Dominantly sand, high permeability, low water holding capacity, low compressibility, good drainage, low plasticity, low ridge and depressed relief.

Group – C

Dominantly clay silt and sand, moderate permeability and drainage, moderate water holding capacity, low to moderate compressibility, level relief with local ridge, high shear strength. A separate report is presented on the soil condition of the study area in eight volumes. A map on the borehole points also attached with that report.

b. Topography

According to the Geological Survey of Bangladesh, most of the land in Keraniganj is 5 to 10 feet high from the mean sea level. Some of the areas of Gadarbagh, Chunkutia, Konakhola and Jinjira mouzas fall in 15 to 20 feet high range.

The area slopes regionally towards the south with gentle and low relief. Levees are found in the elevated parts of the area wherein flood basin and ox-bow lakes are located in the lowest depressions. Only levees remain above the floodwater during the rainy season. the highest elevation is 7 meters (22.7 feet) above mean sea level near Jainpur in the north-western part of the area and the lowest parts in the south are nearly at mean sea level.

c. Climate

The climate of the project area is generally moderate. Maximum mean monthly temperature of 26.3^0c is obserevd in the month of August while minimum mean temperature of 12.7^0c is observed in the month of January. Summer begins from late March and continues till August. The monthly mean temperature and rainfall of Keraniganj Upazila are presented in the Table-1.3.

Table-1.3: Mean Monthly Rainfall and Temperature of Keraniganj Upazila

Month	Rainfall (mm)	Temperature (^{0}c)
January	07	12.7
February	24	15.6
March	64	20.5
April	146	23.6
May	330	24.5
June	336	26.1
July	367	26.2
August	303	26.3
September	302	25.8
October	176	23.0
November	33	19.3
December	12	14.2

Source: Bangladesh Meteorological Department.

d. Geological Fault

From geological setting and topography, it is clear that Dhaka City and its surrounding areas have experienced major and minor faulting at different times. Some faults and lineaments were observed in satellite images and aerial photographs and were confirmed through field surveys. But, in many places, human settlement activities have destroyed the field evidences.

During field investigations, a sharp lithological change has been observed in Dhaka City and its surroundings. There are many evidences of down-thrown blocks of the fault. Except for rapid subsidence there is also evidence in a sharp lateral contract between layers. Considering various facts, it may be inferred that there is a displacement due to faulting. The north-south trend is considered to be the probable alignment of this fault.

Basta, Kalindi, Ruhitpur, Tegharia and Subhadda are more or less free from any fault line. The study area lies on Banar fault (in the south) which runs through Dhaleswari River. However, the study area falls in the earthquake Zone-2 of the Seismic Map of Bangladesh (Ref. BNBC). Besides, main sediments of the many parts the study area is poorly compacted and organic clay layers. With the presence of organic layers and sediments with low compaction, the area is considered to be a weaker foundation layer.

Any civil construction needs very careful attention and special foundation treatment as well as design. Provisions of BC Rules 2008 and BNBC 1993 have to be strictly followed.

1.9 Review of Previous Plans and Proposals

Planning principles and planning standards are two important indicators in the design process for the planning area. Planning standards may differ from area to area and region to region. Planning impact depends on existing situation of the land characteristics and land value. Planning principles addresses two distinct situations like existing urban area and new urban area. Special attention has always been given to manage development of existing urban areas, fringe areas and new urban areas. New urban areas and fringe areas development are not as fast as that in the existing urban areas. Planning principles and standards are necessary for controlling density and creating effective land use in future. Different measures are taken to match the existing landuse in respect of required facilities and services.

All design principles and standards are not applied in the right way, rather mentioned as reference or target. Success of implementation of this plan can be achieved through cooperation of local inhabitants, developers and depends on availability of budget. Rate of future urbanization, availability and value of land, future size of population, environmental quality and future need of the targeted population were considered to optimize the use of land under the project area. Relevant Structure Plan, Urban Area Plan and Dacca Master Plan of 1959 were considered as a basis and guideline of this detailed area plan. Sequential discussion on those guidelines is illustrated in the following paragraphs.

1.9.1 The Dhaka Master Plan, 1959

The Dhaka Master Plan 1959 covered the then Dhaka Improvement Trust (DIT) area of roughly 290 sq miles, with a population slightly exceeding 1 million. Of this population, approximately 575,000 were in Dhaka City. The Dhaka Master Plan comprised of a short report supplemented by a map of the DIT area at 1:3960 scale and a map of the Dhaka City area to a scale of approximately 1:20,000.

Major part of the present study area was actually outside the Dhaka Master Plan 1959 area. The Master Plan covered an area of 290 sq. mile including Dhaka, Narayanganj and Tongi Pourashava and their surroundings. The Tongi Municipality and some part of Rupganj Thana were under the Master Plan 1959. Proper review of those areas as prescribed in the Master Plan of 1959 was not followed within the specific time frame. As a result, those areas, due to it being adjacent to Dhaka City, developed in an unplanned way. On the other hand, part of Keraniganj included in the Master Plan of 1959 developed as a mixed residential area though the Master Plan proposed it as reclamation areas. Due to the shortfall of review within set period of time, the Master Plan of 1959 did not perform proper planning and development control of the rapid development demand of Dhaka City.

1.9.2 Dhaka Metropolitan Development Plan

The Dhaka Metropolitan Development Plan (DMDP) was a three-tier plan package, covered Structure Plan, Urban Area Plan and Detailed Area Plan. The DMDP Structure Plan provides a long term strategy for 20 years (1995-2015) for the development of the Metropolitan area of 1528 sq km, and the Urban Area Plan provides a mid term strategy for 10 years (1995-2005) for development within the RAJUK's jurisdiction. Out of the above-mentioned three components, Structure Plan and Urban Area Plan were completed in 1995. Policies and strategies relating to transport development in the area having a gross area of 4173.60 acres consisting of SPZ-18 together with some other major transport issues / policies of Dhaka covered by the two plans are discussed below.

1.9.3 Dhaka Structure Plan (1995-2015)

DMDP Structure Plan provides a long-term strategy for the 20 years (1995 to 2015) for the development of the greater Dhaka sub-region. For the purposes of the plans and reports, the term "Metro Dhaka" refers to the 590 square mile area.

The DMDP Structure Plan consists of a written report and policy document with various support maps and a 1:50,000 or as appropriate scale composite map. The report identifies the order-of-magnitude and direction of anticipated urban growth and defines a broad set of policies considered necessary to achieve the overall plan objectives.

Structure plan differs from the older–style master plan by concentrating only on the broad structure of the city. It is not considered as master plan with either the detail of the physical layout of the city or detail of individual development areas, which cannot be implemented until the later stages of the plan period.

Inappropriate and variance with the strategy and structure plan approach. It would not be possible to determine the detailed landuse and development implied by a master plan over such a long time scale, bearing in mind the uncertainties associated with economic and population growth. Its preparation would in addition be very time consuming and would, in the current situation, be an irresponsible use of skilled manpower to little purpose. What is required is the production of more limited area-specific plans where action can be contemplated within a relatively short time when standards and available resources can be more readily foreseen.

The Structure Plan covers whole of RAJUK's development control area. The DMDP Structure Plan functions may be summarized as to:

- Interpret national policies.
- Establish aims, policies and general proposals to guide metropolitan Dhaka's long term growth and development.
- Provide a framework and mechanisms necessary to ensure all public and private sector agencies coordinate and prioritise their respective development planning and investment programs and decisions within the metropolitan area in particular, and phasing of development.

The DMDP Structure Plan both in its preparatory and implementation stages aims to provide a coordinated and consistent framework for the development of the plans and programs of all public and private sector agencies within the metropolitan area and to:

- Bring the main planning issues of the metropolitan area to the attention of the Government, other public and private sector agencies, vested interest group and the public at large. The broad message and strategic intent of the Structure Plan will need wide dissemination.
- Provide the framework for local plans. The Structure Plan will set the context for the preparation of Detailed Area Plans and Local Plans as appropriate, including the identification of development themes and specific areas in need of immediate/short term action.
- Provide guidance for development management. The Structure Plan will provide the basis for development management at the broad metropolitan level, via management policies for items of strategic and structural importance. The DMDP Structure Plan does not include detailed development management policies or standards.

Major Road Development Program

A total of 217 km. roads were programmed for construction to meet the following purposes:

- To provide diversions for the national grids;
- To provide infrastructural facility for urban dispersal; and
- To provide east-west intercity connection for reducing core city traffic congestion.

One of the most important link recommended for construction was a limited access to the *Dhaka – Maowa linkage through the study area* linking the Maowa Road at a point near Sreepur, in the south-west of the Keraniganj area, to divert some of the long distance inter-district traffic, which would otherwise use the busy urban roads of Dhaka city which are already congested.

Link Road Development Program

The DMDP Structure Plan also included proposals for construction of 25.8 km. strategic links with a view to providing corridors to ease the intracity traffic movement, to reduce the traffic hazards / congestions and to connect west Dhaka with the spine. In the area covered by Location-3, the road (*Dhaka–Maowa linkage through the study area)* is the only link proposed for development.

Water Transport Development Program

The DMDP Structure Plan also made a recommendation with regard to water transport in order to efficiently utilize the available natural resources with a view to:

- Develop navigability of the encircling waterways;
- Install new berthing points;
- Disperse traffic loads to be carried by water transport;
- Reduce congestion in old Dhaka roads;
- Develop water transport to serve different points around the city.

The whole component included dredging of channels and canals and installation of berthing points. Navigability of the encircling waterways would enhance the riverine recreational facilities as well as movement of goods to different parts of the city by water transport. Introduction of water transport could reduce the cost of transportation for both goods and passengers.

1.9.4 The Urban Area Plan, 1995-2005

Urban Area Plan (UAP) was developed for the Dhaka City Corporation (DCC) area and its major expansion areas, including the area to the east of the DCC, the DND Triangle and for the Tongi, Gazipur, Savar, and Dhamsona areas. The UAP was intended to provide interim mid-term strategies for a 10-year period and were conceived as “nested” within the overall Structure Plan. Unfortunately, although the UAP for Dhaka covered a smaller area and was drawn at

a larger scale, its level of specificity was not much different from the Structure Plan.

In the area covered by Urban Area Plan, Location-3 has a small part covering only the area lying along *Dhaka–Maowa* Road. No major recommendations relating to transport has been introduced for Location-3 area.

1.9.5 Strategic Transport Plan for Dhaka

Besides DMDP, one of the recent (2006) initiatives taken by the Government of Bangladesh (GoB) was to undertake a study titled: "Strategic Transport Plan (STP) for greater Dhaka". Before suggesting strategic transport network for Dhaka, STP considered three Landuse Scenarios, as indicated below, developed within the context of the updated Structure Plan:

a) A strong Central Spine Scenario in which strong north-south axial characteristics of Dhaka were recognized.

b) The Growth Pole scenario was one that could profitably be applied to planning and investment decisions at the national level. For the purposes of the STP study, the principles were applied at the regional level within the bounds of the study area.

c) A dispersed settlements scenario in which the size of settlement was a function of the size of the hinterland it would serve and of its hierarchical relationship to other settlements.

Having considered the implications of the above scenarios, decisions were taken to adopt the Growth Pole/Satellite Cities scenario. Consequently, this was used to guide the investigations of all of the alternative transportation strategies. On the basis of present landuse scenario and utilizing the Growth Pole theory, STP found a growth pole in Subhadda Union expected to be occurring during the period up to 2024. According to this concept, Keraniganj is identified as a growth centre, and the study area is also located outside the prescribed growth centre (Keraniganj).

Road Proposals

1. A dual carriageway has been proposed from Abdullapur to Konakhola. Such a link road is planned to encourage development in the southwestern areas and expected to be constructed by RHD. In the study area, traffic flows are low and it may be upgraded sufficiently which may increase the safety aspects of this road.

1.9.6 Drainage Proposal of JICA (FAP-8A)

In the JICA's report it is recommended that in the Keraniganj Thana an area of 11km in length almost parallel to the Buriganga river on both side of the Dhaka-Khulna road and an average width of 3 km will be taken up for development. If the JICA's proposal is accepted then some major navigable 'Khals' will be closed. The Thana H.Q. (Upazila H.Q.) will remain outside the protected area. At the time of field visit it was found that BWDB already constructed three polders in Keraniganj Thana, namely polder No. 1, 2 and 3. BWDB constructed many regulators, dwarf embankment and excavated many internal Khals of these polders. It is also reported by R&H Department that the second bridge over Buriganga River connecting Babu Bazar and Jinjira has been constructed. The Subhadda Khal will be kept open for the existing navigation facilities for commercial purpose. This is the shortest river connection between Dhaleswari and Buriganga River via Jinjira.

1.10 Public Consultation

As per section 74 of Town Improvement (TI) Act 1953, RAJUK carried out a two-month long Public Hearing on the Detailed Area Plan from October 3, 2008 to December 4, 2008. The Public Hearing was carried out through:

- Media Coverage
  - Print
  - Electronic
- Press Conference
- Web based Publication
- Display of Maps (Hard Copy)
  - RAJUK Auditorium
  - DAP, PD Office
  - RAJUK Zonal Office at Dhanmandi
  - RAJUK Zonal Office at Mohakhali

- RAJUK Zonal Office at Uttara
- Explain different aspects of the Plan to the stakeholders by experts
- Digital Display upto individual Mouza Plot level in GIS Platform
- Collection of Complaints in prescribed format and preparation of checklist
- Collection of Complaints in the form of letter to Chairman/P.D.

A total of 2 complaints / comments were made on the plans by the stake holders of Location-3 area. Complaints were received from Private Developers. The complaint was related to sub-flood flow land. For fear of eviction, the land Developer suggests to include his land for future urban expansion. However, quite a good number of people also appreciated the plan and wanted its early implementation.

1.10.1 Consultation with Local Government Authorities

Local Government Authorities, such as, Dhaka City Corporation, Keraniganj Upazila Parishad and concerned Union Parishads were involved in the consultation with the consultants.

1.10.2 Consultation with Different Communities

Besides Public Hearing, consultation with different communities and organizations were held. These were:

1. Academics: Department of Urban and Regional Planning of BUET, JU and Department of Urban and rural Planning of KU
2. Professional body: Bangladesh Institute of Planners, Institute of Architects Bangladesh
3. Study groups: Center for Urban Studies
4. Business group: FBCCI, DCCI, REHAB, BLDA, Dhaka Mohanagar Somitee
5. Media : The Daily Inqilab, The Daily Naya Diganta, The Daily Sambad

Outcome of such consultation was:

1. DCC Mayor wants Plans should be prepared for 50-100 years
2. Academics want protection of Flood Flow Zones at any cost, protection of agriculture are, separation of Rural Homestead from agriculture
3. DCCI appreciated the treatment of industrial use
4. Pourashavas: Retain their development control right in the form of issuance of Planning Permit
5. Affected People: Don't want wider roads and civic facilities which will evict them from their land without resettlement.

1.10.3 Public Hearing

Only six complaints were filed by the inhabitants during the public hearing period. Most of those complaints came from the fear of eviction as traditionally in Bangladesh development activities are carried out through compulsory land acquisition. But land acquisition can be avoided by involving land owners in the development process. In the process land owners become partner in the project and contribute land voluntarily to secure right of ways for roads and civic amenities. Such projects are to be taken on area basis. All the aspects of an area are taken into consideration and plots are subdivided according to an agreed layout plan. Land owners get back their plots after proportionate deduction of land used for roads and other uses. This way the land owners get a fully serviced plot and their land value enhances and become planned to use. On the other hand the development authority implements its plan with no cost from public fund other than the seed capital needed for the quick offtake of the project.

1.10.4 Consultation with Public Representatives

A large number of Public Representatives provided their suggestions during last six months. Those representatives are Member of Parliament and Ministers. Most of those representatives suggested to complete the DAP within stipulated time period and advised RAJUK to save Dhaka from unplanned trend of development. Except this, the

representatives made known their opinion on environment pollution, indiscriminate land filling, expansion of central area of Dhaka City towards north and south in a planned manner, improvement of drainage system of central Dhaka at the same time fringe areas and industrial development in specific locations.

1.11 Draft DAP Review by Review Committee

The Review Committee, formed for assessing the proposals of Detailed Area Plan (DAP), constituted a 16-member Technical Working Group (TWG) to analyze the DAP and formulate appropriate recommendations if corrections are needed. While reviewing, the TWG has found some serious violation of DMDP – the higher level plan and also numerous inconsistencies in proposals in terms of landuse conformity, standards of amenities and various types of data. Considering these, TWG has prescribed a road map for both RAJUK and the consultants to attain the desired goals of DAP. It was agreed by all the members of TWG that although late, DAP must be completed. However, it should be endorsed only after necessary corrections and changes made in the draft proposals as per recommendations of the TWG and The Review Committee.

One of the main issues that are confronted by any planning exercise is the projected population at the end of the planning period (in this case year 2015). The reason is that this projected population ultimately determines the allocation of land among various categories of uses, provision of amenities and distribution of service facilities. The working group has estimated that there will be around 16 million people in Dhaka Metropolitan Area in 2015 which is very close to that projected in DMDP.

It was revealed that the allocation of land for residential/mixed use in DAP could accommodate more than 27 million people with a density of 230 persons/acre which is far above the projected population for the year 2015. While allocating land for residential purposes it was necessary to determine required land for residential land use for different income groups. But it is quite unfortunate that DAP completely failed to address housing requirements of poor and middle income groups.

The TWG also emphasizes that being a third tier plan, the DAP must conform to the proposals of the higher level plans i.e. Structure Plan and Urban Area Plan of DMDP. The Group identified gross violation of DMDP policies by the draft proposals of DAP with regard to land use classification, allocation of space and use in several areas, Flood Flow and Sub-Flood Flow Zones and areas of high agricultural values. The TWG also observed that there was lack of clear-cut definition of local and regional scale recreational and other facilities, maintenance of road hierarchy and consideration of landuse-transport interaction in making proposals for road networks.

Against this backdrop, the TWG has suggested several corrective measures. The group strongly recommended following steps to ensure successful completion and implementation of DAP:

(i) The planning standards as recommended by the TWG need to be followed uniformly by all the consulting groups in finalizing the DAP proposals.

(ii) Both RAJUK and consultants should take corrective actions as per recommended tasks.

(iii) RAJUK is required to take necessary actions to fix the GIS data base.

(iv) A time frame should be given to the groups for due corrections of the DAP.

(v) RAJUK should take necessary and immediate actions for capacity building of the DAP project team and may engage short term independent consultants to receive the final reports/maps from the DAP consultants with due corrections.

(vi) Existing “Nagar Unnayan Committee” if required, may be entrusted with the responsibility to monitor proper implementation of DAP.

1.12 Draft DAP Review by DAP PORJALOCHANA Committee

Ministry of Housing and Public Works vide a notice no. Gri o pu ma/Pari-3/1(5)/2001(Part-3)43 dated 7-3-2010 constituted a DAP PORJALOCHANA Committee with the following members to verify the compliance status of the recommendations made by the previous Review Committee according to a ToR.

a. Prof. Dr. Jamilur Reza Chowdhury : Convener
Former VC, BRAC University
b. Prof. Nazrul Islam, Chairman : Member
University Grants Commission
c. Prof. Sarwar Jahan, President : Member
Bangladesh Institute of Planners
d. Ms. Rezwana Hasan : Member
Chief Executive Director, BELA
e. Architect Iqbal Habib : Member
Jt.Secretary, BAPA
f. Project Director, Detailed Area Plan : Member Secretary
RAJUK, Dhaka.

The committee reviewed the status of the Draft DAP in view of the recommendations of the previous Review Committee in four separate meetings held on 16-03-2010, 25-03-2010, 01-04-2010 and 11-04-2010 in RAJUK Board Room. The committee ultimately made 36 point recommendations to be followed by the consultants. The committee also recommended that on compliance of these recommendations made by the PORJALOCHANA Committee, the Draft DAP may be accepted by the ministry.

Chapter - 2
CRITICAL PLANNING ISSUES

2.1 Existing Development Pattern

The task of detailed area planning is co-related and guided according to the use restriction of the involved land. Human habitation of Keraniganj Upazila started along with the habitation of Dhaka City. From then, Dhaka City has been guided through different types of planning activities, also with a Master Plan prepared in 1958. But Keraniganj acted as fringe area of Dhaka City, and developed as a natural formation. Dhaka City has undergone drastic transformation from Municipality to Pourashava and then City Corporation, from Metropolitan City to Megalopolis City. But, Keraniganj, once administered by the Union Parishad, remained the same.

The study area is formed with mixed landuse of residence, administration and government offices, educational institutions, health facilities, recreation facilities, utility services, commercial and industrial establishments, water bodies, roads, agriculture, etc. and these are scattered all over the area.

Major part of the study area is still under agricultural use and represents 69% of the total land in the study area. About 25% of the land is under non-agriculture use and 5% in water bodies. Table-2.1 shows the major landuses in the study area and the details are shown separately according to the major categories.

2.1.1 General

The study area consists of 5760 acres (2057.14 hectares) of land mass and includes 23 mouzas. Its population is 272439, which is 51.39 percent of the total population of Keraniganj Thana. Total number of involved households is 51115 and average family size is 5.6. Information on the existing landuse pattern of the study area, facilities and their utilization characteristics are presented below.

The area is urban in character with low and middle class population but lacking in municipal services. Gross density of population is 47 person per acre or 116 persons per hectare. On the east of the Maowa Road the Tularam Jute Mill is located. It looks like a township located along the riverbank. Low-lying areas bound this area on the east and south. On the west of the Maowa Road, lies the Paschim Para area of Jinjira and is and notable for bricks trading. Many small semi-pucca sheds are located for dealing in bricks and construction materials. There is a connecting road known as Keraniganj Road in between Mawa Road and Jinjira Bazar and it passes through the agricultural land. It is the only vehicular road leading to the built up area. The road is narrow and movement of vehicular traffic is difficult, recently it has been widened. Moreover, most of the road space is occupied by vegetable market. The road is not straight and irregular in width and zigzag in alignment. This road crosses a small bridge and extends up to the bus stand. Nature of the alignments of roads in Jinjira is peculiar and difficult to find out the direction the road follows. Bus stand is at road side and there is no organized bus terminal. Condition of road from bus stand toward the west passing through Kalind, Neknolbagh and Rohitpur is good. The built up area in and around the Jinjira Bazar is the main commercial and industrial area, which can clearly be identified through detailed area landuse survey. Settlements both commercial and residential, have developed along the riverbank and in between the roads. Due to presence of narrow and zigzag road and location of scattered settlements, it would be very difficult to prepare a Detailed Area Plan. Seemingly, the appropriate steps for the Jinjira sub-urban area would be the preparation of urban renewal plan. Rural Settlements occupy the western part of the zone where land is available for urban development. As development has already taken up, it is the appropriate time to take steps for planned development of Jinjira.

2.1.2 Socio-economic Profile

Socio-economic profile of the project area (Location-3) has been revealed from the Socio-economic survey of households. Five percent households of the Study Area were surveyed and following broad information has been gathered through it.

a. Family Size

It is found that the family size varied widely, from 1 to 12 or more though families of 4-6 members are more common in the study area. Most of the families are unitary type, though a few joint families are also found. The table below represents the family size of the study area.

The table represents the comparative scenario of household size in the study area. It is found that most of the families are comprised of 4 to 6 members in all over the study area which covers about 63.8%. About 19.6% families are of 7-9 members. Actually most of the families are unitary families in the study area. There is significant number of joint families existing within the study area.

Table-2.1: Family size

Family size	Subhadda		Zinjira		Kalindi		Basta		Total	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
1-3	29	12.2	21	27.6	21	11.0	14	10.4	85	13.3
4-6	159	67.1	45	59.2	113	59.2	91	67.4	408	63.8
7-9	41	17.3	7	9.2	52	27.2	25	18.5	125	19.6
10-12	7	3.0	3	3.9	5	2.6	5	3.7	20	3.1
13-15	1	0.4	0	0	0	0	0	0	1	0.2
Total	237	100	76	100	191	100	135	100	639	100

Source: Socio-economic survey, 2005.

b. Age and Sex Structure

Among the surveyed households, 53.63% are male, while the rest are female. About 47% of the populations fall between the age group of 16 to 35. It clearly indicates that a large section of the people is workable and can be very effectively used for the development of the area, if properly utilized.

Table-2.2: Age-sex structure of population

Age group	Male	%	Female	%	Total
0-5	104	53.06	92	46.94	196
6-10	97	44.70	120	55.30	217
11-15	144	53.93	123	46.07	267
16-20	188	53.71	162	46.29	350
21-25	119	44.57	148	55.43	267
26-30	157	54.33	132	45.03	289
31-35	122	57.55	90	42.45	212
36-40	94	54.97	77	45.03	171
41-45	76	59.38	52	40.63	128
46-50	57	55.88	45	44.12	102
51-55	32	66.67	16	33.33	48
56-60	39	59.09	27	40.91	66
60+	55	67.90	26	32.10	81
Total	**1284**	**53.63**	**1110**	**46.37**	**2394**

Source: Socio-economic Survey, 2005.

c. Religious Groups

About 90% of the surveyed families are Muslim while the rest of the families are of Hindu community. Though there are also people of other different communities like Buddhist and Christian, but they are very few in numbers.

Table-2.3: Religious groups

Religious type	Frequency	%
Islam	371	89.4
Hindu	44	10.6
Total	415	100.0

Source: Socio-economic Survey, 2005.

d. Educational Status

Though Keraniganj is considered to be an area of urban and rural mixture, the literacy rate of the surveyed people is found high. Only 12.53% of the surveyed people is totally illiterate. About 38.47% of the people have either primary education or continuing as student while 32% of the people have secondary education. The rate of higher education among the surveyed people is not remarkable.

Table-2.4: Educational Status

Types	Male	%	Female	%	Total
Illiterate	106	35.33	194	64.67	300
Primary	463	50.27	458	49.73	921
Secondary	463	60.29	305	39.71	768
Higher Secondary	96	65.75	50	34.25	146
Graduate	57	68.67	26	31.33	83
Post Graduate & Higher	12	75.00	4	25.00	16
Not Applicable	87	54.38	73	45.63	160
Total	1284	53.63	1110	46.37	2394

Source: Socio-economic Survey, 2005.

e. Occupation / Employment Pattern

The occupational pattern of the people of the study area is not related with the existing land use of the study area. During the study it was found that about 60% of the study area falls under the category of agricultural use. But the occupation of the people does not depend much on agriculture. Only 0.75% of the surveyed people are found to be dependent on agriculture as their main source of livelihood. About 18% of the people are of business community and 27% of the people are engaged in household work. Among the rest of the people, 3.42% are labour, 10% service holder and 2.21% engaged in other works. Only 4.42% of the surveyed people are totally unemployed while 26.52% are student.

Table-2.5: Occupational Pattern

Type of Occupation	Male	%	Female	%	Total
Agriculture / farming	17	94.44	1	5.56	18
Labor	74	91.24	8	9.76	82
Govt. service	41	91.11	4	8.89	45
Private service	206	96.71	7	0.29	213
Business	419	96.99	13	0.01	432
Jobless	69	65.09	37	34.91	106
Housewife / HH Work	27	4.15	623	95.85	650
Others	34	64.15	19	35.85	53
Student	310	48.82	325	51.18	635
Not Applicable	87	54.38	73	45.63	160
Total	**1284**	**53.63**	**1110**	**46.37**	**2394**

Source: Socio-economic Survey, 2005.

f. Income and Expenditure Levels

Income and expenditure of the surveyed population in the study area prescribed in the following table.

Table-2.6: Income from Main Occupation (monthly)

Range of Income (In Tk.)	Number of Household Head Engaged with the Occupation								
	Agricul-ture/ Farming	Labour	Govt. Service	Private Service	Busi-ness	House-hold Work	No Work	Student	Others
Below 1000		7		20	10	1		1	
1001 - 1500		4		13	3				
1501 - 2000	1	5		32	26	3		1	1

2001 - 2500	1	3		3	5				2
2501 - 3000		5	6	25	28	1			3
3001 - 3500			1	3	6	1			1
3501 - 4000		8	6	22	23	2		2	1
4001 - 4500		1	1	4		1			
4501 - 5000	2	6	3	22	56	3	1	1	2
5001 - 5500			2		1	1			
5501 - 6000	1	1	4	6	16	2	1		1
6001 – 6500				1	4				
6501 – 7000	1	1	2	8	8	5	1		
7001 - 7500			1						
7501 - 8000		2	3	6	20		1		1
8001 - 8500					1				
8501 - 9000					9		1		
9001 – 9500									
9501 – 10000	1		7	7	50	4	1		2
10000 +	3	2	3	6	84	6	2		3
Total	**10**	**45**	**39**	**178**	**350**	**30**	**8**	**5**	**17**

Source: Socio-economic Survey, 2005.

Highest involvement in main occupation is business and private service is second highest. Subsidiary occupation reflects the Government service as major occupation.

Table-2.7: Expenditure (monthly)

Range in Tk.	Name of the Sectors							
	Housing	Fooding	Trans-port	Educa-tion	Urban Services	Health	Recrea-tion	Others
Lowest-1000	36	19	295	226	328	320	164	141
1001-2000	10	53	66	52	22	12	13	28
2001-3000	2	74	15	17	-	1	7	5
3001-4000	1	67	1	8	-	0	1	1
4001-5000	3	57	9	10	2	-	2	5
5001-6000	1	46	2	1	-	-	-	1
6001-7000	1	14	-	1	1	-	-	-
7001-8000	2	27	-	1	-	-	-	-
8001-9000	-	4	-	-	-	-	-	-
9001-10000	1	28	-	-	-	-	-	4
10000 +	-	21	-	-	-	-	-	-

Source: Socio-economic Survey, 2005.

g. Source of Income

Wages and salary are the dominant sources of household monthly income in the project area-accounting for around 25.9% of the total household monthly income. Income from trade and commerce accounts for around 20.4% of household monthly income. Agriculture as a whole, including crops, livestock and poultry and fish cultivation, accounts for around 21.7%, while remittances from migrant workers from abroad around 27.6% of the total monthly household income.

Table-2.8: Sources of income (in percent)

Source	Subhadda	Zinjira	Kalindi	Basta	Total
Salary	6.2	34.6	7.1	7.5	10.0
Income from the Assets	.3	.9	.7	1.0	.6
House rent	.6	12.1	.7	2.0	2.3
Business	19.1	28.0	16.8	23.6	20.4
Wage (daily)	16.8	15.9	13.9	17.1	15.9

Agriculture	24.1	0	23.9	15.1	19.3
Poultry/Livestock	2.6	0	1.4	3.5	2.2
Cottage industry/Handicraft	.3	0	.4		.2
Remittance	28.5	6.5	33.6	29.1	27.6
Others	1.5	1.9	1.4	1.0	1.4
Total	100	100	100	100	100

Source: Socio-economic survey, 2005.

h. Migration

Migration from Keraniganj to Dhaka city is a natural trend since long ago. As Keraniganj is situated just beside the Dhaka City separated by the Buriganga River, their inhabitants perform the long lasting practice of emigrating from their homeland. From Table-2.9, it has been observed that most of the inhabitants used to immigrate to Dhaka City by family reason (by birth). It is estimated as 63.1%. The second most important reason for migration is business purpose with 18.2%. Here, the other reasons behind emigration are service or transfer, higher education and others facilities.

Table-2.9: Causes of in-migration towards Dhaka

Causes	**Frequency**	**%**
Service / transfer	32	6.8
Higher education	18	3.8
Business	86	18.2
Security	3	.6
Long term treatment of health	0	0
For the enjoyment of urban facilities	17	0.6
By birth	298	63.1
Others	18	3.8
Total	**415**	**100.0**

Source: Socio-economic survey, 2005.

2.1.3 Landuse

Existing landuse pattern of the study area is an outcome of a long and constant process involving various natural, socio-economic, industrial and political factors. **Map-2.1** shows the existing landuse pattern, provision of facilities and land utilization characteristics.

Table-2.10: Existing landuse of the study area

Categories of landuse	**Area in acres**	**% of the total**
Agriculture	2394.00	57.36
Residential	1194.90	28.63
Water body	322.80	7.73
Semi-pucca Road	55.70	1.33
Commercial	47.50	1.14
Industrial	46.10	1.10
Pucca Road	43.60	1.04
Katcha Road	25.10	0.60
Socio-cultural	17.50	0.42
Administrative	11.50	0.28
Health services	4.50	0.11
Educational facilities	4.40	0.10
Urban services	3.90	0.09
Recreation	2.10	0.05
TOTAL	**4173.60**	**100.00**

Source: Landuse Survey, 2005.

a. Residential areas

According to the landuse survey, several categories of residential landuses were revealed. From the table it is realized that private residence covers 28.63% (1194.90 acre). The survey revealed few slums covering only 2.3% of the total residential area.

From the beginning of settlement formation in and around Dhaka City, settlement was also initiated in the Jinjira mouza. According to the survey of old structures found in the study area, pucca structure was primarily constructed near the Buriganga River and the side of other prominent canals.

Table-2.11: Residential landuse

Type of use	Area		Percent
	Acre	Hectare	
Private residence	758.90	303.58	63.51
Staff quarter of Mitford Hospital	0.19	0.08	0.02
Housing (Jheelmel)	405.25	162.10	33.91
Slum	27.64	11.06	2.31
Residential + commercial (Resicom)	2.92	1.17	0.25
Total	**1194.90**	**477.98**	**100**

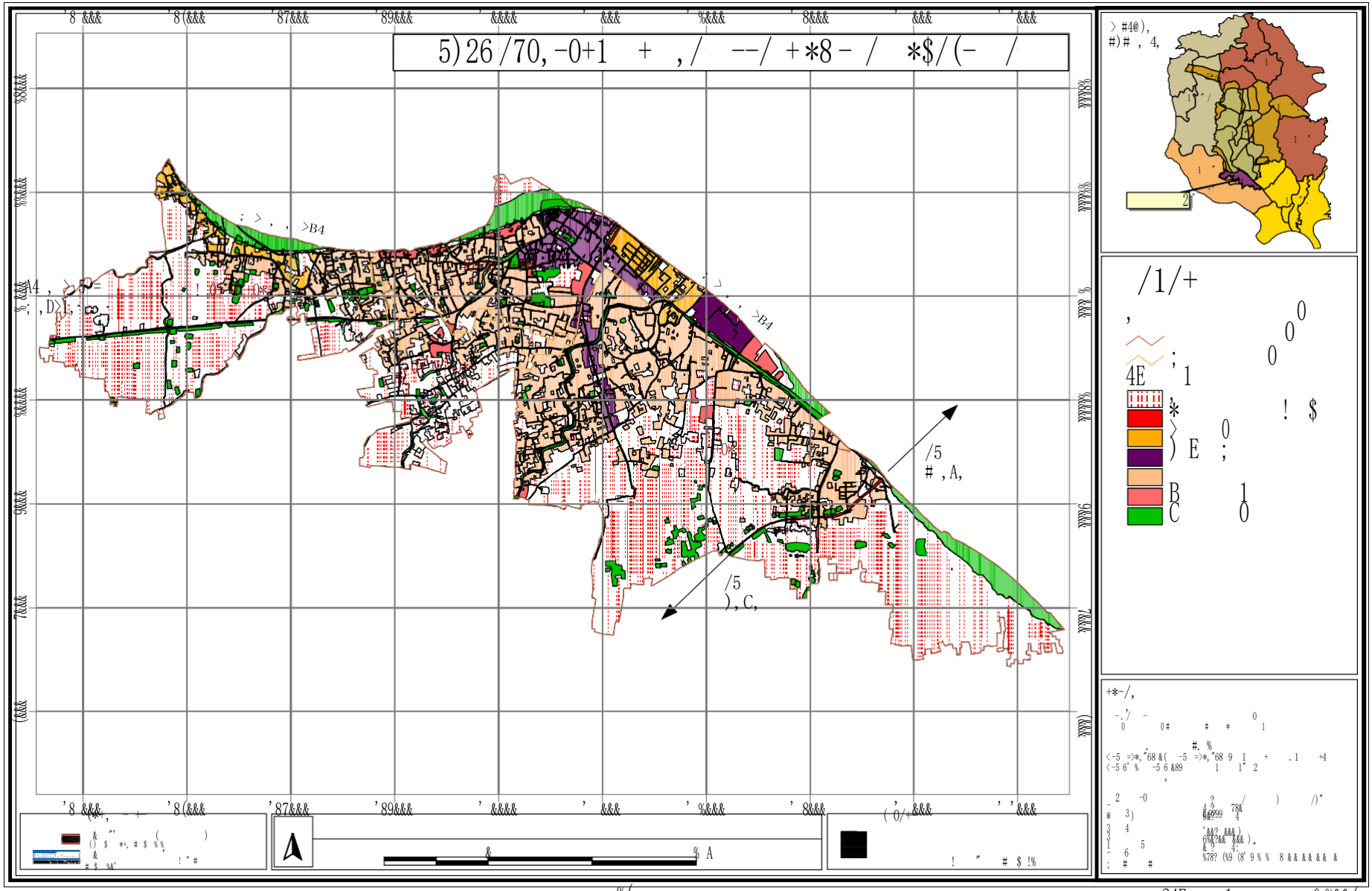
Source: Landuse Survey, 2006.

Except Teghuria and Basta mouza all other mouzas are involved with the residential development. Jinjira mouza is contains the highest amount of land under pucca settlement (about 71.65 acres). Most of those pucca settlements are performing dual character like residential cum commercial activities. Mixed landuse such as residential cum commercial, not included here. Again in consideration of housing development, Chunkutia and Subhadda mouzas occupiy highest (404 acres) among all the mouzas in the study area. Name of the planned housing area is Jhilmil being implemented by RAJUK.

Table –2.12: Settlement according to the mouza

J.L. No.	Name of Mouza	Area in acre						Total
		Pucc	Semi-pucca	Katcha	Slum	Housing	Staff quarter	
Subhadia Union								
430	Kaligonj	5.00	10.50	23.25				38.75
431	Mirerbag	20.60	25.02	11.28	3.90			60.80
432	Chunkutia	10.86	75.20	32.90	15.20	178.40		312.59
433	Subhadda	3.90	2.16	4.70	1.30	225.60		237.66
441	Ikuria (part)	2.80	12.65	6.20	1.16			22.81
442	Naiatola (part)			8.45				8.45
Zinjira Union								
425	Mandail	9.73	68.00	40.25				117.98
427	Dakpara	3.80	20.35	10.05				34.20
428	Char Ragunathpur	2.00	7.50	2.20				11.70
429	Zinjira	71.65	30.75	26.50	6.05	1.25	0.19	136.39
Kalindi Union								
420	Brahmankita	14.04	22.50	24.50				61.04
421	Gadarbag			6.25				6.25
422	Atasur			5.70				5.70
423	Kalindi		5.00	9.07				14.07
424	Barisur		5.20	31.05				36.25
425	Gokpar		2.40	70.08				72.48
Sakta Union								
398	Malancha			5.63				5.63
Basta Union								
416	Dhitpur (part)			3.75				3.75
418	Boali (part)			0.25				0.25
419	Konakhola(part)			5.27				5.27
Total		**144.38**	**287.23**	**327.33**	**27.64**	**405.25**	**0.19**	**1194.90**

Source: Physical feature survey, 2006.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There is a government staff quarter of Dhaka Mitford Hospital, 0.19 acres in area and located in Jinjira mouza. About 27.64 acres under slum are found in 5 mouzas, though the katcha houses in densely populated areas are almost viewed as slum. Large amount of land involve with slum is located in Chunkutia mouza and occupies 15.23 acres.

b. Industrial areas

Like commercial areas, industrial areas occupy only 46.09 acres, about 1.10% of the total study area. These uses are scattered in the study area. Among those industrial establishments; factory covers 65.27% acre that is of highest coverage. Apart from these, few dockyards (27.12%) have been found covering 12.50 acres. Except these two types of industrial uses, others are of negligible coverage.

Table-2.13: Industrial landuse

Type of use	Area		Percent
	Acre	Hectare	
Factory	30.08	12.03	65.27
Industry	2.93	1.17	6.36
Brickfield	0.50	0.20	1.08
Dockyard	12.50	5.00	27.12
Poultry farm	0.08	0.03	0.17
Total	**46.09**	**18.44**	**100.00**

Source: Landuse Survey, 2006.

Table –2.14: Industrial development according to the mouza.

J.L No.	Name of Mouza	Area in acre						Total
		Factory	Mill	Industry	Dockyard	Brickfield	Poultry	
Subhadia Union								
430	Kaligonj	0.43			1.88			2.31
431	Mirerbag		26.05	1.40	8.75			36.20
441	Ikuria (part)	0.05	0.20					0.25
442	Naiatola (part)					0.50		0.50
Zinjira Union								
425	Mandail	0.36	0.79					1.15
427	Dakpara			0.42				0.42
428	Char Ragunathpur	0.07						0.07
429	Jinjira	0.22		0.47	1.87			2.56
Kalindi Union								
420	Brahmankita	0.68	0.71				0.08	1.47
424	Barisur			0.60				0.60
425	Gokpar	0.52		0.04				0.56
Total		**2.33**	**27.75**	**2.93**	**12.50**	**0.50**	**0.08**	**46.09**

Source: Physical feature survey, 2006.

In total 46.09 acres are under industrial landuse. According to the Table, 11 mouzas contain industrial landuse. Among them, 3 mouzas named Kaliganj, Mirerbagh and Jinjira are the most important industrial areas. Land elevation of those 3 mouzas is generally higher than the other mouzas of the study area. The mill in the Mirerbagh mouza is a Jute Mill which occupies 26.05 acres. Other factories and industries includes small-scale garments factory, furniture factory, iron and steel fabrication factories etc. One brickfield in Naiatola mouza is going to be closed because the area has been acquired by the RAJUK for Jhilmil residential area.

c. Commercial areas

It is found that 7 types of commercial establishments are existing, grouped in broad heads. In total 8 mouzas are not performing any commercial activities. Large concentration is found in Jinjira mouza (27.28 acres). It means Jinjira mouza preserves a close relation with Dhaka City than other mouzas in context of commercial activities. Retail shops are found in most of the mouzas but the commodities are sold in different bazars of Dhaka City. InTable-2.15 commercial activities considered as retail or wholesale shops, occupied 17.31 acres of land in the study area.

Table-2.15: Commercial landuse

Type of use	Area		Percent
	Acre	Hectare	
Commerce/Shops	17.31	6.18	36.43
Bazar	25.45	9.09	53.58
Bank	0.27	0.09	0.57
Hotel	0.27	0.09	0.57
Garage	0.15	0.05	0.32
Godown	1.18	0.42	2.48
Mixed	2.92	1.04	6.15
Total	**47.50**	**16.96**	**100.00**

Source: Landuse Survey, 2006.

Commercial area covers 1.14% of the study area. The area being popular as commercial area, serves the Greater Dhaka. Particularly Jinjira and the adjoining riverbank strip cover most of the commercial areas. Apart from this area, rest of the areas are either barren land or residential land. In total 47.50 acres has been found as commercial area. Among this 53.58% area, kitchen market / bazar is the highest. Second important area is known as commercial shops (36.43%). Other commercial uses are in negligible amount. There are few banks, hotels, garages and godowns, found mostly along the riverbank and Jinjira ghat bazar area.

Table–2.16: Commercial establishment according to the mouza

J.L. No.	Name of Mouza	Area in acre							Total
		Hotel	Bazar	Godown	Commerce	Bank	Mixed	Gara	
Subhadia Union									
430	Kaligonj				1.20		0.70		1.90
431	Mirerbag			0.80	1.40				2.20
433	Subhadia				1.36				1.36
441	Ikuria (part)				0.61		0.11		0.72
Jinjira Union									
425	Mandail		1.02		0.05		0.17	0.15	1.39
427	Dakpara				0.40		0.12		0.52
428	Char Ragunathpur				2.58		0.15		2.73
429	Zinjira	0.27	24.00		1.92	0.27	0.82		27.2
Kalindi Union									
420	Brahmankita				0.38		0.05		0.43
423	Kalindi				0.20		0.10		0.30
424	Barisur		0.43		0.10				0.53
425	Gokpar				6.56		0.07		6.63
Basta Union									
419	Konakhola			0.38	0.55				0.93
Total		**0.27**	**25.45**	**1.18**	**17.31**	**0.27**	**2.92**	**0.15**	**47.13**

Source: Physical feature survey, 2006.

d. Amenities and Urban facilities

Administration: The study area is located just outside the Dhaka Metropolitan Area separated by a major river; few government administrative uses were found. The amount of administrative area refers to what is needed to serve as a Thana level urban area. The stated administrative use in Table-2.17 shows that Thana complex covers 70.73% land, whereas Government offices cover 13.59%. In total, the administrative uses present only 11.48 acre.

Table-2.17: Administrative landuse

Type of use	Area		Percent
	Acre	Hectare	
Thana complex	8.12	3.25	70.73
Union Parishad	0.97	0.39	8.45
Police station	0.83	0.33	7.23
Government office	1.56	0.62	13.59
Total	**11.48**	**4.59**	**100**

Source: Landuse Survey, 2006.

Administrative development includes Upazila complex, Police station, Union Parishad office and other government offices. Among these area, police station covers 0.83 acres, Union Parishad 0.97, government offices 1.56 and Thana Complex 8.12 acres. Table-2.18 presents mouza-wise information about administrative use of the study area.

Table –2.18: Administrative use according to the mouza

J.L. No.	Name of Mouza	Area in acre				Total
		Police station	Union Parishad	Government office	Thana Complex	
Subhadia Union						
431	Mirerbag	0.55	0.70			1.25
432	Chunkutiya			0.15		0.15
441	Ikuria (part)			1.41		1.41
Zinjira Union						
429	Jinjira	0.28	0.14			0.42
Kalindi Union						
420	Brahmankita		0.13			0.13
Basta Union						
419	Konakhola				8.12	8.12
Total		**0.83**	**0.97**	**1.56**	**8.12**	**11.48**

Source: Physical feature survey, 2006.

Administrative services have been established in 5 mouzas. Among them, Jinjira and Mirerbagh are prominent. The scenario involves the mouzas which are adjacent to Buriganga River and easily communicable with the main land of Dhaka Metropolitan Area. Government offices have been developed in two mouzas named Ikuria and Chunkutia due to the existing Dhaka – Maowa Road.

Health facilities: Table-2.19 presents health facilities of the study area. Total coverage of the facilities is 4.51 acre (0.11%). Three types of health facilities were found and they are hospital, health center and family planning office. Among these, hospital covers 4.40 acres (97.56%) of the total health facilities. A few health center and family planning offices are found during the survey, but the total amount of area is insignificant.

Table-2.19: Landuse by health facilities

Type of use	Area		Percent
	Acre	Hectare	
Hospital	4.40	1.80	97.56
Health Centre	0.05	0.02	1.33
Family planning office	0.05	0.02	1.11
Total	**4.50**	**1.84**	**100.00**

Source: Landuse Survey, 2006.

Health facilities include hospital, health centre and family planning clinic. In the study, dispensary is considered as commercial activities and includes in the commercial sector. About 4.51 acres of land are covered under health facilities.

Table –2.20: Health facilities according to the mouza

J.L. No.	Name of Mouza	Area in acres			Total
		Hospital	Health Centre	Family planning	
Subhadda Union					
432	Chunkutiya			0.05	0.05
Jinjira Union					
428	Char Ragunathpur		0.05		0.05
Sakta Union					
398	Malancha	4.40			4.40
Total		**4.40**	**0.05**	**0.05**	**4.50**

Source: Physical feature survey, 2006.

According to the table, hospital, health center and family planning center is located in the mouza named Chunkutia, Char Raghunathpur and Malancha. The services are representing that, establishment of poor health facilities in the study area lead to greater dependency on the older part of the Dhaka City. The hospital in Malancha mouza is far away (about 6 km.) from the central area where density of population is high. Private involvement and other informal sector are absent on the delivery of health services in the study area.

Education: Educational facilities of the study area covers only 4.40 acre (0.10%). Six major categories of educational facilities are found in the study area. Among these, land covered by high schools is highest (44.39%) and primary schools are second highest (32.49%). But the educational area if compared with the total study area is very insignificant. They are found scattered. Few kindergarten schools and madrashas were identified in the study area which covers only 3.20% and 4.58% respectively.

Table-2.21: Educational landuse

Type of use	Area		Percent
	Acre	Hectare	
Kindergarten	0.14	0.06	3.20
Madrasha	0.20	0.08	4.58
Primary school	1.42	0.57	32.49
High school	1.94	0.78	44.39
College	0.30	0.12	6.86
Others	0.40	0.15	8.47
Total	**4.40**	**1.76**	**100.00**

Source: Landuse Survey, 2006.

Table-2.22 presents that 11 mouzas are involved with educational facilities. Among them, mouza Kalindi has 4 types of educational institutions or Kindergarten, High school, College and Madrasha. The study area is involved with 11 primary schools for 272439 population i.e. one primary school for 24767 population. The college in Kalindi mouza reflects that, students of the study area are dependent on scools in Dhaka Metropolitan area for higher education. Minimum number of educational facilities produces two concepts: that either the number of children are working or the dependency on educational facilities in Dhaka City is more than that of study area. According to the second concept , the establishment of minimum number of educational facilities in the study area can be argued for.

Table–2.22: Educational facilities according to the mouza

J.L. No.	Name of Mouza	Area in acre						Total
		Kindergarten	Primary school	High school	College	Madrasha	Others	
Subhadda Union								
430	Kaligonj		0.08					0.08
431	Mirerbag		0.32	0.22				0.54

432	Chunkutiya		0.08	0.10				0.18
433	Subhadda		0.44					0.44
441	Ikuria (part)		0.17					0.17
Jinjira Union								
425	Mandail		0.02	0.27			0.19	0.48
427	Dakpara		0.05					0.05
428	Char Ragunathpur	0.04						0.04
429	Jinjira		0.06	0.07				0.13
Kalindi Union								
420	Brahmankita		0.05			0.05		0.10
423	Kalindi	0.10		0.90	0.30	0.15		1.45
424	Barisur			0.08			0.13	0.21
425	Gokpar			0.30			0.08	0.38
Basta Union								
416	Dhitpur (part)		0.05					0.05
419	Konakhola		0.10					0.10
Total		**0.14**	**1.42**	**1.94**	**0.30**	**0.20**	**0.40**	**4.40**

Source: Physical feature survey, 2006.

Most of the institutions preserve rural character. Old structures with non-availability of sunlight and natural wind, congestion and absence of sanitation facilities are the major physical components of those schools.

Urban services: According to the survey findings, Table-2.23 presents existing landuses under urban services. In total 3.90 acre of land is used under these purposes. Urban services cover only 0.09% land of the total study area. The services that cover the major share (87.62%) are T&T offices (36.08%), Electric sub-station (32.21%) and Fire services (19.33%).

Table-2.23: Landuse by urban services

Type of use	Area		Percent
	Acre	Hectare	
Post office	0.07	0.03	1.80
T & T	1.40	0.60	36.08
Fire service	0.75	0.30	19.33
Electric sub-station	1.25	0.50	32.21
Launch / boat ghat	0.33	0.12	7.99
Ferry ghat	0.10	0.04	2.58
Total	3.90	1.60	**100.00**

Source: Landuse Survey, 2006.

Launch / boat ghat: Three launch / boat ghat with 0.33 acres of land is found in Jinjira, Brahmankita and Barisur mouzas. Excepting these, a large number of non-formal boat ghats are found in the study area. Launch ghat in the Malancha mouza is prominent than others but no formal jurisdiction of the ghat are using the riverside of a market place as the ghat.

Ferry ghat: One ferry ghat is found in the Char Ragunathpur mouza on the Buriganga River with the covered areas of 0.10 acres. Before opening the 2nd Buriganga Bridge this ferry ghat was the only road transportation linkage between Dhaka City and Keraniganj. Roads and Highways Department are maintaining the ferry services.

Recreation: In the study area one could scarcely find any recreational facilities except a few cinema halls. Those halls serve as the lone recreational arrangement for the inhabitants indiscriminately. Area coverage of those cinema halls is only 2.10 acre (0.05%) of the total study area. Vast track of agriculture and open land are being used as out door play facilities. Those open lands are also used for Baishakhi Meela (festival) and different type of games.

Table-2.24: Recreational landuse

Name of use	Area		Percent
	Acre	Hectare	
Cinema hall	2.10	0.90	100
Total	**2.10**	**0.90**	**100**

Source: Landuse Survey, 2006.

Socio-culture: The study area involves 17.50 acres of land under the socio-cultural use. Table-2.25 presents information of the existing socio-cultural activities in the study area. Sufficient number of mosques and graveyards are found in the study area. Location of two community centers represents dependency on Dhaka City for those services. Mondir in 4 mouzas are representing that, a significant number of Hindu community are living in the area. Three eidgah with smallest covered area is representing that the mosques of the areas are also performing the role of eidgah during major festivals. Most of the mosques are two to three storied.

Table-2.25: Socio-cultural landuse

Type of use	Area		Percent
	Acre	Hectare	
Mosque	3.23	1.30	18.43
Mondir	0.18	0.07	1.03
Graveyard/ Burial ground	12.24	4.90	69.82
Eidgah	1.18	0.50	6.73
Club	0.14	0.06	0.80
Community centre	0.30	0.12	1.71
Others	0.23	0.10	1.48
Total	**17.50**	**6.90**	**100.00**

Source: Landuse Survey, 2006.

Table-2.26 reveals that graveyards or burial grounds (12.24 acre) cover 69.82% of land. Apart from this category, second highest is Mosque as it can be understandable that the area is a Muslim dominated area. Therefore, mosques are frequently visible throughout the study area. Compared to the number of mosques and their area coverage, very few mondirs are found which covers only 1.03%. Other socio-cultural uses like club, community centre etc. are not frequently noticeable around the study area and thus lacking of social and cultural development of the inhabitant is inferred.

Table –2.26: Socio-cultural activities according to the mouza

J.L. No.	Name of Mouza	Area in acre							Total
		Community centre	Club	Mosque	Mondir	Graveyard / Burial ground	Eidgah	Others	
Subhadda Union									
430	Kaligonj			0.19					0.19
431	Mirerbag		0.07	0.54		0.72	0.72		2.05
433	Subhadia			0.24	0.03			0.08	0.35
441	Ikuria (part)					0.09			0.09
442	Naiatola (part)			0.11					0.11
Jinjira Union									
425	Mandail	0.20		0.24	0.02	0.57		0.12	1.15
427	Dakpara		0.02	0.19		0.42			0.63
428	Char Ragunathpur			0.18		0.15			0.33
429	Jinjira			0.35		7.75			8.10
Kalindi Union									
420	Brahmankita			0.33		0.05	0.23	0.3	0.64
421	Gadarbag			0.05		1.56			1.61

423	Kalindi			0.15					0.15
424	Barisur	0.10	0.03	0.22		0.13	0.23		0.71
425	Gokpar		0.02	0.40	0.08	0.80			1.30
Basta Union									
416	Dhitpur(part)			0.04					0.04
419	Konakhola				0.05				0.05
Total		**0.30**	**0.14**	**3.23**	**0.18**	**12.24**	**1.18**	**0.23**	**17.50**

Source: Physical feature survey, 2006.

e. Non-urbanized areas

Water bodies: Water bodies include canal, pond and ditch. Total areas under water bodies are 322.80 acres (130.16 hectares). Among those areas, canal includes 50.87 acres, pond 120.42 acres and ditch 151.51 acres. Table-2.27 presents the total coverage of water bodies in the study area. This Table presents information on the existing water bodies in the study area. Average depth of the major canals in monsoon season is about 3 meter (10 feet). In dry season, average depth is reduced and falls within 1 to 2 meters.

Table-2.27: Land under water bodies

Type of use	Area		Percent
	Acre	Hectare	
Canal	50.87	20.51	15.76
Pond	120.42	48.56	37.31
Ditch	151.51	61.09	46.93
Total	**322.80**	**130.16**	**100.00**

Source: Landuse Survey, 2006.

Water flows of the river and canals are generally from north to south. Ponds are considered as the natural water reservoir for the dry season. Except central area, every residence preserves a pond for bathing and washing due to the absence of supply water. Settlements located near the river and canal uses canal and river water for household works.

All the canals are flowing with a close linkage between Buriganga and Dhaleswari River. Those canals are performing a major role on natural drainage facilities of the areas. Due to the existence of those canals, floodwater could not stand for a long time.

Highest number of pond area is found in the Brahmankita mouza (22.20 acres) and lowest in the Kaliganj mouza (0.23 acres). Most of the ponds in the Kaliganj mouza have been filled and settlements built thereon. Highest number of ditch area could be found in Gokpar mouza (50 acres) and canal area in Boali mouza (17.01 acres). Ponds and canals are going to be filled for human habitation. Such water bodies should be preserved for natural drainage facilities in the study area as well as whole Thana.

Table –2.28: Area under pond, ditch and canal according to the mouza

J.L. No.	Name of Mouza	Area in acre			Total
		Pond	Ditch	Canal	
Subhadda Union					
430	Kaliganj	0.23	2.03	-	2.26
431	Mirerbag	4.69	3.33	0.67	8.69
432	Chunkutiya	8.93	9.43	-	18.36
433	Subhadda	19.55	28.20	-	47.75
441	Ikuria (part)	7.75	2.90	-	10.65
442	Naiatola (part)	0.98	0.57	-	1.55
Jinjira Union					
425	Mandail	12.40	13.62	-	26.02
427	Dakpara	2.45	13.32	-	15.77
428	Char Ragunathpur	0.27	2.85	-	3.12
429	Zinjira	9.47	6.30	-	15.77
Kalindi Union					

420	Brahmankita	22.20	3.12	9.55	34.87
421	Gadarbag	1.90	3.44	4.50	9.84
422	Atasur	2.43	-	-	2.43
423	Kalindi	5.98	1.52	-	7.50
424	Barisur	5.93	5.66	0.72	12.31
425	Gokpar	6.56	50.00	10.00	66.56
Sakta Union					
398	Malancha	3.75	0.04	-	3.79
Basta Union					
53	Basta (part)	1.20			1.20
416	Dhitpur (part)	-	3.53	-	3.53
417	Rayatandi	-	1.61	6.74	8.35
418	Boali (part)		-	17.01	17.01
419	Konakhola			1.68	1.68
Teghuria Union					
440	Teghuria (part)	3.75	0.04	-	3.79
Total		**120.42**	**151.51**	**50.87**	**322.80**

Source: Physical feature survey, 2006.

2.1.4 Infrastructure

a. Circulation Network

Keraniganj Thana is well connected with Dhaka Metropolitan Area through transportation network provided by boats and roads. Though the road transportation linkage with Dhaka City was backward, after 1990 it has been improved due to bridges constructed on the Buriganga River near Postagola and another in Alu Bazar, 1st Buriganga Bridge and 2nd Buriganga Bridge respectively. A ferry ghat is also located near 2nd Buriganga Bridge.

There are three types of road in the Thana areas such as -

1. Pucca road including Dhaka to Maowa National Highway, Jinjira to Nawabganj highway, Maowa road to Jinjira Ferry Ghat and 2nd Buriganga Bridge to Maowa road.
2. Semi-pucca road or brick soling road.
3. Katcha roads linking the Thana Shahar areas with the rural areas.

Those three types of roads comprise of 124.40 acres (50.16 hectares) of land. Among those roads, 43.57 acres are pucca, 55.68 acres are semi-pucca and 25.15 acres are katcha road. Most of the semi-pucca roads and all katcha roads are being submerged in the rainy season. Table-2.29 presents the total road coverage in the study area.

Table-2.29: Landuse by roads

Name of use	**Area**		**Percent**
	Acre	**Hectare**	
Pucca road	43.57	17.57	35.03
Semi-pucca road	55.68	22.45	44.76
Katcha road	25.15	10.14	20.21
Total	**124.40**	**50.16**	**100.00**

Source: Landuse Survey, 2006.

Table-2.30 presents information on the existing road coverage in the study area. Three pucca roads named Dhaka - Maowa highway passes through the western part of the study area; other from Jinjira ferry ghat to Upazila Parishad in Konakhola mouza and another from2nd Buriganga Bridge to Maowa road via Jhilmil Model Town. All of those pucca roads covers about 15 mouzas out of the 23 mouzas of the study area. Semi-pucca and katcha roads are in worsening condition; road width is varied from 2 to 4 meters only.

Table –2.30: Road according to the mouza

J.L. No.	Name of Mouza	Road (in acre)			Total
		Pucca	Semi-pucca	Katcha	
Subhadda Union					
430	Kaliganj	0.30	0.59	-	0.89
431	Mirerbag	1.25	3.10	1.95	6.30
432	Chunkutiya	2.02	0.44	0.76	3.22
433	Subhadda	1.22	4.08	6.49	11.79
441	Ikuria (part)	10.19	0.47	1.75	12.41
442	Naiatola (part)	2.50	-	0.45	2.95
Jinjira Union					
425	Mandail	1.56	6.84	0.04	8.84
427	Dakpara	-	2.19	-	2.19
428	Char Ragunathpur	-	1.08	-	1.08
429	Jinjira	12.85	10.25	2.50	25.60
Kalindi Union					
420	Brahmankita	3.88	3.04	1.56	8.48
421	Gadarbag	0.32	0.08	0.52	0.92
422	Atasur	-	-	0.92	0.92
423	Kalindi	0.72	1.12	0.20	2.04
424	Barisur	1.92	8.80	1.12	11.84
425	Gokpar	1.92	12.80	6.24	20.96
Sakta Union					
398	Malancha	1.60	-	0.48	2.08
Basta Union					
419	Konakhola	1.32	0.80	0.17	2.29
Teghuria Union					
440	Teghuria (part)	-	-	-	
Total		**43.57**	**55.68**	**25.15**	**124.40**

Source: Physical feature survey, 2006.

Water ways: The Buriganga River provides inland water transportation route mainly for the country boats and mechanized boats. The Buriganga River links the Dhaleswari River on the east and again joins on the south (border of the Munshiganj Zila). The Strategic Transport Plan has prescribed circular water transportation network along Buriganga River.

b. Utility Services

Drainage and sanitation: The study area is almost surrounded by two rivers named Buriganga and Dhaleswari; a canal named Subhadda canal is flowing through Buriganga to Dhaleswari River. Lowlands are also available in the study area with ditches and ponds. All of these criterions are supporting the areas to be naturally drained. Land elevation is also helpful for the natural drainage of rain and floodwater. From north to south, land level is about 4 meter to 7 meter respectively.

Underground drainage system is totally absent in the study area. Existing canals are performing the major role as natural drainage. All settlements have its own sanitation system in the premises and most of them are septic tank and pit latrine system. The septic tank is evacuated once in a year throw the night soil to the river or canal.

In Keraniganj Thana, 21.19% of dwelling households have sanitary latrines. A total of 74.63% of the households have non-sanitary latrines while 4.18% of the households have no toilet facilities. The Study Area consist of households with poor condition of toilet facilities. Some of the household have no toilet. They are using riverside and open field as a toilet. Sanitary latrines are only constructed within the building premises.

Most of the non-sanitary latrines are with bamboo thatched hanging types on low-lying areas or ditches or canals. The households which are over the low land has their toilets adjacent with the kitchen or room. Settlements constructed on the

land have their latrines in a distant place from the living room but in the same compound. Most of those latrines are using canals and ditches as a dumping ground of night soil.

Table- 2.31: Toilet facilities in the Study Area (in number)

J.L.No	Name of mouza	Sanitary	Other	No toilet
Subhadda Union				
430	Kaliganj	2136	1674	53
431	Mirerbag	3369	4063	67
432	Chunkutiya	1326	5348	21
433	Subhadda	752	3298	160
441	Ikuria	277	1024	24
442	Naiatola (Hasnabad)	638	941	35
Jinjira Union				
425	Mandail	2135	2705	162
427	Dakpara	503	1584	19
428	Char Ragunathpur	536	891	04
429	Zinjira	2913	5760	66
Kalindi Union				
420	Brahmankita	513	889	36
421	Gadarbag	16	67	01
422	Atasur	4	62	1
423	Kalindi	146	255	1
424	Barisur	497	549	3
425	Gokpar	244	1469	23
Sakta Union				
398	Malancha	24	87	-
Basta Union				
53	Basta (part)	37	283	58
416	Dhitpur	11	142	3
417	Rayatandi	N.A	N.A	N.A
418	Boali	3	189	2
419	Konakhola	27	126	1
Teghuria Union				
440	Teghuria	19	312	16

Source: Bangladesh Population Census, 1991 (Community Series). Dhaka Zila. Note: N.A = Not available.

Water supply: There is no any central water supply system using deep tubewell in the study area. Individual owned pumping system with hand tubewell is the major source of drinking water. Perhaps all the settlement has their own hand tubewell within the residential premises. Peoples who are nearer to the rivers use river water for their daily necessities other than drinking.

In the Thana, 95.77% of the dwelling households use tubewell, 1.18% tap, 0.46% ring-well, 1.60% pond and 1.00% canal / river as main source of drinking water.

The scenario of the Study Area is same as the Thana, which presents that supply water provided by the Upazila Parishad is not sufficient for the population living in the area. So, large number of population depends on the tubewell for drinking water. Availability of pond and Buriganga River also serves a role as the source of drinking water. People living adjacent to the river uses river water for daily needs. Ring-well serves a negligible part as the source of drinking water. People living in the remote areas depend on river for daily purposes of water and tubewell for drinking water. Everyday those people collect drinking water from a distance of over one kilometer where a hand tubewell exists. Houses constructed with brick and concrete materials use tubewell water for drinking purposes and those tubewell are in the same compound.

Table-2.32: Sources of drinking water (in number)

J.L.No.	Name of Mouza	Tap	Tubewell	Well	Pond	River
Subhadda Union						
430	Kaliganj	47	3795	16	4	01
431	Mirerbag	353	6973	09	83	81
432	Chunkutiya	02	6687	06	-	-
433	Subhadda	01	4168	09	31	01
441	Ikuria	03	1318	03	01	-
442	Naiatola	180	1208	15	125	86
Jinjira Union						
425	Mandail	62	4832	3	18	87
427	Dakpara	4	2097	1	4	-
428	Char Ragunathpur	85	1341	02	-	03
429	Zinjira	253	8435	04	22	25
Kalindi Union						
420	Brahmankita	04	1382	03	05	44
421	Gadarbag	-	84	-	-	-
422	Atasur	-	67	-	-	-
423	Kalindi	-	387	-	15	-
424	Barisur	-	1025	16	4	4
425	Gokpar	03	1724	02	07	-
Sakta Union						
398	Malancha	22	89	-	-	-
Basta Union						
53	Basta (part)	-	367	-	11	-
416	Dhitpur	-	156	-	-	-
418	Boali	-	191	-	3	-
419	Konakhola	24	130	-	-	-
Teghuria Union						
440	Teghuria	-	347	-	-	-

Source: Bangladesh Population Census, 1991 (Community Series). Dhaka Zila. Note: N.A = Not available.

Electricity: In the study area, Rural Electrification Board performs the role for electrification. Perhaps total study areas are involved with these facilities. Three National Grid lines have crossed over the study area. One electric sub-station has been found in the Gokpar mouza with 1.25 acres of land within its jurisdiction.

Gas supply: There is one Titas Gas Transmission and Distribution office in the central area of Jinjira mouza. The network generally follows pucca roads and some of the semi-pucca roads.

Post office: One post office is existing in the Mirerbagh mouza which comprises of an area of 0.07 acres. It means that people of the study area is mostly dependent on the Sadar Post Office in the Sadar Ghat area of Dhaka City for their postal services.

Telecommunication: A primitive system of facilities is related with the telephone service. Two-telephone exchange offices are found in the Konakhola and Char Ragunathpur mouza with 1.42 acres of covered area but the services rendered by them are not up to satisfactory level due to the absence of modernization.

Fire service: One fire service station in the Konakhola mouza near Upazila Headquarters is found with the covered area of 0.75 acres. It is about 6 km. away from the densely central area connected by single road.

Table -2.33: Utility services according to the mouza

J.L. No.	Name of Mouza	Area in acre						Total
		T&T	Post office	Electric sub-station	Fire service	Launch/ Boat ghat	Ferry ghat	
Subhadda Union								
431	Mirerbagh		0.07					0.07
Jinjira Union								
428	Char Ragunathpur	0.48					0.10	0.58
429	Jinjira					0.05		0.05
Kalindi Union								
420	Brahmankita					0.10		0.10
424	Barisur					0.16		0.16
425	Gokpar			1.25				1.25
Basta Union								
419	Konakhola	0.92			0.75			1.67
Total		**1.40**	**0.07**	**1.25**	**0.75**	**0.31**	**0.10**	**3.88**

Source: Physical feature survey, 2006.

2.1.5 Land ownership and Value

Most of the people in the study area live in their own house inherently. Among the surveyed household, 63.4% of the family lives on the land owned inherently while 19% have their own land as they purchased, rest of the family live either on Khas land or in rented house. About 0.4% of the family live in government quarter and 13% and 4% of the family live respectively living in rented house and on Khas land.

Table-2.34: Land ownership of the household head

Range of year	Number of household	%
1 – 5	64	1534
6 – 10	32	7.7
11 – 20	30	7.2
> 21	17	4.1
By born	272	65.5
Total	**415**	**100.0**

Source: Questionnaire Survey, 2005.

Different duration of living in the house by the surveyed family is found. About 65.5% of the surveyed families live in the same house from the beginning of their life and 15.34% are living in the present house for 1 to 5 years, 7.7% from 6 to 10 years, 7.2% from 11 to 20 years and 4% is found living in the same place during the last 25 years.

Among the surveyed families almost everyone has his own land of different categories. Amount of land owned by different families varies in respect of area (in katha). In total 26% of the surveyed family has their own land ranging from 1 to 2 katha and 33% has 2 to 4 kathas. Area ranging from 4 to 8 katha is owned by 24% of the family while rest of the surveyed family owned their holdings above 8 kathas.

Table-2.35: Amount of land holdings

Area in katha	Frequency			
	Residential land	Low land	Mixed	High land
Below 1	23	1	-	-
1.1 - 2	87	2	-	-
2.1 - 3	53	1	-	-
3.1 - 4	86	1	-	-
4.1 - 5	34	1	-	-

5.1 - 6	10	-	-	-
6.1 - 7	44	3	1	-
7.1 – 8	14	-	-	-
8.1 – 9	4	-	-	-
9.1 – 10	7	-	-	-
10 +	53	16	4	1
Total	**415**	**25**	**5**	**1**

Source: Questionnaire Survey, 2005.

Land in the study area is classified into four categories according to their prices prevailing in the land market (the information served by the Keraniganj Sub-Registry Office). Highest land value is found in the Kaliganj and Mirerbagh mouza (1 crore 80 lakhs to 2 crore 70 lakhs per acre) where over crowded mixed uses are existing and the lands are buildable for residential, commercial and industrial purposes. Lowland value exists in those areas that are not buildable or requires huge filling for reclamation. Usually, agriculture land and ditches that go under water during monsoon fall in this group. Highest land value is found to be Taka 2 crore 70 lakhs per acre in the commercial areas. While the lowest land value found is Taka 5 lakhs 40 thousand per acre. Ditches, low lands and ponds are of lowest value.

Table-2.36: Land ownership pattern

Type	**Frequency**	**%**
Inherited / Paternal	263	63.4
Purchased	79	19.0
Rental	55	13.0
Govt. quarter	1	.2
Living without rent	16	3.9
Others	1	.2
Total	**415**	**100.00**

Source: Questionnaire Survey, 2005.

Table–2.37: Highest land value in the study area

J.L. No.	**Name of Union/ Mouza**	**Highest land value in Tk.**	
		Per decimal	**Per acre**
Subhadda Union			
430	Kaliganj	2,00,000 to 3,00,000	1 crore 80 lakhs - 2 crore 70 lakhs
431	Mirerbag	2,00,000 to 3,00,000	1 crore 80 lakhs - 2 crore 70 lakhs
432	Chunkutiya	60,000	54 lakhs
433	Subhadda	20,000 to 1,00,000	18 lakhs - 90 lakhs
441	Ikuria (part)	1,20,000	90 lakhs - 1 crore 80 lakhs
442	Naiatola (part)	1,00,000	90 lakhs
Jinjira Union			
425	Mandail	60,000	54 lakhs
427	Dakpara	40,000	36 lakhs
428	Char Ragunathpur	15,000 to 20,000	1 crore 35 lakhs - 1 crore 80 lakhs
429	Jinjira	1,50,000 to 2,00,000	1 crore 35 lakhs - 1 crore 80 lakhs
Kalindi Union			
420	Brahmankita	10,000	9 lakhs
421	Gadarbag	6,000	5 lakhs 40 thousand
422	Atasur	12,000	10 laks 80 thousand
423	Kalindi	32,000	28 lakhs 80 thousand
424	Barisur	50,000	45 lakhs
425	Gokpar	40,000	36 lakhs
Sakta Union			
398	Malancha	15,000	13 lakhs 50 thousand

Basta Union			
416	Dhitpur (part)	6,000	5 lakhs 40 thousand
417	Rayatandi	6,000	5 lakhs 40 thousand
418	Boali (part)	6,000	
419	Konakhola(part)	14,000	12 lakhs 60 thousand
Teghuria Union			
440	Teghuria (part)	6,000	5 lakhs 40 thousand

Source: President of Deed Writers Association, Keraniganj.
NB. 30 decimal = 1 bigha & 3 bigha = 1 acre.

Table-2.37 presents highest land value in the present land market. Type of land included is commercial, industrial and residential land. Characteristic of land is flood free and located on roadside. The range prescribed in the table, means, variation depends on the location of land. The land, located in a greater distance from the nearby road, is lowest value than the land located adjacent to the road. Variation of land value among the mouzas depends on the location of mouzas from the core area / developed area and communication linkages. The mouzas with odd communication generally attracts minimum value but if the mouzas are well linked with road or waterways, the value is highest.

According to the table, lowest land value prescribed in the mouzas mean that the lands in the mouzas are the highest value prevailing in the land market though the government rate is not in the same range as presented in the series of table in this chapter. In a mouza there are different types of land with different valuation. To make a co-ordination with actual land value in the land market and easy way of land revenue collection, government has prescribed minimum land value in all the mouzas of Bangladesh.

Residential land: Residential land is locally known as 'Vita Bari' (homestead). The terminology is frequently used in the country for the preparation of land purchase deed in the Sub-registry Office. Minimum value of residential land is found in Jinjira mouza. According to the government rate land value is Tk. 94,197 per decimal or Tk. 84,77,730 per acre in Jinjira mouza, which is highest among all the mouzas in the study area and lowest in the Raytandi mouza (Tk. 2717 per decimal or Tk. 2,44,530 per acre). Generally, residential land value is high in Subhadda and Jinjira unions among all the unions in the Thana. It means, both the unions are adjacent to the Dhaka Metropolitan Area and easy accessible with road and water communication. The lands are also flood free and located nearer to the core areas where commercial activities are dominating. Table-2.38 presents minimum land value in different mouzas of the study area. The Table also reflects government value which is about 50% lower than the actual value, in some areas it is more than 50%.

Table –2.38: Minimum value of residential land

J.L. No.	Name of Union/Mouza	Minimum land value in Tk.	
		Per decimal	Per acre
Subhadda Union			
430	Kaliganj	74,425	66,98,250
431	Mirerbag	77,666	69,89,940
432	Chunkutiya	48,841	43,95,690
433	Subhadda	28,571	25,71,390
441	Ikuria (part)	73,443	66,09,870
442	Naiatola (part)	27,380	24,64,200
Jinjira Union			
425	Mandail	62,567	56,31,030
427	Dakpara	49,696	44,72,640
428	Char Ragunathpur	70,171	63,15,390
429	Jinjira	94,197	84,77,730
Kalindi Union			
420	Brahmankita	13,958	12,56,220
421	Gadarbag	8,307	7,47,630
422	Atasur	8,842	7,95,780
423	Kalindi	38,536	34,68,240
424	Barisur	48,459	43,61,310

425	Gokpar	45,333	40,79,970
Sakta Union			
398	Malancha	14,552	13,09,680
Basta Union			
416	Dhitpur (part)	4,000	3,60,000
417	Rayatandi	2,717	2,44,530
418	Boali (part)	11,931	10,73,790
419	Konakhola(part)	21,025	18,92,250
Teghuria Union			
440	Teghuria (part)	32,765	29,48,850

Source: Sub-registry Office, Keraniganj. NB. 30 decimal = 1 bigha and 3 bigha = 1 acre. April 2000

Table –2.39: Minimum value of agriculture land

J.L. No.	Name of Union/Mouza	Minimum land value in Tk.	
		Per decimal	Per acre
Subhadda Union			
430	Kaliganj	46,617	41,95,530
431	Mirerbag	21,101	18,99,090
432	Chunkutiya	13,833	12,44,970
433	Subhadda	16,917	15,22,530
441	Ikuria (part)	45,135	40,62,150
442	Naiatola (part)	12,652	11,38,680
Jinjira Union			
425	Mandail	32,222	28,99,980
427	Dakpara	33,138	29,82,420
428	Char Ragunathpur	40,000	36,00,000
429	Jinjira	41,068	36,96,120
Kalindi Union			
420	Brahmankita	2,814	2,53,260
421	Gadarbag	4,904	4,41,360
422	Atasur	4,373	3,93,570
423	Kalindi	3,661	3,29,490
424	Barisur	11,142	10,02,780
425	Gokpar	22,884	20,59,560
Sakta Union			
398	Malancha	6,391	5,75,190
Basta Union			
416	Dhitpur (part)	3,361	3,02,490
417	Rayatandi	1,369	1,23,210
418	Boali (part)	3,009	2,70,810
419	Konakhola(part)	3,855	3,46,950
Teghuria Union			
440	Teghuria (part)	9,302	8,37,180

Source: Sub-registry Office, Keraniganj. NB. 30 decimal = 1 bigha & 3 bigha = 1 acre. April 2000

The residential land which lies in odd communicated areas, not linked with road linkages, attract land value drastically lower than the land located near to the core areas. Mouzas in the Kalindi, Sakta, Basta and Teghuria unions are in the same group, though some areas of the mouzas are moderately high in comparison with the highest value of land.

Agriculture and low land: In the study area, the annual flood frequently submerges all agriculture land and low land. According to the use, low land is also considered as agriculture land. Most of the agriculture land is single cropped. Agriculture land value is high in Jinjira and Kaliganj unions because the lands are nearer to the commercial or industrial areas. Highest value of agriculture land is found in Kaliganj mouza (Tk. 46,617 per decimal or Tk. 41,95,530 per acre), which is highest among

all the mouzas in the study area. Minimum, but lowest land value of agriculture land among all the unions are found in Raytandi mouza (Tk. 1,360 per decimal or Tk. 1,23,210 per acre).

Table-2.39 presents minimum government rate of agriculture land in the study area. According to the table, value of agriculture land is high in Jinjira union and Kaliganj, Mirerbagh, Ikuria mouza in Subhadda union and Gokpar in Kalindi union. Range of valuation of agriculture land in the study area is about Tk. 2,000 to Tk. 50,000 per decimal or Tk. 1,80,000 to Tk. 45,00,000 per acre.

Pond: A large number of ponds are found in the study area but land value has not been prescribed by the government for all the areas in Keraniganj Thana because the ponds in the agriculture land did not hold any water throughout the year.

In dry season they are used as agriculture land or low land. The pond contained water throughout the year is considered in this category. Minimum government value of the pond is Tk. 1,500 per decimal or Tk. 1,35,000 per acre in Ikuria mouza and Tk. 28,571 per decimal or Tk. 25,71,390 per acre in Jinjira mouza.

Table–2.40: Mouza wise land value of pond in different mouzas

J.L. No.	Name of Union/Mouza	Minimum land value in Tk.	
		Per decimal	Per acre
Subhadda Union			
432	Chunkutiya	24,000	21,60,000
433	Subhadda	5,714	5,14,260
441	Ikuria (part)	1,500	1,35,000
Jinjira Union			
425	Mandail	18,947	17,05,230
429	Jinjira	28,571	25,71,390
Kalindi Union			
420	Brahmankita	7,162	6,44,580
Sakta Union			
398	Malancha	-	-
Basta Union			
418	Boali (part)	1,920	1,72,800
419	Konakhola (part)	-	-
Teghuria Union			
440	Teghuria (part)	7,857	7,07,130

Source: Sub-registry Office, Keraniganj. NB. 30 decimal = 1 bigha & 3 bigha = 1 acre. April 2000

Ditch: Ponds and ditches are in same category but the valuation depends on the availability of water. Table-2.41 presents minimum land value of ditches prescribed by the government. Highest land value of ditches in all the mouzas are located in Mandail mouza (Tk. 13,333 per decimal or Tk. 11,99,970 per acre) and minimum in Konakhola mouza (Tk. 3,389 per decimal or Tk. 3,05,010 per acre).

Table-2.41: Minimum land value of ditches

J.L. No.	Name of Union/Mouza	Minimum land value in Tk.	
		Per decimal	Per acre
Subhadda Union			
433	Subhadda	4,848	4,36,320
Jinjira Union			
425	Mandail	13,333	11,99,970
429	Jinjira	12,857	11,57,130
Kalindi Union			
425	Gokpar	10,714	9,64,260
Basta Union			
419	Konakhola(part)	3,389	3,05,010

Source: Sub-registry Office, Keraniganj. NB. 30 decimal = 1 bigha & 3 bigha = 1 acre. April 2000

Industrial land: Industrial development mostly occurred in the mouza named Barisur, Mandail, Char Raghunathpur, Jinjira and Kaliganj. Most of the industries are located within 0.5 km. from the riverbank of Buriganga. Land value of those industrial areas is same as residential land of those areas as prescribed by the Sub-registry Office. Though, some of the industries occupy riverbank which is low land. Small scale manufacturing factories in the Jinjira mouza are located sparsely and are calculated as of residential land value.

2.2 Expected Development

In order to prepare Detailed Area Plan different stakeholders, public agencies, local communities, private developers, NGOs, elite groups and pressure groups were surveyed. For the preparation and implementation of the plan their role is considered as vital. It was also necessary to collect basic information on existing situation of the study area. At the same time, positive suggestion was collected from them. Future and on-going projects of public agencies was reviewed and incorporated in the plan. The whole process and each consultation were participatory, transparent and involved all the stakeholders. In each consultation, local people highlighted their problems, gave some conditions and requirements. There were some gaps found between political leaders and Government officials' about projects and appraisals. Several consultations stressed the importance of dissemination of information as a condition for participation, public need effective access to information from the Government before any participation sought from them.

The study area was developed as a trade center based on river communication. The traders, who bring their commodities through the Buriganga River to Dhaka, Keraniganj acted as a boat ghat for unloading of commodities from the boat. From then development activities started along the riverside. This trend is continued up to recent years.

After the year 1980, when Upazila system was imposed on the country in consideration of the decentralization of administration, some internal roads have been developed and trend of development followed those roads.

After the year 1990, development activities started sparsely due to the presence of vast low land. But, this type of development also benefited from the proximity of Dhaka City and availability of river communication.

Expected development is highlighted based on the projected population. The projected population up to the year 2015 has been considered for those purposes. Growth scenario further describes the growth of physical components. Existing government establishments considered as permanent establishment and proposed for further expansion where necessary.

To calculate future expected development of the study area some important existing development around the study area has been considered and those developments are –

1. In northern side of the study area, Jinjira the renowned manufacturing industrial area, is situated. Jinjira should influence the study area in context of the residential area for low-income people.
2. The Jhilmil Model Town established by RAJUK is adjacent with the eastern side of the study area (adjacent with the Baghair mouza). Further expansion of the said Model Town will influence to private residential use along with this Model Town.
3. Land acquired for Army Mechanical Division is just adjacent with the Jhilmil Model Town. Those developments will encourage commercial and residential development adjacent with the communication linkages.
4. Kholamura launch / boat ghat including big daily bazar is situated on the northern side of the study area linked through a major road. Most of the agriculture produces from the study area is transported to Dhaka City through this ghat. This is the centre of commercial establishment.
5. Keraniganj Upazila Headquarter is located on the south of the study area (in Konakhola mouza). Such administrative development will encourage further development around the Upazila Headquarter as an administrative centre.
6. Third Buriganga Bridge and its approach road will penetrate the study area linking with the northwest to southeast road of the study area. Such linking will encourage residential development.

7. Some private housing estates (in total 30 Housing Estates are in the study area) are in / adjacent with the study area. Those housing projects will encourage residential expansion.
8. Three arterial roads (Dhaka – Maowa Road, Babu Bazar to Ruhitpur Road and Babu Bazar to Maowa Road) and Three Bridges (Buriganga 1st Bridge, Buriganga 2nd Bridge and Buriganga 3rd Bridge) are in the study area. Those developments will influence the expansion of physical growth from north to south.
9. The road proposed in the STP from Nabinagar to Dhaka-Maowa Road through Konakhola and Abdullapur will link the western side of the Dhaka City. This road will improve accessibility of the study area.

Based on the above expectations, development trend of the study area will encourage residential, commercial and accommodation for low-income people. The plan is proposed based on this concept.

2.2.1 Population

Forecast in the Metropolitan Development Plan: This is the basic component of Detailed Area Plan. But the growth rate of population and at the same time growth rate of development activities within the study area could not be satisfactory, if the forecast consider existing growth rate. After the completion of 2nd Buriganga Bridge on the river Buriganga, growth rate of development activities has been increased without calculative norm. As an example, it is not possible to consider 12% growth rate over 3.1% of the Dhaka Metropolitan Area as prescribed in the DMDP Central Population Forecast on Keraniganj.

Table-2.42: DMDP Central Population Forecast for Keraniganj, 1981-2015

Forecast component	1991	1996	2001	2006	2011	2015
Total by natural increase of 1981 population.	1584	1742	1899	2022	2124	2197
Net migration in previous period.	460	501	488	433	433	456
Cumulative migration, total + natural.	-	501	1077	1659	2208	2747
Total population	2044	2744	3464	4114	4764	5400

Source: Dhaka Metropolitan Development Plan, 1995-2015, Vol. I, P. 34, Table 2.1.
Note: Population in thousands - based on 1991 figures.

According to the Dhaka Metropolitan Development Plan, the forecast anticipates a doubling of populations over 25 years and an average annual growth rate of 3.1%. However, even with continuing large in-migration, overall growth rates show a steady decline as follows.

Table-2.43: Population, Area and Density Considered in the DMDP

	1991 population (adjusted)	294000
	1991 density (pph)	222
Densification of Population	1983 exist	108
	1983/91	45
	New area development	35
	2006 urban area	1637
	2006 population	482000
	2006 density (pph)	294

Source: Dhaka Metropolitan Development Plan, 1995-2015, Vol. II.

The study area includes 23 mouzas in full or part and an area of 5760 acres (2057.14 hectares). Total population of the study area was 1877875 and 272439 in the year 1981 and 1991 respectively. Growth rate of Keraniganj was 4.92% in 1981 and 3.90% in 1991. The study area identified during the survey is tentatively defined.

Table-2.44: High, Medium and Low Projections in the Study Area

Year	High	Medium	Low
	Growth rate = 4.92	**Growth rate = 3.90**	**Assumed growth rate (base year 1991) = 2.0**
1991	272439	272439	272439
1995	318715	306632	294897
2000	387766	355471	325590
2005	471777	412088	359478
2010	573989	477723	396893
2015	698345	553812	438202

Note: Growth rate for low projection are assumptions lower than the medium projections.

The formula considered to calculate the forecasting population is –

Population = Base population $(1 + r)^n$

Where r = growth rate and n = number of years.

Density of population in the study area is considered to be the number of population per acre over different plan periods. The density of population is shown in Table-2.45.

Table-2.45: Density of Population against High Range Projection

	1991	**1995**	**2000**	**2005**	**2010**	**2015**
Area in acres	5760	5760	5760	5760	5760	5760
Population	272439	318715	387766	471777	573989	698345
Density per acre	47.30	55.33	67.32	81.91	99.65	121.24

Household structure of the study area is shown in Table-2.46 indicating household size and resultant number of households during the year 1991 to 2015.

Table-2.46: Household Size on High Population Projection

	1991	**1995**	**2000**	**2005**	**2010**	**2015**
Population	272439	318715	387766	471777	573989	698345
Household size	6.2	6.0	5.8	5.6	5.4	5.0
No. of household	43942	53119	66856	84246	106294	139669

Note: Household size is expected to decline with urbanization.

Labour force: There is no any dependable data to estimate the labour force and employment in urban and rural areas of Bangladesh. However, in the present planning exercise, potential labour force has been estimated on the basis of working age population i.e. 10 years and above generally adopted by the authorities like the Bangladesh Bureau of Statistics.

It is also difficult to determine employment structure at Thana level, because correct picture is not available in the published data of the Bangladesh Bureau of Statistics. In this study, therefore, the potential labour force has been considered as the population employed and seeking employment. Table-2.47 shows the estimated labour force on the basis of the forecasted population of the study area.

Table-2.47: Forecasting of Labour force of Dhaka Zila and Keraniganj, 1981-2015

(high range projection, growth rate 4.92 of active population) (in thousand)

	1981	1986	1991	1995	2000	2005	2010	2015
1. Total labour force in Dhaka Zila.	3246	4233	5220	5957	6947	7934	8921	9908
2. Male labour	3064	3766	4468	5170	5872	6574	7276	7978
- assumed % of item (2) for Keraniganj	5%	5%	6%	6%	6%	8%	10%	12%
3. Female labour	182	467	752	787	1075	1360	1645	1930
- assumed % of item (3) for Keraniganj	6%	6%	7%	8%	9%	12%	15%	18%
4. Total male and female labour of Keraniganj	164	216	321	373	449	689	975	1304

Note: The labour forces in 1981 and 1986 have been quoted from Statistical Yearbook of Bangladesh, 1993, Table-3.04, page 89.

Design Population: Table-2.48 presents information on forecasted population for residential and services requirements of the study area. The population, which will be residing in the study area are considered on the basis of residential land requirements, primary education facilities and other uses.

Table-2.48: Projected Population, 1991-2015

	1991	1995	2000	2005	2010	2015
1. Study area population	272439	318715	387766	471777	573989	698345
2. Assumed labour force	32100	37300	44900	68900	97500	130400
3. 20% commuting population of item (2) who do not like to live in study area	6420	7460	8980	13780	19500	26080
Total population (1+2+3)	**310959**	**363475**	**441646**	**554457**	**690989**	**854825**

2.2.2 Economic activities

Agriculture and manufacturing are the most important employment sources in the study area. All type of daily essential goods are being manufactured in Jinjira adjacent to Dhaka City. Those categories of goods draw huge amount of skilled or semi-skilled labour force that is available in the study area at a very low cost. Other sources are business enterprises. Jinjira is an old trading centre with road and reverie transport facilities. Three unorganized wholesale markets (including retail) have already emerged in Konakhola, Subhadda and Ruhitpur unions. Due to non availability of high flood free land with good access to work places of manufacturing units, it is very likely that new residential areas will emerge in the central, northern and eastern parts of the study area. Development of housing estates on commercial and cooperative basis will further augment growth of residential areas particularly for low and lower middle income groups which would play important role in the growth of retail business.

The southern part of Dhaka City (called old Dhaka) is just 0.5 km. away from the study area and old Dhaka is known as old Central Business District (CBD) Area. The 1st Buriganga Bridge to Mawa Road and 2nd Buriganga Bridge to Ruhitpur Bridge link roads are the major communication between study area and southern part of Dhaka City. Commercial activities further spread along these two major links. Waterways through Dhaleshwari and Buriganga Rivers with the old Dhaka is historically important. Important local markets are being arranged in many places along Buriganga River. About 69% agriculture land proves that the study area belongs with the agriculture production area and Dhaka City (Sham Bazar and Alu Bazar) is the important market for those commodities.

2.3 Development Problems

Substantial part of the study area is devoid of infrastructure required to serve this rapidly growing suburb of mega Dhaka. The area is particularly deficient in physical infrastructure like, standard road network, piped water supply, drainage and waste management. It is not possible to develop the study area, as like Dhaka City though the area includes the Detailed Area Plan of Dhaka City.

The study area is predominately rural based but current prevailing trend is fast of urbanization. From the field survey it

is found that 26.01 sq. km of land are being occupied by urban development. With the implementation of DAP, a wide range of rural area would be accompanied with rapid urbanization. This urbanization will improve the socio-economic and living condition of the rural people in communication, sanitation, electricity, health, education, industrialization, business and social services. A brief development problem is presented in the following paragraphs:

Proximity to major urban agglomeration named Dhaka Metropolitan Area: Due to the close relation with Dhaka City, services have not yet developed independently in Keraniganj. In other words, it is said that Keraniganj acts as a hinterland of Dhaka City since long. Its population density is comparatively high among all Thanas in Dhaka Zila except Dhaka Metropolitan Area. Due to the close relation, the area is dependent on Dhaka City with all of its major functions such as health, education and urban services. It will be difficult to establish those functions in the area in comparison with the standard maintaining in the Dhaka City.

Need for conserving areas of high yielding agricultural land: The study reveals that about 70% land is under agriculture use. The area is performing an important role on the supply of agricultural commodities to Dhaka City. Those agriculture lands get submerges in rainy season. Physical development activities are reducing the agriculture land rapidly. This trend should be controlled through the imposition of 'development controlled', but the contemporary regulations and their management is not enough to control such development activities.

Development problems on low land: About 5 to 10-meter earth filling will be needed for physical development activities in the study area. So, bulk development should not be encouraged due to huge cost involvement. Poor soil condition is another problem of bulk development. Lowlands are also providing natural drainage facilities in the area.

Unorganized landuses all over the study area: Keraniganj is a naturally developed area. Planning efforts have not yet been taken by the public authority. Therefore, a mixed landuse scenario is viewed all over the Thana. These unorganized landuses should not be framed within a planned manner with the physical and financial involvement of public authority.

2.3.1 Hydrology (Drainage and Flooding)

Flooding and drainage: Following are the critical issues regarding flooding and drainage in the Location-3 area.

Scarcity of Flood Free Land: Flood free land close to Dhaka has already been developed. Most of the areas of Location-3 are under flood flow zone. Part of Jinjira Union, Subhadda Union and Tegharia Union are some 2 km (average) away from central Dhaka to the south, predominantly flood free and suitable for development. The development activities in those flood free areas increases through earth filling and will be saturated within few years. Except those flood free areas other lands are low-lying and are the major constraints for development. About 5 meter earth filling is necessary for further development.

Unplanned landuse on Flood Plain: Some major land filling projects through private residential housing (about 30 numbers in Keraniganj) have been undertaken on floodable land. Haphazard land filling increases frictional surface and further reduces velocity of water flow. As a consequence the water level in flood flow zone is increasing and relatively high lands adjacent to flood plain are going under water and causing prolonged flooding. Land filling being carried out indiscriminately and along transverse direction is creating pockets of Flood Flow Zone and permanent problem of drainage congestion. To avoid such problems, natural drainage system in the study area should be linked with the outside of the study area.

Storm Water Drainage: The Dhaka Structure Plan's "Rural and Spatial Area (RS) Policy" RS/5-Flood Retention Ponds relate to Flood retention ponds that need to be designed to reduce the intensity of local flooding within the protected areas and to reduce pumping requirements, and as such, are an integral part of the proposed flood protection schemes.

Alternative way of improvement of storm water and drainage is by gravity flow, which has no hazard and requires no maintenance. Drainage by gravity flow can be applied only if the land is free from designed flood level and additional 0.50m to 1.00m heights is available to drain storm water by gravity. If the above conditions are not met, then Pump drainage is mandatory.

The existing drainage system in general consists of local open khals connected to Buriganga and Dhaleshwari Rivers. A large number of those connections and discharging points are along the river length, rather than uniformly

distributed. In fact natural system is hampering for draining storm water due to unplanned development of homestead. It is further aggrevated by siltation, dumping of solid wastes and encroachment due to construction of local roads.

Absence and Encroachment of natural Drainage System: Before the urban invasion started in the study area, it is necessary for natural drainage system to drain out the excess rainwater during monsoon and save the area from flooding. Almost entire study area is without any drainage network; it is necessary to construct drainage system based on natural slope while rapid urban growth is taking place in some locations. Otherwise, it may pose a serious threat to new settlements caused by water logging. At present, new landowners are filling most of the natural drainage outlets. Thorough traffic on the new roads should be kept free to allow uninterrupted movement of traffic and those roads should be constructed with the provision of bridges and culverts where necessary. As a result, natural flow of the rainwater and flash flood water will be drained naturally towards adjacent rivers. To relive the main traffic from possible interruption, it is suggested that the service lanes on either side of the major roads should be provisioned.

Conflict of Drainage and Waterways with Road Network: Conflicts of drainage and waterways arise whenever and wherever the road networks cross the drainage networks. The conflict may be minimized if the systems are made parallel as far as possible so that they do not cross each other. Practically, however, this is not possible in all cases. In a project or study area roads are developed straight and in a gridiron frame to minimize the cost. In the process it crosses the rivers and waterways; and its drainage function is thus hampered, on the other hand, roads should not be let to remain open at the drainage crossings for continuous flow of the traffic.

To reduce the vulnerability of the waterway-road conflicts, DMDP proposed certain principles. Its recommendation was “Roads have to be aligned in such a way (when necessary) khals and ponds have to be somewhat remodeled that as much as possible of the land along the roads can be put to high value uses, with khals and ponds in peripheral position, roughly halfway between a pair of parallel roads.”

These conflicts of drainage and waterways with road networks can be mitigated by structural means and is thoroughly discussed in section 2.6 of this plan. Bridge, culverts, pipe culverts etc. are provided for safe passages of traffic over road and unobstructed passages of drainage through and across structures.

2.3.2 Geological fault

Geographically Bangladesh finds itself in one of the most earthquake prone areas of the world. However, earthquake occurs in lesser frequency with lesser intensity. As a result, people of this country are not familiar with earthquake. However, the country is not free from the risk of earthquake. In the past a number of high intensity earthquakes occurred in the country. The 1885 earthquake of Manikganj, 1887 earthquake of Great Assam, 1918 earthquake of Srimangal, 1930 earthquake of Dubal and the 1950 earthquake of Assam are all geologically matured now to recur and cause disaster. Records of earthquake show that Bangladesh and its surroundings experienced at least 1000 earthquakes in the last 100 years with a magnitude greater than or equal to 4 in Richter scale.

In a study on Dhaka city and earthquake (Daily Star, August 25, 2006) one fault line passes through the planning area creating one area moderately vulnerable. That fault line passes through **Bangshi - Dhaleswari River**. The Structure Plan identified three fault lines. One fault, called **Bangshi Fault** passes though the Turag, the **Dhamrai fault** runs through the Karnapara River and the fault, originating from Karnapara River in the west, runs north-east, crosses Bangshi fault and joins **Tongi fault**. Construction of structures in and around these fault lines involves high risks.

Development control should be exercised in those areas through Building Construction Rules, 2006 and Bangladesh National Building Code (BNBC) 1993 to avoid any possible disaster due to earthquake. Any type of heavy structure around this fault line should not be encouraged.

2.3.3 Spontaneous Development

The study area is predominately a rural based area which shows moderately fast trend of urbanization but limited urbanization is expected. With the implementation of DAP, a wide range of rural area would be accompanied with urbanization. This urbanization will improve the socio-economic and living condition of the rural people in communication, sanitation, electricity, health, education, industrialization, business and social services.

Conflicts of drainage and waterways arise whenever and wherever the road networks cross the drainage networks.

The conflict may be minimized if the systems are made parallel as far as possible so that they do not cross each other. Practically this is not possible in all cases. In the project area roads are developed straight and in a gridiron frame to minimize the cost. In the process it crosses the rivers and waterways; and its drainage function is thus hampered, on the other hand, roads should not be let to remain open at the drainage crossings helping in continuous flow of the traffic.

To reduce the vulnerability of the waterway-road conflicts, the DMDP proposed certain principles. Its recommendation was, “Roads have to be aligned in such a way (when necessary) khals and ponds have to be somewhat remodeled that as much as possible of the land along the roads can be put to high value uses, with khals and ponds in peripheral position, roughly halfway between a pair parallel roads.

2.3.4 Transportation

a. Road

The study area road network consists of National and Local roads. The National and Local Roads provide access to the area. Local roads are narrow and lack in adequate interconnection. The urbanizing areas north of the study area are growing with regional and primary roads specially the area suffers from Southward and East-West connector roads. The road linkage with the BSCIC industrial area at Ruhitpur will generate huge traffic and the existing primary and regional roads connected with the north and western side of the study area will need expansion. With the development of Jhilmill Model Town the Dhaka-Maowa Road and link road from Babu Bazar to Maowa Road will lose accessibility.

Except Jinjira ferry ghat to Ruhitpur Road, all roads in Keraniganj are narrow and irregular. Some of the roads submerge in rainy season. Widths of all semi-pucca and katcha roads are between 3 to 6 meters, and somewhere they are used as footway. All of the roads continues from the riverbank and ends on a low land. This narrow and irregular road should be widened in a regular shape but not in all cases. Because some of the roads are in densely populated areas, pucca buildings and commercial establishments will be needed to demolish. Some roads did not preserve any land for further expansion. Infrastructural facilities such as water and sanitation will not be possible to be established along those narrow roads.

b. Railway

No railway line is being provided in the study area.

c. Waterway

The study area lies between two rivers named Buriganga and Dhaleswari. From its origin, the area is connected with Dhaka and Narayanganj with waterways rather than road. No proper planning is found in the water ways. A Launch Ghat at Konakhola and a number of Boat Ghats without any proper design and facilities are located. The Dhaleswari River will need extensive dredging for designing and maintaining circular water ways around Dhaka City.

d. Modal Conflict

Before the urban invasion started in the planning area, there was a natural drainage system in the planning area that drained out the excess rainwater during monsoon and saved the area from flooding. Almost entire planning area is without any drainage network; while rapid urban growth is taking place everywhere. This is posing a serious threat to new settlements by waterlogging. Since new landowners are filling most natural drainage systems, the Consultant s feel that the thorough traffic of roads should be kept free to allow uninterrupted movement of intercity traffic. To relive the main traffic from possible interruption the consultant has suggested service lanes on either side of 1st Buriganga Bridge to Mawa Road and Duel Carriage Way from Savar to Mawa Road via Abdullahpur Union.

2.3.5 Utility Services

a. Electricity

It has been mentioned that entire Location-3 area is not covered by electricity network. PDB and REB are responsible for distribution while PDB is responsible for production and transmission. Though the area is not substantially

covered, electricity supply is subject to protracted load shedding. The situation is unlikely to improve in the near future unless substantial increase of generation is possible.

b. Water Supply

Tubewell is the main source of drinking water in the study area. Most of the houses have own shallow tubewells for drawing water. But there are some multi-storied buildings (3 to 4 storied) who constructed their own water reservoir including pump with deep tubewell. They store water in their underground reservoirs. Due to such practices several numbers of deep tubewells are available in the study area and those are also being used for irrigation purposes.

Problems associated with the water collection system in the study area are more acute. It is found that the water supplied from the related authorities is mostly irregular and takes huge time to collect. Distance from the source of water to households is also great problem of the residents living in the study area.

c. Gas Supply

The study area is not linked with the network of Titas Gas Supply. As a result, in habitants of the Study Area are maintaining their daily needs through the use of other fuel sources.

d. Sewerage Disposal

The Location-3 area is not covered by sewerage network. In the absence of sewerage system there is no equipment or machinery with the local authorities to clean septic tanks of individual houses. As a result, most of the households link up their septic tanks with the road side drains or ditches. This results in unhygienic condition and pollution of water bodies, mostly canals and rivers which act as outfall.

In rural areas recently pit latrines are being extensively used, but a substantial number of houses are still using hanging latrines. This results in environmental degradation and unhealthy living environment.

e. Drainage

In the low lying areas of the study area, water logging causes serious problem in case of moderate to heavy rain. The problem has emerged due to haphazard development of industry and commercial uses. Due to absence of culverts in specific points, water logging has become a serious problem. Encroachment on khals and canals and indiscriminate filling of low lying areas without securing drainage channels has also contributed to this problem.

f. Solid wastes

The Buriganga River, Subhadda canal and other low lying areas are being used as dumping ground of solid waste by the inhabitants. Poor sanitation facilities with pit latrine and open drain, katcha latrine are the general picture of sanitation facilities. Industrial wastes dumped in the Buriganga River, solid wastes and garbage of Market areas and ferry ghats cause obstruction to waterflows..

2.3.6 Amenities and Urban Facilities

a. Active and Passive Recreation

Cinema hall is the only recreational item of the people in the study area. Absence of city level open space is a common scenario. Play fields are adjacent with the existing primary schools and open spaces are being used for active recreational purposes.

The recreational facilities may be categorized as indoor and out door recreational facilities in the study area. There is no recognized playgroun. Watching TV is in the top of the list of indoor recreation, which was reported by nearly 57% of the households.

b. Educational Facilities

The areas are not sufficiently developed with educational institutions. Inhabitants of the study area traditionally depend on older part of the Dhaka City for educational activities.

c. Market Facilities

Zinjira, the hub of market facilities, comprises of 25.45 acres of land for these facilities. This area is popular as commercial wholesale area which serves Greater Dhaka. Particularly Jinjira and the adjoining rivers banks site most of the commercial areas of the study area. Among total area about 57% area covers as bazar which can be visualized easily. The second most area coverage as commercial area listed under commercial shops, is about 39%. The market and commercial areas are concentrated in Zinjira mouza as congested and unhygienic condition. Narrow road, absence of surface and underground drain, absence of parking facilities, loading and unloading problems is the general scenario of the market. Poor structural condition and absence of fire appliances make the area vulnerable.

d. Community Facilities

Health: Three types of health facilities were found and these are hospital, health center and family planning office. Among these, area covered by hospital is 4.40 acres. Few health center and family planning offices have been found during the surveys, but the total amount of area coverage is almost insignificant. Most of the people are dependent on Dhaka City for health facilities.

e. Urban Facilities

About 4 acres of land has been found under the use of urban services. The services cover only 0.07% land of the total study area, which is very negligible. The urban services that cover the major share are T&T office, Electric sub-station and Fire service.

Existing T&T and Fire service office in the Konakhola mouza make this mouza important in the study area. It also means that the public authority is trying to develop the Konakhola mouza as the nerve center of the administrative and urban services.

Post Office: One post office located in the Mirerbagh mouza comprises an area of 0.07 acres only. It means that people of the study area is mostly dependent on the Sadar Post Office in the Sadar Ghat area of Dhaka City for their postal services.

Fire Service: One fire service station in Konakhola mouza near Upazila Headquarter with a coverage area of 0.75 acre is found. It is about 6 km. away from the densely central area and fire service station is connected by single road.

Launch/Boat Ghat: Three launch / boat ghats with area of 0.31 acres is found in the Zinjira, Brahmankita and Barisur mouzas. Except these, a large number of non-formal boat ghats are found in the study area. Launch ghat in the Malancha mouza is prominent than others but there are no earmarked land areas for this ghat, river launches are using the riverside of a market place as the ghat.

Ferry Ghat: One ferry ghat is located in the Char Ragunathpur mouza on the Buriganga River with the covered area of 0.10 acre. Before opening of the 2nd Buriganga Bridge this ferry ghat was the only road transportation linkage between Dhaka City and Keraniganj. Roads and Highway is maintaining the ferry services.

2.3.7 Environmental Concern

Environmental condition of Keraniganj is found to be deplorable. Specially water, air and noise factors have been considered in measuring the environmental condition. Apart from water, air and noise, other factors of environment which make a significant contribution in deploring environmental condition is estimated as 55.4%. Air quality has been identified as 37.5%, responsible for the environmental degradation of the study area.

a. Flood Flow and Water body

Flooding condition of Keraniganj is found to be severe in monsoon period. The inhabitants of the Keraniganj face various types of problems. In most of the cases, transportation hazard is prominent and it is estimated as 54.5%. Whereas, polluted environment cause 29.6% problem to the people.

For a better living environment all of the above environmental phenomenon should be considered with the systematic planning principles and regulatory measures. With these views, people's consciousness should be increased for fair living environment including different public activities. Arrangement of landuses should be provisioned for all the

public and private organizations as their necessities.

During monsoon season, most of the land is liable to flood in the study area. The land, is generally high, and pucca structures can be found only in those areas.

A radical change on the present environment of the study area should be viewed when the proposed development activities will be preceded. This change should occurr in the every sector of urban environment. It is necessary to investigate on every component of the study area to analyze the environmental impact. The impact analysis only considers the riverine development project through tourism facilities.

b. Pollutions

Small number of vehicular movement is found in the study area. But, the Double Carriage Way from Savar-Nabinagar Road to Maowa Road through Abdullapur and other regional roads will generate heavy volume of traffic and those will exhaust Carbon Monoxide inn the air more than that of the present volume.

Existing scenario of the riverbank of Buriganga is composed with polluted industries and activities by the people. Such type of tourism projects will easily control the river pollution caused by the people and industries.

From the cost-benefit analysis it is observed that the benefit will return after 18 years but other benefits like water pollution will return from the 2nd year. From this point of view it is said that, the project value is higher than its economic value.

Implementation of project will generate a system of control on the use of riverbank. Such type of development will naturally discourage the polluting industries to be established on the riverbank. This is an indirect awareness concept injected for the masses.

The boat ghat naturally developed on the riverbank may be facilitated through this type of development. Riverbank erosion should be controlled with the financial benefit of the authorities. The riverbank is also being used as the solid waste dumping ground by the households living along the riverside. The process should be controlled through the development of tourism facilities.

Water of both the rivers (Buriganga and Dhaleswari) in the study area is polluted. Buriganga is worsening than Dhaleswari River. The study area is mostly dependent on Buriganga River for irrigation purposes. The BSCIS industrial estate located on one side of Dhaleswari River and other small-scale industries established there pollutes the Dhaleswari and Buriganga river water. This polluted water degrades soil fertility of the study area and affect agriculture production.

c. Loss of Biodiversity

The study area is known as suburb of Dhaka City. As like the characteristics of suburb, every homestead is surrounded with green trees, horticultures and fruit gardens. Pisciculture in the tanks and ponds are going to disappear due to the scarcity of water in summer, natural flow of water from Buriganga and Dhaleswari Rivers are being obstructed by the construction of new homesteads.

For a better living environment, all of the above environmental phenomena should be considered with the systematic planning principles and regulatory measures. With these views, people's consciousness should be increased to generate fair living environment through different public activities. Arrangement of landuses should be provisioned for all the public and private organizations as per their necessities.

d. Potential Hazards

Small number of vehicular movement is found in the study area. But, the roads from 1st and 2nd Buriganga Bridge through the study area and other regional roads will generate heavy volume of traffic and those traffics will exhaust Carbon Monoxide in a greater volume than the present.

e. Health and Safety

According to the survey, hospital, health center and family planning center is located in the mouzas Chunkutia, Char Ragunathpur and Malancha. The services these are rendering are of of poorest quality of health facilities and this

cause dependency of the area on the main land of Dhaka City. The hospital in Malancha mouza is far away (about 6km.) from the central area where density of population is high. Private involvement and other informal sector are absent on the delivery of health services in the study area.

Law and order situation plays an important role in the implementation of development activities for the welfare of the study area people. There exist to some extent occurrences of theft, hijacking, robbery, snatching and toll mongering and terrorism in the study area. People feel somewhat precarious in this locality at night. Main reason for this situation is the law enforcing agencies who are reportedly not active and careful about their responsibilities. The overall law and order situation of the area is, therefore, not satisfactory. According to the socio-economic survey data, most of the inhabitants are not satisfied with the present law and order situation of their locality. Another important cause of deteriorating law and order situation is political unrest and political entity between the two main political parties in the study area.

f. Controlling Instruments

Out of the total study area, one Union Parishad office is available in Yearpur Union. Other administrative facilities are totally absenct in the study area. To control the development activities in the study area administrative decentralization will be needed. Such administrative functions should be performed jointly by all public authorities including RAJUK.

2.3.8 Shelter and settlement

Most of the houses of the surveyed slums are non-permanent structures. The construction materials vary from local construction materials to modern construction materials. A list of construction materials which are usually being used to construct those non-permanent slum houses are bamboo, corrugated iron sheets, hardboard, wood, cement, brick and concrete.

The housing patterns of the slums are more or less linear. Usually housing patterns depend on the shape as well as size of the land. The rooms are made cellular so that one family can manage there with cheaper rents or can rent more than one room side by side if the family size is remarkably big to be managed within one room. The toilet is usually detached from the houses and isolated at the far end of the area or near the hand-pump tubewell and provides common access. Most of the families share common kitchen and the number of kitchens depend on the number of families using them. A kitchen is constituted with double gas burner and shared by four to six families.

Physical condition of the most of the houses is not acceptable. Materials used for building are severely decayed and those houses are not safe for living. But still some people choose to live in those houses as they offer extremely cheap rent and they can not manage any other places closer to their workplace. Most of the houses of the area faces common problem of water-logging due to the absence of adequate drainage facilities.

Recently, some new slum-houses have been built in the areas which are better than the previous ones and require higher rent but still able to attract people because of their offerings of more cleanliness, aesthetics, better qualities of toilets, kitchen and water supply, etc. These newly built houses constructed with cement floor as well as walls and corrugated iron sheets overhead. Some have a false ceiling under the corrugated iron ceiling. But still those new houses suffer from water-logging problems due to improper drainage facilities. A large number of populations living in such little space create a huge pressure on the drains. Another problem arises because of the vicious habit of the inhabitants that includes blocking the local drains with various solid wastes, which decreases the wastewater carrying capacity of the drains.

Like any other slums, rental pattern of every single unit of the houses of Keraniganj slums is low because it is a remote area from the centre city. In this case unit of a house means one room. Usually one family is accommodated in one single room and number of members living in one-room ranges from two to seven and even more. Rental pattern also varies according to the physical quality and other facilities provided with the house.

It is evident from the visual illustration that the rental pattern varies according to the physical condition of the houses and as well as the affordability of the inhabitants. There are so poor quality houses, not livable in any condition, at any rent; still some people are living in those houses because of extreme poverty. About 97% of the households surveyed considered housing problem as acute.

There prevailing housing problems in the study area. From the survey it is found that most of the housing problems are with inadequate civic facilities, air pollution, sound pollution, high land price, putrid and others in all over the study area.

2.3.9 Lack of Co-ordination among agencies

A number of Departments / Agencies are operating in Dhaka. One estimate indicates that 46 government agencies are involved in the metro Dhaka's development works. But unfortunately it found that these organizations are working accordingly to their own agenda completely disregarding the projects of other agencies.

a. Duplication of Efforts

It is found that more than one organizations are engaged in the same work at different time ignoring the fact other agencies are doing the same work resulting in duplication, chaos and wastage of valuable national resources.

b. Disregard of Abiding Plans by Line Agencies/Authorities

Line agencies often disregard the binding plan in implementation of their projects. They do not care whether Landuse plan allows them to undertake those projects in the areas they are implementing them. There are thousands of examples of this violation.

c. Weak Plan Implementation Mechanism

There are various laws and regulation for development control. But there is no requisite administrative effort to enforce them. As a consequence violation is common.

2.4 Current investment program

Any public sector investment program is not found in the Annual Development Program 2007. Projects on Knitting Industries and Garments Industries are going to be established in the Ruhitpur BSCIC industrial area. Private sector involvements, according to the Board of Investment Manual 2006, are not found in the study area. But some manufacturing industries are going to be established in Jinjira mouza, not documented in the Union Parishad or Upazila Parishad Record Book.

2.5 Stake Holders' Wish List of Projects

Stakeholders wish list include following projects:

- Construction of Sitalakya Bridge No. 3 at Nabiganj as early as possible.
- Develop the river banks of Dhaleswari as recreation spot by removing all illegal occupants.
- Replacement of katcha toilets by sanitary latrines in the whole study area.
- Improvement of Solid Waste management system to prevent environmental degradation.
- Improvement of important roads to facilitate movement of industrial goods and providing hazard-free walkways for the people.
- Introduction of circular water ways around Dhaka City.
- Establishment of a University Complex in the study area.
- Supply of piped water in the study area.