



**BANGLADESH
ECONOMIC ZONES
AUTHORITY**

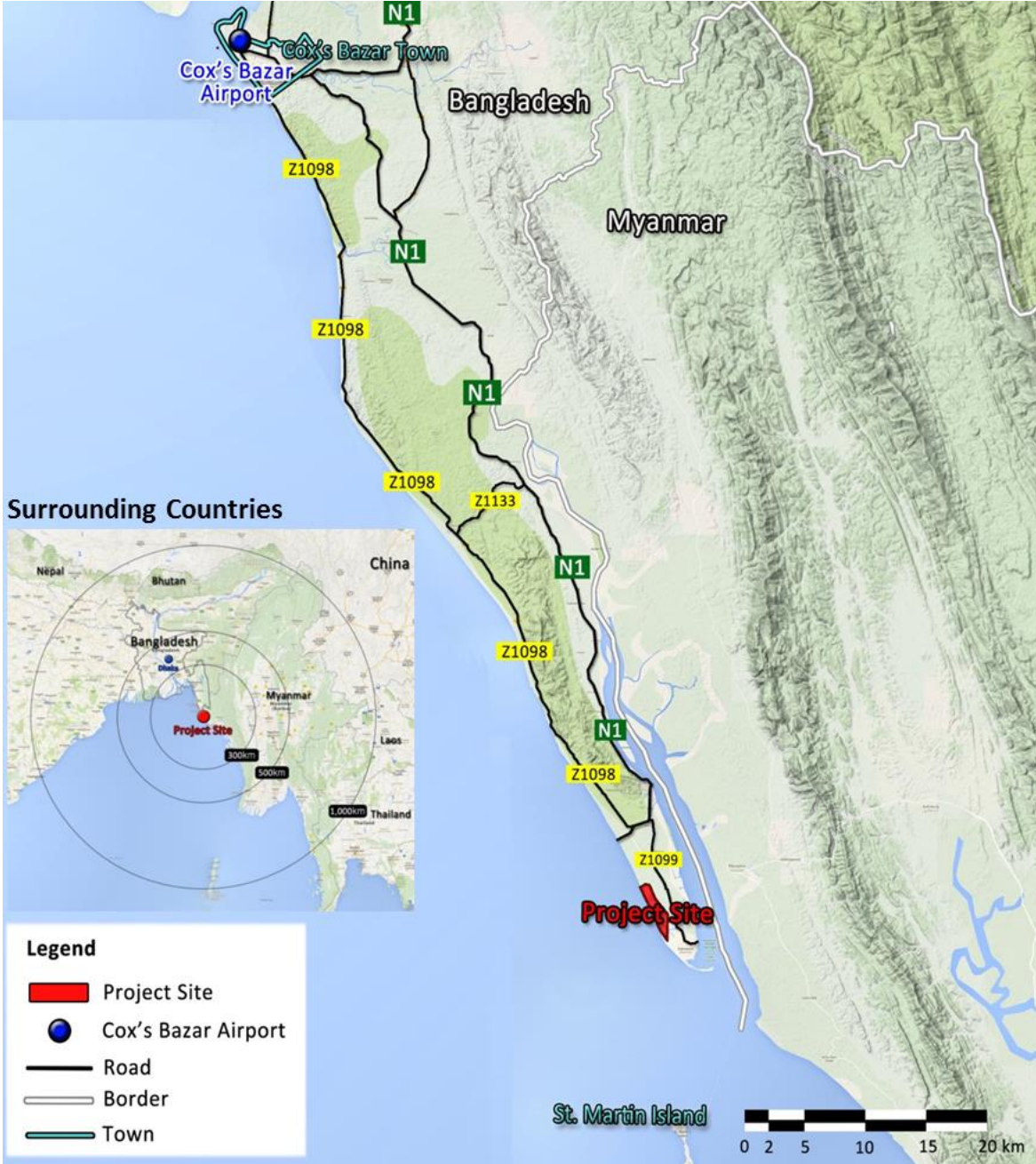


PRE-FEASIBILITY STUDY OF
ANOWARA-II EZ & SABRANG TOURISM PARK

FINAL REPORT FOR SABRANG TOURISM PARK

Support to Capacity Building of Bangladesh Economic Zones Authority November 2016

LOCATION MAP OF SABRANG TOURISM PARK



ACRONYMS

<i>Ea</i>	Each
Ha	Hectare
<i>km²</i>	Square Kilometre
<i>Km</i>	Kilometre
<i>m³</i>	Cubic metre
<i>m²</i>	Square metre
<i>M</i>	Metre
<i>Mw</i>	Mega-Watt
<i>Tk</i>	Bangladesh Taka
<i>T</i>	Tonne
ATP	Accumulated Tourism Patronage
BEPZA	Bangladesh Export Processing Zone Authority
BEZA	Bangladesh Economic Zones Authority
BIDA	Bangladesh Investment Development Authority
BTB	Bangladesh Tourism Board
CUFL	Chittagong Urea Fertilizer Factory
DC	Deputy Commissioners
EIA	Environmental Impact Assessment
EPZ	Export Processing Zone
EZ	Economic Zone
FGD	Focus Group Discussion
FDI	Foreign Direct Investments
FY	Fiscal Year
GDP	Gross Domestic Product
GRC	Grievance Redress Committee
GOB	Government of Bangladesh
ICDS	Integrated Child Development Scheme
ICT	Information and communication technology
IT	Information and Technology
KAFCO	Karnaphuli Fertilizer Company Limited
KEPZ	Korean Export Processing Zone
KGDCL	Karnaphuli Gas Distribution Company Ltd.
KII	Key Informant Interview
MICE	Meeting, incentive travel, convention and exhibition industry
OP	Operational Policy
PAP	Project Affected Person
PMO	Prime Minister's Office
PPP	Public-Private Partnership
PSDSP	Private Sector Development Support Project
RAP	Resettlement Action Plan
RMG	RadyMade Garments
SCC	Suggestion and Complaint Committee
SPARRSO	Space Research and Remote Sensing Organization
SMEs	Small-and Medium-Enterprises

SMF	Social Management Framework
SMP	Social Management Plan
TP	Tourism Park
TTP	Tribal Peoples Plan
UK-DFID	UK-Department for International Development
UNO	Upazila Nirbahi Officer

TABLE OF CONTENTS

Location Map of Sabrang Tourism Park	i
Acronyms	ii
Table of Contents	iv
Table of Figures	vi
Table of Tables	ix
Chapter 1. Project Overview	1
1. Introduction	1
2. Scope of the Study.....	8
Chapter 2. The Fundamental Concepts of Development	9
1. Objectives of the Development of the Sabrang SEZ.....	9
2. Developmental Concepts	12
Chapter 3. Competitiveness Advantage and Industry Assessment	13
1. Industry and Market Assessment.....	13
2. Competitiveness Analysis	15
3. Demand Estimates	47
Chapter 4. Market Strategy	77
1. Product Definition of Sabrang Tourism Park	77
2. SWOT Analysis and The Enhancement/Mitigation Strategies	78
Chapter 5. Transport Assessment	99
1. Description of Transport Assessment.....	99
2. Sabrang Tourism Park in the Regional Context	100
3. Existing Transport Networks	102
4. Potential Opportunities and Constraints	105
5. Proposed Transportation Network	105
Chapter 6. Site Assessment	111
1. Cox’s Bazar District in the Regional Context	111
2. Tourism Resources	114
3. Setting of the Site Boundary and Land Ownership	116
4. Physical Conditions	119
5. Existing Infrastructure	123
6. Comprehensive Analysis.....	127

Chapter 7. Master Plan	129
1. Planning Concept.....	129
2. Introduced Functions.....	131
3. Spatial Concept.....	134
4. Land Use Plan.....	136
5. Employees and Population.....	142
6. Road Network.....	145
7. Park and Open Space Plan.....	149
8. Area Division of the Sabrang TP.....	151
9. Zoning Plan.....	153
10. Phased Development Plan.....	164
Chapter 8. Infrastructure Plan	169
1. Infrastructure Concept.....	169
2. Infrastructure Plan.....	169
3. Cost Estimates.....	176
Chapter 9. Environmental and Social Footprint	187
1. Environmental Footprint.....	187
2. Social Footprint.....	240
Chapter 10. Financial Analysis	279
1. Assumptions for Financial Analysis.....	279
2. Sensitivity Test for Viability.....	292
Chapter 11. Economic Analysis	295
1. Assumptions for Economic Analysis.....	295
2. Sensitivity Tests.....	299
Chapter 12. Institutional Framework	301
1. Institutional Framework of the Sabrang TP.....	301
References	309
APPENDICES	313
Appendix 1. Records of Stakeholder Meetings.....	313
Appendix 2. Literature Review.....	329
Appendix 3. Implementation Schedule.....	338

TABLE OF FIGURES

Figure 1.1. Selected Growth Indicators, 1990-2015	1
Figure 1.2. Contribution to GDP by Respective Industrial Sectors, 1960-2015	2
Figure 1.3. FDI Net In-flows in Bangladesh, 1996-2014	3
Figure 1.4. Total Contribution of Travel and Tourism to GDP in.....	4
Figure 1.5. International Tourism: Receipts and Number of Arrival, 1995-2014	5
Figure 2.1. General View of the Tourism Value Chain	9
Figure 2.2. Cox’s Bazar Tourism District.....	10
Figure 2.3. Main Attractions of the Cox’s Bazar Tourism Corridor.....	11
Figure 2.4. Schematized Diagram of the Basic Development Concept of the Sabrang TP	12
Figure 3.1. Growth of Global Tourism Industry, 1995-2014.....	13
Figure 3.2. Tourism Sector Performance in Bangladesh.....	16
Figure 3.3. South and Southeast Asia: International Tourist Arrivals, 2010	17
Figure 3.4. Malaysia: International Tourism Receipts (% of Total Exports), 1995-2014	21
Figure 3.5. Some Tourist Attractions in Malaysia	24
Figure 3.6. Singapore: International Visitor Arrival and Growth Rate, 1995-2014.....	25
Figure 3.7. Sentosa Resort World and Marina Bay Sands Hotel in Singapore.....	26
Figure 3.8. Some Tourist Attractions in Singapore.....	28
Figure 3.9. Maldives: Change in the Number of International Tourist Arrivals, 1995-2014	30
Figure 3.10. Some Tourist Attractions in Maldives	32
Figure 3.11. Some Tourist Attractions in Myanmar.....	35
Figure 3.12. Some Tourist Attractions in Sri Lanka	37
Figure 3.13. Tourism Destinations in Vietnam.....	38
Figure 3.14. Some Tourist Attractions in Viet Nam	40
Figure 3.15. Map and Satellite Image of the East Busan Tourism Complex	49
Figure 3.16. International Tourism, Number of Arrivals by Region, 1995-2014.....	50
Figure 3.17. Average Temperature in Cox’s Bazar	56
Figure 3.18. Average Amount of Precipitation in Cox’s Bazar	56
Figure 3.19. International Tourist Arrival in Three Scenarios	61
Figure 3.20. Respondents and the Industry Sub-Sectors in Which They Are Operating	73
Figure 5.1. Transport Assessment Flowchart.....	99
Figure 5.2. Regional Context of the Sabrang Tourism Park	100
Figure 5.3. Location of the Sabrang Tourism Park	101
Figure 5.4. Poor Accessibility to the Project Site by Uncompleted Access Roads.....	102
Figure 5.5. Pictures of Available Transportation Modes in Cox’s Bazar	104
Figure 5.6. Multimodal Transport System.....	106
Figure 5.7. Conceptual Connection of Transportation System	106
Figure 5.8. Case Study: Queens Wharf, New Zealand	107

Figure 5.9. Conceptual Plan for Multi-modal Transport Spot.....	108
Figure 5.10. Map of the Proposed Transportation System.....	110
Figure 6.1. Tourists Attractions neat the Cox's Bazar town	115
Figure 6.2. Tourists Attractions neat the project site	116
Figure 6.3. Locations of the Site	117
Figure 6.4. Types of Land Ownership of the Project site.....	118
Figure 6.5. Existing Land Use	119
Figure 6.6. Level of the Project Site	120
Figure 6.7. Physiography of the project site	121
Figure 6.8. Areas affected by cyclone in Bangladesh.....	123
Figure 6.9. Map of Infrastructure	126
Figure 6.10. Planning Issues	128
Figure 7.1. Development Concept.....	130
Figure 7.2. Strategic Position of Tourism Spots in Cox's Bazar.....	132
Figure 7.3. Diagram of design principles.....	134
Figure 7.4. Marina in Pattaya, Thailand.....	138
Figure 7.5. Land Use Plan.....	141
Figure 7.6. Location and Plan of Seamangeum Tourism Complex.....	143
Figure 7.7. Residential and Reserved Area Plan.....	145
Figure 7.8. Cross-section of Roads in Sabrang TP	147
Figure 7.9. Road Network Plan.....	148
Figure 7.10. Park and Open Space Plan.....	151
Figure 7.11. Zone Division Map of Sabrang TP	152
Figure 7.12. Example of plot.....	155
Figure 7.13. Example of Building line (Setbacks)	156
Figure 7.14. Example of Setbacks (Building Line).....	156
Figure 7.15. Definition of Front, Side and Rear of a Plot.....	157
Figure 7.16. Illustration of Building Appearance.....	158
Figure 7.17. Example of Building Facades around Waterfront Square of the Commercial & Business Area	158
Figure 7.18. Illustrated Skyline of the Sabrang TP	161
Figure 7.19. Sample image of Commercial	162
Figure 7.20. Sample Image of Waterfront Commercial Area	162
Figure 7.21. Phased Development Plan	164
Figure 7.22. Map of Three (3) Phases.....	165
Figure 8.1. Pre-Loading Method.....	170
Figure 8.2. P.B.D. Method.....	170
Figure 8.3. Water Supply Plan.....	174
Figure 9.1. Steps for environmental clearance certificate for red category projects.....	202
Figure 9.2. Seismicity Map of Bangladesh.....	210
Figure 9.3. Cyclone affected area map of Bangladesh	211
Figure 9.4. Flood affected area map of Bangladesh	212

Figure 9.5. Layout Map of Anowara Upazila	246
Figure 9.6. Broad Channels for Social Capital Development	251
Figure 9.7. Stakeholder Consultations	277
Figure 12.1. Typology of PPP Based on the Time of Ownership Transfer	302
Figure 12.2 Institutional Framework of a Joint-Venture	303

TABLE OF TABLES

Table 1.1. International Tourism, Number of Arrival: Selected Countries, 2010-2014.....	6
Table 1.2. Main Tourist Spots in Bangladesh.....	6
Table 1.3. Scope of the Study.....	8
Table 3.1. Change in Growth Rate of the Global Tourism Industry.....	14
Table 3.2. International Tourist Arrivals by Region, 2010-2014.....	14
Table 3.3. Global GDP and the Contribution of Selected Industries, 2013	15
Table 3.4. Bangladesh’s Travel and Tourism Competitiveness	15
Table 3.5. Travel and Tourism Competitiveness: Selected Countries.....	18
Table 3.6. International Tourism, Arrivals and Receipts: Selected Countries, 2014	18
Table 3.7. Some Macro-economic Indicators, 2015.....	19
Table 3.8. Government Allocation for Tourism Development in Malaysia	21
Table 3.9. Number of International Conference Held.....	26
Table 3.10. Maldives: Major Source Markets and International Tourist Arrivals,.....	30
Table 3.11. Key Competitive Advantages of the Competitors to Sabrang TP.....	42
Table 3.12. Strategy, Policy and Incentives: Selected Countries	43
Table 3.13. Facilities and Programmes to be Introduced in the Sabrang TP	47
Table 3.14. ATP by Contents.....	51
Table 3.15. Estimates on the International Arrivals: Baseline Scenario	53
Table 3.16. Estimates on the Accumulated Tourism Patronage: Baseline Scenario	53
Table 3.17. Estimates on the Accumulated Tourism Patronage by Respective Tourism Programmes and Facilities: Baseline Scenario (Y1=2017 as the Base Year).....	54
Table 3.18. The Highest Patronage Days Rate by Seasonal Characteristics	57
Table 3.19. Simultaneous Stay Rate.....	57
Table 3.20. Estimates on the Highest Demand: Baseline Scenario.....	59
Table 3.21. Estimates on the Highest Demand by Respective Tourism Programmes and Facilities: Baseline Scenario	59
Table 3.22. Estimates on the International Arrivals: Aggressive Scenario	63
Table 3.23. Estimates on the Accumulated Tourism Patronage: Aggressive Scenario	63
Table 3.24. Estimates on the Accumulated Tourism Patronage by Respective Tourism Programmes and Facilities: Aggressive Scenario (Y1=2017 as the Base Year).....	64
Table 3.25. Estimates on the Highest Demand: Aggressive Scenario.....	66
Table 3.26. Estimates on the Highest Demand by Respective Tourism Programmes and Facilities: Aggressive Scenario	66
Table 3.27. Estimates on the International Arrivals: Conservative Scenario.....	68
Table 3.28. Estimates on the Accumulated Tourism Patronage: Conservative Scenario.....	68
Table 3.29. Estimates on the Accumulated Tourism Patronage by Respective Tourism Programmes and Facilities: Conservative Scenario (Y1=2017 as the Base Year)	69
Table 3.30. Estimates on the Highest Demand: Conservative Scenario	71
Table 3.31. Estimates on the Highest Demand by Respective Tourism Programmes and Facilities: Conservative Scenario.....	71

Table 3.32. The Firms Expressed to Invest in Sabrang.....	74
Table 4.1. SWOT Analysis for Sabrang TP	79
Table 4.2. Estimated Timeframe for the Implementation of Strategic Tasks.....	82
Table 4.3. Manpower Required for the Management of an IP	95
Table 5.1. List of Airports in Bangladesh.....	103
Table 5.2. Opportunities and Constraints.....	105
Table 5.3. Road Expansion Proposal	108
Table 6.1. Population in Cox’s Bazar.....	112
Table 6.2. Number of Establishments and Persons Engaged by Activity	113
Table 6.3. Parameters and Details of the site boundaries	116
Table 6.4. Land Ownership.....	117
Table 6.5. Level Difference of the Site.....	120
Table 6.6. Climate Features in Bangladesh.....	122
Table 6.7. Opportunities and Constraint.....	127
Table 7.1. Introduced Tourism Facilities.....	132
Table 7.2. Evaluation of alternatives of spatial concept design	135
Table 7.3. Cases of Street Commercial in Beach Areas.....	137
Table 7.4. Guiding Indicators of Land Use Areas for Major Facilities	140
Table 7.5. Land Use Program.....	140
Table 7.6. Introduction of Seamangeum Tourism Complex in Korea	142
Table 7.7. Estimated Number of Employees	143
Table 7.8. Estimated Number of Households.....	144
Table 7.9. Road Design Standard	147
Table 7.10. Types of Park.....	149
Table 7.11. Area of Zone Division	152
Table 7.12. Plot Size, Corresponding Minimum Frontages, Rear and side open space for Various Types of New Development	159
Table 7.13. Height Limitations Based on Road Width and Front Open Space	159
Table 7.14. Maximum Permissible Floor Area Ratios (FAR)	160
Table 7.15. Equivalent Car Space (ECS) in Different Type of Parking.....	163
Table 7.16. Parking space for various occupancies.....	163
Table 7.17. Land use for Phase 1.....	165
Table 7.18. Land use for Phase 2.....	166
Table 7.19. Land use for Phase 3.....	167
Table 8.1. Road Length by Categories	171
Table 8.2. The Estimated Amount of Sewage.....	173
Table 8.3. Grading Work.....	176
Table 8.4. Road and Pavement Work	177
Table 8.5. Length of Pipelines.....	177
Table 8.6. WTP and WWTP.....	178
Table 9.1. Key Site Facts.....	191

Table 9.2. Applicability of Key Environmental Legislation at a Glance	192
Table 9.3. Monthly minimum and average minimum temperature during Jan 2005 to Dec 2014.....	204
Table 9.4. Monthly maximum and average maximum temperature during Jan 2005 to Dec 2014.....	204
Table 9.5. Monthly average relative humidity during Jan 2005 to Dec 2014	205
Table 9.6. Monthly total and 10 years average monthly rainfall during Jan 2005 to Dec 2014	205
Table 9.7. Ambient Air quality monitoring at proposed TP in Sabrang	206
Table 9.8. Ambient Noise quality monitoring at proposed EZ in Sabrang	207
Table 9.9 Surface water quality at proposed TP in Sabrang	207
Table 9.10 Groundwater quality at proposed TP in Sabrang	208
Table 9.11. Groundwater quality data for Sabrang.....	208
Table 9.12. Environmental Components to be affected due to the Project Intervention.....	215
Table 9.13. Preliminary Scoping Matrix for Impact Identification	216
Table 9.14. General Anticipated Environmental Impacts and Mitigation Measures.....	224
Table 9.15. Matrix Table of Monitoring Plan	235
Table 9.16. Site Details of Anowara-II EZ.....	241
Table 9.17. Connectivity of proposed Anowara-II EZ	242
Table 9.18. Industrial landscape of entire Chittagong District	243
Table 9.19. Socio-Economic Profile of Anowara	245
Table 9.20. Demographic profile of the Unions under Anowara Upazila	246
Table 9.21. Literacy Rates Segregated by Unions in Anowara	247
Table 9.22. Demographic Data.....	253
Table 9.23. PAPs categorized based on their age.....	253
Table 9.24. Literacy level of PAPs	254
Table 9.25. Marital Status of PAPs	254
Table 9.26. Employment Status of PAPs.....	254
Table 9.27 Income Level	255
Table 9.28. Strengths and Weaknesses of the EZ area	255
Table 9.29. Details Stakeholder Consultations	274
Table 9.30. Positive Impacts perceived by the Stakeholders.....	276
Table 10.1. Investment Costs for the Development of Sabrang.....	279
Table 10.2. Investment Schedule.....	282
Table 10.3. Land Allocation Plan	282
Table 10.4. Land Allocation Plan by Year (Land for Rent/Lease).....	285
Table 10.5. Income and Expense Summary (with Off-site Cost, Unit in US\$)	287
Table 10.6. Discounted Cash Flow (with Off-site Cost, Unit in US\$).....	290
Table 11.1. Economic Value of Income and Expense (with On-site Costs, Unit in US\$)	296
Table 11.2. Economic Value of Discounted Cash Flow (with Off-Site Costs, Unit in US\$).....	298
Table 12.1. Potential Areas of Partners' Contribution in PPP	302
Table 12.2. NPV Analysis for Revenue and Cost.....	304
Table 12.3. Bank Loan and Repayment Schedule for the JV (Construction Costs Only).....	304

Table 12.4. Discounted Cash Flow (With Off-Site Costs, Unit in US\$)307

CHAPTER 1

PROJECT OVERVIEW

1. INTRODUCTION

1.1. Economic Transformation of Bangladesh and the Challenge

1.1.1. For the last two decades, Bangladesh has demonstrated robust growth. Gross domestic product (GDP) in 2015, in 2010 constant U.S. dollar term, was approximately \$156 billion, about a four-fold increase compared to the GDP in 1990. Investment in the same period has shown a rapid and steady increase—to about \$45 billion in 2015 from \$6.3 billion in 1990; export has grown about 20 times—approximately \$26.7 billion from \$1.3 billion in 1990 (Figure 1.1).

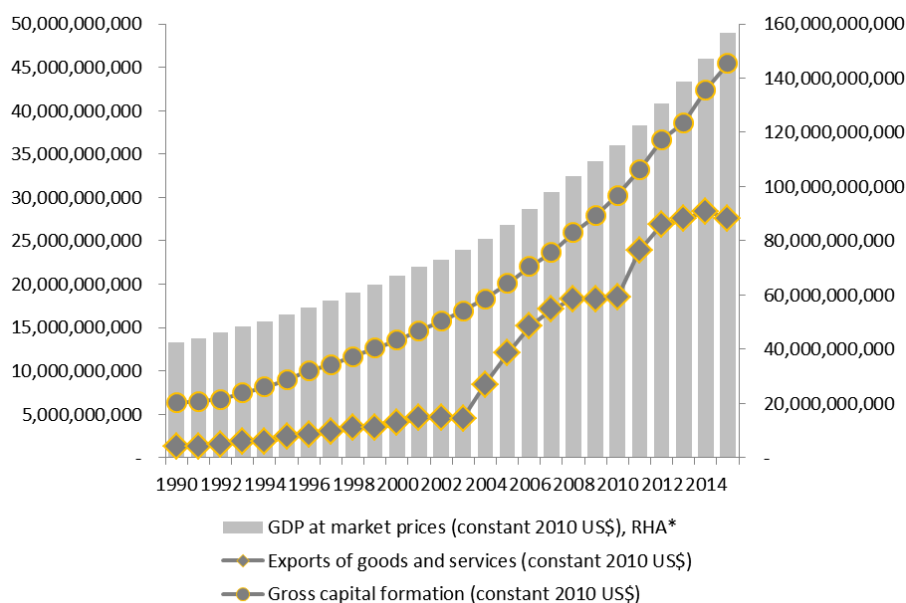


Figure 1.1. Selected Growth Indicators, 1990-2015

Note: * RHA=right-hand axis; Source: Authors' compilation using the data extracted from the *World Development Indicators*, 2016.

1.1.2. Inflation is contained at less than 6%, while real interest rate, as of 2015, is maintained at 5.5%. Official exchange rate per US dollar has been depreciated but is maintained at approximately 78 Taka (BDT 78) per US dollar as of 2015.

1.1.3. Bangladesh’s robust growth is in large part attributable to significant growth of the manufacturing sector. Indeed, the contribution of the manufacturing sector to GDP used to be approximately 5.3% in the 1960s; it grew to 13.8% in 1980 to 14.7% in 2000 to 16.9% to in 2010 and to 17.6% in 2015 (Figure 1.2). Especially, strong export sector coupled with an increase in over-all investment undoubtedly has led the growth, as shown in Figure 1.1.

1.1.4. In contrast, the contribution of agriculture to the nation’s GDP decreased to 15.5% in 2015 from 57.5% in 1960, as shown in Figure 1.3.

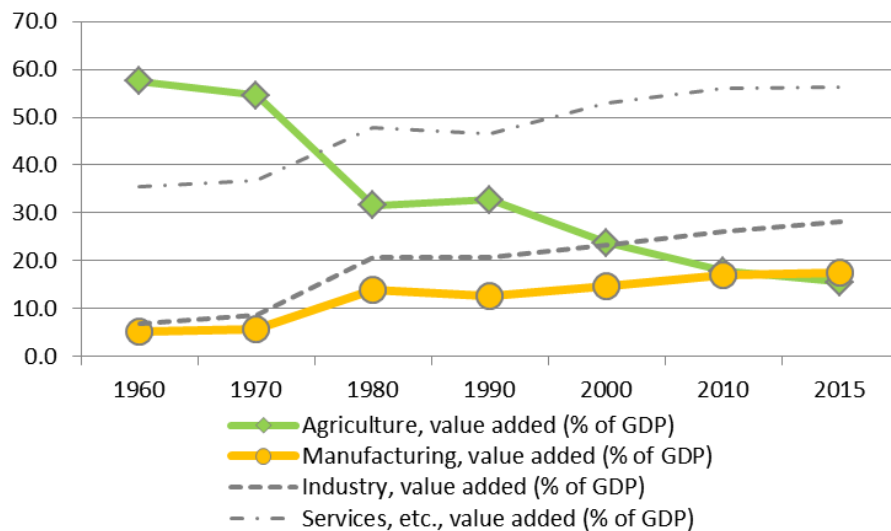


Figure 1.2. Contribution to GDP by Respective Industrial Sectors, 1960-2015

Source: Authors’ compilation using the data extracted from the *World Development Indicators*, 2016.

1.1.5. It demonstrates that Bangladesh has been successfully building a strenuous manufacturing base and has transformed its economic structure, as envisioned by national development planners in the previous decades.

1.1.6. The continuous increase in investment in Bangladesh seems to largely be attributable to a steady gain in foreign direct investment (FDI) in-flows. As shown in Figure 1.3, FDI net in-flows in Bangladesh reached its peak in recent years—about US\$1.6 billion in 2013.

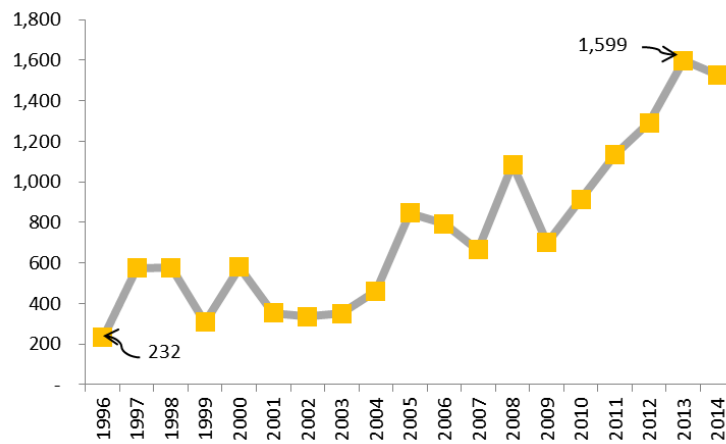


Figure 1.3. FDI Net In-flows in Bangladesh, 1996-2014

Note: Unit in US\$ million; Source: Authors' compilation of the data aggregated from Bangladesh Bank (2014)

- 1.1.7. A vigorous expansion of the manufacturing sector notwithstanding, Bangladesh's economy faces the main challenge—growing dependency on one industry for growth. That is, apparels and related products account for more than 80% of Bangladesh's exports. It is not so much of a surprise, for Bangladesh is now the second top apparel supplier for the EU and the third top apparel supplier for the US.
- 1.1.8. Nevertheless, this fact suggests that the diversifying of the industrial structure, subsequently the export structure, would be a task of exigency to national development planners.
- 1.1.9. Based on this backdrop, Bangladesh Economic Zone Authority (BEZA) has been mandated to develop the Sabrang Tourism Park as a part of the GOB's efforts towards the industry-diversification.

1.2. Profiles of Bangladesh's Tourism Industry

- 1.2.1. Economic impact of the tourism industry to a national economy is often measured by the total contribution of the industry, which is the sum of direct, indirect and induced effects of the industry to the economy.
- 1.2.2. Direct effects usually measure expenditure on typical tourism products, such as hotels, airlines and other transports, restaurants, etc.
- 1.2.3. Indirect effects may be the most important component that national policy-makers pay attention to. It determines the measurement of intermediate consumption of goods and services in the tourism industry. As such, it focuses on the effect of supply chain of the industry. In other words, the indirect effects measure the inputs of local goods and services to the direct activities of the industry, such as agricultural products, local transports, etc. Hence, the linkage impact to other local industries is an important attribute of the measurement of the indirect effects.

1.2.4. Induced effects are derived from the expenditure made by employees' wages and firms that are directly engaged with tourists. They include the purchase of consumer products bought by people working in the tourism industry.

1.2.5. Total contribution of the travel and tourism industry to the national economy of Bangladesh:

1.2.5.1. The industry's total contribution to GDP in 2014 amounted to approximately US\$3.7 billion, accounting for some 4.1% of the nation's GDP.¹ It is forecasted to increase to about US\$15 billion, or 4.4% of GDP, in 2025.

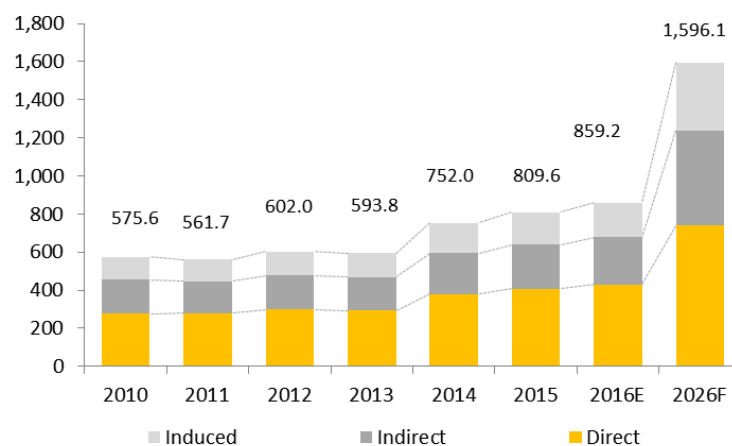


Figure 1.4. Total Contribution of Travel and Tourism to GDP in Bangladesh, 2010-2026

Note: Figures in the chart represent the total contribution of the sector (unit in BDT billion); Source: World Travel and Tourism Council (2016)

1.2.5.2. In 2014, the travel and tourism sector yielded about 1,984,000 jobs, including jobs indirectly supported by the sector, accounting for about 3.6% of total employment.²

1.2.5.3. The sector's total contribution to employment generation is also expected to rise to 2,492,000 in 2025, being estimated about 3.6% of the nation's total employment.

1.2.5.4. As for the national investment, investment to the sector in 2014 recorded about US\$752 million of the total investment; it would expanded to approximately US\$1.6 billion, or 1.6% of the total investment, in 2025.

¹ Original data presented in Bangladesh Taka (BDT): for the sake of convenience, the sums expressed in BDT were computed at BDT80 to US\$1.00 (an approximate average of the official exchange rates in 2012 and 2013), Bangladesh Board of Investment (2015).

² Ibid. The numbers represent total contribution.

1.2.6. International tourism receipt and arrivals:

1.2.6.1. In 2014, international tourism receipt recorded about US\$154 million in the current dollar term and international tourism arrival was estimated as 125,000. The international tourism arrival reached as high as 467,000 in 2008 but began to drop to 303,000 in 2010 to 125,000 in 2014.

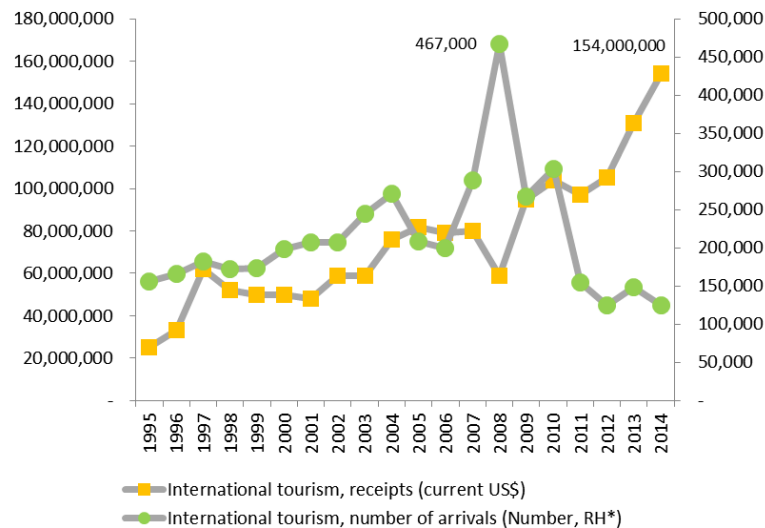


Figure 1.5. International Tourism: Receipts and Number of Arrival, 1995-2014

Note: *RH: right-hand axis; Source: World Bank (2016)



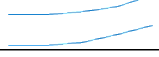


1.2.6.2. Nevertheless, as shown in the table in above, international tourism receipts have been showing an increasing trend—about US\$48 million in 2001, US\$104 million in 2010 and US\$154 million in 2014.

1.3. Challenges to Bangladesh's Tourism Industry

1.3.1. Although Bangladesh has good prospects for travel and tourism, the development of the travel and tourism industry still remains modest. Comparing to its neighbours, especially to Thailand, Malaysia, and the like, Bangladesh's tourism sector by far lags behind.

1.3.2. Moreover, international tourism arrival in Bangladesh recently shows a declining trend while that in its neighbours demonstrates steady growth. International tourism arrival in Bangladesh does not seem to gain the level at which the level of inbound reached its peak, for example, in 2010 (Table 1.1).

Table 1.1. International Tourism, Number of Arrival: Selected Countries, 2010-2014

	2010	2011	2012	2013	2014	Periodic Change
Bangladesh	303,000	155,000	125,000	148,000	125,000	
Thailand	15,936,000	19,230,000	22,354,000	26,547,000	24,810,000	
Vietnam	5,050,000	6,014,000	6,848,000	7,572,000	7,874,000	
Malaysia	24,577,000	24,714,000	25,033,000	25,715,000	27,437,000	
Myanmar	792,000	816,000	1,059,000	2,044,000	3,081,000	

Source: Authors' compilation; data from the World Bank (2016) data set.

1.3.3. In fact, there seems to be no dearth of tourism assets in Bangladesh. As shown in the following table, abundant tourism spots, for example, are well distributed around the country. Then, interesting questions are: Why has the travel and tourism industry lagged behind its neighbours? What are the impediments, if any, to the growth of the industry?

Table 1.2. Main Tourist Spots in Bangladesh

Division	Location	Major Spots
Barisal	Southwest	Kuakata
Chittagong	South	Patenga Sea Beach, War Cemetery, Port, Cox's Bazar, St. Martins Island, Himchori and Inani Beach, Parki beach, Lalmai, Moinamoti and Shalbon Bihar, Chittagong Hill tracks (Rangamati, Khagrachari, Bandarban and Kaptai)
Dhaka	Capital city	Shaheed Minar, Jatiyo Smritisoudho, Ahsan Manzil, Jatiya Sangshad Bahavan
Khulna	Southwest	Sundarban
Rajshahi	North	Mahasthangarh, Varendra Museum
Rangpur	North	Kantagir Temple, Sayedpur railway junction
Sylhet	Northeast	Jaflong, Ratargul, Madhabkunda waterfall, Satchari National Park, Bisanakandi, Srimongal, Lawacherra Rain Forest

Source: Excerpted from Roy and Roy (2015) "Table 1: Tourist spots in Bangladesh," p.57.

1.3.4. Numerous research studies, self-diagnoses, etc. documented by scholars, practitioners and policy-makers have come to the conclusions about the bottlenecks that have inhibited the growth of the industry in Bangladesh as in the following:

- Absence of a comprehensive national-level support plan for the development of Bangladesh's travel and tourism industry as a whole;
- Absence of a long-term national policy;
- Insufficient infrastructure including adequate accommodation, roads, transportation and telecommunication access and the like;
- The lack of systematic and comprehensive development approaches to travel and tourism industry, which results in the shortfall in international marketing efforts;
- Low-level of inter-industry co-operation and co-ordination;
- Shortage of professional human resource in the industry including skilled workers;

- Inadequate level of services;
- Low-level of investment;
- Insufficient information about tourist points of interest;
- Language barriers;
- Conservative social and religious systems that often do not approve tourism activities (i.e. drinking, dancing, gambling, etc.)
- Threat from fundamentalist forces against the expansion of recreational facilities;
- Lack of awareness of general population with regard to the benefits of tourism industry;
- Safety and security concerns;
- Unfriendly police force;
- Foreigners' misconception to perceive Bangladesh as a fundamentalist country

1.3.5. The aforementioned are some examples of impediments recorded in numerous literature and documents filed by both public and private sector. These issues will later be elaborated further in other chapters of this study.

1.3.6. As a part of the efforts to address the challenges, the Government of Bangladesh (GOB) sets out to develop a comprehensive tourism park, also known as Sabrang Exclusive Tourism Economic Zone or Sabrang Tour Special Economic Zone, adjacent to the Cox's Bazar tourism area.

1.4. Study Objectives

- 1.4.1. Based on the preceding backdrop, this study is to serve BEZA with the most pertinent and adequate information for sound decision-making in the development process of the Sabrang Tourism Park.
- 1.4.2. Specifically, this study will propose the client a list of the facilities and programmes to be installed in the park and will conduct demand analysis, master planning, including land-use and zoning plans, financial and economic viability, environment and social footprint.

2. SCOPE OF THE STUDY

2.1. Scope of Works based on the TOR

2.1.1. The main objectives of this pre-feasibility study will be conducted by the Dohwa Consortium. The scope of this study will cover the topics presented in the following table:

Table 1.3. Scope of the Study

Component I : Competitive Advantage and Industry Assessment

- Activity 1: Stakeholder Meetings and a Review of Existing Studies/Information
- Activity 2: Competitiveness Analysis
- Activity 3: Transport Assessment
- Activity 4: Industry/Market Assessment
- Activity 5: Demand Forecasts
- Activity 6: Market Strategy

Component II : Master Planning, Infrastructure Requirements and an Environmental and Social Footprint

- Activity 1: Site Assessment
- Activity 2: Best Practice Master Plan
- Activity 3: On and Off Site Infrastructure Requirements and Associated Costs
- Activity 4: Environmental and Social Footprint

Component III : Institutional Framework

- Activity 1: Identify Institutional Framework

Component IV : Economic and Financial Modelling

- Activity 1: Economic Model
- Activity 2: Financial Model

CHAPTER 2

THE FUNDAMENTAL CONCEPTS OF DEVELOPMENT

1. OBJECTIVES OF THE DEVELOPMENT OF THE SABRANG SEZ

The objectives of the development of the Sabrang Tourism SEZ (ST SEZ) can be summarised as the following:

- Industry diversification
- Development of a new national growth engine
- Creation of a tourism corridor in the Cox's Bazar region

1.1. Industry Diversification

1.1.1. As pointed out in the preceding chapter, Bangladesh's dependency on a certain industry, or industries, such as apparel manufacturing and exports, is somewhat excessive.

1.1.2. As a part of the national efforts to diversify its industries, the development of ST SEZ will contribute to ameliorate the unbalanced structure of industry shares to national outputs and exports.

1.2. New Growth Engine

1.2.1. Tourism industry in general yields highly effective value-adding activities throughout its value chain.



Figure 2.1. General View of the Tourism Value Chain

- 1.2.2. The value chain of the tourism industry could develop not only to such backward linkages as gastronomy and agriculture, but also to forward linkages, for example, fusion tourism which converges with other industries, i.e. medical sector, the meeting, incentive, convention and exhibition (MICE) industry, sports, information and communication technology (ICT), etc.
- 1.2.3. At every nodes of the value chain, the participating industries in the linkages will contribute to create the opportunity for income and employment generation (Refer to the definition of the indirect effects in Chapter 1). As Bangladesh's tourism industry is in its early stage of development, its potential to develop to the further stages is surely high.

1.3. The Cox's Bazar Region as an Exhilarating Tourism Corridor

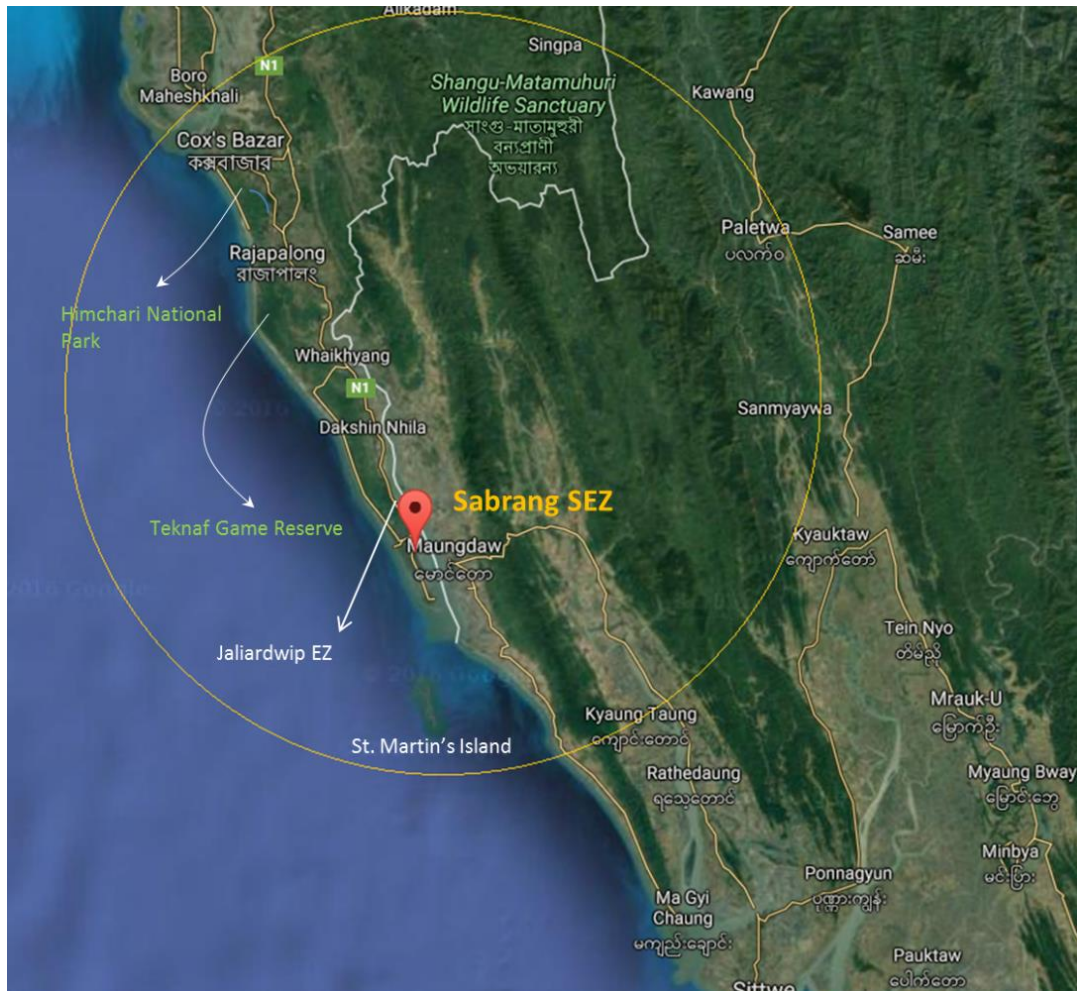


Figure 2.2. Cox's Bazar Tourism District

Source: Image extracted from Google Map, <http://map.google.com/> (Access date: 07 August 2016)

- 1.3.1. Cox's Bazar has known for a popular tourist destination in Bangladesh for decades. A long and pristine beach is the main tourist attraction of the

Cox's Bazar area. Upscale accommodation and other amenities for tourists are available in the town.

- 1.3.2. In the regions adjacent to Cox's Bazar, such tourist attractions as the Sahangu-Matamuhuri Wildlife Sanctuary, Himachari National Park, Teknaf Game Reserve as well as St. Martin's Island are located in accessible distances.
- 1.3.3. As BEZA is presently undertaking the development of the Jalardwip EZ in conjunction with the development of the Sabrang TP, it will ultimately form an excellent tourism corridor as it introduces an integrated route of various tourist attractions—wildlife, beach trekking, eco-tour, etc.



Figure 2.3. Main Attractions of the Cox's Bazar Tourism Corridor

2. DEVELOPMENTAL CONCEPTS

2.1. Basic Concept of Development

2.1.1. Integrating to the national and regional tourism assets, the Sabrang TP is poised to position as a hub, along with the Cox's Bazar area, of a tourism corridor in Bangladesh's southwest focusing on the creating of strenuous points of attractions for both domestic and international visitors. The development concept is schematized as in the following:

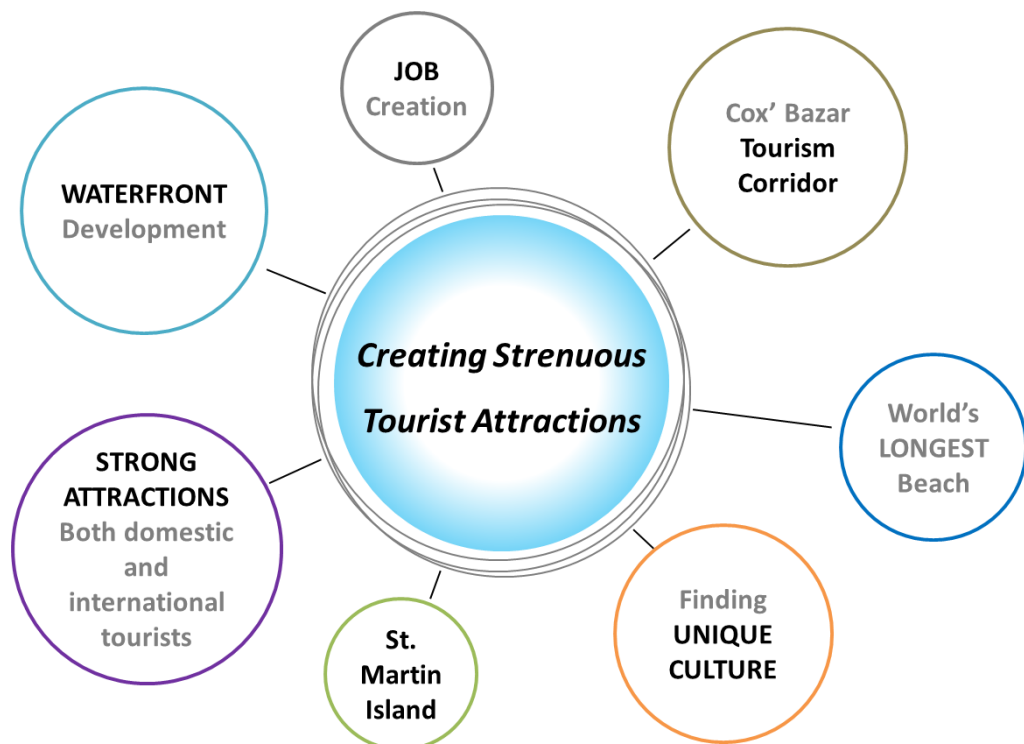


Figure 2.4. Schematized Diagram of the Basic Development Concept of the Sabrang TP

CHAPTER 3

COMPETITIVENESS ADVANTAGE AND INDUSTRY ASSESSMENT

1. INDUSTRY AND MARKET ASSESSMENT

1.1. Growth of the Global Travel and Tourism Industry

1.1.1. Tourism is one of the fastest growing industries in the world. The business volume of the industry is known to be equal or higher than oil exports, foods or automobiles.³ Indeed, the tourism receipts in the world reached approximately US\$1.4 trillion in 2014 while international tourists arrivals were more than 1.1 billion in 2014 (Figure 3.1).

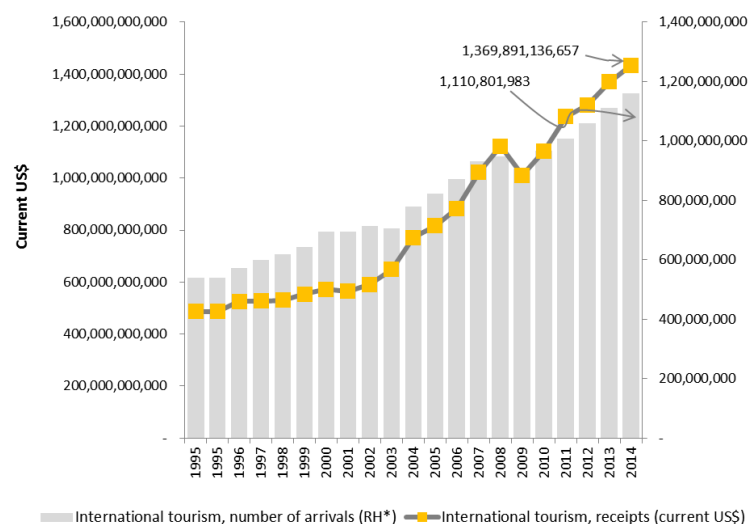


Figure 3.1. Growth of Global Tourism Industry, 1995-2014

Note: RH* refers to right-hand axis (unit in number of persons); Source: Authors' compilation using data from the World Bank (2016)

1.1.2. The number of international arrivals exceeded 1 billion in 2011 and growth has continued in 2012, 2013 and 2014.

³ The World Tourism Organisation, UNWTO (2016) "Why tourism?" <http://www2.unwto.org/content/why-tourism> (Access date: 07 August 2016).

1.1.3. In the period 1996-2014, international tourist arrivals world-wide grew on an average of 4.16% while tourism receipts on an average of 6.04% (Table 3.1.).

Table 3.1. Change in Growth Rate of the Global Tourism Industry

	Changes in international tourism, number of arrivals	Changes in international tourism, receipts (current US\$)
1996	5.70%	8.05%
1997	4.98%	0.22%
1998	3.00%	0.60%
1999	4.08%	4.47%
2000	8.04%	3.39%
2001	-0.14%	-1.56%
2002	3.08%	4.72%
2003	-1.29%	9.81%
2004	10.27%	19.05%
2005	5.76%	5.79%
2006	5.78%	8.17%
2007	7.13%	15.76%
2008	1.64%	9.82%
2009	-4.24%	-9.93%
2010	6.53%	9.19%
2011	4.27%	12.02%
2012	5.08%	3.61%
2013	4.82%	6.86%
2014	4.51%	4.68%

Source: Authors' computation based on the World Bank (2016) data sets.

1.1.4. Regionally, Europe and Central Asia recorded the largest number of tourism arrivals in the period 2010-2014, followed by East Asia and Pacific. The tourist arrivals in Europe and Central Asia amounted to some 588 million in 2014 (Table 3.2).

Table 3.2. International Tourist Arrivals by Region, 2010-2014

	2010	2011	2012	2013	2014	Periodic Change
Europe & Central Asia	492,116,205	524,610,538	544,795,248	572,923,340	588,069,790	
East Asia & Pacific	195,019,796	206,829,090	221,486,549	236,050,673	249,022,080	
North America	76,461,000	79,071,000	83,233,000	86,290,000	91,772,000	
Latin America & Caribbean	71,896,631	75,610,818	78,304,955	80,024,041	88,831,486	
Middle East & North Africa	86,872,771	74,205,493	82,417,976	83,343,279	88,633,213	
South Asia	9,234,491	10,392,363	10,725,073	11,682,769	12,836,485	

Source: Authors' compilation using the World Bank data set.

1.1.5. As discussed in the previous chapter, a positive association of the travel and tourism sector with national growth is indisputable. A positive

impact of travel and tourism on national growth can be evidenced by the sector's contribution to global GDP, as shown in Table 3.3 below. In fact, the level of contribution of the sector exceeds such manufacturing sectors as chemical and automotive.

Table 3.3. Global GDP and the Contribution of Selected Industries, 2013

	Global GDP (\$US billion)	% of Global GDP
Financial services	5,021	6.9%
Communication services	3,221	4.4%
Mining	3,088	4.2%
Banking	2,821	3.9%
Education	2,771	3.8%
Travel & Tourism	2,120	2.9%
Chemicals manufacturing	1,539	2.1%
Higher education	1,003	1.4%
Automotive manufacturing	993	1.4%
Total	73,250	100.0%

Source: The Government of Jeju Special Self-Governing Province (2014) *Tourism Promotion Plan, 2014-2018*, Original source: WWTC (2014) *Executive Summary: Travel & Tourism Economic Research*.

2. COMPETITIVENESS ANALYSIS

2.1. Bangladesh's Global Competitiveness

- 2.1.1. Although Bangladesh takes pride in its tourism assets including rich cultural heritages, it has hardly been a foreign tourists' preferred destination.
- 2.1.2. As presented in the previous chapter, it fell behind its neighbours in terms of international tourist arrivals. This undeniable reality implies that Bangladesh has not properly positioned itself a tourist destination vis-à-vis its competitors in the past.
- 2.1.3. *The Travel and Tourism Competitiveness Report 2015* prepared by the World Economic Forum ranks Bangladesh's tourism competitiveness 127th out of 141 countries in the world. In the regional perspective, Bangladesh's competitiveness in the Southeast and Southern Asia region is evaluated to be the 22nd.

Table 3.4. Bangladesh's Travel and Tourism Competitiveness

Criteria	Rank*	Score
Travel & Tourism Competitiveness Index, 1-7 (best)	127	2.9

Enabling environment sub-index, 1-7 (best)	113	3.9
T&T policy and enabling conditions sub-index, 1-7 (best)	137	3.3
Infrastructure sub-index, 1-7 (best)	114	2.5
Natural and cultural resources sub-index, 1-7 (best)	104	1.9

Note: *Total 141 countries; Source: World Economic Forum (2016)

2.1.4. The report shows that the “travel and tourism policy and enable conditions” criterion pulls down the overall competitiveness index, followed by infrastructure and business enabling environment.

2.1.5. Further evaluations on some main components of the index disclose the points of strengths and weaknesses in Bangladesh’s tourism sector as a whole. That is, Bangladesh retains **price competitiveness** while it needs to develop the cultural resource and business travel component in order to enhance its global tourism competitiveness.

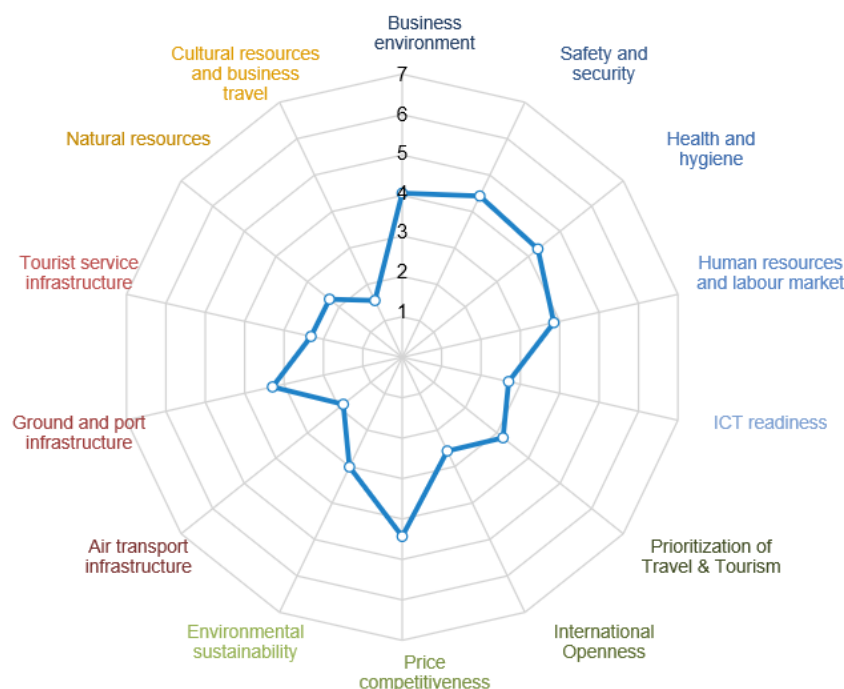


Figure 3.2. Tourism Sector Performance in Bangladesh

Source: Excerpted from World Economic Forum (2016) “Bangladesh,” *Travel and Tourism Report 2015*, <http://reports.weforum.org/travel-and-tourism-competitiveness-report-2015/economies/#economy=BGD> (Access date: 08 August 2016).

2.2. Competitor Analysis

2.2.1. As discussed, almost all countries in the world have recognised the travel and tourism as a key sector in their economy. It is especially so in the Asia and Pacific Region where the growth of the sector has been pronounced. Especially the growth rate of South and Southeast Asia has been impressive, as shown in the previous sections. The countries in the

South and Southeast Asian region have in general opulent tourism assets and are capitalising them to promote the sector.

- 2.2.2. Some countries in the upper-tier group in global competitiveness of the travel and tourism industry, such as Malaysia, Thailand, Singapore, etc., are enhancing their global competitiveness by reforming their tourism policies, improving infrastructure for travel and tourism and evolving to upper level while middle-tier group countries, such as Vietnam, India, Indonesia, Sri Lank, etc., also are trailing the upper-tier group rapidly. On the other hand, the lower-tier group countries, such as Cambodia, Myanmar, etc. are placing their efforts to promote the sector.
- 2.2.3. As can easily be fathomed, the competition in the region is becoming profoundly severe. To that effect, almost all countries in the region are potential competitors (Refer to Figure 3.3).

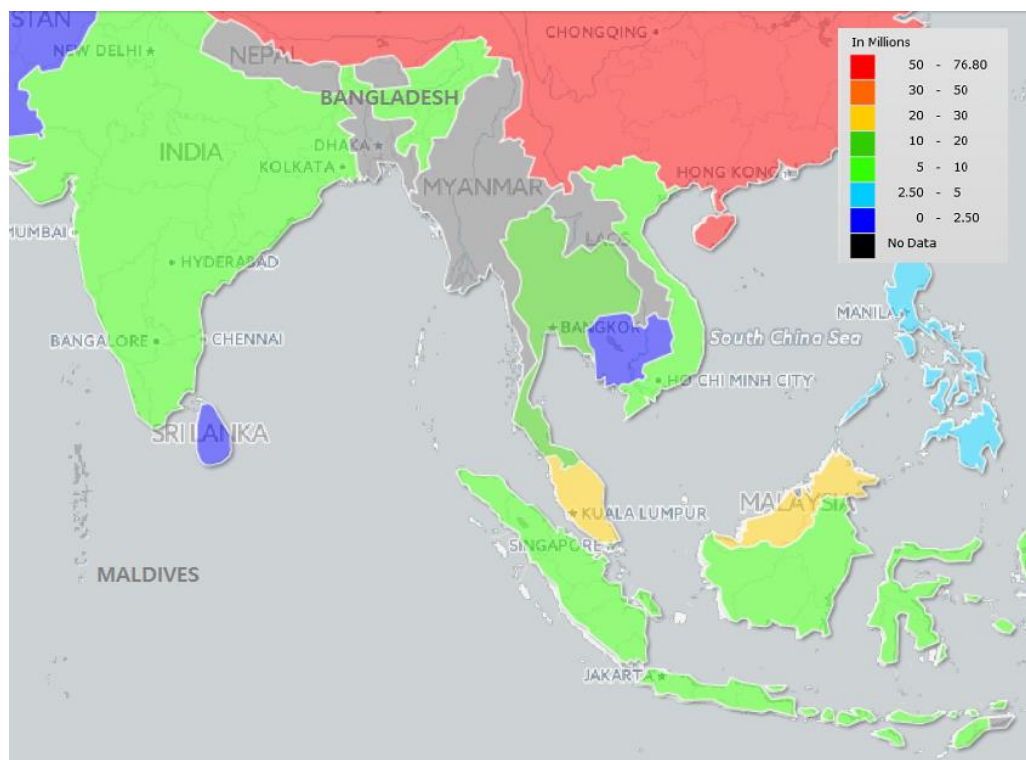


Figure 3.3. South and Southeast Asia: International Tourist Arrivals, 2010

Source: Extracted from MapGenia, s.l. (2012) "International Tourist Arrivals," <http://www.targetmap.com/> (Access date: 02 September 2016).

- 2.2.4. Nevertheless, this study identifies, among others, six countries in the South and Southeast Asian region—two from the upper-, middle- and low tier group countries—as direct and likely regional competitors. The logic of the inclusion of likely competitors is that they will be directly competing with the Sabrang TP, as they have already identified travel and tourism industry as a key sector for their economic development. Accordingly, they are vigorously pushing forward the development of the sector. Hence, they will serve as not only outstanding benchmarks for the

Sabrang TP can make a good reference, but they also are inculcating cases which the Sabrang TP can learn from.

- 2.2.5. In sum, the identified competitors are Malaysia, Singapore, Vietnam, Myanmar, Maldives and Sri Lanka.

Table 3.5. Travel and Tourism Competitiveness: Selected Countries

	Travel & Tourism Competitiveness Index, 1-7 (7 being the best)	Travel & Tourism Competitiveness Index, Ranks
Bangladesh	2.8971	127
Malaysia	4.4071	25
Singapore	4.8577	11
Maldives	n/a	n/a
Myanmar	2.7154	134
Sri Lanka	3.8000	63
Vietnam	3.6026	75

Source: World Economic Forum (2016)

- 2.2.6. It is important to note that some countries in which Islam is a pre-dominating religion, i.e. Malaysia and Maldives, are carefully, and successfully, developing tourism in harmony with their culture and society.

- 2.2.7. Of the competitors, Malaysia by far outnumbers its neighbours in terms of international tourist arrivals and receipts (See Table 3.6).

Table 3.6. International Tourism, Arrivals and Receipts: Selected Countries, 2014

Country	International Tourist Arrivals	International Tourism Receipts	
		(Current US\$)	(% of Export)
Bangladesh	125,000	154,000,000	0.47
Malaysia	27,437,000	22,600,000,000	9.06
Singapore	11,864,000	19,203,000,000	3.26
Maldives	1,205,000	2,645,000,000	79.76
Myanmar	3,081,000	1,613,000,000	12.13
Sri Lanka	1,527,000	3,278,000,000	19.59
Vietnam	7,874,000	7,330,000,000	4.55

Source: World Bank (2016)

- 2.2.8. The contribution of travel and tourism sector to the national economy seems to be highly significant in such countries as Malaysia, Maldives,

Myanmar and Sri Lanka. It is also noted that tourism is becoming a key economic sector in Vietnam.

2.2.9. Some macro-economic indicators of the competitors are as follows:

Table 3.7. Some Macro-economic Indicators, 2015

	(1) GDP¹	(2) per capita GDP²	(3) GDP Growth Rate (%)	(4) Population
Bangladesh	156,629,549,345	973	6.55	160,995,642
Malaysia	329,902,207,320	10,877	4.95	30,331,007
Singapore	287,017,968,464	51,855	2.01	5,535,002
Maldives	2,929,826,239	7,161	1.51	409,163
Myanmar	6.99	53,897,154
Sri Lanka	76,264,645,402	3,638	4.79	20,966,000
Vietnam	154,508,616,328	1,685	6.68	91,703,800

	(5) Un-employment³	(6) Real Interest Rate (%)	(7) Inflation (%)⁴	(8) External Balance on Goods and Services (Current US\$)
Bangladesh	4.30	5.51	6.19	(14,460,497,207)
Malaysia	2.00	4.99	2.10	22,638,330,559
Singapore	3.00	3.65	1.01	78,667,442,537
Maldives	11.60	10.05	0.95	286,979,045
Myanmar	3.30	1.52	10.80	..
Sri Lanka	4.60	4.71	0.92	(6,113,101,359)
Vietnam	2.30	7.32	0.63	1,531,530,922

	(9) External Debt Stock (% of GNI)
Bangladesh	18.84
Malaysia	66.82
Singapore	..
Maldives	39.14
Myanmar	10.21
Sri Lanka	59.65
Vietnam	40.64

Notes: The data are based on 2015 unless noted otherwise; Asterisk (*) represents 2014 data; double dots (..) refer to "data non-available." ^{1,2}. At market prices (2010 constant \$); ³. % of total labour force (Modelled ILO estimates); ⁴. Consumer prices (annual %); Source: Authors' compilation based on the *World Development Indicators*.

2.2.10. Bangladesh, in terms of the size of national economic output, is the third largest, following Malaysia and Singapore. In terms of population, it is the largest country.

- 2.2.11. Unemployment and interest rates are managed in a modest level. However, inflation rate is relatively high compared to other competitor except Myanmar.
- 2.2.12. Although Bangladesh experiences trade balance deficit, external debt is well controlled. As shown in Table 3.7, Bangladesh's external debt stock as portion of GNI is only 18.84% while that of Malaysia and Sri Lanka is 66.82% and 59.65 respectively.
- 2.2.13. As the growth rate being one of the highest in the region and external debt well controlled, Bangladesh seems to have relatively **an ease of access to international capital market**, including institutional loans from multi-lateral banks, if needs for developmental loans arise.
- 2.2.14. Bangladesh, in terms of the size of national economic output, is the third largest, following Malaysia and Singapore. In terms of population, it is the largest country.
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2.3. Current Status of Tourism Development in the Competing Countries

2.3.1. Malaysia

2.3.7.1. Malaysia is a formidable global player in the world tourism sector. According to the WTO, it was ranked 4th in the Northeast and the Southeast Asian region in 2015, following China (1st), Thailand (2nd) and Hong Kong (3rd).⁴ Since 1997, Malaysia's worldwide marketing campaign, "Malaysia Truly Asia" led by the Malaysia Tourism Promotion Board (MTPB), resulted in a huge success, making Malaysia a global player in the world tourism market from a mere regional player.

2.3.7.2. **The development of tourism sector had begun in an effort to diversify the economy, thus to reduce Malaysia's dependency on the export industries.** The tourism in Malaysia has

⁴ UNWTO (2016) *UNWTO Tourism Highlights*, 2016 Edition, Madrid.

demonstrated strong growth during the last decades and international tourism receipts, in 2015, posted about US\$22 billion, or 9.06% of total export, (Figure 3.4).

2.3.7.3. **Key National Strategy for the Tourism Development:** The tourism sector is undoubtedly a key industry in Malaysian economy today. The momentum for the development of tourism sector has begun since the *2nd Malaysia Five-Year Plan*. Subsequent Malaysia Plans have recognised tourism as a key driver for national growth. In the *10th Malaysia Plan*, tourism was recognised as one of 12 national key economic areas.

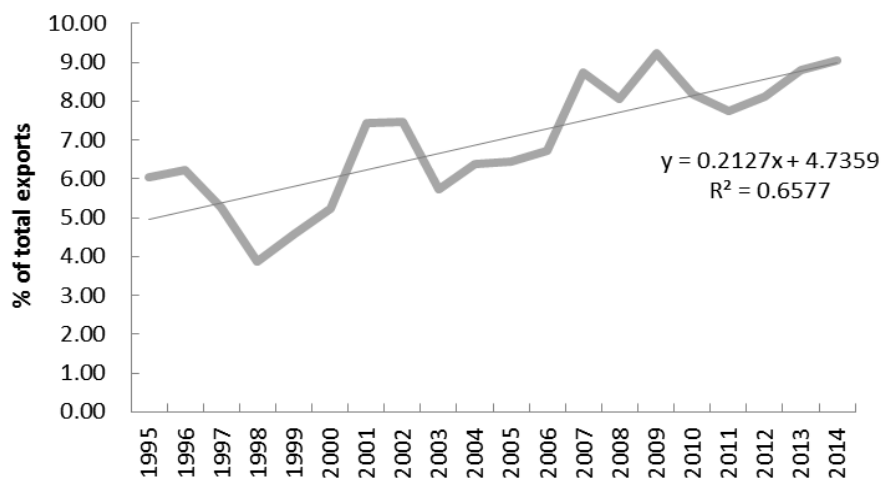


Figure 3.4. Malaysia: International Tourism Receipts (% of Total Exports), 1995-2014

Source: Authors' compilation from the World Bank data (2016).

2.3.7.4. As such, the success of the sector is in large part attributable to the government's determination, which has been reflected in all but the 1st Malaysia Plan. The budget allocation for tourism development in Malaysia has continuously increased since the 2nd Malaysia Plan (See Table 3.8). The Federal Government already allocated MYR1.2 billion (about US\$285 million) for the development of the tourism sector for 2016 alone.⁵

Table 3.8. Government Allocation for Tourism Development in Malaysia

Malaysia Five-Year Plan	Time Period	Plan Allocation (in MYR Million)
1st	1966-1970	No Allocation

⁵ The Government of Malaysia (2015) *2016 Budget*, Ministry of Finance, Putrajaya.

2nd	1971-1975	8.59
3rd	1976-1980	27.19
4th	1981-1985	40.00
5th	1986-1990	140.50
6th	1991-1995	533.90
7th	1996-2000	605.50
8th	2001-2005	1,009.00
9th	2006-2010	1,847.90

Source: Md. Motasim Ali Khan (2013) "Tourism Development in Malaysia: A Review on Government plans and Policies," p.51. Original data from Tan (1991) and the Government of Malaysia (2001, 2006) cited originally in Marzuki (2010).

2.3.7.5. Key National Policies for the Tourism Development: Besides the national-level strategy, the policies delineated in the following also meant to bolster the development of the tourism sector in Malaysia:

- National Tourism Policy (NTP)
- Economic Transformation Programme (ETP)
- National Cultural Policy
- National Tourism Policy (1992)
- National Ecotourism Plan (1996)
- Rural Tourism Mater Plan (2001)
- Second National Tourism Policy (2003-2010)

2.3.7.6. Key Incentives for the Tourism Development: Investment incentives in Malaysia consist mainly of the Pioneer Status and tax exemption. The legal bases for both direct and indirect tax incentives are based on the Promotion of Investments Act 1986, Income Tax Act 1967, Customs Act 1967, Sales Tax Act 1972, Excise Act 1976 and Free Zones Act 1990. These Acts cover investments not only for the manufacturing and agricultural industry, but also for tourism, including hotel, and other approved services sectors.

2.3.7.7. Those investors in tourism recognised with the "Pioneer Status" may have 70% of deduction on statutory income for 5 years from the commencement of operation. In addition, "unabsorbed capital allowances as well as accumulated losses incurred during the pioneer period can be carried forward and deducted from the post pioneer income of the company."⁶

2.3.7.8. For those investors investing in 4 and 5 star hotels are qualified for 60% Investment Tax Allowance (ITA), being granted for an allowance of 60% on the qualifying capital expenditure incurred within five years from the date on which the first qualifying capital

⁶ Malaysian Investment Development Authority, MIDA (2016) "Incentives in Service Sector," <http://www.mida.gov.my/home/incentives-in-services-sector/posts/> (Access date: 27 September 2016).

expenditure is incurred. Investing firms are allowed to offset the ITA against 70% of statutory income in the year of assessment. "Any unutilised allowances can be carried forward to subsequent years until fully utilised."⁷

- 2.3.7.9. Hotel developers undertaking new investments in 4-5 star hotels in Sabah and Sarawak are qualified for enhanced incentives as follows:

Pioneer Status, with income tax exemption of 100% of the statutory income for a period of 5 years. Unabsorbed capital allowances as well as accumulated losses incurred during the pioneer period can be carried forward and deducted from the post pioneer income of the company; or

*Investment Tax Allowance of 100% on the qualifying capital expenditure incurred within a period of five years. The allowance can be offset against 100% of the statutory income in each year of assessment. Any unutilised allowances can be carried forward to subsequent years until fully utilised.*⁸

- 2.3.7.10. In addition, the expenditure incurred for the training of human resource for hotel and hospitality industry would be subject to tax deduction.



⁷ Ibid.

⁸ Quoted from MIDA (2016).



Figure 3.5. Some Tourist Attractions in Malaysia
 Source: Images excerpted from Tourism Malaysia (2016)

Box 1: Genting Highlands

Perhaps the most formidable competition to, and an excellent conceptual benchmark of, the concept of Sabrang TP would be the Resort World Genting, or popularly known as Genting Highlands, a resort complex in Pahang, Malaysia, often referred to as the “Las Vegas of Malaysia.” It sits on the size of about 6,000ha about of 1,740 metres (5,710ft) above the sea-level in the Titiwangsa Mountains. The resort complex is owned by Genting Malaysia Berhad, subsidiary of Genting Group.

The Genting Highlands is an integrated indoor and outdoor theme-park and is vigorously promoted as the destination for “Fun at The Peak.” The resort complex is envisioning being the “City of Entertainment.” The complex consists of Casino, a high-speed gondola lift, shopping malls, restaurants and other attractions.

The idea of developing a resort complex dates back to the early 1960s. The significance of the development of the Genting Highlands is that it was a private sector initiative. About 7,000 rooms are available at the hotels in the complex; *Casino De Genting* offers 3,000 gaming machines and 500 table games. However, a new them park, 20th Century Fox World, is somewhat behind the schedule and will be open to public in the late 2017. It is a US\$300 million investment of a film inspired theme park. It is expected to add another tourism asset to Malaysia’s abundant tourism portfolio.

Under a transformation and renovation plan, the Genting Integrated Tourism Plan (GITP), a 10-year master plan of RM10.38 billion, Genting Group envisions to transform the Genting Highlands with wide array of entertainment options to lure tourists. It envisions attracting about 30 million tourists by 2020.



Genting Highlands in Malaysia
 Source: Images excerpted from Tourist Attractions in Singapore (2016)

2.3.2. Singapore

2.3.7.1. Although being a small city-state, Singapore, along with its neighbour, Malaysia, is leading tourism sector in Southeast Asia. In 2014, international tourism arrivals exceeded 11 million and international tourism receipts were more than US\$19 billion in current US dollar term, or about 3.3% of total exports. It is obviously one of formidable global player in the world tourism sector.

2.3.7.2. Due to some external shocks, such as the Asian Financial Crisis, the aftermath of the 9-11 occurred in the U.S., the Global Financial Crisis, etc., Singapore experienced significant decline in the growth of tourism sector in 1997, 1998, 2001, 2003, 2008 and 2009 (Refer to Figure 3.6).

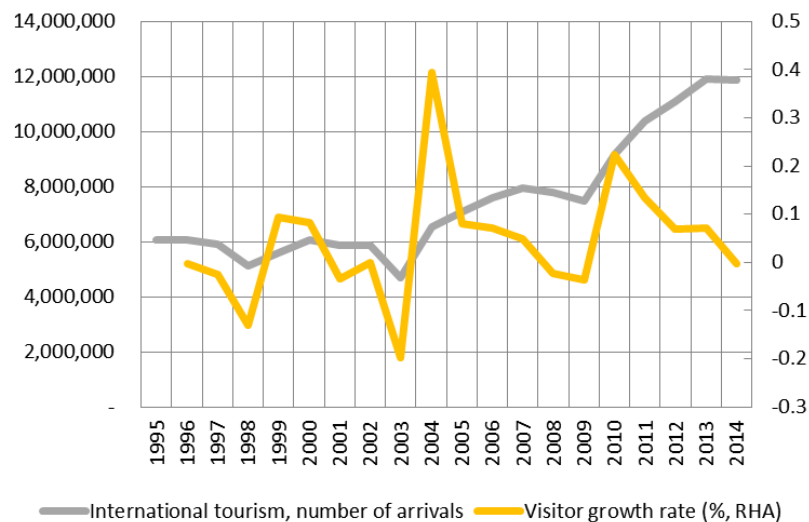


Figure 3.6. Singapore: International Visitor Arrival and Growth Rate, 1995-2014
Note: RHA=Right-hand axis; Source: Authors' compilation based on the World Bank data (2016).

2.3.7.3. However, Singapore's tourism sector demonstrated resilience by introducing new infrastructure for tourism, or new tourism assets if you will. The introduction of Resort World Sentosa and Marina Bay Sands in 2010 is the case in point (Figure 3.8). Obviously, these new tourism complexes have brought forth a significant positive impact on the increase in international visitors to Singapore particularly business and family travellers. Especially, the complexes have brought added strengths in Singapore's MICE businesses. In 2011, Singapore asserted the 1st place in the world in terms of the hosting of international conferences (See Table 3.9).



(a) Resort World at Sentosa



(b) Marina Bay Sands

Figure 3.7. Sentosa Resort World and Marina Bay Sands Hotel in Singapore

Source: Image (a) excerpted from google images.

Table 3.9. Number of International Conference Held

2009			2010			2011		
Rank	Country	No.*	Rank	Country	No.*	Rank	Country	No.*
1	USA	1,085	1	USA	936	1 →	Singapore	919
2	Singapore	689	2	Japan	741	2	USA	744
3	France	632	3 →	Singapore	725	3	Japan	598
4	Germany	555	4	France	686	4	France	557
5	Japan	538	5	Belgium	597	5	Belgium	533
6	Belgium	470	6	Spain	572	6	Korea	469
7	Netherlands	458	7	Germany	499	7	Germany	421
8	Austria	421	8	Korea	464	8	Austria	390
9	Italy	391	9	UK	375	9	Spain	386
11	Korea	347	10	Austria	362	10	Australia	329

Note: No. refers to the number of the hosting of international conferences; Source: Korea Tourism Organisation (2012).

2.3.7.4. In general, Singapore's tourism development strategy can be characterised by aggressive planning and marketing based on an

utmost objective of **creating a national economic sector from a “clean slate.”** The idea of developing the sector was conceived in the 1960s. Indeed, Singapore is a small city-state and in terms of tourism it had almost nothing to sell to visitors then: no scenic natural beauties, no urban infrastructure, etc.

2.3.7.5. Nevertheless, the policy-makers, in the early days of post-Independence, recognised the potential of tourism that could grow to a key industry of Singapore in the future.

2.3.7.6. Again in 1996, Singapore released the second ambitious plans that aimed to be the “capital of the world tourism,” as asserted in report titled *Tourism 21: Vision of a Tourism Capital*.

2.3.7.7. As is well known today, *Tourism 21* particularly stands on six strategic pillars. They are

- redefining tourism;
- reformulating the product;
- developing tourism as an industry;
- configuring new tourism space;
- partnering for success; and
- championing tourism.

2.3.7.8. Each strategy was supplemented by a set of directions that ultimately targeted Singapore to become a top tourist destination as well as a leading tourism business centre and tourism hub.

2.3.7.9. **Key National Policy/ies for the Tourism Development:** Undoubtedly, *Tourism 21: Vision of a Tourism Capital* initiated and implemented by the Singapore Tourism Promotion Board (STPB)⁹ is the roadmap for Singapore to reach its goals to be (1) a top tourist destination, (2) a leading tourism business centre and (3) a tourism hub.

2.3.7.10. **Key Incentives for the Tourism Development:** Main incentives for the development of tourism in Singapore are double tax deduction programmes. However, these incentive programmes are not applicable to those firms that are already having tax incentives from other incentive programmes, such as:

- **Tax incentives under the Income Tax Act:** For example, Land Intensification Allowance, Headquarters tax incentives, and Global trader programme; and
- **Tax incentives under the Economic Expansion Incentives (Relief from Income Tax) Act:** Pioneer industries, Pioneer service companies, Development and expansion incentive, Investment Allowance.

⁹ It is now known as Singapore Tourism Board (STB).

2.3.7.11. The incentives provide concessionary tax rates, ranging from 0%-15%. However, the concessionary tax rates are not universal; they are usually determined by Economic Development Board (EDB) for economic impacts in Singapore, i.e. linkage effect, job creation, etc.

2.3.7.12. Tax holidays are also ranging from 5-10 years. Tax credits can generally be carried forward until exhausted within the designated period.



Figure 3.8. Some Tourist Attractions in Singapore

Source: Images excerpted from Tourist Attractions in Singapore (2016)

Box 2: Sentosa Island

Sentosa Island is managed by the Sentosa Development Corporation (SDC), which was established in 1972 as a Statutory Board under the Ministry of Trade and Industry. Sentosa has enhanced its proposition as an attractive island resort by offering a compelling mix of attractions, hotels, dining facilities and year-round calendar of events since 1970's.

The island has over the years become a premier resort destination with an exciting array of themed attractions, award-winning spa retreats, lush rainforests, golden sandy beaches, resort accommodations, world-renowned golf courses, a deep-water yachting marina and luxurious residences – making Sentosa a vibrant island resort with multi-faceted appeal catering to both leisure and business visitors.¹⁰

The 500-hectare island resort is home to an exciting array of themed attractions, award-winning spa retreats, lush rainforests, golden sandy beaches, resort accommodations, world-renowned golf courses, a deep-water yachting marina and luxurious residences. Also, Sentosa Cove, an exclusive oceanfront and residential enclave bustling with some 2,000 homes, romantic quayside restaurants, retail and specialty shops and Sentosa Golf Club are also key tourist attractions in Sentosa Island.¹¹

The number of visitors in Sentosa island is reached 19.4 million in 2014, and it is expected to be increased due to SDC's programs and facilities such as KidZania Singapore and Singapore Cable Car Sky Network to be introduced.¹²



Sentosa Island in Singapore

Source: Images excerpted from Google Image, Sentosa Island (2016)

2.3.3. Maldives

2.3.7.1. Maldives has emerged one of the most favourite tourist destinations today, as evidenced by a continuous increase in international tourist arrivals. In 2013, the number of international tourist arrivals passed 1 million (Figure 3.9).

¹⁰ Sentosa annual report 2015 (2015), Sentosa Development Corporation

¹¹ Sentosa Islands Homepage, <http://www.sentosa.com.sg/>

¹² Sentosa Development Corporation (2015) *Sentosa annual report 2015*, Singapore.

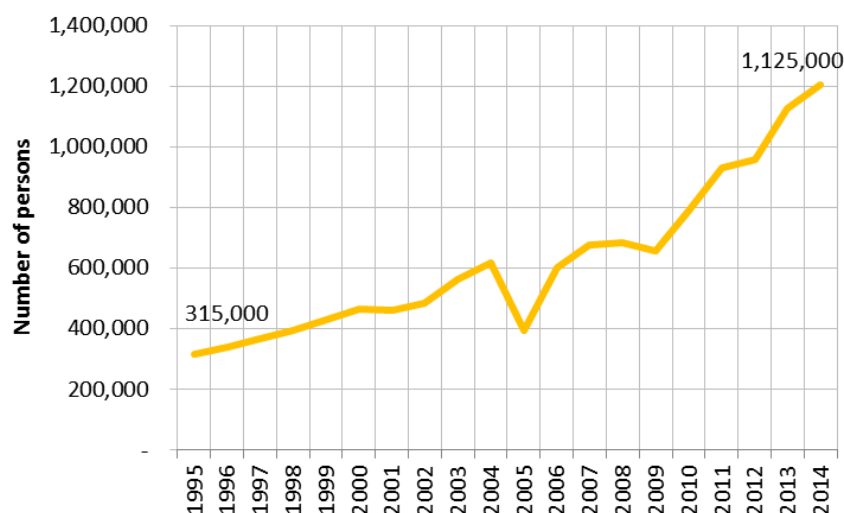


Figure 3.9. Maldives: Change in the Number of International Tourist Arrivals, 1995-2014

Source: World Bank (2016)

Table 3.10. Maldives: Major Source Markets and International Tourist Arrivals, 2001 and 2011

Source market	Arrivals (2001)	% of total arrivals	Arrivals (2011)	% of total arrivals
Germany	66	14	91	10
UK	77	17	105	11
Italy	116	25	83	9
France	31	7	60	6
Russia	4	1	64	7
Other Europe	70	15	135	15
Total Europe	364	79	538	58
Japan	42	9	36	4
China	7	2	199	21
Korea	5	1	25	3
India	8	2	31	3
All other markets	35	7	102	11
Overall total	461	100	931	100

Note: Unit for arrivals in thousand ('000); Source: Maldives, The Government of (2012) *Fourth Tourism Master Plan*, Ministry of Tourism, Art and Culture, Maldives.

- 2.3.7.2. In fact, tourist arrivals have doubled in a 10-year period. The arrivals grew to 931,000 in 2011 from 461,000 in 2001.
- 2.3.7.3. To continue the growth of tourism, Maldives' Ministry of Tourism has formulated and implanted diverse development policies for both short and long term tourism industry development.
- 2.3.7.4. **Key National Policies for the Tourism Development:** The Master Plan established since 1984 delineated in the following are for developing tourism at a national level, and carry out long-term

planning, development, monitoring, and regulatory functions to ensure a sustainable tourism industry for the benefit of the people of the Maldives.

- First Tourism Master Plan (1984-1993)
- Second Tourism Master Plan (1996-2005)
- Third Tourism Master Plan (2007-2011)
- Forth Tourism Master Plan (2013-2017)

2.3.7.5. In every year, the Ministry of Tourism publishes a yearbook that summarises the statistics on tourists by country, the tourism contribution on the economy of Maldives and the forecasts through the analysis on the average stay and the expected growth sectors.

2.3.7.6. Also, the policies and reports on eco-friendly tourism are being developed to address the global climate change issues. These are:

- Economic Costs and Benefits of Climate Change Impacts and Adaptation to the Maldives Tourism Industry (2015)
- Baseline Analysis of Adaptation Capacity and Climate Change Vulnerability Impacts in the Tourism Sector (2015)
- Introduction of Financial Instruments to Cover and Transfer the Risks of Climate Hazards in the Sector of Tourism for the Maldives (2015)
- Gaps and Disincentives that Exist in the Political Laws and Regulations which Act as Barriers to Investing in Climate Change Adaptation in the Tourism Sector of the Maldives (2015)
- Assessment of Solid Waste Management Practices and its Vulnerability to Climate Risks in Maldives Tourism Sector (2015)
- Addressing Barriers to Effective Climate Change Adaptation in the Water and Wastewater Services in the Maldives Tourist Resorts and Dependent Communities (2015)

Key Incentives for the Tourism Development: According to the Maldives Tourism Act, Main incentives for the development of tourism in Maldives are land leasing period extension, exemption of import duties on materials imported for the construction of tourist resorts or tourist hotels, application of Maldives Foreign Investments Act for foreign investors to have no Foreign Exchange Restrictions, no restrictions on the repatriation of earnings and capital proceeds, and right to 100% foreign ownership.



Figure 3.10. Some Tourist Attractions in Maldives

Source: Images excerpted from *Tourist Attractions in Maldives* (2016)

2.3.4. Myanmar

- 2.3.4.1 Experiencing the rapid growth of global tourism, the Ministry of Hotels and Tourism is working towards the sustainable tourism development to attain the golden age of the tourism industry. In order to address all forms of challenges that hinder the ultimate goal of tourism development, the magnitude of challenges ahead and areas that require greater efforts to build the tourism sector are handled collectively through strong public private partnership.
- 2.3.4.2 There is a considerable emphasis on developing and managing tourism in line with the Government's reform strategies and economic liberalisation to achieve the goals of the Master Plan to maximize the tourism's contribution to national employment and income generation while ensuring the equal distribution of social and economic benefits of tourism. The Master Plan will be used as a roadmap to shape the future of tourism in Myanmar with its clear vision, guiding principles, and strategic programs in the long-term implementation framework.
- 2.3.4.3 **Key National Policies for the Tourism Development:** Ministry of Hotels and Tourism and the Myanmar Tourism Federation recognised that the rapid tourism development will succeed in boosting the sector. In response to this challenge, the Myanmar's Ministry of Hotels and Tourism established 'Myanmar's

Responsible Tourism Policy' in 2012 for the long-term success for sustainable tourism development in Myanmar.

2.3.4.4 Also, Under the “Myanmar’s Responsible Tourism Policy,” “Myanmar Tourism Master Plan (2013-2020)” was prepared in 2013. It emphasises developing and managing tourism in line with the Government’s reform strategies and economic liberalisation to achieve the goals of the Master Plan. It also attempts to maximise the tourism sector’s contribution to national employment and income generation while ensuring the equal distribution of social and economic benefits.

2.3.4.5 *The Master Plan* includes several activities to strengthen tourism-related social and environmental safeguards which enhance the economic development through tourism while minimizing the negative environmental impacts. The key objectives under this program are:

- Develop Innovative and Integrated Approach to Destination Planning and Management;
- Strengthen Tourism-Related Social and Environmental Safeguards;
- Improve Zoning In Tourism Destinations;
- Develop Adaptation Frameworks and Strategies on Tourism and Climate Change;
- Promote Innovative and Green Technologies in Tourism; and
- Strengthen Community Involvement in Tourism

2.3.4.6 Additionally, the Ministry of Hotels and Tourism and the Ministry of Environmental Conservation and Forestry are working together to shift from cultural and urban assets focused tourism to globally unique ecosystems, now known as “Myanmar Ecotourism Policy and Management Strategy.” This involves using eco-tourism as a driving force to strengthen the management of Myanmar’s expanding protected area network.

2.3.4.7 As such, Myanmar will, based on its recent political opening of the country, be highly likely emerge as a formidable competitor in regional tourism industry, as it has diversified assets for tourism around the country.

2.3.4.8 **Key Incentives for the Tourism Development:** Ministry of Myanmar has established Myanmar Special Economic Zone (SEZ) Law in 2014, and the SEZ law include incentives and to investors and developers in the tourism sector. Incentives under the Myanmar SEZ Law include:¹³

¹³ PWC (2016) “Corporate - Tax credits and incentives,” <http://taxsummaries.pwc.com/uk/taxsummaries/wwts.nsf/ID/Myanmar-Corporate-Tax-credits->

(For investors)

- Income tax holidays for the first seven years starting from the date of commercial operation in respect of those investment businesses operated in an exempted zone or exempted zone businesses.
- Income tax holidays for the first five years starting from the date of commercial operation in respect of those investment businesses operated in a business promoted zone or other business in a promoted zone.
- 50% income tax relief for the investment businesses operated in an exempted zone and a business promoted zone for the second five-year period.
- For the third five-year period, 50% income tax relief on the profits of the business if they are maintained for re-investment in a reserve fund and re-invested therein within one year after the reserve is made.
- Exemption on customs duty and other taxes for raw materials, machinery and equipment, and certain types of goods imported for investors in exempted zones; whereas, for investors in prompted zones, exemption on customs duty and other taxes for the first five years in respect of machinery and equipment imported that are required for construction starting from the date of commercial operation, followed by 50% relief of customs duty and other taxes for a further five years.

(For developers)

- Income tax holidays for the first eight years starting from the date of commercial operation.
- 50% income tax relief for the second five-year period.
- For third five-year period, 50% income tax relief on the profits of the business if they are maintained for re-investment in a reserve fund and re-invested therein within one year after the reserve is made.

2.3.4.9 Exemption on customs duty and other taxes for raw materials, machinery and equipment, and certain types of goods imported.



Figure 3.11. Some Tourist Attractions in Myanmar

Source: Images excerpted from Tourist Attractions in Myanmar (2016) Ministry Of Hotels and Tourism (<http://www.myanmar-tourism.org/>) (Access date: 25 September 2016)

2.3.5. Sri Lanka

- 2.3.5.1. Since the establishment of Ceylon Tourist Board in 1966, the main responsibility has been within revitalization of the tourism industry. With the aim to position Sri Lanka as the most treasured travel destination in Asia, enhancing synergy and cooperation among the Tourism industry stakeholders are mandatory.
- 2.3.5.2. Through monitoring the progress and implementation of annual performance and strategic plans, the key strengths of the country were revealed: diversity, compactness and authenticity. This will

be reflected in the tourism sector in order to transform Sri Lankan tourism sector to be the largest foreign exchange earner in the economy by 2020.

2.3.5.3. The main trend is from beaches to culture, nature and adventure-related activities.

2.3.5.4. **Key National Policies for the Tourism Development:** The specific strategies related to tourism in the Five Year Master Plan are discussed under the following five main areas in focus:

- Creating an environment conducive for tourism
- Attracting the right type of tourists to the country
- Ensuring that departing tourists are happy
- Improving domestic tourism
- Contributing towards improving the global image of Sri Lanka

2.3.5.5. **Key Incentives for the Tourism Development:** tourism, recreation, and leisure industries had been designated as the investment promoting sector in Sri Lanka.

2.3.5.6. Sri Lanka provides several incentives and benefits as described below:

- Corporate Tax Deduction from 28% to 15% for 15 years;
- Tax Exemption in Importing goods during project period; and
- Deduction of Income Tax to Foreign employees from 24 % to 15% for 3 years

2.3.5.7. Furthermore, for the project that has the investment cost is higher than 500 million Rupee (approximately US\$3.4 million), additional benefits such as income tax exemption and no application of the Foreign Exchange Management Act will be applied.

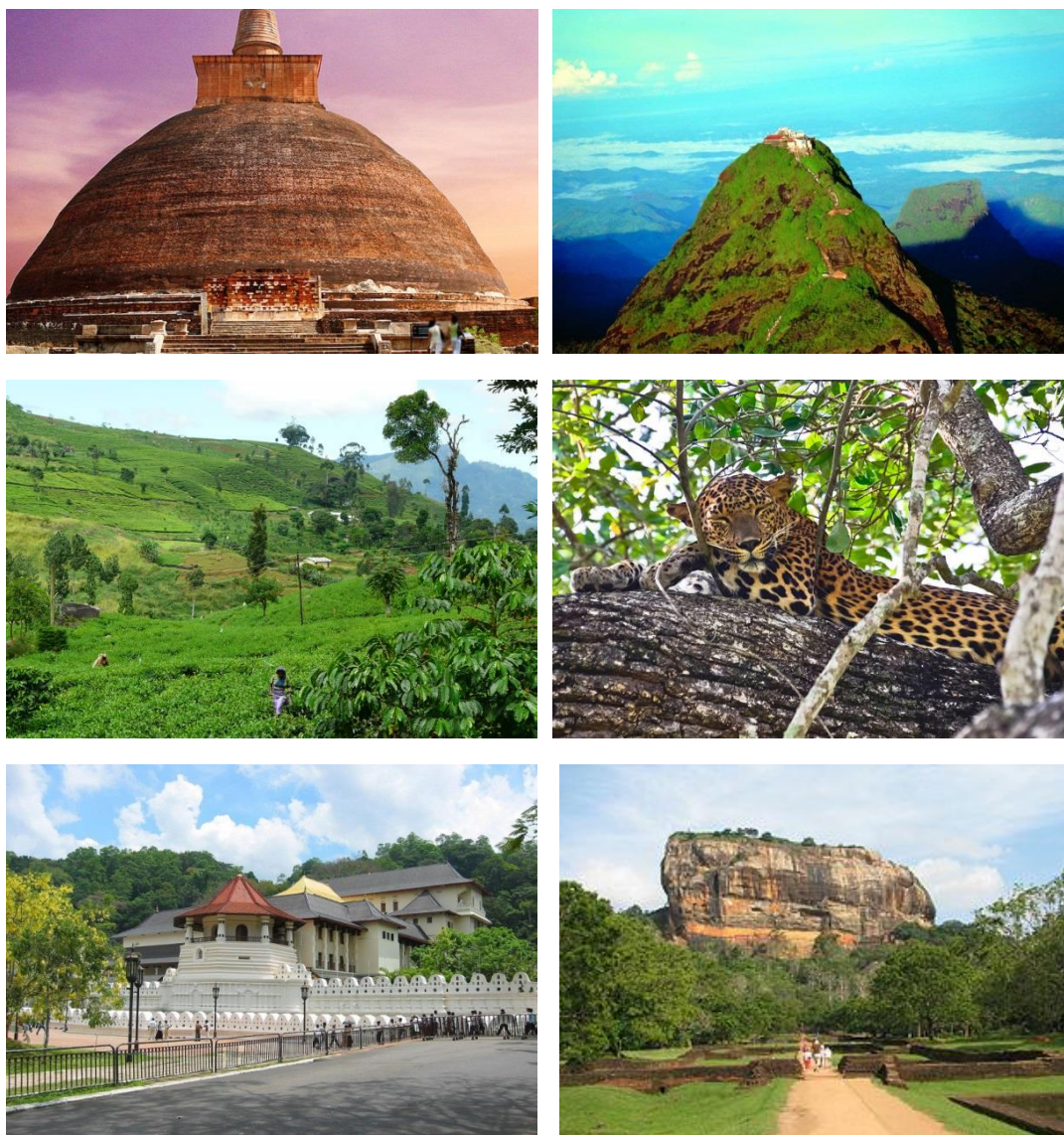


Figure 3.12. Some Tourist Attractions in Sri Lanka

Source: Images excerpted from *Tourist Attractions in Sri Lanka* (2016) Sri Lanka Tourism Development Authority

2.3.6. Vietnam

- 2.3.7.1. The Law on Tourism (*Luat Du Lich*) in Vietnam was passed on June 14, 2005 by the 11th National Assembly of the Socialist Republic of Vietnam at its 7th session, taking effect as of January 1, 2006. This Law provides for tourism resources and activities; rights and obligations of other tourists, organizations and individuals engaged in tourism-related activities.
- 2.3.7.2. The specific objectives are to develop 7 tourism zones with specific tourism products; 46 national tourist areas; 41 national tourist spots; 12 tourist cities and other key tourist spots (See Figure 3.12).



Figure 3.13. Tourism Destinations in Vietnam

Source: Image obtained from the Vietnam National Administration of Tourism (2015) "Famous Destinations," <http://www.vietnamtourism.com/en/index.php/tourism/cat/05> (Access date: 02 Sep. 2016).

2.3.7.3. The main directions of Viet Nam's tourism industry include:

- developing tourism markets;
- developing both domestic and international tourism, inbound and outbound tourism;
- focusing on tourists whose purpose of trip is travel and leisure with long stay and high expenditure
- developing tourism products;
- organizing tourism zones;
- boosting investment for tourism development; and
- tourism business management.

2.3.7.4. Regarding solutions, the plan focuses on mechanisms, policies; mobilization of tourism investment; promotion and advertisement; organization and management of the plan; application of science and technology; international cooperation; resources and tourism

environment protection and solutions to cope with impact of climate change.

2.3.7.5. Also, the Government of Vietnam with the assistance of the Environmentally and Socially Responsible Tourism Programme (ESRT), has developed the “Vietnam Tourism Marketing Strategy to 2020 and Action Plan 2013-2015” as one way in which to guide the development and marketing of tourism in a controlled and sustainable manner. The Marketing Strategy reinforces the Government’s Tourism Development Strategy objectives for the tourism sector in Vietnam: (i) **Economic:** attract 10-10.5 million international visitors by 2020, and serve 48 million domestic tourists, increase tourism revenue to US\$ 18-19 billion by 2020; (ii) **Social:** increase numbers employed in tourism to over 3 million, of which 870,000 are direct jobs, ensure tourism development contributes to the preservation and promotion of Vietnam’s cultural values, improving the lives of its people and (iii) **Environmental:** develop green tourism activities associated with preserving and promoting the value of natural resources and environmental protection.¹⁴

2.3.7.6. **Key Incentives for the Tourism Development**¹⁵: In case of Chan May-Lang Co Economic Zone, it is developed in the model of the economic complex with “open” policies, operated by separate legal framework, convenient investment and business environment; therefore, once investing in the economic zone, the investors are given preferential policies. For example, the key incentives Chan May-Lang Co Economic Zone provided are as follow:

- **Income Tax Deduction:** Investors pay corporate income tax rate of 10% within 15 years, exempted from corporate income tax for 4 years from having taxable income and reduced by 50% for next 9 years.
- **Personal Income Tax Deduction:** For the personal income tax, the investors are reduced by 50% of personal income tax to be paid for the ones working in Chan May - Lang Co Economic Zone who have income subject to direct taxation.
- **Exemption of Import Duties:** Investors are exempted from import duties for equipments, machines, materials, means of transport and other commodities used for carrying out the investment projects in accordance with the Law on Import and Export Tax.

¹⁴ Ministry of Culture, Sports and Tourism (2012), Press Release: Professionalising Tourism Marketing,

¹⁵ Vietnam Trade Promotion Agency (2013)



Figure 3.14. Some Tourist Attractions in Viet Nam
 Source: Images excerpted from *Tourist Attractions in Viet Nam* (2016)

Box 3: Chan May-Lang Co Economic Zone

Chan May-Lang Co Economic Zone (27,108ha) is regarded as one of 7 tourism zones of the country. Positioned in two large cities of the Middle such as Hue and Da Nang City, about 36 km from Phu Bai international airport, 32 km from Da Nang international airport, very near to world cultural heritages (Hue Ancient Capital, Hoi An Old Street, My Son Holy Land, Lang Co sea—one of 30 most beautiful bays in the world).

According to the statistical data of 2013, there have been 34 projects granted with licenses with total registered investment capital of approximately US\$2.28 billion. Of which, there are 10 FDI projects with total registered capital of US\$1.31 billion (including 5 projects have been put into operations), 24 domestic projects with total registered capital of approximately US\$793 billion.

The construction project for infrastructure on the project site such as electricity system,

water plant, and communication system has been installed/being installed.¹⁶

As Chan May Port's Wharf No. 1 is operational in 2015, there has been increasing number of tourist in Chan May-Lang Co Economic Zone and expecting 150,000 foreign tourists incoming by the end of 2016.¹⁷



Chan May - Lang Co Economic Zone in Viet Nam

Source: Images excerpted from google images (2016)

2.3.7. Direct Competition to Sabrang TP

2.3.7.1. As discussed earlier, a large number of countries around the world, especially developing countries, are being attracted to actively develop their tourism industry today. For, they realised that the world tourism industry is not only one of the most fast growing ones, but it also contributes to national economy in many ways. In general, tourism industry renders an opportunity to develop forward and backward linkages and employment generation. Indeed, its economic contribution to national economy cannot go unnoticed. In Malaysia, the direct contribution of tourism on GDP is estimated at about 12.5%. In Vietnam, it is about 7.5%; Singapore about 5%. In Maldives, it is about 34%.

2.3.7.2. This implies that the magnitude of competition for developing tourism assets and attracting foreign tourists is increasing. This, in turn, will affect the Sabrang EZ development project tremendously, as it has to compete with not only exiting well-established regional tourist destinations, such as Genting Highlands in Malaysia, Sentosa Islands in Singapore, pristine islands and beaches in Maldives, but also newly emerging tourism complexes, such as seven tourism economic zones in Vietnam, Rumassala Eco-Tourism Zone in Sri Lanka, and Bagan in Myanmar.

2.3.7.3. As reviewed in the preceding sections, the competitors are also actively developing their competitive advantages to distinguish their tourism assets from others, including the Sabrang EZ. Then,

¹⁶ Vietnam Trade Promotion Agency (2013)

¹⁷ Viet Nam National Administration of Tourism (<http://vietnamtourism.gov.vn/english>)

what are the key competitive advantages that they have developed? Perhaps, the **key competitive advantages** they developed, or are developing, can be identified as follows:

Table 3.11. Key Competitive Advantages of the Competitors to Sabrang TP

Country	Direct Competition to Sabrang	Key Competitive Advantage
Malaysia	Genting Highlands	Well-harmonised complex attractions (i.e. hotels, theme parks, casino, etc.)
Singapore	Sentosa Island	Well-harmonised complex attractions (i.e. hotels, theme parks, casino, etc.), Hub of international traffic
Myanmar	Bagan	Rich cultural heritages, price advantage
Maldives	Whole islands	Pristine beaches known for relaxation, value for money
Sri Lanka	Beaches, Rumassala Eco-Tourism Zone	Business friendly environment, relatively excellent infrastructure among Southwest Asian nations
Vietnam	7 Tourism EZ	Strong government initiatives, relative price advantage, excellent infrastructure

2.3.7.4. In the business environment of this magnitude, it is not too difficult to imagine that Sabrang must develop its own competitive advantages to differentiate itself from its competitors. It will be elaborated in specific in the later chapter set aside for marketing strategy.

2.3.7.5. The preceding findings and discussions are summarised as in Table 3.11.

Table 3.12. Strategy, Policy and Incentives: Selected Countries

Indicator	Malaysia	Singapore	Maldives	Myanmar	Sri Lanka	Vietnam
1 GDP	329,902,207,320	287,017,968,464	2,929,826,239	..	76264645402	154,508,616,328
2 per capita GDP	10,877	51,855	7,161	..	3,638	1,685
3 GDP Growth Rate (%)	4.95	2.01	1.51	6.99	4.79	6.68
4 Population	30,331,007	5,535,002	409,163	53,897,154	20,966,000	91,703,800
5 Un-employment	2.00	3.00	11.60	3.30	4.60	2.30
6 Real Interest Rate (%)	4.99	3.65	10.05	1.52	4.71	7.32
7 Inflation (%)	2.10	1.01	0.95	10.80	0.92	0.63
8 External Balance on Goods and Services (Current US\$)	22,638,330,559	78,667,442,537	286,979,045	..	-6,113,101,359	1,531,530,922
9 International Tourism, Arrivals	27,437,000	11,864,000	1,205,000	3,081,000	1,527,000	7,874,000
10 International Tourism, Receipt (Current US\$)	22,600,000,000	19,203,000,000	2,645,000,000	1,613,000,000	3,278,000,000	7,330,000,000
11 International Tourism, Receipt (% of total export)	9.06	3.26	79.76	12.13	19.59	4.55
12 Key National Strategy for the Tourism Development	Malaysia Five-Year Plan	Tourism 21: Vision of a Tourism Capital	The Master Plan	The Master Plan • Myanmar Eco-Tourism Policy and Strategy	The Five Year Master Plan	The Law on Tourism

Indicator	Malaysia	Singapore	Maldives	Myanmar	Sri Lanka	Vietnam
13 Key National Policies for the Tourism Development	<ul style="list-style-type: none"> • National Tourism Policy (NTP) • Economic Transformation Programme (ETP) • National Cultural Policy • National Tourism Policy (1992) • National Ecotourism Plan (1996) • Rural Tourism Mater Plan (2001) • Second National Tourism Policy (2003-2010) 	<ul style="list-style-type: none"> • Goals: (1) a top tourist destination, (2) a leading tourism business centre and (3) a tourism hub 	<ul style="list-style-type: none"> • Economic Costs and Benefits of Climate Change Impacts and Adaptation to the Maldives Tourism Industry • Baseline Analysis of Adaptation Capacity and Climate Change Vulnerability Impacts in the Tourism Sector • Introduction of Financial Instruments to Cover and Transfer the Risks of Climate Hazards in the Sector of Tourism for the Maldives • Gaps and Disincentives that Exist in the Political Laws and Regulations which Act as Barriers to Investing in Climate Change Adaptation in the Tourism Sector of the Maldives • Assessment of Solid Waste Management Practices and its Vulnerability to Climate Risks in Maldives Tourism Sector • Addressing Barriers to Effective Climate Change Adaptation in the Water and Wastewater Services in the Maldives Tourist Resorts and Dependent Communities. 	<ul style="list-style-type: none"> • Myanmar Eco-Tourism Policy and Management Strategy 	<ul style="list-style-type: none"> • Five main areas in focus: • Creating an environment conducive for tourism • Attracting the right type of tourists to the country • Ensuring that departing tourists are happy • Improving domestic tourism • Contributing towards improving the global image of Sri Lanka 	<ul style="list-style-type: none"> • Objectives: • To develop 7 tourism zones with specific tourism products • To develop 46 national tourist areas • 41 national tourist spots • 12 tourist cities and other key tourist spots • Main direction: • developing tourism markets; • developing both domestic and international tourism, inbound and outbound tourism; • focusing on tourists whose purpose of trip is travel and leisure with long stay and high expenditure • developing tourism products; • organizing tourism zones; • boosting investment for tourism development; and • tourism business management

Indicator	Malaysia	Singapore	Maldives	Myanmar	Sri Lanka	Vietnam
14 Key Incentives for the Tourism Development	<ul style="list-style-type: none"> • The Pioneer Status: 70% of deduction on statutory income for 5 years • Unabsorbed capital allowances as well as accumulated losses incurred during the pioneer period can be carried forward and deducted from the post pioneer income. • For those investors investing in 4 and 5 star hotels are qualified for 60% Investment Tax Allowance (ITA), being granted for an allowance of 60% on the qualifying capital expenditure incurred within five years from the date on which the first qualifying capital expenditure is incurred. • Investing firms are allowed to offset the ITA against 70% of statutory income in the year of assessment. "Any unutilised allowances can be carried forward to subsequent years until fully utilised. • The expenditure incurred for the training of human resource for hotel and hospitality industry would be subject to tax deduction the expenditure incurred for the training of human resource for hotel and 	<p>Double tax deduction programmes (except those who are benefitted from</p> <ul style="list-style-type: none"> • Tax incentives under the Income Tax Act: For example, Land Intensification Allowance, Headquarters tax incentives, and Global trader programme; and • Tax incentives under the Economic Expansion Incentives (Relief from Income Tax) Act: Pioneer industries, Pioneer service companies, Development and expansion incentive, Investment Allowance) • Concessionary tax rates, ranging from 0%-15% • Tax holidays 0-15% for 5-10 years • Tax credits can generally be carried forward until exhausted within the designated period 	<ul style="list-style-type: none"> • Land leasing period extension, • Exemption of import duties on materials imported for the construction of tourist resorts or tourist hotels • Application of Maldives Foreign Investments Act for foreign investors to have no Foreign Exchange Restrictions, no restrictions on the repatriation of earnings and capital proceeds • Right to 100% foreign ownership 	<p>(For investors)</p> <ul style="list-style-type: none"> • Income tax holidays for the first seven years starting from the date of commercial operation in respect of those investment businesses operated in an exempted zone or exempted zone businesses. • Income tax holidays for the first five years starting from the date of commercial operation in respect of those investment businesses operated in a business promoted zone or other business in a promoted zone. • 50% income tax relief for the investment businesses operated in an exempted zone and a business promoted zone for the second five-year period. • For the third five-year period, 50% income tax relief on the profits of the business if they are maintained for re-investment in a reserve fund and re-invested therein within one year after the reserve is made. • Exemption on customs duty and other taxes for raw materials, machinery and equipment, and certain types of goods imported for investors in 	<ul style="list-style-type: none"> • Corporate Tax Deduction from 28% to 15% for 15 years • Tax Exemption in Importing goods during project period • Deduction of Income Tax to Foreign employees from 24 % to 15% for 3 years • For the project that has the investment cost is higher than 500 million Rupee (approximately US\$3.4 million), additional benefits such as income tax exemption and no application of the Foreign Exchange Management Act will be applied. 	<ul style="list-style-type: none"> • Income Tax Deduction: Investors pay corporate income tax rate of 10% within 15 years, exempted from corporate income tax for 4 years from having taxable income and reduced by 50% for next 9 years. • Personal Income Tax Deduction: For the personal income tax, the investors are reduced by 50% of personal income tax to be paid for the ones working in Chan May-Lang Co Economic Zone who have income subject to direct taxation. • Exemption of Import Duties: Investors are exempted from import duties for equipments, machines, materials, means of transport and other commodities used for carrying out the investment projects in accordance with the Law on Import and Export Tax.

		hospitality industry would be subject to tax deduction			exempted zones; whereas, for investors in prompted zones, exemption on customs duty and other taxes for the first five years in respect of machinery and equipment imported that are required for construction starting from the date of commercial operation, followed by 50% relief of customs duty and other taxes for a further five years.		
					<p>(For developers)</p> <ul style="list-style-type: none"> • Income tax holidays for the first eight years starting from the date of commercial operation. • 50% income tax relief for the second five-year period. • For third five-year period, 50% income tax relief on the profits of the business if they are maintained for re-investment in a reserve fund and re-invested therein within one year after the reserve is made. 		
15	Direct competition to Sabrang	Genting Highlands	Sentosa Islands	Whole Islands	Bagan	Beaches (coast line of 1,600km), Rumassala Eco-Tourism Zone (planned)	7 Tourism Zones (planned)
16	Competitive Advantages	Complex attractions	Complex attractions. A hub of international traffic, both air and sea	Pristine beaches known for relaxation	Rich cultural heritages, price advantage	Business friendly environment, relatively excellent infrastructure among Southwest Asian nations	Strong government support, relative price advantage, relatively excellent infrastructure

Source: Authors' compilation

3. DEMAND ESTIMATES

3.1. Forecasting Demands: Model Estimates

- 3.1.1. As discussed in the previous chapter, the Sabrang Tourism Park (TP) will be allocated by such facilities as to support the tourism, sports, amusement, and entertainment activities and the like.
- 3.1.2. The estates of the TP will be placed by hotels and resort buildings, restaurants, shopping malls, a golf-course, a marina, hospital, etc. A summary of the facilities that will be introduced in the Sabrang TP is presented in the following table:

Table 3.13. Facilities and Programmes to be Introduced in the Sabrang TP

No.	Facility	Programme
1	Casino	Casino for international tourists
2	Ocean Park	Water park
3	Golf course	18-hole golf course, Club house, Golf school
4	Activity Facilities	Surfing, Bungee jumping, Buggy car driving, Scuba diving, Hang gliding, 3D theatre, 3D aquarium
5	Eco-Tourism Facilities	Trekking, Cycling, Traditional culture experience (dance performance, Bangladeshi cuisine, etc.)
6	Shopping mall	Duty-free shopping, Food avenue, Craft-art and souvenir shops
7	Hotels and Resort	5-Star hotels, Condominium, Family resort
8	Special Facilities	Hospital, Outdoor theatre, Helipad, Prayer's room
9	Residential	Apartment
10	Business	Business Centre
11	Marina	Marina

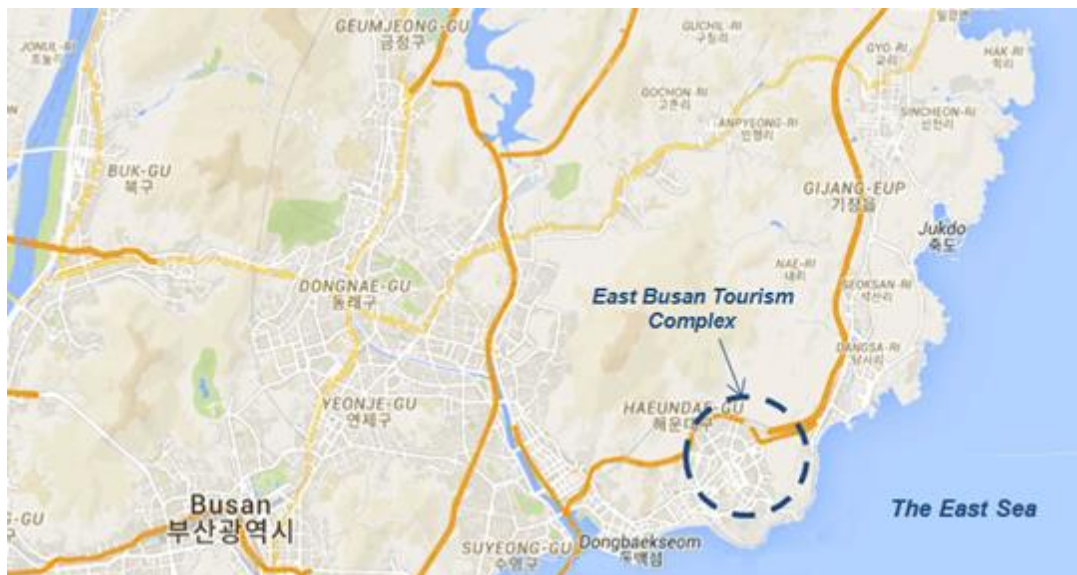
- 3.1.3. These programmes will be hosted in about a 2-million m² estate. The placement and allocation of respective programmes will be discussed in details in the land-use and zoning plans section of the Master Planning chapter.

3.2. Methodology Used

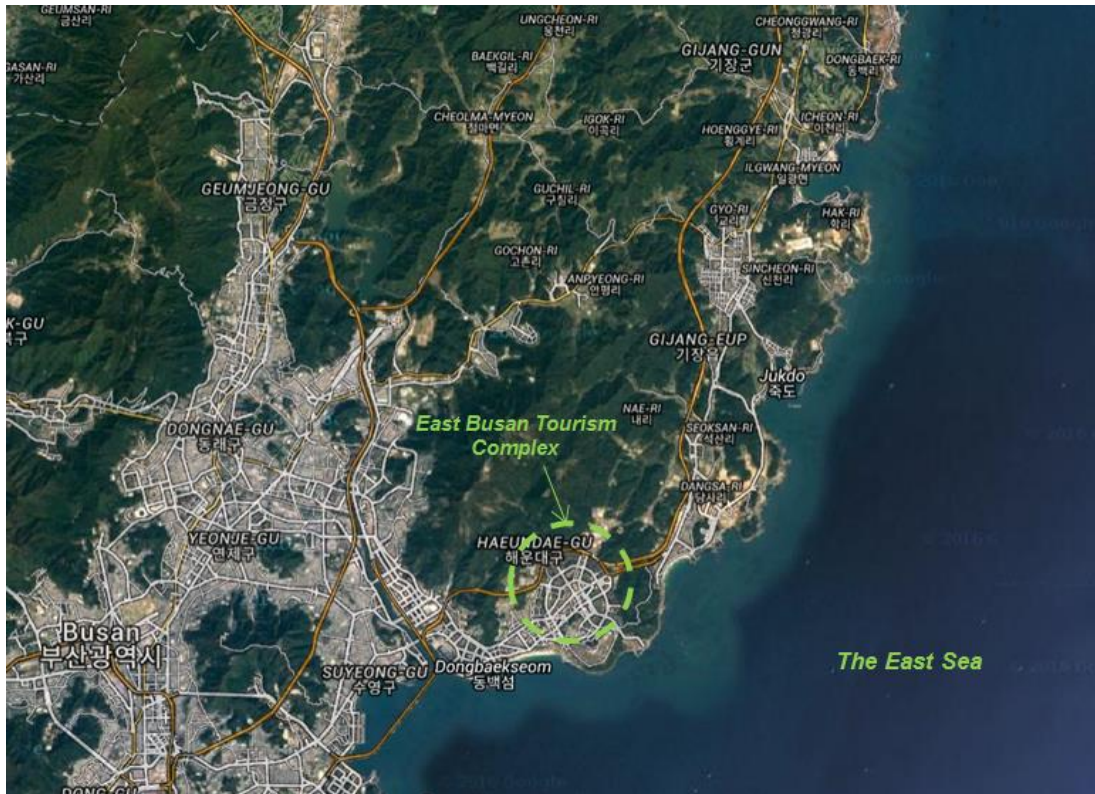
- 3.2.1. As the development of the Sabrang TP is yet in its conceptual design stage, so that the relevant data that can be employed in the estimation are practically absent, the consultancy team uses the benchmarking methods in order to determine crucial attributes for the demand

estimates—such as the international arrivals, the accumulated number of tourists, the maximum number of tourist, and the like.

- 3.2.2. Examining the sites for the tourism industry around the world, which share similar attributes with the Sabrang TP, such as Cancun in Mexico, Saemangeum in Korea, Phuket in Thailand, etc., the consultancy team has finally decided to adopt the case of the development of the Dong Busan Tourism Complex, or East Busan Tourism Complex in Busan area, a southern port-city, in Korea (Refer to Figure 3.3.). For, one: it too is in the conceptual development stage. Two: its geographic environment is similar to that of the Sabrang TP. And three: its developmental and marketing concepts, which will be elaborated in a later chapter, are also similar, if not identical, to those of the Sabrang TP.



(a) Map of the East Busan Tourism Complex



(b) Satellite Image of the East Busan Tourism Complex

Figure 3.15. Map and Satellite Image of the East Busan Tourism Complex

Source: Google Map (2016)

3.3. Estimate on the International Arrivals

- 3.3.1. As discussed, the international tourism arrivals in general have been globally on an increasing trend for the last two decades. Since the beginning of the 2000s, Europe and Central Asia and East Asia and Pacific have seen significant growth of the international tourist arrivals in the absolute number term (Figure 3.15).

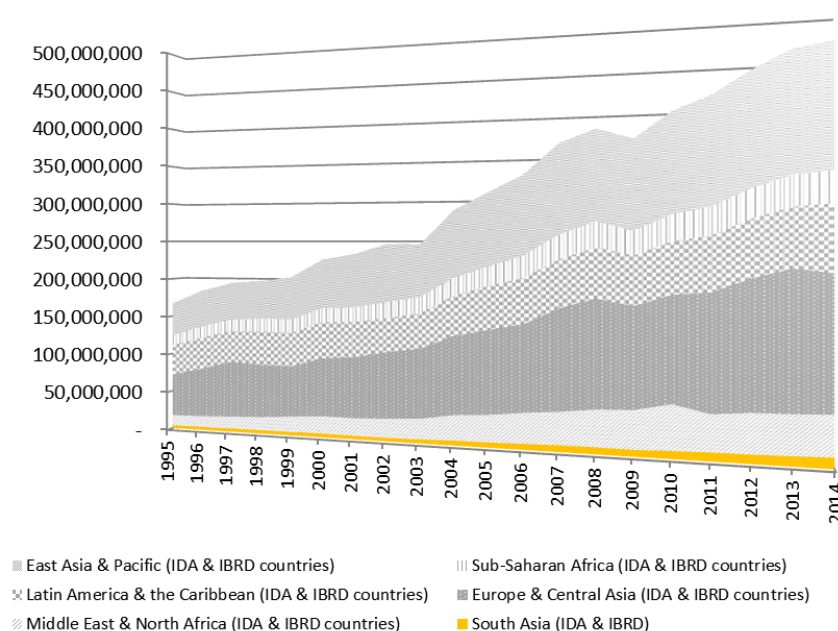


Figure 3.16. International Tourism, Number of Arrivals by Region, 1995-2014

Source: World Bank (2016) World Development Indicators

3.3.2. However, South Asia posted the lowest number of arrivals during the period 1995-2014—about 13 million in 2014 vis-à-vis 14 million in East Asia and Pacific and 15 million in Europe and Central Asia.¹⁸

3.3.3. Nevertheless, growth of the international arrivals in the regions in the last decade have grown at a quite impressive rate—about 8.51% during the period 2003-2014. If the growth rates for 2008 and 2009, the period of the Asian Financial Crisis, which are 3.56% and -3.72% respectively, are excluded as outliers, the average growth rate of the international tourist arrivals in South Asia for the period 2003-2014 would be about 10.23%.¹⁹

3.3.4. Using this average to estimate the baseline (normal economic condition) scenario, the number of international arrivals in Bangladesh for the next 20 years can be forecasted.

3.3.5. As presented in the table, the international tourist arrivals in Bangladesh in 2041 are estimated to be **approximately 1.9 million**.

¹⁸ According to the World Travel and Tourism Council, WTTC, category, South Asia includes Bangladesh, India, Maldives, Nepal, Pakistan and Sri Lanka.

¹⁹ The average growth rate for the baseline scenario was drawn from the past growth rates as shown in the following:

2003	2004	2005	2006	2007	2010	2011	2012	2013	2014
12.97%	18.01%	4.87%	11.96%	10.35%	12.66%	11.14%	3.10%	8.20%	8.99%

Source: World Bank (2016) World Development Indicators.

3.4. Accumulated Tourism Patronage

- 3.4.1. **The term—accumulated tourism patronage (ATP)—used herein refers to the aggregated number of a foreign tourist’s visits to all the tourism points of attractions while in Bangladesh.** For example, a foreign visitor visits Cox’s Bazar and the Sabrang TP and decides to carry on her/his trip to Sundarbans before s/he embarks on any international modes of transportation from Bangladesh, the accumulated number of tourists will be counted as three. The ATP serves as a base for other estimates such as an estimate for total tourism patronage of the respective tourism contents to be installed in the Sabrang TP (Refer to Table 3.6).
- 3.4.2. In this study, a **number of person/s is employed as the unit of analysis** that represents the accumulated tourism patronage.
- 3.4.3. As there are no historical data on the ATP that are available in Bangladesh, the consultant team has adopted the data for the East Busan Tourism Complex as a benchmark for the estimate of the ATP for Bangladesh.
- 3.4.4. The ATP is estimated annually; a result of the analysis is presented in Table 3.7. In 2041, the ATP is estimated to be **about 45.5 million persons**.

3.5. Accumulated Tourism Patronage by Respective Tourism Contents

- 3.5.1. As pointed out in the preceding section, the ATP for the respective contents is distributed as follows:

Table 3.14. ATP by Contents

Contents	Patronage
1. Casino	0.0603
2. Ocean Park	0.0360
3. Golf course	0.0152
4. Activity Facilities	0.0486
5. Eco-Tourism Facilities	0.0891
6. Shopping mall	0.4871
7. Hotels and Resort	0.1301
8. Special Facilities	0.0009
9. Residential	0.0000
10. Business	0.0841
11. Marina	0.0486
Total:	1.0000

Source: Authors’ compilation using the base data from the Ministry of Culture and Tourism of Korea (2014).

- 3.5.2. In the table, it is important to note that the “residential area,” Item No. 9 in Table 3.14., is estimated as zero (0). For, the area is not set aside for the tourism purpose but for those employees and other residents who are supposed to reside in Sabrang because of the duties and responsibilities appended to their jobs and assignments.
- 3.5.3. The ATP for the respective tourism contents refers to the estimate number of tourists’ visits to the respective programmes/facilities in the Sabrang TP in a given year. The estimates for the ATP for the respective tourism contents are presented in Table 3.16.

3.6. The Highest Demand

- 3.6.1. The **highest demand** refers to the tourists’ concentration on a tourism area. In other words, tourists in general do not visit all the points of tourism attractions evenly in a given year but concentrate on an area/s in a certain period in a year based on the characteristics of the tourism points of attractions. The “visit patterns” are normally affected by seasonality. For example, a ski resort sees an influx of tourists in winter. In contrast, a beach area usually is filled by tourists in summer. This phenomenon is known as the “**seasonality**” of the points of tourism attractions.

3.6.2. Seasonality

- 3.6.2.1. In fact, tourists’ concentration occurs in specific days in a given year. It is referred to as the **highest patronage days**. And **the highest patronage days** (to a tourism area) to the ATP is referred to as the “**highest patronage days rate**” or a “**peak rate**.”
- 3.6.2.2. Although the climate condition in the Cox’s Bazar area is favourable for tourism, the area, in the vantage point of tourism, can be said that it has two seasons—a rainy season and a non-rainy, or dry, season.
- 3.6.2.3. The temperature-wise, it is generally warm throughout the year. The warmer months are around April and May—the highest temperatures observed in the period 1981-2010 are about 32.7°C and 32.8°C, whereas the cooler months are December, January and February in which minimum temperature can go to 17°C, 15.6°C and 17.4°C respectively (See Figure 3.17).

Table 3.15. Estimates on the International Arrivals: Baseline Scenario

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
Number of arrivals	171,200	188,714	208,019	229,300	252,757	278,614	307,116	338,534	373,166	411,341	453,421	499,806	
2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
550,936	607,297	669,424	737,906	813,393	896,604	988,326	1,089,432	1,200,881	1,323,731	1,459,149	1,608,420	1,772,961	1,954,335

Table 3.16. Estimates on the Accumulated Tourism Patronage: Baseline Scenario

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Accumulated visitors	3,987,498	4,395,419	4,845,070	5,340,721	5,887,077	6,489,325	7,153,183	7,884,953	8,691,584	9,580,733	10,560,842
2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
11,641,216	12,832,113	14,144,838	15,591,855	17,186,902	18,945,122	20,883,208	23,019,560	25,374,461	27,970,268	30,831,626	33,985,702
2039	2040	2041									
37,462,439	41,294,847	45,519,309									

Table 3.17. Estimates on the Accumulated Tourism Patronage by Respective Tourism Programmes and Facilities: Baseline Scenario (Y1=2017 as the Base Year)

	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11
Casino	264,865	291,960	321,828	354,751	391,042	431,046	475,141	523,748	577,328	636,389	701,491
Ocean Park	158,029	174,195	192,015	211,658	233,311	257,178	283,488	312,489	344,456	379,694	418,537
Golf course	66,773	73,603	81,133	89,433	98,582	108,667	119,784	132,037	145,545	160,434	176,847
Activity Facilities	213,672	235,531	259,626	286,186	315,462	347,734	383,307	422,520	465,744	513,389	565,909
Eco-Tourism Facilities	391,733	431,807	475,981	524,674	578,348	637,513	702,730	774,620	853,863	941,213	1,037,500
Shopping mall	2,141,175	2,360,217	2,601,668	2,867,819	3,161,196	3,484,587	3,841,060	4,234,000	4,667,139	5,144,587	5,670,878
Hotels and Resort	572,019	630,536	695,040	766,143	844,519	930,914	1,026,146	1,131,121	1,246,834	1,374,385	1,514,985
Special Facilities	4,006	4,416	4,868	5,366	5,915	6,520	7,187	7,922	8,733	9,626	10,611
Business	369,475	407,272	448,936	494,863	545,487	601,290	662,802	730,607	805,348	887,735	978,551
Marina	213,672	235,531	259,626	286,186	315,462	347,734	383,307	422,520	465,744	513,389	565,909

	Y12	Y13	Y14	Y15	Y16	Y17	Y18	Y19	Y20	Y21
Casino	773,254	852,358	939,554	1,035,670	1,141,619	1,258,407	1,387,142	1,529,046	1,685,468	1,857,891
Ocean Park	461,353	508,549	560,574	617,921	681,134	750,814	827,622	912,288	1,005,615	1,108,490
Golf course	194,938	214,880	236,862	261,093	287,803	317,245	349,700	385,474	424,908	468,376
Activity Facilities	623,801	687,616	757,959	835,499	920,970	1,015,185	1,119,039	1,233,516	1,359,705	1,498,803
Eco-Tourism Facilities	1,143,636	1,260,630	1,389,592	1,531,747	1,688,445	1,861,173	2,051,571	2,261,447	2,492,793	2,747,805
Shopping mall	6,251,009	6,890,487	7,595,384	8,372,392	9,228,888	10,173,003	11,213,701	12,360,863	13,625,379	15,019,255
Hotels and Resort	1,669,968	1,840,806	2,029,120	2,236,699	2,465,514	2,717,736	2,995,760	3,302,226	3,640,044	4,012,420
Special Facilities	11,696	12,893	14,212	15,666	17,268	19,035	20,982	23,128	25,494	28,103
Business	1,078,656	1,189,003	1,310,638	1,444,716	1,592,511	1,755,425	1,935,005	2,132,956	2,351,157	2,591,680
Marina	623,801	687,616	757,959	835,499	920,970	1,015,185	1,119,039	1,233,516	1,359,705	1,498,803

	Y22	Y23	Y24	Y25
Casino	2,047,953	2,257,459	2,488,397	2,742,960
Ocean Park	1,221,888	1,346,887	1,484,674	1,636,556
Golf course	516,291	569,107	627,327	691,503
Activity Facilities	1,652,131	1,821,143	2,007,446	2,212,808
Eco-Tourism Facilities	3,028,906	3,338,763	3,680,319	4,056,815
Shopping mall	16,555,725	18,249,375	20,116,287	22,174,182
Hotels and Resort	4,422,891	4,875,353	5,374,102	5,923,872
Special Facilities	30,977	34,146	37,640	41,490
Business	2,856,809	3,149,061	3,471,210	3,826,314
Marina	1,652,131	1,821,143	2,007,446	2,212,808

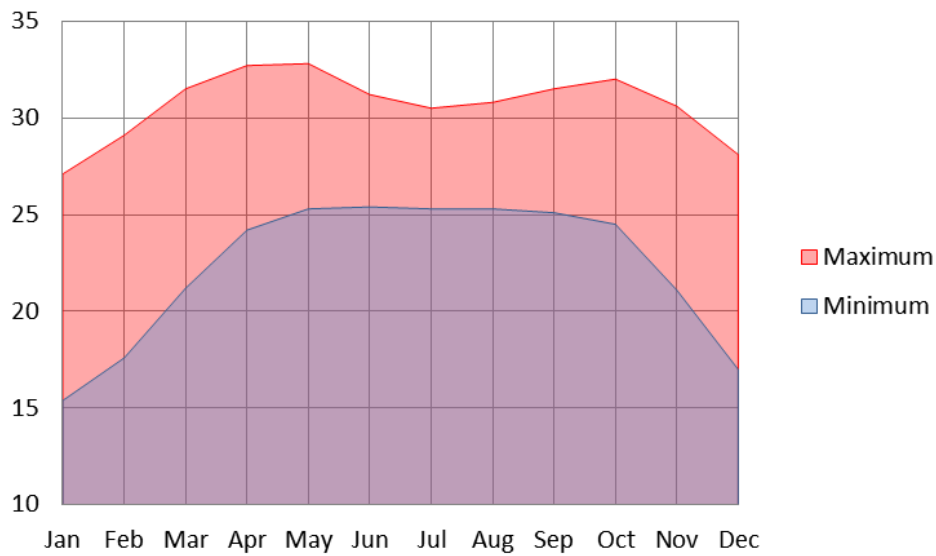


Figure 3.17. Average Temperature in Cox's Bazar

Notes: Unit in Centigrade (°C); Average temperature observed in the period 1981-2010; Source: Authors' compilation of the data obtained from Khatun et al. (2016).

3.6.2.4. On the other hand, precipitation is concentrated in the months of June, July and August. January is the month with the least precipitation, about 5.1mm. However, it gets a heavy rain in the months of June, July and August—about 859.9mm, 933.4mm and 665.5mm respectively (See Figure 3.18).

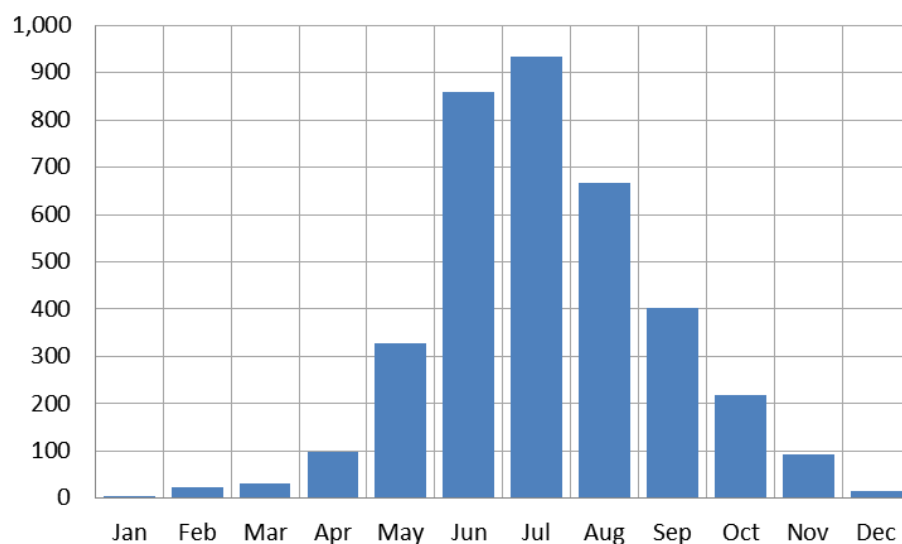


Figure 3.18. Average Amount of Precipitation in Cox's Bazar

Notes: Unit in millimetre (mm); Average precipitation observed in the period 1981-2010; Source: Authors' compilation of the data obtained from Khatun et al. (2016)

- 3.6.2.5. As pointed out, the highest patronage days rate, or a peak rate, is highly affected by seasonal characteristics. So, the rate is high in such areas as beaches and ski resorts but is low in, for example, hot springs.
- 3.6.2.6. The highest patronage days can be distinguished in 4 types of the point of attraction—1 Season and 2, 3 and 4 Seasons. This study employs the highest patronage days provided by the Ministry of Culture and Tourism of Korea as in the following:

Table 3.18. The Highest Patronage Days Rate by Seasonal Characteristics

1 Season	2 Seasons	3 Seasons	4 Seasons
0.034	0.017	0.012	0.01

Source: Kwak No-yeop, et al. (2014) *Tourism and Leisure Facilities Plan*, in Korean, Gimoon-Dang Publishers, Seoul. p.116. Original data from the Ministry of Culture and Tourism (2007).

- 3.6.2.7. The highest patronage days rate, or the peak rate, for Sabrang is thus determined as **1.7% or 0.017**.

3.6.3. Simultaneous Stay Rate

- 3.6.3.1. As indicated in the discussions on the highest patronage days, tourists' visit to a tourism point of attraction in specific time frames. In general, tourists' visit is concentrated on an area between 2:00PM-4:00PM.²⁰
- 3.6.3.2. The highest number of the visitor concentration occurs in a certain timeframe in a day is referred to as the **simultaneous stay**, or **turn-over**. In Korea, for example, the visitor concentration usually does not exceed 6 hours. Thus, beyond 6 hours, a visitor's stay is regarded as an over-night tourist stay.
- 3.6.3.3. This study assumes that the simultaneous stay in Sabrang be 4 hours given that that in East Busan is 5 hours. Based on pre-established data, the simultaneous stay rate for Sabrang is determined as **0.62** (Refer to Table 3.19).

Table 3.19. Simultaneous Stay Rate

Hour	1	2	3	4	5	6	7	8
Turn-over rate	0.16	0.31	0.47	0.62	0.77	0.92	-	-

Source: Kwak, et al. (2016) p.116. Original data: Ministry of culture and Tourism of Korea

²⁰ Kwak et al. (2014) p.117.

3.6.4. The Highest Demand

3.6.4.1. The highest demand for Sabrang can be estimated by multiplying the ATP by the highest patronage days rate and the turn-over rate. That is,

The highest demand = the ATP × the highest patronage days rate × turn-over

3.6.4.2. It is important to note that the highest demand serves as the basis for the size of facilities in the Sabrang TP. The estimates for the highest demand for the Sabrang TP and the respective programmes and facilities are presented in Table 3.20 and 3.21 respectively.

3.6.4.3. As shown in the tables, Sabrang needs to be developed to facilitate about half a million visitors by 2041 and casino facilities, if installed, need to facilitate the maximum of about 30,000 visitors by 2041.

Table 3.20. Estimates on the Highest Demand: Baseline Scenario

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027		
Highest demand	42,028	46,328	51,067	56,291	62,050	68,397	75,395	83,107	91,609	100,981	111,311	122,698		
	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
	135,250	149,087	164,338	181,150	199,682	220,109	242,626	267,447	294,807	324,965	358,209	394,854	435,248	479,774

**Table 3.21. Estimates on the Highest Demand by Respective Tourism Programmes and Facilities: Baseline Scenario
(Y1=2017 as the Base Year)**

	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11
Casino	2,792	3,077	3,392	3,739	4,122	4,543	5,008	5,520	6,085	6,708	7,394
Ocean Park	1,666	1,836	2,024	2,231	2,459	2,711	2,988	3,294	3,631	4,002	4,411
Golf course	704	776	855	943	1,039	1,145	1,263	1,392	1,534	1,691	1,864
Activity Facilities	2,252	2,482	2,736	3,016	3,325	3,665	4,040	4,453	4,909	5,411	5,965
Eco-Tourism Facilities	4,129	4,551	5,017	5,530	6,096	6,719	7,407	8,164	9,000	9,920	10,935
Shopping mall	22,568	24,877	27,421	30,227	33,319	36,728	40,485	44,626	49,192	54,224	59,771
Hotels and Resort	6,029	6,646	7,326	8,075	8,901	9,812	10,816	11,922	13,142	14,486	15,968
Special Facilities	42	47	51	57	62	69	76	84	92	101	112
Business	3,894	4,293	4,732	5,216	5,749	6,338	6,986	7,701	8,488	9,357	10,314
Marina	2,252	2,482	2,736	3,016	3,325	3,665	4,040	4,453	4,909	5,411	5,965
Total	46,328	51,067	56,290	62,050	68,397	75,395	83,109	91,609	100,982	111,311	122,699

	Y12	Y13	Y14	Y15	Y16	Y17	Y18	Y19	Y20	Y21
Casino	8,150	8,984	9,903	10,916	12,033	13,264	14,620	16,116	17,765	19,582
Ocean Park	4,863	5,360	5,908	6,513	7,179	7,914	8,723	9,616	10,599	11,683
Golf course	2,055	2,265	2,497	2,752	3,033	3,344	3,686	4,063	4,479	4,937
Activity Facilities	6,575	7,247	7,989	8,806	9,707	10,700	11,795	13,001	14,331	15,797
Eco-Tourism Facilities	12,054	13,287	14,646	16,145	17,796	19,617	21,624	23,836	26,274	28,962
Shopping mall	65,885	72,626	80,055	88,245	97,273	107,223	118,192	130,284	143,612	158,303
Hotels and Resort	17,601	19,402	21,387	23,575	25,987	28,645	31,575	34,805	38,366	42,291
Special Facilities	123	136	150	165	182	201	221	244	269	296
Business	11,369	12,532	13,814	15,227	16,785	18,502	20,395	22,481	24,781	27,316
Marina	6,575	7,247	7,989	8,806	9,707	10,700	11,795	13,001	14,331	15,797
Total	135,250	149,086	164,338	181,150	199,682	220,110	242,626	267,447	294,807	324,964

	Y22	Y23	Y24	Y25
Casino	21,585	23,794	26,228	28,911
Ocean Park	12,879	14,196	15,648	17,249
Golf course	5,442	5,998	6,612	7,288
Activity Facilities	17,413	19,195	21,159	23,323
Eco-Tourism Facilities	31,925	35,191	38,791	42,759
Shopping mall	174,497	192,348	212,026	233,716
Hotels and Resort	46,617	51,386	56,643	62,438
Special Facilities	327	360	397	437
Business	30,111	33,191	36,587	40,329
Marina	17,413	19,195	21,159	23,323
Total	358,209	394,854	435,250	479,773

3.7. Demand Estimate by Growth Scenario

- 3.7.1. Thus far, this study assumes that the development of tourism sector in Bangladesh will follow an average growth rate derived from the data on the international tourist arrivals that Bangladesh has observed in the last decades excluding some outliers, as elucidated in the preceding section. Hence, this growth pattern can be regarded as the baseline scenario.
- 3.7.2. There are two more scenarios one can adopt—those are an aggressive scenario and a conservative scenario. The aggressive scenario assumes that Bangladeshi tourism sector grows faster than the baseline due to internal and external effects, while the conservative scenario presumes otherwise (See also Figure 3.19).

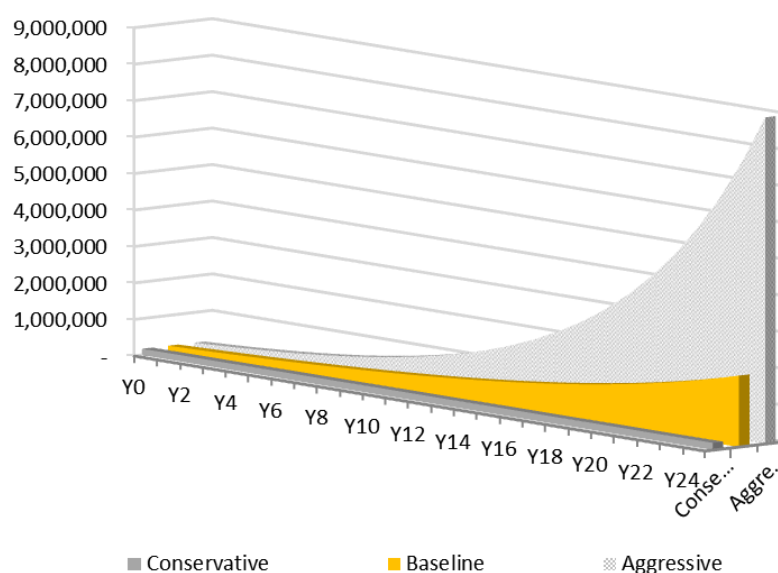


Figure 3.19. International Tourist Arrival in Three Scenarios

Source: Authors' computation

- 3.7.3. An average of the largest likelihood of an increase in international tourist arrivals during the period 2003-2014, the growth rates larger than a 10% threshold, 12.85%, was adopted to determine the largest possible growth scenario.²¹ To this, the “China effect” was added to estimate the aggressive growth scenario.

²¹ The years in which South Asia experienced larger occasions of tourism growth, more than 10%, were:

2003	2004	2006	2007	2010	2011
12.97%	18.01%	11.96%	10.35%	12.66%	11.14%

Source: World Bank (2016)

- 3.7.4. The China effect refers to a phenomenon that recent upward growth of Chinese tourists affects the growth of the tourism sector in neighbouring countries. For example, Busan experienced approximately 34% of Chinese visitor growth on average during the period 2009-2014. This number was discounted by a proportion of international tourist arrivals of Korea and Bangladesh, 12.63%. In sum, the impact of Chinese tourist, the growth rate of 4.29%, on Bangladesh's international tourist arrivals was added to the high growth potential, 12.85%. Hence, an average number of 17.14% was adopted to determine the aggressive scenario.
- 3.7.5. As for the conservative scenario, the most pessimistic growth rate forecasted for the South Asia for the period 1995-2030 reported by UNWTO, 5.5%, was adopted to constitute the base of the pessimistic, or conservative, scenario.²²
- 3.7.6. A determination of the accumulated tourism patronage and the highest demand for both aggressive and conservative scenarios followed the same estimate methods presented in the preceding section.

²² UNWTO (2014) *Tourism towards 2030: Global Overview*, and the "World Tourism Barometer," (October 2014).

Table 3.22. Estimates on the International Arrivals: Aggressive Scenario

	2016 (Y0)	2017 (Y1)	2018 (Y2)	2019 (Y3)	2020 (Y4)	2021 (Y5)	2022 (Y6)	2023 (Y7)	2024 (Y8)	2025 (Y9)	2026 (Y10)	2027 (Y11)	
Number of arrivals	171,200	200,544	234,917	275,182	322,348	377,598	442,318	518,132	606,940	710,969	832,829	975,576	
	2028 (Y12)	2029 (Y13)	2030 (Y14)	2031 (Y15)	2032 (Y16)	2033 (Y17)	2034 (Y18)	2035 (Y19)	2036 (Y20)	2037 (Y21)	2038 (Y22)	2039 (Y23)	2040 (Y24)
	1,142,790	1,338,664	1,568,111	1,836,885	2,151,728	2,520,534	2,952,553	3,458,621	4,051,428	4,745,843	5,559,281	6,512,141	7,628,322
	2041 (Y25)												
	8,935,817												

Table 3.23. Estimates on the Accumulated Tourism Patronage: Aggressive Scenario

	2016 (Y0)	2017 (Y1)	2018 (Y2)	2019 (Y3)	2020 (Y4)	2021 (Y5)	2022 (Y6)	2023 (Y7)	2024 (Y8)	2025 (Y9)	
Accumulated visitors	3,987,498	4,670,955	5,471,557	6,409,382	7,507,950	8,794,812	10,302,243	12,068,048	14,136,511	16,559,509	
	2026 (Y10)	2027 (Y11)	2028 (Y12)	2029 (Y13)	2030 (Y14)	2031 (Y15)	2032 (Y16)	2033 (Y17)	2034 (Y18)	2035 (Y19)	2036 (Y20)
	19,397,809	22,722,593	26,617,246	31,179,442	36,523,598	42,783,743	50,116,876	58,706,909	68,769,273	80,556,326	94,363,681
	2037 (Y21)	2038 (Y22)	2039 (Y23)	2040 (Y24)	2041 (Y25)						
	110,537,615	129,483,763	151,677,280	177,674,765	208,128,220						

Table 3.24. Estimates on the Accumulated Tourism Patronage by Respective Tourism Programmes and Facilities: Aggressive Scenario (Y1=2017 as the Base Year)

	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
Casino	281,468	329,712	386,225	452,424	529,969	620,806	727,212	851,856	997,864	1,168,898
Ocean Park	167,935	196,719	230,437	269,933	316,200	370,397	433,883	508,250	595,364	697,410
Golf course	70,958	83,121	97,368	114,056	133,606	156,506	183,331	214,754	251,562	294,680
Activity Facilities	227,067	265,986	311,576	364,980	427,538	500,818	586,658	687,211	804,999	942,976
Eco-Tourism Facilities	416,289	487,641	571,223	669,131	783,820	918,166	1,075,540	1,259,888	1,475,832	1,728,790
Shopping mall	2,275,399	2,665,403	3,122,253	3,657,407	4,284,287	5,018,613	5,878,804	6,886,431	8,066,765	9,449,409
Hotels and Resort	607,877	712,067	834,115	977,083	1,144,555	1,340,731	1,570,533	1,839,722	2,155,051	2,524,426
Special Facilities	4,258	4,987	5,842	6,843	8,016	9,390	11,000	12,885	15,094	17,681
Business	392,636	459,934	538,767	631,112	739,284	865,998	1,014,430	1,188,303	1,391,978	1,630,563
Marina	227,067	265,986	311,576	364,980	427,538	500,818	586,658	687,211	804,999	942,976
Total:	4,670,954	5,471,556	6,409,382	7,507,949	8,794,813	10,302,243	12,068,049	14,136,511	16,559,508	19,397,809

	Y11	Y12	Y13	Y14	Y15	Y16	Y17	Y18	Y19
Casino	1,369,247	1,603,936	1,878,850	2,200,885	2,578,117	3,020,006	3,537,635	4,143,986	4,854,265
Ocean Park	816,946	956,970	1,120,995	1,313,133	1,538,204	1,801,852	2,110,690	2,472,462	2,896,242
Golf course	345,188	404,354	473,660	554,845	649,945	761,346	891,841	1,044,702	1,223,764
Activity Facilities	1,104,602	1,293,931	1,515,711	1,775,504	2,079,825	2,436,308	2,853,891	3,343,048	3,916,046
Eco-Tourism Facilities	2,025,105	2,372,207	2,778,804	3,255,091	3,813,013	4,466,564	5,232,133	6,128,920	7,179,417
Shopping mall	11,069,037	12,966,270	15,188,689	17,792,030	20,841,584	24,413,832	28,598,363	33,500,122	39,242,043
Hotels and Resort	2,957,113	3,463,962	4,057,685	4,753,172	5,567,866	6,522,198	7,640,103	8,949,617	10,483,581
Special Facilities	20,711	24,261	28,420	33,291	38,997	45,681	53,510	62,682	73,426

Business	1,910,042	2,237,423	2,620,917	3,070,142	3,596,365	4,212,782	4,934,853	5,780,686	6,771,496
Marina	1,104,602	1,293,931	1,515,711	1,775,504	2,079,825	2,436,308	2,853,891	3,343,048	3,916,046
Total:	22,722,593	26,617,245	31,179,442	36,523,597	42,783,741	50,116,877	58,706,910	68,769,273	80,556,326

	Y20	Y21	Y22	Y23	Y24	Y25
Casino	5,686,286	6,660,916	7,802,597	9,139,962	10,706,551	12,541,654
Ocean Park	3,392,658	3,974,160	4,655,331	5,453,254	6,387,942	7,482,836
Golf course	1,433,518	1,679,222	1,967,041	2,304,192	2,699,131	3,161,761
Activity Facilities	4,587,256	5,373,512	6,294,532	7,373,414	8,637,218	10,117,637
Eco-Tourism Facilities	8,409,970	9,851,438	11,539,975	13,517,927	15,834,899	18,549,001
Shopping mall	45,968,129	53,847,066	63,076,453	73,887,757	86,552,119	101,387,152
Hotels and Resort	12,280,467	14,385,339	16,850,986	19,739,245	23,122,551	27,085,757
Special Facilities	86,011	100,753	118,022	138,252	161,948	189,706
Business	7,932,130	9,291,697	10,884,294	12,749,863	14,935,189	17,495,080
Marina	4,587,256	5,373,512	6,294,532	7,373,414	8,637,218	10,117,637
Total:	94,363,681	110,537,615	129,483,763	151,677,280	177,674,766	208,128,221

Table 3.25. Estimates on the Highest Demand: Aggressive Scenario

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
Highest demand	42,028	49,232	57,670	67,555	79,134	92,697	108,586	127,197	148,999	174,537	204,453	239,496	
2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
280,546	328,631	384,959	450,941	528,232	618,771	724,828	849,064	994,593	1,165,066	1,364,759	1,598,679	1,872,692	2,193,671

Table 3.26. Estimates on the Highest Demand by Respective Tourism Programmes and Facilities: Aggressive Scenario (Y1=2017 as the Base Year)

	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11
Casino	2,967	3,475	4,071	4,769	5,586	6,543	7,665	8,979	10,517	12,320	14,432
Ocean Park	1,770	2,073	2,429	2,845	3,333	3,904	4,573	5,357	6,275	7,351	8,611
Golf course	748	876	1,026	1,202	1,408	1,650	1,932	2,264	2,651	3,106	3,638
Activity Facilities	2,393	2,803	3,284	3,847	4,506	5,279	6,183	7,243	8,485	9,939	11,643
Eco-Tourism Facilities	4,388	5,140	6,021	7,053	8,261	9,678	11,336	13,279	15,555	18,221	21,345
Shopping mall	23,983	28,093	32,909	38,549	45,156	52,896	61,962	72,583	85,024	99,597	116,668
Hotels and Resort	6,407	7,505	8,792	10,298	12,064	14,131	16,553	19,391	22,714	26,607	31,168
Special Facilities	45	53	62	72	84	99	116	136	159	186	218
Business	4,138	4,848	5,679	6,652	7,792	9,128	10,692	12,525	14,671	17,186	20,132
Marina	2,393	2,803	3,284	3,847	4,506	5,279	6,183	7,243	8,485	9,939	11,643
Total:	49,232	57,669	67,557	79,134	92,696	108,587	127,195	149,000	174,536	204,452	239,498

	Y12	Y13	Y14	Y15	Y16	Y17	Y18	Y19	Y20	Y21	Y22
Casino	16,905	19,803	23,197	27,173	31,831	37,287	43,678	51,164	59,933	70,206	82,239
Ocean Park	10,086	11,815	13,840	16,213	18,992	22,247	26,060	30,526	35,759	41,888	49,067
Golf course	4,262	4,992	5,848	6,850	8,025	9,400	11,011	12,898	15,109	17,699	20,733
Activity Facilities	13,638	15,976	18,714	21,921	25,679	30,080	35,236	41,275	48,350	56,637	66,344
Eco-Tourism Facilities	25,003	29,289	34,309	40,189	47,078	55,147	64,599	75,671	88,641	103,834	121,631
Shopping mall	136,665	160,089	187,528	219,670	257,322	301,427	353,091	413,611	484,504	567,548	664,826
Hotels and Resort	36,510	42,768	50,098	58,685	68,744	80,527	94,329	110,497	129,436	151,621	177,609
Special Facilities	256	300	351	411	481	564	661	774	907	1,062	1,244
Business	23,582	27,624	32,359	37,906	44,403	52,013	60,928	71,372	83,605	97,934	114,720
Marina	13,638	15,976	18,714	21,921	25,679	30,080	35,236	41,275	48,350	56,637	66,344
Total:	280,545	328,632	384,958	450,939	528,234	618,772	724,829	849,063	994,594	1,165,066	1,364,757

	Y23	Y24	Y25
Casino	96,335	112,847	132,189
Ocean Park	57,477	67,329	78,869
Golf course	24,286	28,449	33,325
Activity Facilities	77,716	91,036	106,640
Eco-Tourism Facilities	142,479	166,900	195,506
Shopping mall	778,777	912,259	1,068,620
Hotels and Resort	208,052	243,712	285,484
Special Facilities	1,457	1,707	1,999
Business	134,384	157,417	184,398
Marina	77,716	91,036	106,640
Total:	1,598,679	1,872,692	2,193,670

Table 3.27. Estimates on the International Arrivals: Conservative Scenario

	2016 (Y0)	2017 (Y1)	2018 (Y2)	2019 (Y3)	2020 (Y4)	2021 (Y5)	2022 (Y6)	2023 (Y7)	2024 (Y8)	2025 (Y9)	2026 (Y10)	2027 (Y11)
Number of arrivals	171,200	172,142	173,088	174,040	174,998	175,960	176,928	177,901	178,879	179,863	180,852	181,847
2028 (Y12)	2029 (Y13)	2030 (Y14)	2031 (Y15)	2032 (Y16)	2033 (Y17)	2034 (Y18)	2035 (Y19)	2036 (Y20)	2037 (Y21)	2038 (Y22)	2039 (Y23)	2040 (Y24)
182,847	183,853	184,864	185,881	186,903	187,931	188,965	190,004	191,049	192,100	193,157	194,219	195,287
2041 (Y25)												
196,361												

Table 3.28. Estimates on the Accumulated Tourism Patronage: Conservative Scenario

	2016 (Y0)	2017 (Y1)	2018 (Y2)	2019 (Y3)	2020 (Y4)	2021 (Y5)	2022 (Y6)	2023 (Y7)	2024 (Y8)	2025 (Y9)
Accumulated visitors	3,987,498	4,009,429	4,031,481	4,053,654	4,075,949	4,098,367	4,120,908	4,143,573	4,166,363	4,189,278
2026 (Y10)	2027 (Y11)	2028 (Y12)	2029 (Y13)	2030 (Y14)	2031 (Y15)	2032 (Y16)	2033 (Y17)	2034 (Y18)	2035 (Y19)	2036 (Y20)
4,212,319	4,235,487	4,258,782	4,282,205	4,305,757	4,329,439	4,353,251	4,377,194	4,401,268	4,425,475	4,449,815
2037 (Y21)	2038 (Y22)	2039 (Y23)	2040 (Y24)	2041 (Y25)						
4,474,289	4,498,898	4,523,642	4,548,522	4,573,539						

Table 3.29. Estimates on the Accumulated Tourism Patronage by Respective Tourism Programmes and Facilities: Conservative Scenario (Y1=2017 as the Base Year)

	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
Casino	241,605	242,934	244,270	245,614	246,965	248,323	249,689	251,062	252,443	253,831
Ocean Park	144,151	144,944	145,741	146,543	147,349	148,159	148,974	149,793	150,617	151,446
Golf course	60,909	61,244	61,581	61,919	62,260	62,602	62,947	63,293	63,641	63,991
Activity Facilities	194,908	195,980	197,058	198,142	199,232	200,328	201,430	202,537	203,651	204,771
Eco-Tourism Facilities	357,332	359,297	361,274	363,261	365,259	367,267	369,287	371,319	373,361	375,414
Shopping mall	1,953,145	1,963,887	1,974,689	1,985,549	1,996,470	2,007,451	2,018,492	2,029,593	2,040,756	2,051,980
Hotels and Resort	521,786	524,656	527,542	530,443	533,361	536,294	539,244	542,209	545,192	548,190
Special Facilities	3,655	3,675	3,695	3,715	3,736	3,756	3,777	3,798	3,818	3,839
Business	337,029	338,883	340,747	342,621	344,505	346,400	348,305	350,221	352,147	354,084
Marina	194,908	195,980	197,058	198,142	199,232	200,328	201,430	202,537	203,651	204,771
Total:	4,009,428	4,031,480	4,053,655	4,075,949	4,098,369	4,120,908	4,143,575	4,166,362	4,189,277	4,212,317

	Y11	Y12	Y13	Y14	Y15	Y16	Y17	Y18	Y19
Casino	255,227	256,631	258,043	259,462	260,889	262,324	263,767	265,217	266,676
Ocean Park	152,278	153,116	153,958	154,805	155,656	156,512	157,373	158,239	159,109
Golf course	64,343	64,697	65,053	65,411	65,770	66,132	66,496	66,861	67,229
Activity Facilities	205,898	207,030	208,169	209,314	210,465	211,622	212,786	213,957	215,133
Eco-Tourism Facilities	377,479	379,555	381,643	383,742	385,852	387,975	390,108	392,254	394,411
Shopping mall	2,063,266	2,074,614	2,086,025	2,097,498	2,109,034	2,120,634	2,132,297	2,144,025	2,155,817
Hotels and Resort	551,205	554,237	557,285	560,350	563,432	566,531	569,647	572,780	575,930
Special Facilities	3,861	3,882	3,903	3,925	3,946	3,968	3,990	4,012	4,034
Business	356,031	357,990	359,958	361,938	363,929	365,931	367,943	369,967	372,002

Marina	205,898	207,030	208,169	209,314	210,465	211,622	212,786	213,957	215,133
Total:	4,235,486	4,258,782	4,282,206	4,305,759	4,329,438	4,353,251	4,377,193	4,401,269	4,425,474

	Y20	Y21	Y22	Y23	Y24	Y25
Casino	268,143	269,617	271,100	272,591	274,091	275,598
Ocean Park	159,984	160,864	161,749	162,639	163,533	164,432
Golf course	67,599	67,971	68,345	68,721	69,098	69,479
Activity Facilities	216,317	217,506	218,703	219,906	221,115	222,331
Eco-Tourism Facilities	396,581	398,762	400,955	403,160	405,378	407,607
Shopping mall	2,167,674	2,179,596	2,191,584	2,203,638	2,215,758	2,227,944
Hotels and Resort	579,098	582,283	585,486	588,706	591,944	595,199
Special Facilities	4,056	4,078	4,101	4,123	4,146	4,169
Business	374,048	376,105	378,174	380,253	382,345	384,448
Marina	216,317	217,506	218,703	219,906	221,115	222,331
Total:	4,449,817	4,474,288	4,498,900	4,523,643	4,548,523	4,573,538

Table 3.30. Estimates on the Highest Demand: Conservative Scenario

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
Highest demand	42,028	42,259	42,492	42,726	42,961	43,197	43,434	43,673	43,913	44,155	44,398	44,642	
2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
44,888	45,134	45,383	45,632	45,883	46,136	46,389	46,645	46,901	47,159	47,418	47,679	47,941	48,205

**Table 3.31. Estimates on the Highest Demand by Respective Tourism Programmes and Facilities: Conservative Scenario
(Y1=2017 as the Base Year)**

	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11
Casino	2,546	2,561	2,575	2,589	2,603	2,617	2,632	2,646	2,661	2,675	2,690
Ocean Park	1,519	1,528	1,536	1,545	1,553	1,562	1,570	1,579	1,588	1,596	1,605
Golf course	642	646	649	653	656	660	663	667	671	674	678
Activity Facilities	2,054	2,066	2,077	2,088	2,100	2,111	2,123	2,135	2,146	2,158	2,170
Eco-Tourism Facilities	3,766	3,787	3,808	3,829	3,850	3,871	3,892	3,914	3,935	3,957	3,979
Shopping mall	20,586	20,699	20,813	20,928	21,043	21,158	21,275	21,392	21,510	21,628	21,747
Hotels and Resort	5,500	5,530	5,560	5,591	5,622	5,652	5,684	5,715	5,746	5,778	5,810
Special Facilities	39	39	39	39	39	40	40	40	40	40	41
Business	3,552	3,572	3,592	3,611	3,631	3,651	3,671	3,691	3,712	3,732	3,753
Marina	2,054	2,066	2,077	2,088	2,100	2,111	2,123	2,135	2,146	2,158	2,170
Total:	42,258	42,494	42,726	42,961	43,197	43,433	43,673	43,914	44,155	44,396	44,643

	Y12	Y13	Y14	Y15	Y16	Y17	Y18	Y19	Y20	Y21	Y22
Casino	2,705	2,720	2,735	2,750	2,765	2,780	2,795	2,811	2,826	2,842	2,857
Ocean Park	1,614	1,623	1,632	1,641	1,650	1,659	1,668	1,677	1,686	1,696	1,705
Golf course	682	686	689	693	697	701	705	709	712	716	720
Activity Facilities	2,182	2,194	2,206	2,218	2,230	2,243	2,255	2,268	2,280	2,293	2,305
Eco-Tourism Facilities	4,001	4,022	4,045	4,067	4,089	4,112	4,134	4,157	4,180	4,203	4,226
Shopping mall	21,867	21,986	22,108	22,229	22,351	22,475	22,598	22,723	22,847	22,973	23,099
Hotels and Resort	5,842	5,874	5,906	5,939	5,971	6,004	6,037	6,070	6,104	6,137	6,171
Special Facilities	41	41	41	42	42	42	42	43	43	43	43
Business	3,773	3,794	3,815	3,836	3,857	3,878	3,899	3,921	3,942	3,964	3,986
Marina	2,182	2,194	2,206	2,218	2,230	2,243	2,255	2,268	2,280	2,293	2,305
Total:	44,889	45,134	45,383	45,633	45,882	46,137	46,388	46,647	46,900	47,160	47,417

	Y23	Y24	Y25
Casino	2,873	2,889	2,905
Ocean Park	1,714	1,724	1,733
Golf course	724	728	732
Activity Facilities	2,318	2,331	2,343
Eco-Tourism Facilities	4,249	4,273	4,296
Shopping mall	23,226	23,354	23,482
Hotels and Resort	6,205	6,239	6,273
Special Facilities	43	44	44
Business	4,008	4,030	4,052
Marina	2,318	2,331	2,343
Total:	47,678	47,943	48,203

3.8. Estimating Demands: Investor Profile and Utility Demands

3.1.1. In order to identify potential investors and their demands, a survey and interviews were conducted for a month, from 29 September 2016 to 29 October 2016.²³

3.1.2. In a greater than 200 raw data set of firms in both domestic and international tourism sector, some 87 firms were established a contact; thus, the study team treated the 87 firms as a sample population ($S=87$).

3.1.3. Description of the Sample Population: Potential Investor Profile

3.1.3.1. The sample population includes 54 local Bangladeshi firms and 33 international ones. The firms are predominantly operating in multiple sub-sectors as shown in Figure 3.20 below.

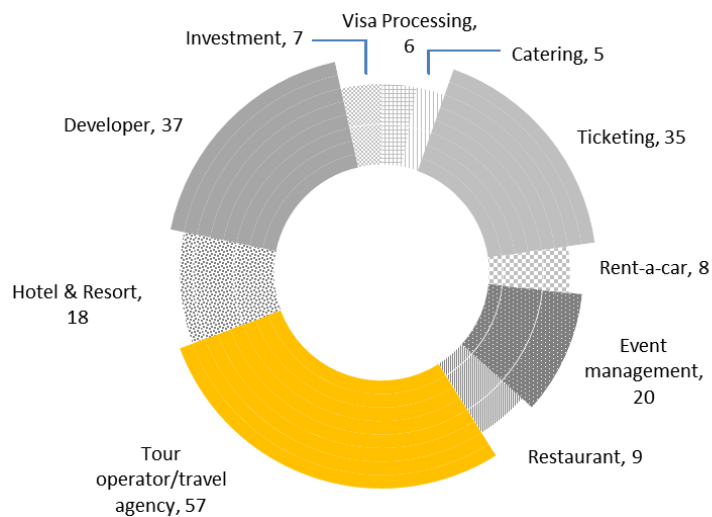


Figure 3.20. Respondents and the Industry Sub-Sectors in Which They Are Operating

Note: The respondents were allowed to check all the sub-sectors in which they are operating.

3.1.3.2. The largest sub-sector in which the firms are operating in is tour operator and/or travel agency.

3.1.3.3. Of the sample population, 19 local Bangladeshi firms responded with an affirmative intention of investing in Sabrang (21.8%).²⁴

²³ The list of the sample firms will be provided in a separate Excel file.

²⁴ In contrast, international firms in general declined to respond or stated that they would require more information.

- 3.1.3.4. Of the respondents who expressed the intention of investing in Sabrang, 5 were established before 2000 and 14 after 2000. This implies that the development of tourism sector in Bangladesh is a recent phenomenon.
- 3.1.3.5. However, the Bangladeshi domestic tourism sector in general is dominated by relatively small firms in terms of assets. Nevertheless, annual turn-over is impressive. The firms with annual turn-over less than US\$1 million were 2; between US\$1 million and US\$5 million in 2015 were 8; US\$10 million-US\$29.9 million were 8; and over US\$30 million were 1.
- 3.1.3.6. On the other hand, international developers and investment financing firms ranged from US\$2 million-US\$11 million in terms of annual turn-over.
- 3.1.3.7. In sum, the firms that expressed the intention to invest in Sabrang are as follows:

Table 3.32. The Firms Expressed to Invest in Sabrang

Name of Company	Industry and/or Industry Sub-Sector
1. Metro Group	Construction , Hotel and Resort
2. Galaxy Bangladesh	Tour Operator , Air-ticketing, Travel Agencies
3. Tour Planners Limited	Tour Operator, Travel Agencies.
4. Your Trip Mate Ltd	Tour Operator , Others
5. A One Tourism	Tour Operator , Air Ticketing , Travel Agencies , Visa Processing
6. JABA Tour Ltd.	Travel Agency, Tour Operator
7. Maliha Travel & Tours	Air-ticketing, Travel Agency, Tour Operator
8. Green Holiday Tours	Air-ticketing, Travel Agencies, Tour Operator, Hotel & resort
9. Al Jesour Resort Ltd	Hotel & resort
10. Hotel Sufia International	Air-ticketing, Food Restaurant, Event Management, Travel Agency, Tour Operator, Hotel & Resort,
11. Resort Beach View	Air-ticketing, Travel Agencies, Tour Operator, Hotel & resort, Food Restaurant, Transport
12. Grand Prince Hotel	Air-ticketing, Food Restaurant, Event Management, Travel Agency, Tour Operator, Hotel & Resort, Catering, Retail Shop
13. Chuti Resort Ltd.	Air-ticketing, Food Restaurant, Event Management, Travel Agency, Tour Operator, Hotel & Resort
14. Dhaka Resort	Restaurant, Hotel and Resort
15. Bd Tours Ltd	Air-ticketing, Event Management, Travel Agency, Tour Operator, Interior Solution
16. Linijco Tours & Travels	Catering, Air Ticketing, Event Management, Tour Operator
17. Tourism Window	Air-ticketing, Event Management, Travel Agencies, Tour Operator, Rent a Car
18. Reverie Resort Ltd	Food Restaurant, Hotel and Resort

- 3.1.3.8. Of the firms, Metro Group stated that it planned to build a 5-Star hotel having 300 guest rooms in the period 2022-23; the estimated investment is about US\$200 million.
- 3.1.3.9. Top Planners Ltd. intends to invest in developing an international-level resort facilitated with about 2,000 rooms in the period 2022-2025.
- 3.1.3.10. Your Trip Mate Ltd. intends to add scuba-diving into their tour programme.
- 3.1.3.11. In sum, the respondents would invest within 3-5 years of timeframe when Sabrang TP would become available.
- 3.1.3.12. Those respondents who possessed an intention of expanding their businesses to Sabrang TP responded that they would add new businesses, such as scuba-diving and other water sports, aquarium, etc.
- 3.1.3.13. The main incentives that they expect from Sabrang TP, according to the order of the respondents' preferences, were as follows:

- (1) Security and safety measures;**
- (2) Power;**
- (3) Regional and international connectivity;**
- (4) Availability of urban amenities;**
- (5) Gas;**
- (6) Availability of skilled human resource; and**
- (7) Access to water.**

3.1.4. Utilities and labour demands:

- 3.1.4.1. **Electricity:** Of the respondents, 7 investors indicated that they would require larger than 100kwh. Maximum demand was 200kwh while minimum being 5.
- 3.1.4.2. **Water:** On average, the potential investors need access to water about 200 litres per day. Maximum usage was 2,000 litres while minimum was 10.
- 3.1.4.3. **Gas:** On average, the investors responded that they would need on average about 53ft³ of gas per day. Maximum was 150ft³ whereas, the minimum was 10.
- 3.1.4.4. **WTP:** The respondents stated that they would expect about 100ft³-160ft³ of sewer water treatment per day.

On average, firms would require about 100ft³ of water treatment per day.

- 3.1.4.5. **Plot size:** Plot size the respondents would require was mostly 3 acres (43,560ft²) and/or above.
- 3.1.4.6. **Fire system:** The firms would need mostly 2-4 fire hydrants per 3,000ft² in the plot.
- 3.1.4.7. **Communication facilities:** The average (mode) bandwidth for internet was 30 mbps; the maximum was 100. Six firms responded that they would require greater than 30 land-lines (telephone) while six stated that they needed less than 20 land-lines.
- 3.1.4.8. **Number of workers required:** The respondents disclosed that they would need on average about 23 office employees on regular basis, 37 skilled workers, and 22 unskilled. On average, about 55 workers in other categories would be needed by the potential investors.

CHAPTER 4

MARKET STRATEGY

1. PRODUCT DEFINITION OF SABRANG TOURISM PARK

1.1. Product Characteristics

- 1.1.1. As stated in the earlier chapters of this report, the Sabrang TP is a **tourism complex which constitutes an integral component of the Cox's Bazar Tourism Corridor**. It will be the first of the kind in Bangladesh so that it is expected to be an unparalleled landmark in the corridor, and further, in the Bangladeshi tourism development.
- 1.1.2. The main differences of tourism goods (and services) from manufactured goods include the following attributes:
 - It is intangible and perishable;
 - It is seasonal and is inseparable, which means that its production and consumption cannot be separated and be stored or inventoried; thus, it is sensitive to the changes in external conditions, such as weather, economic conditions, etc.
 - It is variable and is hard to be standardised; however, it can be tailored to the needs of consumers.
 - It is prone to the effect of the economies of scale, etc.
- 1.1.3. Given the product definition and characteristics, what strategies should Sabrang TP adopt so that it can attain differentiation from its competitors and develop own competitive advantages?

2. SWOT ANALYSIS AND THE ENHANCEMENT/MITIGATION STRATEGIES

2.1. Identifying Key Areas of Strength, Weakness, Opportunity and Threat

2.1.1. In order to draw appropriate market strategy, this study first conduct a SWOT analysis to identify key areas of competitiveness and weaknesses as well as general business environment of the site, including Bangladesh's social and economic situation at the national- and international-level, so that appropriately enhancing and/or mitigating strategies can be drawn.

2.1.2. **Strengths:** The Sabrang TP and appended tourism industry in general possesses the strengths in the following areas:

- Long coast line with a pristine beach
- Eco-Tourism asset nearby (ST. Martin's Island)
- Excellent site location with easy access to the Cox's Bazar airport
- It is an integral part of the Cox's Bazar tourism corridor
- Land title is clear (BEZA)
- Easy access to labour
- Bangladesh's national image is being transformed to the country of manufacturing.

2.1.3. **Weakness:** But it possesses some inherent weaknesses in terms of physical, social and economic environment as well. The weaknesses include:

- Tourism is a relatively nascent industry in Bangladesh
- Security and safety concerns
- Shortfall in infrastructure
- Shortfall in skilled manpower in tourism and/or related industries
- Inadequate backward and forward linkages in tourism industry
- Unfavourable business environment
- Low community acceptance of foreign tourists
- High rate of illiteracy
- Climatic hazards from cyclones, river-erosions, etc.

2.1.4. **Opportunity:** Opportunities for the development of Sabrang include:

- Growing global and regional tourism industry

- Increasing level of interest in econ-tourism and adventure tourism

2.1.5. **Threat:** However, threats pose potential bottle-necks to Sabrang TP in the short-, medium- and long-run. They are:

- Growing level of competition
- Concerns on national laws and order

2.1.6. The strengths, weaknesses, opportunities and threats delineated above can be summarised as follows:

Table 4.1. SWOT Analysis for Sabrang TP

	Internal	External
Helpful	<p>Strengths</p> <ul style="list-style-type: none"> • Long coast line with a pristine beach • Eco-Tourism assets nearby (i.e. St. Martin’s Island) • Excellent site location with easy access to the Cox’s Bazar airport • It is an integral part of the Cox’s Bazar tourism corridor • Land title is clear (BEZA) • Easy access to labour • Bangladesh’s national image is being transformed to the country of manufacturing. 	<p>Opportunities</p> <ul style="list-style-type: none"> • Growing global and regional tourism industry • Increasing level of interest in econ-tourism and adventure tourism.
Harmful	<p>Weaknesses</p> <ul style="list-style-type: none"> • Tourism is a relatively nascent industry in Bangladesh • Security and safety concerns • Shortfall in infrastructure • Shortfall in skilled manpower in tourism and/or related industries • Inadequate backward and forward linkages in tourism industry • Unfavourable business environment • Low community acceptance of foreign tourists • Climatic hazards from cyclones, river-erosions, etc. 	<p>Threats</p> <ul style="list-style-type: none"> • Growing level of competition • Concerns on national laws and order

2.2. Enhancement and Mitigation Strategies

2.2.1. In order to enhance the potential strengths of Sabrang TP coupled by opportunities, the S+O strategies can be drawn as follows:

- Target investors and developers with an emphasis on growth potential of the Bangladeshi tourism industry;
- Inform those regional and global tourism promoters about eco-tourism programmes that are going to be installed in Sabrang TP;
- Target those global IT firms, i.e. Google, Samsung, Korea Telecom, Softbank, etc., and extend an invitation to them to install their advanced IT demonstration programmes in Sabrang;
- Target tour promoters in Singapore, Thailand, Malaysia, etc. to develop tour packages that include Sabrang in their packaged tour programmes;
- Emphasise excellent locational advantages that Sabrang can offer in marketing campaign;
- Work closely with the Ministry of Industry and the business associations in the textile and RMG industry for the possibility of organising national- and international level business conferences in Sabrang.

2.2.2. The weaknesses of Sabrang and potential threats have to be ameliorated and mitigated. For example,

- Work closely with the Bangladesh Parjatan Corporation to start to promoting Bangladesh's image campaign as an international tourist destination;
- Establish closer collaboration with relevant authorities to set up a one-stop-shop for investors seeking to invest in the park to ease business set-up procedures and to lower transaction costs;
- Inform investors the power supply plan continuously committed by the GOB (i.e. Vision 2030, a long-term power development strategy; plan to develop coal-fired power stations in the Chittagong area with the power generation capacity of 600MW each, etc.);
- Build a jetty in the site for Sabrang TP, so that access to coastal transportation and/or cruise programmes connecting to the Chittagong Port, Cox's Bazar and other destinations can also be available;
- Install continuing vocational education programmes, i.e. technical vocational education and training (TVET), in the site to address the challenge of the shortfall in skilled manpower;

- Establish closer collaboration with national and regional government security and safety apparatus to ensure the safety of the zone;
- Install and continue community aware campaign about the benefits that can be brought forth by the Sabrang TP and work closely with community leaders; and
- Inform investors that Bangladesh is a signatory to and member of the Multilateral Investment Guarantee Agency (MIGA), an affiliate of the World Bank, which guarantees against loss of investment due to political problems in host countries.

2.3. Time-frame to Implement the Strategic Tasks

2.3.1. The timeframe for the implementation of the strategies to enhance Sabrang TP's competitiveness as identified in the preceding section is presented in Table 4.2.

2.3.2. As the construction and preparation period of Sabrang is estimated to be about 10 years until completion, the tasks mostly can be achieved in the medium run, meaning less than 5 years. Nevertheless, since the establishment of inter-ministry or inter-agency co-operation may take longer time-frame, it is recommended BEZA start to forge the foundation for the co-operation framework as soon as possible.

Table 4.2. Estimated Timeframe for the Implementation of Strategic Tasks

Strategy	Description	Partner in task	Task Completed within		
			Short-term ($t \leq 1$ year)	Medium-term ($1 > t \leq 5$)	Long-term ($t > 5$)
1	Target investors and developers with an emphasis on growth potential of the Bangladeshi tourism industry.	Ministry of Civil Aviation and Tourism, Bangladesh Parjatan Corporation (BPC), Bangladesh Investment Development (BIDA)	▶		
2	Inform those regional and global tourism promoters about eco-tourism programmes to be installed in Sabrang TP	Ministry of Civil Aviation and Tourism, Bangladesh Parjatan Corporation (BPC), BIDA, Tour Operators' Association of Bangladesh	▶		
3	Target those global IT firms, i.e. Google, Samsung, Korea Telecom, Softbank, etc., and extend an invitation to them to install their advanced IT demonstration programmes in Sabrang	Ministry of Civil Aviation and Tourism, Bangladesh Parjatan Corporation (BPC), BIDA, Ministry of Industry	▶		
4	Target tour promoters in Singapore, Thailand, Malaysia, etc. to develop tour packages that include Sabrang in their packaged tour programmes	Ministry of Civil Aviation and Tourism, Bangladesh Parjatan Corporation (BPC), BIDA, Tour Operators' Association of Bangladesh	▶		

5	Emphasise excellent locational advantages that Sabrang can offer in marketing campaign; Work closely with the Bangladesh Parjatan Corporation to start to promoting Bangladesh's image campaign as an international tourist destination.	Ministry of Civil Aviation and Tourism, Bangladesh Parjatan Corporation (BPC), BIDA, Tour Operators' Association of Bangladesh			
6	Work closely with the Ministry of Industry and the business associations in the textile and RMG industry for the possibility of organising national- and international level business conferences in Sabrang.	Ministry of Industry, BIDA, BPC, Bangladesh Textile Mills Association, Bangladesh Garments Accessories & Packaging Manufacturers & Exporters Association (BGAPMEA), etc.			
7	Establish closer collaboration with relevant authorities to set up a one-stop-shop.	BIDA, Ministry of Finance, Ministry of Housing and Public Works, Bangladesh Customs, Ministry of Commerce, Ministry of Industry, National Board of Revenue (NBR), Chittagong regional authorities,			
8	Inform investors the power supply plan continuously committed by the GOB.	BIDA, Bangladesh Power Development Board (BPDB), Power Division, Ministry of Power, Energy and Mineral Resources (MPEMR),			

9	Build a jetty in the site for Sabrang TP, so that access to coastal transportation and/or cruise programmes connecting to the Chittagong Port, Cox's Bazar and other destinations can also be available	BIDA, Ministry of Transportation and Bridges, the Chittagong Port Authority			
10	Install continuing vocational education programmes	Ministry of Education, Ministry of Labour and Employment, National Hotel and Tourism Training Institute (NHTTI)			
11	Establish closer collaboration with national and regional government security and safety apparatus	Bangladesh Police (Tourism Police), Ministry of Home Affairs, Ministry of Foreign Affairs, Regional authorities			
12	Install and continue community aware campaign about the benefits that can be brought forth by the Sabrang TP and work closely with community leaders	BIDA, Bangladesh Police (Tourism Police), Ministry of Home Affairs, Regional authorities, Community leaders			
13	Inform investors that Bangladesh is a member of MIGA	BIDA, the World Bank, Bangladesh Police, Ministry of Home Affairs, Ministry of Foreign Affairs, regional authorities			

2.4. Marketing Framework

2.1.1. One of many characteristics of FDI in-flows to Bangladesh is diversity. As shown in Figure 4.2 below, FDI in-flows encompass the European and Far Eastern countries as well as regional neighbours.

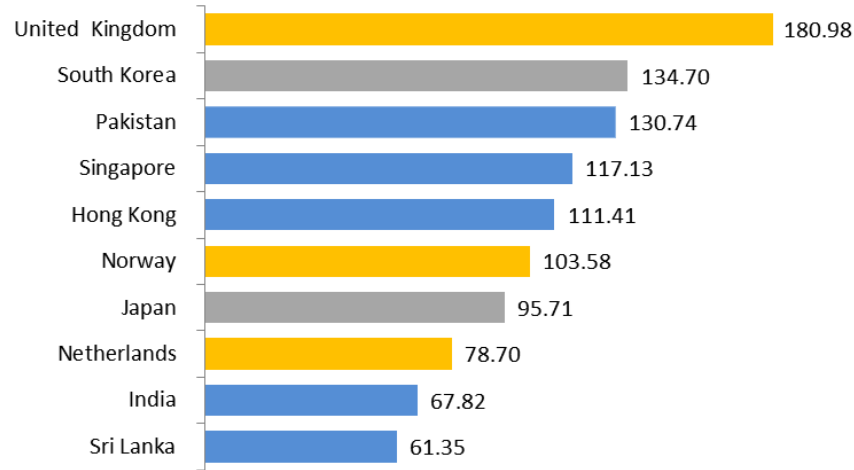


Figure 4.1. Major Investors to Bangladesh, 2014

Note: Unit in US\$ million

2.1.2. However, FDI in-flows to Bangladesh have mostly been committed in the energy and manufacturing sectors and have rarely, if not at all, targeted the tourism sector.

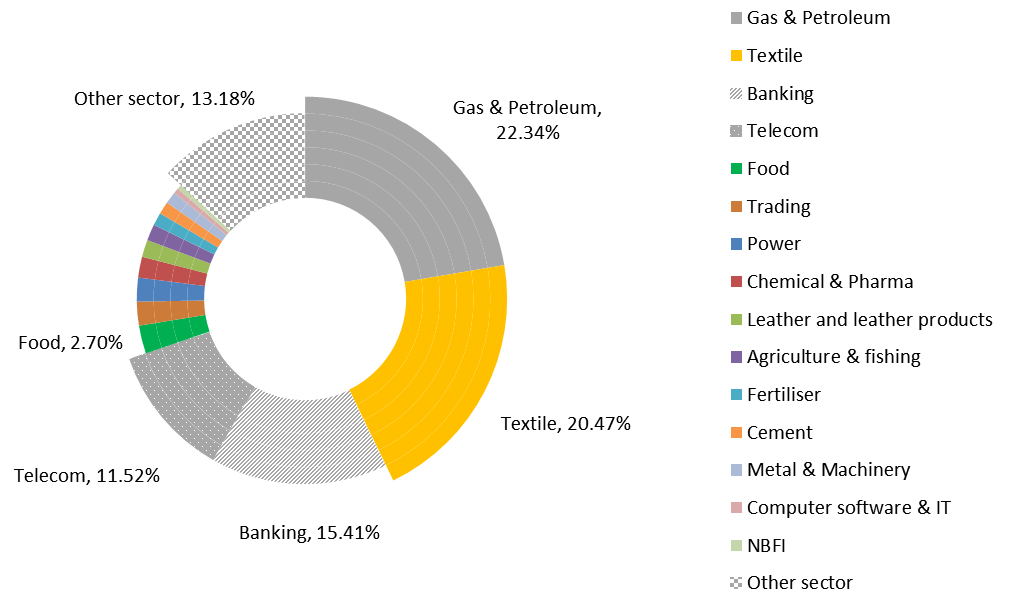


Figure 4.2. FDI In-flows classified by Major Sectors, 2014

Source: Authors' computation based on the data obtained from Bangladesh Bank (2014).

2.1.3. Hence, the tasks of exigency are to inform investors and potential visitors about the development of Sabrang TP in Bangladesh. To that, the study team recommends the following models and strategies be integrated for the basis of the task implementation in addition to the strategies delineated in the preceding section:



Figure 4.3. Schematic Diagram of the Strategic Framework of the Promotion of Sanbrang

- (1) **Selection and concentration strategy:** Needless to say, the marketing activities have to be based on selection and concentration in order to attain efficiency and effectiveness in the use of limited resources.
- (2) & (3) **Place marketing model/Co-operation and partnership Strategy:** The place marketing model is frequently adopted in the promotion of tourism. It involves the employment of branding and sales strategies to different regions or country. The main attributes of the place marketing are image, point, target, channel and organisation. As such, it calls for **the promotion of image for Sabrang, and further Bangladesh as an international tourist destination, close inter-agency co-operation and partnership and even inter-organisational and international co-operation and partnership.** Furthermore, it should not go unnoticed the **necessity of close collaboration with regional communities.**

2.5. Marketing Channels

- 2.5.1. The marketing channels refer to those means of communication established for/with investors and potential tourists.
- 2.5.2. They consist of social media networks (SMSs), i.e. Facebook, Instagram, etc., leaflets, catalogues, ads on international TV channels, i.e. BBC, CNN, Al Jazeera, etc., a setting-up of home-page, etc. (See Figure 4.4 for a sample of a leaflet).
- 2.5.3. As the matter of course, all these strategies for the media campaign would target to create the following effects among others:
- *creating/increasing awareness of the destination;*
 - *reaching global publicity;*
 - *encouraging visitors to plan their journey;*
 - *strengthening the destination image as a favourite destination;*
 - *targeting new/specific market;*
 - *increasing number of visitors;*
 - *creating buzz around the destination;*
 - *increasing the number of email subscribers;*
 - *increasing the number of Facebook fan base;*
 - *changing the position of destination in the mind of visitors;*
 - *bringing back the destination as a favourite one for visitors.*²⁵
- 2.5.4. One of noticeable weaknesses of the Sabrang development project is the fact that **Bangladesh is not known in the global tourism industry as a popular tourist destination. Thus, first and foremost, BEZA needs to turn this perception around.** And to this, BEZA has to work closely, above all, with BPC. One way of establishing a co-operation channel with the BPC is to go to joint-road shows with a prime object—inform investors as well as potential visitors of the rise of tourism industry in Bangladesh.
- 2.5.5. An important question is then: where should BEZA and the BPC go for the road-show for the promotion of Sabrang?

2.6. Marketing Target

- 2.6.1. The marketing channels refer to those means of communication established for/with investors and potential tourists.

²⁵ Alžbeta Királ'ová and Antonín Pavlíčka (2015) "Development of Social Media Strategies in Tourism Destination," *Procedia-Social and Behavioural Sciences*, 175, pp.363.

2.6.2. To this, **the selection and concentration principle needs to be adopted**. BEZA can **tentatively, and initially, segment the markets into 6 large groups** as in the following (Figure 4.5):

- (1) Germany and the Western Europe;
- (2) Russia and the Eastern Europe;
- (3) China and the rest of the East Asia;
- (4) Australia and the rest of Oceania;
- (5) India and the rest of the Southwest Asia; and
- (6) Saudi Arabia and the rest of the Middle-east;

2.6.3. In fact, tourists from these countries tend to grow by a large number in every year. For example, in 2000, the number of outbound tourists from Russia was about 18 million; in 2014 it reached to about 46 million. For China, in 2000, the number was about 10 million; today it is about 98 million. As for India, it was about 4 million in 2000; now it is about 18 million (Figure 4.6).

05 Phasing Plan

Phase 1 : Beginning with Competitive Facilities



- Place anchor facilities that attract international tourist
- Generate initial profit from strong attractions
- Key facilities : **Casino, Resort, Golf Course**



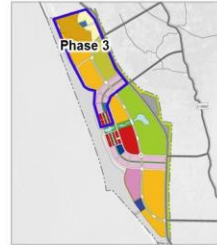
Phase 2 : Establishing an International Tourism Park Image



- Provide family-oriented facilities to widen target ages
- Provide a ferry service to help tourists visit easily
- Key facilities : **Marina, Ocean Park, Hotel**



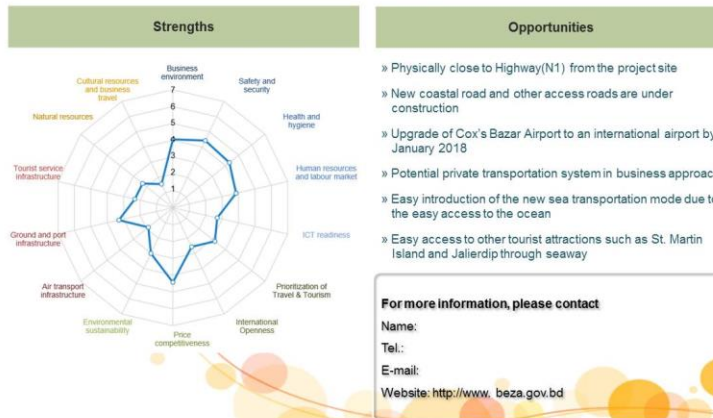
Phase 3 : Completion of the Sustainable Tourism Park



- Provide the Eco-Tourism place for ecological/cultural conservation
- Establish a residential area to accommodate employees' families
- Key facilities : **Residential, Eco-Tourism**



06 Strengths and opportunities



SABRANG TOURISM PARK:

WHERE YOU CAN FIND THE TRUE VALUE FOR INVESTMENT

BANGLADESH ECONOMIC ZONES AUTHORITY
THE PEOPLE'S REPUBLIC OF BANGLADESH

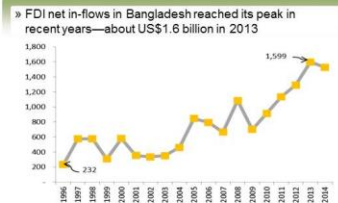
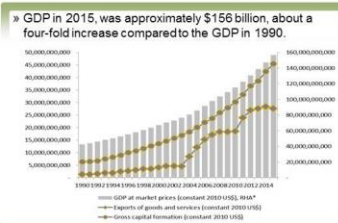
01 Investing in Bangladesh

Overview of Sabrang Tourism Park



Item	Description
Location	• Sabrang, Cox's Bazar Div., Bangladesh
Total Area	• 4,160,000m ²
Goal year	• year
On-Site Cost	• US\$

Leading Economy in Central Asia



02 Sabrang Tourism Park

Sabrang Tourism Park



Development Concept



Integrating to the national and regional tourism assets, the Sabrang is to position as a hub, along with the Cox's Bazar area, of a tourism corridor in Bangladesh's southwest focusing on the creating of strenuous points of attractions for both domestic and international visitors.

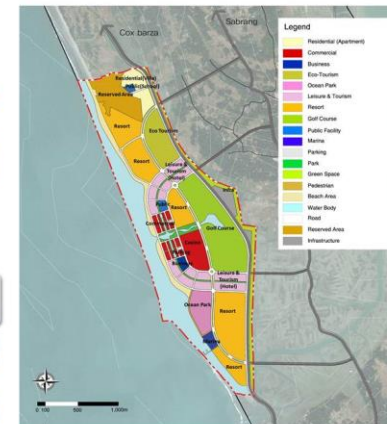
03 Functions and Facilities

Selected Functions and Facilities

Casino	• Casino for International Tourists
Ocean Park	• Water Slides, Family Pool, Beach Sports (Jet Skiing, Banana Boat, Yacht Sailing)
Golf Course	• 18hole Golf Course, Club House, Golf School
Activity Facility	• Extreme sports (Surfing, Bungee jumping, Buggy car driving, Scuba diving, Hang gliding), 3D theater, 3D aquarium
Eco Tourism	• Trekking, Cycling, Traditional Culture Experience
Shopping Mall	• Duty-Free Shopping, Food Avenue, Craft Art Shops
Hotel and Resort	• 5 Star Hotel, Condominium, Family Resort
Marina	• Marina Deck, Cruise (from Chittagong and Cox's Bazar)
Special Facilities	• Outdoor Theater, Helipad, Prayer's Room

04 Master Plan

Sabrang Tourism Park Land use



Land Use	Area(m ²)	Ratio (%)
Total	4,158,000	100.0
Tourism	1,774,000	42.6
Sub-total	1,774,000	42.6
Leisure & Tourism Resort	293,000	7.0
Ocean Park	704,000	16.9
Eco-Tourism	174,000	4.2
Golf Course	120,000	2.9
Golf Course	483,000	11.6
Commercial	198,000	4.8
Central Commercial Business	182,000	4.4
Business	16,000	0.4
Residential	104,000	2.5
Apartment	104,000	2.5
Public Facility	51,000	1.3
Sub-total	51,000	1.3
Public Facility	24,000	0.6
Marina	24,000	0.6
Parking	3,000	0.1
Open Space	1,225,000	29.4
Sub-total	1,225,000	29.4
Park	71,000	1.7
Green Space	193,000	4.6
Pedestrian Road	15,000	0.4
Beach Area	151,000	3.6
Water Body	795,000	19.1
Others	806,000	19.4
Sub-total	806,000	19.4
Road	505,000	12.2
Infrastructure	56,000	1.3
Reserved Area	245,000	5.9

Figure 4.4. A Sample of Leaflet for the Promotion of Communication for Sabrang TP

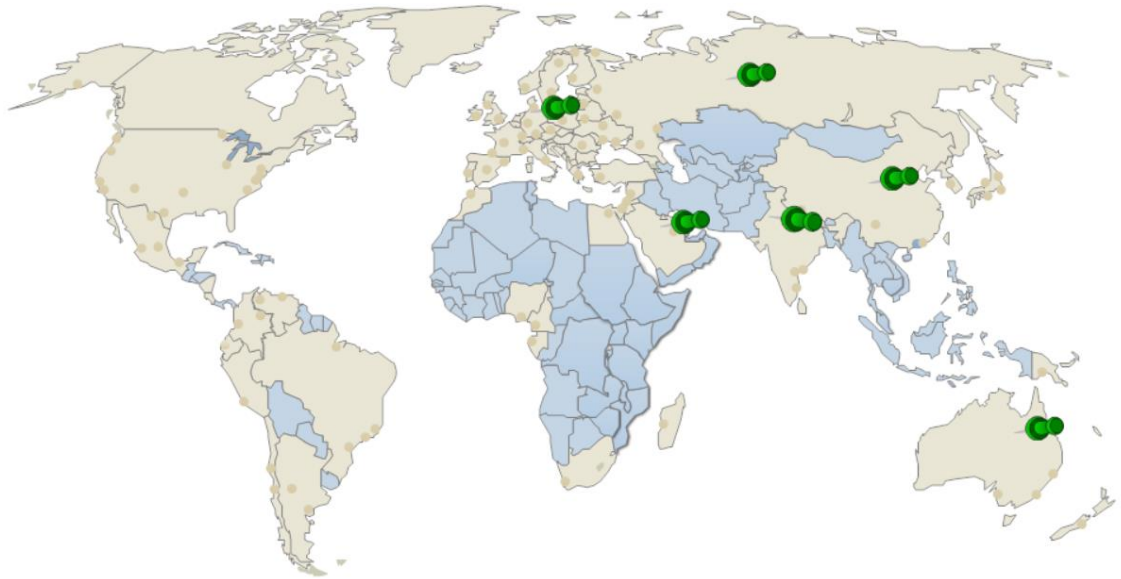


Figure 4.5. The Strategic Counties for the Six Marketing Regions at Initial Marketing Stage

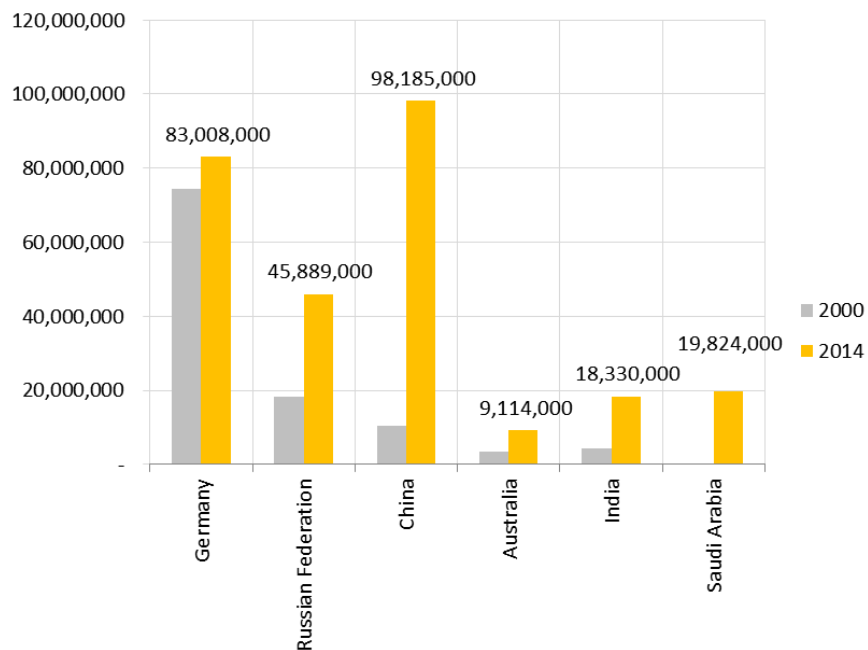


Figure 4.6. Change in the Number of International Tourist Departure
 Note: China, 2013 figure; Source: Authors' compilation of the data from the World Bank (2016)

2.6.4. As discussed in the previous chapter and sections, China, among the strategic targets, is the most important market for the success of Sabrang TP. For, in this neighbouring market, the increase in the number of outbound has been tremendously high. For the last decade or so, the number grew about 10-fold and the Chinese

tourists have become one of the most important groups of potential visitors to Sabrang TP (Figure 4.7).

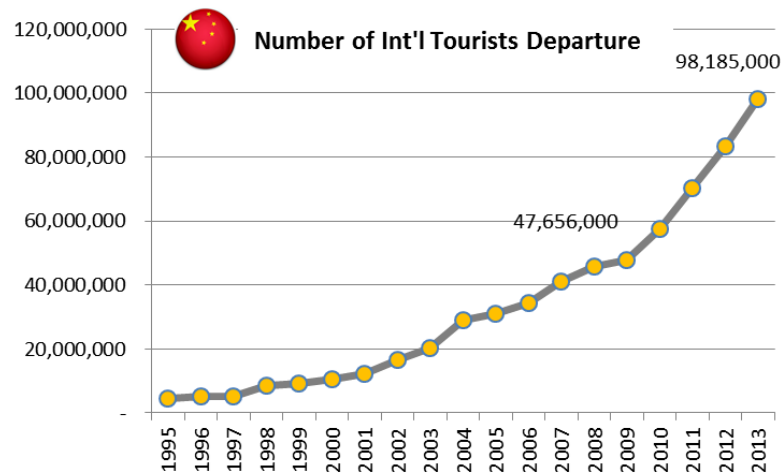


Figure 4.7. Change in International Tourist Departure
 Source: Authors' compilation, World Bank (2016) data file

2.6.5. As a daily international flight between Kunming, China and Dhaka is in service with 2 or 2.5 hours of flight time, the access to Sabrang from China would be relatively easy. Frequent flights between Shanghai and Kunming are also in service, so that the air access for the Chinese tourists in the eastern China to Sabrang would not be much troublesome (Figure 4.8).

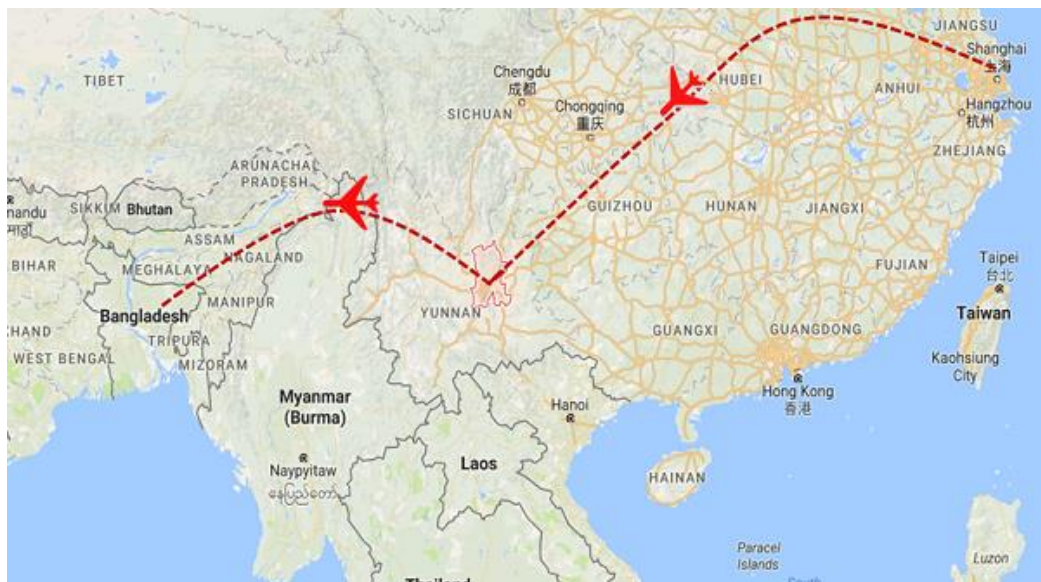


Figure 4.8. Flight Route from Kunming and Shanghai, China to Bangladesh
 Source: Authors; Map extracted from Google Map (2016)

2.6.6. By the same token, the growing market for international tourism in India should not be overlooked. In fact, the outbound tourists

from India increased by 4 times in the last decade or so. The number of outbound tourists increased to about 18 million in 2014 from about 4 million in 2000 (Figure 4.9).

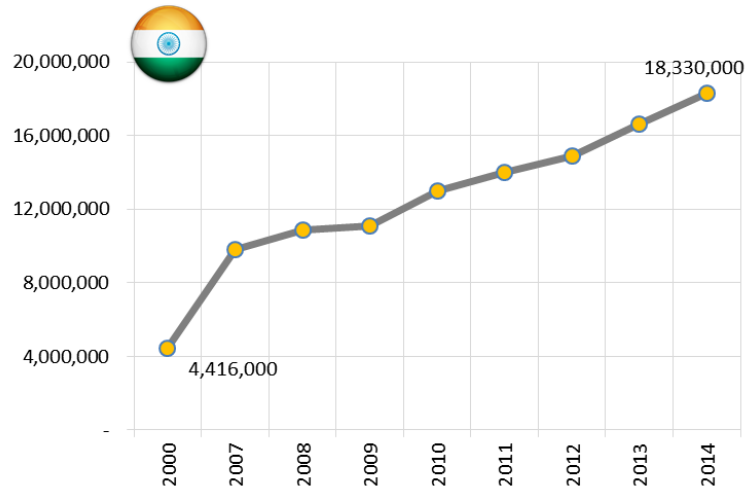


Figure 4.9. India: International Tourist Departure

Source: Authors' compilation; World Bank (2016)

- 2.6.7. **Co-operation and Partnership:** In order to invigorate the Sabrang TP, it is also important for BEZA to work together with other public and private entities, such as the BIDA, BPC, the Ministry of Civil Aviation and Tourism, Tour Operators' Association of Bangladesh and even with foreign entities.
- 2.6.8. For BEZA, it is obviously a challenge to develop Sabrang to a tourism SEZ as it is a new concept. In addition, co-operation and partnership is not new in international tourism industry. For example, the governments of Singapore and Indonesia entered into a formal co-operation to work together to attract foreign tourists. Indonesia is known to expect gains from co-operating with Singapore to absorb transit passengers as Singapore is a hub of air and sea traffic.
- 2.6.9. By the same token, Bangladesh may co-operate with Thailand. If a national level co-operation is not possible, then private sector level co-operation structure must be sought, i.e. Tour Operators' Association of Bangladesh with the same organisations in Thailand.²⁶

2.7. Organisational Structure

²⁶ AntataNews.com (2016) "Singapore-Indonesia tourism cooperation mutually beneficial," 01 June 2016, Rabu, <http://www.antaranews.com/> (Access date: 02 October 2016).

2.7.1. In order for BEZA to implement the strategies delineated in above, it needs to set up its organisational structure, emphasising BEZA’s external relationship based on co-operation and partnership in marketing and promotional activities.

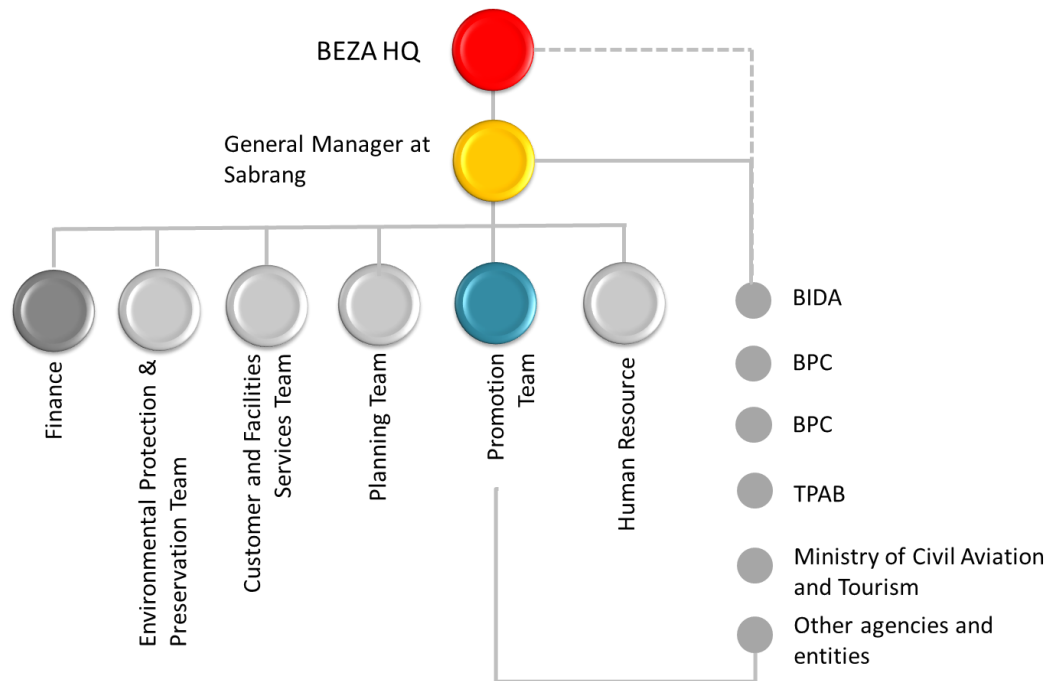


Figure 4.10. Organisational Structure of the Management of the Sabrang TP

2.7.2. As shown in Figure 4.10., the development and operation of the Sabrang TP will be undertaken by a **general manager and six teams—planning, promotion, finance, human resource, environmental protection and preservation, customer and facilities services** (See also Table 4.3).

2.7.3. General Manager will of course be responsible for daily management of the entire TP and will report to BEZA headquarter. S/he will also be responsible for co-ordinating partner agencies and institutions and will organise non-standing committees and meetings, when necessary, with other agencies to co-ordinate strategies, regulations and policies aiming to the development and promotion of Sabrang.

2.7.4. Planning will be headed by a team leader and is responsible for the allocation of the site and subsequently prepare a contract with investors and will consult to general manager who will be advised by a lawyer. The team will also devise long-term planning and will be monitoring the progress of the plan, which will be reported to general manager, then to the head office in Dhaka. The team leader is also responsible for the co-ordination with other teams.

- 2.7.5. Customer Services and Aftercare will basically be responsible to facilitate the needs of investors. It will support investors the entire process of business registration and the development of their buildings and facilities in the TP. In collaboration with other agencies and organisation, it will also institute and manage the on-stop shop.
- 2.7.6. The main responsibility of the promotion team includes the investment attraction and marketing activities for the TP. In collaboration with BEZA's head-office and the general manager as well as concerned agencies such as the BOI, the team will institute the programmes for the attraction of investments to Sarang. In addition to marketing and promotional activities, it will make recommendations to the general manager as to with whom Sabrang needs to collaborate in order to expose itself to the global tourism industry. It will also communicate closely with local communities so that Sabrang will muster community support. Upon the direction of the general manager and the collaboration with other institutions, this team will focus on promoting Sabrang to the global tourism industry and will be responsible for daily update of the contents of website as well as SMS tools.
- 2.7.7. Environmental Protection and Preservation team is responsible for the protection of the nature in and around the TP including sea-areas of Sabrang and St. Martin's Islands and maintain green area and eco-tourism assets in the TP. Its duties also include the maintenance of the TP clean. In short, it is the care-taker of the physical assets of the TP.
- 2.7.8. Human resource team will be responsible for the employment of the workers hired by the TP. Its main job includes the instituting continuing education programmes for the workers.
- 2.7.9. The job of the Finance team is quite broad. It will mainly look after the financial affairs of the TP. In addition, it will also be responsible for the daily transactions accrued from the daily management of the TP. It will also be responsible for the supervision of security apparatus during and after the development of the TP.

Table 4.3. Manpower Required for the Management of an IP

No.	Job Category	Number	Total
Manager's Office			
1	General Manager of TP	1	
2	Executive Secretary	1	
3	Senior Officer	1	
5	Complaints Handling Auditor	1	
6	Lawyer	1	5

Planning			
1	Team Leader	1	
2	Secretary	1	
3	Plan Monitoring Senior Officer	1	
4	Plan Monitoring Junior Officer	1	
5	Technician	3	
6	Junior Technician	2	9
Human Resource			
1	Team Leader	1	
2	Personnel Officer	1	
3	Secretary II	1	
4	Junior HR Officer	1	
5	Archivist	3	
6	Post handling	3	10
Promotion			
1	Team Leader	1	
2	Secretary II	1	
3	Senior Promotion Officer	1	
4	Promotion Officer	3	
5	Public Relation Officer	4	
6	Audio visual Technician	1	
7	Assistant Audio Visual Technician	1	12
Finance			
1	Team Leader	1	
2	Secretary	1	
3	Cashier	1	
4	Collector	1	
5	Senior Finance Officer	1	
6	Finance Officer	2	
7	Purchasing Officer	1	
8	Purchasing	1	
9	Property Administration Officer	2	
10	Chief of Stores	1	
11	Stores Worker	2	
12	Transport Officer	1	
13	Driver I	4	
14	Driver II	3	
15	General Maintenance Worker	1	
16	Telephone Operator	4	
17	Guards	10	
18	Security	4	
19	Errand	5	
20	Gardner	4	
21	Janitors	10	61
Environmental Protection and Preservation			
1	Team Leader	1	

2	Senior Environmentalist	1	
3	Environmentalist	3	
4	Assistant Environmentalist II	1	
5	Assistant Environmentalist I	2	
6	Junior Environmentalist	3	
7	Senior Sanitary Officer	1	
8	Sanitary Officer	3	
9	Assistant Sanitary Officer	4	
10	Junior Sanitary Officer	4	23
Customer Services and Aftercare			
1	Team Leader	1	
2	Senior Customer Services Officer	1	
3	Customer Services Officer	3	
4	Assistant Customer Services Officer	4	
5	Senior Registration Officer	3	
6	Registration Officer	3	
7	Junior Registration Officer	2	
8	General Officer	4	21
Customer and Facilities Services			
1	Team Leader	1	
2	Premises Head	1	
3	Buildings Administrator	2	
4	Traffic Controller	3	
5	General Maintenance	3	10
Total personnel			151

CHAPTER 5

TRANSPORT ASSESSMENT

1. DESCRIPTION OF TRANSPORT ASSESSMENT

1.1. Introduction

- 1.1.1. A Transport Assessment is a comprehensive review of all the potential transport impacts of a proposed development, with a master plan to mitigate any adverse consequences. The Transport Assessment covers all modes of transport.
- 1.1.2. The components in the process of Transport Assessment are shown in Figure 5.1. below.

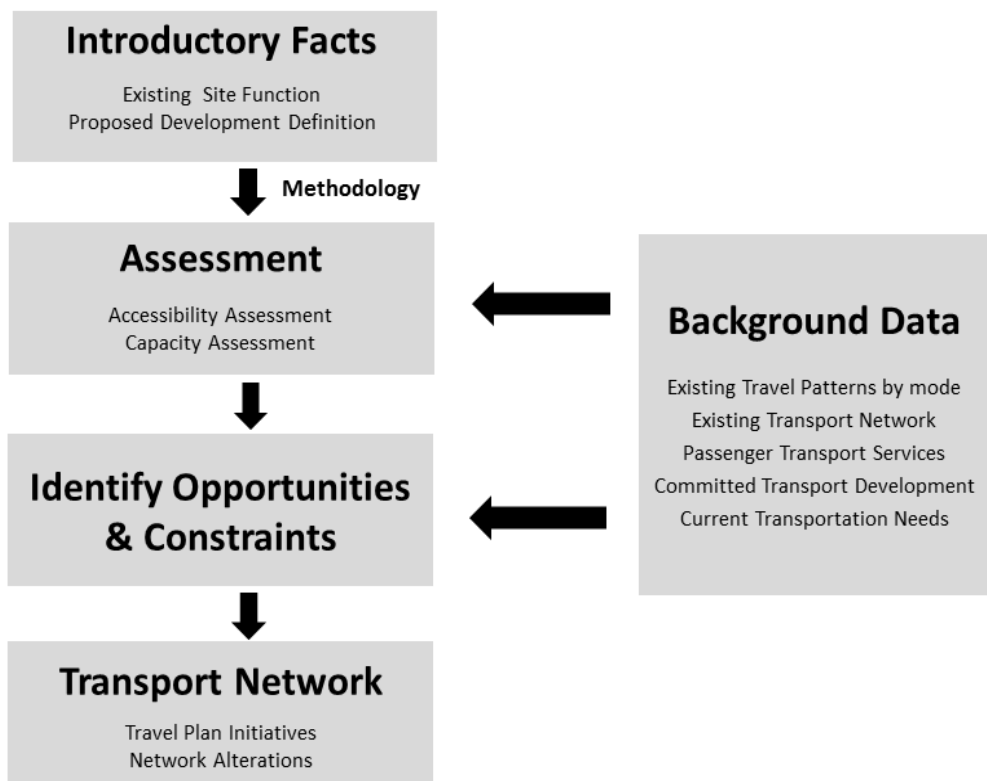


Figure 5.1. Transport Assessment Flowchart

- 1.1.3. Assessing the transport impacts of the Sabrang TP in a systematic manner contributes toward understanding how more efficient

travel patterns might be achieved and what transportation mode will be suitable for the development of project site in the future.

- 1.1.4. The convenience and efficient connection to Sabrang TP is a very important to increase the number of tourists. It is because the travel and tourism industry and the nation's transportation system have significant interdependent impacts. (Aubrey C. King, 2007)
- 1.1.5. The transportation assessment has two purposes from the context of tourism industries;
 - Meeting the demand of tourist and
 - Providing benefits to the tourism industries.
- 1.1.6. The methodology used for the assessment is mostly by analyzing baseline data collected from site visits, meeting with relevant authorities, and literature review.

2. SABRANG TOURISM PARK IN THE REGIONAL CONTEXT

- 2.1. Bangladesh, located in between South Asia and South East Asia, serving as the hub of regional connectivity has mainly two locational advantages; (1) open to the Indian Ocean by seaway; and (2) applied to potential tourists from emerging countries by approximately three hours by flight.
- 2.2. Due to the adjacency of the project site to other countries in Asia, there is a potential to have good transport connectivity to neighboring countries such as China.



Figure 5.2. Regional Context of the Sabrang Tourism Park

- 2.3. Teknaf Upazilla, where the project site is located in, is in Cox's Bazar District in the Division of Chittagong. Teknaf is located at approximately 380km from the Dhaka, and 86 km from the Cox's Bazar Town.

- 2.4. From the Cox's Bazar Airport, the only route to the project site is road; however, it is found out that even the road connectivity varies depending on season. Agricultural and seaside
- 2.5. Existing transportation networks are shown in Figure 5.3. below:

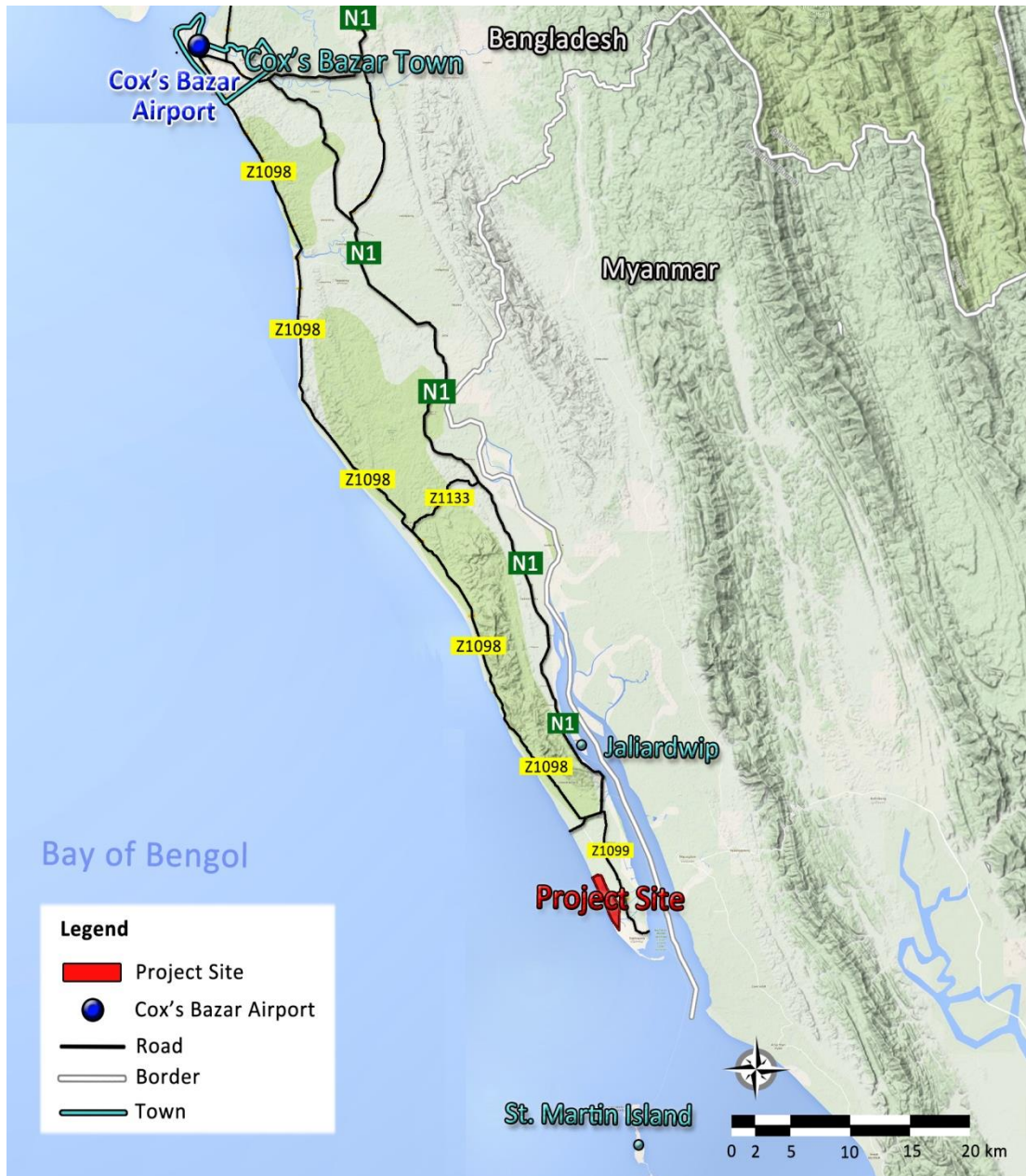


Figure 5.3. Location of the Sabrang Tourism Park

3. EXISTING TRANSPORT NETWORKS

3.1. Roadway and Bus Route

- 3.1.1 Road is the main route to the Sabrang TP and it takes around two(2) hours of travel time via road(N1 and Z1099) from the Cox's Bazar airport. The proposed site is approximately 96km away from Cox's Bazar town.
- 3.1.2 A highway (Teknaf-Shahparirdwip road (Z1099)) runs parallel and adjacent to the site. There is one (1) access road from the existing highway to the site.
- 3.1.3 Among the total 513km of road in Teknaf Upazila, 358km of road (69.7%) is unpaved, while 155km of road (30.3%) is paved or semi-paved. Moreover, the accessibility problem reveals during the monsoon season, from June to August. Some parts of road in low-lying areas tend to be flooded frequently.
- 3.1.4 Regarding to the project site, there are four road projects identified; a coastal road from running parallel to the beach from Cox's Bazar to the project site, and three access road projects for connecting the coastal road and Teknaf - Shahparirdwip road (Z1099).



Figure 5.4. Poor Accessibility to the Project Site by Uncompleted Access Roads

- 3.1.5 There is only one operational express bus service from Dhaka to Teknaf town, and it takes approximately 12 hours. No direct bus route to the project sites is available.
- 3.1.6 In this regards, there is no bus terminal or other urban infrastructure in Teknaf town, and the nearest bus terminal from the project site is Cox's bazar bus terminal. Moreover, it is found that there are some local buses from Cox's Bazar town to Teknaf, and it takes more than two (2) hours.

3.2. Airway

- 3.2.1. The project site is approachable national-wide by Cox's Bazar Airport. The Cox's Bazar Airport is located in 300km away from the Dhaka International Airport (Hazrat Shahjalal International Airport), and it takes approximately one hour by flight. No other flight route from other national airports in is available at present.

Table 5.1. List of Airports in Bangladesh

Type	Location	Name of Airport
International airports	Chittagong	Shah Amanat International Airport
	Dhaka	Hazrat Shahjalal International Airport
	Sylhet	Osmani International Airport
Domestic airports	Bagerhat Sadar	Khan Jahan Ali Airport (under construction)
	Barisal	Barisal Airport
	Cox's Bazar	Cox's Bazar Airport
	Ishwardi (Ishurdi)	Ishwardi Airport
	Jessore	Jessore Airport
	Rajshahi	Shah Makhdum Airport
	Saidpur	Saidpur Airport
	Tejgaon	Tejgaon Airport

- 3.2.2. Cox's Bazar Airport Upgrade Project is on-going by the Ministry of Civil Aviation and Tourism. The length of the current airstrip is not long enough for large international aircrafts to land directly in Cox's Bazar, so that the project is extending the airstrip length of the Cox's Bazar airport to upgrade it as an international airport in Bangladesh. The project is scheduled to be completed in January 2018.

- 3.2.3. For the expected tourist coming by private helicopters or flight, several helipads shall be introduced. Helipad will be constructed

on the rooftop of high-rise buildings such as casino and four and five star hotels.

3.3. Seaway

3.3.1. The nearest port in Bangladesh from the Sabrang TP is the Port of Chittagong which is located at 160 km away; however there is no route delivering visitors from the Chittagong Port to the Project Site.

3.3.2. St. Martin Island, located at a distance of approximately 30km from the Sabrang TP as shown in figure 5.3, is an important tourist attraction that is expected to have synergetic effects in the tourism industry in Cox's Bazar. Getting to St. Martin Island, visitors should take a ferry, called 'at Teknaf Ferry Service, located near Teknaf town and Jaliardwip.

3.4. Railway

3.4.1. There is no railway in Cox's Bazar District, and the nearest existing railway station is Chittagong railway, located at approximately 210 km away.

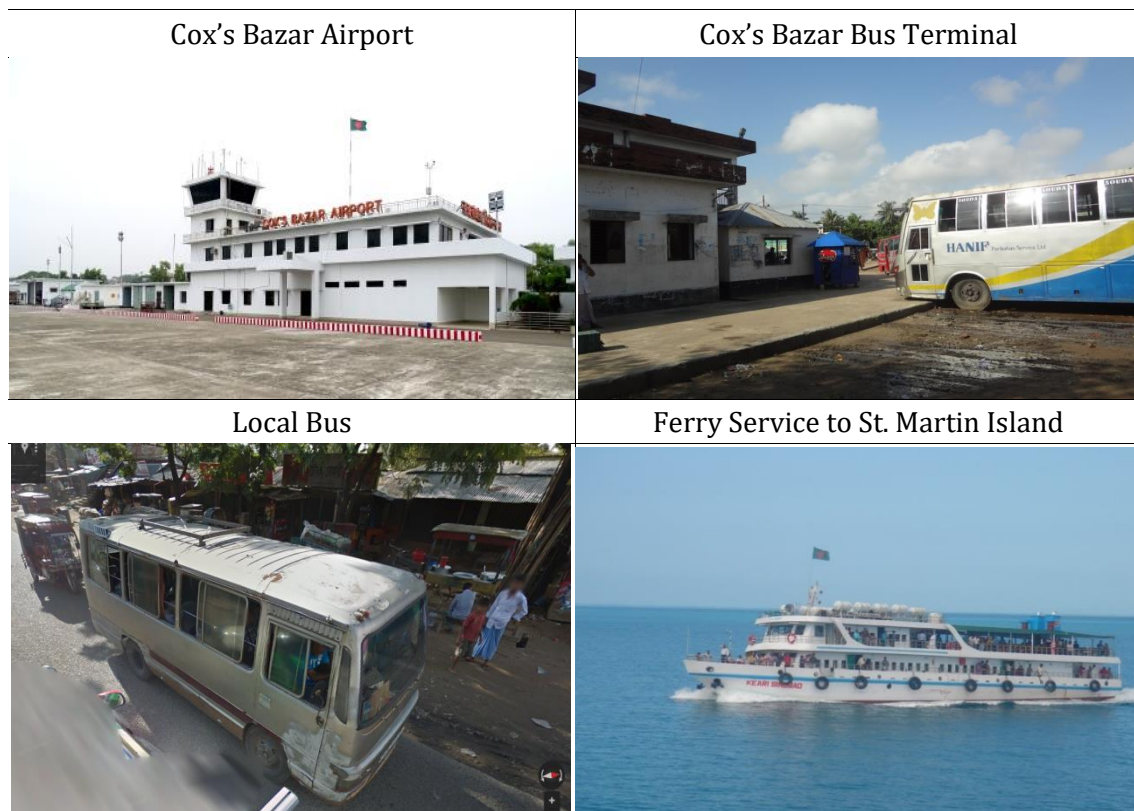


Figure 5.5. Pictures of Available Transportation Modes in Cox's Bazar

4. POTENTIAL OPPORTUNITIES AND CONSTRAINTS

4.1. This section is to identify potential opportunities and constraints by a critical assessment of existing transportation conditions (Table 5.2.), and to provide better transportation options for the Sabrang TP.

Table 5.2. Opportunities and Constraints

	Description
Opportunities	<ul style="list-style-type: none"> • Physically close to Highway(N1) from the project site • New coastal road and other access roads are under construction • Upgrade of Cox's Bazar Airport to an international airport by January 2018 • Potential private transportation system in business approach • Easy introduction of the new sea transportation mode due to the easy access to the ocean • Easy access to other tourist attractions such as St. Martin Island and Jaliardwip through seaway
Constraints	<ul style="list-style-type: none"> • No bus terminal near the project site • Absence of terminals/bus informatics services for international tourists • 96km distance of the nearest airport from the site • Not sufficient road connection to the project site • Only one road connection • Flooded road during the monsoon season • No traffic sign and traffic lights • Lack of international direct lines • Time consuming to visit the project site • Traffic congestion caused by the poor road condition and high number of tourists

5. PROPOSED TRANSPORTATION NETWORK

5.1. Basic Direction

- 5.1.1. The purpose of transportation plan is to help people reduce their travel distance and costs while maximizing travel speed and accessibility to their destination.
- 5.1.2. Therefore, based on the analysis of the opportunities and constraints, the Dohwa team identified a list of recommended transport infrastructure and networks for the Sabrang TP. The Dohwa team's decision making for the transportation

recommendation is primarily made in consideration of the concept of multi-modal transport platform shown in Figure 5.6.

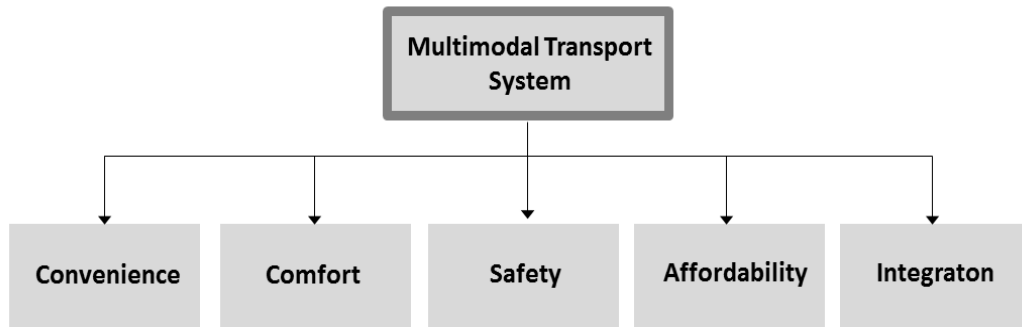


Figure 5.6. Multimodal Transport System

5.1.3. The Conceptual connection of the proposed transportation system is shown in Figure 5.7.

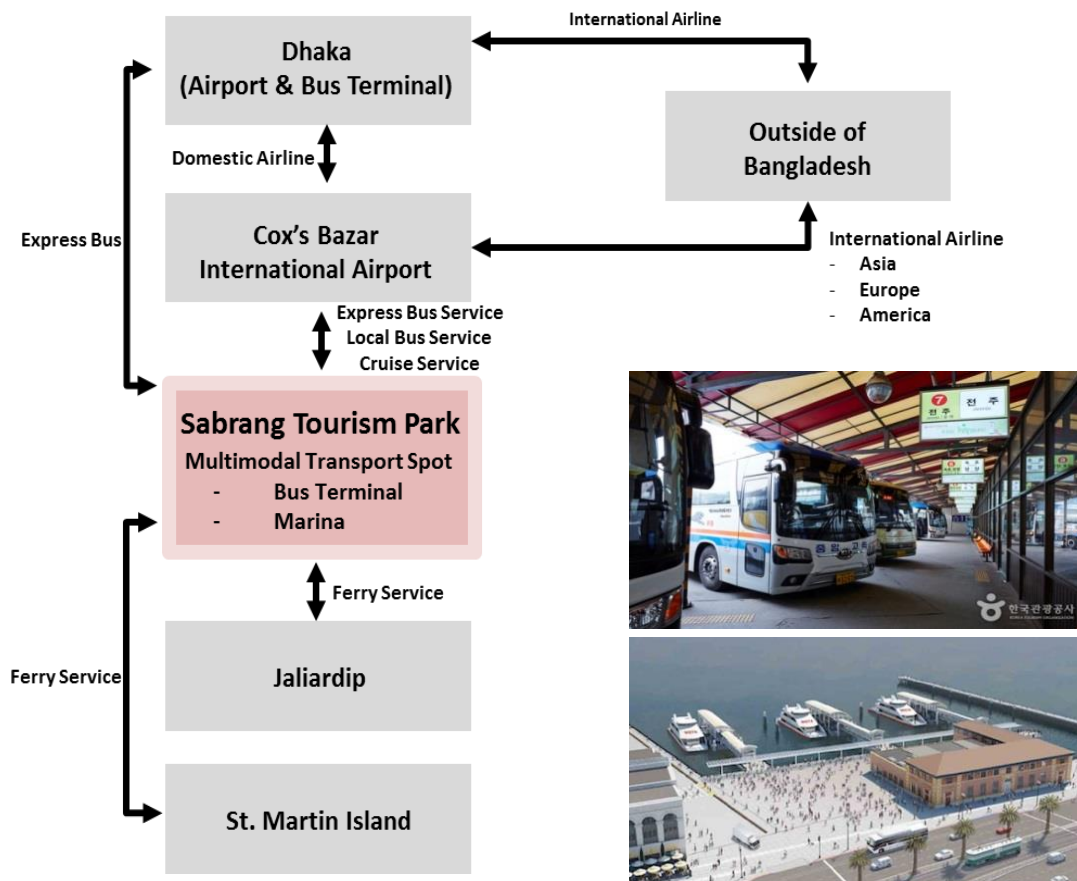


Figure 5.7. Conceptual Connection of Transportation System

5.1.4. In order to develop the multi-modal transportation system in the Sabrang TP, a central bus terminal and marina facility will be introduced. The marina facility and central bus terminal will have

an important role for linking all transportation modes such as seaway, roadway, airway, and railway.

- 5.1.5. The concept of the multimodal Transportation spot is acquired from the case study of 'Queens Wharf and Britomart Transport Centre' in New Zealand. Britomart Transport Centre is a major interchange between trains, buses and ferries in Auckland, New Zealand, and it is connected to the Ferry Terminal in Queens Wharf in order to carry the transfer passengers between ferry and bus.

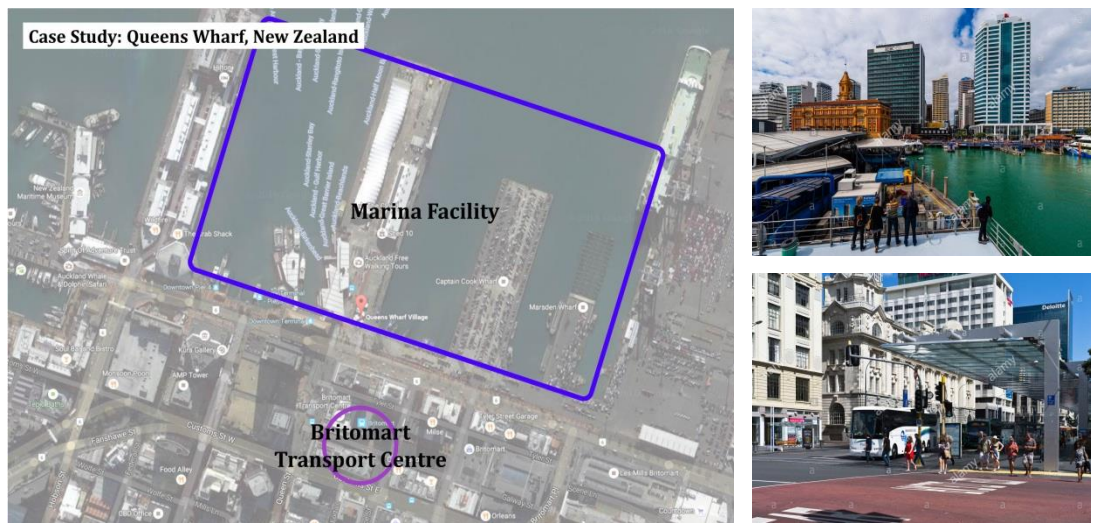


Figure 5.8. Case Study: Queens Wharf, New Zealand

- 5.1.1. The tentative location of the multi-modal transport spot will be apart from the center of the project site in order to prevent traffic congestion of the central area. Moreover, the proximity to the St. Martin Island from the Marina facility in Sabrang TP is a factor for choosing the location of the multi-modal transport spot within the project site.
- 5.1.2. Conceptual plan for the multi-modal transport spot in the Sabrang TP is as shown in Figure 5.9 below.

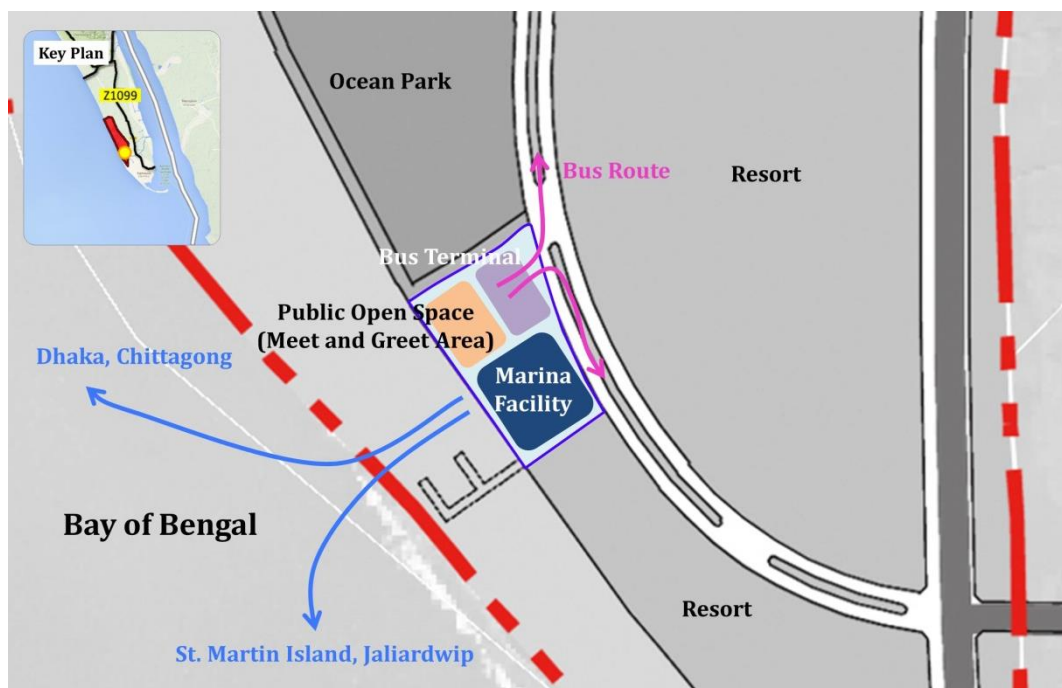


Figure 5.9. Conceptual Plan for Multi-modal Transport Spot

5.2. Roadway and Bus Routes

- 5.2.1 Regarding to motor vehicle travel, the condition of roadway is the key factor for traffic speed, congestion delay, vehicle operation cost and safety.
- 5.2.2 The Dohwa team identified that the width of the current road and highway shall be expanded for trip generation created from the development of the Sabrang TP. A proposal for road expansion is as follows:

Table 5.3. Road Expansion Proposal

Road	Lanes (Current)	Lanes (Plan)	Purpose
Z1099	1	2	• Connection with Jaliardwip Tourism Park and Teknaf town (See Figure 5.10)
Z1098 (Costal Road)	2	4	• Direct Connection to the Sabrang TP

- 5.2.3 In addition, due to the large portion of roads (69.7%) in Teknaf Upazila is unpaved road that requires the improvement of physical condition or new pavement. The improvement and maintenance of rural road is essential for the expected increase of local population by the Sabrang TP.

- 5.2.4 The express bus service will be linked to the Sabrang TP from different regions in Bangladesh such as Dhaka and Chittagong to attract domestic tourists.
- 5.2.5 Tourists arriving through the Cox's Bazar Airport will mainly use the Local bus service to the Sabrang TP.

5.3. Airway

- 5.3.1 As the Cox's Bazar Airport will be upgraded to an international airport, there will be flights arriving from diverse countries in Asia, Europe, America, etc. which need to be planned accordingly. This will play a significant role in servicing the international tourists coming to the Sabrang TP.
- 5.3.2 Moreover, the introduction of helipads as an infrastructure facility in the Sabrang TP is considerable for private flight users.

5.4. Seaway

- 5.4.1 In order to diversify the modes of transportation, a cruise service from Cox's Bazar to the project site is to be introduced. The cruise service is beneficial for not only improving the connectivity to the project site, but also functioning as one of tourism resources itself. The location of marina facilities should be allocated in the master plan.
- 5.4.2 Aimed at a long-term plan, a cruise connection from Dhaka and Chittagong to the project site is considerable accordingly.
- 5.4.3 A linkage with St. Martin Island, located at a distance of approximately 30km from the Sabrang TP, is also planned. In addition to the 'Keari Sindbad' at Teknaf Ferry dock, the new ferry route will be opened that directly connecting to the St. Martin Island from the Sabrang TP.

5.5. Railway

- 5.5.1 Railway connection plan is not considerable at this study; however, it is reviewed that the new railway station has been approved from the Railway Ministry at Gundum²⁷, which is 50 km from the site shall be continuously reviewed and studied.

²⁷ Project Administration Manual: Additional Financing People's Republic of Bangladesh: Subregional Transport Project Preparatory Facility (2015), *Asian Development Bank (ADB)*

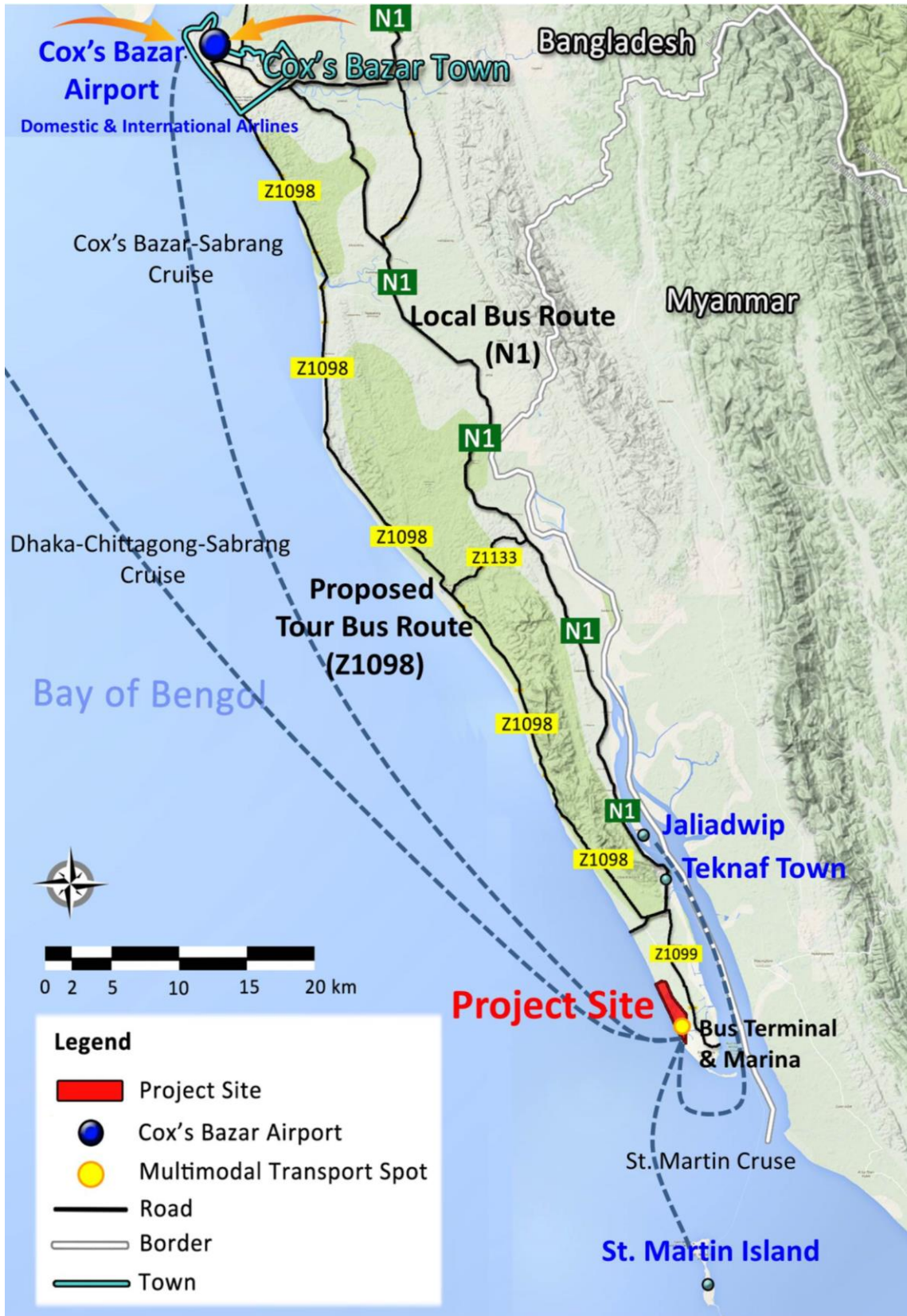


Figure 5.10. Map of the Proposed Transportation System

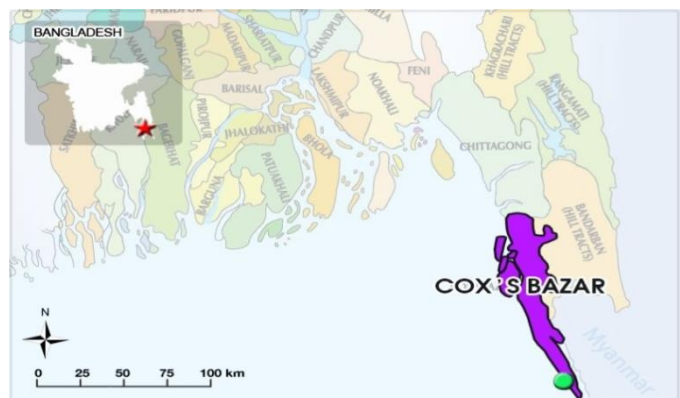
CHAPTER 6

SITE ASSESSMENT

1. COX'S BAZAR DISTRICT IN THE REGIONAL CONTEXT

1.1. Location

- 1.1.1 Earlier Cox's Bazar was a sub-division of the Chittagong District and was upgraded to a full district in 1984. Cox Bazar is located at the fringe of the Bay of Bengal and boast of world's longest unbroken sea-beach.
- 1.1.2 It is surrounded on the north by the Chittagong District, on the east by the Bandarban District and Myanmar, on the south and west by the Bay of Bengal and on the west by the Bay of Bengal.
- 1.1.3 The total area of the district is 2,491.85 km² out of which 940.58 km² is under forest land area.²⁸
- 1.1.4 The district consists of 8 upazilas²⁹ and the upazilas of Cox's Bazar are Chakaria, Cox's Bazar Sadar, Kutubdia, Moheshkhali, Pekua, Ramu, Teknaf and Ukhia.



²⁸ PricewaterhouseCoopers Pvt Ltd. (2015), p.209.

²⁹ The administrative units of Bangladesh are divided in the following order: Division, Zila, City Corporation, Municipalities, Upazila, Thana and Union

1.1.5 The project site is located in Teknaf Upzilla of Cox’s Bazaar district, at approximately 86 km from Cox’s Bazaar district office where the Teknaf beach is along the site on the left side.

1.2. Demographic

1.2.1. According to the 2011 census, Cox’s Bazar has a total population of 2,289,990 with a sex ratio of 1.04 males to 1 female. There are 415,954 households with an average household size of 5.5. The density of population stands at 919 per km². The overall literacy rate for the district of Cox’s Bazar as per the 2011 census stood at 39.3 %. Upazila-wise population details as per *District Population and Housing Census 2011* are presented in Table 6.1.

Table 6.1. Population in Cox’s Bazar

Name	Status	Population Census (thousands persons)			
		1981	1991	2001	2011
Cox's Bazar	District	1,061	1,420	1,774	2,289
Chakaria	Upzila (Upazila)	317	409	503	474
Cox’s Bazar Sadar		186	254	348	459
Kutubdia		76	95	107	125
Pekua		0	0	0	172
Ramu		127	167	203	267
Teknaf		106	153	201	264
Ukhia		92	122	155	207

Source: Bangladesh Bureau of Statistics, BBS (2011)

1.3. Local Economy

1.3.1. The economy of Cox’s Bazar is predominantly agricultural. Out of total 335,825 business holdings of the district, 44.15% holdings are farms that produce varieties of crops, namely, local and HYV rice, wheat, vegetables, spices, cash crops, pulses, betel leaves and others.³⁰

1.3.2. Main crops cultivated in this district are paddy, potato, pulse, onion, garlic, ginger, betel leaf, betel nut, wheat, sugarcane, ground nut, tobacco, rubber and vegetables, etc.

³⁰ PricewaterhouseCoopers Pvt Ltd. (2015), p.214.

1.3.3. The major portion of the agriculture land is utilized as temporary cropped area in this district. The employment pattern of the agriculture land for the year 2008 is presented in the below.

1.3.4. Apart from the agricultural industry, there were 40,086 establishments in the district in which 127,272 persons are engaged in different types of non-farming activities. Wholesale and retail trade emerged as the single largest activity (62.3%) with 24,986 establishments and 64,515 persons engaged (50.7%) in the establishments of the district.

Table 6.2. Number of Establishments and Persons Engaged by Activity

Activity	Establishments			Persons	Ratio (%)
	Total	Urban	Rural	Total	
Mining and Quarrying	23	0	23	379	0.3
Manufacturing	2,099	567	1,532	11,193	8.79
Electricity, Gas and Water Supply	15	3	12	260	0.2
Construction	10	5	5	226	0.18
Wholesale & Retail Trade	24,986	6,615	18,371	64,515	50.69
Hotels and Restaurants	3,807	990	2,817	17,640	13.86
Transport, Storage and Communication	631	142	489	1,629	1.28
Bank, Insurance and Financial Institution	135	47	88	1,027	0.81
Real Estate and Renting	282	193	89	786	0.62
Public Administration and Defence	291	172	119	3,415	2.68
Education	2,036	130	1,906	10,071	7.91
Health and Social Work	542	145	397	2,902	2.28
Community, Social and Personal Services	5,229	973	4,256	13,226	10.39
Cox's Bazar District	40,086	9,982	30,104	127,272	100

Source: District Statistics 2011 Cox's Bazar, Bangladesh Bureau of Statistics (2013)

1.3.5. It is possible to interpret by the above that the tourism industry has a strong potential to be improved with the firm base of the

“hotels and restaurants” industry which has the 2nd largest business and labour pool among non-farming activities.

2. TOURISM RESOURCES

2.1. Tourism in Cox’s Bazar

2.1.1. Cox’s Bazar is one of the most popular tourist centres in the country. Located at the head of the world’s longest sea beach, the area is blessed with many tourist attractions. Over many years, Cox’s Bazar has been an attraction to both international and domestic tourist.

2.1.2. According to the “Initial Site Assessment for Five Economic Zone Sites” report, nearly 2 million people visit Cox’s Bazar in peak season from November to March, and most of the visitors are Bangladesh nationals.

2.2. Tourists Attractions near the Cox’s Bazar town

2.2.1. **Laboni Beach:** This is the main beach of Cox’s Bazar and is considered the main beach due to the fact that it is closest to the town. Close to the beach, there are small shops selling souvenirs and beach accessories to the tourists.

2.2.2. **Himchari:** It is located about 18km south of Cox’s Bazar. The magnificent waterfall and green hills leading to the beach is a rare scene to enjoy. The road to Himchari runs by the open sea on one side and hills on the other which makes the journey to Himchari very attractive.

2.2.3. **Inani Beach:** Located 35km south of Cox’s Bazar, this white sandy beach is located within Ukhia Thana. This beach is famous for its golden sand and cleans.

2.2.4. **Ramu:** About 10km from Cox’s Bazar, is a village with sizeable Buddhist population. The village is famous for its handicrafts and homemade cigars. There are monasteries, khyangs and pagodas containing images of Buddha in gold, bronze and other metals inlaid with precious stones.

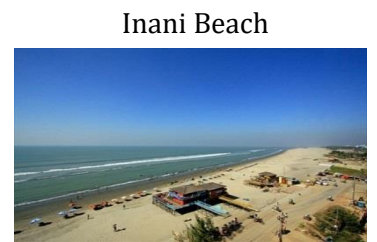
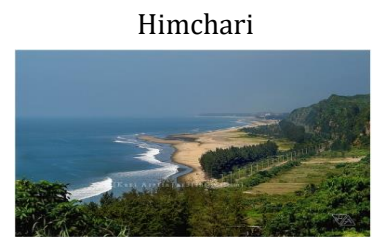
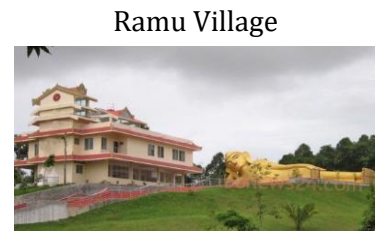


Figure 6.1. Tourists Attractions near the Cox's Bazar town

2.3. Tourists Attractions near the Project Site

- 2.3.1. **Teknaf Beach:** It is a large beach about 5km west of the center of town, very popular with locals at sunset. It is much quieter than Cox's Bazar.
- 2.3.2. **Naf River:** Tourists visits the Teknaf Port to enjoy a river cruise along beautiful Naf River, which flows between Bangladesh and Myanmar.
- 2.3.3. **St. Martin's Island:** A small island in the northeast part of the Bay of Bengal, about 9km south of the tip of the Cox's Bazar-Teknaf peninsula. It is most beautiful and the only Coral Island in Bangladesh where tourists' will find live corals. It is only coral 30km from Teknaf and visitors go there by local motorboat, tourist boats, or Sea Truck. Also, it is about 8km west of the northwest coast of Myanmar at the mouth of the Naf River. The connection of St Martin Sabrang TP is considered to be very significant, which means linking the tourism industry and transport connection is required.



Figure 6.2. Tourists Attractions near the project site

3. SETTING OF THE SITE BOUNDARY AND LAND OWNERSHIP

3.1. Site Boundary

3.1.1. BEZA designates this North-South linear shaped land, mostly with wet conditions as the Sabrang TP, and sets up a site boundary drawn on the basis of Upzila Nirba Office (UNO)'s Mouza Map. According to the map, each side of the site is defined by different topographical and built elements due to its unique location on the sea beach condition. Details and parameters of the site boundaries are shown in Table 6.3. and Figure 6.4.

Table 6.3. Parameters and Details of the site boundaries

Parameters	North	South	East	West
Details	Private and governmental lands	Bay of Bengal	Existing banks	Bay of Bengal

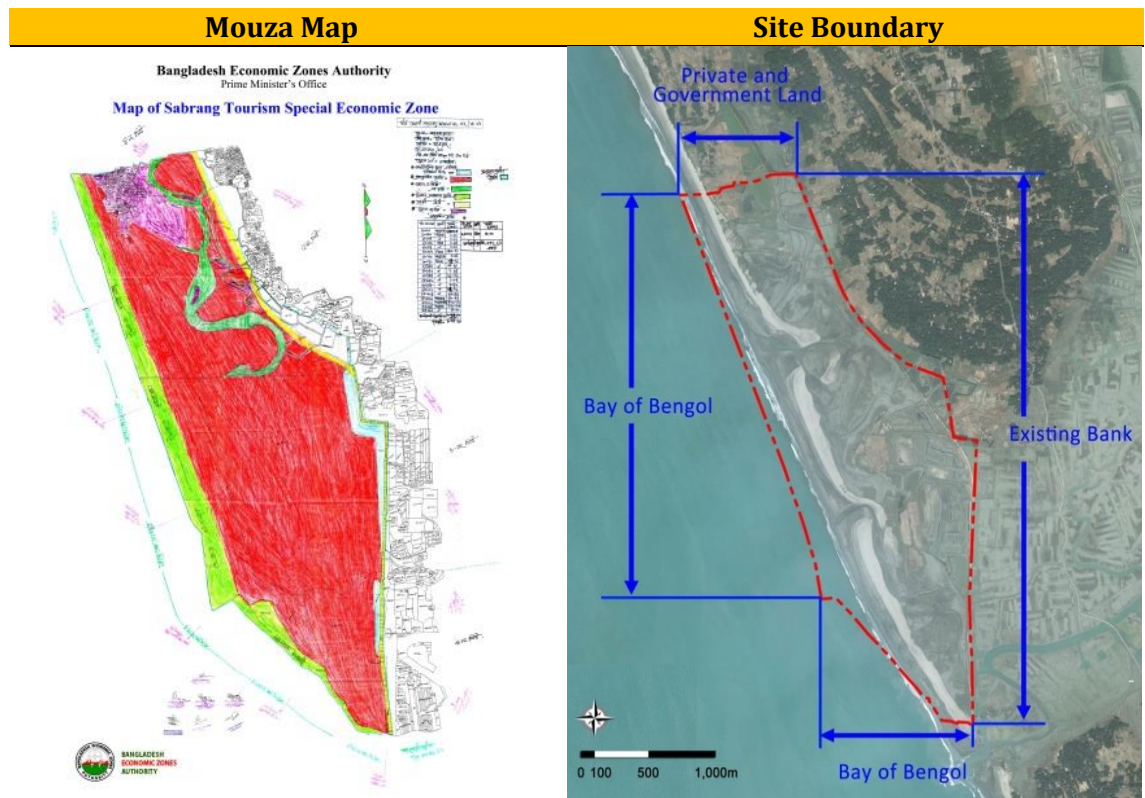


Figure 6.3. Locations of the Site

3.2. Site Area

3.2.1. The area of the site is **1,027.56** acres (416ha), confirmed by BEZA with an official letter. This number is also supported by PWC's "Initial Site Assessment for Five Economic Zone Sites".

3.3. Land Ownership

3.3.1. BEZA provides the information of land ownership by 3 categories as shown in Table 6.4. Approximately 91% of the site is governmental ownership (by BEZA and Water Development Board) and confirmed to be developed while another 9% private land is determined to be reserved at the pre-feasibility stage.

Table 6.4. Land Ownership

Types of Ownership	Area (acres)	Area (%)	Note
BEZA	882.26	85.9	Khas land, Bank, Canal, Sea,
Institution	53.62	5.2	Water Development Board
Private	91.68	8.9	
Total	1,027.56	100.0	

Source: Official letter from BEZA on the subject of confirmation of areas and site boundaries of Sabrang Tourism Park and Amowara-2 EZ dated on 19/07/2016

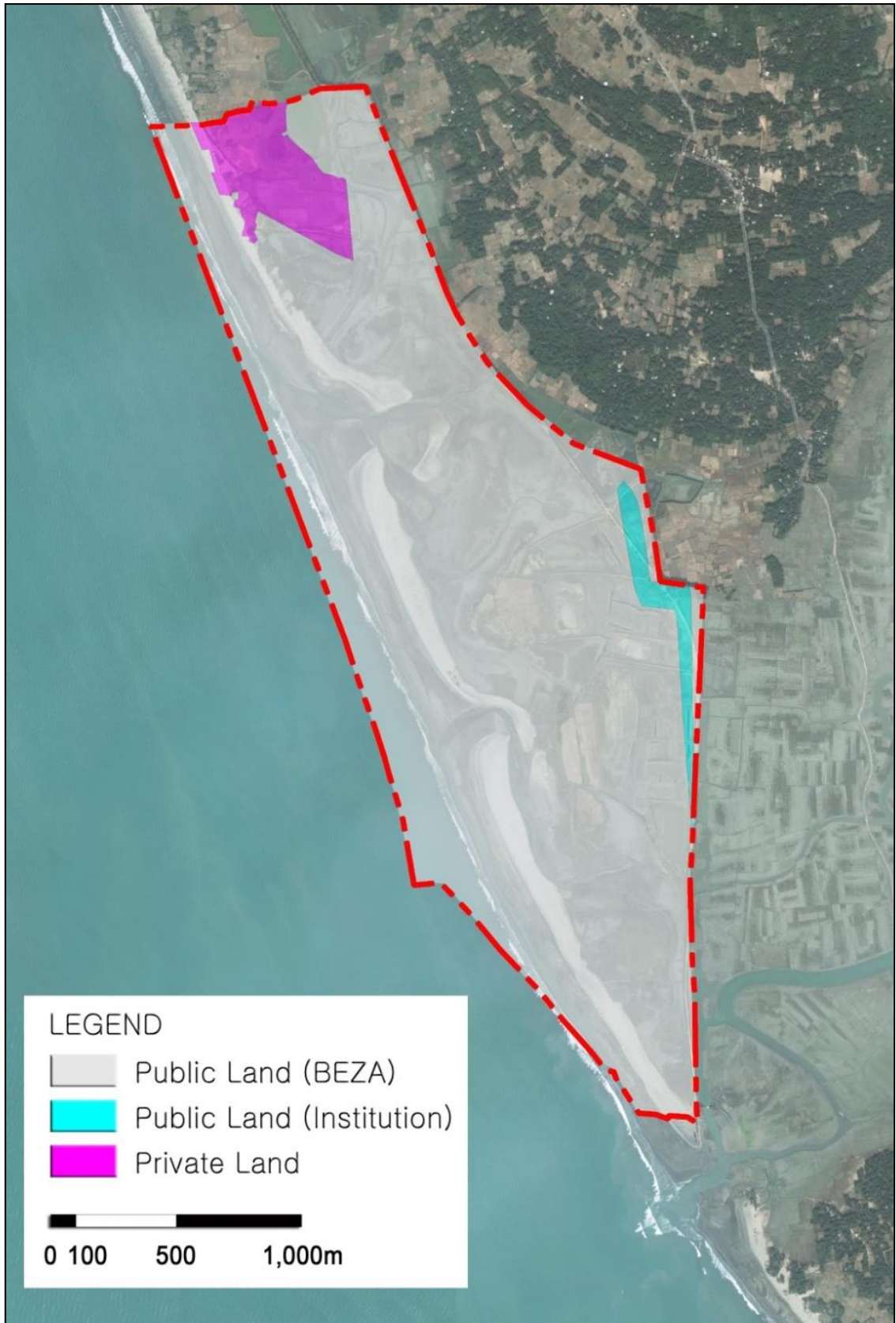
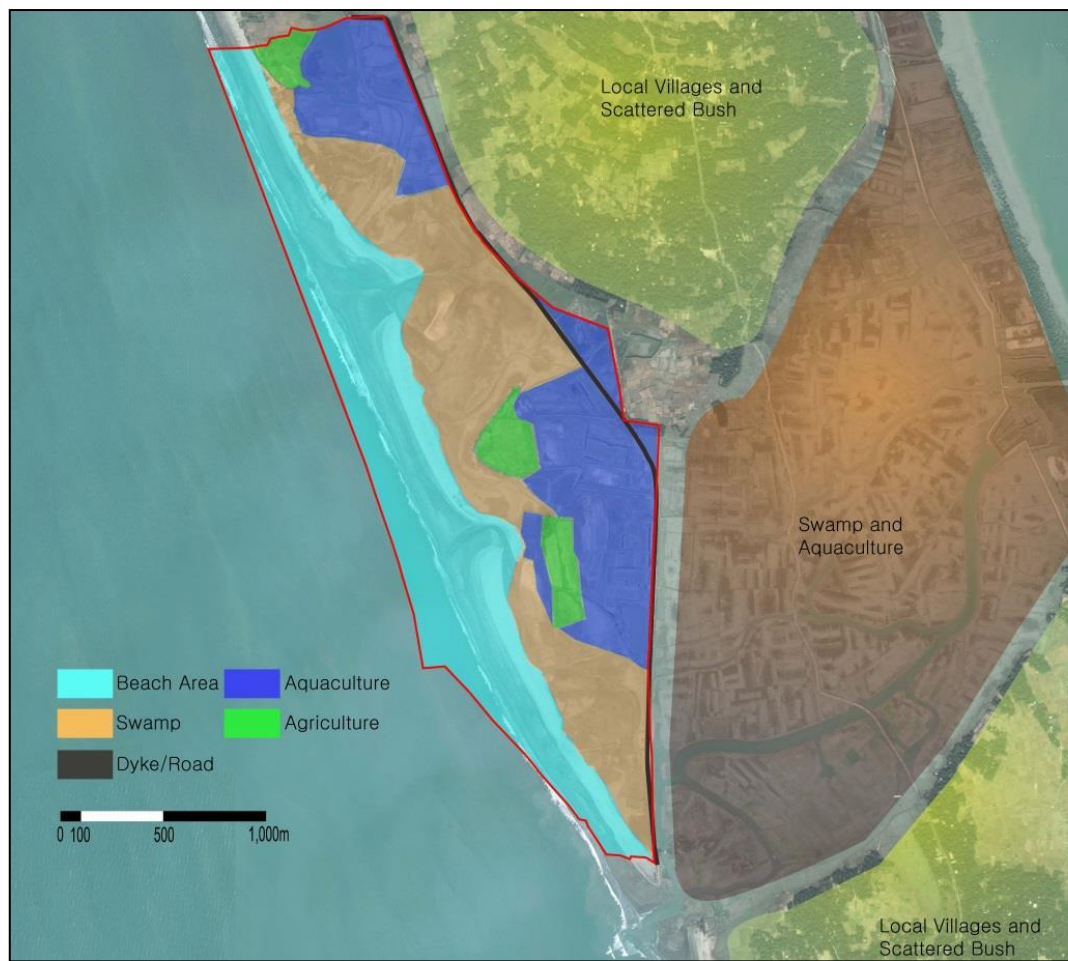


Figure 6.4. Types of Land Ownership of the Project site

4. PHYSICAL CONDITIONS

4.1. Existing Land Use

- 4.1.1. Land uses of the project site are dominated by agricultural and aquaculture activities as shown in a satellite and site survey pictures of Figure 6.5.
- 4.1.2. According to an interview with an Upazila Nirbahi officer of Teknaf, the site is roughly organized by salt field (10~20%) and shrimp farming (40%) while the rest area is vacant.



(a) Key Plan



(b) Current land use



(c) Bay of Bengal



(d) Coastal Road

Figure 6.5. Existing Land Use

4.2. Topography and Geological Condition

4.2.1. The proposed site has a level difference of approximately 0 to 6m with a gentle slope towards sea. The GIS analysis in Table 6.5 shows that more than 70% of the site is just above sea level so that most of the site is severely vulnerable against flood and storm surge.

Table 6.5. Level Difference of the Site

Level of land	Area (ha)	Proportion (%)
Below 0	4.5	1.1
0-3m	310.5	74.7
3-6m	100.8	24.2
Total	415.8	100.0

4.2.2. It is assumed that the depth of the site shall vary by a proposed land use. As the site is almost waterlogging and has no seawall protecting the site, a considerable amount of filling should be accompanied for site preparation.

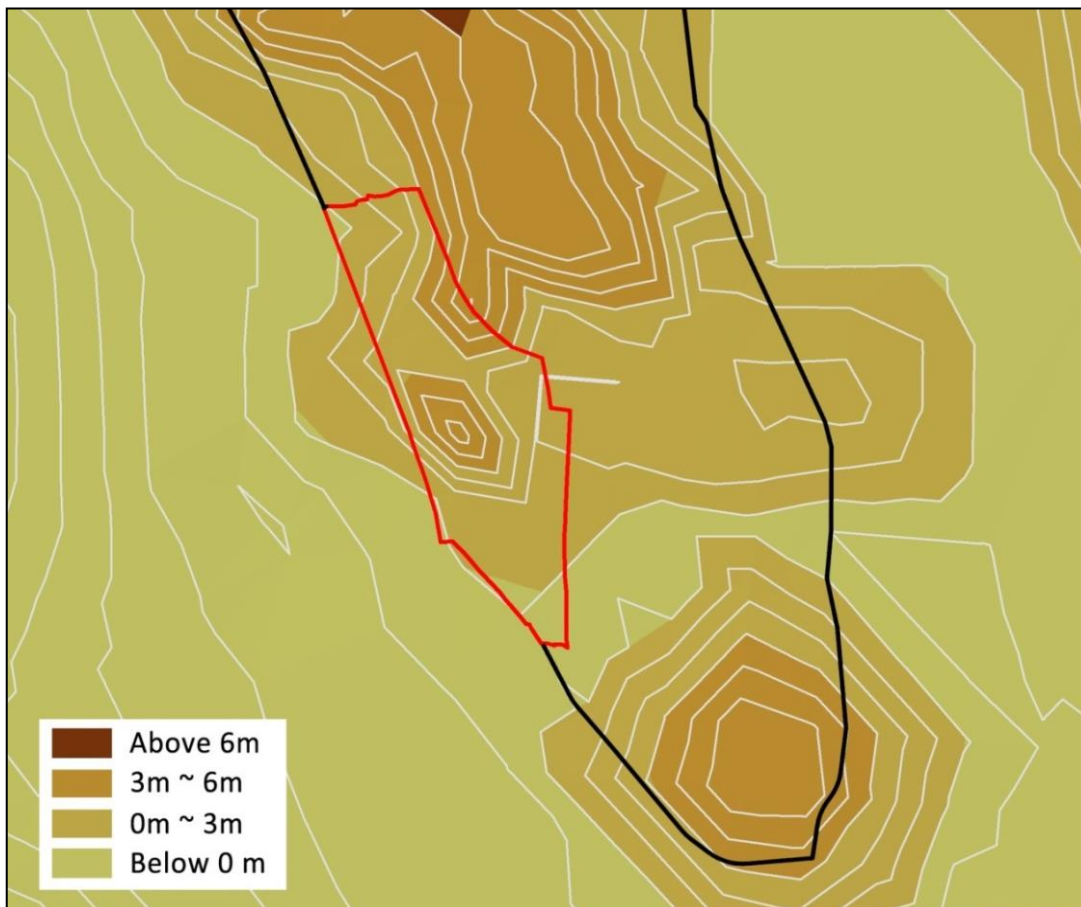


Figure 6.6. Level of the Project Site

4.2.3. The physiography of the project site falls in Chittagong coastal plain which is both the low hill range and the river valley so that most of the land within the site undergoes high flood during monsoon season as shown in the Bangladesh physiography map (Figure 6.7.).

4.2.4. According to the PWC report, the top soil layer is found to be black cotton soil which is not suitable for laying foundation for any structure. The dominant soil texture is sandy loam. The soil layer is moderate to strong acidic in character. It is highly leached and has a low natural fertility.

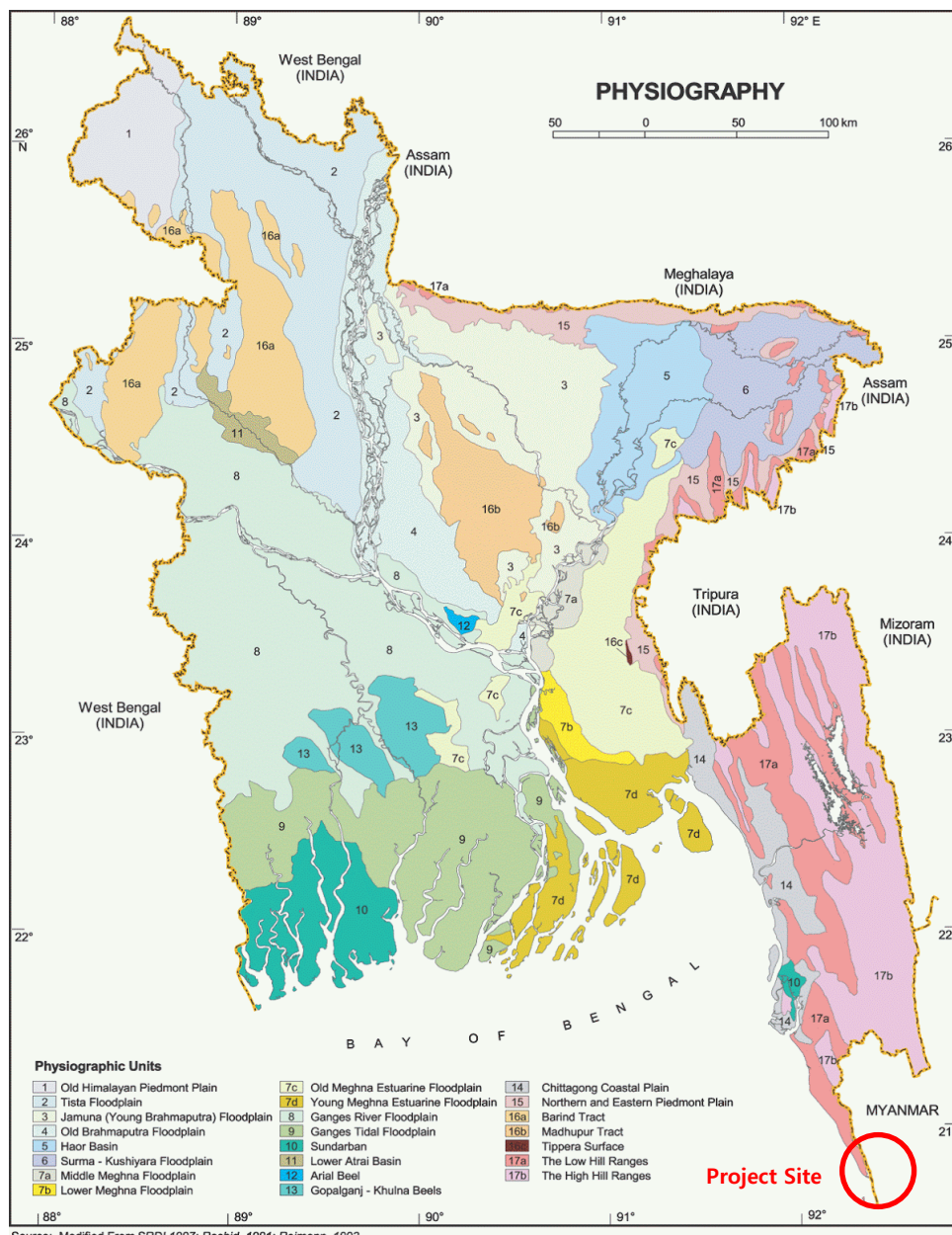


Figure 6.7. Physiography of the project site
Source: Bangladesh Bureau of Statistics

4.3. Climate

- 4.3.1. The general Bangladesh climate which is called a sub-tropical monsoon consists of six (6) seasons in a year. Winter begins in November and ends in February. In winter, there is not much fluctuation in temperature which ranges from minimum of 7°-13°C to maximum 24°C-31°C. Summer months from February to June, the temperature can be high at 37°C or even more than 40°C in some regions. Monsoon starts in July and stays up to October and almost 80% of the total rainfall is occurred in this season.
- 4.3.2. However, in the site, monsoon season starts from May and lasts until October. During this season, most of rain falls are generated with thunderstorms and even cyclones. So, the impacts of these disaster factors need to be considered in planning.

Table 6.6. Climate Features in Bangladesh

Years	Temperature(°C)		Rainfall (mm)	Humidity (%)
	Max.	Min.		
2008	41.1	14.6	3,543	76
2009	33.9	15.6	3,299	77
2010	33.9	15.3	2,813	61.1
2011	27.0	14.9	4,411	75.5

Source: Initial Site Assessment, BEZA (2015), Original Source from BMD

4.4. Cyclones and Storms

- 4.4.1 Most of coastal regions of Bangladesh are identified as areas affected cyclone which is occurring in the Bay of Bengal in April-May and October-November. It may cause serious damage to crops, livestock, assets, and people. Cox's Bazar district is one of these areas in high risk as shown in the Figure 5.9. Therefore, the site is prone to multi hazard threats such as cyclones, storm surges and floods.

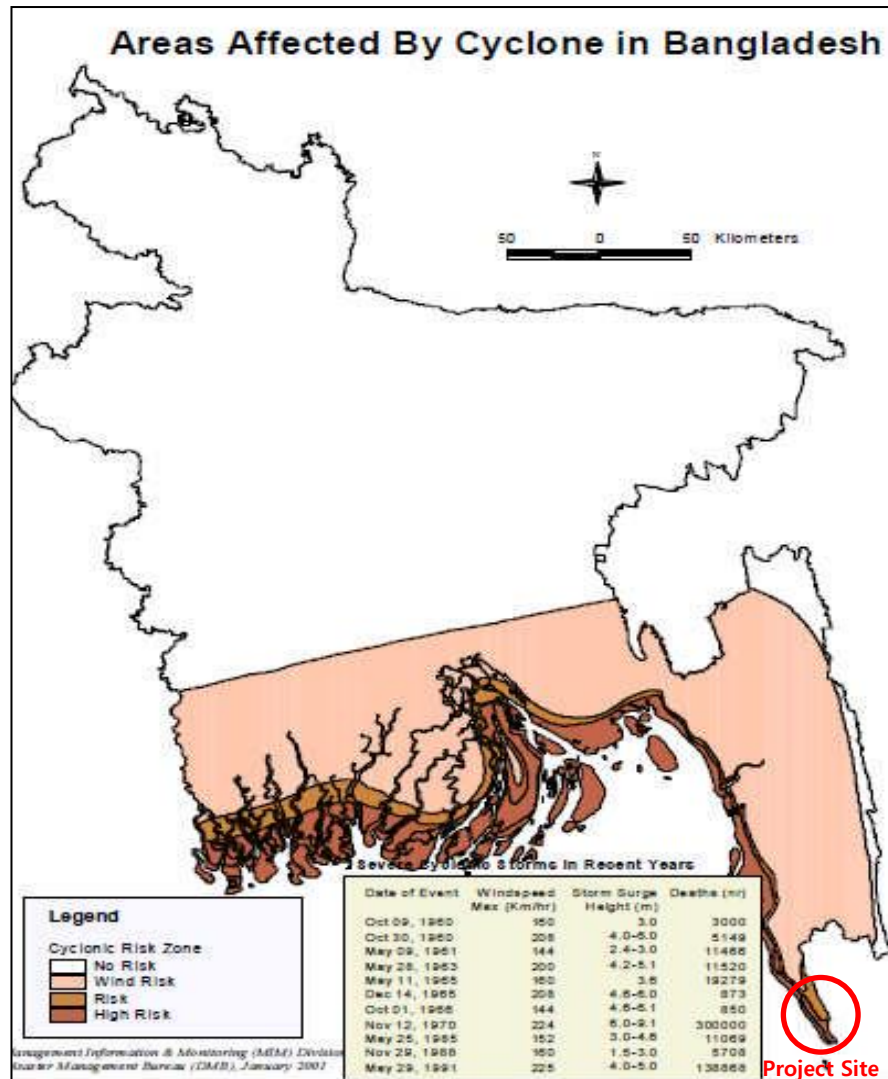


Figure 6.8. Areas affected by cyclone in Bangladesh
Source: Bangladesh Meteorological Department

5. EXISTING INFRASTRUCTURE

5.1. Road

5.1.1. Refer to the *Chapter 5. Transport Assessment*.

5.2. Water Supply

5.2.1. In Bangladesh, the share of the population with access to an improved water source was estimated at 98% in 2004,³¹ a very high level for a low-income country. This has been achieved to a large extent through the construction of hand-pumps with the support of external donors.

³¹ National Institute of Population Research and Training (Bangladesh) (2005)

- 5.2.2. Groundwater is the major source of drinking water in the region. It is also an important source of irrigation water for the area. The project area has good groundwater potential, as groundwater recharge is not a problem.
- 5.2.3. There is no water supply system near the project site and the nearest water supply system is one in Huyakong, where is 35km away from the project site.
- 5.2.4. The local inhabitants are dependent on tube well water for drinking purpose. The ground water is available at a depth of 35~15m from natural ground level.
- 5.2.5. In addition, Naf River is located approximately 2km away from east of the project site. Naf River is a river marking the border of Bangladesh and Myanmar. The Naf River's average depth is 39m and maximum depth is 120 m.
- 5.2.6. This river, lived a variety of wild animals and plants, has excellent water quality as the fishing is famous. The amount of water is also sufficient and suitable for water intake source of project site. The stream of river runs near the project site.

5.3. Sewage

- 5.3.1. Currently, there is no Waste Water Treatment Plants around the project site.
- 5.3.2. Sewage directly or indirectly goes to the rivers and eventually flows into the Bay of Bengal. In fact, none of the coastal cities have any proper sewerage system or sewage treatment plant in place. All the urban cities are supported by septic tank and pit sanitation. Poor households use community latrines but these systems are directly or indirectly connected to canals or rivers through surface drain of the city. This situation is becoming more serious due to increase of population in coastal districts and lack of proper sanitation as well as sewage treatment facilities.

5.4. Power Supply

- 5.4.1. The per capita energy consumption in Bangladesh is one of the lowest (321 KWH) in the world. Wood fuel, animal waste, and crop residues, are estimated to account for over half of the country's energy consumption. Electricity is the major source of power for most of the country's economic activities. Bangladesh's installed electric generation capacity was 10,289MW in January, 2014. Bangladesh has 15MW solar energy capacities through rural households and 1.9 MW wind power in Kutubdia and Feni.³²

³² Bangladesh Power Development Board (2014)

- 5.4.2. Teknaf substation (10MW capacity) is located approximately 7 km away from the proposed EZ, and there is no other power supply facility within 2 km from the project site.
- 5.4.3. A construction project for the new solar power plant with a capacity of 20MW at 20 km away from the project site has been proposed and the project is under site assessment stage.

5.5. Telecommunication

- 5.5.1. The liberalization of Bangladesh's telecommunications sector began with small steps in 1989 with the issuance of a license to a private operator for the provision of inter alia cellular mobile services to compete with Bangladesh Telegraph and Telephone Board (BTTB), the previous monopoly provider of telecommunications services within Bangladesh.
- 5.5.2. Significant changes in the number of fixed and mobile services deployed in Bangladesh occurred in the late 1990s and the number of services in operation has subsequently grown exponentially in the past five years.
- 5.5.3. The incentives both from government and public sectors have helped the industry grow and it is now one of the biggest industries in Bangladesh. As a populous country, its huge market has attracted many foreign investors.
- 5.5.4. Current internet services are provided several mobile companies including Grameen, Banlalink and Robi.
- 5.5.5. Bangladesh Telecommunications Company Limited (BTCL) is providing telecom and internet services in Teknaf, which is at a distance of 7km from the project site.

5.6. Solid Waste

- 5.6.1. Bangladesh is the ninth most populous country and twelfth most densely populated countries in the world. In particular, the projected urban population growth rate from 2010 - 2015 is 3%.³³ With this population growth, there is an increasing problem of waste management particularly in the larger cities. Moreover, there is an increasing rate of waste generation in Bangladesh and it is projected to reach 47, 064 tonnes per day by 2025.³⁴
- 5.6.2. The total waste collection rate in major cities of Bangladesh such as Dhaka is only 37%.³⁵ When waste is not properly collected, it

³³ UNdata (2012), *Country Profile: Bangladesh*

³⁴ Alamgir M. & Ahsan. A. (2007). Municipal Solid Waste and Recovery Potential: Bangladesh Perspective.

³⁵ I. Enayetullah & S. S. A. Khan & A. H. Md. M. Sinha (2005). *Urban Solid Waste Management. Scenario of Bangladesh: Problems and Prospects.*

will be illegally disposed of and this will pose serious environmental and health hazards to the Bangladeshis.

5.6.3. There have been recent developments in Bangladesh to improve waste management, especially in urban cities. Dhaka City Corporation with support from the Japan International Corporation Agency (JICA) has a master plan underway to better handle the solid waste management.

5.6.4. There is no Solid Waste Treatment facility around the project site.

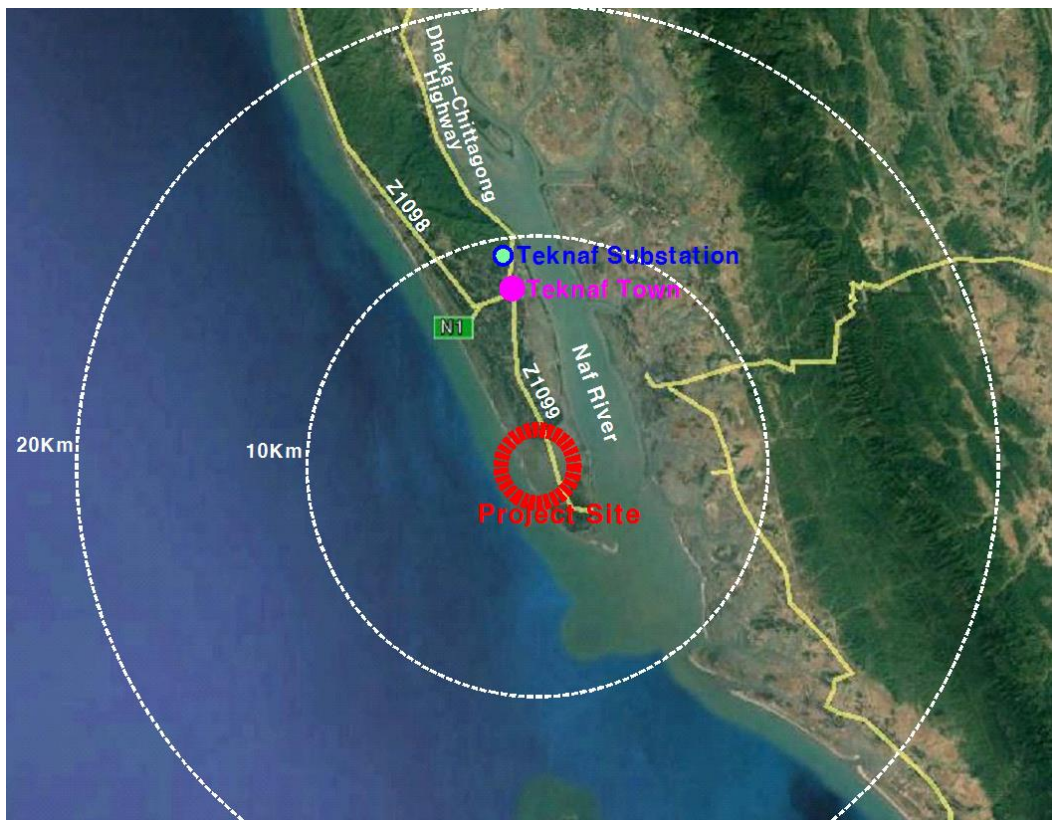


Figure 6.9. Map of Infrastructure

6. COMPREHENSIVE ANALYSIS

6.1. Opportunities and Constraints

6.1.1. Based on the previous chapters; review of existing studies, transportation assessment and site conditions, opportunities and constraints that the project site is facing are identified as shown in Table 6.7.

Table 6.7. Opportunities and Constraint

	Description
Opportunities	<ul style="list-style-type: none"> • According to the Initial Site Assessment report, no existing settlement exists in the project site, thus no resettlement plan needed • Mostly Government owned land • A new coastal road is under construction • Good tourism resources • BEZA's strong will to develop the Sabrang Tourism Park • Synergetic effects with the proposed Jaliardwip tourism Development • Potential to be an international spot by the airport upgrade
Constraints	<ul style="list-style-type: none"> • Distant area from the Cox's Bazar town • The lack of site information and data established • The lack of urban infrastructure (telecommunication, water and power supply, water treatment system, etc. • A few social support facilities, such as school, hospital, etc. • Difficulties in access to major cities and the national road • Vulnerable against flood and storm surge • Change of the country's lifestyle • Need of embankment and land fill → Increase of construction cost • Weak soil conditions

6.2.Planning Issues

6.2.1. Before preparing the master plan, there are implications extracted from the site assessment that should be carefully considered in the planning phase.

- Connections to the site should be prioritized to attract investors and to secure conveniences of visitors;
- As there are existing local villages and scattered bushes in the surrounding areas, sufficient buffer area should be arranged;
- Consider that there is a reserved area in the northern part of the site currently used for agriculture and aquaculture;

- There is an embankment along with the eastern boundary which is use as a road at the present. Regarding the scale and traffic volume accommodated on the road, it should be expanded and refurbished;
- Moreover, new embankment will be needed to utilize the current foreland which mostly consists of swamp and aquaculture land; and
- The coastal line is the most important tourism resource in the site; thus, the line should be carefully considered to maximize the efficient use of the site as well as to avoid the significant change of the coastal environment.



Figure 6.10. Planning Issues

CHAPTER 7

MASTER PLAN

1. PLANNING CONCEPT

1.1. Need of the Tourism Park

- 1.1.1. Concentration of tourist facilities and services in specified tourism zones allows for efficient provision of infrastructure, offers a variety of easily accessible activities and facilities for tourists, encourages integrated planning and development controls.

1.2. Basic Principles

- 1.2.1. Make a strong attraction, “Bring the people”

Strong attractions in harmony with the waterfront environment are required to develop a unique tourism park.

A new tourism concept distinguished from existing items is developed to promote voluntary visiting of people in the basis of an underlying question “What will make people voluntarily visiting the place on a long trip?”

- 1.2.2. Water-friendly Environment, “On the water”

The project site is a place where strong marine tourism resources such as beach and island, are located to attract tourists.

The project is targeting a tourism spot actively promoting beach and marine leisure activities.

- 1.2.3. Using site-specific characters, “Tell the story of the place”

Maximizing the use of natural assets and its characteristics (access to the beach and island, connection to the Cox’s Bazar town, etc.) is a basic approach for the establishment of a concept

This approach of concept development is expected to enhance the accessibility and approachability of tourists by the locational appropriateness of the development and provide a better living environment with improved infrastructure and urban amenity. In

the meantime, the development impact to native flora and fauna should be minimized by adopting an environmental friendly development concept.

1.2.4. Generating local economy, “Something for everyone”

A tourism park is a large-sized economic zone with mainly tourism industries so that introduced facilities of the project site should consist of urban service facilities for not only visitors but also native people.

Traditional and cultural facilities for tourism have a role of improving unique local culture and making synergy with local economy.

1.3. Development Concept

- 1.3.1. The Sabrang TP is planned to provide an outstanding excitement of all types of leisure and entertainment, aiming the international market.
- 1.3.2. Once the target is set up for the international market, the competitiveness for the domestic market will be naturally stronger.
- 1.3.3. Once tourists visit the park, its one-stop tourism package delivers the widest range of entertainment and leisure experiences in Bangladesh.
- 1.3.4. To realize the concept of the Sabrang Exciting Park, it should be firmly supported by four goals; ‘Family-oriented’, ‘International level’, ‘Unique and Advantageous’, and ‘Natural and Cultural’.



Figure 7.1. Development Concept

- 1.3.5. There are four goals underpinning the development concept

Family-oriented tourism Activities

Every well-known tourism spot is targeting families by providing facilities for all groups of ages. Sabrang is advantageous to the establishment of a family-oriented tourism park with the coastal environment. In addition, entertainment and cultural facilities are required to develop richer family package tour programs.

Tourism attractions to meet international standards

There are a lot of competitive tourism spots in surrounding regions while Sabrang in Cox's Bazar is not known as an international spot. To attract international tourists, its tourism facilities and transport infrastructure should meet international standards.

Unique and adventurous experience

Providing unique experience for tourists induce tourists to re-visit the tourism park once they experience there. Special tourism resources are needed to provide this unforgettable experience that cannot be same in other spots. The mixture of natural and built tourism environment also creates an adventurous environment with various local characters on one site. It should be a place where people want to escape from the city life and indulge in holidays.

Natural and cultural assets

Sabrang has the longest beach in the world which is the most powerful asset to promote it as an international tourism park. St, Martin Island is another hidden jam with the beautiful nature. In addition, the neighbouring with Myanmar creates a unique cultural story. Sabrang has a great potential to be developed as an international tourism park with these assets.

2. INTRODUCED FUNCTIONS

2.1. Functional Character at the Regional Level

- 2.1.1. From the Cox's Bazar town to St, Martin Island, there are unique spots with different characteristics. They are also chained up as one big cluster of Bangladesh's first tourism region.
- 2.1.2. Among other spots, Sabrang is unique with the beach environment, but less competitive than others so that it should provide differentiated services to be a unique spot in the Cox's Bazar region. For this purpose, Sabrang aims to promote various functions of "Oceanfront international tourism". Figure 7.2. shows

how Sabrang will be positioned with the ocean front tourism character along Cox's Bazar's tourism connection.




Figure 7.2. Strategic Position of Tourism Spots in Cox's Bazar

2.2. Introduced Facilities with Detailed Programs

2.2.1. As a destination for the new family tourism and international attraction in the Cox's Bazar area, proposed tourist attractions include 'Amusement Park', 'Water Park' and 'Waterfront development', 'Eco-tourism', 'Unique culture experience', 'Hotels/casinos', 'Family tourist attraction', and '3D experience park'. This facilities and programs are applied to the form of land use in the best practice master plan.

Table 7.1. Introduced Tourism Facilities

No.	Facility	Program	Images
1	Casino	Casino for international tourists	

No.	Facility	Program	Images
2	Ocean Park	Water Slides, Family pool, Beach sports (Jet skiing, banana boat, yacht sailing)	
3	Golf course	9-hole golf course, Club house, Golf school	
4	Activity Facility	Extreme sports (Surfing, Bungee jumping, Buggy car driving, Scuba diving, Hang gliding)	
5	Eco Tourism	Trekking, Cycling, Traditional Culture experience	
6	Shopping mall	Duty-free shopping, Food avenue, Craft art shops	
7	Hotel and Resort	5 star hotel, Condominium, Family resort	
8	Marina	Marina deck, Cruise(from Chittagong and Cox's Bazar)	
9	Special Facilities	Outdoor theater, Helipad, Prayer's room	

3. SPATIAL CONCEPT

3.1. Basic Principles

3.1.1. Efficient allocation of facilities

Facilities to be set up in the site should be systematically and logically allocated in consideration of the avoidance of duplication and the appropriateness of their sizes.

Facilities should be allocated in harmony with remaining natural resources.

Each nearby facility should not be conflict in their images.

3.1.2. Integration with nature

Each function and natural resource in the site is organically integrated by sustainable spatial design.

Facilities and natural resources in the site should be functionally linked to make a synergy of local tourism industries.

3.1.3. Sustainability

Development for the built environment and environmental preservation in sensitive areas are harmonized in spatial design.

Physical development is concentrated on less valuable land or sea water while environmentally sensitive areas are less touched.

3.1.4. Reality

All development activities should be compliant with laws of Bangladesh.

Opinions from local stakeholders should be actively adopted in the design process in order to minimize the conflict of interest.

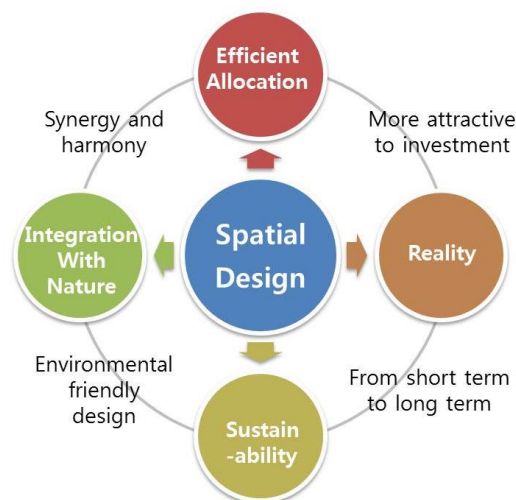


Figure 7.3. Diagram of design principles

3.2. Selection of the Best Spatial Concept Design

3.2.1. The following chart presents alternatives of spatial concept design.

Table 7.2. Evaluation of alternatives of spatial concept design

	Alternative 1 - Selected (Maximising land availability)	Alternative 2 (Unique island design)
Alternative e		
Efficient allocation of facilities	<ul style="list-style-type: none"> • Each function is segmented and widely distributed so that this allocation is advantageous to wider services • Roads with different hierarchies are systematically arranged for efficient traffic movement 	<ul style="list-style-type: none"> • Each different type of functions is agglomerated so that this allocation makes the tourism park more economic but monotonous in structure • It shows the simple road network but a lack of hierarchy
Integration with nature	<ul style="list-style-type: none"> • The large green activity area and the reserved area function as green buffer against surrounding nature • The existing beach area keeps maintained 	<ul style="list-style-type: none"> • The green areas are distributed in the north and south end so that there is weak connection to surrounding nature • The current waterlogging condition of the site can be utilized as a watercourse in the middle
Sustainability	<ul style="list-style-type: none"> • Flood resilient design by embankment • Most areas of the site are filled so that there will be loss of wetland 	<ul style="list-style-type: none"> • Relatively more wetlands are sustained
Reality	<ul style="list-style-type: none"> • Even though the large area of the site shall be filled, different levelling of the site provides more economic approach 	<ul style="list-style-type: none"> • Building and maintaining an island is costly
Selection	<ul style="list-style-type: none"> • This spatial concept provides more resilient and rational design solutions 	<ul style="list-style-type: none"> • This unique design makes the site special but less economical and less flexible in allocation.

4. LAND USE PLAN

4.1. Key Elements

- 4.1.1 Anchor facilities such as Casino are placed in the centre of the site, and have good accessibility by adjoining high hierarchical roads in consideration of their symbolic status.
- 4.1.2 Facilities that require ocean views and good access to the beach, such as resort and hotel, are located along the coastal line.
- 4.1.3 According to the traffic assessment, the project site requires a marina port to transport people by seaway.
- 4.1.4 Land use around the reserved area provides a calming environment that minimizes negative noise impacts from surroundings.
- 4.1.5 There is a green network systematically planned to encourage people to walk through it while functioning as an eco-corridor for native animals.
- 4.1.6 Roads and land use boundaries along the beach are designed for embankment.
- 4.1.7 The road network is hierarchically arranged from the arterial road to the local road in order to control a huge volume of traffic.

4.2. Tourism

4.2.1. Leisure and Tourism

The leisure and tourism land use is the central function of the project so that the central and waterfront location is for this use.

Lands upon the seashore are reserved for tourism hotels, condominiums and any-accommodation related facilities that are advantageous with good beach views.

Large-sized and symbolic facilities are centralized so that visitors are easily recognized where the centre of the site is. They also function as landmarks that are visible from a long distance.

4.2.2. Eco-Tourism

The eco-tourism land use introduces native nature setting and activity programs where large scaled sites are required.

Existing nature is reserved for making people to experience the natural condition of the sites as well as for educational purpose.

In the meantime, native species and flora and fauna living in the designated site are also conserved.

4.2.3. Ocean Park

The ocean park shall closely along with resorts to target family users.

The ocean park is planned to be built near the marina to make family visitors get access to it easily by seaway, and this area is located closed to the inland where farm land and forest are naturally linked.

4.2.4. Resort

In general, it is preferred to locate resorts in the remote area, away from the main road.

In the meantime, resorts are remote from the central areas as their remoteness appeals to travellers who seek an environment different from the busy urban and suburban environment.

Large lot size is required for resorts with multiple purpose facilities and landscape features.

4.2.5. Golf Course

A 9-hole golf course is planned to target travellers looking for field sports.

The golf course should not be close to facilities that generate noise.

4.3. Commercial

4.3.1 Central Commercial

As the central commercial area creates the most dynamic and busiest atmosphere, the waterfront area in the centre of the Sabrang TP is most suitable.

The pedestrian environment makes the central commercial area more attractive to visitors who are willing to enjoy both the waterfront environment and shopping.

The central commercial area includes Casino as an anchor facility

Table 7.3. Cases of Street Commercial in Beach Areas



4.3.2 Business

Office and business activities are grouped in a specific area where good transport access is possible. The road accessibility and proximity to a marina (seaway accessibility) is a key factor for its allocation.

4.4. Public Facility

4.4.1. Public Facility

Employees and visitors together require public services such as health care and administrative supports.

Public facilities are clustered in a place where a floating population arise.

It is beneficial to be close to any residential area due to its approachability.

4.4.2. Marina

To use sea transport services for public and private purposes, a marina is strongly required.

As the marina should secure a certain depth (at least 3~4m) of the shipping area, it is necessary to make embankment long enough.



Figure 7.4. Marina in Pattaya, Thailand

4.4.3. Parking

Public parking places are strategically located at where people bring cars for their activities. As large sized facilities have enough parking lots to serve, commercial, and beach area are considered mostly needed.

4.5. Residential

4.5.1. Apartment

Some portion of employees is settled down in the tourism park. To serve them, the apartment-type medium density residential area is planned.

The apartment area is preferred at a calming place which is away from populated places so as to provide a peaceful living environment.

In the meantime, it is recommended to be located near high hierarch roads to provide good access to their workplaces by private and public transport modes.

4.6. Area Distribution of Land Uses for Major Facilities

4.6.1. After confirming land uses above, estimating the planned proportion of their areas is a next step to allocate them properly in a logical manner

4.6.2. The calculation utilizes the demand estimate outcome and basic indicators from two Korean Tourism Development Standard Manuals³⁶³⁷.

4.6.3. Demand area of each land use for Sabrang TP can be estimated by multiplying the highest demand (in Y25) by a service rate ³⁸and an indicator. That is

The Demand area = the highest demand x the service rate (0.6) x the indicator

4.6.4. There is an assumption that visitors and tourists for activity facilities, special facilities and business (from items of demand estimates) are scattered in every tourism facility so that no specific area of their land uses is calculated.

4.6.5. There is no calculation of area distribution for public facilities as they are planned by planning intention rather than demands

4.6.6. Accordingly the area demand of main land uses (facilities) detailed in Table 7.4.

³⁶ *Tourism and Amenity Space Plan: Introduction to Tourism Development Planning* (2014), p. 125

³⁷ *Tourism Resource Development Manual* (2014), p.102.105.107.

³⁸ The service rate varies in consideration of the location, scale, and characteristic of a tourism place. The general rate is between 60% to 80% and this study applies 60% in a conventional manner.

Table 7.4. Guiding Indicators of Land Use Areas for Major Facilities

Land Use	Highest Demand (Person)	Service Rate (%)	Indicator	Area Demand (Approx. m ²)
Leisure and Tourism, Resort	62,438	60	35 m ² /person	1,311,000
Central Commercial	Casino: 28,911 Shopping Mall: 233,716	60	1.5 m ² /person	236,000
Eco-Tourism	42,759	60	10 m ² /person	256,000
Ocean Park	17,249	60	10 m ² /person	103,000
Golf Course (9 holes)	7,288		45,000 m ² /hole	405,000

4.7. Land Use Plan

4.7.1. According to the plans of each land use and area demand study, the land use plan is calculated and drawn as follows;

Table 7.5. Land Use Program

Land Use	Area(m ²)	Ratio(%)	Remark	
Total	4,158,000	100.0		
Sub-total	1,774,000	42.6		
Tourism	Leisure & Tourism	293,000	7.0	High density hotels
	Resort	704,000	16.9	
	Eco-Tourism	174,000	4.2	
	Ocean Park	120,000	2.9	
	Golf Course	483,000	11.6	9 holes
Sub-total	198,000	4.8	High density	
Commercial	Central Commercial	182,000	4.4	Including Casino
	Business	16,000	0.4	
	Apartment	104,000	2.5	
Sub-total	51,000	1.3		
Public Facility	Public Facility	24,000	0.6	
	Marina	24,000	0.6	
	Parking	3,000	0.1	
	Sub-total	1,225,000	29.4	
Open Space	Park	71,000	1.7	
	Green Space	193,000	4.6	
	Pedestrian Road	15,000	0.4	
	Beach Area	151,000	3.6	
	Water Body	795,000	19.1	
Sub-total	806,000	19.4		
Others	Road	505,000	12.2	
	Infrastructure	56,000	1.3	
	Reserved Area	245,000	5.9	

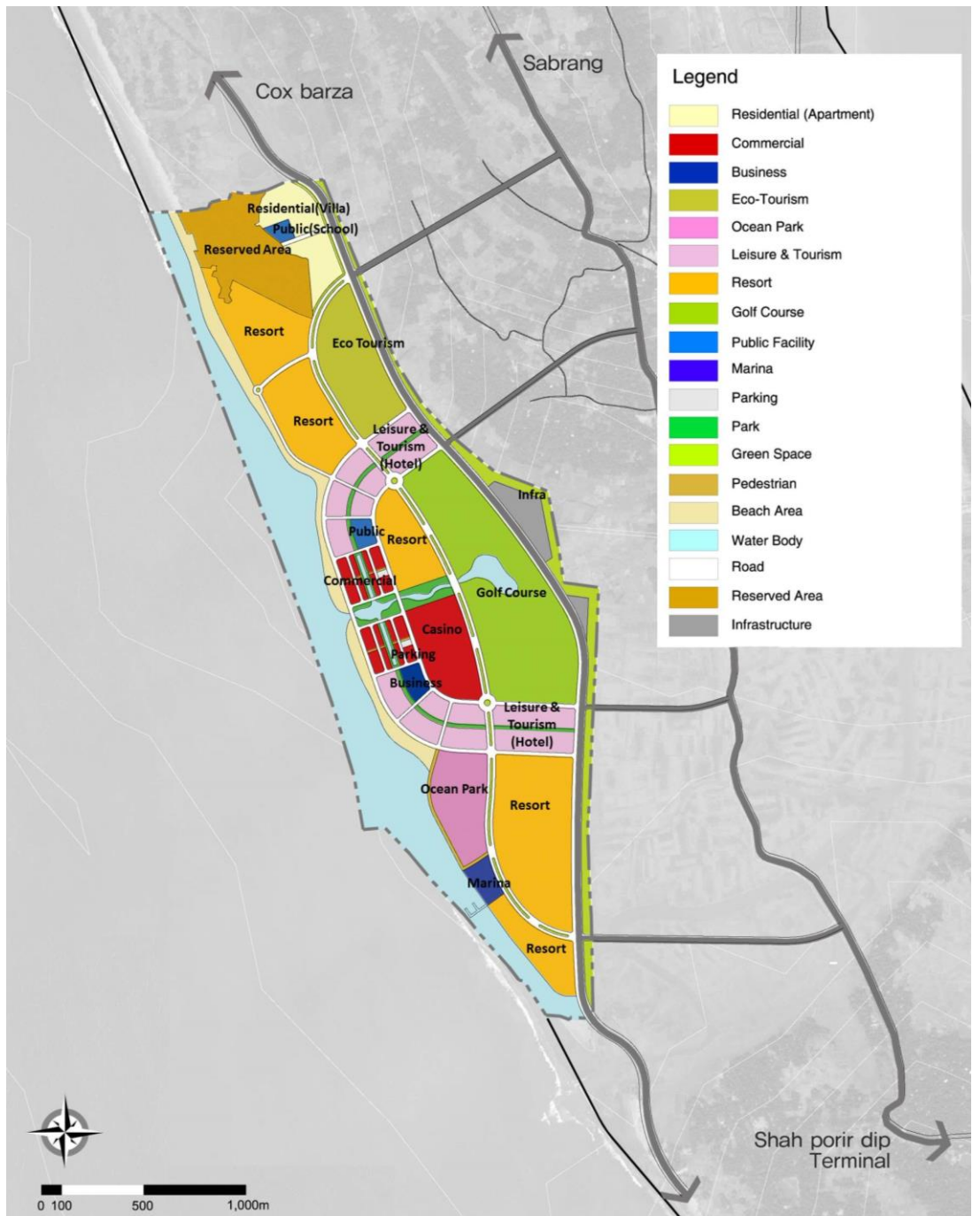


Figure 7.5. Land Use Plan

5. EMPLOYEES AND POPULATION

5.1. Planning Approaches

- 5.2.4. The Sabrang TP is expected to create a large number of jobs that will boost local economy as well as the tourism industry of Bangladesh as a whole.
- 5.2.5. The calculation of the number of employees requires indicators for the tourism industry. However, there is no statistic survey or research for this type of indicators in Bangladesh so that sample indicators used for a tourism park in a coastal area, are substituted for this study.
- 5.2.6. The sample tourism park is “Seamangeum Tourism Complex” in Korea, which is being constructed in an embanked coastal area. Its indicators were made by the Jeonbuk National Research Institute (2010).³⁹
- 5.2.7. There are two types of indicators for calculating employees in the tourism industry: 1) Number of employees per 1,000 tourists, 2) Number of employees per m² of facilities. This study uses the 2nd type of indicators due to the different size of target tourist numbers between the Sabrang TP and the sample tourism park.
- 5.2.8. If no indicator exists for some sectors, similar cases are applied.
- 5.2.9. A new accommodation area with mid-rise apartments is set up in the land use plan in order to accommodate a certain portion of the employees and their families at the initial phase. The proposed number of households is calculated by an average density (Floor Area Ratio, FAR) of the mid-rise apartment residential area and an average size of the apartment house.
- 5.2.10. The reserved area, which is currently private-owned, has a potential to be on additional places for the residential development in the future

Table 7.6. Introduction of Seamangeum Tourism Complex in Korea

Items	Description
Location	Jeollabuk-do, Korea
Developer	Jeonbuk Development Corporation
Size	3,680ha
Expected completion year	2020
Goals	1) Building large-scale complex leisure and tourism area through attraction of domestic and international tourism capital. 2) Integration of marine leisure and sports, health care and complex resort to global tourists

³⁹ Jeonbuk National Research Institute (2010). “Tourism Labour Supply Analysis and Measures for Seamangeum”, *Issue Briefing*, Vol 1,2,3



Figure 7.6. Location and Plan of Seamangeum Tourism Complex

5.2. Tentative Study of the Number of Future Employees

5.2.1. By applying the model indicators⁴⁰ for calculating the number of employees of proposed service sectors, the outcome is detailed in Table 7.7.

5.2.2. As a result, the estimated number is approximately 24,900 persons.

Table 7.7. Estimated Number of Employees

Category		Indicator	Estimated Number	Remark
Total		-	24,900	
Leisure and Tourism	Hotel & Condominium	1.5 / Room	11,000	FAR: 300%
	Luxury Resort	1.28 / Room	4,100	FAR: 70%
Eco-Tourism	Pleasure Ground	2 / 1,000 m ²	350	
Ocean Park	Ocean Park	12.2 / 1,000 m ²	1,500	
Golf	Golf (9 holes)	10 / 18 holes	10	
Commercial	Casino	-	3,600	Gangwon Land, Korea
	Commercial Activities	0.09 / m ²	2,800	
Business	Business Activities	0.09 / m ²	1,400	
Public Facility	Primary School	-	10	Average 6 teachers in Gov't Primary School ⁴¹
	Health Care	10 / 1,000 m ²	70	
	Administrative Support	7 / Unit	10	
Marina	Marine Sports	2 / 1,000 m ²	50	50% land

⁴⁰ Jeonbuk National Research Institute (2010), p6~9

⁴¹ Ministry of Primary and Mass Education (2014), p.8

5.3. Residents

- 5.3.1. The size of the Sabrang TP is considered a new town with various tourism-related industries that create 24,900 jobs.
- 5.3.2. According to the 2011 statistics⁴², the population size of Teknaf Upazila is 264,000. The average size of Bangladesh's household is 4.35 persons. If it is assumed that one person per household is a workforce, the number of possible labour force is about 60,700 persons.
- 5.3.3. Accordingly new jobs created by the Sabrang TP can be fully supported by the local labour market
- 5.3.4. However, the job creation attracts employees coming from other regions. They tend to settle down close to their work places. We assume that around 20% of employees are not local based.
- 5.3.5. To accommodate them, the tourism park provides a medium density apartment town with the size of around 10ha.
- 5.3.6. To calculate the number of households, following assumptions are applied:
- Apartment type: 4 story housing
 - Size of units: 100m²
 - Building Coverage Ratio: 30%
 - Floor area ratio: 120% (Medium density)
- 5.3.7. With the above assumptions, calculation is made as below.

$$\text{No. of Household} = (\text{Residential Land Area} \times \text{Building Coverage Ratio} \times \text{No. of Stories}) / \text{Unit Size}$$

Table 7.8. Estimated Number of Households

Land Use	Area (m ²)	Unit Size (m ²)	Building Coverage Ratio (%)	Floor	Floor Area Ratio (%)	No. of Households
Medium Density Apartment	104,000	100	30	4	120	1,248

⁴² District Statistics 2011 Cox's Bazar, Bangladesh Bureau of Statistics (2013)

5.3.8. If the average size of a household (4.35 persons) is applied to the estimated households (1,248), around **5,400 people** are estimated to live in the residential area.

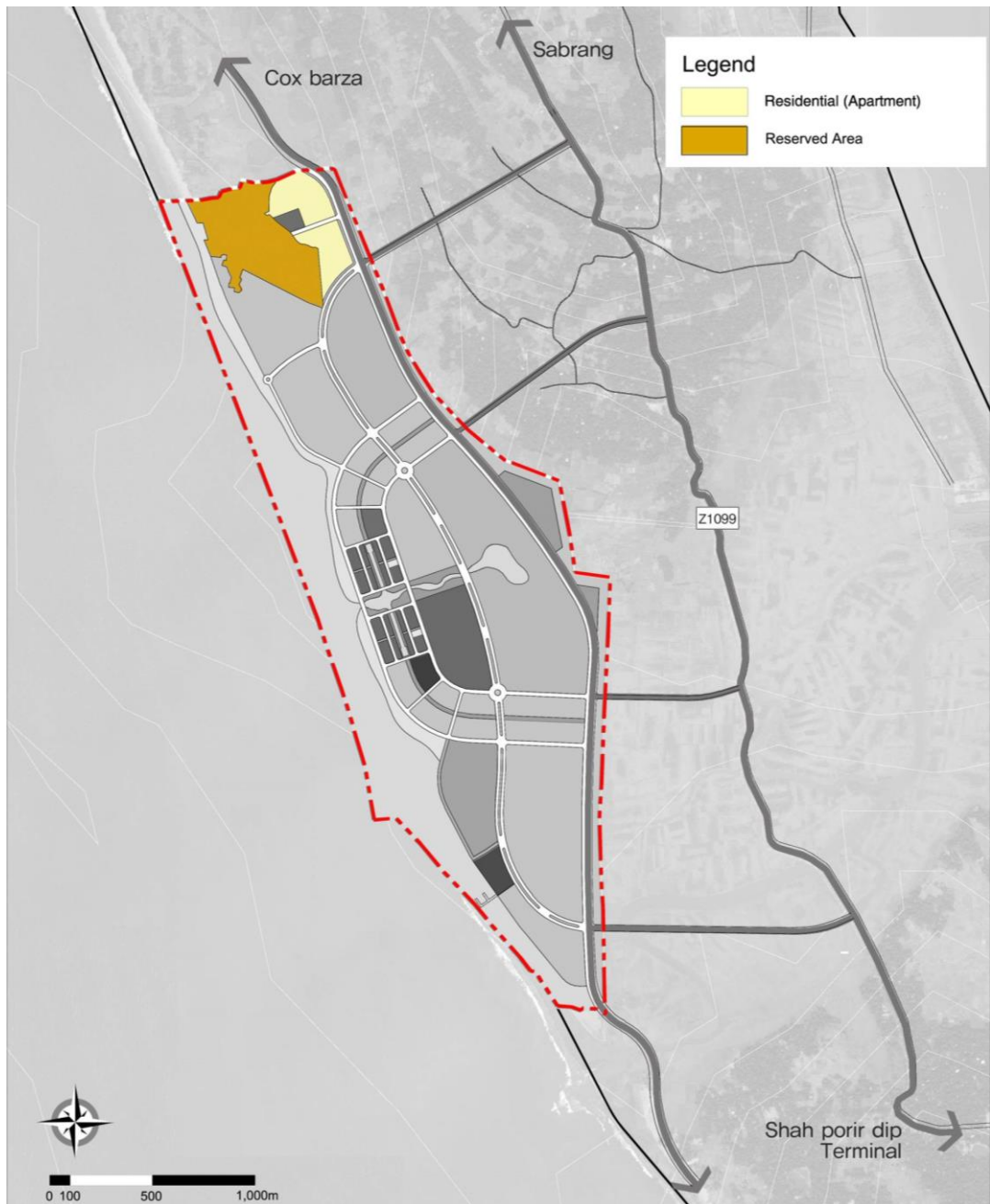


Figure 7.7. Residential and Reserved Area Plan

6. ROAD NETWORK

6.1. Internal Network

6.1.1. The internal road network comprises of; Main Arterial road (50m width), Circular Road (40m width), Collector Road (20m width) and Local Road (15m width).

- 6.1.2. The main arterial road will be constructed by expansion of the current embankment along with the eastern boundary of the site and connects to the coastal road to north and local villages to south. This road becomes a backbone of the site collecting all traffics from collector roads, and maintains fluent traffic with the site.
- 6.1.3. The circular road runs across the middle of the site serving all blocks and is actual main access road to the site. The road is connected to the national road and helps circulation of traffics. A 10m with median strip is installed to enhance its landscape while preventing vehicle collision. The median strip can be utilized for road expansion against future traffic demand.
- 6.1.4. The collector road is mainly treating traffic generated by massive facility and from local roads. The local road serves each commercial and tourism activities.

6.2. Road Design Standard

- 6.2.1. The width of a roadway is an important design consideration to ensure that it is appropriately sized to serve its function.
- 6.2.2. As the Sabrang TP is the tourism area requiring streetscape and urban amenity, the BEZA building code which is specifically focusing on industrial park development, is not used for this study.
- 6.2.3. Referring to the road design standards from 5 sample countries, a new road design standard for the Sabrang TP is proposed ensuring international standard services.⁴³ All roads separate the pedestrian road from vehicle road to ensure pedestrian safety.⁴⁴

⁴³ The Standard of road width as per road level rearranged from “*Regulation of Standard Road Structure*” by the Ministry of Land, Infrastructure and Transport of Korea (2012).

Country	Road Width		
	Highway	Arterial Road	Local road
South Korea	3.5-3.6m	3.0-3.5m	3.0m
USA	3.6m	3.3-3.6m	2.7-3.6m
Germany	3.5-3.75m	3.25-3.5m	2.75-3.25m
France	3.5m	3.5m	3.5m
South Africa	3.7m	3.1-3.7m	2.25-3.0m

⁴⁴ In this master plan, the cycle track and foot path are combined as a pedestrian road. Considering a minimum width of cycle track (1.5m) and foot path (2.0m), it is suggested that pedestrian roads be at least 3.5m wide, the Ministry of Land, Infrastructure and Transport of Korea (2010) Guidelines of the installation and management of bicycle facility.

Table 7.9. Road Design Standard

Types of Road	Width(m)	Key Design Elements
Main Arterial Road	50 m	Median Strip(10 m), 8 lanes(two 5.5m bus lane), Pedestrian Road
Circular Road	40 m	Median Strip(4 m), 6 lanes, Bicycle Road, Pedestrian Road
Collector Road A	20 m	4 lanes, Pedestrian Road
Collector Road B	20 m	2 lanes, Bicycle Road, Pedestrian Road
Local Road	15 m	2 lanes, Pedestrian Road



Figure 7.8. Cross-section of Roads in Sabrang TP

6.3. Bicycle Road

- 6.3.1. In recent trends, bicycle road system is one of the important sustainable development tools discouraging the car use while improving residents' health.
- 6.3.2. All roads in the site has bike lane in both sides. The bicycle road is also designed to provide pleasant atmosphere for employees and tourists enjoying cycling.
- 6.3.3. The bicycle road can be used for commute and daily transportation as well as tourism purpose.

6.4. Car Park

6.3.1. Tourism facilities usually generate a significant amount of traffic and parking demands. To prevent the site from the congestion by off-street parking, logistic vehicles and group-tour vehicles, parking spaces at strategic spots are needed to be allocated.

6.3.2. The Sabrang TP planned two (2) public car parks within the commercial area to serve visitors enjoying shopping and beach activities.

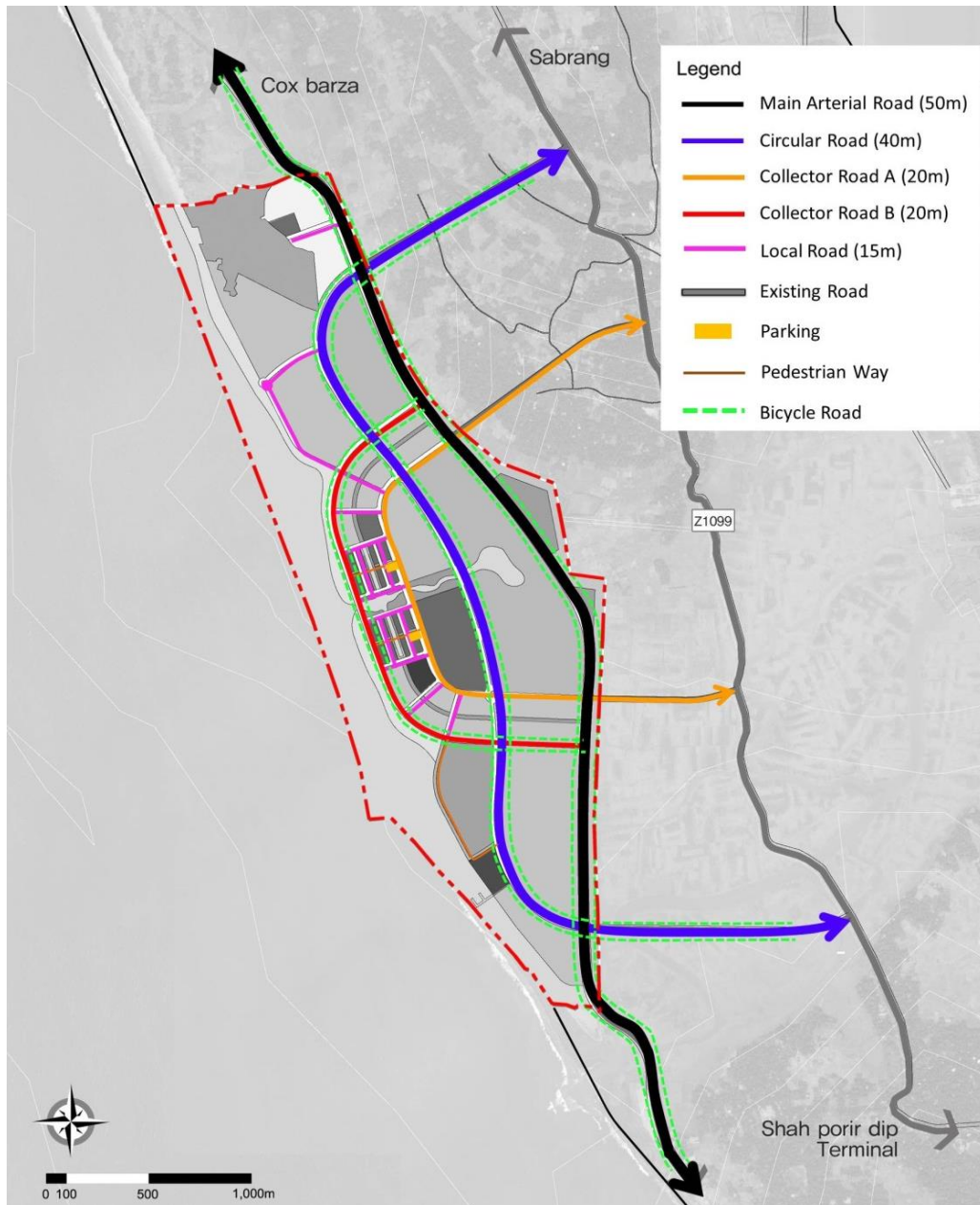


Figure 7.9. Road Network Plan

7. PARK AND OPEN SPACE PLAN



7.1. Need for Park and Open Space

- 7.1.1. To provide a pleasant atmosphere for visitors and residents, it is important to set up parks and open spaces.
- 7.1.2. The Sabrang TP is designed to interface with the existing ecosystem harmoniously minimizing adverse environmental impacts. The green network naturally connects to the surrounding ecosystem and the parks are strategically placed to create an eco-friendly environment and enjoyable area.

7.2. Park

- 7.2.1. Parks create resting and recreational opportunities for visitors and residents. Different types of parks provide various activities and enjoyable features on the site.
- 7.2.2. For the Sabrang TP, there are three types of park as described in the Table 7.10 below; Central park, Community Park and Linear park.

Table 7.10. Types of Park

Type	Features	Image
Central Park	<ul style="list-style-type: none"> • Massive park with 100m width with dense trees and grass field • Provide a place for cultural and recreation activities • Connect major areas such as beach areas and golf course 	
Community Park	<ul style="list-style-type: none"> • Serve commercial and tourism activities nearby • Provide a playground and various facilities for families of workers while encouraging community gathering 	
Linear Park	<ul style="list-style-type: none"> • Planned in a linear form with 40m width across the commercial and tourism areas in the middle • Provide pedestrian and bicycle paths for commute and resting area with park facilities 	

7.3. Beach

- 7.3.1. Beach is a key tourism feature and Ocean areas are key areas taking 9.7% of the site area and showing identity of the site. Beach areas should be considered precious and preserved its original form as much as possible.
- 7.3.2. These beach areas are used for ocean activities such as boat riding, banana boat, surfing and etc., so that it attracts most of tourists in Sabrang TP targeting all types of tourists.

7.4. Pedestrian Streets and others

- 7.4.1. Pedestrian streets are located in the commercial area. It enhances the accessibility of commercial facilities and can be used for cultural and marketing activities.
- 7.4.2. This landscaped route encourages people to walk to their destinations, so that it reduces car dependency and promotes health. They create a safe shopping environment and make connection between the beach and the casino/shopping mall.
- 7.4.3. The central commercial area with the central park and stream creates a waterfront walking environment, which can be called 'Canal Walk', where urban amenity and commercial activities attract tourists.
- 7.4.4. Green buffer (Min. Width: 20m) is established along the eastern boundary of the site to mitigate potential adverse environmental impacts to surrounding areas caused by the development activity.
- 7.4.5. Median strip is placed in the middle of the major arterial road with up to 10m width to assure traffic safety within the site. In addition, it gives room for future road expansion and a symbolic image of the Sabrang TP with tree plantation to the people who enter the park through the arterial road.

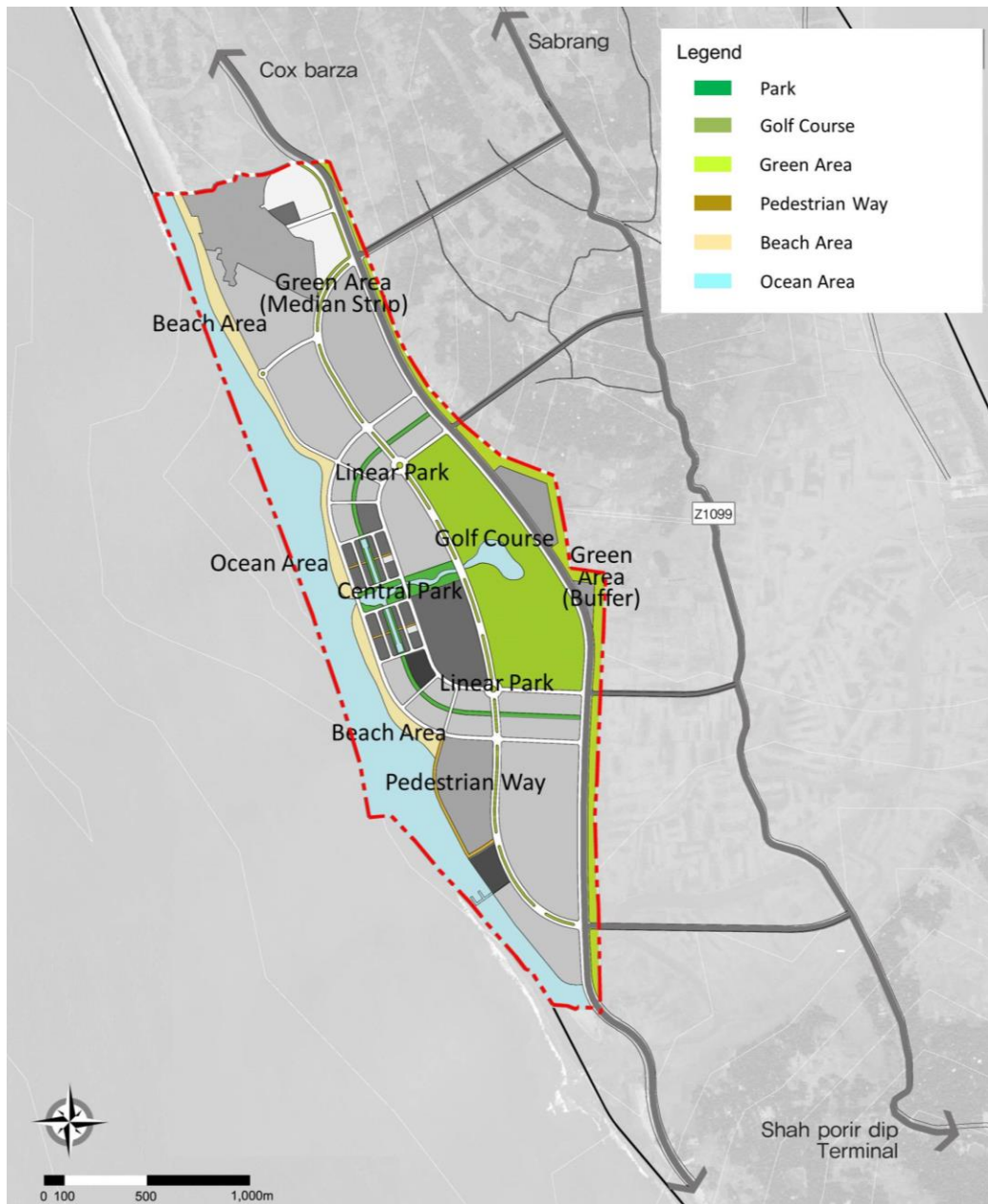


Figure 7.10. Park and Open Space Plan

8. AREA DIVISION OF THE SABRANG TP

8.1. According To the BEZA Act (2010), the area of the Bangladesh Economic Zone is divided into following areas;

- Export Process Area: Specified for export-oriented industries;
- Domestic Processing Area: Specified for industries to be established to meet the demand of the domestic market;
- Commercial Area: Specified for business organizations, banks, warehouses, offices or any other organizations;

- Non-Processing Area: Specified for residence, health, education, amusements, etc.

8.2. For the Sabrang TP, only central commercial area and business area fall into the Commercial Area, and the rest of land use including residential, resort, Marina, etc. fall into Non-Processing Area.

Table 7.11. Area Division

Land Use	Area(m ²)	Ratio(%)
Total	4,158,000	100.0
Commercial Area	275,000	7.0
Non-Processing Area	3,883,000	93.0

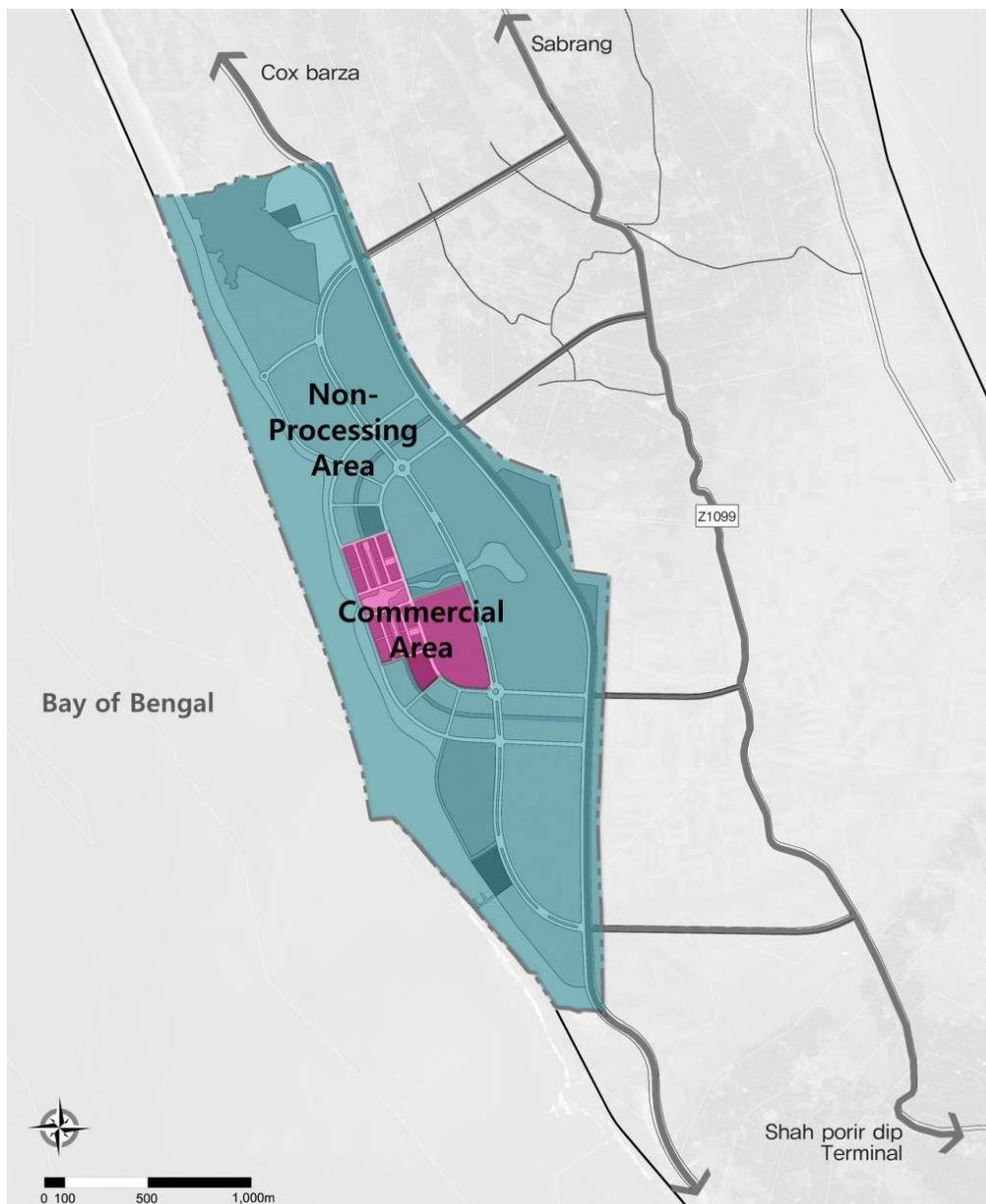


Figure 7.11. Zone Division Map of Sabrang TP

9. ZONING PLAN

9.1. Building Guidelines

- 9.1.1. For the development of international tourist attractions and securing the flexible investment attraction, only the minimum building guidelines of the Sabrang TP will be presented for the specific zones.
- 9.1.2. Hence, there would be no set guidelines for the developments that require large-scale investment attraction, such as land use for the Casino, tourism/resorts and leisure activities. These should depend on the investors' will and creativity.

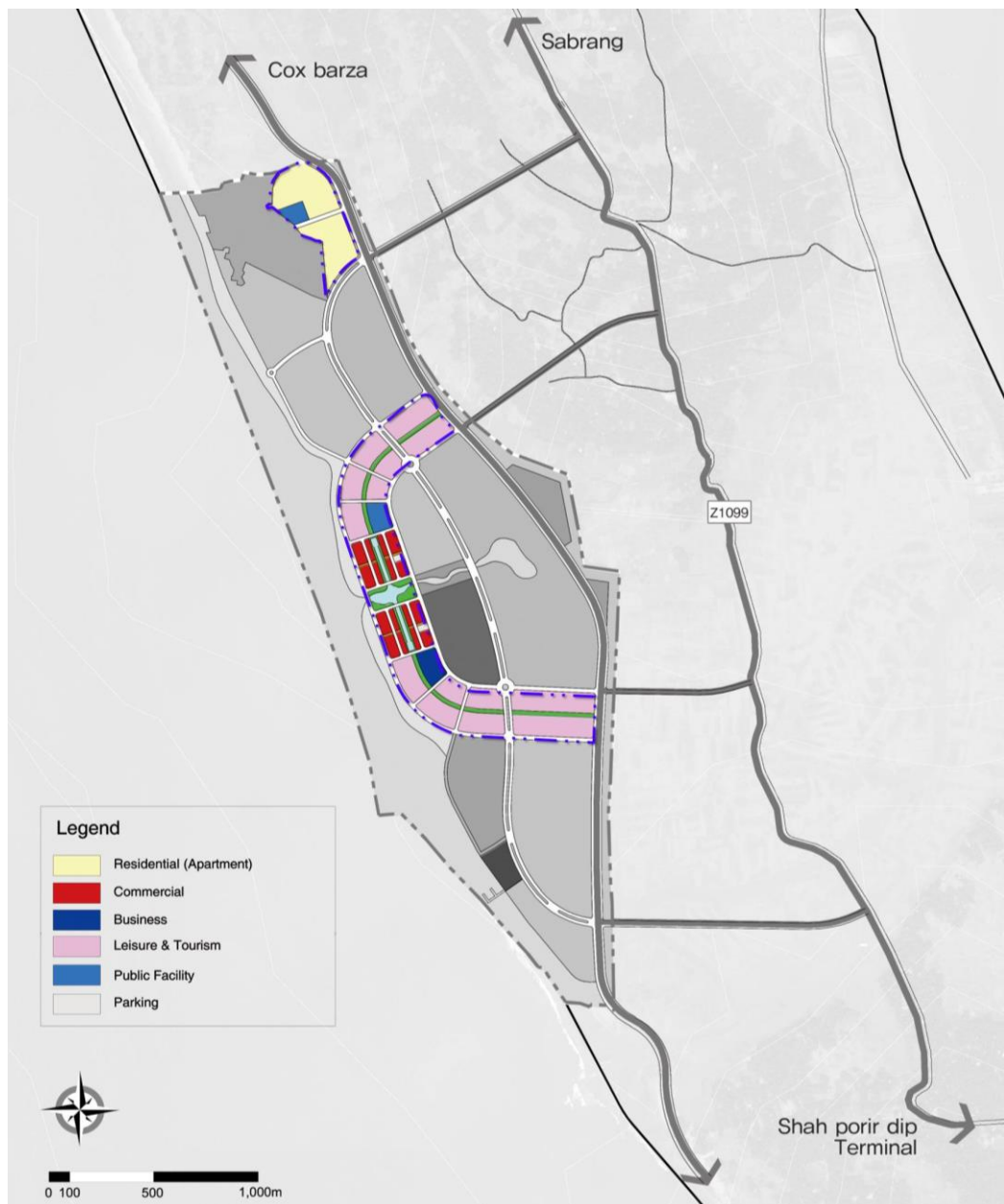


Figure 7.12. Implementation Zones of Design Guidelines

- 9.1.3. Bangladesh Economic Zone Rules 2016 (Draft), published by BEZA, is focusing on development of industrial zones. For the reason, it is considered not appropriate applying the rule to the Sabrang Tourism Park which promotes aesthetically unique and distinctive space.
- 9.1.4. Nevertheless, minimum guidelines for specific spaces such as residential, commercial and partially public spaces as these are main spots of urban amenity of the site.
- 9.1.5. In this regard, this zoning plan utilizes the guidelines from the Bangladesh National Building Code, 2006.
- 9.1.6. The areas applicable to the implementation of design guidelines are shown in the Figure 7.12.

9.2. Terminology

- 9.2.1. Definitions of terminologies specified on the land use that are used in this report are shown as follows:

- 9.2.1.1. 'Leisure and Tourism Area' means the site that includes hotel, open space (Pedestrian path, Square) and private road other than the adjacent general roads.

- 9.2.1.2. 'Central Commercial and Business Area' means the site that includes commercial, retail, shopping centres, business, open space (park and water way) and private road other than the adjacent to roads.

- 9.2.1.3. 'Residential Area' means the area is determined by the roads with the following segmentation.

Apartments: Apartments comprised with residence unit internal parking lot, open space (flower beds), playground, internal road, and apartment buildings.

- 9.2.1.4. 'Public facility Area' is referred to as the urban cultural welfare-based facilities including school, Public Healthcare, and administrative supporting facility.

- 9.2.2. Definitions of terminologies specified on the Bangladesh National Building Code that are used in this report are shown as follows.

- 9.2.2.1. 'Building' means any permanent or semi-permanent structure which is constructed or erected for human habitation or storage or for any other purpose and includes the foundation, plinth, walls, floors, roofs, chimneys, fixed platform, verandah, balcony, cornice, projections, extensions, annexes and any land or space enclosed by wall adjacent to it/ The term building will also include the sanitary, plumbing, HVAC, outdoor display structure, signs and all other building service installations which are constructed or erected as an integral part of a building.

- 9.2.2.2. 'Building Line' means the line up to which the plinth of a building may lawfully extend.
- 9.2.2.3. 'Development' means carrying out construction of buildings, engineering, mining or other operations in, or over or under land or water. Includes redevelopment and layout and subdivision of any land, 'To develop' and other grammatical variations shall be interpreted accordingly.
- 9.2.2.4. 'FAR' is an abbreviation for Floor Area Ratio. Measured as the ratio of total covered area of all floors of a building to the area of the plot on which the building is erected or intended to be erected
- 9.2.2.5. 'Frontage' means Length of the side of a plot facing the street. There may be more than one frontages depending on the location of a plot with respect to the street
- 9.2.2.6. 'Height of building' means the vertical distance from a reference datum to the highest point of the coping or the parapet of a flat roof or to the deck line of a mansard roof or to the average height of the highest gable of a pitched or whipped roof. The reference datum shall be the elevation of the nearest footpath, or the elevation of the nearest road or street or public way at its centre line, whichever is higher.
- 9.2.2.7. 'Occupancy or use group' means the purpose for which a building or a part thereof is used or intended to be used.
- 9.2.2.8. Plot: A piece or parcel of land on which a building is intended to be or has already been constructed.
- 9.2.2.9. 'Road' means a thoroughfare or public way which has been dedicated or deeded to the public for public use. Also known as street
- 9.2.2.10. 'Road Line' means a line defining the side limits of a road.
- 9.2.2.11. 'Site' means a piece or parcel of land on which a building is intended to be or has already been constructed. Also known as Plot.

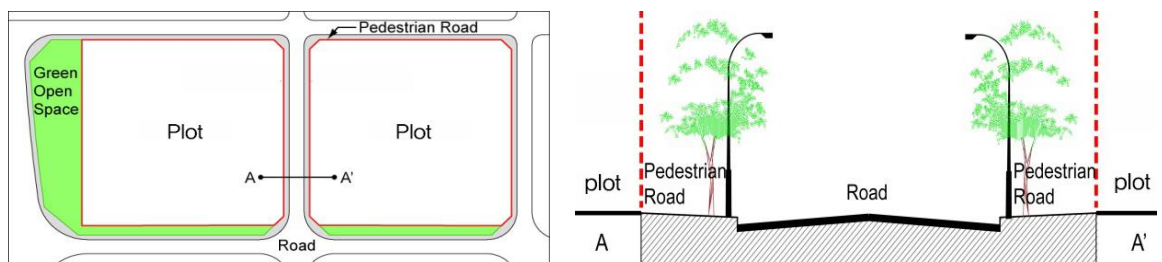


Figure 7.12. Example of plot

Source: Newtown masterplan of Haiphong, Vietnam, KOICA (2010)

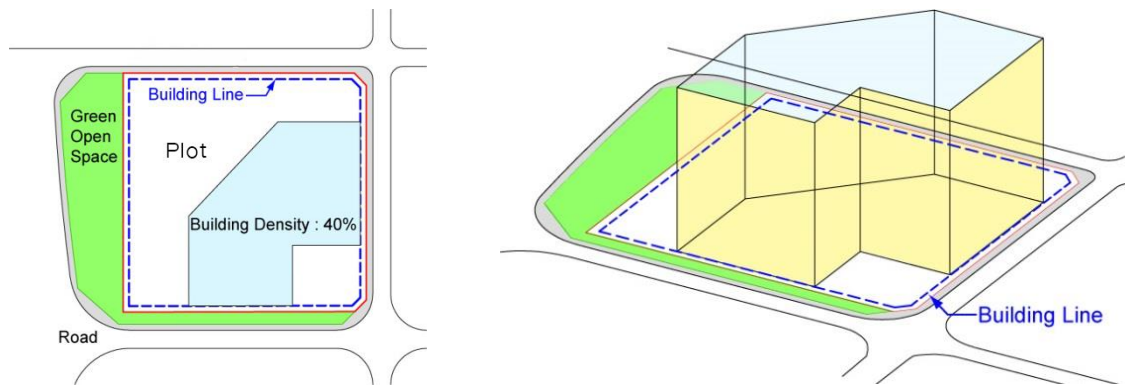


Figure 7.13. Example of Building line (Setbacks)
 Source: Newtown masterplan of Haiphong, Vietnam, KOICA (2010)

9.3. Building orientation and Access to the plot

- 9.3.1. Green corridor must be placed in the centre of the commercial and business area in consideration of the circulation of tourists and floating population to ensure the connectivity within the site and create interesting building facades.
- 9.3.2. Buildings should be placed facing the green corridor with an active edge for at least two thirds of the building's frontage to vitalize the tourist complex.

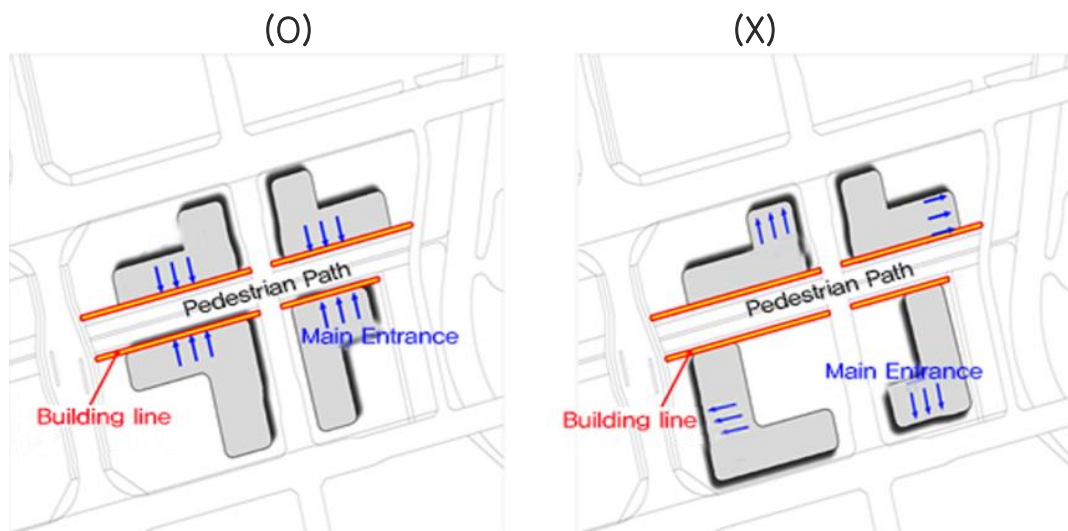


Figure 7.14. Example of Setbacks (Building Line)

- 9.3.3. The area for the road for the project site is 12.1% of the total project site, which is higher than that of a general urban area for the accessibility of a car with smooth traffic: minimizing the access to arterial road with hierarchy of roads and obvious separation of pedestrian and carriageway.

- 9.3.4. The width of local in a plot shall be decided by the number of buildings served. For plots other than residential the width of internal roads and driveways shall be not less than 7m.
- 9.3.5. The gate of entrance/exit shall be located along the collector or local (secondary) road. One main entrance/exit gate has to be built for each plot and the main entrance gate has to face the road.
- 9.3.6. For safe and smooth and efficient traffic flow, the main entrance gate must be located at least 20 m from major intersections.

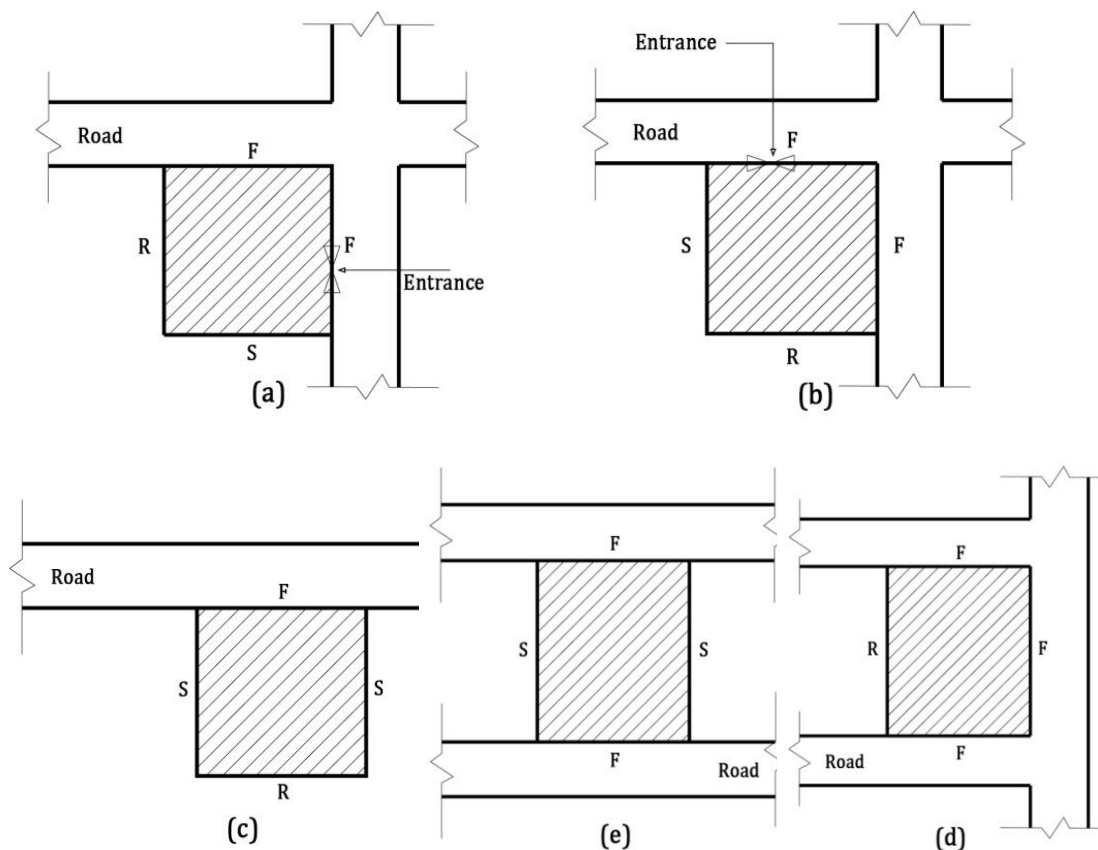


Figure 7.15. Definition of Front, Side and Rear of a Plot

Source: Bangladesh National Building Code, 2006

9.4. Building Facades for Commercial and Business Area

- 9.4.1. Buildings facing the main street use, but not limited to, the materials of glass, steel clay brick for exterior design to realize the new tourist city image.
- 9.4.2. The first floor of buildings adjacent to road of width for 20m or more will specifically use the penetrating materials as exterior materials to provide pleasant environment to the pedestrians and

at least for the half of building façade shall be covering with the penetrating material.

- 9.4.3. For the convenience of pedestrians' entrance to the commercial and business building, the levelling adjustment between the first floor of buildings and the pedestrian path will be conducted.
- 9.4.4. The building façades along the pedestrian path in commercial and business areas shall have the consistent design with the pedestrian path in regarding to the colours, patterns, materials etc.
- 9.4.5. The floor height of the first floor of buildings adjacent to the water front square and pedestrian path has to be consistent in order to produce the consecutive street landscaping.

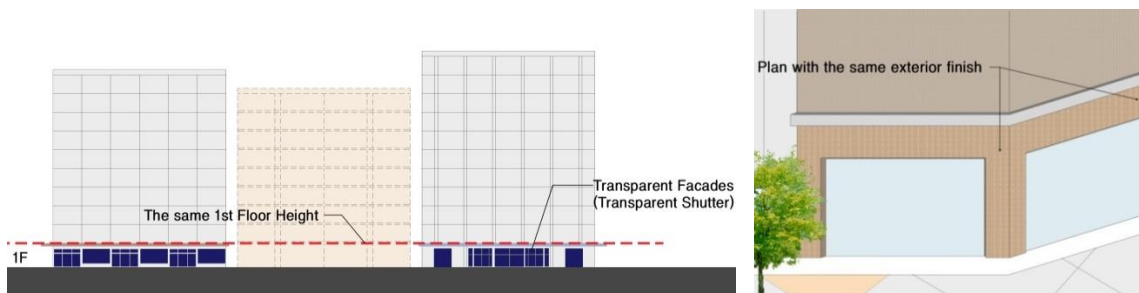


Figure 7.16. Illustration of Building Appearance
Source: Newtown masterplan of Haiphong, Vietnam, KOICA (2011)

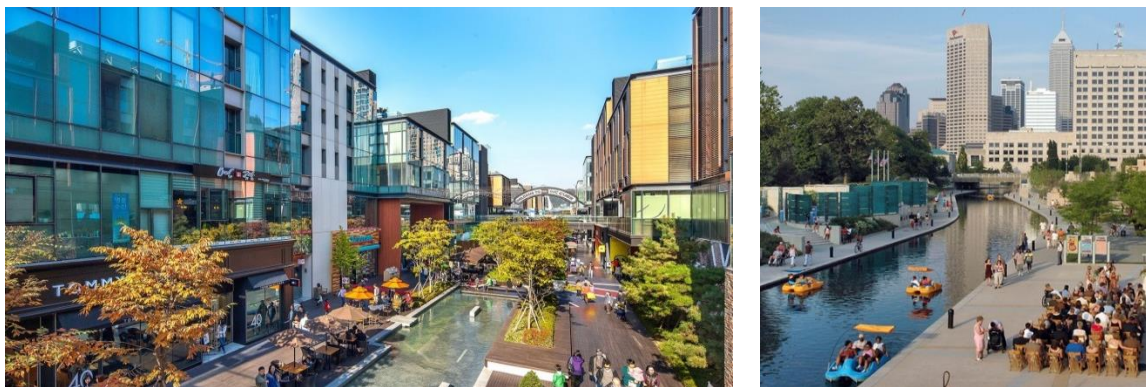


Figure 7.17. Example of Building Facades around Waterfront Square of the Commercial & Business Area
Source: Songdo canal walk, KOREA/Indianapolis waterfront, USA

9.5. Setbacks, Densities and Height Limits

9.5.1. Setbacks (Building line)

- 9.5.1.1. 'Setback (Building line)' is the boundary line to obtain the construction permit for housing and buildings.
- 9.5.1.2. The setback plan influences on construction arrangement plan in consideration of the road width, building height etc. The regulations of the setbacks in the Bangladesh National Building code (2016) are shown as follow:

Table 7.12. Plot Size, Corresponding Minimum Frontages, Rear and side open space for Various Types of New Development

Type of New Development	Plot Size (m ²) (Min. size)	Min. Frontage (m)	Min. Rear Open space(m)	Min. Side Open space (m)
Central Commercial	200	10	1.5	1.5
Business	200	10	1.5	1.5
Residential(Apartment)	135	8	1.5	1.25
Public Facility	1,300	-	-	-

Source: Bangladesh National Building Code, 2006

9.5.2. General Height limitations on Road Width

9.5.2.1. As described in the Table 7.13 below, the maximum height of any building of Type 1 construction shall not exceed the nominal value of two times the sum of the width of the front road and the front open space.

Table 7.13. Height Limitations Based on Road Width and Front Open Space

2 times (Front Road Withed Plus Front Open Space)	Maximum Permissible Height					
	Type 1		Type 2		Type 3	
	No. of storeys	Height (m)	No. of storeys	Height (m)	No. of storeys	Height (m)
Below 10.6m	3	11	2	8	2	8
10.6m to below 13.6m	4	14	3	11	2	8
13.6m to below 16.6m	5	17	4	14	3	11
16.6m to below 19.6m	6	20	4	14	3	11
19.6m to below 22.6m	7	23	4	14	3	11
22.6m to below 25.6m	8	26	4	14	3	11
25.6m to below 28.6m	9	29	4	14	3	11
28.6m to below 31.6m	10	32	4	14	3	11
31.6m to below 34.6m	11	36	4	14	3	11
34.6m to below 37.6m	12	39	4	14	3	11
37.6m to below 40.6m	13	42	4	14	3	11
40.6m to below 43.6m	14	45	4	14	3	11
43.6m to below 46.6m	15	48	4	14	3	11
And so on in increments of 3m	-	-	-	-	-	-

Note : Classification of buildings based on types of construction

- Type 1 : Highest degree of fire resistance
- Type 2 : Moderate degree of fire resistance
- Type 3 : Lowest degree of fire resistance

Source: Bangladesh National Building Code, 2006

9.5.2.1. For plots having front road width not less than 23 m in an approved residential or business and mercantile area, there shall be no restriction on height for residential and business & Commercial buildings of Type1 (Highest degree of fire resistance) construction.

9.5.2.2. For Type 2 (Moderate degree of fire resistance) construction, the maximum permissible height of the building shall be four (4) storeys or 14m for values of two times the sum of the width of the front road and the front open space not less than 13.6 m.

9.5.2.3. For Type 3 (Lowest degree of fire resistance) construction, the maximum permissible height of the building shall be three (3) storeys or 11m for values of two times the sum of the width of the front road and the front open space not less than 13.6 m.

9.5.3. Densities (Area limitation based on FAR)

9.5.3.1. The maximum permissible values of FAR (Floor Area Ratio) for different classes of Occupancy and Types of Construction shall be as specified in the Table 7.14

Table 7.14. Maximum Permissible Floor Area Ratios (FAR)

Occupancy	Type of construction		
	Type 1	Type 2	Type 3
Central Commercial and Business			
Office	Unlimited	2.0	1.5
Small shops and markets	4.0	1.5	1.0
Large shops and markets	Unlimited	2.0	1.5
Garages and petrol stations	6.0	1.5	1.0
Essential service	3.0	Not Permitted	Not Permitted
Residential (Apartment)	Unlimited	2.0	1.5
Public Facility (Administrative Supporting Facility)	2.5	1.5	0.5
Public Facility (Health Care)	6.0	1.5	1.0

Source: Bangladesh National Building Code, 2006

9.6. Landscaping Requirement

9.6.1. Skyline

9.6.1.1. The city skyline of Sabrang TP should be achieved through the integration of the existing geographical features and artificial architecture. In order to avoid designing for uniform and monotonous skyline, the number of floors and layout of the resorts and commercial areas must be regulated.

9.6.1.2. A flexible and variable cityscape should be created.

9.6.1.3. A balance between the natural landscape and artificial cityscape must be encouraged.

9.6.1.4. Skyline to promote the creation of the urban image and amenities should be formed.

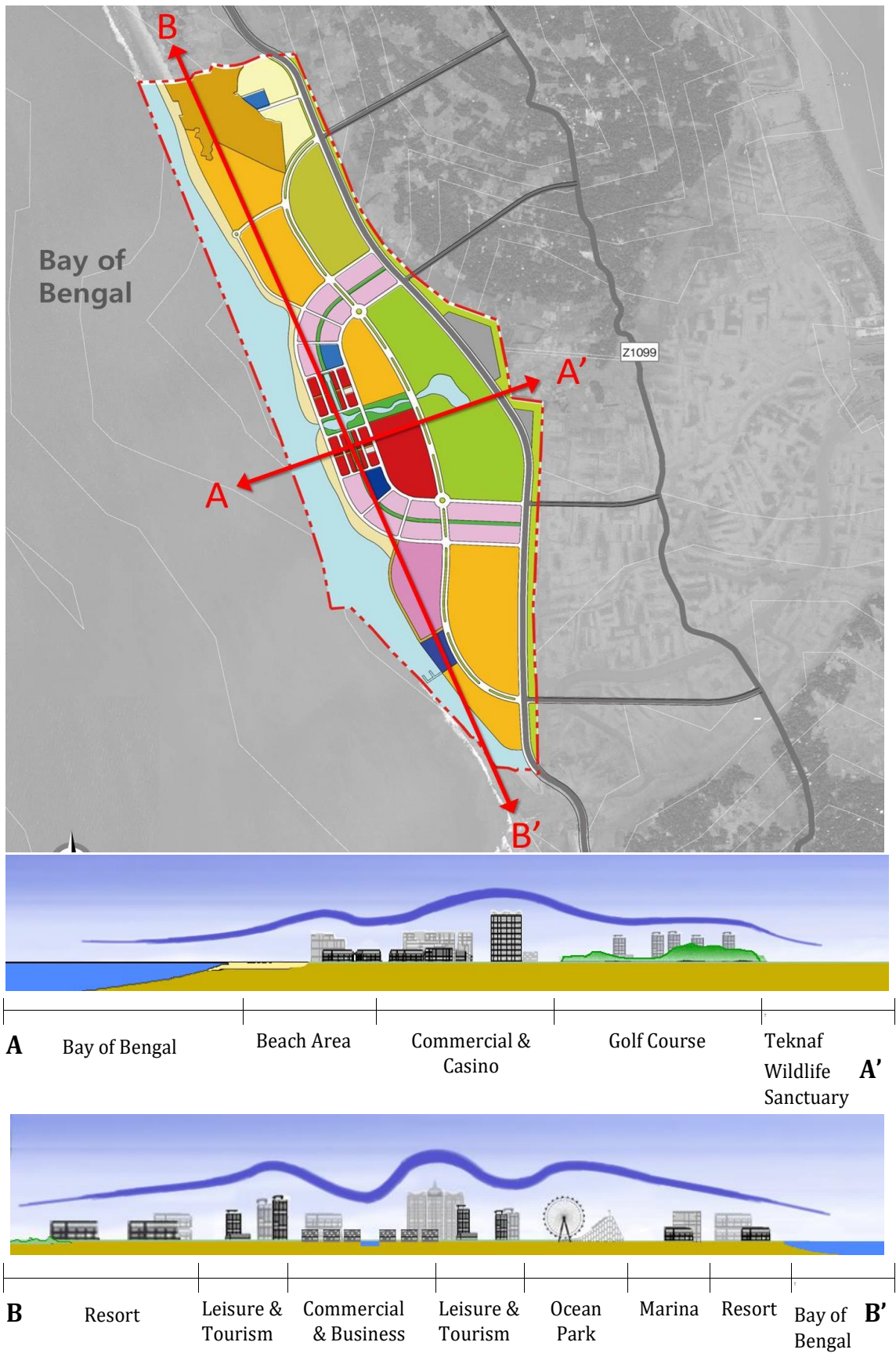


Figure 7.18. Illustrated Skyline of the Sabrang TP

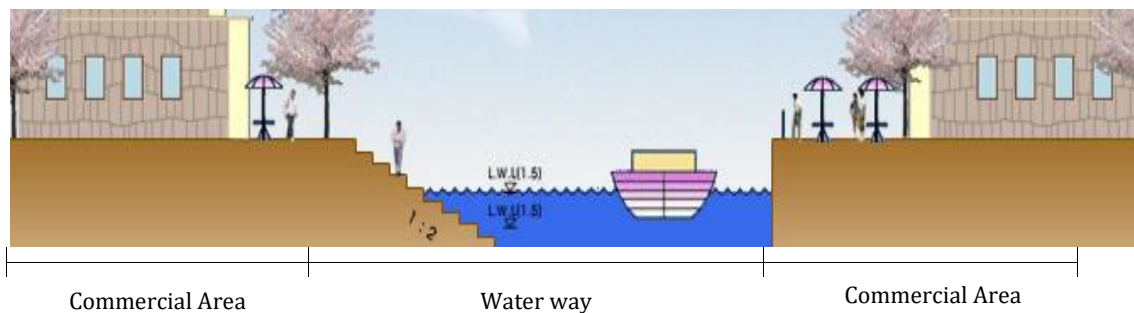
9.6.2. Waterfront Commercial Area

- 9.6.2.1. Planning for a waterfront square within commercial and business areas of Sabrang TP will present a distinctive landscape and induce vitalization of shops in the vicinity.
- 9.6.2.2. In liaison with the surrounding land use activities, revetment structure should be classified and constructed in forms of sloping, perpendicular, and step-down, and natural raw materials must be used for the perpendicular wall.
- 9.6.2.3. Green space revetment should be created on a gentle slope to induce natural vegetation recruitment in water level fluctuation.

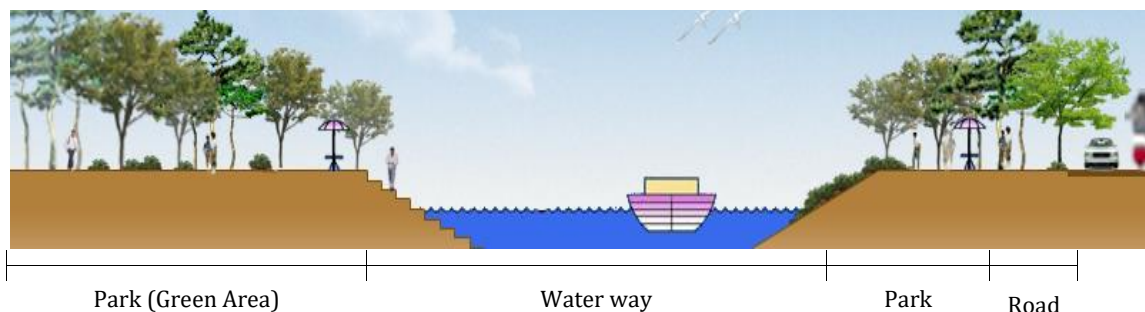


Figure 7.19. Sample image of Commercial

Source: Image extracted from Google Map, <http://map.google.com/>



(a) Section of Waterfront Square (Commercial Area)



(a) Section of Waterfront Square (Park Area)

Figure 7.20. Sample Image of Waterfront Commercial Area

Source: Image extracted from Google Map, <http://map.google.com/>

9.7. Parking Requirement

- 9.7.1. Parking for Residential, Commercial and other facilities is to be developed within the plot. No on-street parking will be allowed within the Sabrang TP.
- 9.7.2. All plots will have a minimum parking space allocation of 1 standard sized automobile (23 m²) per 200 m² of floor space. An extra 5% of ground coverage is permissible for construction of automated multilevel/multi-level parking with ramp parking structures for additional needs.

Table 7.15. Equivalent Car Space (ECS) in Different Type of Parking

Parking Type	Area in m ² Per ECS
Open shed	23
Basement	32
Multi-level with ramp	30
Automated multi-level	16

Source: Mirershorai Economic Zone, BEZA, 2014

Table 7.16. Parking space for various occupancies

Occupancy	Minimum Parking Requirement(m ² /car)
Central Commercial and Business	-
Office	200
Small shops and markets	200
Large shops and markets	200
Garages and petrol stations	200
Essential service	100
Residential (Apartment)	300
Public Facility (Administrative Supporting Facility)	200
Public Facility (Health Care)	300

Source: Bangladesh National Building Code, 2006

- 9.7.3. All plots will have a minimum parking space allocation of 1 standard sized automobile (23 m²) per 200 m² of floor space. An extra 5% of ground coverage is permissible for construction of automated multilevel/multi-level parking with ramp parking structures for additional needs.

10. PHASED DEVELOPMENT PLAN

10.1. Phasing Plan

10.1.1. Key assumptions for the phased development plan are as follows:

- This type of anchor facilities such as casino and golf course is introduced in the initial stage due to their large economic benefits by attracting major international tourists.
- A flexible development approach is suggested to alleviate financial burdens on developers and manage risks. Once a priority phase is successfully completed and generates profit as a growth engine, the next phase is considered for expansion.
- Providing enough time periods to acquire budget and to attract investors for construction of tourism facilities and infrastructure and site preparation of the Sabrang TP.

10.1.2. As shown in the Figure 7.21 below, three (3) phased development plan is provided considering different geological, economic and functional issues.

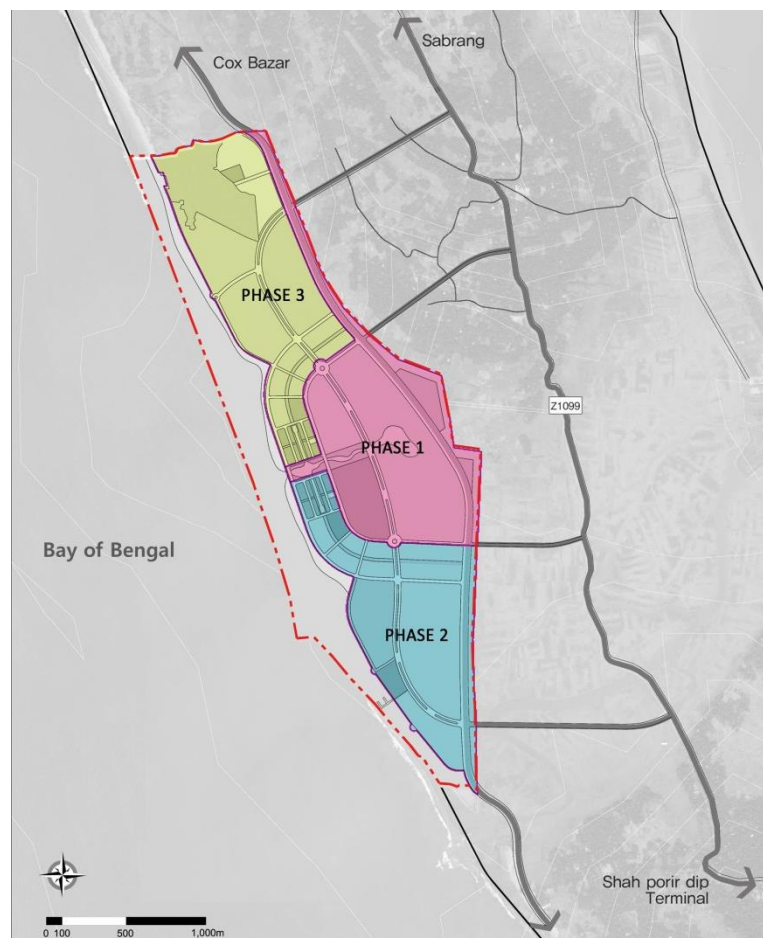


Figure 7.21. Phased Development Plan

10.1. Land Use and Key Facilities on Each Phase

As shown in the Figure 7.22 below, three (3) phased development plan⁴⁵ is provided considering different geological, economic and functional issues.

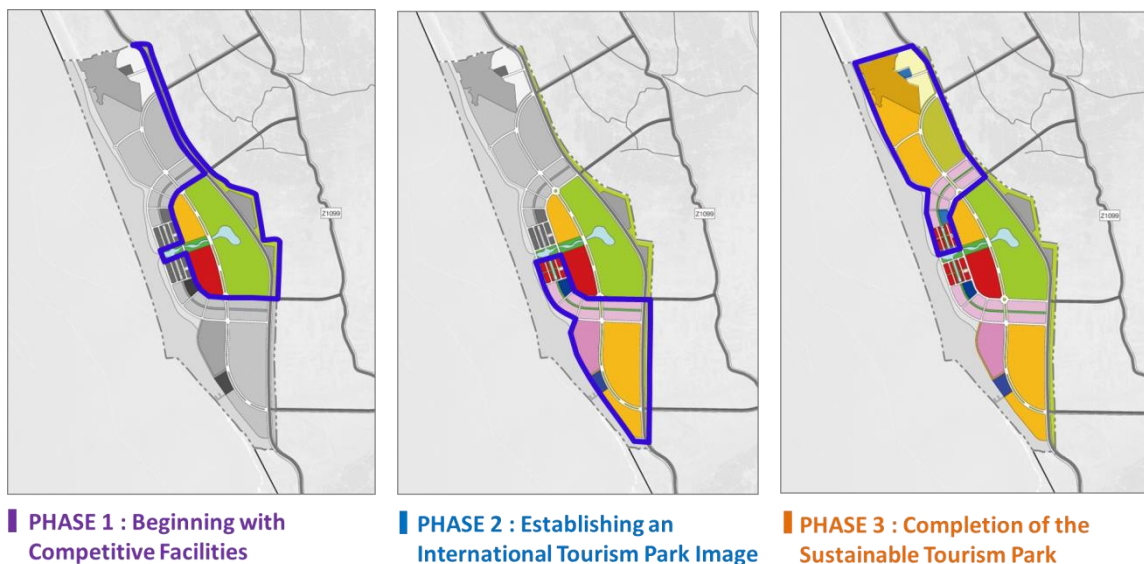


Figure 7.22. Map of Three (3) Phases

10.1.1. Phase 1: Beginning with Competitive Facilities

10.1.1.1. During the 1st phasing period, anchored facilities such as Casino and golf course will be constructed to attract national and international tourists. Moreover, 1st phase will generate initial profit from strong attractions.

10.1.1.2. The main access road and key infrastructure such as water treatment plant (WTP), waste water treatment plant (WWTP) and substations in the 1st phase will make the Sabrang TP be fully serviced at the initial stage.

10.1.1.3. Key facilities to be introduced during the period of 1st phase include **Casino, Resort, Golf Course, Power sub-station, WWTP, WTP etc.**

Table 7.17. Land use for Phase 1

Category		Land Use Plan (m ²)	Ratio (%)
Total		1,149,000	100.0%
Tourism	Subtotal	579,000	50.3%
	Resort	96,000	8.3%
	Golf Course	483,000	42.0%
Commercial	Subtotal	120,000	10.4%

⁴⁵ Detailed implementation schedule by phases is shown in Appendix 3

Category		Land Use Plan (m ²)	Ratio (%)
	Commercial (Casino)	120,000	10.4%
Open Space	Subtotal	156,000	13.6%
	Park	30,000	2.6%
	Green Space	109,000	9.5%
	Water body	17,000	1.5%
Others	Subtotal	294,000	25.7%
	Road	238,000	20.8%
	Infrastructure	56,000	4.9%

10.1.2. Phase 2: Establishing an International Tourism Park Image

10.1.2.1. During the 2nd Phase, the key issue is to provide family-oriented facilities to widen target ages of the Sabrang TP.

10.1.2.2. To the extent of the transportation plan, a ferry terminal in Marina will be constructed during the 2nd phase to increase the variety of transportation mode and to improve accessibility.

10.1.2.3. Meanwhile, the main arterial road (50m) is fully constructed to the extent of the boundary of 2nd phase.

10.1.2.4. The key facilities of the Phase 2 include **Marina, Ocean Park, Hotels and resorts, business etc.**

Table 7.18. Land use for Phase 2

Category		Land Use Plan (m ²)	Ratio (%)
Grand total		1,000,500	100.0%
Tourism	Subtotal	653,000	65.3%
	Ocean Park	120,000	12.0%
	Leisure & Tourism	170,000	16.9%
	Resort	363,000	36.3%
Commercial	Subtotal	47,000	4.7%
	Central Commercial	31,000	3.1%
	Business	16,000	1.6%
Public Facility	Subtotal	25,500	2.5%
	Marina	24,000	2.4%
	Parking	1,500	0.2%
Open Space	Subtotal	107,000	10.7%
	Park	23,000	2.3%
	Green Space	66,000	6.6%
	Pedestrian	13,000	1.3%
	Water body	5,000	0.5%
Others	Subtotal	168,000	16.8%
	Road	168,000	16.8%

10.1.3. Phase 3: Completion of the Sustainable Tourism Park

- 10.1.3.1. The phase 3 is a completion phase to be achieved as an Eco-Tourism place through introducing additional ecological/cultural conservation facilities.
- 10.1.3.2. Sabrang TP includes a residential area to accommodate a certain portion of employees and their families.
- 10.1.3.3. Additionally, public land for school, hospitals etc. are preferentially set up to provide basic services to workers and their residents.
- 10.1.3.4. Key facilities included in the 3rd phase are **Residential, Eco-Tourism etc.**

Table 7.19. Land use for Phase 3

Category		Land Use Plan (m ²)	Ratio (%)
Grand total		1,089,500	100.0%
Tourism	Subtotal	542,000	49.7%
	Eco-Tourism	174,000	16.0%
	Leisure & Tourism	123,000	11.3%
	Resort	245,000	22.5%
Commercial	Subtotal	31,000	2.8%
	Central Commercial	31,000	2.8%
Residential	Subtotal	104,000	9.5%
	Residential (Apartment)	104,000	9.5%
Public Facility	Subtotal	25,500	2.3%
	Public Facility	24,000	2.2%
	Parking	1500	0.1%
Open Space	Subtotal	43,000	4.1%
	Park	18,000	1.7%
	Green Space	18,000	1.7%
	Pedestrian	2,000	0.2%
	Water body	5,000	0.5%
Others	Subtotal	344,000	31.6%
	Road	99,000	9.1%
	Reserved Area(Existing Settlement)	245,000	22.5%

10.1.4. Beach and ocean(water body) Area

- 10.1.4.1. These areas (919,000 m²) are excluded in the phasing plan.

CHAPTER 8

INFRASTRUCTURE PLAN

1. INFRASTRUCTURE CONCEPT

- 1.1. The project has been envisioned as an infrastructure-led project, whereby the availability of infrastructure can behave as the key determinant for realizing the development potential of the project. Provision of infrastructure facilities for ensuring adequate water supply, efficient drainage system, solid waste management, and availability of adequate power will be important aspects in attracting potential investments to the project area.
- 1.2. The assessment for the physical infrastructure for the proposed master plan has been carried out on the basis of a demand assessment of the various land uses. The data provided was based on assumption made with population and area, and a detailed infrastructure plan will be developed based on the result of demand analysis.
- 1.3. In terms of the supply of the road network, it is desirable to develop all major trunk systems within the proposed roads. The trunk system will accommodate provisions of water supply, a storm water drainage network, power, sewerage, and related infrastructure.
- 1.4. The existing and natural drainage system of the site needs to be respected and retained. These can eventually be utilized as an open space system in the project area.

2. INFRASTRUCTURE PLAN

2.1. Weak foundation Treatment

2.1.1. Basic concept of planning

The project site is located on the shoreline and considered as the weak foundation. This weak foundation is required to be treated for the construction of the infrastructure and building.

The pre-loading is the most popular and economical method for the weak foundation treatment so it is planned to execute the pre-loading for this project.

However, the construction period is extended if only the pre-loading is used. Therefore, the PBD method is planned together to promote the improvement of the weak foundation. (According to consultation during Sabrang and Anowara workshop on Oct. 26, 2016)

The detail of the weak foundation design will be determined in the next design stage.

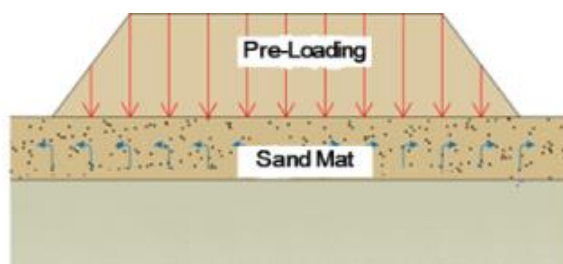


Figure 8.1. Pre-Loading Method

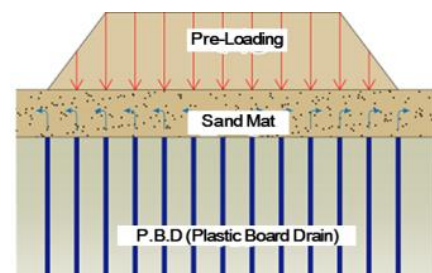


Figure 8.2. P.B.D. Method

2.2. Site Grading

2.2.1. Status of project site

According to the site survey, the black cotton soil has been found on the top soil layer, which needs to be replaced for site preparation. This soil is not suitable for laying foundation for any structure. The dominant soil texture is sandy loam. The soil layer is moderate to strong acidic in character. The soil layer is highly leached and has a low natural fertility.

2.2.2. Basic concept of planning

- As a reclamation area, develop an economical site in consideration of tide level and design flood level
- Establish site plans available to flexible storm water drainage
- Plan the Road system in consideration with connectivity with existing roads

2.2.3. Existing Issue for establishment of the earthwork plan

The project site floods during the monsoon season. The project site needs filling in consideration with flood level. The black cotton soil needs to be replaced according to geotechnical investigation so that it is hard to determine appropriate earthwork volume and

construction cost. In the worst case, the exorbitant cost of construction is expected if an enormous amount of black cotton soil is required to be replaced. In this case, spoil area and borrow pit where could handle an enormous amount of soil need to be considered.

2.3. Road and Pavement

Basically, the road and pavement design follows “Road Design Standards Rural Road”. These standards have been established in 2005 by Roads and Highways Department, Government of the People’s Republic of Bangladesh.

2.3.1. Basic concept planning

The pavement thickness of roads and sidewalks will be determined in consideration of traffic flow and weather conditions in design stage. The Consultant shall establish cross-sectional of roads and the installation plan of affiliated facilities.

2.3.2. Road length by categories

Road length based on the land use plan is as follows:

Table 8.1. Road Length by Categories

Road width (m)	Road length (m)
50	4,500
40	3,300
20	5,200
15	3,000
Sum	16,000

2.4. Water Supply

2.4.1. Planning objectives

- To ensure the centralized water supply of the entire project site.
- To provide the safe and stable supply of the industrial and fire-fighting water.
- To optimize effective utilization of groundwater resources.

2.4.2. Basic concept

To supply water to the site properly, the construction of new facilities is essential.

The most practical water supply source shall be the Naf River. Water intake and pumping facilities will be installed nearby the Naf River. As the location of the selected site is higher than the Naf River, it will be necessary to install a water pumping facility. Water supply source needs to be secured for stably-supply the water in the site.

The salinity of Naf-river is briefly mentioned in the Environmental Footprint but the investigation of the water resource is required to secure the stable water resource. The salinity of Naf-river should be investigated in consideration of the tide level, changes in salinity due to the tide level, and the changes due to the separation distance from the project site.

It is planned to construct the WTP within the project site on the assumption that the fresh water is brought from the upstream of Naf-river.

2.4.3. Estimation of consumption

As mentioned above, the amount of water supply has been determined based on unit rates used in similar projects and research paper.(Bangladesh Water Utilities Data Book 2006-2007(Benchmarking for improving water supply delivery) June. 2009)

Table 8.2. The Estimated Water Consumption

The amount of water consumption (m³/day)	
Tourism	9,000
Commercial	3,780
Residential	450
Public Facility	960
Infrastructure	5,240
Total	19,430

2.5. Storm Water

2.5.1. Planning objectives

- To develop drainage system to ensure a smooth drainage of rainwater without outflows
- To plan the storm water drainage system in consideration of safety against flooding caused by the discharge of storm water.

2.5.2. Basic concept of Planning

Storm water is treated by gravity flow and directly flows into the inner stream and the Bay of Bengal in the lower area via pipeline and culvert.

In design stage, hydrologic analysis will be implemented to plan the storm water drainage, accordingly it may be considered to set up the reservoir in order to prevent flooding.

2.6. Sewage

2.6.1. Planning objectives

- To develop an effective sewage treatment and disposal facility
- To determine the drainage area considering the natural topography
- To determine a discharge method in consideration of the combined flow from the existing discharge area and the project site

2.6.2. Estimation of generation

Based on sewage standards and experiences, the amount of sewage is estimated proportionally to the daily water consumption in this case, the ratio of amount of domestic sewage and water consumption is 0.80.

The amount of sewage generated in the site area is calculated as follows;

Table 8.2. The Estimated Amount of Sewage

Categories	The amount of sewage (m ³ /day)
Tourism	7,200
Commercial	3,020
Residential	360
Public Facility	770
Infrastructure	4,190
Total	15,540

2.6.3. Basic concept of planning

Wastewater shall be collected into Wastewater Treatment Plant (hereinafter WWTP) via pipeline.

Wastewater is treated by gravity flow. The mediation pumping station shall be constructed, if required, and the consultant shall establish a wastewater treatment plan which shall minimize the number of the mediation pumping station.

Treated wastewater from WWTP flows into the inner stream of project site and could be recycled as irrigation water for landscaping and water for maintenance of water sources.

2.7. Power Supply

2.7.1. Planning objectives

To build an efficient, clean and reliable power supply infrastructure to provide adequate electric energy for the project site.

- To ensure better public life for industrial facilities in the project site with reliable and stable electricity supply
- To forecasting a future energy demand

2.7.2. Basic Concept of planning

The remaining electricity of Teknaf substation which is located at a distance of 7km from the project site shall be brought and supplied to the project site.

A separate substation needs to be constructed within the project site in pursuance of reliable power supply. The consultant shall determine the demand of electricity at the stage of detail design and shall take account this demand into remaining electricity of Teknaf Substation.



Figure 8.3. Water Supply Plan

If the remaining electricity of the Teknaf substation is insufficient, a new power plant may be considered through discussion with client.

Table 8.. The Estimated Amount of Power

Categories	The amount of power (kW)
Tourism	13,100
Commercial	4,730
Residential	2,600
Public Facility	1,480
Open Space	1,730
Infrastructure	6,550
Total	30,190

2.8. Telecommunication

2.8.1. Planning objectives

- To provide a robust communication infrastructure that will support the project site
- To comply with local laws and regulations for the telecommunication
- To select all methods and equipment to ensure safety and suitability for the condition of use
- To plan the allocation for telecom network in the roads cross section in the integrated infrastructure layout
- To review appropriateness of the amount of and telecommunication demand

2.8.2. Basic concept of planning

Based on the safe and reliable transmission network, it is planned to develop a comprehensive communication services.

2.9. Solid Waste

The common method of waste disposal is by incineration or landfill. The best way of handling solid waste will be to construct a landfill site for non-hazardous waste and an incinerator for handling hazardous waste.

2.9.1. Planning objectives

- To safely collect, transport, recycle and treat solid waste.
- Establish solid waste treatment plan capable of minimizing the civil complaint and improving the environment.

2.9.2. Basic concept of planning

The treatment method of solid waste will be determined through discussion with the client and the Ministry of Environment.

In general, the following alternatives could be considered:

- Alt1) Incineration or landfill: To look for ideal place on the outside of project site in consideration of surrounding environment, complaint, and maintenance.
- Alt2) Solid Waste Treatment Plant: Location and scale of facilities shall be determined according to generation amount of solid waste calculated by consultant.

2.10. Phased Development Plan

2.10.1. The consultant shall establish a practical phased development plan in accordance with a budget of the client.

2.10.2. The 1st phase is bordered by a principle that composes the main access point and key infrastructure facilities such as water treatment plant (WTP), waste water treatment plant (WWTP) and substations to be fully serviced at the initial stage. Similarly, lands for administrative and supporting facilities are preferentially set up to provide basic services to workers.

3. COST ESTIMATES

The engineering cost is estimated for infrastructure planned above. The unit rates for water supply, sewage, storm water, roads and energy supply costs are established based on an analysis of current market prices and similar construction contracts in Bangladesh.

As this consultancy service is the Pre-feasibility study, we roughly estimated the construction cost. The cost may differ depending on the result of detailed design.

2.1. Grading Work

The cost for the grading work includes the Dyke installation, site clearing, dredging, levelling, as well as the PBD for weak foundation treatment. Each amount is determined by assuming the depth (H) based on the area where the earthwork is required excluding the water body in the total area.

Table 8.3. Grading Work

Categories	Quantity	Remark
Dyke	9,200 m	

Site Clearing	3,251,000 m ²	
Dredging	6,502,000 m ³	H=2.0m
Leveling	13,004,000 m ³	H=4.0m
PBD	3,251,000 m ²	

The construction cost is calculated by multiplying the volume of grading work and the unit cost. This unit cost is estimated from similar construction works in Bangladesh.

2.2. Road and Pavement

The construction cost of the road includes cost for subgrade, base course and surface (Asphalt), curve and gutter, sidewalk, and street lighting. The length, width (Carriage and sidewalk) of the planned road within the proposed site is as follow:

Table 8.4. Road and Pavement Work

Categories	Length (m)	Width of Carriage (m)
50m	4,500	40
40m	3,300	30
20m	5,200	14
15m	3,000	7
Total	16,000	

2.3. Pipe Network

Pipelines to be constructed by its purpose: water supply, storm water, sewage, power supply and telecommunication.

We utilize a correlation between the length of the pipeline and the road which has been acquired through implementing numerous development projects for the new town and industrial park.

Table 8.5. Length of Pipelines

Categories	The length of road (m)	Rate (%)	Pipeline (m)
Water Supply	16,000	150	24,000
Storm Water	16,000	260	42,100
Sewage	16,000	200	31,800
Power Supply	16,000	250	40,600
Telecommunication	16,000	100	16,000

2.4. WTP and WWTP

It is planned to build a water treatment plant with a capacity of 19,500m³/day and an integrated waste water treatment plant with a capacity of 15,500m³/day.

The construction cost is determined by using per capacity construction cost which is estimated through numerous projects in Korea. It was compared with the construction cost of the project performed in Bangladesh to check its feasibility.

Table 8.6. WTP and WWTP

Categories	Capacity (m ³ /day)
Water Treatment Plant	19,500
Waste Water Treatment Plant	15,500

2.5. Structure

There is a river within the project site so that the construction cost of the bridge is required to be determined.

As for the type of the bridge, it is necessary to compare the various types of bridges at the detailed design stage and select the most appropriate type. At the present stage, the construction cost is roughly estimated based on the experience of many projects executed in Korea and Overseas.

2.6. Off-Site Infrastructure

The construction cost for the off-site infrastructure is categorized by External water supply, and External power supply and each construction cost was provided from BEZA (according to consultation during Sabrang and Anowara workshop on Oct.26.2016).

2.7. Summary of Estimated Cost

< Total Estimated Cost >

1. On-site						
	TYPE	Unit	Quantity	Cost(Taka)	Cost(USD)	Remark
Earthwork	Dyke	m	9,200	1,618,556,000	20,608,047	
	Earthwork	m2	3,251,000	4,661,977,347	59,358,000	
	PBD	m2	3,251,000	2,866,544,542	36,497,893	
	Subtotal			9,147,077,889	116,463,941	
Road & Pavement	Carriage	m2	372,660	888,954,380	11,318,492	B=50,40,20,15m
	Sidewalk	m2	133,040	223,640,240	2,847,469	
	Street Lighting	ea	533	2,263,833	28,824	
	Subtotal			1,114,858,453	14,194,786	
Water Supply	Water Supply	m	23,970	182,615,700	2,325,130	Including Valve work, Reservoir Tank, Water Tower
	WTP	WTP	1	1,411,000,000	17,965,368	
	Subtotal			1,593,615,700	20,290,498	
Stormwater		m	42,101	517,884,876	6,593,900	Including Across Pipe
Sewerage	Sewerage Disposal	m	31,808	158,260,650	2,015,032	Including Lifting Pumping Station
	WWTP	set	1	1,232,500,000	15,692,641	
	Subtotal			1,390,760,650	17,707,673	
Power Supply	Distribution Line	m	40,600	50,556,300	643,701	33kV, 11kV, 0.4kV
	Substation	set	6	76,500,000	974,026	33KV/11KV
	Transformer	set	120	204,000,000	2,597,403	
	Subtotal			331,056,300	4,215,130	
Telecommunication		m	15,980	32,297,178	411,219	
Structure		m2	1,500	157,500,000	2,005,348	
Landscape		m2	262,000	132,965,000	1,692,959	
Miscellany cost		set		1,537,537,450	19,576,489	10%
1. Total Construction Cost				15,955,553,497	203,151,942	
2. Engineering Cost (Planning, Design and construction Supervision)				957,333,210	12,189,116	
3. Contingency Cost (Construction Cost+Engineering Cost)*15%				2,536,933,006	32,301,159	
4. Total Cost (Not Including Tax)				19,449,819,712	247,642,217	
TAX				2,917,472,957	37,146,333	
5. Total Construction Cost (Including Tax)				22,367,292,669	284,788,550	
2. Off-site						
	TYPE	Unit	Quantity	Cost(Taka)	Cost(USD)	Remark
	Water Supply	set	1	163,370,000	2,080,087	
	Power Supply	set	1	98,246,110	1,250,905	
1. Total Construction Cost				261,616,110	3,330,992	
2. Engineering Cost (Planning, Design and construction Supervision)				15,696,967	199,860	
3. Contingency Cost (Construction Cost+Engineering Cost)*15%				41,596,962	529,628	
4. Total Cost (Not Including Tax)				318,910,038	4,060,479	
TAX				47,836,506	609,072	
5. Total Construction Cost (Including Tax)				366,746,544	4,669,551	
3. Grandtotal						
1. Total Construction Cost				16,217,169,607	206,482,934	
2. Engineering Cost (Planning, Design and construction Supervision)				973,030,176	12,388,976	
3. Contingency Cost (Construction Cost+Engineering Cost)*15%				2,578,529,968	32,830,787	
4. Total Cost (Not Including Tax)				19,768,729,751	251,702,696	
TAX				2,965,309,463	37,755,404	
5. Total Construction Cost (Including Tax)				22,734,039,213	289,458,101	

Notes: The exchange rate is 1USD = 78.54Taka. It is estimated based on local market prices and experiences from similar project in Bangladesh. The cost can be revised based on the construction types and methods.

< Estimated Cost of Phase 1 >

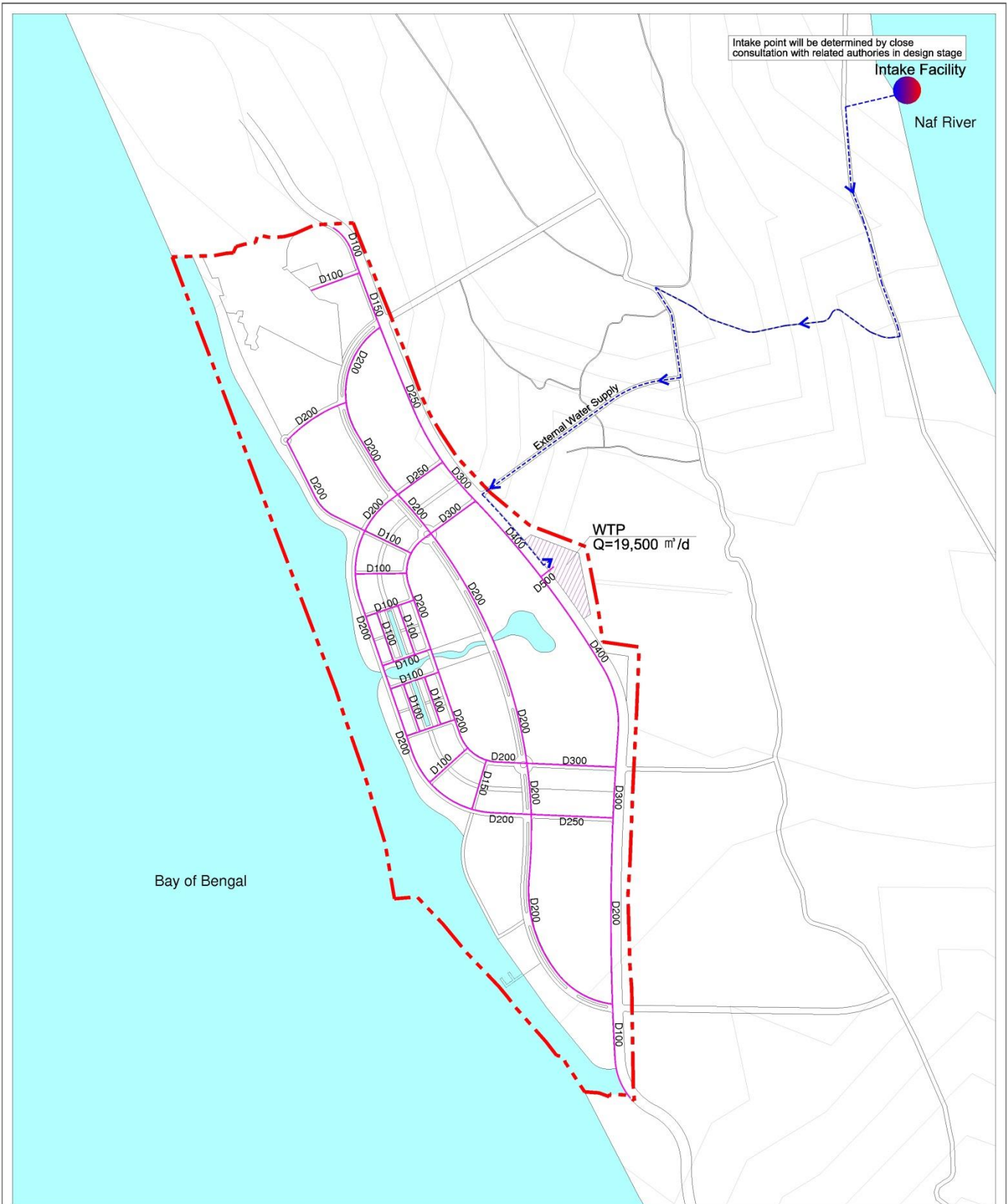
1. On-site						
TYPE	Unit	Quantity	Cost(Taka)	Cost(USD)	Remark	
Earthwork	Dyke	m	5,000	879,650,000	11,200,025	
	Earthwork	m2	1,784,500	2,558,996,793	32,582,083	
	PBD	m2	1,784,500	1,573,469,313	20,033,987	
	Subtotal			5,012,116,106	63,816,095	
Road & Pavement	Carriage	m2	197,510	460,309,930	5,860,834	B=50,40,20,15m
	Sidewalk	m2	38,390	64,533,590	821,665	
	Street Lighting	ea	227	964,750	12,284	
	Subtotal			525,808,270	6,694,783	
Water Supply	Water Supply	m	10,215	130,849,850	1,666,028	Including Valve work, Reservoir Tank, Water Tower
	WTP	WTP	1	982,600,000	12,510,823	
	Subtotal			1,113,449,850	14,176,851	
Stormwater		m	18,347	232,452,964	2,959,676	Including Across Pipe
Sewerage	Sewerage Disposal	m	14,532	68,760,750	875,487	Including Lifting Pumping Station
	WWTP	set	1	844,900,000	10,757,576	
	Subtotal			913,660,750	11,633,063	
Power Supply	Distribution Line	m	18,268	24,006,975	305,666	33kV, 11kV, 0.4kV
	Substation	set	2	25,500,000	324,675	33KV/11KV
	Transformer	set	40	68,000,000	865,801	
	Subtotal			117,506,975	1,496,142	
Telecommunication		m	6,810	13,763,691	175,244	
Structure		m2	1,500	157,500,000	2,005,348	
Landscape		m2	139,000	70,542,500	898,173	
Miscellany cost		set		852,510,938	10,854,481	10%
1. Total Construction Cost			9,009,312,044	114,709,855		
2. Engineering Cost (Planning, Design and construction Supervision)			540,558,723	6,882,591		
3. Contingency Cost (Construction Cost+Engineering Cost)*15%			1,432,480,615	18,238,867		
4. Total Cost (Not Including Tax)			10,982,351,382	139,831,314		
TAX			1,647,352,707	20,974,697		
5. Total Construction Cost (Including Tax)			12,629,704,089	160,806,011		
2. Off-site						
TYPE	Unit	Quantity	Cost(Taka)	Cost(USD)	Remark	
Water Supply	set	1	163,370,000	2,080,087		
Power Supply	set	1	98,246,110	1,250,905		
1. Total Construction Cost			261,616,110	3,330,992		
2. Engineering Cost (Planning, Design and construction Supervision)			15,696,967	199,860		
3. Contingency Cost (Construction Cost+Engineering Cost)*15%			41,596,962	529,628		
4. Total Cost (Not Including Tax)			318,910,038	4,060,479		
TAX			47,836,506	609,072		
5. Total Construction Cost (Including Tax)			366,746,544	4,669,551		
3. Grandtotal						
1. Total Construction Cost			9,270,928,154	118,040,847		
2. Engineering Cost (Planning, Design and construction Supervision)			556,255,689	7,082,451		
3. Contingency Cost (Construction Cost+Engineering Cost)*15%			1,474,077,577	18,768,495		
4. Total Cost (Not Including Tax)			11,301,261,420	143,891,793		
TAX			1,695,189,213	21,583,769		
5. Total Construction Cost (Including Tax)			12,996,450,633	165,475,562		

< Estimated Cost of Phase 2 >

1. On-site						
TYPE	Unit	Quantity	Cost(Taka)	Cost(USD)	Remark	
Earthwork	Dyke	m	2,700	475,011,000	6,048,014	
	Earthwork	m2	619,000	887,654,253	11,301,939	
	PBD	m2	619,000	545,798,546	6,949,307	
	Subtotal			1,908,463,799	24,299,259	
Road & Pavement	Carriage	m2	120,862	288,340,226	3,671,253	B=50,40,20,15m
	Sidewalk	m2	55,998	94,132,638	1,198,531	
	Street Lighting	ea	170	722,925	9,205	
	Subtotal			383,195,789	4,878,989	
Water Supply	Water Supply	m	7,655	27,160,985	345,824	Including Valve work, Reservoir Tank, Water Tower
	WTP	WTP	1	141,950,000	1,807,359	
	Subtotal			169,110,985	2,153,183	
Stormwater		m	14,147	169,990,268	2,164,378	Including Across Pipe
Sewerage	Sewerage Disposal	m	10,289	51,510,510	655,851	Including Lifting Pumping Station
	WWTP	set	1	159,800,000	2,034,632	
	Subtotal			211,310,510	2,690,483	
Power Supply	Distribution Line	m	12,582	15,167,018	193,112	33kV, 11kV, 0.4kV
	Substation	set	2	25,500,000	324,675	33KV/11KV
	Transformer	set	40	68,000,000	865,801	
	Subtotal			108,667,018	1,383,588	
Telecommunication		m	5,103	10,313,673	131,317	
Structure		m2	0	-	-	
Landscape		m2	88,000	44,660,000	568,627	
Miscellany cost		set		338,890,783	4,314,881	10%
1. Total Construction Cost			3,344,602,824	42,584,706		
2. Engineering Cost (Planning, Design and construction Supervision)			200,676,169	2,555,082		
3. Contingency Cost (Construction Cost+Engineering Cost)*15%			531,791,849	6,770,968		
4. Total Cost (Not Including Tax)			4,077,070,843	51,910,757		
TAX			611,560,626	7,786,613		
5. Total Construction Cost (Including Tax)			4,688,631,469	59,697,370		
2. Off-site						
TYPE	Unit	Quantity	Cost(Taka)	Cost(USD)	Remark	
Water Supply	set	0	-	-		
Power Supply	set	0	-	-		
1. Total Construction Cost			-	-		
2. Engineering Cost (Planning, Design and construction Supervision)			-	-		
3. Contingency Cost (Construction Cost+Engineering Cost)*15%			-	-		
4. Total Cost (Not Including Tax)			-	-		
TAX			-	-		
5. Total Construction Cost (Including Tax)			-	-		
3. Grandtotal						
1. Total Construction Cost			3,344,602,824	42,584,706		
2. Engineering Cost (Planning, Design and construction Supervision)			200,676,169	2,555,082		
3. Contingency Cost (Construction Cost+Engineering Cost)*15%			531,791,849	6,770,968		
4. Total Cost (Not Including Tax)			4,077,070,843	51,910,757		
TAX			611,560,626	7,786,613		
5. Total Construction Cost (Including Tax)			4,688,631,469	59,697,370		

< Estimated Cost of Phase 3 >

1. On-site						
TYPE	Unit	Quantity	Cost(Taka)	Cost(USD)	Remark	
Earthwork	Dyke	m	1,500	263,895,000	3,360,008	
	Earthwork	m2	847,500	1,215,326,300	15,473,979	
	PBD	m2	847,500	747,276,684	9,514,600	
	Subtotal			2,226,497,984	28,348,587	
Road & Pavement	Carriage	m2	54,288	140,304,224	1,786,405	B=50,40,20,15m
	Sidewalk	m2	38,652	64,974,012	827,273	
	Street Lighting	ea	136	576,158	7,336	
	Subtotal			205,854,394	2,621,013	
Water Supply	Water Supply	m	6,101	24,604,865	313,278	Including Valve work, Reservoir Tank, Water Tower
	WTP	WTP	1	286,450,000	3,647,186	
	Subtotal			311,054,865	3,960,464	
Stormwater		m	9,607	115,441,645	1,469,845	Including Across Pipe
Sewerage	Sewerage Disposal	m	6,987	37,989,390	483,695	Including Lifting Pumping Station
	WWTP	set	1	227,800,000	2,900,433	
	Subtotal			265,789,390	3,384,128	
Power Supply	Distribution Line	m	9,751	11,382,308	144,924	33kV, 11kV, 0.4kV
	Substation	set	2	25,500,000	324,675	33KV/11KV
	Transformer	set	40	68,000,000	865,801	
	Subtotal			104,882,308	1,335,400	
Telecommunication		m	4,067	8,219,814	104,658	
Structure		m2	0	-	-	
Landscape		m2	35,000	17,762,500	226,159	
Miscellany cost		set		346,135,729	4,407,127	10%
1. Total Construction Cost			3,601,638,629	45,857,380		
2. Engineering Cost (Planning, Design and construction Supervision)			216,098,318	2,751,443		
3. Contingency Cost (Construction Cost+Engineering Cost)*15%			572,660,542	7,291,323		
4. Total Cost (Not Including Tax)			4,390,397,488	55,900,146		
TAX			658,559,623	8,385,022		
5. Total Construction Cost (Including Tax)			5,048,957,111	64,285,168		
2. Off-site						
TYPE	Unit	Quantity	Cost(Taka)	Cost(USD)	Remark	
Water Supply	set	0	-	-		
Power Supply	set	0	-	-		
1. Total Construction Cost			-	-		
2. Engineering Cost (Planning, Design and construction Supervision)			-	-		
3. Contingency Cost (Construction Cost+Engineering Cost)*15%			-	-		
4. Total Cost (Not Including Tax)			-	-		
TAX			-	-		
5. Total Construction Cost (Including Tax)			-	-		
3. Grandtotal						
1. Total Construction Cost			3,601,638,629	45,857,380		
2. Engineering Cost (Planning, Design and construction Supervision)			216,098,318	2,751,443		
3. Contingency Cost (Construction Cost+Engineering Cost)*15%			572,660,542	7,291,323		
4. Total Cost (Not Including Tax)			4,390,397,488	55,900,146		
TAX			658,559,623	8,385,022		
5. Total Construction Cost (Including Tax)			5,048,957,111	64,285,168		



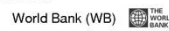
Legend

- Water Distribution Line
- Intake Facility
- D700 Pipe Diameter (mm)
- Site Boundary
- WTP Water Treatment Plant
- Water Body
- External Water Supply

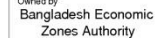
Water Supply Layout

Pre-Feasibility Study of Anowara-2 EZ and Sabrang Tourism Park

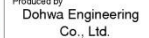
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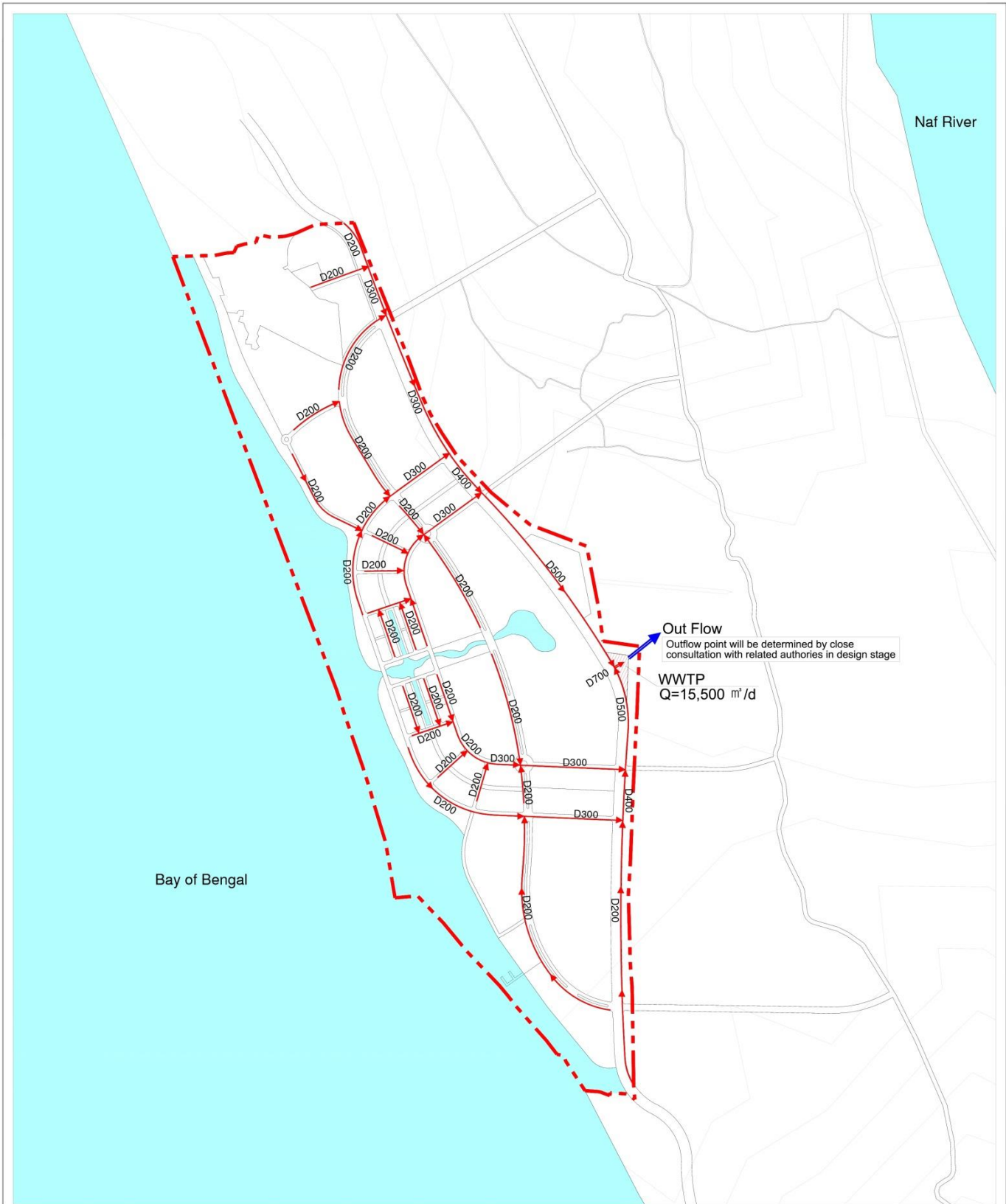


Produced by



Scale : None





Legend

- ← Sewage Pipe Line
- Site Boundary
- D700 Pipe Diameter (mm)
- Water Body
- WWTP Wastewater Treatment Plant
- ← Sewage Outflow Pipe

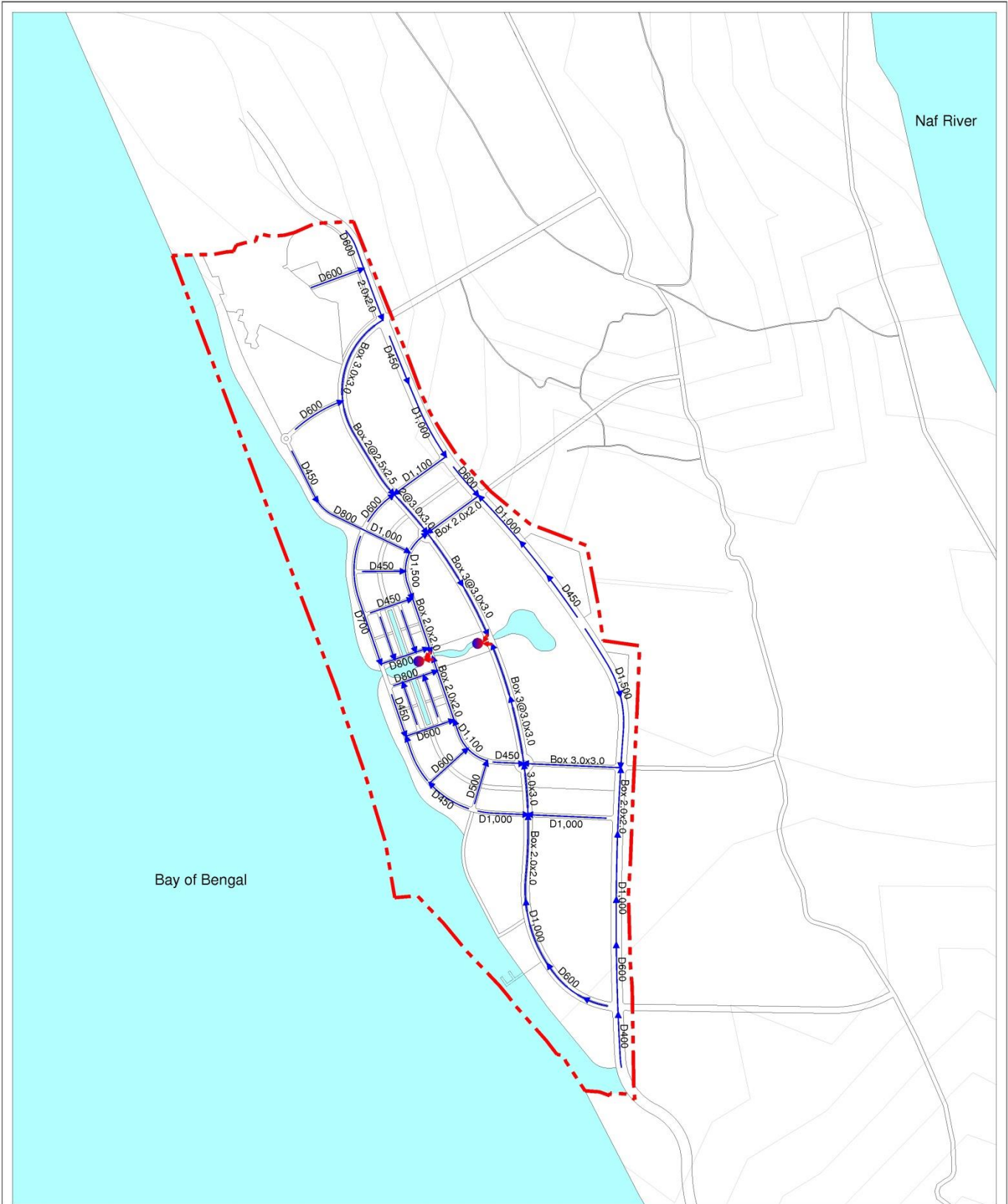
Sewerage Layout

Pre-Feasibility Study of Anowara-2 EZ and Sabrang Tourism Park

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Scale : None





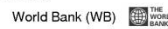
Legend

- ← Stormwater Pipe Line
- Outflow Point
- D700 Pipe Diameter (mm)
- ← Storm Outflow Pipe
- Site Boundary
- Water Body

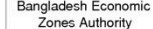
Stormwater Drainage Layout

Pre-Feasibility Study of Anowara-2 EZ and Sabrang Tourism Park

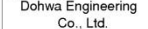
Supported by



Owned by



Produced by



Scale : None



CHAPTER 9

ENVIRONMENTAL AND SOCIAL FOOTPRINT

1. ENVIRONMENTAL FOOTPRINT

1.1. Introduction

The proposed project comprises of the development of the land and off-site and on-site facilities. Hence, huge intervention is needed for the development of the TP which has both negative and positive impacts on the environment. Therefore, it necessitates the environmental review in the pre-feasibility study to identify the principal requirements for the development of the Sabrang TP.

In this respect, potential environmental impacts of the proposed project need to be identified in the footprint report where adverse effects and mitigation measures as well as benefits would be addressed.

1.1.1. Objectives of the Study

The overall objective of this study is to identify major environmental impacts resulting from implementation of the project and to recommend mitigation measures to avoid or reduce adverse environmental impacts and to enhance positive impacts. The specific objectives include:

- To assess the existing environmental conditions of the project site and its adjacent areas in order to establish a baseline framework against which potential environmental impacts due to implementation of the project would be compared;
- To identify and assess impacts resulting from the project during its development or construction phase;
- To identify and assess environmental impacts resulting from the project during its operational phase;
- To develop a well-balanced environmental management plan with

recommendations for mitigating adverse impacts and enhancing positive impacts and outlining environmental monitoring requirements both during construction and operational phase of the project;

- To identify issues that may require further studies.

1.1.2. Scope and Methodology of the Study

As a part of the Pre-feasibility Study of the Sabrang TP, this environmental study has been prepared for the GoB assistance in undertaking the project appraisal of the Sabrang TP Development Project for the Bangladesh Economic Zone Authority (BEZA). The project proponent is BEZA under the Prime Minister's Secretariat.

The environmental study is performed in order to give a brief idea about the basic environmental considerations required. The intention is to make a brief overview of the environmental analysis for this project. As such, this environmental footprint has been prepared based on field reconnaissance, coordination with BEZA, Department of Environment (DoE), Local Govt. Engineering Division (LGED), and Water Resources Planning Organization and stakeholder and expertise consultations. The study methodology comprised the following activities:

- Documents/Desktop Study;
- Field Investigations and Data Collection;
- Data Analysis and Report Writing.

1.1.2.1. Documents/Desktop Study

The desktop study involved:

- Initial meetings with client, stakeholders to discuss the proposed project, including project activities and options under consideration;
- Collection and review of the baseline data, maps, reports and other relevant information on the existing environmental and social conditions of the project area;
- Review of the existing legislation, regulation and policies relevant to the proposed project;
- Understand the anticipated technical processes that may affect the environment;
- Outline a gap analysis and recommend what other studies should be done for the Project.

1.1.2.2. Field Investigation and Data Collection

Field investigations involved site walks within the project area and the neighbouring areas that may be affected by the project. The following key tasks were performed during the field visit:

- Taking photographs of the significant aspects to assist in describing the baseline environmental conditions of the project area;
- Interviews with representatives of the relevant key regulatory authorities within the project area and interested and affected parties mainly within the project influence zone;
- Obtaining relevant documents from the authorities such as local government and key authorities within the project influence zone.

The aim of the field investigations was to verify information and data collected during the desktop study and to collect new information that may have been important in the assessment of the impacts and design of the mitigation measures. On the bases of the collected relevant data, identification of the possible impacts has been conducted. This was followed by evaluation of the likely impacts along with their origin and extensiveness. A team of the consultants made a field investigation to the proposed site on 12 and 13 November 2016. The investigation team composition is given below:

- Mr. Mahbubur Rahman, Environmental Expert; and
- Hasibun Nahar Khanam, Social Expert.

The basic objective of the field investigation is to have a general overview of the proposed site and to understand people's views through brief consultation about the project. The visiting team also met different government offices such as UNO Office, Upazila Engineer Office, AC-Land Office, Union Parishad Land Office, and LGED Office.

1.1.2.3. Data Analysis and Report Writing

The data and information collated from all the sources (literature review, secondary and primary data, public consultation and abstraction of the relevant data from other groups) were analyzed to describe the existing environmental setting of the project area, to identify the potential positive and negative impacts of the proposed project, as well as to provide preliminary suggestions for mitigation measures. Finally, this environmental footprint report has been prepared.

1.2. Outline of the Project Site and Proposed Intervention

The detailed of the project site and proposed intervention is described comprehensively in separate section. However, this part is only highlighted the key information related to the project site.

1.2.1. Project Setting and Current Situation

Sabrang Tourism Park will be the first exclusive tourism park in the Cox's Bazar. Sabrang is an amazing hill and sea beach territory, multifaceted diverse and admirably beautiful. The purest air, lofty hill, sea and lagoon create perfect conditions for the development of all types of tourism and entertainment.

The site is abutted by Bay of Bengal on the southern side and Western side, private owned land on its north and Khas land on its east. The location map of the proposed Sabrang TP is shown in Figure 5.3

Location: In Teknaf Upazila, about 86 km from Cox's Bazar Town

Natural condition: Agriculture and aquaculture

Total area of site: The project site consists of 967 acres of land consisting of Khas land, land under Bangladesh Water Development Board and land under Khals/Pond (non-transferable Khas land). Of the 967 acres proposed for the project site, the Khas land constitutes 878.26 acres, khals and ponds of 57.62 acres and 31.18 acres land belong to Bangladesh Water Development Board (BWDB). The proposed site doesn't have any privately owned land. The privately owned 60.50 land acres at the north of the proposed site can consider as reserve area. Considering this 60.5 acres as reserve area, the total area comprises of 1027 acres.

Existing land Use: Agriculture and aquaculture

The land demarcated for the proposed EZ is not under any use presently, thus the development of proposed EZ will not involve physical or economic displacement.

The proposed EZ will be connected with the Marine Drive at the northern periphery which will be used for access to the EZ. The Marine drive is under construction by Bangladesh Army from Cox's Bazar to Sabrang. The Marine drive is a linked project for the proposed EZ and the compliance of the safeguard requirements for the Marine drive needs to be assessed to determine the gaps with the WB OP requirements

Table 9.1. Key Site Facts

Criteria	Facts	Major Highlights	Identified potentially industries linkage
Location	Sabrang	Vacant land with no residential houses	Hotel complexes, Eco-tourism, Recreational tourism, Business tourism, Sports and extreme tourism, Water tourism, Education & Health Tourism
Size (acres) and ownership	Project site consists of 967 acres. Considering 60.5 acres as reserve area, the total area 1027 acres	Government Khas land, Khals & Embankment BWDB & private land. It doesn't include any private land	
Connectivity	Well connected	Marine Drive is the key access road	
Labour Source	Chittagong and Cox's Bazar	Local and migrated labours are available	

The present status of the connectivity, utility services, telecommunication, water supply and site specific issues is described in the separate section. The current situation of the site is further elaborated in the Figure 9.1.

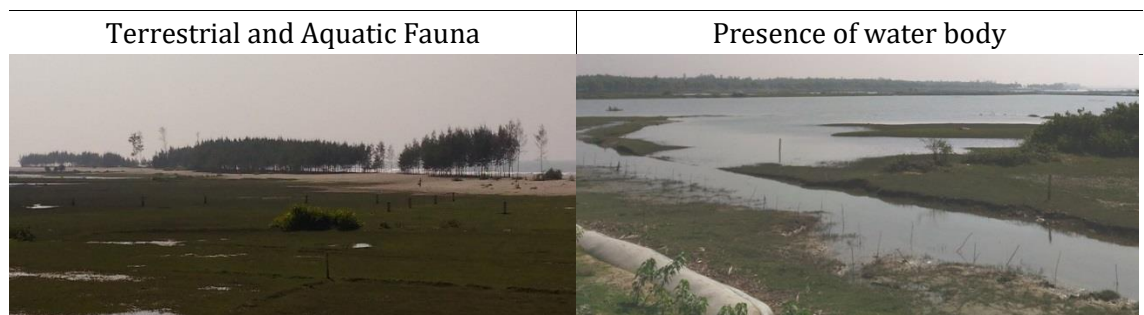


Figure 9.1. Pictures of the current situation of the site

1.2.2. Project Components and Proposed Intervention

The proposed project involves development of the following facilities to make site appropriate for development of Tourism Park:

- Site development
- Administrative building
- Land filling and levelling
- External power supply system and substation at project site

- External water supply arrangement

The project components primarily include on-site infrastructure, off-site infrastructure and utility requirements. The proposed tourism facilities include: casino, Ocean Park, golf course, eco-tourism, shopping mall, hotel and resort, marina, special facilities like prayer room, theatre, and fitness centre.

1.3. Policy, Legislative and Administrative Framework

Environmental issues in the country are legislated by different sectoral policies and law, such as those relating to land use, water and air pollution, noise, solid wastes, wildlife protection, forest conservation, environmental health, sanitation, and industry. The sectoral laws dealing with different environmental issues in Bangladesh were enacted at different periods. The environmental concerns and priorities of the country have changed considerably in recent years. For environmental management in particular, the need for updating of the legislative requirements has been identified and is currently being undertaken by the Bangladesh Department of Environment (DoE).

1.3.1. Regularity Requirements for the Proposed Project

The following sections review the relevant legislative, regulatory, and policy requirements of the Government of Bangladesh (GoB). Environmental assessment to determine the positive and negative potential impacts of the proposed project must be carried out within the framework and according to current GoB environmental policies, rules, and regulations for obtaining environmental clearance of the Sabrang TP Project.

This section also highlights the regulatory requirements set out by GoB and World Bank (WB) in relation to protection of environment and its resources from adverse impacts associated with the project development. These requirements are summarized below.

Table 9.2. Applicability of Key Environmental Legislation at a Glance

Name	Key Requirement	Applicability	Remarks
Acts/Rules			
Bangladesh Environmental Conservation Act, 1995 (ECA, 1995) and Environment Conservation Rules 1997 (ECR, 1997)	Mandatory requirement of prior environment clearance for certain category of project for conservation and improvement of environment and control and mitigation of pollution of the environment. Standards are described under	Applicable. The project is classified under red category EIA study required to be undertaken	Site approval certificate is to be obtained from DoE

Name	Key Requirement	Applicability	Remarks
ECA & ECR amendment 2000 ECA & ECR amendment 2002	ECR, 1997 To ascertain responsibility for compensation in case of damage to ecosystem Restriction on polluting automobiles, sale and production of environmental harmful items.		
Environment Court Act, 2000 and subsequent amendments in 2002	To give high priority to environment pollution prevention	Applicable as the project shall have environmental impacts	All the developments to be carried out as per ECA, 1995 & ECR, 1997 and amendments.
Bangladesh Wildlife Preservation Act, 1974 and Revision 2008 (Draft)	No person shall damage or destroy any vegetation in any wild life sanctuary & the wild Animals shall not be hunted or captured. For preservation of Wildlife Sanctuaries, parks, reserves.	Not Applicable. Project site is not located within any wildlife sanctuary/national park or any other protected area under this act.	Development activity will not have any interface with wildlife or wild habitat at any stage.
The Forest Act 1927, Amendment 2000 (Protected, village Forests and Social Forestry)	Declare any forests land or waste land as protected forests. May stop public or private way or watercourse in the interest of preservation of the forest Declare a reserved forest area as Village Forests Declare an area as Social forests or launch a social forestry programme in Govt. land or private land with permission	Not Applicable. No forest land diversion is involved. However, permission of cutting trees will be required from Forest Department.	The existing green zone with the planted tree should be preserved.
The Private Forests Ordinance Act, 1959	Conservation of private forests and for the afforestation on wastelands.	Applicable as the tree cutting is involved in development of off-site facilities	The existing green zone with the planted tree should be preserved.

Name	Key Requirement	Applicability	Remarks
The Protection and Conservation of Fish Act, 1950 and The Protection and Conservation of Fish Rules, 1985	Prohibit or regulate the construction, temporary or permanent of weirs, dams, bunds, embankment and other structures	Applicable. The project involves construction of embankment and other structures.	Necessary permission would need to be taken for construction of embankment.
The Explosive Act, 1884	To prevent any accident due to explosive storage, use or transportation due to careless handling/management	Not applicable	The site will be developed for tourism purposes in which storage of explosive materials is not required.
Water Pollution Control Ordinance 1970	Prevention of water pollution	Applicable from the prospective of prevention of pollution	Applicable during both construction stage (e.g. sewage and equipment washing and maintenance liquid waste discharges at construction camps) and operation phase (tourism activities)
Water Supply and Sanitation Act, 1996	Management and Control of water supply and sanitation in urban areas.	Applicable for all development projects	Regulatory authority is Ministry of Local Government, Rural Development and Cooperatives
The ground Water Management Ordinance 1985	Management of Ground Water Resources. Tube well shall not be dug in any place without permission from Upazila Parishad.	Applicable. Deep tube wells will be dug to develop water supply system during operation phase	Permission should be taken before digging tube wells
Natural Water Bodies Protection Act 2000	The character of water bodies i.e. rivers, canals, tanks, or floodplains identified as water	No permanent water body present in the site. However, due to	In the site development activity water body should be

Name	Key Requirement	Applicability	Remarks
	bodies in the master plans or in the master plans formulated under the laws establishing municipalities in division and district towns shall not be changed without approval of concerned ministry.	tidal effect and flash flood seasonal and temporary water body exist.	preserved in the new form water park. It should not be filled completely
The Embankment and Drainage Act 1952	An Act to consolidate the laws relating to embankment and drainage and to make better provision for the construction, maintenance, management, removal and control of embankments and water courses for the better drainage of lands and for their protection from floods, erosion and other damage by water.	Applicable. The project involves construction of embankment.	Permission to be taken from the Ministry of Water Resources and DOE
Wetland Protection Act 2000	<p>Adhere to a formal environmental impact assessment (EIA) process, as set out in EIA guidelines and manuals for water sector projects or related to alteration of natural drainage.</p> <p>No construction of roads if likely to effect the flow of navigable water ways without clearance from concerned authorities</p> <p>Upland flow in water channels to preserve eco-system</p> <p>Protection against degradation and resuscitation of natural water-bodies such as lakes, ponds, beels, khals, tanks, etc. affected by man-made interventions or other causes.</p>	Applicable. The proposed site location has low lying area which is seasonally flooded due to flash flood and due to tidal effect.	Permission to be taken from the Ministry of Water Resources and DOE

Name	Key Requirement	Applicability	Remarks
	<p>Completely stop the filling of publicly-owned water bodies and depressions in urban areas for preservation of the natural aquifers and environment.</p> <p>Stop unplanned construction on riverbanks and indiscriminate clearance of vegetation on newly accreted land.</p>		
Antiquities Act 1968	Governs preservation of the national cultural heritage, protects and controls ancient monuments, regulates antiquities as well as the maintenance, conservation and restoration of protected sites and monuments, controls planning, exploration and excavation of archaeological sites.	Not applicable as no structure of national cultural heritage will be affected due to project development	Regulatory authority is Ministry of cultural Affairs
The Building Construction Act 1952 (with amendments)	An Act to provide for the prevention of haphazard construction of building and excavation of tanks which are likely to interfere with the planning of certain areas in Bangladesh	Applicable as the project involves development of infrastructure	Regulatory authority is Ministry of Works
The Vehicle Act, 1927 The Motor Vehicles Ordinance, 1983 The Bengal Motor Vehicle Rules, 1940	To regulate vehicular exhaust emissions	Applicable as heavy vehicle movement is involved both during construction and operation phase	Regular maintenance and up keeping of the vehicles should be carried out. Regulatory authority is Bangladesh Road Transport Authority
The Factories Act, 1965 Bangladesh Labour Law,	This Act pertains to the occupational rights and safety of factory workers and the	Applicable as the workers will be employed during construction and	Regulatory authority is Ministry of labor

Name	Key Requirement	Applicability	Remarks
2006	provision of a comfortable work environment and reasonable working conditions.	operation phase of TP	
Policies			
National Environment Policy, 1992	For sustainable development	Applicable for all development projects	Usage of energy efficient building material, fuel etc. should be encouraged
National Environment Management Action Plan 1995	Conservation of natural habitats, bio-diversity, energy, sustainable development and improvement of life of people	Applicable for all development projects	Usage of energy efficient material, green building techniques, reduction of carbon foot prints etc.
National Conservation Strategy	Sustainable development of Industrial Sector	Applicable for all development projects	Usage of energy efficient material, green building techniques, reduction of carbon foot prints etc.
The National Forest Policy (1994)	conserve the existing forest areas and to increase forest cover of country and increase the reserve forest	Not Applicable, no diversion of forest land is involved	Not applicable
The National Energy Policy, 1995	Protecting the environment by requiring an EIA for any new energy development project, introduction of economically viable and environment friendly technology.	Applicable. EIA study is to be carried out	Energy efficient materials and techniques should be explored
The National Water Policy, 2000	To ensure efficient and equitable management of water resources, proper harnessing and development of surface and ground water, availability of water to all concerned and institutional capacity building for water	Applicable. Ground water is required to be withdrawn for fulfilling water requirement during operation phase	Conjunctive use of water should be explored

Name	Key Requirement	Applicability	Remarks
	resource management		
The National Water Management Plan, 2001	Addresses options for water quality, considerations behind measures to clean up industrial pollution, where effluent discharge monitoring and zoning regulations for new industries are emphasized	Applicable as it is tourism sector project and will involve generation of sewage	Installation of sewage treatment facility within the premises
World Bank's Safeguards			
OP 4.01 Environmental Assessment	Ensures sustainability and environmental feasibility of the project. Projects are classified into A, B & C category depending on the nature and extent of the impact.	Triggered	Project classified as Category A considering impacts of project
OP 4.04 Natural habitats	Ensures conservation of natural habitats and discourages disturbance of any natural habitat due to project development by recommending adoption of alternative method/route/approach or adopting management measures	Triggered	The project is likely to affect the natural habitat of the marine ecosystem. Hence the OP 4.04 is triggered.
OP 4.09 Pest Management	Ensures managing pests that affect either agriculture or public health. WB supports a strategy for pest management that promotes the use of biological or environmental control methods and reduces reliance on synthetic chemical pesticides.	Not Triggered	The project activities will not lead to use of fertilizers and issues identified in pest management policy.
OP 4.10 Indigenous People	Ensures development process fully respects the dignity, human rights, economies, and cultures of Indigenous Peoples.	Not Triggered	There are no indigenous people in the project area.
OP 4.11 Physical	Ensures preservation of property of cultural and	Not Triggered	There are no cultural

Name	Key Requirement	Applicability	Remarks
Cultural Resources	religious importance, heritage and property of natural importance and enhancement of cultural properties		heritage people in the project area.
OP 4.12 Involuntary Resettlement	Ensures safeguards to address and mitigate risks due to involuntary resettlement such as economic, social and environmental risks.	Not Triggered	The proposed land is devoid of any permanent structures, any Common Property Resources (CPR) and industrial and commercial setup
OP 4.36 Forests	Ensures that project activities does not disturbs/interfere with the forest, forest dwellers activities, fauna and flora of the forest. Prevents and discourages deforestation and impacts on rights of forest dependant people.	Not Triggered	No diversion of forest land is involved
OP 4.37 Safety of Dams	Ensures that appropriate measures are taken and sufficient resources are provided for the safety of dam, irrespective of its funding sources or construction status.	Not Triggered	The project doesn't entail construction and operation of dams
OP 7.50 Projects on International Waterways	Ensures cooperation and goodwill of riparian for the efficient use and protection of the waterway.	Not Triggered	The project does not envisage activities in the international ways and also does not impact the quantity and quality of international waterways.
Private Sector Development Support Project			
Environment Management Framework	Describes all the mandatory environmental and	Triggered	EIA The framework sets out mitigation,

Name	Key Requirement	Applicability	Remarks
(EMF)	social clearances and purpose of the same required to be taken before development of the project		monitoring and institutional measures to be taken during design, implementation and operation of the project activities to eliminate adverse environmental impacts, offset them, or reduce them to acceptable levels.

According to Prime Minister Sheikh Hasina, this kind of project should have the following components: sewerage treatment plant, green Belt, and water reservoir, rain water harvesting system, water treatment plant and renewable energy sources. Hence, for the overall design and development of the project these issues should be considered.

Besides that, Ministry of Civil Aviation and Tourism of Bangladesh, has some guidelines for the construction of the Helipad and air vehicles. Bangladesh Hotel and Restora Laws was proposed in 2015, which has also some guidelines for the construction of the hotel and resort in tourism sector should also be kept in consideration.

1.3.2. Environmental Clearance Requirements

Bangladesh is a signatory to a number of International Treaties and Conventions, which require safe protection of her environment from degradation and environmental concerns of global scale, protect workers against hazards arising from occupational exposure to harmful substances and agents in the working environment. Section 12 of the ECA stipulates that "No industrial unit or project shall be established or undertaken without obtaining environmental clearance from The Director General of the Department of Environment (DG, DOE) in the manner prescribed by the rules". The act also bestowed rule-making power to the government which requires that rules be made to "evaluate, review the environmental impact assessment (EIA) of various projects and activities and procedures be established for approval." The Department of Environment (DOE) which is a statutory body under the Environment Conservation

Act is responsible for the environmental review of all development projects in Bangladesh.

Under the Environmental Conservation Rules (1997) this project falls within Red-Category projects. Hence, a detailed EIA study is a prerequisite applying for the environmental clearance certificate for Red-Category projects under the Environmental Conservation Rules (1997).

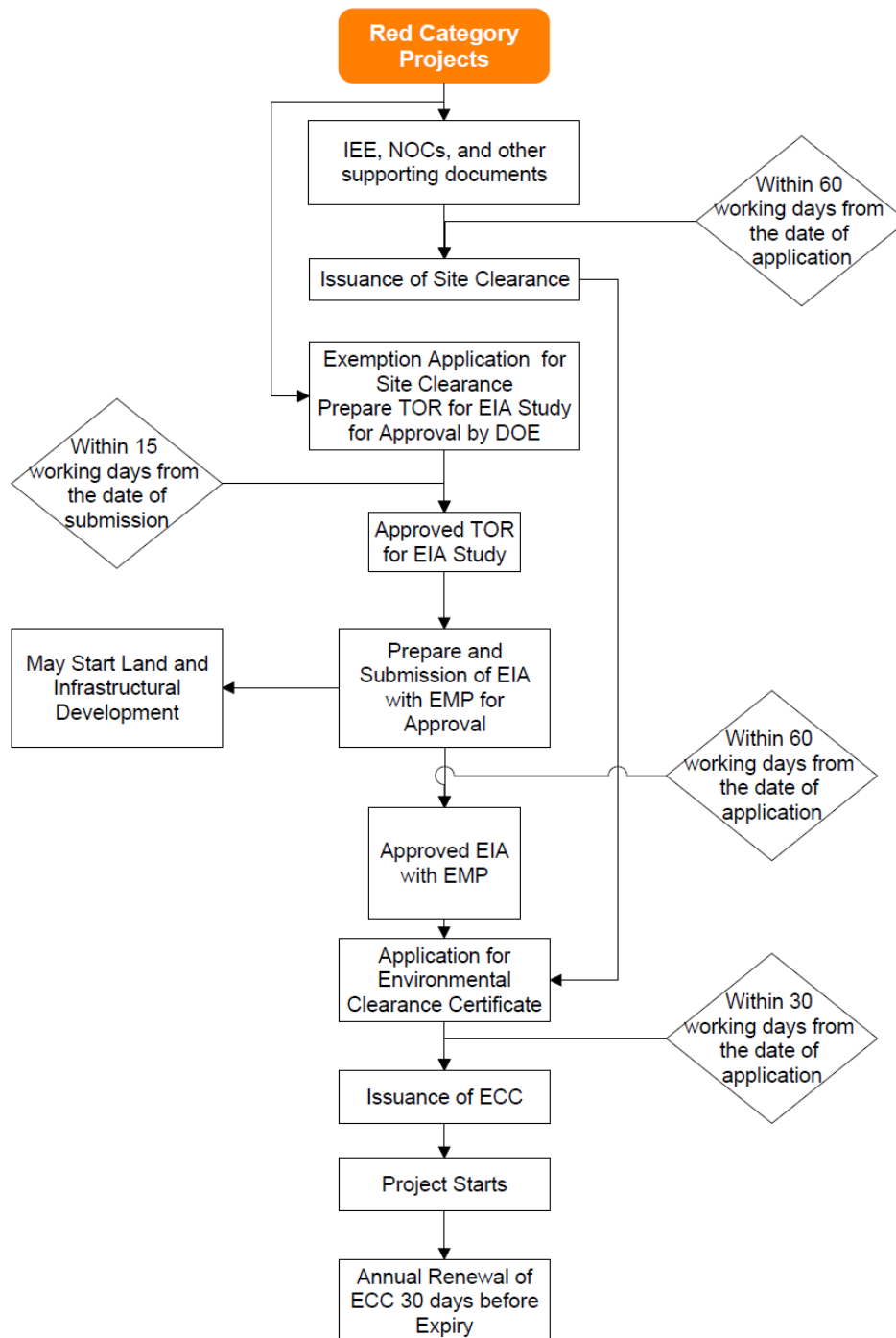


Figure 9.1. Steps for environmental clearance certificate for red category projects

1.4. Existing Environmental Conditions

The baseline environmental status of the proposed tourism park and surrounding area is needed to determine the project influence area within which the impacts of the Project are to be assessed. Establishing baseline helps in understanding the prevailing environmental status of the study area. This section gives an overview of the baseline environmental status based on secondary sources. However, field survey was conducted at the project site to

collect the requisite baseline information through discussions with project proponents, and local people.

1.4.1. Physical Environment

1.4.1.1. Topography, Eco Sensitivity, Soil Quality and Geology

The proposed Sabrang TP has a level difference of 0 to 6 m (approx.) with a gentle slope towards sea (East to West direction). According to the contour variation, the depth of land filling across the project area will vary. The natural slope of ground is advantageous for gravity network of water supply, sewer and storm water drains.

The physiography of the region surrounding the proposed Sabrang TP falls in Chittagong coastal plain. Sediments near the hills are mainly silty, locally sandy, with clays more extensive in the coastal plain basin. The whole of the main land area is subjected to flash floods. The Bangladesh physiography map is presented in Figure 6.7. According to the history of physiography of this region, the area around the proposed TP falls in the low hill range and in the river valley. The area around proposed TP is prone to high flood during the monsoon season and tidal influence affects the area around the proposed TP.

The top soil layer is black cotton soil which needs to be replaced for road construction. This soil is not suitable for laying foundation for any structure. The dominant soil texture is sandy loam. The soil layer is moderate to strong acidic in character. The soil layer is highly leached and has a low natural fertility. As per the geological map of Bangladesh, the Teknaf area mainly consists of mainly deep brown (some red soil) with a mixture of fine sand of the same colour and nodules containing a large percentage of sesquioxides.

1.4.1.2. Climate and Meteorology

Meteorological data is used to anticipate the dispersion and diffusion of pollutants, once discharged into the atmosphere.

Temperature

Monthly minimum and maximum temperatures and average minimum and maximum temperatures for the period 2005-2014 for Cox's Bazar are given in Table 9.3 and 9.4 (Source: Bangladesh Meteorological Department).

Table 9.3. Monthly minimum and average minimum temperature during Jan 2005 to Dec 2014

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
2005	13.5	14.6	19.4	22.0	21.8	24.0	24.5	23.5	23.8	23.4	17.5	15.0
2006	13.5	15.3	18.0	22.5	22.2	23.4	24.3	24.0	23.3	22.0	16.4	12.2
2007	12.5	15.2	17.0	19.2	23.0	23.8	23.2	24.0	22.6	21.4	18.6	13.4
2008	12.7	12.3	17.5	21.1	20.2	23.3	23.4	24.0	23.5	22.6	17.3	14.0
2009	13.5	14.2	19.0	19.0	21.5	22.5	24.0	23.5	23.6	22.0	15.5	13.0
2010	13.5	13.8	20.0	24.0	22.5	23.4	24.2	24.5	23.8	23.4	17.8	14.0
2011	11.0	14.5	17.5	21.4	22.0	23.5	24.5	23.7	23.0	21.0	17.4	13.5
2012	12.5	13.0	18.4	19.0	22.5	22.0	24.0	23.8	24.2	20.5	15.5	11
2013	10.3	14.5	17.0	20.2	21.0	24.2	24.0	23.5	24.4	22.0	16.5	12.4
2014	12.4	15.0	18.8	24.3	24.0	24.0	24.5	24.5	24.3	22.5	17.0	15.0
Average	12.6	14.2	20.1	21.2	21.9	23.4	24.1	23.9	23.6	22.1	16.9	13.3

Table 9.4. Monthly maximum and average maximum temperature during Jan 2005 to Dec 2014

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
2005	29.5	32.5	33.2	37.5	35.0	35.4	33.0	32.6	34.6	34.4	32.5	31.5
2006	30.5	32.3	37.3	35.0	34.8	33.5	32.8	33.0	33.5	33.6	34.0	31.0
2007	29.4	32.2	35.2	34.8	35.8	34.5	34.2	33.5	33.7	34.8	33.7	30.5
2008	30.0	31.4	35.6	35.0	35.9	34.2	32.6	33.5	34.0	35.1	33.0	31.3
2009	31.8	33.3	36	34.8	36.5	35.0	32.8	34.0	35.0	34.6	34.5	30.5
2010	30.0	34.0	37.0	35.0	36.0	34.0	34.0	33.7	33.5	36.0	33.5	33.0
2011	31.0	32.5	35.0	34.7	34.5	34.0	33.5	33.8	33.5	34.3	32.5	32.2
2012	31.2	34.0	34.5	35.0	35.5	34.8	33.5	33.6	33.8	34.3	33.6	30.4
2013	32.0	33.8	35.0	35.0	34.5	35.0	34.0	33.5	34.2	34.2	32.6	31.0
2014	30.5	31.3	35.0	39.5	35.5	35.5	34.4	33.0	34.7	34.8	34.0	30.5
Average	30.6	32.6	35.5	35.6	35.3	34.7	33.4	33.4	34.1	34.6	33.3	31.1

The data shows that the monthly minimum (average) temperature at Cox's Bazar varies between 10.3°C and 24.5°C and maximum temperature varies between 29.4°C and 37.50°C. The minimum and maximum temperature data indicates that December to February months are relatively cooler and April, May and June are the relatively hotter months.

Relative humidity

The average relative humidity at Cox's Bazar varies between 68 % in the month of February and 87 % in the month of July and August. The average relative humidity for the last 10 years for Cox's Bazar is provided in Table 9.5 (Source: Bangladesh Meteorological Department). The data shows that average humidity is higher throughout the year. June to October months have relatively higher humidity (82% - 85%) as compared to humidity in rest of the year.

Table 9.5. Monthly average relative humidity during Jan 2005 to Dec 2014

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
2005	70	71	78	76	75	84	87	90	86	82	76	77
2006	72	75	68	72	80	86	89	86	85	81	74	73
2007	72	72	67	76	79	83	89	86	86	83	80	71
2008	72	66	78	71	76	85	89	87	86	81	74	75
2009	70	66	73	76	75	82	89	88	85	80	73	71
2010	71	64	74	75	77	86	85	84	85	84	76	74
2011	67	67	69	77	80	87	85	88	87	82	74	77
2012	66	62	77	77	79	86	89	87	85	82	76	77
2013	70	66	75	77	85	85	86	86	85	83	73	73
2014	73	71	73	76	79	86	85	88	84	79	77	76
Average	71	68	73	76	78	85	87	87	85	82	75	74

Rainfall

The average monthly rainfall data for Cox’s Bazar (source: BMD) is provided in Table 9.6 below. The data show that rainy season in Cox’s Bazar mainly prevails from May to October. The average monthly rainfall in Cox’s Bazar for the period Jan 2005 to Dec 2014 varied between 4 mm in the month of January and 903 mm in the month of June. The rainfall follows the general climate pattern with the highest rainfall in the summer from April to October and minimum rainfall in the winter from November to March.

Table 9.6. Monthly total and 10 years average monthly rainfall during Jan 2005 to Dec 2014

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
2005	6	0	27	113	178	848	608	957	342	257	23	25
2006	0	0	0	114	800	662	802	385	678	78	10	0
2007	0	65	0	100	373	640	1274	526	409	492	127	0
2008	15	50	4	0	244	1318	1275	664	387	184	3	0
2009	0	0	0	130	241	324	971	944	485	130	58	0
2010	0	0	15	12	717	982	496	501	257	375	15	68
2011	11	0	4	123	296	926	877	1226	692	280	0	5
2012	0	0	109	148	254	1102	1130	801	302	263	14	0
2013	0	0	0	54	700	876	772	1000	237	420	0	0
2014	0	29	1	4	139	677	717	611	264	41	0	0
Average	4	13	16	79	367	903	892	762	405	252	25	10

Wind Speed and Direction

The coastal areas in Bangladesh witness gentle winds blowing at relatively low speeds of 3-6 Km/hr. From March to May, violent thunderstorms, called northwesterers, are observed. At Cox’s Bazar, dominant wind speed is 2.5-5 m/sec. The predominant wind direction from Jan to Dec is

south followed by south-east and north. The detailed wind speeds need to be analysed for designing the high rise structures in the proposed TP.

From the analysis it is shown that Northerly winds prevail in October to February and Southerly wind flows from March to September. This area experiences wind speeds lower than 5 m/s for 89% of time. The weather conditions favours dispersion of air pollutants. Month wise prevailing wind speeds are as follows: predominantly calm conditions prevail during October to February and the remaining months experience lesser calm conditions and wind speeds in the range of 2.5 – 5 m/s.

1.4.1.3. Ambient Air Quality

Under the study of site assessment by BEZA, primary monitoring has been conducted on 30th – 31st May 2016 at the proposed site in Sabrang to collect the data on ambient air quality. The analysis results of ambient air monitoring are provided in Table 9.7 below. The air quality data below shows that the concentrations of all the parameters are below the national ambient air quality standard.

Table 9.7. Ambient Air quality monitoring at proposed TP in Sabrang

Sample Location	PM _{2.5}	PM ₁₀	SPM	SO ₂	NO ₂
Ferrighat near Sabrang EZ	22.5	44.2	94.4	3.4	7.6
100 m west of ferrighat near Sabrang EZ	26.8	47.6	97.5	3.2	7.2
Majherpara Mouza	20.2	44.6	90.5	-	-
Konapara Mouza	17.5	42.5	88.5	-	-
National ambient air quality standard, Bangladesh	<65 in average time 24 h	<150 in average time 24 h	<200 in average time 8 h	<80 in average time annual	<100 in average time annual

During the field visit, no apparent problem with the ambient air quality was observed. The area around the proposed TP is located in a rural area and less traffic concentration.

1.4.1.4. Noise Level

Under the study of the site assessment by BEZA, the noise monitoring data collected during site survey shows that

ambient noise levels are within national standard for noise. However, it is envisaged that TP development shall lead to increase in noise levels which can be minimized with suggestive mitigation measures. The ambient noise monitoring data is presented in Table 9.8.

Table 9.8. Ambient Noise quality monitoring at proposed EZ in Sabrang

Sample Location	Sound level in dB (day time)	Sound level in dB night time)
Ferrighat near Sabrang EZ	43	36
100 m west of ferrighat near Sabrang EZ	45	33
Majherpara Mouza	42	34
Konapara Mouza	41	32
DoE (Bangladesh) Standard for residential zone (day time) as per ECR 1997 in Bangladesh	55	45

During the field visit, no apparent problem of noise was observed. This may be due to the fact that the area around the proposed TP is located in a rural area with less traffic concentration.

1.4.1.5. Water Resources and Quality

The low land of the proposed site retains water during flash flooding and due to tidal effect. However, this is temporarily and seasonal. Groundwater sample and surface water samples have been collected to get the baseline information.

Surface Water Quality

The surface water quality data was analyzed during site assessment by BEZA and the results are provided in Table 9.9 below.

Table 9.9 Surface water quality at proposed TP in Sabrang

	Parameter	Unit	Sabrang Boat Ghat Area	200 m from Boat Ghat area	Bangladesh Standard as per ECR 1997
1	pH		7.78	8.02	6.5-8.5
2	EC	µS/cm	5400	5600	2250
3	TDS	ppm	3000	3160	-
4	TS	ppm	3160	3320	-
5	DO	ppm	7.48	6.8	>5
6	BOD	ppm	30	46	<10
7	COD	ppm	106	205	-
8	Arsenic (As)	ppm	N/D	N/D	-

9	Iron	ppm	1.6	1.2	-
10	Oil & Grease	ppm	2.1	2.0	-
11	Temperature	°C	31.6	32.0	-

The data shows that EC and BOD5 for both the locations exceed the prescribed standards. Generally nitrates and phosphates contribute to high BOD levels and also signify organic waste in the water.

Ground water

The ground water quality data was analyzed during site assessment by BEZA and the results are provided in Table 9.10 below. From the results, it shows that pH, TDS, BOD, COD and temperature exceeds the Bangladesh standards for drinking water. The DO (3.6 ppm) is lower than the prescribed Bangladesh Standard (6 ppm). The high pH and TDS shows that groundwater is alkaline in nature which shall be due to coastal area. The high BOD level signifies organic contamination in ground water which shall be due to shallow groundwater table. The other analyzed parameters are within the limits prescribed by Bangladesh standard.

Table 9.10 Groundwater quality at proposed TP in Sabrang

SN	Parameter	Unit	Deep Tube well of Sabrang Mauza	Bangladesh Standard as per ECR 1997
1	pH		8.63	6.5-8.5
2	EC	µS/cm	3510	-
3	TDS	ppm	1607	1000
4	TS	ppm	1767	-
5	DO	ppm	3.6	6
6	BOD	ppm	40	<0.2
7	COD	ppm	114	4
8	Arsenic (As)	ppm	N/D	0.05
9	Iron	ppm	0.78	0.3-1
10	Oil & Grease	ppm	0.01	0.01
11	Temperature	°C	31.2	20-30

As per the groundwater quality data for Sabrang available from DPHE, the metals present in the groundwater are within the prescribed limits of Bangladesh Standard as shown in Table 9.11.

Table 9.11. Groundwater quality data for Sabrang

Type	Result (mg/l)	Bangladesh Standard as per ECR 1997 (mg/l)
As	0.03	0.05
Al	<0.1	0.2

Ba	0.006	-
Ca	<0.003	75
Co	<0.002	-
Cr	<0.008	0.05
Fe	0.06	0.3-1
K	1.3	12
Li	0.012	-
Mg	5.57	30-35
Mn	0.062	0.1
Na	20.8	200
P	0.1	0
Si	6.05	-
SO4	7.8	400
Sr	0.156	-
V	0.004	-
Zn	0.01	5

1.4.1.6. Natural Hazards

Seismicity

Bangladesh has long been one of the seismically active regions of the world, and has experienced numerous large earthquakes during the past 200 years. A seismicity map of Bangladesh and its adjoining areas has also been prepared by BMD and GSB. Bangladesh has been classified into three seismic zones with zone-3 the most and zone-1 the least vulnerable to seismic risks as indicated in Figure 4. Sabrang lies in Zone-2 which shows intermediate level of seismic activity.

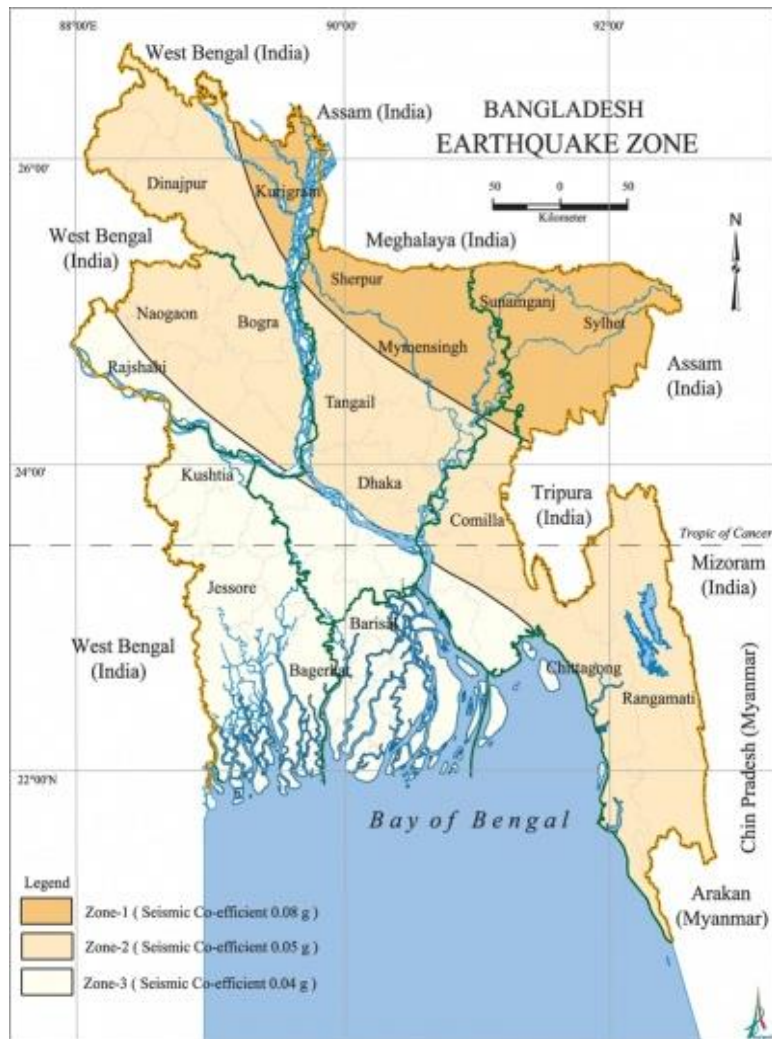


Figure 9.2. Seismicity Map of Bangladesh

Source: BMD

Wind Hazard

Devastating cyclones hit the coastal areas of Bangladesh almost every year usually accompanied by high-speed winds, sometimes reaching 250 km/hr or more and 3-10 m high waves, causing extensive damage to life, property and livestock. Cyclones in the Bay of Bengal occur in two seasons, April-May and October-November—i.e. before and after the monsoon. Cyclones enter the Bay as the remnants that originate in the South China Sea. They gain moisture and latent heat from the Bay of Bengal, and consequently rejuvenate into full-blown phenomenon. Following a curvilinear path, they reach the coast of Myanmar, Bangladesh or East Coast of India. Because of the funnel shaped coast, Bangladesh repeatedly becomes the landing ground of cyclones formed in the Bay of Bengal. The Bay cyclones also move towards the eastern coast of India, towards Myanmar and occasionally into Sri Lanka. But they

cause the maximum damage when they come into Bangladesh and West Bengal of India. This is because of the low flat terrain, high density of population and poorly built houses. The cyclone affected area map of Bangladesh is shown in Figure 9.5. Sabrang lies in high risk area with surge height of above 1 m.

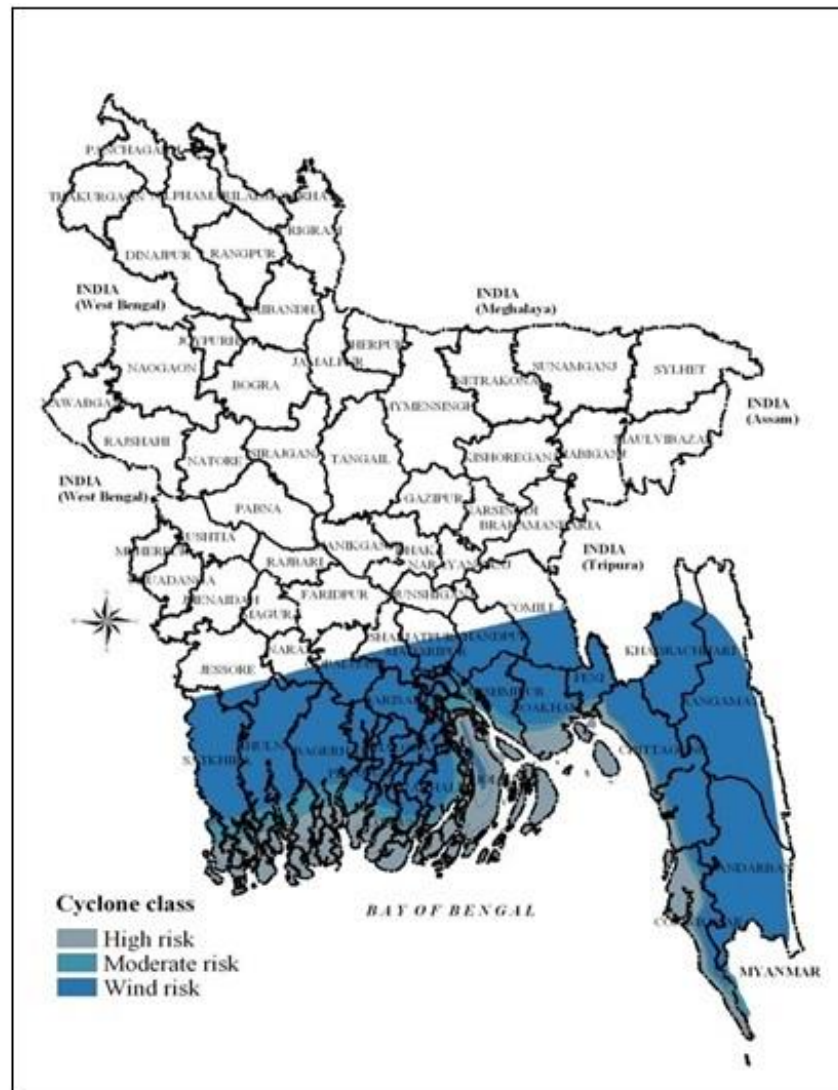


Figure 9.3. Cyclone affected area map of Bangladesh
 Source: Department of Disaster Management

Floods

Floods are the most significant natural hazard in the country causing extensive damage to human life and property. The flood damage potential in Bangladesh is increasing due to the possible causes of climate change, urban concentration in the three river basins, encroaching of settlements into flood prone areas, and overreliance on

the safety provided by flood control works such as levees, reservoirs. The flood affected area map of Bangladesh is provided in Figure 9.6. The map shows that Sabrang lies in flood free area. However, the local people informed that flash floods occur during monsoon time and the flood level varies from 4 feet to 5 feet within the area of the proposed TP.

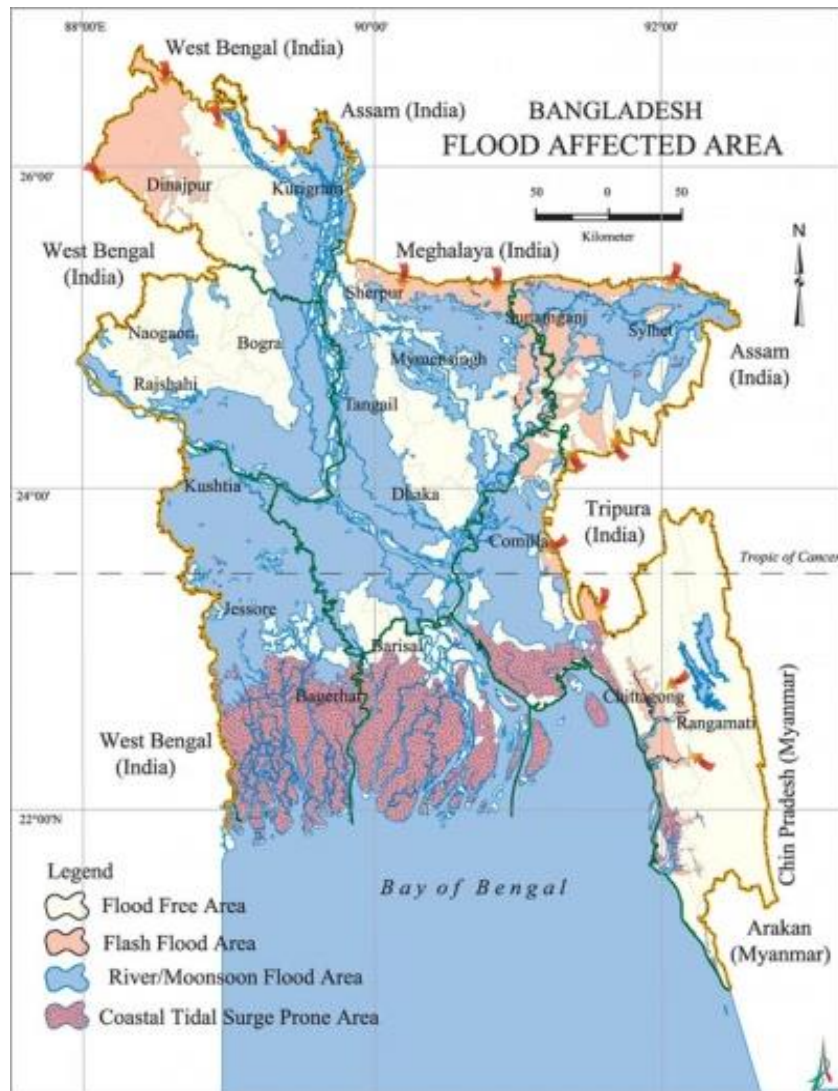


Figure 9.4. Flood affected area map of Bangladesh
Source: Department of Disaster Management

Tornado

It is the pre-monsoon period when most of the abnormal rainfall or drought conditions frequently occur in different parts of Bangladesh. There are severe local seasonal storms, popularly known as nor'westers (Kalbaaishakhi). Severe nor'westers is generally associated with tornadoes. Tornadoes are embedded within a mother thundercloud,

and moves along the direction of the squall of the mother storm. The frequency of devastating nor'westers usually reaches the maximum in April, while a few occur in May, and the minimum in March. Nor'westers and tornadoes are more frequent in the afternoon. Nor'westers may occur in late February due to early withdrawal of winter from Bangladesh. The occasional occurrence of nor'westers in early June is due to the delay in the onset of the southwest monsoon over the region (Karmakar, 1989). The data shows that Sabrang was hit by tornadoes in the year 1976 and is prone to tornadoes.

1.4.2. Biological Environment

The flora fauna information provided in this section is collected through secondary sources. The project area is abutting Bay of Bengal and is rich in biodiversity. The proposed TP location has been exempted from ECA vide the circular no. PBM/4/7/87/99/245. As per the circular, "Samudro Soikat" along the coastline of Cox's Bazar and Teknaf has been exempted from ECA. The biodiversity features of the project area are provided in subsequent sections. As per the district handbook 2011, the flora and fauna details are given below.

1.4.2.1. Flora

Common trees found within the influence area of the project are gamar (*Gumelina arborea*), jarul (*Lagerstroemia speciosa*), hartaki (*Terminalia chebula*), bahera (*Terminalia bellirica*), hargaza (*Dillenia pentagyna*), chalmoogra (*Hydnocarpus kurjii*), rudrakia (*E ganitrues*), tatua (*Albizia odoratissima*), deohal (*Garciria xanthochymus*), bon sonalu (*Cassia nodosa*), mango (*Mangifera indica*), and dumur (*Ficus sp.*), bazna (*Zanthophyllum flavescens*), harphata (*baccaurca sapida*), barela (*Holigarna caustica*), nageswar (*Mesua nagassarium*), kiabong (*Carallia lucida*), kasturi (*Cinnamomum cecidodaphne*) and Ashok (*saraca indica*), Jam (*Eugenia jambolanavav*) etc.

Common plants that grow in the swampy areas along the Bay are chalta (*Dillenia indica*), pitali (*Trewia nudiflora*), sheora (*Streblus asper*), and cane (*Calamus viminalis*).

1.4.2.2. Fauna

Rodents are represented by different species of squirrels, rats and mice and porcupines. Gayals (*Bos fontalis*), foxes (*Vulpes bengalensis*) and jackals (*Canis aureus*) are found within the influence area of the project. Among the aquatic mammals, porpoises and dolphins are found in the estuaries of Cox's Bazar and its coastal area.

Birds-Charadriidae, accipites, falcons, pheasants, pastridges, quails, columbids. Cuckoos (*Cuculus microplerus*), owls (*Tyto albo*), woodpeckers, and kingfishers (*alcedo atthis*) of different species are present in this area. Of the seabirds, different species of gulls, terns, Indian skimmers and pelicans are also found.

Fishes: A wide variety of indigenous and exotic fishes including carps catfishes and many smaller species are available in this area. In the fresh water, the popular species are ruhi (*labeo rohita*), katla (*Catla catla*), mrigel (*Cirrhinus mrigala*), kalabaush (*labeo calbasu*), airh (*Mystus aor*), ghonia (*Labeo gonius*), shoil (*Channa striatus*), boal (*Wallagonia attu*), gazar (*Channa marulius*), gulsha (*Mystus bleekeri*), koi (*Anabas testudineus*), shing (*heteropneustes fossilis*) and magur (*Clarias batrachus*) hilsha (*Hilsa ilisa*) etc.

This area is the most important marine fisheries centre in Bangladesh. Among them marine fishes are Ilisha or hilsa, rupchanda (*Pampus chinensis*), hail chanda (*Parastromateus niger*), luckwa (*Polynemus indicus*), lotya (*Harpodon nehereus*), churi (*Lepturacanthus savala*), poa (*Pama pama*), ekthoate (*Hemiramphus georgii*), bargau (*Bagarius yarrellii*), datina (*Acanthopagrus latus*), tullar dandi (Whiting), bata and khorshul (*Mugilcorsula*), phansha (anchovy), tophshil (*Polynemus paradiseus*), gucchiya and bhetki are popular. Prawn farming is an important economic activity of this area.

Other aquatic fauna: Invertebrates like sponges, jelly fish, corals and sea- anemone are common also crabs, king crabs and equilla, molluscus like shells (gasteropods), maine borers (teredo), oysters (pelecypods), squids, octopuses (Phylum echinydermata) like star fish, sea-urchin and sea-cucumber are also found in good number in the coastal area of Cox's Bazar.

From the local people information and visual observation, there is no endanger species exist as per IUCN list. Hence, this issue should be checked by further detailed investigation.

1.4.3. Socio-economic and Socio-Cultural Environment

In the social footprint study this section is discussed comprehensively. Therefore, to avoid repetition it does not include here.

1.5. Anticipated Environmental Impacts

The project is in the conceptual stage now. Hence, there is limited scope to anticipate the environmental impacts specifically according to the key activities of the project. Therefore, the environmental impacts assessment carried out considering present environmental setting of the project area, and nature and extent of the activities that are proposing in the pre-feasibility study. The proposed project involves development of TP, on-site and off-site facilities. Potential environmental impacts associated with TP and each of the proposed off-site facility and on-site facilities are classified according to phase of the project:

- Design Phase/Pre-construction Phase;
- Construction Phase;
- Operation Phase/Post-construction Phase.

Sensitive environmental components identified during the site visit and qualitative and quantitative analysis performed for direct and indirect assessment of the impacts on these components. All activities related to the lifecycle of the project will include appropriate mitigation measures to ensure that negative impacts are properly mitigated and managed. Mitigation involves identifying the best options to be adopted to minimize or eliminate negative impacts, highlighting the benefits associated with the proposed project and the protection of public and individual rights. Practical measures are therefore sought to reduce adverse impacts or enhance beneficial impacts of the project. The following environmental parameters are anticipated to be affected due to the project interventions:

Table 9.12. Environmental Components to be affected due to the Project Intervention

Components	Sub-component	Parameters
PHYSICAL		
Water	Surface water, Ground	Regional hydrology, water
Air	Air, noise	Air quality, noise level
Land	Soil	Erosion, soil quality
ECOLOGICAL		
Aquatic	Aquatic species, Aquatic Biology	Species, diversity Density, species
Terrestrial	Vegetation	Species, population

Furthermore, due to facilitates on-site and off-site infrastructures such as water supply, electricity, access road and internal road network, filling of the land for the site development, effluent treatment plant, solid waste

management system, sewage system will have impact on the physical and biological environment.

1.5.1. Impact Identification

During the site visit, various environmental sensitive features identified which may potentially be impacted by the project at various stages. A conceptual preliminary scoping matrix is presented here in order to give an idea for impact identification.

Table 9.13. Preliminary Scoping Matrix for Impact Identification

Activities	Impacts	Negative Impact		Positive Impact		Not Applicable
		Short Term	Long Term	Short Term	Long Term	
Pre-Construction Phase						
Site Preparation	Removal of Vegetation. Loss of tree cover and Impact on aesthetic aspects	√				
Construction Phase						
Construction of the hotel & resort and other special structure for TP, on-site & off-site infrastructure, utility facilities	Loss of water body		√			
	Soil contamination due to spillage of material	√				
	Surface and ground water contamination	√				
	Air pollution	√				
	Noise pollution	√				
	Traffic congestion	√				
	Loss of aesthetic value	√				
	Impact on health & safety	√				
	Felling of Trees and clearing of the vegetation			√		
Operational Phase						
Operation maintenance of the hotel,	Impact on the ambient air quality		√			

Activities	Impacts	Negative Impact		Positive Impact		Not Applicable
		Short Term	Long Term	Short Term	Long Term	
resort & other facilities and maintenance of the off-site infrastructure and utility services	Noise pollution	√				
	Potential for surface water pollution due to waste discharge		√			
	Accessibility				√	
	Groundwater pollution		√			
	Rainwater harvesting to reduce pressure on GW				√	
	Potential for land contamination due to improper disposal of waste		√			
	Improved drainage system to enhance better environmental condition				√	
	Improved health and sanitation facilities to ensure better working environment				√	
	Water reservoir to reduce pressure on surface water				√	
	Solar power-to facilitate renewable and sustainable energy source				√	
Green Buffer	Natural drainage pattern-to introduce natural system	√				
	Improved				√	

Activities	Impacts	Negative Impact		Positive Impact		Not Applicable
		Short Term	Long Term	Short Term	Long Term	
development around the site;	Ecology Air Quality Improvement Aesthetics				√ √	

1.5.2. Impact during Pre-construction Phase

This stage involves the design, planning and pre-construction activities of the project. Key activities to be considered include:

- Vegetation clearing;
- Transportation of materials to project site;
- Storm water management;
- Visual intrusion;
- Landscape design.

Impact due to Site Clearing

During site preparation, vegetation consisting of grasses, shrubs and trees will be cleared to commence construction of the structures. Vegetation clearing is associated with loss of biodiversity, soil erosion, sedimentation and siltation, increased run off and degradation of surface water quality. The pre-construction phase will also involve site clearance activity for development of TP, access road and utility facilities which will lead to fugitive emissions. However, these emissions will be localized and have impact for short duration only during clearance activity. To minimize the dust generation, water should be sprinkled regularly at the site and low sulphur diesel should be used in land levelling equipments to control the SO₂ emissions. In addition, operation of different machineries and equipments, running of heavy load traffic for construction materials transportation, and regular traffic movement may generate noise.

Impact due to Dredging and Land Filling

The project site is located in low lying area and land filling will be done during site development activity. Generally in Bangladesh, land filling is performed by dredging and dredged material. Dredging activity may be carried out near the site location or away from site. Dredging activity has two fold impacts - firstly as a result of the dredging process itself and secondly as a result of the land filling of the dredged material. During the dredging process the

activities such as excavation of the sediments at the bed, loss material during transport to the surface, overflow from the dredger whilst loading and loss of the material from the dredger and/or pipelines during transport may lead to impacts on the land environment. The soil used for land filling should be free of any type of contamination and have similar characteristics as that of native soil to avoid impacts on the soil quality.

Impact during Construction Phase

The proposed project involves construction activities which include: site development (levelling, earth work), civil construction, construction material & equipment handling and storage and vehicular movement which will generate fugitive dust and vehicular emissions. The project activities could affect soil, and water quality, and could cause hindrance (noise, dust, traffic) or pose safety hazards (health and safety). The majority of these impacts could be prevented or mitigated by contractors adopting good operational practices and environmental management guidelines and by permanent monitoring and inspection. The components of the environment that may be affected by the proposed project during construction period are stated below-

Effects on Landscape and Soil Quality

The project site is required to raise its level from the existing ground level by earth filling. This land rising from its original level certainly disrupts the natural surface of the earth. A landscape is a subjective concept that cannot be precisely quantified. However, if development activity is not designed in considering the landscape, it creates visual intrusion to the people. The proposed project, changes the local landscape of the area to some extent by covering vacant area into a built-up area. This will change the natural and visual equilibrium for the local people.

Any built up of the project should be designed considering the key criteria of landscape like coherence, readability, hierarchy, harmony and stability. It is understood that the project will have a modern architectural view which does not provide any significant visual intrusion. Impact on soil is not expected to occur as the project does not use any toxic or any chemical for its process and operation.

Effects on Flora and Fauna, Ecosystem and Habitats

The project site is vacant land. There is no establishment and structure to be demolished for the site development. However, wet land and low land of the project form water body seasonally during flash flood and due to tidal effect. Hence, it has individual ecosystem and floral and faunal habitats. To minimize the ecological impact the green zone adjacent to the sea can be

preserved. The seasonal water body can be conserved by making Water Park. Thus, seasonal water body will form permanent water body. As such there will be no loss and displacement of agricultural land and encroachment into precious ecological resources. Intervention of flora and fauna and habitats is expected to be negligible due to setting up the facility and its operation.

Effects on Noise Level

Operation of the machineries and equipment for construction activities, running of the heavy load traffic for construction materials transportation, and regular traffic movement may generate noise during construction period. The heavy equipment, machineries, transportation and earthworks used for the construction activities are the major sources of noise. The impact of noise generation on the settlements is not significant as the nearby settlement is within 1-2 km from the site area. However, the generation of noise shall impact the marine life. Studies show that intense sound produced by human-generated noise in the marine environment can induce a range of adverse effects on marine mammals.

Effects on Air Quality

Gaseous emissions containing PM₁₀, PM_{2.5}, SPM, CO, HC, NO_x, SO₂ and lead will be released from the vehicular and construction equipment exhaust. The vehicular movement on the unpaved roads will also result in the fugitive dust emissions. The movement of trucks carrying construction material to the site will lead to fugitive and exhaust emissions which would impact the people in the project area of influence.

1.5.3. Impacts during Operation Phase

In operational phases, anticipated environmental impacts may mainly from operation and maintenance of the facilities, off-site infrastructure and utility services. Setting up of resorts/ hotels, development of adventure sports will impact the air quality of the area. In hotels/ resorts, the major air emissions during the operation phase will be due to running of DG sets during the power failure. The DG sets are the major sources of gaseous and particulate emission including SO₂, NO_x, PM₁₀, PM_{2.5} and CO emissions. The operation of the river cruises will emit air emissions, both at the land and open sea considering the power requirement for their restaurants, air conditioning equipment, etc. The air emissions from the operation of the River Cruise are disseminated in the environment from the exhausts of the cruise and impact the air quality.

After development of offsite infrastructure and TP, the noise levels may rise due to vehicular movement and tourism activities. The

major source of noise generation during the operation phase will be due to vehicular movement and DG sets used for power back up on the project site. The major source of noise emissions during cruising activity are ship engines and ventilation fans.

Seeing that there are no real industrial activities to be facilitated for the TP, air quality degradation and generation of the noise of the site and nearby areas should be within the limit.

1.5.4. Impacts on Ground and Surface Water Resources

Significant quantity of water will be required for various construction activities and domestic purpose. Excess withdrawal of ground water may lead to depletion of the aquifers. Thus, measures should be taken to minimize the water extraction by reducing water consumption and wastage. Rain water harvesting ponds and water reservoir should be constructed to store rain water for construction activities. Water for curing can be saved by carrying out curing in early morning or late evening and covering structures with gunny bag so as the moisture can be restored for longer time.

1.5.5. Impact on Surface Water and Ground Water Quality

The major source of wastewater generation during construction phase is from the labour camp, which will be established for project construction activity. The major sources of the wastewater generated after development of the facilities, from the hotel, resort and restaurant and parks etc. There is a potential for contamination of surface and groundwater resources resulting from improper management of sewage. The quality of water bodies could also be affected due to surface runoff from contaminated soil (soil contamination due to oil/ fuel spillage and leakages), particularly during monsoon season. The surface runoff carrying the loose top soil will lead to increased sedimentation in the receiving water bodies. Contamination to water bodies may also result due to oil spilling during construction activities and/or surface runoff from the construction site to the nearby water body. To minimize it, excavation activities should be not carried-out during rain.

1.5.6. Waste Generation and Impact on Soil & Ambient Environment

The construction waste generated onsite comprises of materials such as excavated soil, rocks, concrete, wooden pallets, steel cuttings/filings, packaging paper or plastic, wood, metals etc. Municipal domestic wastes consisting of food waste, plastic, glass, aluminium cans and waste paper will also be generated by the construction workforce and labour camp site. The waste generated during the construction phase will also include hazardous waste such as used oil, hydraulic fluids, waste fuel,

grease and waste oil containing rags. If improperly managed, solid waste could create impacts not only to land but also to local air quality, water quality, and human health. It is expected that the generation of the waste oil will be insignificant as the DG sets will be used only during the construction phase and the waste oil will be generated only during the maintenance of DG sets.

Soil contamination during the construction phase may result from filling activity, leaks and spills of oil, lubricants, or fuel from heavy equipment and wastewater. Such spills could have a long-term impact on soil quality, but are expected to be localized.

During operation phase, in hotels/ resorts, solid waste comprising of biodegradable, non-bio-degradable, hazardous and inert waste will be generated. The sewage sludge will also be generated from the sewage treatment plant and needs to be disposed off. During this phase, improper disposal of solid waste may contaminate soil, ground water, surface water and air quality.

1.5.7. Impacts on Biodiversity

Post development of the economic zone & setting up of hotels/ resorts, cruising activities and adventure sports, there could be some impacts on the ecosystem of the area. Tourism activities will involve generation of some emissions, effluents and increased vehicular movements. These altogether may have overall negative impact on the eco-system of the site and the nearby areas as the air pollutant will impact the existing vegetation and avifauna in the area. If appropriate measures for preventing air, water, soil and noise pollution are taken there will be no significant impact on the eco-system of the area. Therefore, appropriate mitigation measures should be taken to minimize the impacts on biodiversity.

1.5.8. Impacts due to Climate Change

Bangladesh is one of the most vulnerable countries to Climate change. The coastal region of Bangladesh is prone to multi hazard threats such as cyclones, storm surges and floods, as well as earthquakes. The site is abutted by Bay of Bengal on the southern side and Western side, which possess cyclone risk alleviated by the impact of the climate change. During monsoon, the flood level during monsoon season varies from 4 feet to 5 feet within the area of the proposed TP.

Global warming as a consequent of the Climate change will most likely increase the precipitation levels in the region thereby heightening the flood risk at the proposed site location. A warmer atmosphere can hold more moisture, and globally water vapour increases by 7% for every degree centigrade of warming. The impact of these changes on global precipitation has not yet been

correlated academically, but the total volume of precipitation is likely to increase by 1-2% per 0C of temperature increase.

To mitigate the risk of flooding it is proposed to provide an embankment along the periphery of the project site.

1.5.9. Impacts on Health and Safety

The health and safety (H&S) impacts related to the project can be categorized into two types- occupational health and safety and community health and safety. The lack of adequate mitigation measures on the health and safety of the workers will result in accidents and injuries leading to loss of life or property. Public safety, particularly of pedestrians and children can be threatened during construction activities. It is anticipated that the construction (including transport and handling), erection and commissioning and operational activities will have medium risks on community H&S aspects. The most important risks associated with the construction activities are listed below:

- Exposure to the sunlight- workers are being exposed to the sun for long hours;
- Exposure to the high temperature, and humidity for a long time resulting in dehydration;
- Contact with the hazardous substances and wastes pose risks of infections and diseases;
- Risk of collision (traffic);
- Risks from the head loads for carrying any kinds of materials;
- Risks of using of the machinery in motion;
- Risks from fall from the height;
- Risk associated to the sudden bad weather working conditions.

1.6. Environmental Management Plan

The preparation of Environmental Management Plan (EMP) is intended to provide guidelines for the implementation of environmental management of the overall project activities. Matters that should be monitored are the affected or predicted to be affected matters, both positively and negatively from the activities. Environmental management is an integrated effort in the usage, arrangement, maintenance, supervision, controlling and development of environment, therefore preservation of the potential natural resource can be maintained, and pollution or environmental damage can be prevented or reduced.

The EMP is intended to be a manual to be used in the day to day operations of the overall project activities. It provides a structured

program for the management of the works to ensure that all reasonable and practicable measures will be implemented to prevent and/or minimize the likelihood of the environmental harm being caused during the project activities.

1.6.1. Environmental Management Action Plan

The environmental management action plan has been outlined in Table 9.14. The environmental impact and corresponding mitigation measures as well as responsibilities parties for the implementation of the EMP are also incorporated in the environmental management action plan.

Table 9.14. General Anticipated Environmental Impacts and Mitigation Measures

Impact	Mitigation Measures	Time Frame	Implementation of Mitigation Measures	Supervision & Monitoring
Removal of Vegetation	<ul style="list-style-type: none"> • Care shall be taken to keep vegetation clearing at a minimum; • Removal of as little vegetation as possible during the development and re-vegetation of bare areas after the project. 	re-construction phase	Contractor	BEZA/PMU
Setting up of construction camps/labour camps	<ul style="list-style-type: none"> • The construction camps should be at least 500 m distance from habitations from the nearest settlements; • Location for stockyards for construction materials will be identified at least 1 km from water sources; • Standard living place should be provided; • Construction camps shall be provided with sanitary latrines; • The sewage system for the camp will 	re-construction phase	Contractor	BEZA/PMU

Impact	Mitigation Measures	Time Frame	Implementation of Mitigation Measures	Supervision & Monitoring
	<p>be properly designed, built and operated;</p> <ul style="list-style-type: none"> • Potable drinking water facility should be provided at the site; • First aid facilities should be made available at construction camp. 			
Land filling	<ul style="list-style-type: none"> • The soil used for land filling should have similar characteristics to the native soil and free of any type of contamination. <p>In case of dredging activity for land filling purposes:</p> <ul style="list-style-type: none"> • Dredging should not impact natural drainage courses; • Dredging sites should be located away from sensitive locations; • Permission from concerned local body should be taken before finalizing the location; • Magnitude and frequency of dredging activity should be monitored to avoid impacts on the natural drainage; • Prior to dredging activity, analyse the soil sample to prevent impacts on the receiving environment as a result of mismatch 	During Construction	Contractor	BEZA/PMU

Impact	Mitigation Measures	Time Frame	Implementation of Mitigation Measures	Supervision & Monitoring
	<p>in soil characteristics;</p> <ul style="list-style-type: none"> • During dredging activity, physical barriers such as silt screen/ curtains should be employed to prevent the spread of suspended sediments; • Maintain the extent of the turbidity plumes close to the dredging and disposal areas to minimise impacts on marine fauna habitat; • Visually inspect for any marine life and terrestrial organisms and stop dredging activity in case of any organism in the vicinity; • Monitoring should be done continuously during dredging to observe impacts on the marine life and in case of visible impacts, stop the dredging activity; • Dredging should be carried out during day time to minimize impacts on marine life. 			
<p>Identification of dumping sites for debris</p>	<ul style="list-style-type: none"> • The dumping sites shall not be located within designated Forest/protected areas; • Dumping sites should be located at least 1 km from sensitive locations; 	<p>During Construction</p>	<p>Contractor</p>	<p>BEZA/PMU</p>

Impact	Mitigation Measures	Time Frame	Implementation of Mitigation Measures	Supervision & Monitoring
	<ul style="list-style-type: none"> • Agriculture lands should be avoided & vacant lands should be preferred; • The area should be sprinkled with water to suppress the dust emissions; 			
Soil Erosion and Sedimentation control	<ul style="list-style-type: none"> • No loose earth surface is left out before the onset of monsoon. • To avoid soil compaction along the transportation routes, only identified haul roads would be used for transportation; • Turfing of low embankments and plantation of grasses and shrubs should be done in slope stabilization; • Soil erosion checking measures as the formation of sediment basins, slope drains, etc, should be carried out. 	During Construction	Contractor	BEZA/PMU
Disposal of Debris and any waste generated	<ul style="list-style-type: none"> • Waste from construction camp should be properly disposed in a designated dump site; • Dustbins should be provided at the site and construction camps to prevent littering of waste; • Storage area of minimum 2 days should be provided at construction 	During Construction	Contractor	BEZA/PMU

Impact	Mitigation Measures	Time Frame	Implementation of Mitigation Measures	Supervision & Monitoring
	<p>camp for storage of the waste generated from labour camps;</p> <ul style="list-style-type: none"> • Any hazardous waste generated during construction activity shall be stored at designated place and then disposed off as per DoE guidelines; • Contaminated runoff from storage areas should be captured in ditches with an oil trap at the outlet. . 			
<p>Dust Generation</p>	<ul style="list-style-type: none"> • Vehicles delivering materials should be covered with tarpaulin to reduce spills and dust blowing off the load; • Water should be sprayed in the cement and earth mixing sites as well as after compaction; • Regular maintenance, servicing of the vehicles and periodic emission check for equipment and machinery would be carried out ; • Water will be sprayed on the haul road. • Air quality monitoring to be carried out during construction phase to check the 	<p>During Construction</p>	<p>Contractor</p>	<p>BEZA/PMU</p>

Impact	Mitigation Measures	Time Frame	Implementation of Mitigation Measures	Supervision & Monitoring
<p>Procurement & Setting up of Crushers, Hot-mix plants, other Vehicles, Equipment and Machinery</p>	<p>pollutants level in the air</p> <ul style="list-style-type: none"> • Specifications of crushers, hot mix plants and batching plants, other Construction Vehicles, Equipment and Machinery to be procured should comply to the DoE Standards/ norms; • Hot mix plants, crushers and batching plants shall be located at distance of approx 1 km from nearest habitation, archaeological site, sensitive areas, forests etc; • Adequate stack height and emission control devices such as bag house filters, cyclone separators, water scrubbers etc., should be attached; • Impervious platform for storage of bituminous and other liquid hazardous chemical; • Pollution control measures for Diesel Generator (DG) set. 	Pre-Construction	Contractor	BEZA/PMU
<p>Contamination of soil</p>	<ul style="list-style-type: none"> • Impervious platform and oil and grease trap for collection of spillage from construction 	During Construction.	Contractor	BEZA/PMU

Impact	Mitigation Measures	Time Frame	Implementation of Mitigation Measures	Supervision & Monitoring
	equipment vehicle maintenance platform will be appropriately provided at construction camp, servicing area and liquid fuel and lubes at storage areas.			
Contamination of surface & ground water	<ul style="list-style-type: none"> • Construction close to water bodies shall be avoided; • Avoid excavation during monsoon season; • Loosened soil will be stabilized by Contractor through landscaping and developing vegetation, wherever possible, once construction activity is completed at any site. • Sanitation facility with septic tank followed by soak pit will be developed; • Surface run off due to construction activity will not be discharged in open without treatment. 	During Construction	Contractor	BEZA/PMU
Loss of water bodies/ surface / ground	<ul style="list-style-type: none"> • No excavation from the bund of the water bodies; • No earth will be excavated for development of any off-site facility; • No debris disposal near any water body; • Construction labours to be 	During construction	Contractor	BEZA/PMU

Impact	Mitigation Measures	Time Frame	Implementation of Mitigation Measures	Supervision & Monitoring
	<p>restricted from polluting the source or misusing the source;</p> <ul style="list-style-type: none"> Labour camps will be located away from water bodies. 			
Drainage and runoff	<ul style="list-style-type: none"> The Contractor will always clear the cross drainage structures and natural drainage before onset of monsoon in order to keep all drainage unblocked Earth, stones, wastes and spoils will be properly disposed off, to avoid blockage of any drainage channel. 	During Construction	Contractor	BEZA/PMU
Noise from Vehicles, Plants and Equipment	<ul style="list-style-type: none"> Construction activities would be carried out in the daytime only; The construction equipment would be provided with adequate noise control measures and should comply with the noise standards as prescribed by DoE; Regular maintenance of vehicles and equipment; DG sets if installed should be provided with acoustic enclosures; Labour working in noise prone area should be provided with ear plugs and job rotation should be practiced to 	Throughout construction	Contractor	BEZA/PMU

Impact	Mitigation Measures	Time Frame	Implementation of Mitigation Measures	Supervision & Monitoring
	prevent the prolonged exposure of any workers to high noise levels.			
Loss or damage to vegetation	<ul style="list-style-type: none"> • Vegetation will be removed from the construction zone before commencement of construction. All works will be carried out such that the damage or disruption to flora other than those identified for cutting is minimum. • Only ground cover/shrubs that impinge directly on the permanent works or necessary temporary works will be removed with prior approval from the Environmental Expert; • Trees identified under the project will be cut only after receiving clearance from the Forest Department; • Construction workers will be prohibited to cut trees and also to disrupt or damage the fauna. 	During Construction Phase	Contractor	BEZA/PMU
Accidents	<ul style="list-style-type: none"> • Cautionary guidance should be provided at site to aware people about the associated risk with the area. 	During Construction	Contractor	BEZA/PMU

Impact	Mitigation Measures	Time Frame	Implementation of Mitigation Measures	Supervision & Monitoring
	Entry to the fuel storage room or machinery operation room should be restricted only to authorized trainer personnel.			
Clearing of Construction of Camps & Restoration	<ul style="list-style-type: none"> On completion of works, all temporary structures shall be cleared, all rubbish burnt, excreta or other disposal pits or trenches filled in and sealed and the site left clean and tidy. 	Post Construction	Contractor	BEZA/PMU
Occupational Health & Safety Plan	<ul style="list-style-type: none"> All construction worker should wear PPEs including safety jacket, helmet, gloves, gum boots, ear plugs, mask while working at the site Training to workers should be provided for handling the construction equipment and machinery; Training to the workers should be provided to handle the emergency situations like fire, floods etc. Cautionary signage and notice should be displayed in local language and English at the required places like fuel storage area so that hazards can be 	During Construction	Contractor	BEZA/PMU

Impact	Mitigation Measures	Time Frame	Implementation of Mitigation Measures	Supervision & Monitoring
	avoided. <ul style="list-style-type: none"> A register of all toxic chemicals delivered to the site shall be kept and maintained up to date. A register of Materials Safety Data Sheets (MSDS) relating to all hazardous substances on board, will be maintained 			
Disaster Management	<ul style="list-style-type: none"> Precaution will be taken to prevent danger of the workers and the public from fire, flood, drowning, etc. All necessary steps will be taken for prompt first aid treatment of all injuries likely to be sustained during the course of work. 	During Construction	Contractor	BEZA/PMU

1.6.2. Emergency Response and Disaster Management

In order to be in a state of readiness to face adverse effects of accidents, an emergency preparedness plan is required to be prepared which includes on-site and off-site emergency plan. BEZA is responsible to develop an emergency preparedness plan in consultation with concern authorities.

Disaster management can be defined as the organization and management of resources and responsibilities for dealing with all humanitarian aspects of emergencies, in particular the preparedness, response, and recovery to lessen the impact of disasters. Emergency Preparedness Planning (EPP) and Contingency Planning (CP) are the processes of disaster management plan for developing strategies, arrangements, and procedures to address the humanitarian needs of those adversely affected by the crisis. There are four main types of disasters, namely: Natural disasters, Environmental Emergencies, Complex Emergencies, and Pandemic Emergencies.

For TP activities, BEZA would identify the immediate needs, prioritize the tasks, and identify resource requirements to address the humanitarian needs of those adversely affected by the crisis. The Emergency Preparedness Plan will have the following minimal components:

- Accidents preventions procedures/ measures;
- Fire prevention planning and measures;
- Fire water storage and foam system
- Accident/emergency response planning procedure;
- Emergency control centre;
- Emergency information system with role & responsibility and command structure.

1.6.3. Monitoring Plan

The objective of environmental monitoring during the construction and operation phases is to compare the monitored data against the baseline condition collected during the study period to assess the effectiveness of the mitigation measures and the protection of the ambient environment based on national standards. A monitoring schedule has been sketched based on the environmental components is given below.

Table 9.15. Matrix Table of Monitoring Plan

Monitored Parameter/ Issues	Monitoring method/Key aspects	Period & Monitoring Frequency	Executing Agency	Enforcement Agency
Visual and observation during operation phase				
Safety orientation & training of workers	Frequency of training & orientation of workers for safety	-Once in a month -Reporting: Once in a month	Contractor	BEZA/P MU
Personal Protective Equipment and safety equipment	Ensure every single person involved in the activities wear and use safety equipment	-Daily -Reporting: Once in a month	Contractor	BEZA/P MU
Worker’s health	Monitoring process of worker’s health	-Daily -Reporting: Once in a month	Contractor	BEZA/P MU
Sanitation & drinking water facility to the workers	Availability of safe drinking water and sanitation to the workers	-Daily -Reporting: Once in a month	Contractor	BEZA/P MU

Monitored Parameter/ Issues	Monitoring method/Key aspects	Period & Monitoring Frequency	Executing Agency	Enforcement Agency
Incident record & reporting	Documented record of all incident, accident, and its remedial process	-Daily -Reporting: Once in a month	Contract or	BEZA/P MU
Site security	Proper fencing/isolation of site from general access, marked passage for workers and visitors	-Daily -Reporting: Once in a month	Contract or	BEZA/P MU
Bulletin/ announcement boards/ prohibition signs	Visible in good condition or not	-Daily -Reporting: Once in a month	Contract or	BEZA/P MU
Equipments /vehicles	-Switched-off engines when not in use; -Search any possible leakage; -Fuelling.	-Daily -Reporting: Once in a month	Contract or	BEZA/P MU
Dust	Dust is visible or not	-Daily -Reporting: Once in a month	Contract or	BEZA/P MU
Oil waste generation and disposal	Quantity of oily waste, storage and disposal	-Daily -Reporting: Once in a week	Contract or	BEZA/P MU
Solid waste generation	Quantity of solid wastes and disposal	-Daily -Reporting: Once in a month	Contract or	BEZA/P MU
Drainage facilities	Provision of open /closed surface drainage	-Monthly -Reporting: Once in a month	Contract or	BEZA/P MU
Gender equity	No discrimination regarding payment	-Daily -Reporting: Once in a month	Contract or	BEZA/P MU
Child labor	No child will be engaged in the activities	-Daily -Reporting: Once in a month	Contract or	BEZA/P MU
Handling of hazardous materials	-Fuelling, storage, operation	-Daily -Reporting: Once in a month	Contract or	BEZA/P MU
Local Manpower Absorption	-Contractor's report -No. of people working in the project	-Daily -Reporting: Once in a monthly	Contract or	BEZA/P MU
Soil Erosion	Survey & observation; Extent and degree of	-Daily -Reporting: Once in a monthly	Contract or	BEZA/P MU

Monitored Parameter/ Issues	Monitoring method/Key aspects	Period & Monitoring Frequency	Executing Agency	Enforcement Agency
	erosion; Structures for controlling soil erosion			
Greenbelt Development	Survival rate of species planted; Density of vegetation	-Daily -Reporting: Once in a monthly	Contractor/ BEZA	BEZA/PMU
Biodiversity	Ecological survey Surface water quality analysis Visual inspection	Monthly but Visual inspection should be done weekly	Contractor	BEZA/PMU
Analytical Monitoring during operational phase				
Air Quality	Survey & observations; Levels of PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO	Quarterly	-	BEZA/PMU
Noise Level	Survey & observations	Weekly	Contractor	BEZA/PMU
Drinking Water	All physico-chemical & biological parameters	Quarterly	Contractor	BEZA/PMU

1.6.4. Capacity Building and Institutional Arrangement

BEZA has developed Environmental Management Framework with the help of World Bank. The institutional arrangement is aligned as per this framework. BEZA should have an Environmental and Social cell which will coordinate with the site engineers and PMU. In addition, a training program should be developed by the BEZA to build the capability of the PMU and contractors. BEZA should organize an introductory course for the training the PMU officials, and contractors preparing them on: (i) Awareness on environmental issues (ii) EMP Implementation, including environmental monitoring requirements related to mitigation measures; and (iii) taking immediate action to remedy unexpected adverse impacts or ineffective mitigation measures found during the course of the implementation.

1.7. Stakeholder Analysis and Information Disclosure

Participation of local people and other stakeholders has now been recognized as a key element to ensure sustainable results of both environment and development projects. Participation enables different socio-economic interest groups in an area to develop their capabilities and to play a dynamic role in developing initiatives. In the context of

preparing the Environmental Footprint Report, participatory public consultation was conducted in the project site. The Union, Upazila and District Level Officials, Engineers from different govt. dept, NGOs and local individuals attended the stakeholder meeting and focus group discussion. In addition, walk-through informal group consultations were also held. The local communities were informed about project interventions including their benefits. The detailed of the public consultation, stakeholder analysis and information discloser is given in the Social Footprint Report. However, in this section only highlighted the key points.

The stakeholders expressed that the development of the Tourism Park will bring social and economic development in the region providing permanent source of income. The community perceives that the project will help in providing sustained employment opportunities, alternate means of livelihood, better service facilities, and better conveyance. From this point of view the local people are in favour of the project. However, some of the key issues raised by the stakeholders regarding development of project are listed below:

- Groundwater in the project area is saline in nature. Hence, provision for drinking water should be taken care properly;
- Preservation of the existing water body in the master plan;
- Preservation of the green area in the master plan;
- Provision of the renewable energy sources such as solar power;
- Provision of the WTP and STP;
- Provision of the water reservoir and rain water harvesting system;
- Incorporation of the guidelines of the Civil Aviation Authority and Tourism Ministry for the development activities in the Tourist area in the study.

1.8. Conclusion and Recommendation

1.8.1. Conclusion

From the conceptual stage of the project, this study helps to understand the overall project activities and initial environmental impacts as well as to formulate the applicable mitigation measures and monitoring plans. Findings of the study reveal that potential negative environmental impacts associated with the construction activities are relatively minor in comparison to the significant environmental and economic benefits resulting from project operation. During construction, the contractor will implement the mitigation measures while project consultants will conduct

regular monitoring to ensure the contractor's compliance with applicable provisions of the EMP. The overall conclusion is that if the mitigation, compensation, and enhancement measures are entirely implemented, there will be no significant negative environmental impacts as a result of location, design, construction, and or operation of the proposed project.

1.8.2. Recommendation

The recommendations made for the project development on the basis of this study are given below:

- All mitigation, compensation, and enhancement measures should be followed by the concern authorities for implementing the project;
- The environmental management and monitoring plan also needs to be followed;
- Natural resources such as water, wood, and fuel should properly use. Hence, effective method for using of the natural resources should be formulated;
- Proper training of maintaining environment, health and safety should be given to project management unit and contractors in construction phase;
- Existing water body and green area should be conserved;
- Renewable energy sources such as solar power can be installed;
- Water reservoir and rain water harvesting system can be introduced;
- Development of the green belt by plantation of the local fruits, medicinal and ornamental plants;
- Waste bins can be used for effective waste management facilities;
- Embankment should be designed considering the surge height;
- Infrastructure should be designed following the BNBC and BEPZA guideline to resist any seismic effect;
- EMP should include in the bidding documents, bills of quantity and other contractual obligations of the contractor clearly identify environmental responsibilities and describe penalties for noncompliance;
- A detailed EIA study should be undertaken through a multidisciplinary team (fisheries biologist, terrestrial and aquatic ecologist etc.) to precisely record the baseline situation and to refine designs and specifications necessary for the parameters.

2. SOCIAL FOOTPRINT

2.1. Project Description

The Government of Bangladesh has embarked on the program to develop new Economic Zones (EZs) in the country. As a key part of this strategy, the project will demonstrate the viability and efficacy of new models to remove key constraints facing the private sector, including adequate infrastructure, access to serviceable land and good social practices. Particular attention will also be paid to commercial practices and good governance to attract public-private partnerships in zone development, service provision and /or management coupled with a strong emphasis on environmentally and socially compliant manufacturing. A strengthened institutional framework will also be supported through policy advice and capacity building to help accomplish these objectives.

Bangladesh Economic Zone Authority (BEZA), after the initial site assessment, finalized to develop an Economic Zone in the form of a Multi-Product Economic Zone with focus on sectors such as ready-made garments, textile and related industries, leather and footwear, pharmaceuticals, ship building; and plastic & chemicals at Anowara Upazila. Owing to its geographic location and proximity to key industrial sectors, the proposed site at Anowara - 2 has certain inherent advantages. Anowara is located at 12 km from the city of Chittagong – which is the 2nd largest manufacturing hub in Bangladesh after Dhaka. The city houses 28% of manufacturing enterprises and 30% of the employment in Bangladesh. Chittagong has remained the location of choice for heavy industries such as steel, cement, ship building, chemical production and oil

PSDSP will support transformative investments beyond already established sectors. A key outcome is a contribution towards zoned industrialization, which will enable Bangladesh to maximize the growth benefits of agglomeration and ease the increasing urban congestion.

Potential Impacts

Outside the EZ will involve use of the existing kaccha approach road through the CUFL road (R170) and widening of 30m wide four lane access road to connect the site from existing main road (R170) for a length of approximately 750 m. It is proposed to provide a transmission line to connect with Julda power plant of 100 MW capacity. The water requirement is proposed to be met through the bore wells of depth of around 150 to 200 meter to be constructed at the project site.

Proposed site comprises of private lands, private “Bondobostho” land and khas land and part of the existing land is being presently used for agricultural purposes and 2 brick kilns are also there within the subject site. The acquisition of the private lands will result in the livelihood loss for the land owners. Thus, the proposed EZ will involve physical displacement and economic displacement of local stakeholders which triggers the OP 4.12 “Involuntary Resettlement”. The approach road is

envisaged to be connected with the CUFI road. There is an existing Kaccha road which needs to be widened to 33m (4 lane road). On either side of the kaccha road lies privately owned agricultural land. The first 50m of the present kaccha approach road has kaccha to semi pacca houses.

There are no indigenous people in the project area of influence; hence the OP 4.10 is not triggered for the development of this EZ.

The number of project affected persons (PAPs) are there, thus a Resettlement Action Plan will be prepared for the PAPs.

2.2. Site Assessment for the Development of Anowara-II EZ

2.2.1. Description of project Site

The proposed Economic Zone falls in the Anowara upzila (Chittagong district) with an area of 173.53 km², is bounded by Patiya upazila on the north. Banshkhli upazila on the south, Chandanaish upazila on the east and Bandar (Chittagong port) thana on the verse are Karnafuli and Sangu. The main forests are Dheang Pahar, Battoli and Baramat.

Table 9.16. Site Details of Anowara-II EZ

Parameters	Details
Parameters	Details
Site co-ordinates	22° 12'04.44"N to 22° 13'18.02"N latitude, 91° 51'28.25"E to 91° 52'41.82E longitude
Site boundaries on East	Banchura village & Agriculture land
Site boundaries on West	Boina Village, Agri land, Radar station & college
Site boundaries on North	Baichuna road & Agriculture land
Site boundaries on South	Barthuli village, Aaigav, Adarshayran & Agriculture land
Total area of the site	774.425 acres
Area in Botali mouza	337.315 acres
Area in Hajigowa mouza	179.04 acres
Area in Balcho mouza	79.04 acres
Area in Boiraz	179.03 Acres
Land tenure details	Government owned & private land
Government Khas land	290.875 Acres
Private land	160.01 Acres
Others	323.540 Acres
Expansion Potential of Proposed EZ area	Basis initial site assessment, proposed EZ area is surrounded by villages (Banchura, Boina etc.) and agriculture land.

Parameters	Details
	Hence, there lies scope of expansion subject to acquisition of agricultural and village land area. However, this is subjected to land survey and feasibility analysis.
Existing land use	Agriculture & Hilly terrain

2.2.2. Influential area for development

Anowara is located at 12 km from the city of Chittagong – which is the 2nd largest manufacturing hub in Bangladesh after Dhaka. The industries of Chittagong region have flourished owing to the development of Chittagong Port. Approximately 90% of international trade in Bangladesh is facilitated through Chittagong sea-port, thereby making this district industrial hub of Bangladesh. To analyse the industrial segments which may be considered fit to develop in the proposed multi-product economic zone Anowara -2 EZ.

Table 9.17. Connectivity of proposed Anowara-II EZ

Key Parameters	Facilities
Connectivity	<ul style="list-style-type: none"> • The proposed EZ is located at a distance of 15 km (approx.) from the Chittagong town. It is abutting the Chittagong – Anowara Banshkhali highway (R170) which is the main access road to the area. • Access to Chittagong, industrial hub of Bangladesh National. Highway EPZ N1 connects the country capital Dhaka and Port City Chittagong. • It is around 500m from Chittagong - Anowara-Banshkhali Highway (R170). This 500m unpaved Road stretch connects the site to the medaled single lane road. • Multilane Road tunnel is proposed under the River Karnaphuli.. • Chittagong railway station is located at a distance of 17 km (approx.) from the proposed EZ. • Proposed EZ is situated at a distance of 30 km (approx.) from Shah Amanat International Airport, Chittagong. It takes about an hour to reach the airport from the proposed EZ.. • Proposed EZ is situated at a distance of 30 km (approx.) from Shah Amanat International Airport, Chittagong. It takes about an hour to reach the airport from the proposed EZ.
Utility Connection	<p>Power Julda power plant of 100MW capacity is located 4 Km (approx.) away from the proposed EZ.</p> <p>Water Basis the interaction with the local inhabitants, ground water is available at a depth of 100 to 200 feet from</p>

Key Parameters	Facilities
	<p>natural ground level. Karnaphuli River located at a distance of 15-20 km (approx.) from the proposed EZ</p> <p>Gas pipeline is available near Korean EPZ (KEPZ) which is located at a distance of 2Km (approx.) from the proposed EZ.</p>
Suitability for Industrial Development	<ul style="list-style-type: none"> The prominent industrial sectors in Chittagong are textile related industries, Leather and Footwear, Pharmaceuticals, Ship building, Plastics etc. Around 23% of total manufacturing units of Bangladesh are located in Chittagong. Around two thirds of the 3000 plastic units are in Chittagong/Dhaka region. (iii) These industries may act as backward linkages for development of industries such as RMG, light engineering, leather/ footwear, bottling/ packaging etc.
Social and Resettlement Aspects	<ul style="list-style-type: none"> Private land to be acquired.
Access to quality manpower	<ul style="list-style-type: none"> Proposed EZ is located in proximity to an already set up industrial area where two EPZs are functional. Chittagong being the Industrial Hub of Bangladesh has adequate supply of manpower. The proposed EZ would have access to established ecosystem of industries which could provide access to manpower (labour sources).
Social Infrastructure	<ul style="list-style-type: none"> The labours working in the proposed EZ shall have access to the dwelling units and residential areas within 5-10 km radius of the proposed EZ; There are few medical facilities available within 10 km radius of the proposed EZ to cater to the healthcare requirements of the workforce. Major healthcare facilities are available in Chittagong city (20 km away from proposed EZ).

Table 9.18. Industrial landscape of entire Chittagong District

Type	Number
Number Heavy Industries	328
Small Industries	4323
Major Industrial Units	Shipping industry in Shitakunda, Eastern Refinery, KAFCO, CUFL, THP Complex, Pahartali Railway Workshop, Yamuna Oil, PHP Float Glass, Unilever, Glaxo etc.
Jute Mill	24
Government Textile mill	5
Cement Factory	10
Garments and Textile Factory	647

EPZ	3 (Govt.-1; Private-2)
Oil Refinery	1
Rubber Garden	8
Fertilizer Industries	3
Tea Gardens	23
Leather Industries	19
Shipping related industries	110
Multinational Companies	12
International Companies (Office in Chittagong)	628

2.2.3. Scope and Methodology Used for social Impact Assessment Study

Social impact assessment for this project incorporates primary information gathered through site visit, community consultation, focus group discussions (FGDs), stakeholder meetings with Upazila level Govt official, and key informant interview (KII) with relevant district official of Chittagong. This methodology aims to formulate the Terms of Reference for the proposed engagement and explains the envisaged approach in carrying out the engagement. While formulating this methodology, we have ensured that the final deliverables are oriented towards sustainable development and subsequent operations with innovative and implementable concept. The check list to be utilized during site visit is annexed with this report.

The broad methodology followed by the consultant and the objectives is undertaken are detail below:

- Gather necessary information on existing socio-economic condition in the project area.
- Identify key stakeholders and establish an appropriate framework for their participation in the project selection, design, and implementation.
- Ensure that project objectives and incentives for change are acceptable to the range of people intended to benefit.
- Develop capacity at the appropriate level to enable participation, resolve conflict, permit service delivery, and carry out mitigation measures, as required.
- Identification of areas which require further social analysis.
- Choice of methodology, sequencing inspect of social Impact Assessment has been determined by these specified objectives and is guided by the World Bank safeguard policy guideline.

2.2.4. Socio-economic profile of Anowara Upazila

Anowara Upazila is an Upazila under Chittagong District in the Division of Chittagong, Bangladesh. It is located at 22.2167° North 91.9111° East. It is bounded by Patiya on the north, Banshkhali on the south, Chandanaish on the east and Bandar on the west.

Archaeological heritage and relics Dargah of Mohsin Awlia, Akbari Mosque, Churut Bibi Mosque, Dhala Bibi Mosque, Monu Miah's canon (now preserved in the National Museum) and Dighi.

History of the War of Liberation In 1971 Anowara upazila was under sector 1. During the War of Liberation 56 freedom fighters and many a number of Pak army were killed or wounded in encounters at different places like KAFCO, Kaliganj, Paraikora, etc. The Pak army brutally killed 9 innocent persons at village Khilpara and they also set on fire many houses of the Upazila.

Table 9.19. Socio-Economic Profile of Anowara

Indicators	Quantity
Area (Km ²)	164.10
Union/Wards (No.)	11
Mouzas/Mahallas (No.)	80
Villages (No.)	81
Households (No.)	49,966
Population (No.)	2,59,022
Population density (per Sq. Km)	1578
Male (%)	50.34
Female (%)	49.65
Sex Ratio (Females/ 1000 males)	101
Number of Child Birth (No.)	9,533
Overall (%)	26.7
Males (%)	29.7
Females (%)	23.6
Mosques	183
Temples	7

Source: Bangladesh Bureau of Statistics, Census 2011

Geography

Anowara Upazila with an area of 173.53 sq.km. Main rivers are Karnafuli and Sangu. The main forests are Dheang Pahar, Battoli and Baramat. The upazila consists of 11 union parishad, 80 Mauzas, and 81 villages. Anowara is an upzila in Chittagong district which is located in Chittagong division (south-eastern Bangladesh). There are a total of 11 districts under Chittagong division. The district has Port city of Chittagong, the second largest city of Bangladesh. Chittagong district is surrounded by:

- North- Tripura (India)
- East- Khagrachhari, Rangamati and Bandarban Districts;
- South- Cox's Bazar District;
- West- Bay of Bengal, Feni and Noakhali Districts

It lies between 21°54' and 22°59' North latitudes and between 91°17' and 92°13' East longitudes. The district spreads over an area of about 5282.92 km² of land of which 1700 km² including coastal area is under forest. Chittagong district has 14 upazilas. The upazilas are Anowara, Banshkhali, Boalkhali, Chandanaish, Fatikchhari, Hathazari, Lohagara, Mirsharai, Patiya, Rangunia, Raozan, Sandwip, Satkania and Sitakunda

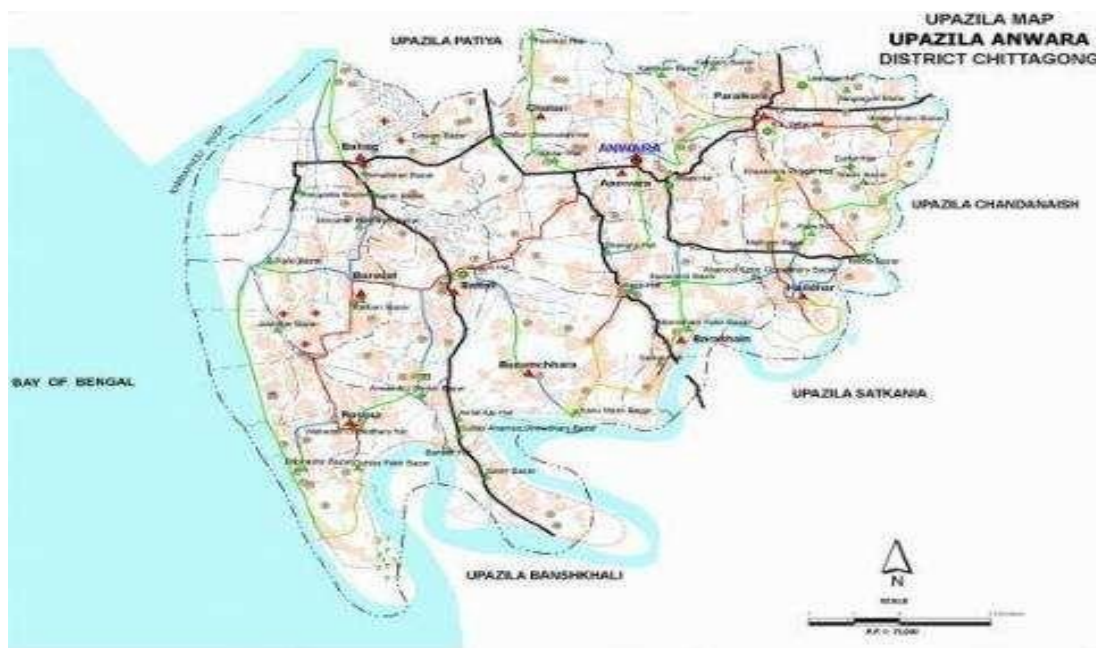


Figure 9.5. Layout Map of Anowara Upazila

Demography

In Anowara upazila total population is 2,59,022 of which 1,26,709 are male and 1,32,313 are female. Total number of households were 49,966 and the literacy 51.9. The average number of people per household for the Anowara Upazila works out to be 5.15. The lower sex ratio indicates the absence of gender bias which augurs well with the planned development and the skill up gradation programmes which are planned as an integral component of the proposed project.

Table 9.20. Demographic profile of the Unions under Anowara Upazila

Union	Area (Acres)	Households	Population			Sex Ratio (%)
			Total	Male	Female	
Anowara	1,871	2,171	10,260	5,114	5,146	99
Bairag	4013	5662	30,545	15,759	14,786	107
Barakhain	4,378	5,679	28,836	13,746	15,090	91

Barasat	3,208	5,460	28,865	14,235	14,630	97
Burumcharra	5,927	3,913	20,061	9,582	10,479	91
Battali	2,935	4,659	23,630	11,576	12,054	96
Chatari	3,256	3,708	19,022	9,384	9,638	97
Haildhar	3,885	4,979	25,315	11,869	13,446	88
Juidandhi	2,144	3,291	17,575	8,495	9,080	94
Paraikora	3,935	4,055	19,635	9,488	10,147	94
Roypur	5,721	6,389	35,278	17,461	17,817	98

Source: Bangladesh Bureau of Statistics, Census 2011

Religion and Ethnic Minority Groups

Islam is the dominant religion followed by the people of Anowara Upazilla and Bengali is the predominant language for communication. Overall in Bangladesh, about 87% of the population are Muslims, followed by 12% Hindu, 1% Buddhist and 0.5% Christians. Out of the total population of 2,59,022 in Anowara, 2,24,496 are Muslims, 33,210 are Hindus, 1,268 are Buddhist, 39 are Christians and 9 are categorized as others.

The ethnic minorities in Bangladesh comprise of Khasi, Jaintia, Chamkas, Marmas, Santals, Garos, Manipuri, Tripuri, Tanchangya and the Mros. The ethnic minorities in Bangladesh are prevalent in the regions of Chittagong Hill Tract and Sylhet and are not found in the project area as well as in Anowara upazilla. The area for EZ development doesn't have any ethnic groups. The EZ doesn't need to have resettlement plan for ethnic groups.

2.2.5. Social Infrastructure

Education

The educational system in Anowara upazila has improved gradually from last 10 years. The literacy rate of Anowara upazila is 51.9 % with 54.6% of males and 49.5%. Anowara upazilla has 2 private colleges, 23 private secondary schools, 118 primary schools, 14 madrasa, 7 kinder garden and 4 technical institutes

Table 9.21. Literacy Rates Segregated by Unions in Anowara

Name of Union of	Area (Acres)	Population		Literacy Rate (%)	
		Male	Female	Male	Female
Anowara	1,871	5,114	5,146	71.6	66.4
Bairag	4013	15,759	14,786	68.0	57.1

Barakhain	4,378	13,746	15,090	56.5	52.8
Barasat	3,208	14,235	14,630	52.1	46.7
Burumcharra	5,297	9,582	10,479	39.8	37.3
Battali	2,935	11,576	12,054	47.1	42.7
Chatari	3,256	9,384	9,638	66.5	60.0
Haildhar	3,885	11,869	13,446	76.5	71.3
Juidandhi	2,144	8,495	9,080	24.0	21.4
Paraikora	3,935	9,488	10,147	68.1	63.1
Roypur	5,721	17,461	17,817	35.1	32.0

Source: Bangladesh Bureau of Statistics, Census 2011

Availability of manpower

In Anowara upzilla, several educational institutions are located which would cater to the requirements of semi-skilled labour and administrative personnel of the proposed Anowara-2 EZ. One technical training centre under Bureau of Manpower Employment and Training (BMET) is located in Chittagong (within 20 km radius of the proposed EZ); hence the unskilled/ semiskilled and skilled/executive level manpower could also be sourced from the same:

Chittagong Technical Training Centre, Nasirabad, Chittagong (approximately 20 km from Anowara, travel time of around 1 hours). There are a total of 300 vocational education institutions (48 public and 252 private).

Table 9.22. Educational Institutions in Chittagong district

Type of Institutions	No. of Institutions
Universities	3
Medical colleges	2
Bangladesh institute of technology	1
Govt. colleges	14
Non-govt. colleges	121
College of physical education	1
Teachers training college	1
Regional public administration institute	1
Polytechnic institute	1
Homeopathy colleges	2
Nursing institute	2
Forest research institute	1
Veterinary college	1
Home economics college	1
Bangladesh military academy	1
Vocational institute	1
Law colleges	2
Art college	1
Marine academy	1
Marine fisheries academy	1

Type of Institutions	No. of Institutions
Cadet college	1
Madrassa	395
Govt. secondary schools	12
Non-govt. secondary schools	698
Govt. primary schools	1,665
Registered primary schools	512
Private (non-registered) primary schools	208
Kindergarten schools	1,011

Source: Chittagong District, www.chittagong.gov.bd

Healthcare Facilities

There is a 50 bedded government hospital and a private hospital in Anowara Upazila. Available healthcare facilities in Anowara Upazila are captured in the table below:

Table 9.23. Healthcare facilities In Anowara

Type of Facilities	No. of facilities
Upzilla Health Complex	1
Community Health Centre	9
Hospital (non govt.)	1
Private Clinic	1
Union health centre & family planning centre	9
Diagnostic Centre	1

Source: Data collected from UNO Office

Source of Income

Main sources of income Agriculture 41.25% and commerce 15.38.

Table 9.24. Source of Livelihood of Anowara Upazila

Indicators	Quantity
Source of Livelihood (in %)	
Agriculture	41.25
Non Agricultural Labors	3.38
Commerce	15.38
Transport and Communications	3.26
Service	16.46
Industry	0.46
Construction	1.42
Religious Services	0.60
Rent and Remittance	3.60
Others	14.19

Source: District Statistics 2011, Chittagong

Land use

The land use pattern of the proposed EZ area falls under agriculture and horticulture zone. Single crop 35.57%, double crop 34.05% and treble crop 30.38%. Main crops: paddy, potato, brinjal, vegetables, dairies, poultries, cattle, breeding and milk processing centers are also found here.

Industrialist Attraction

The industries in this region have flourished owing to the development of Chittagong Port. Approximately 90% of international trade in Bangladesh is facilitated through Chittagong sea-port, thereby making this district industrial hub of Bangladesh.

Major Manufacturing Industries include Eastern Refinery, Pahartali Railway Workshops, Fouzi Flour mill, Jamuna Oil Company, Glaxo Welcome, Lever Brothers, KDS Garments etc. Fuel deposit of Padma Oil Company Ltd., Jamuna Oil Company Ltd., Meghna Oil Company Ltd., International Oil Tankers Ltd., Food Silo, Heidelberg cement Bangladesh Ltd., TSP Fertilizer Factory, LP Gas Ltd, Petro Bangla Chittagong Refinery, NGS Cement Ltd., Eastern Refinery Ltd. (ERL), CEPZ Area are located in Patenga Heavy Industrial Zone. On the other side of river, Karnaphuli Fertilizer Company Limited (KAFCO), Anowara 1300 MW Power plant, Shikalbaha Power Station, National cement Factory Ltd., Super Petro Chemicals, Star Cement, and Chittagong Urea Fertilizer Factory (CUFL) are situated at Anowara. Chittagong Industrial Park Ltd. is located about 30 K.M from the Chittagong City on the way to Kaptai on the northern side of River Karnaphuly

2.3. Impacts with the establishment of Anwra-2 EZ

Anowara-2 Economic Zone development project induce numerous positive impacts of the society who are susceptible to socio-economic risks. The likely positive impacts with the establishment of the Economic Zone include:

- Aid in the development of the industrial sector in Bangladesh as well as the infusion of the financial capital resulting in the increase to the national growth of the GDP.
- Increased mobility, employment generation, and above all better economic integration of the area with major market and trade centers within and outside the district.
- Alleviate the primary education enrolment of women and also the children to cater the requirement to work in the industrial sector and interact with the industrialist,
- Opportunities for the women to educate themselves, train themselves and contribute to improve on the economic conditions of their home.

- Women empowerment with the onset of train programs involving the awareness among the women population.
- It will improved access to market centres, educational institutes, healthcare facilities, and offices located in Anowara upazila.
- Provide impetus for economic development not only in the Anowara area but also around the surroundings and generate employment opportunities. The employment opportunities will grow steadily resulting in more demand of skilled, educated and un-skilled people thereby increasing the standard of education in Bangladesh

2.4. Type of industries planned for the EZ

Prominent industrial sectors in Chittagong are readymade garments, textile related industries, Leather and Footwear, Pharmaceuticals, Ship building, Plastics and Ship Building. Around 23% of total manufacturing units of Bangladesh are located in Chittagong. Around two-thirds of the 3000 plastic units are in Chittagong/Dhaka region. Apart from the sea-port, Chittagong district has one international airport as well. Approximately 75% of the export of Bangladesh happens through Chittagong and approximately 80% of the import of Bangladesh happens through Chittagong. Presence of 2 Export Processing Zones (Chittagong and Karanphuli EPZs) with a cumulative investment of 430 million USD (as of 2011-12) in the vicinity is likely to have certain advantages for the proposed EZ in Anowara.

The development of the EZ will impact social capital development of the region through three broad channels mainly: employment generation, Skill formation and Export promotion.

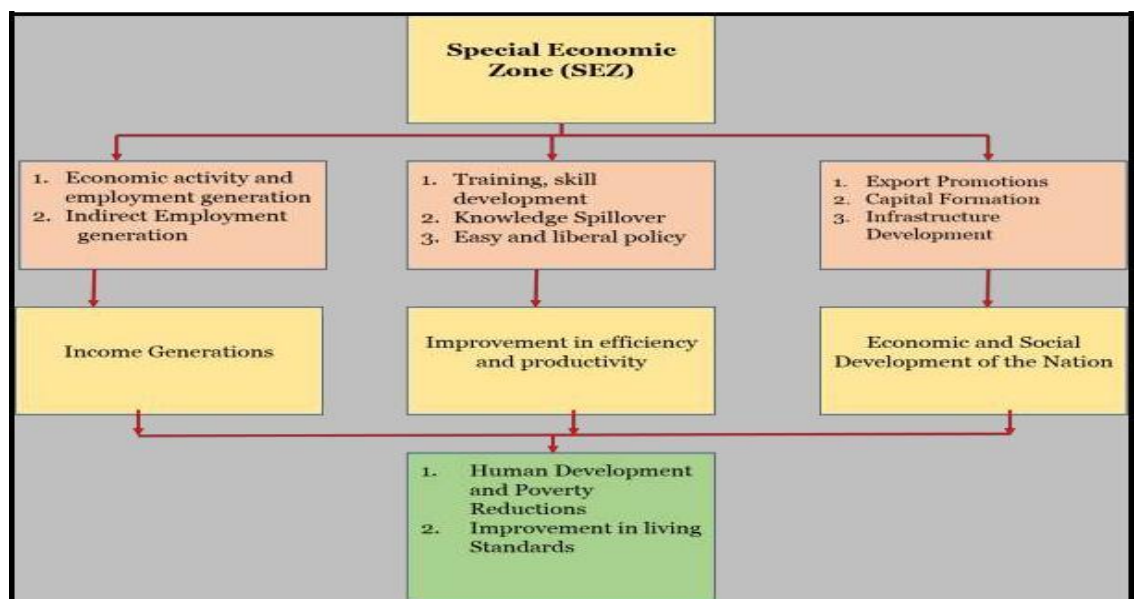


Figure 9.6. Broad Channels for Social Capital Development

2.5. On-Going Social Development Program

In Bangladesh to support the socio-economic developments, government has launched multiple programmes to support marginalized groups. The programmes has supported people of different sectors primarily the marginalized groups to get opportunities for employment and earning livelihood. Closely linked with other policies, including the second National Strategy for Accelerated Poverty Reduction, it emphasises varied types of training needs and recognizes the importance of linking microfinance and skills development for those in rural communities.

There are ongoing social developmental projects which might benefit the overall developments of skills, communication and personal skills. Few of the ongoing projects are:

Skills for Employment and Skills; a ILO funded project which aims to improve the quality and effectiveness of Bangladesh's technical and vocational education and training system and make it more relevant to the market needs. The project benefits government agencies and their staff, employers, workers, public and private training institutions, students and trainees. It focuses particular attention on disadvantaged groups in the labour market, such as women, youth and people with disabilities. The project seeks to create a better-trained, qualified and competent workforce.

Skill Trainings and Enhancement Project; a World Bank funded operational project which aims to create a better-trained, more competent workforce and opportunities for poor men, women, and youth to earn a better living. The project promotes the development of technical and vocational education and training programs that meet the needs of businesses. It aims to increase the number of students and trainees enrolled in education and training programs, including students and trainees from poor backgrounds, and the employability of graduates from these programs.

Improving Health and Nutrition for Hard-to-Reach Mothers and Young Children; a UNICEF-United Nations Children's funded project which aims to improve the health of mothers, new-borns and children under five in order to improve children's growth and reduce death in 14 poor districts in Bangladesh. The corrective actions for each district address shortages and bottlenecks in the public health care system, respond to communication issues, train health service providers and expand cold storage to accommodate the introduction of new vaccines. The project activities are integrated in the Operational Plans of the Health Population and Nutrition Sector Development Program of the Ministry of Health and Family Welfare.

2.6. Private Landowners Impacted by the Project

The area demarcated for the development of the proposed EZ comprises of 160.01 acres of privately owner agricultural area and 323.54 acres of private “Bondobostho” land.

Census survey was administered through structured questionnaire a total of 19 land owners comprising of 36PAP’s constituting the families of the affected homesteads as well as the families. 36 PAP’s, 15 were males and remaining 21were females. The primary source of livelihood for majority of the PAP’s is from the agricultural produce in the project affected area. The overview of the demographic characteristics of the project affected landowners to whom the census survey was administered is provided in the below table.

The demographic data as tabulated in table below indicate that the females constitutes 58.33% of the total project affected landowners populations while the males constituted 41.67%.

Table 9.25. Demographic Data

Scenario	No of PAHs	PAP (%)	No of PAPs			Average Household Size
			Total	Male	Female	
Project Affected Personnel	19	100	36	15	21	5
Total	19	100	36	15	21	5

Most of the affected people were found to be within the age bracket of 41-60 which constituted 30.

Table 9.26. PAPs categorized based on their age

Age Group	Number of PAPs	Number of Males PAPs	Number of Females PAPs	Percentage of the total PAPs (%)
14-17	3	1	2	8.30
18-30	8	4	4	22.20
31-40	9	3	6	25.00
41-60	11	5	6	30.50
61 and above	5	2	3	14.00
TOTAL	36	15	21	100

Religion of the PAHs

As per the findings of the socio-economic survey, 100% project affected households are Muslims surveyed households at Anowara

Literacy Level

None of them are technically qualified (graduates and masters). The low education levels emphasize the need for stress on technical education and skill enhancement programs in the region. Below table illustrates the literacy level percentage.

Table 9.27. Literacy level of PAPs

Literacy Level of PAPs	Number	Number of Female
Illiterate	2	2
Can read and write	4	4
Primary Schooling(class 1-5)	3	1
Class 6 th to 8 th	1	6
Class 9 th to 10 th	3	5
SSC/HSC Equivalent	2	3
Total	15	21

Marital Status of PAPs

As per socio-economic survey, 18 (50%) persons are married while 12 (33.34%) persons are unmarried. Widows comprise 11.11% of the total PAPs. Refer below table for the marital status of the PAPs.

Table 9.28. Marital Status of PAPs

S/N	Marital Status of PAPs	Number	Ratio(%)
1	Married	18	50.00
2	Widow/Widower	4	11.11
3	Divorced/Separated	2	5.55
4	Unmarried	12	33.34
Total		36	100.00

Employment Status of PAPs

Gender segregated employment status of the PAPs is mentioned in table below:

Table 9.29. Employment Status of PAPs

S/N	Employment Status/Occupation	No. of Males	No. of Females
1	Wage Labour	2	2
2	Factory Worker	0	0
3	Farmer	2	1
4	Government Service	1	0
5	Private Service	3	1
6	Unemployed	1	11
7	Shops	1	1
8	Student	1	3
9	Driver	1	0

10	Self Employed	1	1
11	Tailor	2	1
Total		15	21

Income Level

13.89% of the male PAPs do earn above BDT 10,000 per month while 1 of the female PAPs (2.778%) earn over BDT 10,000. Refer the below table for the income levels of the PAPs of the surveyed area. Most of them earn their livelihood as wage agricultural labour.

Table 9.30 Income Level

Ratio	Income Level	No (Male)	Ratio	No.(Female)	Ratio
1	No Income	3	8.3	8	22.2
2	Below BDT 2000	2	5.6	5	13.9
3	Rs. 2000-3000	1	2.8	3	8.3
4	Rs.3000 – 10000	4	11.1	4	11.1
5	Above 10,000	5	13.9	1	2.8
Total		15	41.7	21	58.3

2.7. Key Strengths and Weaknesses

Table 9.31. Strengths and Weaknesses of the EZ area

Strengths	Weaknesses
Location Potentially 774.425acres Direct access to Chittagong Airport. Main industrial area of Chittagong River jetty /port can be suitable Adjacent an industrial cluster	Location Land is in a flood plain and may be vulnerable during super flood
Land Ownership 290.875 acres is Khas Land which is besides river Land use Land condition is good for high rise building	Land Ownership Maximum land is private. So need land acquisition Land use Presently agriculture purpose
Physical Characteristics High land so no need earth filling Flat and unencumbered lands Little vegetation	Physical Characteristics The land needs to be raised and a boundary wall is required to protect it from the river.
Physical Characteristics High land so no need earth filling Flat and unencumbered lands Little vegetation	Physical Characteristics The land needs to be raised and a boundary wall is required to protect it from the river
Social Impacts Limited HHs will affect so minimum resettlement	Social Impacts A social assessment is required Private land owner will be affected. So

Strengths	Weaknesses
Skilled and unskilled labor in close proximity	needs a livelihood restoration plan (LRP)
Suitable for Industrial Project Good location as it is in close proximity to Chittagong and easy access to the existing industrial area in Chittagong. Lands are already adjacent to an industrial cluster Will allow employment from the immediate region including Chittagong Modern facilities will be established at project area which will help to reduce pressure or traffic from Chittagong city.	Suitable for Industrial Project Alluvial land along the river which may become flooded during the monsoon season Due to its location along the river. It will be considered environmentally sensitive District plan may not allow development but an industrial precedent is already in place Moving informal industries on the site.

2.7.1. Need of Social Safeguard Study

The proposed project comprises of development of land facilities for the Anowara-2EZ with an approximate area of 774.425 acres of which Government khas land 290.875 acres, private land 160.01 acres and others 323.540 acres. Hence there is a scope of expansion the proposed project subject to acquisition of land following a Resettlement Action Plan (RAP). It is also mentionable that there are no indigenous people live in the project area hence the OP-4.10 is not triggered for the development of this EZ. The following Table- 7 shows the outline of the RAP:

Table 9.32. Outline of Resettlement Action Plan (RAP)

Project Background	Brief introduction about the project, description of project interventions and areas of jurisdiction, description of project components causing land acquisition and resettlement scope of land acquisition and resettlement an account of the alternatives considered to avoid and or minimize the adverse impacts
Census and Socioeconomic Surveys	Identify all categories of Project Affected Person (PAP) and their vulnerability, identify all categories of impacts (loss of property and assets, loss of livelihood , impact on group and communities impact on physical cultural resources) An account of impact by gender and vulnerability due to project and the special assistance that is to be provided
Participation and Consultation	An account of the disclosure workshop and consultations with the project affected people/ households about the mitigation measures and implementation procedure.
Legal and policy framework	Analysis of the legal framework for compensation, applicable legal and administrative procedures, gaps between local laws and the WB resettlement policy and the mechanisms to bridge such gaps.

Compensation Entitlements	Description of compensation and other resettlement assistance that will be provided according to the principle and guidelines adopted Social Management Plan
Relocation and Livelihood Restoration	Description of resettlement sites and programs for improvement or restoration of livelihoods and standards living
Grievance redress mechanism	Describe specific arrangement and procedure for receiving and resolution of complaints and grievance from the PAP and their community
Resettlement Budget	Resettlement budget with breakdowns by loss categories and the number of persons entitled to compensation/ assistance Fund flow and disbursement procedures
Implementation Arrangement	Institutional arrangement and management of preparation and implementation of resettlement activities grievance resource property assessment and valuation and implementation time schedule
Monitoring and Evaluation	Describe monitoring arrangement involving project person and local body and mechanism for independent review and evaluation as well as report.

Table 9.33. Resettlement Issues Constraints and Mitigations

Constraints	Mitigation measures
Flood and Water logging	Basis the interaction with the UNO officials and local inhabitants, the proposed EZ area is free from flooding.
Unduly land	Basis preliminary assessment, necessary platforms could be created for accessing the site by cutting and filling for about 2 m to 3 m.
Loss of income/livelihood	Basis preliminary assessment and details shared by UNO office, currently around 100-115 households are undertaking agricultural activities in the site. These households could stand to lose their income/livelihood as a result of the development of the project.
Residential units inside project area	Basis preliminary assessment, approximately 50 households are residing inside the project area.

2.8. Legal and Policy Framework

2.8.1. General

The Social Impact Management Plan will express the Project's commitment to avoid any negative impacts due to the project interventions and mitigate unavoidable impacts ensuring that the project-affected persons are able to maintain or improve their livelihood at the end of the project. The project follows the legal and policy framework reflected in the Social Impact Management

Framework (SIMF) that bridges the gaps between the World Bank Operational Policies (OP) on involuntary resettlement (OP 4.12) and on indigenous peoples (OP 4.10). Use of private and public land for project civil works construction is governed by legal framework on land acquisition that falls short of the World Bank social safeguard operational policies in coverage and compensation.

2.8.2. Legal Framework

The current legislations governing land acquisition in Bangladesh for public purposes are: the Acquisition and Requisition of Immovable Property Ordinance, 1982 (Ordinance II of 1982 with amendments up to 1994), and the East Bengal State Acquisition and Tenancy Act (1951) revised in 1994. The 1982 Ordinance requires that compensation be paid for (i) land and assets permanently acquired (including houses, trees, and standing crops,); and (ii) any other impacts caused by such acquisition. The Ordinance provides certain safeguards for the owners and has provision for payment of “fair compensation” for the property acquired. The rules of the law requires that a feasibility of the acquisition is carried out by the Deputy Commissioners (DC) on site to confirm that there is no objects of religious, cultural and historical significance are within the acquisition boundary and there is no objection from the community. According to the law, GOB is obliged to pay compensation to titled owners only for the assets acquired. Further, the ordinance does not deal with social and economic impacts as a consequence of land acquisition. For instance, the Ordinance does not cover project-affected persons without titles such as informal settler (squatters), occupiers, and informal tenants and leaseholders (without registered agreements). Since there is no acquisition of private or public lands following these laws, the affected persons in Phase II operation for improvement of UZR in Region-2 are subject to coverage under the guidelines and policy framework adopted in the SIMF.

2.8.3. The World Bank Policy

The project intervention as discussed, involve no acquisition of private land but affect some people compelling them partially shifting their residential and business structures from roadsides. No tribal peoples are affected or are among the beneficiaries. The project therefore triggers only the Bank policy on Involuntary Resettlement (OP 4.12). The policy requires that subprojects will (i) avoid or minimize private land acquisition; (ii) avoid or minimize displacement of people and households who may have been using public lands for residential, commercial or other purposes; (iii) mitigate adverse impacts with private land acquisition; displacement from public lands; use the common

property resources and temporary displacement/closure of business and livelihood activities during implementation of civil works. The OP 4.12 covers physical displacement (relocation, loss of residential land, or loss of shelter) and economic displacement (loss of land, assets, access to assets, income sources, or means of livelihoods) as a result of (i) involuntary acquisition of land, or (ii) involuntary restrictions on land use or on access.

2.9. Livelihood Restoration and Income Generation Strategy

Involuntary resettlement is an inevitable outcome of development-induced displacement. It disrupts livelihood and sometimes source livelihood is completely lost. In many cases, impacts on existing properties, assets and resources may lead to impoverishment. One of the main objectives behind a resettlement policy is to minimize the resettlement and to restore livelihood conditions of the affected persons at pre-project level; if not enhanced. It is therefore important that the project includes income restoration mechanisms at planning stage itself.

It is crucial for any income restoration measures that their inherent content should be aimed at long term sustainability.

The project will provide income generation opportunities by way of skill development training and linkage with the on-going government schemes. RAP IA with support from BEZA will assist PAPs in making a choice for feasible income generation activities. Market feasibility study and training need assessment shall be undertaken by the RAP IA to choose the most viable and promising income restoration programs for PAPs. The RAP IA will play a proactive role to mobilize various government schemes in the concerned districts for the benefit to PAPs, particularly BPL, WHH and other vulnerable groups through self-help groups (SHGs) and project beneficiary groups (PBGs) or individually. The RAP IA will work with the PAPs and line department of the concern districts to dovetail these programs to benefit PAPs. RAP IA shall prepare social action plans detailing out specific activities to be undertaken by them in consultation with the PAPs and concerned departmental officials.

2.9.1. Skill Mapping

PAPs eligible for income restoration include the private land owners. It is important to ensure that the project will enable the project affected persons to regain their livelihood. One of the aspects for income restoration activities involves skill mapping of PAPs whose livelihoods are likely to be affected. RAP IA engaged for the implementation of RAP will conduct survey among the PAPs whose livelihood will be impacted for skill development. Thereafter, skill development options linked to the resource base of the area and availability of market shall be discussed with PAPs to ascertain their preferences to select certain skill development

training. RAP IA in consultation with the PAPs, R&R Officer at project site, district administration and other stakeholders in institutional financing and marketing federations will prepare IR plan/proposal for PAPs. The proposal will be submitted to project authority for approval. Upon approval, the IR activities will be started by the RAP IA. The scope of work of the RAP IA to be engaged for the implementation of RAP will include all the above aspects related income generation/restoration activities for PAPs.

As the project impacted households earn their livelihood through agricultural activities, it is prudent to provide the PAP's with training technical know-how to enhance the crop productivity and other best agriculture practices. PAPs will be persuaded to participate in developing feasible long- term income generating schemes instead of short-term arrangements.

RAP IA with help from PIU (Project Authority) will facilitate inclusion of PAPs in the government sponsored poverty alleviation programmes in the area as per the eligibility criteria of the respective programmes.

2.9.2. Benefits of the Occupational Groups due to EZ

From the socio-economical survey conducted, out of the total people surveyed, around 45% were housewives. Agriculture and working as a wage labour are the premier source of livelihood or earnings for the people residing on this affected area. People in this area do not have much money to support their travel to any foreign countries in search for an employment. The percentage of unemployed people was high. The challenges as well as the benefits that people from various occupational sectors can experience from the set-up of the EZ is elucidated in table below.

Table 9.34. Challenges and Benefits anticipated for the Occupational Groups

Occupational Groups	Challenges	Benefits
Agricultural Wage Labours and wage labours	<ul style="list-style-type: none"> • Challenge especially for the agricultural wage labours to match the skill requirement for working in the EZ • Wager labours that are associated with industrial activities will also have lesser challenge to work for the EZ. • Wage labours working in the line of construction will face lesser challenge to get absorbed in the construction phase of the EZ 	<ul style="list-style-type: none"> • The major benefit for them is the job security and the assurance of a permanent job • Better salary and a fixed earning • Opportunity for them to get trained for specific skill set which will make them competent in the market
Factory Workers	<ul style="list-style-type: none"> • competency shall be less for a person working in a factory 	<ul style="list-style-type: none"> • Occupational health and safety hazards for working in RMG sector • Presence of an EZ as discussed will also provide educational benefit for their children. • Wage disparity among the women and men workers
Unemployed youth	<ul style="list-style-type: none"> • Low illiteracy rate in the region the need for the Development of skills imperative for employment in the Economic Zone 	<ul style="list-style-type: none"> • Preferential access to knowledge related to foreign markets and technologies that may generate novel insights into unexploited opportunities for new businesses. The development of the EZ will impact social capital development of the region through three broad channels mainly: employment generation, Skill development
Housewives	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Development of EZ will provide women with employment, and, as such, they offer a unique opportunity to empower

	women by providing economic opportunity outside of the informal sector.
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2.10. Inclusion and Gender Mainstreaming

2.10.1. Gender and Vulnerability

Gender and vulnerability analysis will be an integral part of the social impact assessment of project. Social analysis will focus gender and vulnerability based on findings from specific queries during social screening and subsequently during social impact assessment including review of secondary data, community consultation and household surveys. The quantitative and qualitative analysis will bring out sex disaggregated data and issues related to discrimination by gender vulnerability, needs, constraints, and priorities; as well as understanding whether there is a potential for inequitable risks, benefits and opportunities relating to gender and vulnerability. Based on the social analysis, specific interventions will be designed and social management plan will be prepared. The project approach for inclusion and participation encourages gender mainstreaming in the project cycle. Gender equity and empowerment will be ensured through encouraging participation of men and women equitably in the project cycle.

The socio economic profile of Anowara Upazila reveals significant gender gap in literacy, sex ratio, work force participation and access to basic facilities. Low awareness level couple with insignificant role in decision making at household and community level further poses constraints for women and other vulnerable groups to access the opportunities created by the project equitably.

Integrating Social and Gender issues: The BEZA will ensure that project activities development and improvement are socially inclusive and gender friendly. In preparation and design of project activities, the BEZA will consider that

The project proposals will inclusive of the existing socioeconomic and gender issues and concerns on the existing services.

- Key factors will identify that have caused or would cause discriminations in accessing basic services among the local communities, in terms of location and socioeconomic characteristics, and between men and women.

- The project will identify and implemented that would effectively address the social and gender issues, with a focus on equity in the distribution of benefits.
- In addition to those for the communities at large, feasibility of alternative measures are assessed that would help women and vulnerable groups to access the basic services improved under project activities.
- Key stakeholders will identify including women, who could be mobilized to create a community based organizations participate in development and poverty reduction.
- Monitoring of project inputs concerning benefit to women will invite their participation that will make the process more transparent to them. Women shall be encouraged to evaluate the project outputs from their point of view and their useful suggestions shall be noted for taking necessary actions for further modifications in the project creating better and congenial situation for increasing participation from women.

2.10.2. Involvement of Women in Operation Activities

The project will provide employment opportunities during the operation phase for women in the project area. Staff residential quarters will be provided for the workers and their families at the project site. The design of these quarters will be duly approved as per the design requirements.

Health centre will be provided in the workers having at least a visiting doctor to tackle first-aid requirements or minor accidental cases, linkage with nearest higher order hospital to refer patients of major illnesses and critical cases.

Women shall be exempted from night shifts and Day circle facilities shall also be provided for the working women to leave their children in crèche during work time. The crèche should be provided with at least a trained ICDS (Integrated Child Development Scheme) worker with ayahs to look after the children.

2.11. Training Needs Assessment

One of the strategies for economic sustenance of the PAPs is to help them improve their production level or to impart new skills or upgrade skills through training. As the project affected persons are dependent on livelihood from agriculture, have no skill endowment, training is an important component of income restoration. For PAPs who intend to diversify their economic activity, suitable income restoration schemes will be identified on individual basis and training need would be assessed. Besides training in scheme specific skills, general entrepreneurship development will also form part of the

training program, mainly to improve the management capabilities of PAPs.

Executing Agency (EA) will ensure that PAPs receive training in desired trades. The EA will facilitate training by suitable agency or a professional and competent outside agency. The monitoring of training schemes will be carried out along with the monitoring of other components of RP by the external monitoring and evaluation agency.

There are many eminent NGOs and Developmental Policies that can be used as a tool for empowering the women population. Few of the organizations, conventions and committees that can be coordinated with during the training phases for not only to aid the development skill set of a women but for also making them more self-dependent are:

Women Developmental Program: National Women Organization is implementing Women Developmental Program in 64 districts and 50 Upazila. During training phase; camps, representatives from National Women Organization can be requested to provide the necessary developmental tips to the women populations who are majorly bound my household chores.

Bangladesh Shishu Academy: It was founded in 1976, four years after the liberation. The aim of this academy is to augment the socio-economic and mental growth of a girl child from the beginning.

Forty Four (44) focal points have been nominated with the view to coordinating the women development activity in various ministries and organization. The management body of the proposed EZ can coordinate with any of these centers to conduct various women developmental activities.

National Council for Women and Child Development (NCWCD): 50 member association NCWCD has been formed with PM in the chair for review of the socio-economic development of women at National level, policy making and implementation of developmental programs.

Child and Women Abuse Prevention: An inter-ministerial committee with district and upazilla level bodies aiming at prevention of abuse prevention has been promuglated. Members of these committee can also be coordinated with the training programs to make the women much more self-dependent.

The following NGOs in Bangladesh primarily aimed at women empowerment can be consulted especially to provide interest specific skill set to women:

- Department of Youth Development
- Euro-Bangla Foundations (EBFs)

- Dhaka Ahsania Missions
- Bangladesh NGO Foundations
- BRAC Foundations
- Caritas
- ASA
- World Vision
- Samaj Parivartan Kendra
- Country Mission
- Grameen Bank
- Vikrampur Ain Sahajya Sangstha

These all are set of organizations and NGOs which participates actively especially to empower the specific skill set of a women. BEZA along with the RAP IA can collaborate with these organizations to provide necessary set of trainings to women and to aid them to develop their skills. Bangladesh NGO Foundations is a conglomerate of many NGOs that works on skill development of women. Imparting education and knowledge, skill development and trainings related to first aid, firefighting, better family planning and AIDS awareness are among the specializations of Bangladesh NGO Foundations.

2.12. Grievance Redress Mechanism (GRM)

2.12.1. Introduction and Objectives

The RAP provides for a mechanism to ensure that the benefits are effectively transferred to the beneficiaries. However, need also exists for an efficient grievance redressal mechanism which will assist the PAPs in resolving queries and complaints. Land Acquisition will take place according to The Acquisition and Requisition of Immovable Property Ordinance, 1982. Compensation and entitlements will be paid according to Resettlement and Social Management Framework (RSMF), 2015 by BEZA. Any disputes or grievances will be addressed through the grievance redressal mechanism proposed here. Detailed investigation will be undertaken which may involve field investigation with the concerned PAPs. The GRCs are expected to resolve the grievances of the eligible persons within a stipulated time. The decision of the GRCs is binding, unless vacated by court of law.

BEZA will establish the Grievance Redress Mechanism (GRM) for the project site to address grievance and complaints brought by the employed in the individual EZs. The GRM will deal with the case that the Human Resources department in the individual enterprises could not resolve, or resolved in manners not acceptable to the aggrieved person. The GRM will formulate a set of principles to ensure full transparency of the hearing and fairness in the decision-making process and constitute an EZ level Grievance Redress Committee (GRC) to actually deal with the grievances and complaints. The GRM will however not pre-empt a worker's right to go to the courts of law.

2.12.2. GRC and the Redress Process

The GRM will be managed by Grievance Redress Officers (GROs). The Upazila Nirbahi Officer (UNO) and the Deputy Commissioner (DC) will be the GRO at the Upazila and District levels respectively. The Project Director (PD) will act as the GRO at the central level. Members of BEZA as discussed will be part of this committee. Apart from BEZA members, local Upazilla Chairman, local Union Parishad Chairman, Upazilla Nirbhaya Officer, male and female representatives from the affected population shall also be members of GRC.

BEZA will hold the hearing within a week of receiving the complaint, keep detailed records of complaints, hearing and decision-acceptance and rejection, with reasons;

If the decision made at this level is not acceptable to the aggrieved person, GRC will refer the case to the BEZA headquarters with details of the complaint and minutes of the hearing at the EZ level. BEZA will review the case and send its decision within 4 weeks or earlier;

If the decision at any level is accepted by the aggrieved person, it will be binding on the enterprise where the perpetrator is employed.

The GRC at the EZ level will establish a simple computerized system to record the complaints, information on the complaints and perpetrators with names of the enterprises they are employed in, acceptance/rejection of the complaints by GRC/BEZA headquarters and the reason thereof, follow – up information that might be sought for periodic review of the EZ developmental activities.

2.12.3. Information dissemination

Attention of the PAPs will be invited to the proposed redress system for a quick, inexpensive and amicable settlement of claims for enhanced compensation. They will also be advised to get their records of rights updated. All possible efforts will be put forth to motivate the affected landowners and structure owners for a voluntary and amicable settlement of their claims outside the court. Most of the issues will be settled out of court as far as possible. Handouts will be distributed among all the affected persons highlighting the prospects of amicable settlement of dispute in question, outside the court, speedy and at lesser expense along with the timetable of inquiries and spots inspections of the committee. Besides, public announcements will be made in affected areas. Press notes will be released in local newspapers to aid publicity.

2.13. Suggestions and Complaint Handling Mechanism (SCHM)

BEZA recognizes the importance of complaint handling mechanism and hence intends to establish a SCHM for the project. The communication channels to report project related complaints/concerns will be disclosed at all levels of institutions. Under the provisions of the Right to Information Act, 2009, an Act of the Republican of Bangladesh which provides for setting out the practical regime of right to information for citizens, any citizen may request information from a "Responsible Officer" who shall provide the information within 20 working days from the date of receipt of application. In case more than one information providing unit or authority is involved with the information requested, then information shall be given in 30 working days from the date of

application. The Act also requires every public authority to computerize their records for wide dissemination and to proactively publish certain categories of information so that the citizens need minimum recourse to request for information formally. However, it is quite likely that many people may not use the provisions of this Act, and will only resort to the Act in limited cases covering serious concerns. Being a project involving several divisions, districts and large scale of civil works along with R&R and Environment issues, the project is likely to receive many suggestions, complaints, inquiries, etc through the project implementation period. Therefore, BEZA needs to establish SCHM as a good practice to address public concerns pertaining to various issues. SCHM will report all project related LA and R&R of the PAPs for redressal through GRC as appropriate. Several communication channels viz., toll free phone number, dedicated email, mechanism for on line submission of suggestions/complaints/inquiries, provision of suggestion/complaint box (at site and project office), post and other suitable means shall be set up for suggestion and complaint handling.

At the onset of the project implementation, the appointed RAP IA shall disseminate the information regarding establishment of Suggestions and Complaint Handling Mechanism for this project among the Project affected / benefited peoples. The appointed RAP IA will explain the process through various applicable mode to be followed / adopted by the peoples for filing complains & suggestion.

2.13.1. SCHM Users

The users of SCHM could be anyone from the project stakeholders, including civil servants (from BEZA, Upazila Office, Union Office) contractors, consultants, project affected persons (communities), CSOs/NGOs, any other public, who realizes either impact from or relation to the concerned project.

2.13.2. Management of SCHM

The overall responsibility for the operation and management of SCHM will rest with the BEZA. The SCHM shall be solely handled by BEZA. BEZA shall appoint a dedicated personnel or a team of people to handle the queries as raised by the stakeholders, civilians etc. The entire system of SCHM shall be under the supervision of Project Director or the Social Expert Officer appointed for this project. All the complaints, suggestions starting from the pre-construction activities on-site and off-site infrastructure associated with the EZ development shall be directly communicated to the dedicated group or team of people at BEZA. The suggestions

or complaints shall be submitted by using a toll free number or/and email or/and post. Toll free number, a specific post bag number and an email id dedicated to SCHM shall be set up prior to any of the activities as planned and shall be very well communicated to the stakeholders, civilians etc by announcement, pamphlets, sign boards.. The bidding documents must have a requirement for the contractor to put in place signs at the start and end of the project road which will display the toll free number and email account to submit enquiries, suggestions and complaints to the concerned dedicated group or team of people for

2.13.3. SCHM

The overall responsibilities of the dedicated person or a group of people assigned to address the queries of the stakeholders, civilians under SCHM are:

- To respond to as many inquiries/comments as possible
- To receive and sort concerns/grievances
- To forward them to appropriate team members for resolution as per recommendation of the PD or the Social Expert Officer;
- To track/monitor complaint/grievance acknowledgement and resolution
- To review and report on complaint/grievance data and trends to the PD or the Social Expert Officer.

The following channels will be established to receive inquiries/comments and concerns / grievances:

- Toll free phone
- Email
- On-line form
- Regular post/mail
- Suggestion box/Walk-ins

It is critical to assign a specific e-mail ID and a phone/fax number, and to set up an easy-to-access suggestion box and walk-in office. The project website will have a permanent sub-window that will contain an on-line form and facilitates grievance/complaint collection

2.14. Public Consultation, Stakeholder analysis and Information Discloser

Lists the details of stakeholders consulted at Upazila office to obtain first-hand information from about the proposed EZ.

Table 9.35 List of Stakeholder at Anowara-II EZ

Name	Designation	Phone Number
Mr. Goutam Baroi	UNO, Anowara Upazila	01736489800
Mr.Md. Masudur Rahman	Asst. Commissioner(land)	01767670950
Moulana. Md. Eunos	Imam, Anowara Upazila office Mosque	01813714245
Mr. Alamgir Khaled	Business Man	01815109325
Abu Bakar Siddique	Accountant, LGED, Anowara Upazila	01724145379
Jaynab	Community Woman, Hajigao, Anowara	01839008731
Rumi Akhter	Community Woman, Hajigao, Anowara	-
Rina Akhter	Community Woman, Bailchora, Anowara	-
Haji Mojahelul Haque	Local people	-
Babu Mia	Business man, Anowara-II EZ area	01714987522
Saiful	Labor, Anowara-II EZ area	01825165374

Different techniques of consultation with stakeholders were used during project preparation, viz., in-depth interviews, public meetings, group discussions, Individual Consultations etc. to understand the socio-economic profile of the community and the affected families, semi structure questionnaires and check list were designed and information was collected from the individuals on one-to-one basis. The key informants during the project preparation phase included both individuals and groups vis-à-vis:

Preparation of the Social Impact Assessment report, participatory public consultation conducted. The member of union parishad, Upazila official, and district level Official from different dept.,nd individual will attended the meeting. In addition, walk-through informal group consultations will also held. This section will cover

- Formal and informal meeting at the project site
- Stakeholder meeting and FGD
- Issues Raised by the Participants
- Feedback, Suggestions, and recommendations of the Participants

2.14.1. Stakeholder Analysis Matrix

Analyses revealed that majority of stakeholders were supportive and showed positive interest in the project and promised to ensure good support during execution of the project. District, Upazila and Union level authorities were consulted. *Of the 774.25 acres proposed for the project site, the Khas land constitutes 290.875 acres (37.56% of the total land), private bondobostho" land constitutes.*

323.54 acres (41.77 acres) and the private land constitute 160.01 acres (20.66 % of the total land). For the privately owned property owners concerns about the compensations and restoration of the means of livelihood were raised. The stakeholder analysis for the project is presented in below table.

Table 9.36. Stakeholder Analysis

Stakeholder Category	Relevant Stakeholders	Characteristics (Social, location, size, organizational capacity)	Interests in terms of support / opposition	Influence (H-High, M-Medium, L-Low)
Government	UNO, Anowara Upazila	Anowara Upazila Chittagong	Positive with assurance of full support. Assured for providing any legal support that might require to facilitate this project	H
	Asst. Commissioner (land)			
	Accountant, LGED, Anowara Upazila			
	Imam, Anowara Upazila office Mosque			
Other External / internal stakeholders	Off-site residential settlements within the project influence area	Village Bailchora, and Hajigao, Anowara	Stakeholders perceive that the proposed EZ will increase mobility, employment generation, and above all better economic integration of the area with	H

		the major market and trade centres within and outside the districts.
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2.14.2. Specific Consultations

In addition to the local/village level meetings, consultations were organized at specific locations; - critical stretches along and outside the proposed locations within and outside the proposed area for the EZ developments. At these locations, FGDs were also organized.

2.14.3. Consultation with Private Sector

To understand the preliminary level demand assessment for the EZ under discussion to gauge the interest of unit investors from various sectors. Some of the major aspects which will be discussed with the private investors to understand their interest are as below:

- Location attractiveness
- Availability of physical infrastructure
- Availability of Social infrastructure
- Ease of availability of quality manpower
- Marketability of the site
- Support required from the Government

The salient features of the proposed EZ of the proposed Sabrang Anowara-II EZ with vary investors in Bangladesh to understand how attractive the project is for them. To understand the macro level infrastructure requirement that any investor looks upon table below.

Table 9.37. Available Consultation with Private Sector

Parameter	Discussions	Except from the interaction
Connectivity of the site	The EZ site should be located in the proximity of any industrial hub and major cities. The connectivity by road and rail should be excellent and also the access to port and cargo facility is important. The proposed site of Anowara-2	The site seems to have good connectivity and it also has access to Chittagong Port. Connectivity is the prerequisite in the investment decisions for any economic zone site.

	is located near to Chittagong, which is the industrial hub of Bangladesh and it has access to Chittagong Port, which is the largest sea-port in Bangladesh. Several industrial units and EPZs are located nearby to the proposed site.	
Proximity to Port	The proposed site in Anowara-2 has access to Chittagong Port, which is the largest port in the country.	The access to port shall enable us to export RMG products to USA as our major customers are located there.
Proper access road	Existing access road from the highway R170 for a length of 500m need to widened for providing better access for the proposed EZ.	Access road is also important as there will be significant inflow and outflow of load carrying vehicles in the EZ
Utility Connection-availability of power	Julda power plant of 100MW capacity is located 4Km away from the proposed EZ. An existing 132/33 kVgrid substation is located of Julda and the ultimate requirement of EZ can be met from this substation.	Utility connections such as electricity, gas and water are the most important parameters that an investor shall consider before evaluating
Utility Connection-availability of gas	It is understand that Karunaphuli gas Distribution Company limited will not be in a position to meet the demands of the proposed EZ. Hence, some alternate arrangement has to be made for the gas connection to the proposed EZ.	
Utility Connection-availability of water	Water should be available in the vicinity of the site	

Marketability of proposed Anowara-2 EZ:

Location of the site	The proposed EZ is located amidst the industrial centre. Chittagong is the industrial city of Bangladesh and there are several EPZs and other industrial units in this region. Also, access to Airport and Chittagong Port makes this location makes this location attractive.	Chittagong is the industrial hub in Bangladesh and it will be easy to set up industrial units in this region. The location is very attractive for the investor.
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Demand among local unit investor	Considering the location and other facilities available, the demand for development of units in the proposed EZ in Anowara-2 should be quite high	The demand for this site shall be quite high among local investor The location is very attractive and investors from textile industry shall be quite interested.
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2.14.4. Details of Consultations

Detailed consultations in the form of Focused Group Discussions (FGDs) carried out at different locations of the project affected area, discussed issues on land acquisition, compensations for land and structures, alternative alignments, general perception about the project and suggestions from participants to mitigate adverse impacts from relocation and loss of livelihood, resettlement options CPR requirement, etc. The details of the Focused Group Discussions are presented in below table.

Information collected during consultation has been shared with environmental and technical team. Suggestion obtained from people and their representatives have been analysed based on technical and economic feasibility.

The results of the Details of Consultations is summarized

Table 9.35. Details Stakeholder Consultations

Level of consultation	Number of Participant	Issue Raised	Suggestion from Participant	Mitigation Measures
Group of people with in the affected area	22	<ul style="list-style-type: none"> Part of the privately owned land is used for agriculture and it services of income for most of the households Weather the industrial set-up at the Economic Zone proposed shall provide them with employment opportunities. 	<ul style="list-style-type: none"> Adequate livelihood support and income restoration to the affected persons The training system should lead to trained young people in employment skills who are open to immediate employment opportunities The project 	<ul style="list-style-type: none"> Project information Shall be shard regularly and transparently Provision of income restoration plan and skill development training to the PAPs. Employment opportunities for the offered youths shall be provided on a priority basis.

			affected youths shall be prioritized for employment opportunities	<ul style="list-style-type: none"> Interested specific training shall be provided to all youths affected by the development of this project
Women member of the affected household	14	<ul style="list-style-type: none"> Will the women of the community get equal opportunity like the men to get involved in the development activities of EZ. Will they be also get an opportunity to learn get trained and work during the beginning of the construction activities of EZ. 	<ul style="list-style-type: none"> Women shall be trained. They shall be provided equal opportunities for employment 	<ul style="list-style-type: none"> Women shall be provided with equal opportunities No gender bias shall be made, training shall be provided based on person's interest.
Upazila office	11	<ul style="list-style-type: none"> The EZ shall be developed considering the opportunities to local people staying in the Anowara upazila. The design for the EZ development shall be done in anowara upazila. The design for the EZ development shall be done in a way that should minimize the adverse social impacts. 	<ul style="list-style-type: none"> Priority for the employment should be for the people residing in the Anowara upazila The authorities should be updated on the status of the development of the EZ. 	<ul style="list-style-type: none"> The local government bodies and PAPs shall be timely informed about the project developments Employment opportunities with the skill of the local villagers will be provided.

2.14.5. Consultation outcomes

Stakeholders consulted were enthusiastic on the project; they also expressed apprehensions on the compensation that will be provided due to the private land acquisition. The stakeholders expressed that the development of the Economic Zone will bring social and economic development in the region providing permanent source of income for the PAPs and also to other nearby residential settlements. There is paucity of employment opportunities and health facilities

in the region and villagers tend to travel long distances to Dhaka for better medical facilities which is affecting overall social and economic development. Agriculture is the main economic activity in the project area. The land owners were apprehensive regarding the acquisition of their owned property which will invariably cause loss of their lone source of livelihood. The land owners were inquisitive of the proposed plan, land acquisition process, whether proper compensation will be provided and whether local residents whose agricultural lands will be impacted be provided any alternative means of employment.

The community perceives that the project will help in increasing better connectivity, promote better and sustained employment opportunities, better service facilities, and better conveyance. Apprehensions raised by the community include loss of agricultural lands, loss of house and settlement options for few people putting up within the site area, amount and time for the compensations, factors which will determine the compensation, if resettlement happens what would be the likely location.

Further, the analysis of the key positive impacts, apprehensions and perceived negative impacts and the suggestions/recommendations as documented during stakeholder consultations are detailed in below table.

Table 9.36. Positive Impacts perceived by the Stakeholders

Positive Impacts perceived by the Stakeholders
<ul style="list-style-type: none"> • Increase in direct and indirect employment opportunities for both the genders
<ul style="list-style-type: none"> • Provision of enhanced basic amenities
<ul style="list-style-type: none"> • Facilitate improved access to market centres, educational institutions, healthcare facilities, and offices located in Chottagong districts and more especially in the Anowara upazilla.
<ul style="list-style-type: none"> • The cumulative positive impacts of the project will result in increased mobility, employment generation, and above all better economic integration of the area with the major market and trade centers within and outside the districts

Figure 9.7. Stakeholder Consultations



Stakaholder consultation being conducted with UNO, Anowara Upazila



Stakaholder consultation being conducted with Assistant Commissioner(land), Anowara Upazila



Stakaholder consultation being conducted with mosque Imam, Anowara.



Stakaholder consultation being conducted with UNO office, Anowara Upazila



Stakaholder consultation being conducted influencial people, AnowaraUpazila.



Focus Group discussion(FGD) being conducted with the villager , AnowaraUpazila



Door to Door Consultation conducted at various locations within the project site

2.15. Social safeguard checklist

- Does the project respect dignity, cultural property and uniqueness and rights of indigenous/local people
- Are property rights on resources such as land tenure recognized by the existing laws
- Will the project cause social problems and conflicts related to land tenure and access to any other resources
- Does the project incorporate measures to allow affected stakeholders' information and consultation
- Will the project cause change to beneficial uses of land and other resources
- Will the project cause technology or land use modification that may change present social and economic scope of activities
- Will the project cause dislocation/displacement or involuntary resettlement of people
- Will the project cause uncontrolled in-migration (short- and long-term)
- Will the project cause increased local or regional unemployment
- Does the project include measures to avoid forced labour and/or child labour/modern slavery
- Does the project include measures to ensure a safe and healthy working environment for workers employed as part of the project
- Will the project cause impairment of recreational/entertaining opportunities
- Will the project cause impairment of indigenous people's livelihoods or belief systems
- Will the project cause disproportionate impact to women or other disadvantaged or vulnerable groups
- Will the project involve and or be complicit in the alteration, damage or removal of any critical cultural heritage
- Does the project encourages unsocial activities
- Does the project threat violation of women dignity
- Does the project causes drag and human trafficking

CHAPTER 10

FINANCIAL ANALYSIS

1. ASSUMPTIONS FOR FINANCIAL ANALYSIS

1.1. Investment Costs

- 1.1.1. The financial analysis is carried out in one scenario: “with off-site costs” scenario. For, off-site construction costs are only about US\$4,669,551, as detailed in the section below, so that it is meaningless to analyse the impact of the cost structure by disaggregating into on-site and off-site.
- 1.1.2. **Fixed costs:** Investment is required to develop the Sabrang TP. There will be 3 phasing in the development schedule.
- 1.1.3. Exchange rate of US\$1.00=BDT78.54 is used.
- 1.1.4. Considering the aforementioned, the total investment costs for the development of Sabrang TP are about US\$289,458,101 as presented in the following:

Table 10.1. Investment Costs for the Development of Sabrang Phase I

1. On-Site Investment Costs		
Investment Type	US\$	BDT
Earth work	63,816,095	5,012,116,106
Road and pavement	6,694,783	525,808,270
Water supply	14,176,851	1,113,449,850
Storm water	2,959,676	232,452,964
Sewerage	11,633,063	913,660,750
Power supply	1,496,142	117,506,975
Telecommunication	175,244	13,763,691
Structure	2,005,348	157,500,000
Landscape	898,173	70,542,500
Miscellany cost	10,854,481	852,510,938
Total Construction Cost	114,709,855	9,009,312,044
Engineering cost	6,882,591	540,558,723
Contingency	18,238,867	1,432,480,615

Tax	20,974,697	1,647,352,707
Total Cost	160,806,011	12,629,704,089
2. Off-Site Investment Costs		
Investment Type	US\$	BDT
External water supply	2,080,087	163,370,000
External power supply	1,250,905	98,246,110
Total Construction Cost	3,330,992	261,616,110
Engineering cost	199,860	15,696,967
Contingency	529,628	41,596,962
Tax	609,072	47,836,506
Total Cost	4,669,551	366,746,544

Phase II

1. On-Site Investment Costs		
Investment Type	US\$	BDT
Earth work	24,299,259	1,908,463,799
Road and pavement	4,878,989	383,195,789
Water supply	2,153,183	169,110,985
Storm water	2,164,378	169,990,268
Sewerage	2,690,483	211,310,510
Power supply	1,383,588	108,667,018
Telecommunication	131,317	10,313,673
Structure	0	0
Landscape	568,627	44,660,000
Miscellany cost	4,314,881	338,890,783
Total Construction Cost	42,584,706	3,344,602,824
Engineering cost	2,555,082	200,676,169
Contingency	6,770,968	531,791,849
Tax	7,786,614	611,560,626
Total Cost	59,697,370	4,688,631,469
2. Off-Site Investment Costs		
Investment Type	US\$	BDT
External water supply		
External power supply		
Total Construction Cost	0	0
Engineering cost		
Contingency		
Tax		
Total Cost	0	0

Phase III

1. On-Site Investment Costs		
Investment Type	US\$	BDT
Earth work	28,348,587	2,226,497,984
Road and pavement	2,621,013	205,854,394
Water supply	3,960,464	311,054,865
Storm water	1,469,845	115,441,645
Sewerage	3,384,128	265,789,390
Power supply	1,335,400	104,882,308
Telecommunication	104,658	8,219,814
Structure	0	0
Landscape	226,159	17,762,500
Miscellany cost	4,407,127	346,135,729
Total Construction Cost	45,857,380	3,601,638,629
Engineering cost	2,751,443	216,098,318
Contingency	7,291,323	572,660,542
Tax	8,385,022	658,559,623
Total Cost	64,285,168	5,048,957,111
2. Off-Site Investment Costs		
Investment Type	US\$	BDT
External water supply		
External power supply		
Total Construction Cost	0	0
Engineering cost		
Contingency		
Tax		
Total Cost	0	0

1.2. Investment Scheduling

- 1.2.1. **Pre-Investment Costs:** Cost of US\$239,843 for pre-feasibility study and environmental and social impact analysis is included.
- 1.2.2. **Working Capital:** Working capital is required for the initial construction period until such time as the site is made ready for rent. And it is not necessary to consider financing working capital either from loan or equity (BEZA, the GOB, contribution).
- 1.2.3. **Source of Fund:** The fund for the development of the Sabrang TP is entirely provided by the GOB. It is assumed that **the GOB obtains loan covering the entire investment costs for the development of Sabrang from the International Development Association (IDA) at 3% interest per annum with a 10-year grace period and a 20-year repayment period.**
- 1.2.4. **Summary of Investment:** The total investment projection for the development of Sabrang is presented below.

Table 10.2. Investment Schedule

Phase	Year	With Off-Site		Total	Remark
I	2016	239,843		239,843	Pre-feasibility study
	2016			-	
	2017	-	-	-	Construction
	2018	-	-	-	Construction
	2019	74,188,537	-	74,188,537	Construction
	2020	6,762,590	-	6,762,590	Construction
	2021	77,761,846		77,761,846	
	2022	6,762,590	-	6,762,590	Construction
	Sub total	165,475,562	-	165,475,562	
II	2023	59,697,370	-	59,697,370	Construction
	2024	-	-	-	Construction
	2025				Construction
	Sub total	59,697,370	-	59,697,370	
III	2025	64,285,168	-	64,285,168	Construction
	2026	-	-	-	Construction
	2027				Construction
	Sub total	64,285,168	-	64,285,168	
Total	289,458,101	-	289,458,101		

1.3. Income and Expense Summary

1.3.1. **Source of Revenue:** The source of revenue yielded as a result of the development of the Sabrang TP is incurred mainly from rent/lease of the lands it supplies to investors after the preparation.

1.3.1.1. As discussed in the previous chapter, the total available lands in Sabrang are about 4,158,000m²; however, the lands available for rent/lease would be 2,127,000m². About 2,031,000m² would be set aside for public purpose, such as parks, green spaces, pedestrian walks, beach areas, water body, etc.; hence, the lands are not subject to income generation.

1.3.1.2. The details of the land use plan are presented in Table 10.3. below.

Table 10.3. Land Allocation Plan

		(Unit in m ²)
I. Land for Rent/Lease: (1)+(2)+(3)+(4)		2,127,000
Residential	Residential (Apartment)	104,000
	Sub-total (1)	104,000
Commercial	Central Commercial*	182,000
	Business	16,000
	Sub-total (2)	198,000

Tourism	Eco-Tourism	174,000
	Ocean Park	120,000
	Leisure & Tourism**	293,000
	Resort	704,000
	Golf Course	483,000
	Sub-total (3)	1,774,000
Public Facility	Public Facility	24,000
	Marina	24,000
	Parking	3,000
	Sub-total (4)	51,000
II. Land for Public Purpose: (5)+(6)		2,031,000
Open Space	Park	71,000
	Green Space	193,000
	Pedestrian	15,000
	Beach Area	151,000
	Water body	795,000
	Sub-total (5)	1,225,000
Others	Road	505,000
	Reserved Area (Existing Settlement)	245,000
	Infrastructure	56,000
	Sub-total (6)	806,000
3. Grand total (I+II)		4,158,000

Note: * Includes casino and shopping; ** Includes upper class hotels

1.3.1.3. As such, about 2,127,000m² (about 22,894,838ft²) will be considered as the lands from which rent/lease income will be generated. Hence, financial analyses for this study are based on the lands subject to rent/lease—2,127,000m².

1.3.1.4. Other premises regarding income and expense also are as follows:

- Rent income from lands accrues from the lands available for rent/lease;
- Rent for the entire lands for rents starts at **US\$3.00 per m² regardless of business categories**. It is necessary because (1) such a lower rent will obviously lessen investors' risk, so that it will signal to investors that the GOB is determine to promote tourism industry; and that (2) it will serve as a selling-point of Sabrang to international investors.
- The **rent will increase at 35% at every 5 years reflecting inflation** (change in consumer price index, CPI, 7% a year).⁴⁶

⁴⁶ Bangladesh's CPI for the last 5 year was on average about 7.63%.

1.3.2. **Expenses:**

- Administration cost: Assumed that 10% of revenue will be set aside as administration and marketing costs. The administration cost includes the expenses for power, water, communication, fuel, maintenance cost, insurance, etc.
- Salaries and benefits for the managing staff members: Assumed that salaries and benefits for the management team stationed at Sabrang are not included in the expense outlays, as they are charged at the head office;
- Interest expenses: Interest will start to accrue after a 10-year grace period at 3%.
- Amortisation expense: Amortisation, if applicable, will be treated over a 5-year period.
- Depreciation expense: Investment for construction cost will be depreciated over a 20-year period.
- The income and expense summary is worked out for a period of 20 years from 2021 when the construction will be completed and the site will be made ready for rent.

1.3.3. **Rentable Areas:** Considering the land allocation plan and the construction phases, the rentable lands are available for investors for a 10-year period as shown in Table 10.4.

1.3.4. **Income and Expense Summary (with off-site costs):** The operation is profitable. The profit improves quickly, as investors move into the site. The Income and Expense Summary for “with off-site costs” scenario is presented in Table 10.5 below.

Table 10.4. Land Allocation Plan by Year (Land for Rent/Lease)

		m ²	Phase I							Phase II		
			Y1	Y2	Y3	Y4	Y5	Y6	Total	Y7	Y8	Total
Residential	Residential (Villa)	104,000	0	0	0	0	0	0	0	0	0	0
	Sub-total	104,000	0	0	0	0	0	0	0	0	0	0
Commercial	Central Commercial	182,000	0	0	0	0	120,000	0	120,000	15,500	15,500	31,000
	Business	16,000	0	0	0	0	0	0	0	8,000	8,000	16,000
	Sub-total	198,000	0	0	0	0	120,000	0	120,000	23,500	23,500	47,000
Tourism	Eco-Tourism	174,000	0	0	0	0	0	0	0	0	0	0
	Ocean Park	120,000	0	0	0	0	0	0	0	120,000	0	120,000
	Leisure & Tourism	293,000	0	0	0	0	0	0	0	91,000	79,000	170,000
	Resort	704,000	0	0	0	0	96,000	0	96,000	91,000	272,000	363,000
	Golf Course	483,000	0	0	0	0	483,000	0	483,000	0	0	0
	Sub-total	1,774,000	0	0	0	0	579,000	0	579,000	302,000	351,000	653,000
Public Facility	Public Facility	24,000	0	0	0	0	0	0	0	0	0	0
	Marina	24,000	0	0	0	0	0	0	0	24,000	0	24,000
	Parking	3,000	0	0	0	0	0	0	0	1,500	0	1,500
	Sub-total	51,000	0	0	0	0	0	0	0	25,500	0	25,500
Total:		2,127,000					699,000	0	699,000	351,000	374,500	725,500

		m ²	Phase III		
			Y9	Y10	Total
Residential	Residential (Villa)	104,000	48,000	56,000	104,000
	Sub-total	104,000	48,000	56,000	104,000
Commercial	Central Commercial	182,000	15,500	15,500	31,000
	Business	16,000	15,500	15,500	31,000
	Sub-total	198,000	0	0	0
Tourism	Eco-Tourism	174,000	0	174,000	174,000
	Ocean Park	120,000	0	0	0
	Leisure & Tourism	293,000	74,000	49,000	123,000
	Resort	704,000	139,000	106,000	245,000
	Golf Course	483,000	0	0	0
	Sub-total	1,774,000	213,000	329,000	542,000
Public Facility	Public Facility	24,000	24,000		24,000
	Marina	24,000	0	0	0
	Parking	3,000	1,500	0	1,500
	Sub-total	51,000	25,500	0	25,500
Total:		2,127,000	302,000	400,500	702,500

Table 10.5. Income and Expense Summary (with Off-site Cost, Unit in US\$)

	2020	2021	2022	2023	2024	2025	2026	2027	2028
Add: Rent revenue from central commercial, tourism and leisure	-	4,320,000	4,320,000	8,154,000	11,556,000	14,778,000	17,100,000	17,100,000	23,085,000
Add: Rent revenue from other areas	-	20,844,000	20,844,000	29,646,000	39,726,000	47,376,000	59,472,000	59,472,000	80,287,200
Total Revenue	-	25,164,000	25,164,000	37,800,000	51,282,000	62,154,000	76,572,000	76,572,000	103,372,200
Less: Expenses									
Administration cost	-	2,516,400	2,516,400	3,780,000	5,128,200	6,215,400	7,657,200	7,657,200	10,337,220
Interest	-	-	-	-	-	-	-	-	-
Depreciation and Amortisation	-	7,983,617	8,321,747	11,306,615	11,306,615	14,520,873	14,472,905	14,472,905	14,472,905
Total Expenses	-	10,500,017	10,838,147	15,086,615	16,434,815	20,736,273	22,130,105	22,130,105	24,810,125
Gross Profit	-	14,663,983	14,325,853	22,713,385	34,847,185	41,417,727	54,441,895	54,441,895	78,562,075
Less: Taxes	-	-	-	-	-	-	-	-	-
Net Profit	-	14,663,983	14,325,853	22,713,385	34,847,185	41,417,727	54,441,895	54,441,895	78,562,075

	2029	2030	2031	2032	2033	2034	2035	2036	2037
Add: Rent revenue from central commercial, tourism and leisure	23,085,000	23,085,000	23,085,000	23,085,000	23,085,000	23,085,000	23,085,000	23,085,000	23,085,000
Add: Rent revenue from other areas	80,287,200	80,287,200	80,287,200	80,287,200	80,287,200	80,287,200	80,287,200	80,287,200	80,287,200
Total Revenue	103,372,200	103,372,200	103,372,200	103,372,200	103,372,200	103,372,200	103,372,200	103,372,200	103,372,200
Less: Expenses									
Administration cost	10,337,220	10,337,220	10,337,220	10,337,220	10,337,220	10,337,220	10,337,220	10,337,220	10,337,220
Interest	8,683,743	8,249,556	7,815,369	7,381,182	6,946,994	6,512,807	6,078,620	5,644,433	5,210,246
Depreciation and Amortisation	14,472,905	14,472,905	14,472,905	14,472,905	14,472,905	14,472,905	14,472,905	14,472,905	14,472,905
Total Expenses	33,493,868	33,059,681	32,625,494	32,191,307	31,757,119	31,322,932	30,888,745	30,454,558	30,020,371
Gross Profit	69,878,332	70,312,519	70,746,706	71,180,893	71,615,081	72,049,268	72,483,455	72,917,642	73,351,829
Less: Taxes	-	-	-	-	-	-	-	-	-
Net Profit	69,878,332	70,312,519	70,746,706	71,180,893	71,615,081	72,049,268	72,483,455	72,917,642	73,351,829

	2038	2039	2040
Add: Rent revenue from central commercial, tourism and leisure	23,085,000	23,085,000	23,085,000
Add: Rent revenue from other areas	80,287,200	80,287,200	80,287,200
Total Revenue	103,372,200	103,372,200	103,372,200
Less: Expenses			
Administration cost	10,337,220	10,337,220	10,337,220
Interest	4,776,059	4,341,872	3,907,684
Depreciation and Amortisation	14,472,905	14,472,905	14,472,905
Total Expenses	29,586,184	29,151,997	28,717,809
Gross Profit	73,786,016	74,220,203	74,654,391
Less: Taxes	-	-	-
Net Profit	73,786,016	74,220,203	74,654,391

Table 10.6. Discounted Cash Flow (with Off-site Cost, Unit in US\$)

	2016	2017	2018	2019	2020	2021	2022	2023
Net Profit					0	14,663,983	14,325,853	22,713,385
Add: Depreciation and Amortisation					0	7,983,617	8,321,747	11,306,615
Add: Interest							-	-
Less: Investment	(239,843)	-	-	(74,188,537)	(6,762,590)	(77,761,846)	(6,762,590)	(59,697,370)
Outflow/Inflow	(239,843)	0	0	(74,188,537)	(6,762,590)	(55,114,246)	15,885,010	(25,677,370)
Residual Value								
Cash Flow	(239,843)	0	0	(74,188,537)	(6,762,590)	(55,114,246)	15,885,010	(25,677,370)
IRR	25.78%							
NPV	2,176,885,643							
WACC	3.00%							
	2024	2025	2026	2027	2028	2029	2030	2031
Net Profit	34,847,185	41,417,727	54,441,895	54,441,895	78,562,075	69,878,332	70,312,519	70,746,706
Add: Depreciation and Amortisation	11,306,615	14,520,873	14,472,905	14,472,905	14,472,905	14,472,905	14,472,905	14,472,905
Add: Interest	-	-	-	-	-	8,683,743	8,249,556	7,815,369
Less: Investment	-	(64,285,168)	-	-	-	-	-	-
Outflow/Inflow	46,153,800	(8,346,568)	68,914,800	68,914,800	93,034,980	93,034,980	93,034,980	93,034,980
Residual Value								
Cash Flow	46,153,800	(8,346,568)	68,914,800	68,914,800	93,034,980	93,034,980	93,034,980	93,034,980

	2032	2033	2034	2035	2036	2037	2038	2039
Net Profit	71,180,893	71,615,081	72,049,268	72,483,455	72,917,642	73,351,829	73,786,016	74,220,203
Add: Depreciation and Amortisation	14,472,905	14,472,905	14,472,905	14,472,905	14,472,905	14,472,905	14,472,905	14,472,905
Add: Interest	7,381,182	6,946,994	6,512,807	6,078,620	5,644,433	5,210,246	4,776,059	4,341,872
Less: Investment	-	-	-	-	-	-	-	-
Outflow/Inflow	93,034,980	93,034,980	93,034,980	93,034,980	93,034,980	93,034,980	93,034,980	93,034,980
Residual Value								
Cash Flow	93,034,980	93,034,980	93,034,980	93,034,980	93,034,980	93,034,980	93,034,980	93,034,980
	2040							
Net Profit	74,654,391							
Add: Depreciation and Amortisation	14,472,905							
Add: Interest	3,907,684							
Less: Investment	-							
Outflow/Inflow	93,034,980							
Residual Value	3,101,166,000							
Cash Flow	3,194,200,980							

- 1.3.5. **Discounted Cash-flow:** Discounted cash-flow (DCF) determines viability of a project. The DCF is analysed for “With Off-Site Costs (on-site and off-site combined)” scenarios at a discount rate of 3% and is presented in Table 10.6. The percentage represents the weighted average cost of capital (WACC) and reflects the interest rate of the loans extended by the World Bank.
- 1.3.6. As revealed in the analyses, the **financial internal rate of return (FIRR) of both on-site and off-site costs combined scenario is 25.78% and the net present value (NPV) is US\$2,176,885,643. The development of the Sabrang is proven to be a viable project.**

2. SENSITIVITY TEST FOR VIABILITY

2.1. Financial Sensitivity Tests

- 2.1.1. The future variability of the input and output of a large project such as the development of Sabrang is exposed to unexpected changes due to the upward shift in the equilibrium prices of goods and services. As a result, project cash outlays and cash proceeds can be affected by such price fluctuations. Therefore, the purpose of conducting a sensitivity analysis is to tolerate the probability of future adverse changes of a project’s capital, operation, and maintenance costs as well as prices of the project’s benefits.
- 2.1.2. The likely adverse effects based on the respective case-scenarios are analysed and presented below. The base case presented in the preceding section was appended by the following conditions:
- 3% annual interest rate (the GOB contribution from the IDA loan based on a 20-year pay-back period; a grace period of 10 years applied); hence, WACC is assumed at 3%.
 - Asset structure: 100% debt from the GOB (IDA loans)
 - With revenues from the rent of industrial lands and commercial facilities
 - Cost of construction remains as it is.

	As-Is
Financial Net Present Value (FNPV, US\$)	2,176,885,643
Financial Internal Rate of Return (FIRR)	25.78%

2.1.3. Scenario 1:

- **10% annual interest rate (the GOB contribution from the IDA loan based on a 20-year pay-back period; a grace period of 10 years applied); hence, WACC is assumed at 10%.**
- Asset structure: 100% debt from the GOB (IDA loans)
- With revenues from the rent of industrial lands and commercial facilities
- Cost of construction remains as it is.

	Interest rate increased by 10%
Financial Net Present Value (FNPV, US\$)	268,879,907
Financial Internal Rate of Return (FIRR)	23.78%

2.1.4. Scenario 2⁴⁷:

- 3% annual interest rate (the GOB contribution from the IDA loan based on a 20-year pay-back period; a grace period of 10 years applied); hence, WACC is assumed at 3%.
- Asset structure: 100% debt from the GOB (IDA loans)
- **Revenues decrease by 20%**
- Cost of construction remains as it is

	Revenues decreased by 20%
Financial Net Present Value (FNPV, US\$)	1,693,995,582
Financial Internal Rate of Return (FIRR)	22.44%

2.1.5. Scenario 3⁴⁸:

- 3% annual interest rate (the GOB contribution from the IDA loan based on a 20-year pay-back period; a grace period of 10 years applied); hence, WACC is assumed at 3%.
- Asset structure: 100% debt from the GOB (IDA loans)

⁴⁷ See Foot note 37.

⁴⁸ As discussed, the main objective of the sensitivity analysis to ascertain whether the project of this magnitude will be able to withstand against any unexpected changes in inputs and outputs. Conventionally, the interval for the sensitivity test is assumed at 10% or 20% or any percentages deemed necessary. As the matter of course, the level of risk from unexpected changes would be lower if the test interval was larger. In this study, the test interval for the unexpected change in input cost, i.e. construction cost, was assumed to be 20% because the CPI in Bangladesh in 2011 was 10.7%. Based on the same logic, the 20% test interval was adopted to analyse for a case of decreased revenue.

- With revenues from the rent of industrial lands and commercial facilities
- **Cost of construction increases by 20%**

	Cost of construction increased by 20%
Financial Net Present Value (FNPV, US\$)	2,129,419,282
Financial Internal Rate of Return (FIRR)	23.02%

2.2. Final Evaluation on Financial Analysis

- 2.2.1. In sum, the project is concluded as a highly viable one even in some cases with critical contingencies. Indeed, the financial sensitivity tests have revealed that the FIRRs in three contingencies exceeded the cost of capital, 3% (except the case in which interest rate is assumed to be 10%; in this case, the cost of capital is ascended to 10% as well).
- 2.2.2. **The analyses presented in above lead to a conclusion that the development of Sabrang will be not only a financially viable proposition, but it will also be able to withstand any occurrences of major financial risks that cannot be foreseen today.**

CHAPTER 11

ECONOMIC ANALYSIS

1. ASSUMPTIONS FOR ECONOMIC ANALYSIS

1.1. Assessment on Economic Contribution

- 1.1.1. The economic impact assessment examines the benefit of the project in terms of economic contribution during the construction and operation phase.
- 1.1.2. Like the financial analysis, the economic analysis examines the net economic benefits and cost of the project. However, the economic analysis basically differs from the financial analysis that the financial prices are not necessarily acceptable as accurate yardsticks of the project's real costs and benefits. Hence, appropriate adjustments must be made to reflect the economic values and avoid distortions that exist to separate financial prices from the real resource values of project inputs and outputs.
- 1.1.3. **It is assumed that the site is owned by BEZA and that no economic activities are currently taking place in the site; hence no opportunity costs are appended.**

1.2. Conversion of Financial Prices to Economic Values

- 1.2.1. The financial revenue and cost flows were converted into accounting prices to eliminate price distortions that may accrue from for example, taxes, tariffs and other transfers.
- 1.2.2. The total economic capital cost required to develop Sabrang TP is US\$151,417,814.
- 1.2.3. The economic costs were estimated by using the conversion factors 0.55 for investment cost; and the conversion factor of 0.92 was used to estimated economic value revenues. In addition, the factor of 0.93 was used to estimate administration costs.
- 1.2.4. The economic analysis is presented in the tables below.

Table 11.1. Economic Value of Income and Expense (with On-site Costs, Unit in US\$)

	2021	2022	2023	2024	2025	2026	2027	2028	2029
Add: Rent revenue from central commercial, tourism and leisure									
Add: Rent revenue from other areas									
Total Revenue	23,150,880	23,150,880	34,776,000	47,179,440	57,181,680	70,446,240	70,446,240	95,102,424	95,102,424
Less: Expenses									
Administration cost	2,340,252	2,340,252	3,515,400	4,769,226	5,780,322	7,121,196	7,121,196	9,613,615	9,613,615
Total Expenses	2,340,252	2,340,252	3,515,400	4,769,226	5,780,322	7,121,196	7,121,196	9,613,615	9,613,615
Profit	20,810,628	20,810,628	31,260,600	42,410,214	51,401,358	63,325,044	63,325,044	85,488,809	85,488,809

	2030	2031	2032	2033	2034	2035	2036	2037
Add: Rent revenue from central commercial, tourism and leisure								
Add: Rent revenue from other areas								
Total Revenue	95,102,424	95,102,424	95,102,424	95,102,424	95,102,424	95,102,424	95,102,424	95,102,424
Less: Expenses								
Administration cost	9,613,615	9,613,615	9,613,615	9,613,615	9,613,615	9,613,615	9,613,615	9,613,615
Total Expenses	9,613,615	9,613,615	9,613,615	9,613,615	9,613,615	9,613,615	9,613,615	9,613,615
Profit	85,488,809	85,488,809	85,488,809	85,488,809	85,488,809	85,488,809	85,488,809	85,488,809

	2038	2039	2040
Add: Rent revenue from central commercial, tourism and leisure			
Add: Rent revenue from other areas			
Total Revenue	95,102,424	95,102,424	95,102,424
Less: Expenses			
Administration cost	9,613,615	9,613,615	9,613,615
Total Expenses	9,613,615	9,613,615	9,613,615
Profit	85,488,809	85,488,809	85,488,809

Table 11.2. Economic Value of Discounted Cash Flow (with Off-Site Costs, Unit in US\$)

	2016	2017	2018	2019	2020	2021	2022	2023	2024
Profit						20,810,628	20,810,628	31,260,600	42,410,214
Less: Investment	(215,859)	-	-	(40,803,695)	(3,719,424)	(42,769,015)	(3,719,424)	(32,833,554)	-
Outflow/Inflow	(215,859)	0	0	(40,803,695)	(3,719,424)	(21,958,387)	17,091,204	(1,572,954)	42,410,214
Residual Value									
Cash Flow	(215,859)	0	0	(40,803,695)	(3,719,424)	(21,958,387)	17,091,204	(1,572,954)	42,410,214
IRR	35.77%								
NPV	2,087,869,495								
WACC	3.00%								

	2025	2026	2027	2028	2029	2030	2031	2032
Profit	51,401,358	63,325,044	63,325,044	85,488,809	85,488,809	85,488,809	85,488,809	85,488,809
Less: Investment	(35,356,843)	-	-	-	-	-	-	-
Outflow/Inflow	16,044,515	63,325,044	63,325,044	85,488,809	85,488,809	85,488,809	85,488,809	85,488,809
Residual Value								
Cash Flow	16,044,515	63,325,044	63,325,044	85,488,809	85,488,809	85,488,809	85,488,809	85,488,809

	2033	2034	2035	2036	2037	2038	2039	2040
Profit	85,488,809	85,488,809	85,488,809	85,488,809	85,488,809	85,488,809	85,488,809	85,488,809
Less: Investment	-	-	-	-	-	-	-	-
Outflow/Inflow	85,488,809	85,488,809	85,488,809	85,488,809	85,488,809	85,488,809	85,488,809	85,488,809
Residual Value								2,849,626,980
Cash Flow	85,488,809	85,488,809	85,488,809	85,488,809	85,488,809	85,488,809	85,488,809	2,935,115,789

1.2.5. Based on the “With Off-Site Costs” scenario at a discount rate of 3%, the **economic internal rate of return (EIRR) of the on-site costs scenario is 35.77% and the net present value (NPV) is US\$ 2,087,869,495.**

1.2.6. As revealed in the analyses, the development of the Sabrang is determined as a viable project, as it makes an economic sense.

2. SENSITIVITY TESTS

2.1. Economic Sensitivity

2.1.1. Just like the purpose of the financial sensitivity tests, the economic sensitivity analysis too is to see whether the probability of future adverse changes of a project’s capital, operation, and maintenance costs as well as prices of the project’s benefits are in the tolerable range. The base-case scenario as presented in Table 11.1 reveals the following results:

- WACC: Interest rate of 3% applied.
- And other conditions remain as in the financial analysis (with on-site cost scenario)

	As-Is
Economic Net Present Value (ENPV, US\$)	2,087,869,495
Economic Internal Rate of Return (EIRR)	35.77%

2.1.2. Scenario 1:

- WACC: Interest rate of 3% applied.
- And other conditions remain as in the financial analysis (with on-site cost scenario)
- **Revenues decreased by 20%**

	Revenues decreased by 20%
Economic Net Present Value (ENPV, US\$)	1,644,147,183
Economic Internal Rate of Return (EIRR)	30.93%

2.1.3. Scenario 2:

- WACC: Interest rate of 3% applied.
- And other conditions remain as in the financial analysis (with on-site cost scenario)
- Cost of construction increases by 20%

	Cost of construction increased by 20%
Economic Net Present Value (ENPV, US\$)	2,061,721,082
Economic Internal Rate of Return (EIRR)	31.76%

2.1.4. As shown in the financial sensitivity analysis in the preceding chapter, the project demonstrates its viability even in the cases of contingency. **Economic sensitivity tests, too, disclose that economic rate of return (EIRR) in all cases of contingency exceeds the WACC of 3%, which means that the project can withstand unforeseen changes if occur.**

CHAPTER 12

INSTITUTIONAL FRAMEWORK

1. INSTITUTIONAL FRAMEWORK OF THE SABRANG TP

1.1. Main Characteristics of the Institutional Framework of Sabrang

- 1.1.1. The basic institutional framework for the development, promotion and management of the Sabrang TP has already been discussed in Chapter 4 of this study (Refer back to Figure 4.10).
- 1.1.2. The main characteristics of Sabrang represent and reflect the basic strategies, such as the selection and concentration, place marketing and co-operation and partnership strategies.
- 1.1.3. Thus far, this study has assumed that BEZA, on behalf of the GOB, would control the process of development, operation and management of Sabrang. In marketing and promotion efforts, BEZA would adopt co-operation and partnership strategy.
- 1.1.4. Nevertheless, another scenario for the instituting of the development, operation and management process is also possible. That is, BEZA invites private sector participation in the process. This study will explore and weigh the option for the private-sector participation in the development process of Sabrang.

1.2. Various Model of Public and Private Partnership (PPP)

- 1.2.1. Today the development and operation of SEZs by the private sector is gaining popularity as a preferred model for development especially in East Asia, Latin America and the MENA region. Generally, each partner for SEZ development makes contributions to SEZ development projects with assets as exemplified in the table below.

Table 12.1. Potential Areas of Partners' Contribution in PPP

Public Contribution	Private Contribution
<ul style="list-style-type: none"> • Land expropriation • Credit for infrastructure construction • Investment incentives (including tax breaks for relocation) • Utilities supply • Regulation (license and permits, etc.) 	<ul style="list-style-type: none"> • Partially or wholly financing construction and land development • Utilities provision • Management • Investment promotion and marketing • Maintenance

Source: Lee et al. (2016)

1.2.2. Popularly known as PPP, the project under a PPP scheme can generally be classified into the several types depending on the time of ownership transfer. For example, PPP models can largely be:

- Build-Own-Operate (BOO);
- Build-Operate-Transfer (BOT);
- Build-Transfer-Operate (BTO);
- Design-Build-Finance-Operate (DBFO), etc.

1.2.3. The respective structures of the PPP types are outlined as follows:

	Public project ←		→ Private project			
			PPP			
Type of Contract	Public procurement	Franchise	DBFO	BTO	BOT	BOO
Principal of construction :	Public	Public	Private	Private	Private	Private
Principal of operation:	Public	Private	Private	Private	Private	Private
Ownership:	Public	Public	Public	Private → Public	Private → Public	Private
Disbursement of dues:	Public	User	Public/User	Public/Use r	Public/Use r	Public/User
Receipt of dues:	-	Private	Private	Private	Private	Private

Figure 12.1. Typology of PPP Based on the Time of Ownership Transfer

Source: Sang-jin Joo et al. (2013) "Understanding of Public-Private Partnership," (in Korean), Korea Export-Import Bank, Seoul.

1.2.4. There are various models of PPP in IZ development depending on the level of private participation. **One model is that the private sector participates with 100% of its own capital to develop the infrastructure and/or facilities and the government grants concessions to the private-sector partner.**

1.2.5. **Another popular model is a joint venture between public and private partners** in which the public-sector usually takes responsibility of off-site development while the private partner

implements on-site development. Typically, the government grants a BOT (Build-Operate-Transfer) arrangement to a special purpose vehicle (SPV)—jointly owned by the private and public partners—providing entitlements for the collection of maintenance charges of utilities, lease income, fees, etc.

1.2.6. **Compared to the 100% private development/operation model, the government can have better control over the land and the operations while the bankability of the project would be increased due to government presence. However an interest conflict is likely, even though the public sector is exposed to business risk only partially.** PPP in general passes along the risks associated with, for example, a construction project, to the private sector (construction risk).

1.2.7. As an alternative to the 100% private-sector participation, a joint-venture (JV) is a popular typology of the PPP model. In this case, the institutional structure will be as follows:

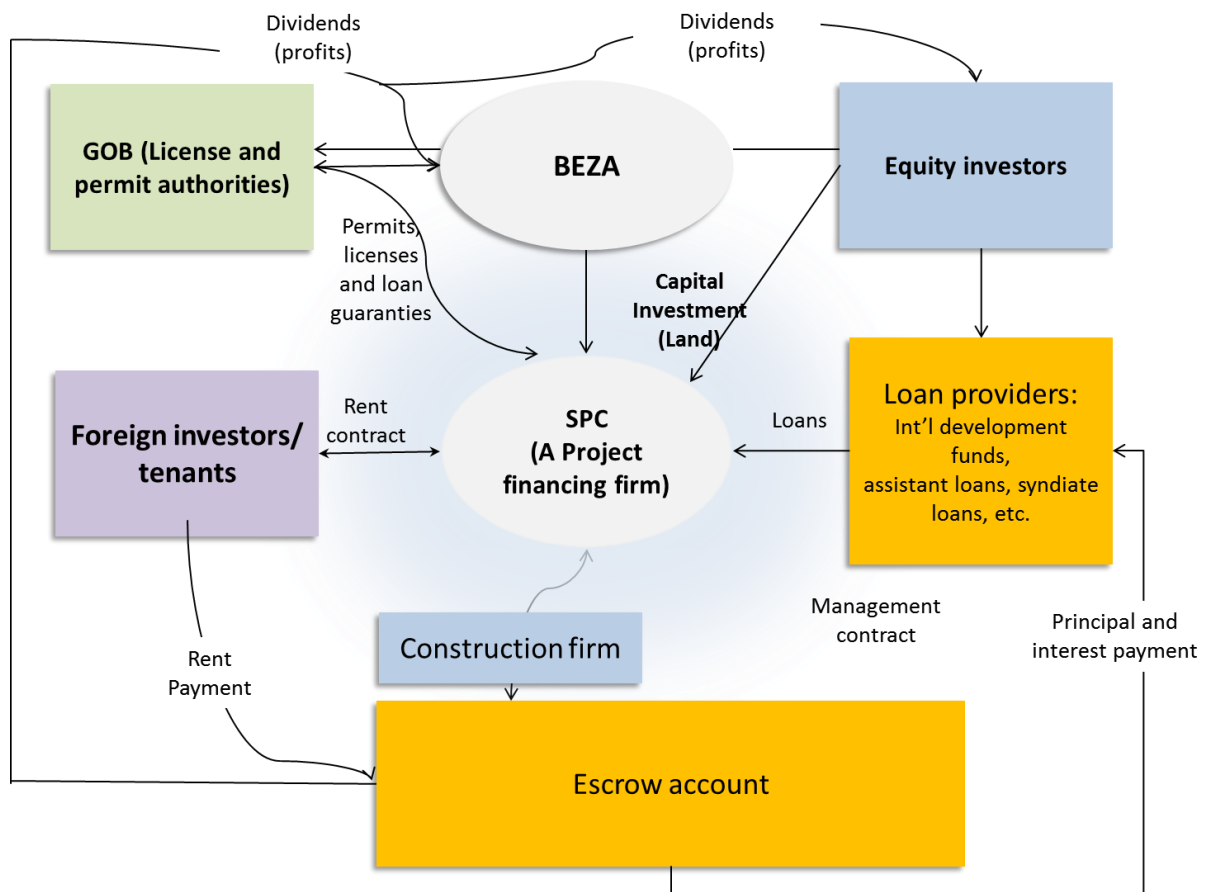


Figure 12.2 Institutional Framework of a Joint-Venture

1.2.8. As the matter of fact, BEZA can, if it is willing, invite a private partner/s to this project, as the return is above the WACC. Indeed, the project profitability is estimated to be 32.2:1, as shown in the table below.

Table 12.2. NPV Analysis for Revenue and Cost

With Off-site Cost	
(1) Initial investment*	(289,297,944)
(2) Benefit (Revenues from the project life-span of Sabrang)**	1,698,546,600
IRR	
Discount rate for the computation of NPV: 3%	
(3) NPV of Benefits [= (2)]	1,037,017,950
(4) NPV of Costs [= (1)]	(237,564,665)
Cost-benefit ratio (3)/(4)	4.37:1

Notes: Units in US\$; all the data used in this table are obtained from the Financial analysis; a discount rate of 3% was used to derive the NPV; *initial investment includes costs for the construction, engineering cost, applicable taxes, etc.; **Revenues are mainly from the rent of lands available for rent/lease.

1.2.9. However, the profit structure surely changes when equity partner is invited. This can be checked by the analyses below. Let us assume that BEZA decided to transfer 50% of its equity in exchange for investment and that the equity investor is seeking at least 10% of return; all other conditions remain the same as in the financial analysis (i.e., the IDA loan conditions, etc.) except the WACC. **The WACC will be increased to 15% as the expected return on equity investment is 20%.** The asset structure between equity and debt would be 50%:50%.

Table 12.3. Bank Loan and Repayment Schedule for the JV (Construction Costs Only)

S/N	Year	Investment	Principal	Interest	Repayment
0	2016				
0	2017				
0	2018				
1	2019	74,188,537	37,094,268		
2	2020	80,951,126	40,475,563		
3	2021	158,712,972	79,356,486		
4	2022	165,475,562	82,737,781		
5	2023	225,172,933	112,586,466		
6	2024	225,172,933	112,586,466		
7	2025	289,458,101	144,729,050		
8	2026	289,458,101	144,729,050		
9	2027	289,458,101	144,729,050		
10	2028	289,458,101	144,729,050		
11	2029	289,458,101	144,729,050	14,472,905	7,236,453
12	2030		137,492,598	13,749,260	7,236,453
13	2031		130,256,145	13,025,615	7,236,453

14	2032		123,019,693	12,301,969	7,236,453
15	2033		115,783,240	11,578,324	7,236,453
16	2034		108,546,788	10,854,679	7,236,453
17	2035		101,310,335	10,131,034	7,236,453
18	2036		94,073,883	9,407,388	7,236,453
19	2037		86,837,430	8,683,743	7,236,453
20	2038		79,600,978	7,960,098	7,236,453
21	2039		72,364,525	7,236,453	7,236,453
22	2040		65,128,073	6,512,807	7,236,453
23	2041		57,891,620	5,789,162	7,236,453
24	2042		50,655,168	5,065,517	7,236,453
25	2043		43,418,715	4,341,872	7,236,453
26	2044		36,182,263	3,618,226	7,236,453
27	2045		28,945,810	2,894,581	7,236,453
28	2046		21,709,358	2,170,936	7,236,453
29	2047		14,472,905	1,447,291	7,236,453
30	2048		7,236,453	723,645	7,236,453
				151,965,503	144,729,050

1.2.10. Then the discount cash-flow would change as in Table 12.4. The joint-venture yields FIRR of 23.41% and NPV US\$82,438,183.

1.2.11. The profits yielded need to be shared with the partner/s in equal amount to the corresponding share of equity, assumed at 50%, after all other expenses were accounted for.

1.2.12. In sum, this simple financial exercise implicates that the private equity investors may hesitate to invest in the Sabrang development project, as it may not yield their target ROI, 20%, if a JV was formed on a 50-50 debt to equity investment scenario.

1.2.13. Thus, BEZA will give up its share in Sabrang (in aobe case, it was 50%) and let **private investors/developers possess the entire equity in the development and operation of Sabrang**, so that they could make ROI above the expected level (i.e. above 20%).

1.2.14. However, **the consultant team recommends BEZA to develop Sabrang by itself. For, (1) the development of tourism is more than just a development of special economic zone.** As the tourism can be said that it is relatively a new industry in Bangladesh and that Sabrang is the first tourism complex in the nation, BEZA on behalf of the GOB is obligated to make it sure that it will be developed to fulfil the main goal of the development. That is, **the development of Sabrang is implemented as a part of a grand national plan of industry diversification. As such, BEZA needs to exercise a full control of land allocation and, subsequently, the rate of rent in line with the strategic goal.** And **(2) investors generally put up more confidence in BEZA to exercise the control of development and management vis-à-vis private developers.**

1.2.15. For these reasons, among others, it is better **BEZA to be a control tower for the development of the Sabrang TP.**

1.2.16. However, BEZA may invite an experienced developer/s as an equity partner/s, as the partner/s' experiences in developing and operating a tourism-SEZ can certainly be another viable option for the development and further operation of Sabrang. Nevertheless, **the final decision to this proposition cannot be weighed and judged solely by an economic, or financial, means, as discussed in preceding section. Indeed, it certainly falls in the domain of BEZA's strategic consideration.**

Table 12.4. Discounted Cash Flow (With Off-Site Costs, Unit in US\$)

	2016	2017	2018	2019	2020	2021	2022	2023
Net Profit						14,663,983	14,325,853	22,713,385
Add: Depreciation and Amortisation						7,983,617	8,321,747	11,306,615
Add: Interest								
Less: Investment	(239,843)	-	-	(74,188,537)	(6,762,590)	(77,761,846)	(6,762,590)	(59,697,370)
Outflow/Inflow	(239,843)	0	0	(74,188,537)	(6,762,590)	(55,114,246)	15,885,010	(25,677,370)
Residual Value								
Cash Flow	(239,843)	0	0	(74,188,537)	(6,762,590)	(55,114,246)	15,885,010	(25,677,370)
IRR	23.41%							
NPV	82,438,183							
WACC	15.00%							
	2024	2025	2026	2027	2028	2029	2030	2031
Net Profit	34,847,185	41,417,727	54,441,895	54,441,895	78,562,075	64,089,170	64,812,815	65,536,460
Add: Depreciation and Amortisation	11,306,615	14,520,873	14,472,905	14,472,905	14,472,905	14,472,905	14,472,905	14,472,905
Add: Interest						14,472,905	13,749,260	13,025,615
Less: Investment	-	(64,285,168)	-	-	-	-	-	-
Outflow/Inflow	46,153,800	(8,346,568)	68,914,800	68,914,800	93,034,980	93,034,980	93,034,980	93,034,980
Residual Value								
Cash Flow	46,153,800	(8,346,568)	68,914,800	68,914,800	93,034,980	93,034,980	93,034,980	93,034,980

	2032	2033	2034	2035	2036	2037	2038	2039
Net Profit	66,260,106	66,983,751	67,707,396	68,431,041	69,154,687	69,878,332	70,601,977	71,325,622
Add: Depreciation and Amortisation	14,472,905	14,472,905	14,472,905	14,472,905	14,472,905	14,472,905	14,472,905	14,472,905
Add: Interest	12,301,969	11,578,324	10,854,679	10,131,034	9,407,388	8,683,743	7,960,098	7,236,453
Less: Investment	-	-	-	-	-	-	-	-
Outflow/Inflow	93,034,980	93,034,980	93,034,980	93,034,980	93,034,980	93,034,980	93,034,980	93,034,980
Residual Value								
Cash Flow	93,034,980	93,034,980	93,034,980	93,034,980	93,034,980	93,034,980	93,034,980	93,034,980

	2040
Net Profit	72,049,268
Add: Depreciation and Amortisation	14,472,905
Add: Interest	6,512,807
Less: Investment	-
Outflow/Inflow	93,034,980
Residual Value	620,233,200
Cash Flow	713,268,180

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APPENDICES

APPENDIX 1. RECORDS OF STAKEHOLDER MEETINGS

1. Social Consultation

KEY STAKEHOLDERS CONSULTATIVE WORKSHOP HELD ON 12nd AND 13rd NOVEMBER 2016 IN SABRANG

Agenda

1. Sabrang Tourism Park concept
2. Social issues raised by the Sabrang Tourism Park
3. Way forward

Present

24 participants

Details of Consultations

Detailed consultations in the form of Focused Group Discussions (FGDs) carried out at different locations within the residential settlements in close proximity to the project site. The main aim of the FGDs was to understand the general perception about the project and note suggestions from participants. The details of the Focused Group Discussions are presented in below table.

Suggestion obtained from people and their representatives have been analyzed based on technical and economic feasibility. The timely and valuable suggestions wherever possible have been incorporated in the final design.

Level of consultation (Number of Participants)	Issue Raised	Suggestion from Participant	Mitigation Measures
Project Site (11)	<ul style="list-style-type: none">• Effect of an economic zone on the standards of living of the people in their village• Whether there are some prerequisites for the training	<ul style="list-style-type: none">• The local stakeholders should be prioritized for employment in the EZ.• Training shall be provided to the people within the	<ul style="list-style-type: none">• Provision for employment opportunities for the people within the project area of influence, will be prioritized• Training on advanced

	<p>progress or is it open for all</p> <ul style="list-style-type: none"> • Whether the proposed EZ will provide employment opportunities for the villager and the women • Proposed training to the local people to inculcate the skills required for working in EZ 	<p>project area of influence in fields most commonly practiced in that locality in the locality like fishing pisciculture, and salt production to enhance their skills</p> <ul style="list-style-type: none"> • Employment opportunities shall be provided at both the construction phase and operation phase. • Impart education and vocational training in local stakeholders. This will help in honing the skills requisite for employment at the proposed EZ. 	<p>pisciculture shall be provided to local stakeholders.</p> <ul style="list-style-type: none"> • Trainings shall be provided under the training programs that will be planned as part of the developing the EZ. • Employment opportunities within the EZ shall be provided to the local provided to the local people commensurate with their skills.
<p>Asst. Commissioner[land] (4)</p>	<ul style="list-style-type: none"> • Provision for the safety of the residents during the construction • Provision of residential quarters for the workforce to minimize the social and economic impacts on the local settlements, Absence of the designated quarters for the influx migrants will increase the demand of the local housing to migrants affecting the rentals. 	<ul style="list-style-type: none"> • Provide accommodations for employees and their family members within walking distance of the EZ • Ensure that the residential areas in the vicinity don't face safety issues during the constructions. 	<ul style="list-style-type: none"> • The safety standards will be made part of the contract of the agency executing the construction work • Labor camps will be provided for construction workforce
<p>Upazila office (9)</p>	<ul style="list-style-type: none"> • The EZ should be developed considering people staying in the Teknaf. 	<ul style="list-style-type: none"> • Stakeholders shall be well informed in advance about the next phase of the 	<ul style="list-style-type: none"> • The stakeholders shall be timely informed about the project developments

	<ul style="list-style-type: none"> • As the construction work might be undertaken during the night the security measure for women during night shift should be ensured. 	<p>development.</p> <ul style="list-style-type: none"> • The authorities should be updated on the status of the development of the EZ • Specially appointed night guards should be ensured for the security. 	<ul style="list-style-type: none"> • Provision of the security will be of outmost significance for the EZ. Round the clock security guard will be provided for the EZ.
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Consultation Conclusion

Though the stakeholders consulted were enthusiastic on the project they were apprehensive regarding the impacts on the prawn culture practices. The stakeholders expressed that the development of the Economic Zone will bring social and economic development in the region providing permanent source of income for the local youths and people residing in close by settlements. There is paucity of employment opportunities and health facilities in the region and villagers tend to travel long distances to Dhaka and Chittagong for better medical facilities which is affecting overall social and economic development. Pisciculture, salt production and fishing are the main economic activity being practiced in Sabrang area.

The community perceives that the project will help in providing sustained employment opportunities, means of livelihood, better service facilities, and better conveyance. Apprehensions raised by the community for the Khal which serves as the source of prawn culture.

Consultation Activities



Stakaholder consultation being conducted with Land Sub-Assist officer, Taknef Upazila



Stakaholder consultation being conducted with Upazila Engineer LGED, Taknef



Stakaholder consultation being conducted with LGED, Cox's Bazar



Stakaholder consultation being conducted with UNO office, Taknef Upazila



Stakaholder consultation being conducted with influential people, SabgongTP area



Focus Group discussion(FGD) being conducted with the fisher



Focus Group Discussion(FGDs) being conducted with the people from neighbouring villages



Door to Door consultation conducted at various locations within the project site

2. Technical Consultation (JUNE 23RD – OCTOBER 26TH 2016)

KICK-OFF MEETING HELD ON 23RD JUNE 2016 IN CONFERENCE ROOM, BEZA OFFICE IN DHAKA

Agenda

4. Methodology of Study
5. Identification of Tourism Industries
6. Way forward

Present

11 participants

Name of Stakeholder	Issue Raised		Consideration
Paban Chowdhury (Executive Chairman), Harunur Rashid (Project Director), Nurul Huda (Procurement Specialist), Khokan Kanti Saha (Deputy Project Director) and other 7 officers in BEZA	Location	<ul style="list-style-type: none"> • Anowara-2 EZ site is close to KEPZ. 	<ul style="list-style-type: none"> • Tourism attractions of Sabrang Tourism Park will be exclusive and/or synergetic with other tourism attractions nearby. • Other case studies for Sabrang Tourism Park will be conducted. • Environmental consideration for two sites will be reflected on the studies. • Sabrang beach environment should be considered as a primary tourist attraction in the master plan.
	Environment	<ul style="list-style-type: none"> • There are protected species of crab and coral reef in St. Martin Island, so that the securing those species is an environmental matters will be highly examined and considered in this stage. • Environmental Impact Assessment (EIA) has been conducted for both sites. 	
	Relations to other EZs and on-going projects	<ul style="list-style-type: none"> • St. Martin Island is located at a distance of approximately 30km from the Sabrang Tourism Park which is one of the tourist attractions in Cox's Bazar. • St. Martin Island and Maheshkhali Island should be studied regarding 	

		to the Sabrang Tourism Park.	
	Investors	<ul style="list-style-type: none"> There is an ongoing pre-feasibility study on Narayanganj & Jaliardwip EZ near the Sabrang Tourism Park site. 	
	Case Studies	<ul style="list-style-type: none"> Investors for tourism parks should include not only locals but also internationals. 	
		<ul style="list-style-type: none"> More case studies should be conducted for Sabrang Tourism Park including Phuket, in Thailand. 	

TECHNICAL CONSULTATION WITH KEY STAKEHOLDERS ON JUNE 26th – 29TH & AUGUST 23rd 2016 IN BEZA OFFICE

Agenda

1. Identification of Tourism Industries
2. Data Collection
3. Local Issues to be considered

Present

9 participants

June 26, 2016

Name of Stakeholder (Institution)	Issue Raised	Consideration
Shaikh Farid Ahmed – Additional Deputy Commissioners (Cox’s Bazar District)	<ul style="list-style-type: none"> All public lands in Sabrang Tourism Park were sold to BEZA. 	<ul style="list-style-type: none"> Confirmed that BEZA has land ownership for Sabrang Tourism Park.
Gi-Tae, Jeong – Project Team Leader	<ul style="list-style-type: none"> The length of the airstrip is not long enough for large international aircrafts, so that 	<ul style="list-style-type: none"> The urban infrastructure for a tourism park

(Project Office of Cox's Bazar Airport Upgrade Project)	<p>the project is to extend the airstrip length to upgrade Cox's Bazar airport as an international airport in Bangladesh.</p> <ul style="list-style-type: none"> The project expected to be completed in Jan. 2018. 		<p>targeting international tourists will be constructed and the increasing number of international tourists has to be calculated on future demand.</p>
Ahsan – General Manager (Ocean Paradise Hotel)	Tourism Industry	<ul style="list-style-type: none"> The number of visitors per week is approximately 280 persons, and international visitors are about 5%. The number of visitors per week is approximately 450 persons. Currently 242 rooms are operational and 48 rooms are under construction. To get the Liquor Selling License, the cost to acquire the license varies case by case. 	<ul style="list-style-type: none"> The hotel and resort business in Cox's Bazar is expanding, tourist attractions in Cox's Bazar have to be increased and varied. Currently Cox's Bazar is a vacation destination mostly for local people. A tourism park targeting international tourists will bring a ripple effect throughout the local economy.
	Future Development	<ul style="list-style-type: none"> Cox's Bazar has much potential as a tourist attraction. Cox's Bazar has been developed since 2009, and the number of hotel increased from 7 to 200. More activities are needed to attract tourist. 	
A P M Nur A Alam – Front Office Manager (Seagull hotels Ltd.)	Tourism Industry	<ul style="list-style-type: none"> Currently 179 rooms are operational. During the peak season 	<ul style="list-style-type: none"> Connectivity and accessibility to the project site is a key success element. Casino, Shopping

		(September - June), there are approximately 1,400 visitors.	malls, entertainment facilities for night activities for tourists should be introduced.
	Future Development	<ul style="list-style-type: none"> The main source for the future development as a tourism spot, there should be infrastructure for night life such as bars and casino. However, the religion and security issue should be resolved. Cineplex, shopping mall basic and/or mandatory tourist attractions. For the cultural aspect, there is Burma's market and some international tourists willing to visit the market. 	<ul style="list-style-type: none"> Tourism activities using the current local culture and characteristics (e.g. eco-tourism) will be considered as introduced functions.
	Accessibility	<ul style="list-style-type: none"> Cox's Bazar Airport is not an international airport. There is no railway connected to Cox's Bazar, and it takes approximately 10 hours by bus. There should be improvement of accessibility to this region, with rails, airport or other means of transportation. 	

June 27, 2016

Name of Stakeholder (Institution)	Issue Raised	Consideration
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Mohabbad Shafioul Alam – UN Officer (Upzila Nirbani Office)	On-going and future Projects	<ul style="list-style-type: none"> • There are several road construction projects ongoing including a coast road from Cox’s Bazar, and three access roads to the coast road. • RFP for Embankment construction plan along the west site boundary will be issued in 2017. • Two access road construction connected to the southern part of the project site is under consideration. 	<ul style="list-style-type: none"> • The access roads should be considered especially during the conceptual master plan and transport assessment phase. • Regarding to the tourism industry, St. Martin Island should be carefully studied as well, as it is another point to attract international tourist. • Current land use on the project site has to be considered for the effectual master plan.
	Land Use	<ul style="list-style-type: none"> • Currently, the site is used by salt field (10-20%) and shrimp farming (40%), and the rests are vacant land. 	
	Tourism Industry	<ul style="list-style-type: none"> • There are 10,000 – 15,000 domestic tourists in Teknaf including St. Martin Island and more tourist attractions for international tourists are expected. 	
	Social Aspects	<ul style="list-style-type: none"> • Employment rate is only 50-60%, more job creation is essential to resolve all relevant social and local economy issues. • Current local people, who are considered to be conservative, do not aware of the project, so it is important to inform 	

		them about this Sabrang Tourism Park to gather local opinions.	
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June 28, 2016

Name of Stakeholder (Institution)	Issue Raised		Consideration
Dr. Bhubon Chandra Biswas – Director (Bangladesh Tourism Board)	Land Ownership	<ul style="list-style-type: none"> All public lands in Anowara-2 EZ site were handed over to BEZA. 	<ul style="list-style-type: none"> Detailed foreign exclusion plan for proposed Casino & Alcohol permitted area shall be considered in design guideline section. Functions suggested by BTB will be in consideration of the master plan.
	Functions	<ul style="list-style-type: none"> There is no exclusive tourism hub for foreigners in Bangladesh. Possible functions according to BTB’s studies in Sabrang TP includes Casino & Bar, Adventure tourism, parasailing, river cruising, beach driving etc. 	

June 29, 2016

Name of Stakeholder (Institution)	Issue Raised		Consideration
K. Manivannan (Mahindra Consulting Engineers)	Site Boundary	<ul style="list-style-type: none"> The site boundary of Anowara-2 EZ is created by Mahindra Consulting Engineers during the Initial Site Assessment phase based on the Mauza Map provided by the Chittagong District. Other electrical maps, such as contour map, utility map, connecting road map are generated by Mahindra Consulting Engineers based on their own assessment. 	<ul style="list-style-type: none"> The discrepancy between the site boundary received from the Chittagong District Commissioner Office and one from MCE should be confirmed by BEZA.

August 23, 2016

Name of Stakeholder (Institution)	Issue Raised		Consideration
Dr. Aparup Chowdhury – Chairman, Dr. Md. Nasir Uddin – Director Commercial (Bangladesh Parjatan Corporation)	Functions	<ul style="list-style-type: none"> In consideration of religious characteristic of Bangladesh, exclusive tourism zone for foreigner will be important for Sabrang TP Introducing conventional function for international convention activities, fashion shows etc. as a hub of gathering 	<ul style="list-style-type: none"> The meeting, incentive, convention and exhibition (MICE) function and its utilizing plan will be suggested. Master plan will include the environmental and cultural speciality of the Sabrang TP.

	Future Development	<ul style="list-style-type: none"> • Scenic beauty and current life style and culture should be adapted to the master plan. • Master plan should take the advantage of beach area 	
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INTERIM PRESENTATION & WORKSHOP HELD ON 24th AUGUST 2016 IN CONFERENCE ROOM, BEZA OFFICE IN DHAKA

Agenda

1. Study of Tourism Industry
2. Master Plan of Sabrang Tourism Park

Present

50 participants

Name of Stakeholder	Issue Raised	Consideration
Paban Chowdhury (Executive Chairman of BEZA), Harunur Rashid (Project Director), Nurul Huda (Procurement Specialist), Khokan Kanti Saha (Deputy Project Director) and other 45 stakeholders	Environment <ul style="list-style-type: none"> • Teknaf peninsula including St. Martin Island is a critical area under the Environment Conservation Act, so that biodiversity conservation group shall be engaged for this project. • Regarding to some specific species, they are vulnerable to the electric lights at night. • There shall be an embankment management plan. 	<ul style="list-style-type: none"> • Sabrang peninsula's natural environment should be considered as the site is environmentally vulnerable. • Water desalination plan will be included in the infrastructure plan. • Social impact on the community of the Sabrang TP and surrounding area will be deeply studied in Activity 4: the environmental and social footprint with mitigation and management plans

	Infrastructure	<ul style="list-style-type: none"> Regarding to the water intake plan, the salinity of the water of the region shall be investigated. 	<p>for key problems arose.</p> <ul style="list-style-type: none"> Current road network plan established by Ministry of Road Transportation and Bridges of Bangladesh will be reviewed.
	Community Engagement	<ul style="list-style-type: none"> As per a lot of new employment will be made and the lifestyle of the community will be changed after development, community awareness and engagement is very important. 	
	Transportation	<ul style="list-style-type: none"> New road connection plan and current Transportation maps will be provided for corresponding to the master plan for the Sabrang TP. 	

2nd INTERIM PRESENTATION & WORKSHOP HELD ON 26th OCTOBER 2016 IN CONFERENCE ROOM, BEZA OFFICE IN DHAKA

Agenda

1. Infrastructure Design and Zoning Plan of Sabrang Tourism Park
2. Construction Costs

Present

50 participants

Name of Stakeholder	Issue Raised		Consideration
Paban Chowdhury (Executive Chairman of BEZA), Harunur Rashid (Project Director), Nurul Huda (Procurement Specialist), Khokan Kanti Saha (Deputy Project Director) and other 45 stakeholders	Environment/ Social	<ul style="list-style-type: none"> • Mitigation and management plans proposed for key incorporated in the report 	<ul style="list-style-type: none"> • Ground water and its salinity shall be reviewed for infrastructure plan. • BEZA's draft Building code will be carefully reviewed and applied for Anowara-II EZ and Sabrang. • Helipad plan will be added in Sabrang TP • Environmental and Social engineers will suggest mitigation and management plans for the environment and social issues.
	Infrastructure	<ul style="list-style-type: none"> • Ground water availability should be checked and mentioned in the report • Off-site cost will be provided by BEZA. 	
	Master Plan	<ul style="list-style-type: none"> • BEZA is making BEZA's own building code for Economic Zone development. The draft version of the BEZA's building code will be provided and applied to this project. • For Anowara-2 EZ, greenery 	

		buffer area shall be considered in the master plan.	
	Transportation	<ul style="list-style-type: none"> • Helipad will be needed for arrivals. 	

Consultation Activities



June 23rd 2016, Kick-off Meeting at Conference Room, BEZA Office in Dhaka



June 26th 2016, Stakeholder Consultation with Shaikh Farid Ahmed (Additional Deputy Commissioner)



June 26th 2016, Stakeholder Consultation with Gi-Tae, Jeong (Project Team Leader)



June 26th 2016, Stakeholder Consultation with Ahsan (General Manager of Ocean Paradise Hotel)





June 26th 2016, Stakeholder Consultation with A P M Nur A Alam (Front Office Manager)



June 27th 2016, Stakeholder Consultation with Mohabbad Shafioul Alam (UN Officer)



June 28th 2016, Stakeholder Consultation with Dr. Bhubon Chandra Biswas (Director)



August 23rd 2016, Stakeholder Consultation with Dr. Aparup Chowdhury (Chairman) and Dr. Md. Nasir Uddin(Director Commercial)



August 24th 2016, Interim Presentation & Workshop with Paban Chowdhury (Executive Chairman of BEZA), Harunur Rashid (Project Director), Nurul Huda (Procurement Specialist), Khokan Kanti Saha (Deputy Project Director) and other 45 stakeholders

APPENDIX 2. LITERATURE REVIEW

Literature review covered key documents requiring the consultant a deep understanding of the project background while enlarging knowledge about related topics. Especially the Dohwa team as a group of international experts requires strong emphasis on this review process to lay the foundation of specific local knowledge.

The aim of the review was to capture existing legal and political conditions and other related information required in the preparation of the pre-feasibility study. The following lists are a series of documents gained by BEZA as well as searched through websites of related agencies.

List of Main Documents Reviewed

Fields	No.	Documents
Law and Regulation	1	BEZA Act
	2	Bangladesh Economic Zone Rules
National Long Term Plan	3	Perspective Plan of Bangladesh 2010-2021
	4	Seventh Five Year Plan FY2016-FY2020
Related Plan	5	Initial Site Assessment for Five Economic Zone Sites

List of Informational Materials Reviewed

Fields	No.	Documents
BEZA Policies	1	Vision Document
	2	Invest in Economic Zones, Invest in Bangladesh
Related Plan	3	Special Tourism Park in Cox's Bazar, Bangladesh

2.1. BEZA Act (2010)

2.1.1. Purpose

The establishment of economic zones in all potential areas including backward and under developed regions and development, operation, management and control thereof including the matters ancillary thereto with a view to encouraging rapid economic development through increases and diversification of industry, employment, production and export

2.1.2. Main Contents related to the Project

2.1.2.1. Establishment of Economic Zones

- EZs established through public and private partnership by local and foreign individuals, body or organizations;
- Private Economic Zones established individually or jointly by local, non-resident Bangladeshis or foreign investors, body, business organizations or groups;
- Government Economic Zones established and owned by the Government;
- Special EZs established privately or by public-private partnership or by the GOB initiative, for the establishment of any kind of specialized industry or commercial organization

2.1.3. Declaration of Economic Zones

2.1.3.1. No economic zone shall be declared on any land within City Corporation, Municipality or Cantonment Board area.

2.1.3.2. Division of an Economic Zone into several areas

- Export Process Area: Specified for export-oriented industries;
- Domestic Processing Area: Specified for industries to be established to meet the demand of the domestic market;
- Commercial Area: Specified for business organizations, banks, warehouses, offices or any other organizations;
- Non-Processing Area: Specified for residence, health, education, amusements, etc.

2.1.3.3. All activities in EZs shall be compliant to all the existing laws on the environment and environmental protection.

2.1.4. Main Considerations

2.1.4.1. As this project is a part of the PSDSP, the Anowara-2 EZ and the Sabrang TP are basically PPP based. The law appeals four types of EZs that should be entitled for the two sites as a result of the pre-feasibility study with investment and operation models suggested by the consultant.

2.1.4.2. It is clear that there is no land owned by cities or municipalities within the target site boundaries.

2.1.4.3. The law indicates four different areas within the EZs that can be used for a zoning plan with specific regulations in the “Best Practice Master Plan” chapter.

2.1.4.4. Environmental issues that can be possibly generated by economic zone development are a significant concern in the laws.

2.2. Bangladesh Economic Zones Rules (2014)

2.2.1. Purpose

2.2.1.1. The rules define the guidelines that must be followed for the successful implementation of the BEZA Act.

2.2.2. Main Contents Related to the Project

2.2.2.1. Definition of Infrastructure

The rules mainly guide the selection of developers and their permit issues. Among its contents, Article 1 “Definitions” clarifies descriptions of on-off infrastructure that are required to identify their requirements and associated costs in the Activity 3 of the Component 2.

2.2.2.2. On-site infrastructure: the infrastructure situated within the economic zone and also includes the residence of the workers

2.2.2.3. Infrastructure: the necessary basic facilities, establishments and utilities for promoting development and activities of the economic zone and also include the following matters along with other related services, namely;

- Buildings or other similar structures
- Systems for collection, treatment, disposal and management of solid waste and industrial waste, etc.;
- Generation, transmission and distribution of electricity;
- Supply and distribution of other energy including gas;
- Facilities for collection, treatment and removal of rain water;
- Sewage;
- Transportation network including roads and bridges;
- Telecommunication and information technology;
- Supply and distribution of water;
- Medical facilities;

- Adoption of training programme for capacity building and development; and
- Central facilities centre and testing facilities.

2.2.2.4. Duties of Developers

Providing all types of utility and other basic services keeping consistency with the requirements of economic zone users and residents are duties of developers.

2.2.3. Main Considerations

2.2.3.1. The Article 1 lists up all related infrastructure facilities needed for economic zone activities. The site assessment helps identify existing off-site infrastructure to be connected. Onsite items are sorted out for their necessity based on the result of the assessment.

2.2.3.2. Developers may have the responsibility of providing off-site infrastructure for promoting development and activities of the economic zones. These are required to be considered in the infrastructure plan and cost estimation.

2.3. Perspective Plan of Bangladesh 2010-2021 (2012)

2.3.1. Purpose

The Perspective Plan provides the road map for accelerated growth and lays down broad approaches for eradication of poverty, inequality and human deprivation.

2.3.2. Main Contents Related to the Project

2.3.2.1. Tourism

- While having the vision to project Bangladesh from the adverse effects of climate change and global warming, actions will also be taken to make Bangladesh an ecologically attractive place and to promote tourism in this regard.
- A strategic policy for the tourism sector is to develop Bangladesh as an exotic tourist destination in Asia and increase tourism's contributions to gross domestic product (GDP) from 0.7% to 2.0% by 2015 and then to 5.0% by 2021.⁴⁹

⁴⁹ General Economic Division Planning Commission (2012), p.38.

2.3.2.2. Industrialisation

- Manufacturing is the predominant and leading sector within broad industry.
- The textile and ready-made garment sector employs about 6.5 million people and accounts for over one-half of manufacturing production.⁵⁰
- Manufacturing is and will remain the driver of industrial growth and employment for years to come.
- Among the manufacturing activities sectors such as food processing, leather and footwear, textile and clothing, pharmaceutical, ship building, toys, ceramics and furniture are likely to be the main growth generators for at least another decade.
- Policy support and promotional initiatives will be put in place to realize emerging opportunities in new sectors identified as thrust sectors in the Industrial Policy 2010.
- These include ICT-based sectors, food, beverages, light engineering, high-end readymade garments, pharmaceuticals, ship-building and others.

2.3.2.3. Special Economic Zones

- A major effort will be made to establish a string of Special Economic Zones (SEZs) along international borders.
- This is designated to stimulate cross-border investments and trade, in line with the successful examples of China and Vietnam.

2.3.3. Main Considerations

2.3.3.1. The Bangladesh government has a vision in tourism to make the country an ecologically attractive place. With this vision, the goal of the GDP contribution to 2.0 % in 2015 was almost achieved with 1.9 % in 2014.⁵¹

2.3.3.2. The report indicates that growth generators such food processing, leather and footwear, textile and clothing, pharmaceutical, ship building, toys, ceramics and furniture, will continue to thrive.

⁵⁰ Ibid. p.36.

⁵¹ World Travel and Tourism Council (2015), p.3.

- 2.3.3.3. In the meantime, the plan look for new opportunities in higher valued sectors such as ICT-based sectors, food, beverages, light engineering, high-end RMGs.

2.4. Seventh Five Year Plan FY2016-FY2020 (2015)

2.4.1. Purpose

The objectives of the Seventh Five Years Plan include the following objectives;

- GDP growth acceleration, employment generation and rapid poverty reduction
- A broad-based strategy of inclusiveness with a view to empowering every citizen to participate full and benefit from the development process
- A sustainable development pathway that is resilient to disaster and climate change, entail sustainable use of natural resource; and successfully manages the inevitable urbanization transition

2.4.2. Main Contents related to the Project

2.4.2.1. Tourism

- Tourism accounted for an estimated 2.2% of GDP.⁵²
- The number of tourists has grown from 113,200 in 1995 to 303,400 in 2010, but from an international perspective, tourism in Bangladesh is at a nascent stage.⁵³
- Inadequacy of investment in tourism infrastructure is the most fundamental challenge facing the tourism sector.
- The tourism initiatives related to Cox’s Bazar are presented in Table A-5.

Ongoing Tourism Expansion Initiatives

Medium-Term Strategic Objectives	Activities	Implementing Departments/Agencies
Safe and secure aviation system	Development of the Cox’s Bazar Airport	Civil Aviation Authority

⁵² General Economic Division Planning Commission (2015), p.270.

⁵³ Ibid., p.270.

Expansion of Tourism	Creating infrastructure and improving management of the tourism industry through Public Private Partnership (PPP) arrangements	Bangladesh Parjatan Corporation
	Preparation of Short-Term Mid-Term and Long-Term Tourism Master Plan for the country for guiding development activities in tourism	Bangladesh Tourism Board

Source: General Economic Division Planning Commission (2015)

- One of tourism strategies of the Seventh Plan is the development of a strait Riviera linking Teknaf to Sundarbans.

2.4.3. Main Considerations

2.4.3.1. The Plan emphasises the importance of export in Bangladesh's economy so that it is required to plan the Anowara-2 EZ with export-related functions.

2.4.3.2. The Plan indicates potential manufacturing sectors that would be able to follow up the success of RMG.

2.4.3.3. The government gives attention to the tourism industry and prepares initiatives for it. Cox's Bazar is considered a potential place to improve the industry and the Airport improvement project is a main initiative.

2.4.3.4. Bangladesh's two tourism agencies' (Bangladesh Parjatan Corporation and Bangladesh Tourism Board) PPP modelling and short to long term tourism plans should be reflected on the institutional framework task.

2.5. Initial Site Assessment for Five Economic Zone Sites

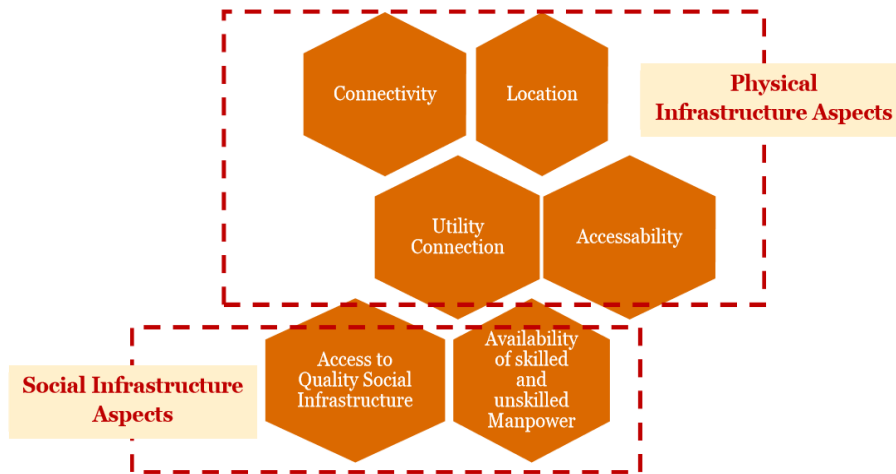
2.5.1. Purpose

The purpose of the initial site assessment is to educate BEZA & the World Bank on the preliminary assessment of the five identified EZs and to assist BEZA and World Bank in selection of suitable land parcels to be considered for future economic zones development.

2.5.2. Main Contents related to the Project

2.5.2.1. Multi-Product EZ

The report introduces a multi-product EZ concept of which physical and social infrastructure facilities are essential to develop a multi-product Economic Zone.



Multi-Product EZ Concept

Source: PWC (2015)

2.5.2.2. Sabrang TP

- **Connectivity:** A highway (Teknaf-Shahparirdwip Road, Z1009) runs parallel and adjacent to the site, and there are 4 approach roads from the existing highway to the site. Cox's Bazar domestic airport is at a distance of 96 km from the site, taking around 2 hours of travel time via road.
- **Portable water:** The ground water is available at a depth of 120-150 feet from natural ground level.⁵⁴
- **Power Supply:** Teknaf substation (10MW capacity) is located at a distance of 7km from the site while the demand of electricity of the region is 6.4KW. A new solar based power plant of capacity 20 MW has been proposed at Huyakong which is 20km away from the site.⁵⁵
- **Accommodation for Tourists:** There is no accommodation facility available in the vicinity of the site. More accommodations are available in Cox's Bazar and St. Martin Island.

⁵⁴ Ibid., p.231.

⁵⁵ Ibid., p.231.

2.5.2.3. Medical facilities: There is only one municipal hospital with 50 beds in Teknaf Upazila⁵⁶. Others are 1 community health centre, 6 private clinics and 7 diagnostic centres.⁵⁷

2.5.2.4. Landfilling Requirements: The site is surrounded by seafront and backwater. The depth of waterlogging is around 4~5 ft. during high tide period and monsoon season. Landfilling of depth 8~10 ft. is required.

2.5.3. Main Considerations

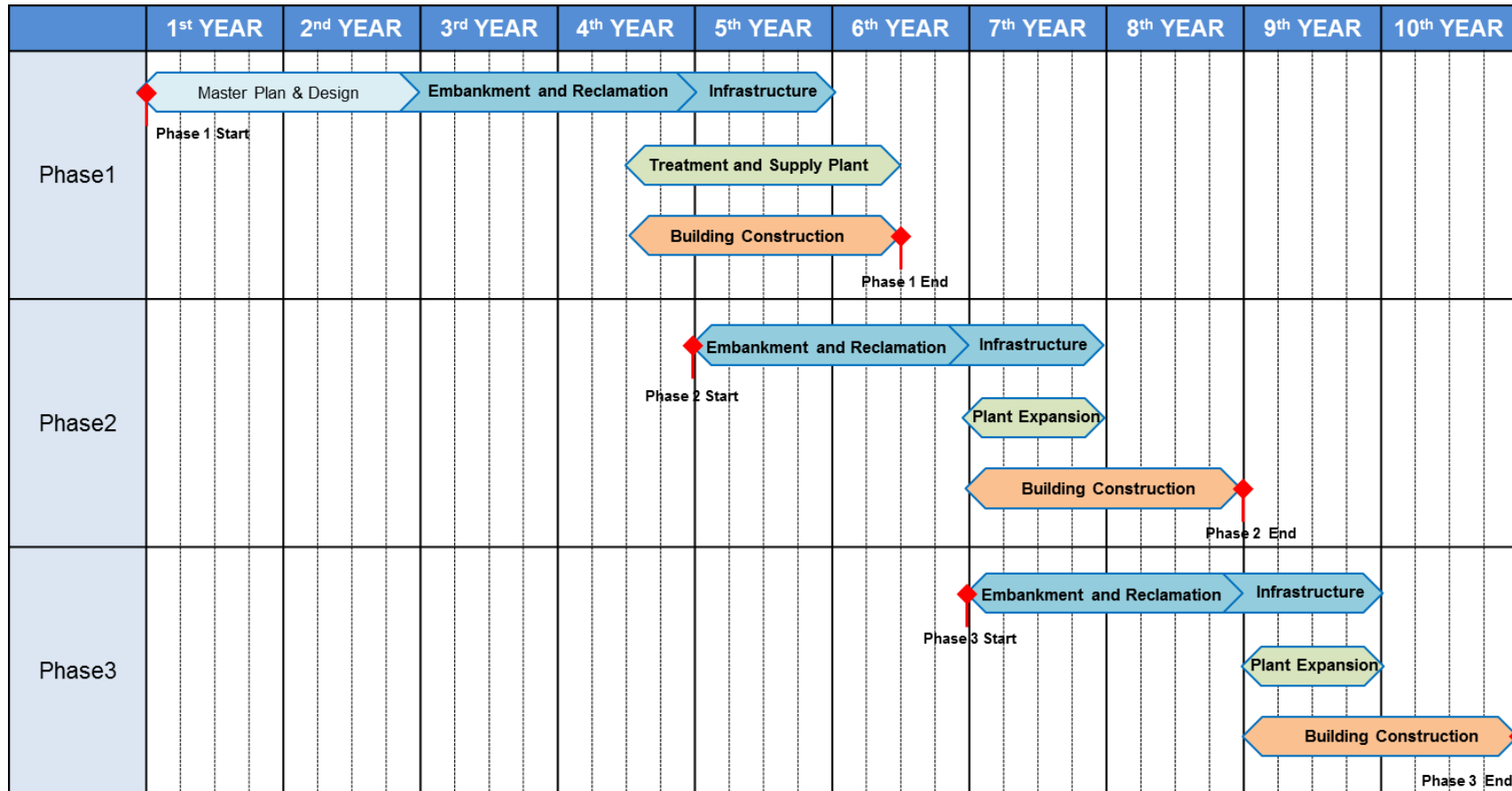
2.5.3.1. The multi-product EZ concept introduces functional elements that are required to consider on designing the Anowara-2 EZ master plan. The concept is, on the other hand, not fully applicable to the Sabrang TP due to its tourism priority.

2.5.3.2. The Sabrang TP site shows improved connectivity with one main beach road under construction while other access roads are planned to be connected to. There is a lack of support utilities in the Sabrang area, most basic supply and treatment facilities should be set up within the site. Its boundary is clearly defined by both current and proposed embankments but it is often waterlogged. How to utilise and mediate the wet site condition seems to be an important task with a wise master planning approach.

⁵⁶ A regional administrative level, Sub-unit of district

⁵⁷ PricewaterhouseCoopers Pvt Ltd. (2015), p.233.

APPENDIX 3. IMPLEMENTATION SCHEDULE



Note: Timelines for each phase in the above schedule are tentative.