

FEASIBILITY STUDY REPORT

On

'FINANCING OF BDT 1000 CRORE
PROPOSED FUND BY BHBFC AS AN
ACTION PLAN TO OVERCOME
CORONA IMPACT'



Bangladesh House Building Finance Corporation
Head Office, 22, Purana Paltan, Dhaka.

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Table of Contents

Executive Summary	i
CHAPTER: 01	1
INTRODUCTION	1
1.1 Necessity of Housing.....	1
1.2 Policy Intervention Regarding Housing	1
1.3 Finance as a Viable Role in Housing Facilitation	2
CHAPTER: 02	3
BACKGROUND	3
2.1 Housing for All.....	3
2.2 Housing and Housing Finance.....	3
2.3 Corona Pandemic Situation	3
2.4 Stimulus Packages	4
2.5 Action Plan of BHBFC.....	4
2.6 Institutional Capacity of BHBFC	5
CHAPTER: 03	6
RATIONALE AND OBJECTIVES	6
3.1 Rationale.....	6
3.2 Objectives of the Study.....	6
CHAPTER: 04	7
HOUSING SECTOR OF BANGLADESH.....	7
4.1 Demographic Scenario in Perspective of Housing Sector.....	7
4.2 Structure of Housing Development System.....	8
4.3 Housing Types Based on Construction Structure.....	9
CHAPTER: 05	10
HOUSING FINANCE SECTOR OF BANGLADESH.....	10
5.1 Investment Scenario in Housing Finance Market.....	10
CHAPTER: 06	12
BANGLADESH HOUSE BUILDING FINANCE CORPORATION	12
6.1 Organogram and Source of Fund.....	12
6.2 Types of Loan	12
6.3 Correlates of Loan Services.....	12
6.4 Source of Fund.....	13
6.5 Operational Plan	13
6.6 Performance of BHBFC	13
6.7 Loan Sanction	14
6.8 Loan Disbursement.....	14
6.9 Loan Recovery	14
6.10 Classified Loan	15
6.11 Fund Management	15
6.12 Repayment of Debenture and Govt. Loan	16
6.13 Financial Position of Last Five Fiscal Years	16
CHAPTER: 07	17
Demand Supply Analysis of Housing Eco-system	17
7.1 Sector Specific Demand and Supply	17
7.1.1 The Major Issues in the Demand Side of Housing Ecosystem	17
7.1.2 The Notable Issues in the Supply Side of Housing Ecosystem	18

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7.1.3	The Projection of Housing Demand and Identifying the LMIH.....	19
7.2	BHBFC Specific Demand and Supply	24
CHAPTER: 08		27
COVID-19 PANDEMIC AND BHBFC		27
8.1	Effects of Pandemic on BHBFC.....	27
8.2	Sustenance of BHBFC Demand Side Trajectory	28
8.3	Necessity of the Additional Fund Flow to Combat Corona Consequence	29
8.4	The Utilization of Proposed Fund.....	30
CHAPTER: 09		31
OUTPUT, OUTCOME AND IMPACT ANALYSIS		31
9.1	Output	31
9.2	Outcome.....	31
9.3	Key Impacts	31
9.3.1	Economic Impacts.....	32
9.3.2	Social Impact	32
9.3.3	Environmental Impact.....	33
9.4	Capacity Development of BHBFC	34
CHAPTER: 10		35
CONCLUSION.....		35
Annexures		36

Tables:

Table 4.1:	Housing deficit in different periods in Bangladesh.....	7
Table-4.2:	The improvement of housing quality based on the structure.....	9
Table 5.1 :	Year wise outstanding in housing finance.....	11
Table 6.1 :	Product Wise ceiling, interest rate and repayment period.....	13
Table 6.2:	Source of fund and outstanding.....	13
Table 6.3:	Area wise loan sanction (Disbursable) for last 5 years.....	14
Table-6.4:	Area wise Loan Disbursement for Last 5 Years.....	14
Table-6.5:	Area wise loan Recovery of last five fiscal years	15
Table-6.6:	Classified loan balance during the last five fiscal year	15
Table-6.7:	Details information of debenture sold.....	16
Table-6.8:	Repayment of debenture, govt. loan and other liabilities.....	16
Table-6.9:	Asset, income, expenditure, profit (before tax) and income tax for last five fiscal year.....	16
Table-7.1:	The distribution of households' monthly income and cons. expenditure by the deciles.....	20
Table-7.2:	Households monthly income and expenditure by ownership of land in rural area.....	21
Table-7.3:	Total housing loan demand per annum for next 5 year period of 2020-21 to 2024-25:.....	22
Table-7.4:	Housing loan demand of LMIH segment per annum for the next five FYs (2020-21 to 2024-25).....	23
Table-7.5:	Division wise average income level of BHBFC borrowers compared to the division wise income level of LMIH of country.....	25

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Table-7.6: The summarization of the loan approval and unmet demand during last 5 FYs.....	25
Table-7.7: Projected demand in BHBFC for the next five FYs (2020-21 to 2022-25) ...	26
Table -8.1: The utilization of the proposed fund through the disbursement against the sanctioned loan cases with zonal segmentation per annum for the next five year.	30
Table-9.1: Estimated output returns investing the proposed funds.....	31
Table-9.2: Estimated outcome	32
Table-9.3: Estimated key monetary involvements with relevant areas.	32

Figures:

Figure 1.1: Links between housing and economic, social, and political aspects.....	1
Figure 4.1: The projected total population of Bangladesh.....	7
Figure 4.2: The up-scaling of household income.....	8
Figure 5.1: The housing price-income ratio of the selective South Asian cities.	10
Figure-7.1: The growth rate of pucca, the formally built houses in last two decades.	23
Figure-7.2: Area wise loan disbursement concentration (%) from 2005 to 2020 in BHBFC.....	24
Figure-7.3: The trend of unmet demand against the attended demand of BHBFC finance.	26

Annexures:

Annexure-1	37
Estimate for Construction of Building in Dhaka and Chattogram Metropolitan Areas by investing BDT 60cr per annum.....	37
Annexure-2	38
Estimate for Construction of Building in all over Bangladesh except Dhaka Chattogram Metropolitan areas by investing BDT 140 crore per annum.....	38







Executive Summary

Housing is recognized in The Universal Declaration of Human Rights along with food, clothing, medical care and social services. The housing sector plays a vital role both in the context of the economy of Bangladesh by serving the fundamental human right of shelter. This sector contributes almost 7.4 percent in the GDP, which is around BDT 14.15 billion in numeric value. But the deficits of housing particularly for the low and middle citizen retain the sector in partial equilibrium.

Housing finance market comes to act with a view to enhancing the purchasing capacity by providing cash flow to the expected segment of borrower. This market is divided into three segments as formal, informal and semi-formal where the formal borrowing in housing is not more than 5% compared to the whole investment. The available sources of collecting necessary formal finance to own a home are the banking and non-banking financial institutions. Bangladesh House Building Finance Corporation (BHBFC) provides financial assistance as housing construction loan for constructing, repairing or remodeling of residential houses all over the country. As the only specialized housing financial institution in the public, BHBFC has been playing a vital role for around 07(seven) decades in providing financial assistance for housing focusing the middle and lower middle-income group people.

BHBFC is missioned to provide financial assistance in order to resolving the housing problems of the low, lower-middle and middle income groups. BHBFC operates its loan servicing with its extended organizational setup targeting the LMIH segments. Due to the fund constraint, BHBFC could not address the potential service expectants satisfactorily. Therefore, huge demanding clients remain unserved. From the credit service and the application received by BHBFC, it is found that the gap between the BHBFC loan approval and loan applied is large which implies that the strength of BHBFC is under- utilized.

As the synchronous initiative to government stimulus programme, BHBFC has also come up with an action plan to combat the corona virus pandemic situation, where emphasis has been given for subsidized financing package to overcome the crisis evolved in housing finance sectors. The main objective of this action plan is to provide corporation's financial assistance to overcome the corona virus impact and enhance the fund flow of financing to the LMIH segment of people. This will obviously ensure to mitigate the needs of affordable housing as well as boost up the financial market in apparently less focused areas.

There is potentially a large demand for housing finance particularly from the Low and Middle Income Households (LMIH) segments. Their demands have not been met up due to the lack of: (i) availability of or access to finance, (ii) commensurate policy and regulatory framework and (iii) affordability of finance. This study wishes to show some rational analysis to identify the expectant home borrowers and the numeric demand projections. The main objective is to continue financing in the housing market to meet up the unmet demand. It is worth to mention here that as state owned public body, BHBFC has the commitment to back up the less focused or less advantaged segment of population in the housing sector from the point of national interest aiming to ensure "Housing for All" policy beyond of the commercial point of view. Therefore, BHBFC would like to address the LMIH segment of people for expanding the impediments prevailing in the market.

The income-affordability method has been used for the demand assessment for the potential home borrowers, especially focusing the LMIH borrowers for the purpose of the study. According to the income trajectory and the purchasing power capacity, the monthly income



BDT 60,000/- is rationally used as the benchmark for the low and middle income households (LMIH) in Bangladesh. Several international organizations (IFC, ADB, and IDB) have used this threshold in their several studies in recent years for calculating the housing finance demand projection in the market.

From this analysis of the demand supply ecosystem of housing finance market, it has been enumerated that there is a huge demand for housing loan. Yet, BHBFC could not spread its loan programs up-to the expectation of its clients because of fund constraints. To enhance the financing capacity, BHBFC has been seeking low cost fund from government sources and side by side also approaching towards the international financial bodies. The supply and demand analysis would suggest a way to inject the fund to optimize the investment benefits. Moreover, this study tries to determine the vivid pathways where the proposed fund will be utilized. It also provides proper information regarding BHBFC's current institutional capacity and strength to utilize the proposed fund of BDT 1000 crore taka in such a way that BHBFC's long term action plan would succeed.

From the analysis of BHBFC's data it is observed that the direct attended demand in BHBFC, per say, was unmet BDT 33.72 billion during the last five years. The average unmet demand of the attended borrowers during the last five years was enumerated 6.71%. Deriving an estimation of the fund requirement on the basis of the effective demand attended in BHBFC and the demand for the LMIH segment in market a simplistic inference has been adopted and it is found that the projected demand for the next five years the LMIH segment, the lion share of the segment aspirants of the BHBFC financing service is BDT 1472.65 billion which implies that BHBFC has the huge potential to expand its service coverage. The trend of the demand (in %) has been calculated on the basis of the average applied loan (zonal office wise) for last two years. This trend has been applied in the distribution as the indices of fund demand of the respective zonal offices. Again, the disbursement estimation has been separately mentioned considering the frequently used dichotomy Dhaka-Chattogram metro areas versus other areas to focus the LMIH segment. Total estimated loan disbursement for next 5 years in Dhaka and Chattogram Metro are 296.6 Crore BDT which is 30%. and Total estimated loan disbursement for 5 years outside Dhaka and Chattogram Metro are 703.4 Crore BDT which is 70% of BDT 1000 crore.

To consider the preference, the fund disbursement will be carried on taking the urban-rural segmentation into account as the concentration of LMIH is supported to be more outside the urban, more precisely outside major two cities- Dhaka and Chattogram. As per the fund proposal backed by the action plan, BHBFC will disburse the proposed BDT 1000 crore over the next five fiscal years, BDT 200 crore in each year in addition to the regular disbursement from BHBFC's own sources.

It is expected that the total number of 1125 multistoried buildings (presumably 6-4 storied) will be built with 9470 family units. Moreover, a huge number of people, nominally 68184, will be the beneficiaries of the improved housing facility through financing the house construction as well as improved citizen amenities will upgrade the living standard of the intended borrowers from LMIH segment of the population.

An effort has been made through this feasibility study to understand the key terms of the housing focusing the present conditions. This financing investment will leave a relevantly small but significant impact on important sectors of Bangladesh economy as well as generating employment in the linkage industries related to the housing finance sector. To overcome the corona pandemic situation, insertion of this fund subsidy would help to advance the housing and housing finance sector.

CHAPTER: 01

INTRODUCTION

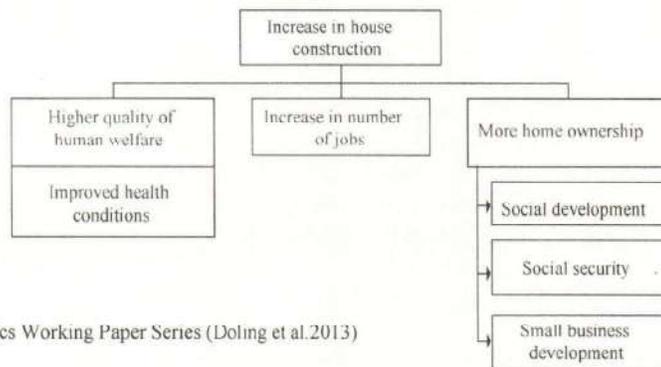
Housing is one of the basic human needs, which provides security and sense of belonging. People need a place to protect themselves from the elements, secure their belongings, and create a space to share with family. Those who live in unplanned and sub-standard housing may suffer from overcrowding, poor protection from adverse natural conditions and inadequate access to basic utilities. Such conditions often lead to health problem issues, particularly for children.

1.1 Necessity of Housing

Bangladesh is one of the most densely populated countries in the world. Bangladesh is struggling to provide affordable housing at a pace fast enough to meet the demand from its growing population, particularly in urban areas. Land prices are high and permanent formal housing is very insufficient—barely 4% in rural areas and 28% in urban centers. Bangladesh has acute housing shortage and needs huge supply of housings to overcome the existing shortage and meet the future demand of housing. The Constitution of Bangladesh under the Article 15 (Part 2) clearly pledges “the provision of the basic necessities of life, including food, clothing, shelter, education and medical care to all the citizens by the state”. Hence, the Government is constitutionally committed to undertake appropriate plan and programs for housing development throughout the country, without preference to any particular area or segment of the population.

Apart from providing physical shelter, housing may have significant impact on the lives of the dwellers in terms of skills enhancement, income generation, increased security, health, self-confidence and human dignity. The Links between Housing and Economic, Social and Political Aspects may be described through the following chart.

Figure 1.1: Links between housing and economic, social, and political aspects.



Source: ADB Economics Working Paper Series (Doling et al.2013)

1.2 Policy Intervention Regarding Housing

Government of Bangladesh (GOB) has adopted ‘National Housing Policy-2016’. National Housing Policy is an indicator of socio-economic stability of the country. This policy is equitably applicable to all urban and rural areas of the country and government is gradually adopting the supporting role in housing development under the purview of this policy. GOB

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through its various agencies constantly trying to facilitate the housing industry by creating favorable environment for the ultimate beneficiaries. Government agencies like RAJUK, KDA, CDA, NHA etc are providing various resources to cater the needs of housing. Moreover, some private organizations like REHAB are also participating actively and institutionally to facilitate the government program of 'Housing for All' in more planned and economic manner.

1.3 Finance as a Viable Role in Housing Facilitation

Housing is an expensive goods which is not viable for a government of 164 million population with limited resources to provide direct houses for the limited fiscal policy. Therefore finance and the subsidized finance is the most effective and acceptable way to improve housing status of its huge population. Financing can increase present income lightening the burden over the periods. The Finance in the housing sector will facilitate to mitigate highly increasing demand of affordable housing for the huge populations of Bangladesh. This would help by providing accommodation facilities for the people as well as enriches comfortable and safe living standard of low and mid-level income group people of the country. The emphasis of housing finance and the subsidization is also echoed in the latest national housing policy of government. Even in the policy, the strengthening of the fund base of the state-owned financing institution is utterly stated. But still, access to housing finance remains very limited in large part due to lack of access to long-term funding absence of capital market various regulatory restrictions. A policy on housing finance based World Bank mission to Dhaka in September, 2019 mentioned some key consideration in their recommendation which includes establishing secondary mortgage market, credit mitigation tool, enabling the environment for mortgage lending and supply side reforms for property and housing construction market.

Following the extent of the housing project and related budget, housing finance had shown growth in recent past. Compared to the high demand for housing finance in Bangladesh, the housing finance sector is small and highly segmented. Though the housing finance system is small and concentrated but the potentiality for growth of this sector has shown a positive sign in recent years. Total outstanding balance has increased 12.40% from fiscal year 2017-18 to 2018-19. Moreover, this sector has shown a promising growth until the COVID-19 situation arises.

The world economy has been experiencing a deep economic downturn due to high contamination risk of corona virus. The gravity and adversity of the pandemic are too pervasive to forecast. The vulnerability is more severe and the ability to deal with the pandemic is lower in developing countries compared to their advanced counterparts due to the inherent socio- economic challenges and resource scarcity. Developing countries like Bangladesh will require huge funding support which is also connoted by the IMF Chief Kristalina Georgieva that COVID-19 has driven the global economy into a downturn, requiring massive funding support to developing countries.

In that note, the housing finance sector of Bangladesh also needs a funding support from Government to get back into its rising position. GOB has already taken various steps including some stimulus packages to deal with the economic downturn caused due to the covid-19 pandemic. The economic stagnant situation arisen in the housing sector needs to address in more comprehensive manner to overcome the obstacles as this sector directly and indirectly contribute in the development of many other linkage sectors along with the resolving the housing need of the people.



CHAPTER: 02

BACKGROUND

Bangladesh is facing an acute shortage of housing supply according to the demand in Urban and Rural areas. About 2.23 million people in Bangladesh live in slums across the country (SID, 2014). The total housing shortage was reported 3.10 million units in 1993, which was reached 6.20 million in 2010 and has currently reached 8.5 million only for the urban and projected to 1.0 million shortages for each year. This study also mentioned that seven out of ten households in Bangladesh dwell in conditions that are not permanent (Kazi Khaleed Ashraf, 2019).

2.1 Housing for All

Bangladesh government is aware of its massive housing crisis. Government has been putting required policies in place. For example, national development plans such as the Government's 7th Five-Year-Plan (FY 2016-2020) emphasize affordable urban housing. Moreover, as a signatory of several national and international policy documents, Bangladesh upholds the right to proper housing and shelter for all. In goal 11 of Sustainable Development Goals, Bangladesh has promised to achieve the target of sufficient, safe and affordable housing by 2030. The present government has highlighted housing on the national goals of Vision 2021 that promises 'housing for all'. Keeping all these commitments in mind, the government has revised and approved the 'National Housing Policy 2016' that affirms to address the housing problems and make the housing market accessible for all. To keep pace with the government policy, the financial institutions are working extensively to provide financial assistance in the housing market so that more people could enjoy the facilities of housing. Housing Finance is an essential and significant part of overall housing sector led by several financial institutions. As an only state owned government organization Bangladesh House Building Finance Corporation (BHBFC) has been providing housing loan specially to the middle and lower middle group of people. It has been working extensively for the business and service purpose towards society. Besides BHBFC, other sources of housing finance currently available in Bangladesh are loans from state owned commercial banks, privatized commercial banks, non-bank financial institutions, NGOs and leasing companies.

2.2 Housing and Housing Finance

Housing and Housing Finance have a multiple effect over other sectors of economy. There are about 269 linkage industries regarding housing & housing finance sector. These industries create employment opportunity in various levels. The type of employment ranges from unskilled and lowly skilled workers to highly paid professions, and include a considerable proportion of technically skilled workers. Moreover, contribution from this sector has been very significant and over the last two decades it contributed on an average 8.24% on the overall GDP of the country. But, due to Corona pandemic housing sector is facing some sort of stagnant situation.

2.3 Corona Pandemic Situation

The novel coronavirus has already caused deadly havoc in the world, affecting more than 208 countries and the spread is still on the rise, significantly affecting the global economy. Bangladesh being forced through lockdown until end of May has seen a crippling effect on workers and businesses across the country. The economy almost came to a standstill and



debilitating effects are being observed in almost all sectors. There are differing opinions on possible impacts of Covid-19 on the Bangladesh economy. Both the World Bank and the International Monetary Fund (IMF) have expressed apprehensions about the economic growth that may slide down to just over 2.0 percent during the current fiscal year. The Asian Development Bank (ADB), forecasts that Bangladesh's economic recovery from the coronavirus-induced downturn would be V-shaped. Like most of the sector, the housing finance sector is under serious stress due to declining demand for funds, increasing Non Performing Loans, declining margins, deteriorations in various efficiency indicators arising from COVID-19. On current issue, one of the most immediate effects of the covid-19 outbreak is the loss of income of many households and the inability to meet mortgage or rent payments. Vulnerability in the mortgage market is getting higher due to payment defaults. Unemployment and reduced income are creating pressure on the borrowers to turn up as defaulters. The tenants are failing to pay the rents properly and many household units are getting vacant, hurting the landlords who may have home loan installments to clear. The landlords are defaulting also.

2.4 Stimulus Packages

The Covid-19 pandemic has forced the economic activities of the world to come at a halt. To save the world from a devastating recession, different countries are announcing stimulus packages for various sectors. A number of stimulus packages and refinancing schemes are extended by the Government as well as Bangladesh Bank with a view to maintaining interrupted credit flow to the economy. As of April 15th, the Government of Bangladesh has introduced stimulus packages of a total of BDT 1,000 billion which is 3.3% of the total GDP. All packages are almost unique in terms of nature, objectives, sources of funds, interest rate duration. It is expected that given stimulus package will be helpful for finance of all types of industries including export-oriented industries affecting due to COVID-19.

2.5 Action Plan of BHBFC

As a victim of Covid-19 pandemic, the housing and housing finance sector also need some extra attention to regain its economic condition so that it could contribute positively in its linkage industries and employment generation. In line with the stimulus package, the government may consider about providing some financial packages to these sector as Bangladesh has had an acute shortage of housing finance supply according to demand. As a government organization, Bangladesh House Building Finance Corporation has come up with an action plan to combat with the pandemic situation, where emphasis has been given for similar financing package to overcome the crisis situation of housing finance sector. The proposed action plan of BHBFC has been divided into 3 terms to combat with the COVID-19 pandemic situation.

First - the short-term activities for 1year focus mainly on the current clients of the organization to provide various facilities such as Omission of penalty charge for late payment, Loan classification, extension of loan disbursement period etc.

Second - Medium Term Activities from FY 2020-2021 to FY 2021-2022 (Two Year Term) proposes giving an incentive on charged interest to motivate borrowers of BIIBFC's who are financially disadvantaged due to Covid-19 virus situation. 10% incentive may be given on charged interest on all loans which will be regular on 30.06.2021 and 30.06.2022 respectively. As a result, the liability of BHBFC borrowers who have suffered financially due to the Covid-19 pandemic situation will be alleviated to some extent. It has been



requested to provide the necessary funds from the special incentive fund of the government for extending these incentives subsidy. On the occasion of Mujib Year, it has been decided to continue the special equity loan of BHBFC till June 30, 2021. Due to the pandemic situation, the activities can be extended to 1 (one) year i.e. 2021-2012 financial year. Zero Equity Loan, a special loan program launched on the occasion of Mujib Year can be availed through Pallima and Krishak Abason Products, which bear interest rate of 7% and 8% respectively. Due to the Covid-19 pandemic situation and to ensure housing facilities for the marginalized people, the interest rate on both the product has been proposed to fixed at 5% for 2 (two) years from 1st July, 2020 to 30th June, 2022.

Third - Long Term Activities for Five Year Term from 2020-2021 Fiscal Year 2024-2025 Fiscal Year), A Loan Assistance from Government amount 1000.00 (one thousand) crore BDT has been proposed to increase the flow of loans at a significant rate per financial year in all metropolitan cities, rural and peri-urban areas of the country including the capital Dhaka. This will meet the housing needs of the people at the marginal level of the Lower Middle Income Housing (LMIH) segment of the country as well as speed up the activities of the housing sector as a whole.

2.6 Institutional Capacity of BHBFC

Bangladesh House Building Finance Corporation (BHBFC) has the Institutional capacity to expand its loan flow to lower-middle income group people. BHBFC has been strengthened its Institutional capacity increasing the number of field offices from 29 to 84 through setting up offices in almost all districts of the country and recruited sufficient manpower accordingly. Therefore, it is to say that BHBFC has developed the Institutional capacity to enhance its operational activity to capture the potential market. Due to the constrained fund sources BHBFC cannot raise sufficient fund to serve the potential service aspirants with the optimum utilization of its institutional strength. Consequently the existing underserved market of house finance becomes more unserved. Current Covid-19 pandemic just made the situation worse. Through injection of fund, BHBFC can cater the unmet demand of housing finance as well as keeps providing assistance to reconstruct the housing finance market by utilizing its full potential.



CHAPTER: 03

RATIONALE AND OBJECTIVES

3.1 Rationale

The persistent growth of the national economy of Bangladesh has come into halt as the Covid-19 pandemic creates a havoc situation in the whole world. Every sector has become a severe victim of the situation including the housing and housing finance sector. These two interrelated sector had an effective impact on national economy reflected in the GDP contribution before the pandemic situation. The ever increasing demand of housing has been backed by the financial institution and enhances the purchasing capability of the ultimate beneficiaries. Though the demand of housing was increasing, the supply of affordable housing was not sufficient against the demand. Moreover, the Covid-19 pandemic situation has made the situation worse of investment. The flow of fund has become limited as the recovery from the previous investment is interrupted due to the overall situation. It is expected that, a stimulus package in the mode of capital financing to the housing sector will facilitate to mitigate increasing demand of affordable housing for the huge populations of Bangladesh and provide better accommodation facilities as well as enriches comfortable and safe living standard of low and mid-level income group people of the country.

In the mortgage market of housing finance Bangladesh House Building Finance Corporation (BHBFC) is the only state owned financial institution. BHBFC has proposed an action plan to overcome the crisis which is created by Corona pandemic. To mobilize the stagnant situation in housing and housing finance sector and mitigate housing problem for lower and lower-middle income group BHBFC proposes a loan assistance of BDT 1000 crore from the government fund. BHBFC seeks fund from the government for enhancing its financing capacity so that it can provide more loans to the middle and lower-income group of people, particularly living in the sub-urban and growth center areas. It is necessary to build the financing capacity of BHBFC for funding in housing sector.

In that perspective, it is necessary to understand and address the gap between the current demand and supply of housing finance to boost up the financing sector. This supply and demand analysis would suggest a way to inject the fund to optimize the investment benefit. So, a feasibility study was conducted to understand the specific ways of investment through the loan assistance of BDT 1000 crore by identifying the demand and supply gap. Moreover, this study tries to determine the vivid pathways where the proposed fund will be utilized. It will also provide proper information regarding BHBFC's current institutional capacity and strength to utilize 1000 crore taka in such a way that BHBFC's long term action plan would success.

3.2 Objectives of the Study

Over viewing the background and rationale described in aforementioned paragraphs following are the objectives of this study:

- To explore the potential and unmet demand of housing loan of BHBFC preferably Low and Middle Income Households (LMIH) segments in urban and rural areas.
- To investigate BHBFC's institutional capacity of disbursing the additional fund to its targeted clients.
- To find out the socio-econo-environmental impact by utilizing of the proposed fund in the targeted areas.

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CHAPTER: 04

HOUSING SECTOR OF BANGLADESH

In the rapidly growing economy of Bangladesh over the last few years, housing is a significant sector in both maintaining and supporting the economy. There are big sectors like industry, infrastructure and communication get prioritized attention, and housing sector deserves a bigger, creative and thoughtful focus as a foundational sector of overall development of the country. The housing sector plays an important role in attaining economic stability. This sector contributes 7.4 per cent in GDP, which is Tk 14.15 billion in numeric value (Reference: Bangladesh Bureau of Statistics). But the deficits of housing particularly for the low and middle citizen retains the sector in partial equilibrium. The data depicted in different studies regarding the housing deficits are summarized in the following table for a quick review.

Table 4.1: Housing deficit in different periods in Bangladesh.

In Million Units

Amount in million units	1991	2001	2010	2021
Urban	0.95	1.13	4.6	8.5
Rural	2.15	3.97	1.6	6.5
Total	3.10	5.10	6.20	15.00

Source: Authors' aggregation of the information from reports of Housing and public works-1993, 2017, BDS-2010 and 7th Five Year Plan.

4.1 Demographic Scenario in Perspective of Housing Sector

Bangladesh, the one of the mostly populous country, has an agriculture-based economy where majority of its population lives in the rural areas with low quality housing service, unfit for human habitation without the presence of sufficient sanitary or utility facilities. The challenge of affordability is not new to Bangladesh, but the need for instituting a supportive institutional framework to increase the supply of affordable housing is still a daunting task. Housing market in Bangladesh is characterized by a surplus of upper-income group housing stock and shortage of affordable housing for the great majority of middle and lower-income population groups.

According to the population projection of Bangladesh Bureau of Statistics of year 2011 as the baseline, the overall population of Bangladesh is increasing gradually and is projected to reach 251 million by 2061 (showed in following figure). The projection indicates that the urban population will increase by year with a fast rate but the growth of rural population is very steady. And by 2050, the urban and rural population will be in the proximity which ascertains the growth of urbanization.

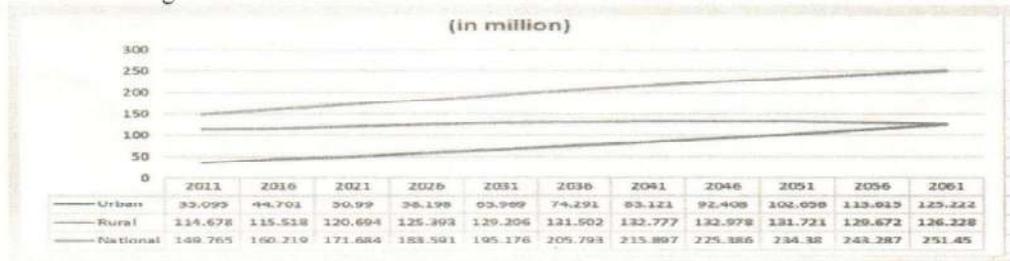


Figure 4.1: The projected total population of Bangladesh.

The housing requirement depends on the household formation rate which is driven by the growth rate of the population. The rising formation rate with shrinking household size and the growing eagerness of young people to own a separate home is intensifying the housing requirements. The requirement of 432000 new housing units each year was reported in 2019.. (Reference: World Bank & Financial Express on 29/11/2019).

On the other hand, following table of income per household shows average income of rural household has been increased 77% in 2020 compared to 2010, where average income of urban household has been increased 75% in 2020 compared to 2010. This indicates the rise of financial capacity of rural dwellers are not lagging behind compared to urban areas not less, which clearly claims the necessity of structural development in rural areas.

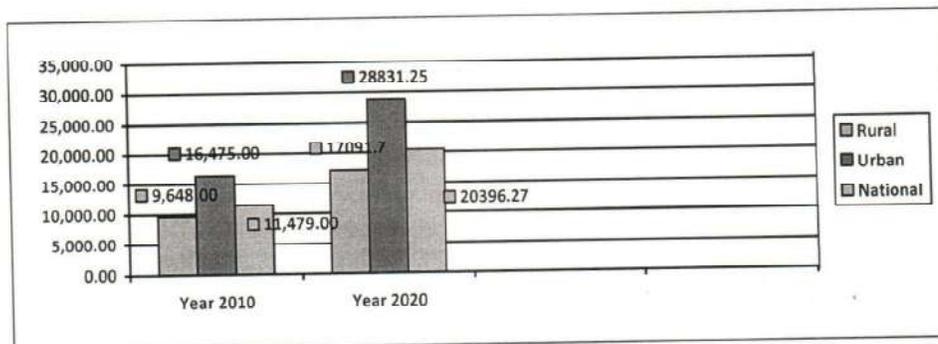


Figure 4.2: The up-scaling of household income.

In BDT per month

4.2 Structure of Housing Development System

Like other developing countries, Bangladesh has two types of housing development systems which are described in the following section:

a) **Formal housing:** Formal housing developments have the legal basis of the planning agency. These are developed within the structure of government rules, controls and regulations. The regulators and stakeholders corresponded to formal housing are:

Policy and Regulatory Bottlenecks:

Important policy compliances are in the housing market:

- ✓ Dhaka Structure Plan 2016-2035
- ✓ National Housing Policy 2016
- ✓ Dhaka Mahanagar Building (Construction, Development Protection & Removal) Rule 2008
- ✓ Private House Land Development Rule 2004
- ✓ Real Estate Act 2010
- ✓ National Housing Authority Act 2000
- ✓ 7th Five Year Plan
- ✓ Prudential Regulations for Consumer Finance (Bangladesh Bank)

Stakeholders:

Key stakeholders identified so far are:

- Ministry of Housing,
- National Housing Authority.
- RAJUK,
- Financial Institute: Bangladesh House Building Finance Corporation, Banks and NBFIs.
- Real Estate Developers.
- Construction Material Suppliers/Producers

The formal private developers and entrepreneurs, being popular recently, are severe only to the upper and middle income groups and thus a large portion of low and lower- middle income

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group is remained unserved. Also high land prices have excluded these income groups from ownership of land and housing.

b) Informal housing: Informal housing development is visibly traditional, illegal and consisted of unauthorized colonies and squatter settlements. These types of developments happen mostly because of unaffordability or sometimes unavailability of housing in legal housing market. The significant characteristics of informal development are insecurity of tenure and low standard of facilities and infrastructure. In the absence of well-established formal land and housing markets in urban areas, informal sector has been playing the major role to cater the housing needs. Small-scale builders and developers, owner-builders operating in the informal private sector are the largest suppliers of land and shelters in Bangladesh. The informal sector holds the role of largest housing supplier in Bangladesh, both in the rental and ownership.

4.3 Housing Types Based on Construction Structure

Based on the structure and building materials, housing are divided into four categories:

- (i) Pucca e.g. the most improved structure with brick cement iron wood materials.
- (ii) Semi-pucca e.g. The improved structure with brick cemented wall and tin shaded roof.
- (iii) Kutcha e.g. Less standard structured with corrugated iron sheet and wooden made roofs and walls.
- (iv) Jhupri e.g. Just the subsistence level of quality made with the materials of mud/unburnt brick, straw/bamboo etc.

Table-4.2: The improvement of housing quality based on the structure. amount in percentage

Types of Structure	2001			2011		
	National	Urban	Rural	National	Urban	Rural
Pucca	6.7	21.7	2.3	11.3	31.9	5.2
Semi-Pucca	10.1	23.1	6.3	19.6	32.0	16.0
Kutcha	74.4	47.7	82.3	66.2	33.6	75.9
Jhupri	8.8	7.6	9.2	2.9	2.6	3.0

Source: Housing condition in Bangladesh, population monograph: volume-2010, BDS-2015.

The housing quality based on the housing structure has improved from 2001 to 2011 and hopefully to the date. But this pace of improvement is yet to satisfactory as the kutcha housing was reported 71.9% in rural area in 2011.

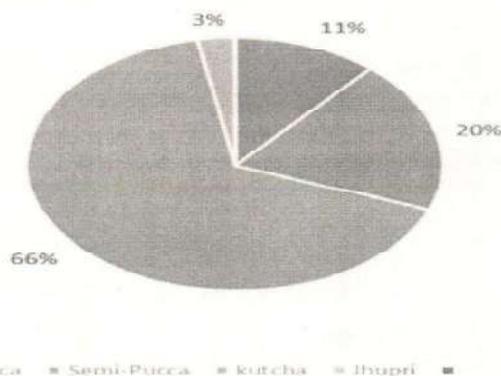


Figure 4.3: The types of housing structure in Bangladesh as time period of 2011.

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CHAPTER: 05

HOUSING FINANCE SECTOR OF BANGLADESH

Housing finance plays a vital role in the development of an economy by supporting strong housing markets. Strong housing and real estate finance markets bring many social and economic benefits like increased investment, savings, employment and more social and labor mobility. In addition, housing represents 15 to 40 per cent of the monthly expenditure of households worldwide. The income to housing price ratio in Dhaka is higher than that in the cities of neighbor countries where the economic facilities are shown in the following chart:

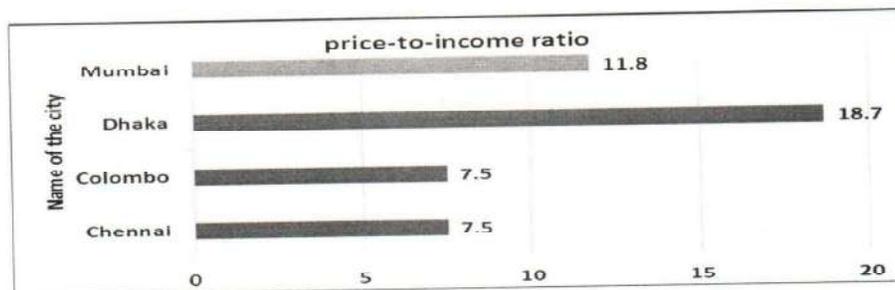


Figure 5.1: The housing price-income ratio of the selective South Asian cities.

Source: Choudhury (2013).

5.1 Investment Scenario in Housing Finance Market

Due to limited sources of funds and high interest rate, there is inadequate financial intermediation in the housing sector in Bangladesh. Traditionally, people tends to build a house on own investment or from informal borrowing. The formal borrowing in housing is not more than 5% compared to the whole investment in housing. In broader sense, the available sources of collecting necessary money to own a home from the available source as financing are as following:

(a) Non-institutional:

The major share of finance in housing constructions, reparations or purchasing is non-institutional and almost 95% of financing activities related to housing are sourced as below:

- ✓ Own savings
- ✓ Debt from Friends or acquaintances
- ✓ Debt/Aid from Relatives
- ✓ Other sources

(b) Institutional:

Institutional or formal housing finance, which covers only around 5% of total financing in housing mainly provided to the customer to construct house, purchase apartment, reconstruct or developing existing house by the authorized lender institutions as follows:

- ✓ State-Owned Commercial Banks (SCBs)
- ✓ Privatized Commercial Banks (PCBs)
- ✓ Non-Bank Financial Institutions (NBFIs)
- State-owned Specialized Housing loan provider

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- (Bangladesh House Building Finance Corporation)
- Privatized Specialized Housing loan provider
(Delta-Brac Housing Ltd. and National Housing Finance Ltd)
- Privatized NBFIs (IDLC, IPDC etc.)
- ✓ Micro-finance Institutions (Grameen Bank, BRAC, ASA, Proshika etc.)

Besides, housing microfinance is still an emerging industry in spite of its strong value proposition and informal systems are not yet well-organized. In addition, the need for the improvement in the housing finance system and the role of specialized housing finance institutions have been articulated in numerous studies and by different government and international agencies. The market share of the home loan service providers are as follows:

Table 5.1 : Year wise outstanding in housing finance.

(in Billion Taka)

Name of the institution	Year		
	2018	2019	2020
Bangladesh House Building Finance Corporation	31	32.5	33.3
Delta Brac Housing Finance Limited	37.1	43.9	43.2
National Housing Finance & Investment Limited	8.0	11.6	12.9
Private Commercial Banks	473.8	491.6	489.3
State-owned Commercial Banks	176.7	211.9	242.0
Foreign Banks & Specialized Banks	25.2	35.4	40.6
Other Financial Institutions	60.9	68.5	68.0
Grameen Bank	0.7	1.1	1.0
Total	802.5	893.8	930.3

Source: Bangladesh Bank Annual Report 2019-2020.

Like any financial sector, the housing financing is also dominated by banks. The share of specialized financial institutions along with BHBFC is trailing. Owing a largely expanded organizational set up BHBFC could not amplify its operations due to its constrained fund base. On the other hand private specialized financial institutions are operating with predominantly urban centric approach usually targeting the upper class and upper-middle class customers of major cities. Therefore it is reported that over 80% of overall housing loan is disbursed to Dhaka and Chattogram city based developers and purchasers. In that situation BHBFC, is extending housing finance, as a beacon of hope, towards the LMIH of zila sadar, upazila sadar, peri-urban and growth centers all over the country.

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CHAPTER: 06

BANGLADESH HOUSE BUILDING FINANCE CORPORATION

Bangladesh House Building Finance Corporation (BHBFC) is a state owned-specialized financial institution. As a pioneering institution in the housing sector, it has been experiencing housing finance service for almost seven decades since its inception in 1952. Still it is the only financial institution in public sector. It provides financial assistance for construction, repairing or remodeling of residential houses to all divisional cities, district towns and upazilla headquarters (including growth centers) of the entire country. As the only state owned specialized financial institution in the housing sector, BHBFC has been playing a vital role for providing financial assistance for housing to the middle and lower middle-income group of people of the country.

6.1 Organogram and Source of Fund

House Building Finance Corporation was established in 1952. After the independence of Bangladesh it was reconstituted as Bangladesh House Building Finance Corporation (BHBFC) by the President's Order no.7 of 1973 (P.O.-7/1973). The Corporation is operating 84 field offices which includes 60 Branch offices, 14 Regional offices and 10 Zonal offices across the country. Currently, around seven hundred employees are working against the approved manpower of 1297.

The main source of fund of BHBFC is the capital subscribed by the government, as per the authorized capital. The Corporation also raises fund by selling Debentures with govt. guarantee. It takes deposit and loan from the Government. The authorized capital is BDT 110.00 crore, 100% has been subscribed and paid. To-date, around BDT 1872.00 crore has been issued, out of which BDT 394.50 crore is outstanding at 4-5% p.a. BHBFC also received loan from GoB, currently BDT 949.20 crore is outstanding at 3% p.a.

6.2 Types of Loan

BHBFC provides housing loan both for construction of house and purchasing ready-made flat/apartment through eleven Products described below:

1. Nagarbandhu Loan
2. Probasbandhu Loan
3. Pallima Loan
4. Abason Unnoyan Loan
5. Flat Loan
6. Abason Meramot Loan
7. Flat Registration Loan
8. Housing Equipment Loan
9. Government employee Loan
10. Zero Equity Loan
11. Krishok Abason Loan

6.3 Correlates of Loan Services

The amount of loan depends on the size/area of building, place and location of the house. The period, rate and the ceilings of loan are as follows:

Table 6.1 : Product Wise ceiling, interest rate and repayment period.

(In Lac BDT)

SL	Area	Ceiling			Common Repayment Period ¹	Rates
		Single	Group	Flat		
1	Dhaka and Chattagram Metropolitan	200.00	120.00	120.00	15-20 years	9%
2	Divisional cities and District Town	60.00	40.00	60.00	15-20 years	7-8%
3	Upazila, Peri Urban and Growth Center	50.00	40.00	40.00	15-20 years	7-8%

6.4 Source of Fund

At present, the capital structure of BHBFC is as follows:

Table 6.2: Source of fund and outstanding.

(Taka in Crore BDT)

Source	Amount
Authorized Capital	110.00
Paid-up-Capital	110.00
Govt. Deposit	12.71
Govt. Loan	949.20
Debenture Balance	394.50

6.5 Operational Plan

BHBFC provides credit facilities for construction of dwelling houses and apartments in cities, towns and rural areas. The corporation offers 5–25 year loans at simple rate of interest. BHBFC operates its loan program to all over Bangladesh (City Corporation, District town, Upazilla head quarter and Growth centers). But, due to fund constraints, BHBFC faces difficulty to expand loan program to fulfill the existing need. The rising financial capacity of the people adds additional LMIH people in service aspiration leading to an increasing demand in housing sector. Though the Corporation has taken various steps to increase its fund to respond the increasing demand of its target market, the limited sources of fund make efforts less effective.

6.6 Performance of BHBFC

The overall dynamics in the activities of the BHBFC has increased in recent years for pragmatic steps taken by the management. The Corporation has undertaken effective long term plans and subsequent efforts to implement those plans toward goal.

¹Loan Period for Specially Designated Loan Product Probasbandhu and Krishok Abason is upto to 25 Years.

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6.7 Loan Sanction

During the last financial year 2019-2020 which was partly affected by Corona pandemic. The amount of loan sanctioned was Tk. 455.32 crore against 1275 loan cases. Scenario of loan sanction during the last five financial periods are shown in the table below:

(In Crore BDT)

Table 6.3: Area wise loan sanction (Disbursable) for last 5 years.

Region (Division wise)	2015-2016		2016-2017		2017-2018 ²		2018-2019		2019-2020	
	Number	Amount	Number	Amount	Number	Amount	Number	Amount	Number	Amount
Dhaka	412	126.05	535	157.02	387	184.39	586	239.08	460	191.19
Chattagram	131	37.20	161	42.30	91	40.52	132	47.27	152	55.32
Rajshahi	110	25.52	165	38.09	160	52.01	259	75.07	190	54.57
Khulna	110	27.32	137	35.44	97	32.98	157	55.52	165	53.68
Sylhet	23	3.80	31	7.65	30	9.66	42	12.46	23	7.43
Barishal	45	11.88	62	18.22	42	16.34	118	39.59	49	16.53
Rangpur	84	20.84	99	25.00	82	30.62	136	43.82	125	40.39
Mymensingh	32	8.30	111	29.70	102	35.10	116	40.25	111	36.21
Total	947	260.91	1301	353.42	991	401.62	1546	553.06	1275	455.32

6.8 Loan Disbursement

During the last financial year 2019-2020 the amount of loan disbursement is Tk. 421.95 crore. Scenario of loan disbursement during the last five financial period are shown in the table below:

Table-6.4: Area wise Loan Disbursement for Last 5 Years

(In Crore BDT)

Region (Division wise)	2015-2016		2016-2017		2017-2018		2018-2019		2019-2020	
	Number	Amount	Number	Amount	Number	Amount	Number	Amount	Number	Amount
Dhaka	378	126.89	393	127.35	465	164.12	422	183.62	452	166.34
Chattagram	91	29.94	114	35.94	111	39.95	90	38.14	113	42.58
Rajshahi	89	26.15	87	26.84	121	41.61	140	61.41	147	52.59
Khulna	75	20.51	104	32.60	81	29.31	110	45.16	125	47.45
Sylhet	20	3.82	17	5.50	30	10.65	21	7.67	23	10.28
Barishal	36	9.87	43	13.63	41	15.66	70	31.80	57	20.69
Rangpur	68	16.39	61	17.85	81	28.70	81	33.82	144	42.81
Mymensingh	48	14.41	55	18.80	82	30.02	72	33.05	71	39.21
Total	805	247.98	874	278.51	1012	360.02	1006	434.67	1132	421.95

6.9 Loan Recovery

BHBFC has shown operational resilience in recovery achievement during the fiscal year 2019-2020, which was affected by corona pandemic. In 2019-2020, the recovered amount of loan was Tk. 484.46 crore against the target of Tk. 430.00 crore. Scenarios of loan Recovery during the last five financial periods are shown in the table below:

² The Loan Ceiling was updated in that year from 50 lacks to 100 lacks. So that, the loan case number was not increased as the increasing of the loan amount.

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Table-6.5: Area wise loan Recovery of last five fiscal years**(In Crore BDT)**

Fiscal year	Area (Division wise)	Dhaka	Chattagram	Rajshahi	Khulna	Sylhet	Barishal	Rangpur	Mymensingh	Total
		2015	Target	369.26	53.28	25.85	49.76	7.45	18.44	21.77
2016	Recovery	351.53	51.43	27.57	34.24	7.08	17.07	19.43	14.69	523.04
	Rate	95.20%	96.53%	106.65%	68.81%	95.03%	92.57%	89.25%	63.10%	91.91%
2016	Target	365.93	58.62	30.47	53.41	7.67	19.07	23.94	24.35	583.46
2017	Recovery	355.11	50.85	34.22	37.14	7.91	18.26	22.45	16.75	542.69
	Rate	97.04%	86.75%	112.31%	69.54%	103.13%	95.75%	93.78%	68.79%	93.01%
2017	Target	346.68	57.75	30.51	53.74	7.28	19.62	24.92	23.62	564.12
2018	Recovery	315.61	49.92	33.74	38.86	8.82	18.50	24.60	16.46	506.51
	Rate	91.04%	86.44%	110.59%	72.31%	121.15%	94.29%	98.72%	69.69%	89.79%
2018	Target	342.08	63.49	32.89	50.84	8.35	20.97	25.63	27.57	571.82
2019	Recovery	317.92	54.37	37.48	38.96	8.78	20.61	26.70	23.32	528.14
	Rate	92.94%	85.64%	113.96%	76.63%	105.15%	98.28%	104.17%	84.58%	92.36%
2019	Target	250.34	47.90	27.08	38.60	6.50	17.17	20.67	21.74	430.00
2020	Recovery	277.82	50.97	38.58	37.42	9.29	20.84	27.80	22.14	484.86
	Rate	110.98%	106.41%	142.47%	96.94%	142.92%	121.37%	134.49%	101.84%	112.76%

6.10 Classified Loan

In 1999-2000 the amount of provision deficit was taka 185.35 crore. In the subsequent years all out efforts were made and as a result, the corporation started earning profit fulfilling the required provision deficit. As on 30.06.2020 the rate and the amount of classified loan were brought down to 7.41% and BDT 257.04 crore respectively. The effort is being keeping on to bring down the total classified loan balance below 5% margin. Though the Corona Situation Slowdown the Speed of the effort. Classified loan balance during the last five financial period shown the table below:

Table-6.6: Classified loan balance during the last five fiscal year**(In Crore BDT)**

Fiscal Year	Unclassified Balance	Percentages of unclassified loan	Classified Balance	Percentages of Classified Loan	Total Balance
2015-2016	2794.14	93.03%	209.26	6.97%	3003.4
2016-2017	2804.04	93.82%	184.83	6.18%	2988.87
2017-2018	2859.95	92.41%	234.76	7.59%	3094.71
2018-2019	3038.66	93.18%	222.28	6.82%	3260.94
2019-2020	3211.19	92.59%	257.04	7.41%	3468.23

6.11 Fund Management

BHBFC has been provided paid up capital and loan from government. BHBFC has also raised funds by selling debentures to various banks and financial institutions for conducting

operational activities. All debenture are guaranteed by Government and all Installment of debenture are regular. The details of which are mentioned below:

Table-6.7: Details information of debenture sold. (In Crore BDT)

SL	Name of Bank	Amount	SL	Name of Bank	Amount
	Bangladesh Bank	1497.00	9.	AB Bank Ltd.	10.00
	Agrani Bank Ltd.	60.00	10.	City Bank Ltd.	10.00
	Janata Bank Ltd.	70.00	11.	UCBL	10.00
	Sonali Bank Ltd.	100.00	12.	Estern Bank Ltd.	20.00
	Pubali Bank Ltd.	20.00	13.	Basic Bank Ltd.	5.00
	National Bank Ltd.	20.00	14.	Bank Asia Ltd.	5.00
	Uttara Bank Ltd.	20.00	15.	Prime Bank Ltd.	10.00
	Rupali Bank Ltd.	5.00	16.	IFIC Bank Ltd.	10.00
Total=					1872.00

6.12 Repayment of Debenture and Govt. Loan

BHBFC has the reputation for paying all its liabilities in due time. The repayment of debenture, Govt. Loan and other liabilities for the last five fiscal years are shown in the table below:

Table-6.8: Repayment of debenture, govt. loan and other liabilities (In Crore BDT)

SL	Fiscal Year	Debenture Repayment	Govt. Loan Repayment	Govt. Liabilities Repayment	Total
1	2015-2016	137.78	17.12	2.79	157.69
2	2016-2017	99.43	25.95	2.79	128.17
3	2017-2018	18.34	31.17	2.79	52.30
4	2018-2019	18.95	37.32	2.79	59.06
5	2019-2020	19.72	37.41	2.79	59.92

6.13 Financial Position of Last Five Fiscal Years

BHBFC has earned profit for last five fiscal year and paid tax to government against the profit. The Assets, Income, Expenditure, Profit before tax and Income tax of last five fiscal years are shown in the table below:

Table-6.9: Asset, income, expenditure, profit (before tax) and income tax for last five fiscal year (BDT in Billion)

SL	Fiscal year Particulars	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
1	Total Assets	38.58	40.75	39.42	42.50	43.15
2	Total Income	2.42	2.56	2.65	2.89	3.00
3	Total Expenditure	0.87	1.00	1.06	1.20	1.26
4	Profit before Tax	1.55	1.61	1.56	1.70	1.69
5	Provision for Income Tax	0.82	0.90	0.53	0.80	0.69

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CHAPTER: 07

Demand Supply Analysis of Housing Eco-system

7.1 Sector Specific Demand and Supply

The demand and supply analysis of housing finance mostly analogous to the demand and supply analysis of housing. The general trend of the demand of housing finance follows the demand of housing almost proportionately. The uprising demand of finance for the incremented population depends also on the incremented capacity of the debt servicing of the population. The up scaling of national income level is enabling the more LMIH fit for debt servicing and eventually new demand is added over existing demand. In addition to, the high population density along with young demographic profile, rapid urbanization and the economic growth is leading to a high demand of housing and housing finance in Bangladesh which is not matched by a corresponding supply (borrowers) especially for the LMIH segment of the people.

Lack of comprehensive and proactive policy, housing market has led to a “partial equilibrium in the housing eco-system where majority banks and non-bank financial institutions (NBFIs) concentrate on serving the upper middle and high-income population in metropolitan areas of major cities, which are comparatively affluent. The market on its own is not fully fulfilling its role to provide housing financing to meet the housing demand for the own-to-stay segment. Rather, it is catering to investment-led demand from the more affluent segments. But there is a potentially large demand for housing finance particularly from the LMIH segments which it has not translated into realizable transactions constrained by the lack of: (i) availability or access to finance, (ii) commensurate policy and regulatory framework and (iii) affordability of finance (Referring to an ADB feasibility report-2018 on expanding housing access to LMIH in Bangladesh).

7.1.1 The Major Issues in the Demand Side of Housing Ecosystem

Analytically, there are more other issues which affect the demand supply ecosystem of housing and housing finance. The several interventions/factors which are predominately impeding demand side of the market are as follows:

(i) **Information asymmetry:** Though always under focused, the information asymmetry between the credit suppliers and potential borrowers is one key factor to address this potential mismatch lying in the market. Therefore credit information mechanism up-gradation is one measure that could be an important factor. The other point is the borrower’s low education and so less informed of the mortgage lending products.

(ii) **The price hike of materials:** The price of building material is higher and gradually increasing which leads to a higher cost of housing which is not commensurate to the recent rental income earned from the residual housing property specially at the early stage which demotivate the potential home builders to receive borrowing for constructing house.

(iii) **The higher registration cost of mortgaged transfer property:** The registration costs for mortgaged and transferring property in Bangladesh is markedly higher than that of other neighboring countries. This high cost discourages the clients, mainly flat purchasers to go and slumps down the demand. This also affects the speed of the secondary market for property transactions. The recent reduction of registration cost in this regard is a justified action which already has impressed the market of property transactions and resulted in increased housing borrowing.



(iv) **The land administration:** The land administration is a key role player in the improvement of the real estate specially the home borrowing market. The complication upon the land title for the mortgage conducting is a factor for impacting the housing development as well as housing finance. Sometimes the lack of clear and non-disputed land titles disincentivise the desire of home borrowers. Though recent digitalization has improved the situation and impacted positively in the mortgage market.

(v) **The procrastination in judicial executions:** One major concern for expanding housing finance is lying with the laws and procedures related to foreclosure of the mortgage property. The long and cumbersome judicial executions for default cases make the way of loan appraisal procedure difficult for the home borrowers. The lack of creditors right in enforcing mortgage loan an impediments for the market. Though the BHBFC enjoys some extent specialized privilege in this context which paves the BHBFC an exclusive nature of market favour.

(vi) **Subsidy:** Incentives in the form of interest subsidy, priority sector leading targets can play an effective role in triggering the demand of LMIH focused housing finance. Govt. housing programme "Gryahan Tahabil", the specialized public housing finance institutions, BHBFC can lead to the subsidized initiatives with the support of convenient govt. policy. As the housing is a basic needs, the LMIH segment is worthy of housing subsidization.

(vii) **Specially designated govt. housing scheme:** The government recent interest subvention housing scheme for government employees is expected to be a fillip in housing improvement. This programme has already added an extra pace in housing industry specially in housing finance market. Though these efforts are indeed commendable, the impact of such programmes remain limited because of constrained fund availability. The expansion of the programme to the public universities is a good advancement for the housing need mitigation. Similar programme is needed to adopt addressing the unaddressed low income people like the garment workers. Four million garments workers who are mainly low income segment staying periphery of the cities are not eligible to access formal finance and remains unattended from the housing service. The cooperative/pooled housing models could be an appropriate initiative to support these low income people which would pool the individual loans of workers through their employers so that banks, developers and these workers can benefit from scale advantages.

(viii) **Debt service capacity and repayment:** For the good financing appraisal, the capacity of loan servicing is a major factor for the covering of the risk of default. The early rental income from a newly built house is low and the rental income is unavailable for the flat of own-to-stay. Therefore, the debt service capacity determines the demand estimation of the expectants of the home finance.

7.1.2 The Notable Issues in the Supply Side of Housing Ecosystem

In the supply side analysis, housing finance is constrained for several reasons. Some of the constraints, which are focused in housing literature mainly in the respective of Bangladesh, are placed in the following.

(i) **The higher cost of long term housing finance:** The high cost of finance for home long term loan is a major obstacle to expand the affordable housing finance especially for the LMIH. Lenders are unable to raise long term liabilities. Lenders source short term liabilities such as deposits with maturities ranging from less than one year to ten years to make long term disbursements up to tenures of 15 to 20 years, exposing lenders to asset liability mismatch risk, and attendant increase in lending costs.

(ii) **Absence of refinance institution:** Due to absence of national level refinance institution, lenders miss the availability of refinance and rollover their short-term liabilities.



This type of refinance window can support housing finance institutions in expanding their portfolio and reducing the risk of asset liability mismatch. The very familiar refinancing agency, National Housing Bank (NHB) of India is acting as a successful resort to the Housing Financing Institutions (HFIs).

(iii) **Absence of securitization market:** The securitization market can help lenders to optimize their portfolio through issuance of mortgage backed securities and in freeing capital with such instruments to expand mortgage portfolio.

(iv) **Lack of well-established debt capital market:** There is no capital market funding available that would help the bridge the maturity mismatch. Debt capital markets in Bangladesh lack the depth to support resource mobilization, which reflects in the over-reliance on deposits, which in turn constraints lending owing to asset liability mismatches. BHBFC which does not have access to none but govt. deposits which is a particular impediments in its expansion plans. Though the organizational strength has penetration enough for rendering the door step service to its client.

(v) **The relative interest volatility:** Funding is at the variable rates, reflected in the mortgaged lending. The volatility in the interest rates generates uncertainty and risk for both borrowers and lenders translating into variable monthly payment and can create affordability and loan delinquency issue. Moreover some other issues for constraints in expanding housing finance such as the alteration of the residential zone into commercial thriving areas largely inexistent of private bond market. There are some regulatory restrictions such as bank loan cap, bank mortgage portfolio limit etc. which are introduced and imposed to regulate the housing finance market of Bangladesh. A policy note of World Bank (WB) mission on housing (Sept-2019) in Bangladesh listed a comprehensive summary of obstacles provided by one of mortgage financing Bank during visit, annexed here with.

7.1.3 The Projection of Housing Demand and Identifying the LMIH

The demand projection of the housing finance is not a straight forward mechanism. Some of study has articulated the demand of particular groups of particular areas. Some of the study are backdated in period for this demand matrix. The demand estimation for housing finance for whole market segment is not found from reliable source. This study wishes to show some rational analysis to identify the expectant home borrowers and the numeric demand projections. Along with aforementioned the issues of housing finance ecosystem, the other necessary issues of housing market has taken into account for outlining the demand estimation such as the rate of urbanization, rental and ownership status i.e. the tenancy status, income sufficiency for debt servicing etc.

In case of Bangladesh the rate of growing urban population is around 5% well above the national population growth rate of per annum 1.4% during the last decades (Statistical Pocket Book-2019). This urban growth includes the migratory population from rural areas as well as the population of the converted rural areas into urban through expansion of the cities and municipalities. And also, some of mega development projects, expansion of industrial zones through SEZ, EPZ etc. has also accumulated the rural areas in urban armpit altering the geography. The tenancy effect is considered in way that the majority of people live in the rental house feels to move from rental dwelling to the home ownership.

The demand projection is a complicated aspect as there is no single straight lined methodology earmarked in the housing literature. There are two ways, commonly practiced by the researchers to estimate the housing finance demand are as follows:

(a) **Supply side approach:** Estimation of the requirements of housing finance to follow the potential supply of housing units from the public and private sectors.



(b) **The income-affordability” approach:** The demand is estimated on the basis of the sustainable debt service capacity while assuming certain minimum loan parameters applied by the lenders.

Given the multiple sources of supply of housing which is naturally heterogeneous and so practically less suitable to use the supply side approach in the current study. The income-affordability method has been used for the demand assessment for the potential home borrowers, especially focusing the LMIH borrowers for the purpose of the study.

The demand projection needs the income profile of the expectant borrowers for sustainable debt servicing as per the approach of income affordability. The following table is derived from the data of HIES 2016 for the year of 2020. The income and consumption expenditure for 2020 has been enumerated on the basis of the growth rate of wage index (WRI) and consumer index (CPI). (Reference: monthly report on CPI, inflation and WRI in Bangladesh of June, 2020).

Table-7.1: The distribution of households’ monthly income and cons. expenditure by the deciles.

Category	No of HHS			Monthly HHS Income in BDT			Monthly HHS Cons. Exp. in BDT		
	Urban	Rural	National	Urban	Rural	National	Urban	Rural	National
bottom 5%	615355	1420497	2037495	1561.09	844.45	952.45	15876.00	11731.64	12633.75
decile 1	1208309	2855754	4066262	3372.50	1808.67	2069.52	15370.74	11693.20	12437.50
decile 2	1203246	2874726	4054366	8604.24	5107.39	5766.66	14832.72	13068.36	13553.75
decile 3	1088125	2873648	4060970	11851.71	7445.28	8271.49	16550.10	13116.72	13645.00
decile 4	1072821	2979955	4061682	14568.99	9361.05	10468.45	17986.50	13845.84	14527.50
decile 5	1082712	2858483	4060976	17276.29	11330.53	12715.02	20191.50	14605.96	15975.00
decile 6	1019278	3023181	4054420	20366.30	13496.79	15268.92	21558.60	16003.44	17555.00
decile 7	1099847	3008813	4056721	24428.86	16264.91	18475.12	23771.16	17420.76	19316.25
decile 8	1112523	2971040	4062581	29937.95	20167.95	22928.41	27299.16	19105.92	21030.00
decile 9	1120740	3009927	4063704	38783.17	26484.68	30304.57	34472.34	22632.48	26203.75
decile 10	1089500	3019261	4054042	119581.04	59497.67	77756.72	52365.60	30482.92	38530.00
top 5%	548522	1525581	2029549	185099.43	82733.35	113546.14	60886.98	34826.64	45015.00
Total	11056058	29507952	40564010	28831.25	17091.70	20396.27	24422.58	17196.32	19275.00

Source: Authors’ derivation on the basis of the HIES 2016, monthly report on CPI, inflation and WRI in Bangladesh of June, 2020 by BBS.

It is the common supposition in the case of income recording, the disclosed income is normally deflected and less compared to the actual income. Therefore, it will be a conservative manner to forecast the demand on the basis of the income statements.

Now, the above table describes that the deciles 1-6 for both urban and rural HHs and the deciles 1-7 of rural households have the income level which is lower than the consumption expenditure and are practically limited to support loan payments towards a housing loan on the basis of the current market condition at any consideration. Hence, the decile-7 and above for urban segment and the decile-8 and above for rural segment might be theoretically considered for the competent borrowing seekers. In case of rural segment, the essential income along with the land ownership will assure the stable loan servicing capacity. It is

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observed that the decile-7 and above has the landholding of the half an acre per HH which supported the assumption.

Table-7.2: Households monthly income and expenditure by ownership of land in rural area.

Ownership of land	No of HHs	% of HH	Total Number of members	Avrg. monthly income per HH	Avrg. monthly expenditure per HH
Landless	2075526	7.34	7650749	9842.21	10191.58
00.01 - 00.04	7424617	26.27	29024881	10735.2	12043.04
00.05 - 00.49	11793687	41.73	49335050	13036.78	13963.4
00.50 - 00.99	3038438	10.75	12700617	14290.79	15813.04
01.00 - 01.49	1502665	5.32	6512449	17793.09	18289.88
01.50 - 02.49	1335652	4.73	5762053	19749.19	18581.76
02.50 - 04.99	755318	2.67	3398414	25142.51	22549.84
05.00 - 07.49	168124	0.6	784659	28339.33	22243.87
07.50 - 09.99	40711	0.14	192718	32595.52	21214.3
10.00 - 14.99	45954	0.16	219171	43039.5	27459
15.00 - 24.99	28624	0.1	100886	13340.38	18469.79
25.00+	48624	0.17	205837	15162.91	20299.8
All Groups	28258539	100	116087485	13398.12	14155.85

Source: HIES-2016,BBS.

Here, it is worth to mention that, the urban segments in the HIES-2016 survey are consists of 68 urbanized sub-strata from 64 districts and 4 city corporations under 8 urbanized strata of 8 administrative divisions of Bangladesh and 4 major city corporations (Dhaka, Chittagong, Rajshahi, Khulna). Similarly, the rural segments are consist of 64 rural sub-strata from 64 districts under 8 rural strata of 8 divisions. In that consideration, the demand for national housing finance is deduced on the basis of these two segments: urban and rural. To follow the income- affordability approach, a considerable portion³ of the present monthly income is taken to be potentially used to service debt for a given tenure of the loan. Refer to the following table where 30% of urban income and 25% of rural income (given the lower income was observed in rural segment) is accounted for the payment toward the EMI of the loan.

³ Housing affordability is a measure when the 25-40% of HHs income can afford the housing expenditure varying on the basis of developed and developing countries.

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Table-7.3: Total housing loan demand per annum for next 5 year period of 2020-21 to 2024-25:

Segment	Decile	Monthly income in BDT	EMI in ⁴ BDT	Inrst. Rate	Tenure in years	Present Value of Debt In BDT	% of Borrowing HHs	No of Borrowing HHs per annum	Loan Demand In Billion Tk
Urban	Decile 7	24428.86	7328.66	9%	20	814539.83	3%	32995	26.88
	Decile 8	29937.95	8981.38			998231.1		33376	33.32
	Decile 9	38783.17	11634.95			1293160.2		33622	43.48
	Decile 10	119581.04	35874.31			3987231		32685	130.32
	Top 5%	185099.43	55529.83			6171832.4		16456	101.56
Subtotal =								149134	335.56
Rural	Decile 8	20167.95	5041.99	8%	20	602791.28	2%	59421	35.82
	Decile 9	26484.68	6621.17			791589.36		60199	47.65
	Decile 10	59497.67	14874.42			1778300.5		60385	107.38
	Top 5%	82733.35	20683.34			2472782.1		30511	75.45
Subtotal =								210516	266.30
Total =								359650	601.86

Now, it is to measure what is the number of households in each segment will be the potential home loan seekers which is dubbed as the effective demand. Considering the current housing and housing finance conditions, existing housing shortage, the growth rate to home ownership, the common trend of uprising of the market, it is conservatively estimated that 3% of urban households is likely to be the formal home loan seekers with their willingness and required purchasing ability as home loan consumer per annum over the next 5 (five) years. Therefore, 15% of the urban households of each decile will join in the demand matrix within the mentioned 5 FYs period of 2021-2025, as effective and competent borrowers who will satisfy their needs backed by the purchasing capacity for the debt servicing. On the rural side, it is anticipated that the potential rate will be slightly less compared to the urban demand. Therefore, the rate of potential home seekers is estimated to be 2% of rural households and, in total, 10% of rural HHs is expected to enter in the market with the necessary financial capacity and the willingness. Since it is a gross conservative forecasting where the impact of inflation, the economic growth, rapid urbanization and the eventual migration may change the trajectory of this demand.

Over viewing the above table-7.2 the housing demand projected for the 5 FY period of 2020-21 to 2024-25 is summarized as follows-

Urban housing demand per annum	BDT 335.56 Billion
Rural housing demand per annum	BDT 266.30 Billion
Total housing demand per annum	BDT 601.86 Billion
Total Urban housing demand for FY (2020-21 to 2024-25)	BDT 1677.8 Billion
Total Rural housing demand for FY (2020-21 to 2024-25)	BDT 1331.48 Billion
Total housing demand for Five FY (2020-21 to 2024-25)	BDT 3009.31 Billion

⁴ For the sustainable debt servicing capacity 30% of urban and 25% of rural income has been treated as the housing consumption.

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According to the income trajectory and the purchasing power capacity, the monthly income 60,000/- is rationally used as the benchmark for the low and middle income households (LMIH) in Bangladesh. Several international organizations (IFC, ADB, and IDB) have used this threshold in their several studies in recent years for calculating the housing finance demand projection in the market. As to the threshold of HHs income, the following table describes the demand projection of the LMIH segment of Bangladesh which segments are mainly in the need of housing finance or in some extent are excluded from housing credit service in the current market diaspora.

Table-7.4: Housing loan demand of LMIH segment per annum for the next five FYs (2020-21 to 2024-25).

Segments	Decile	Average Income per HH	No of HHs	No of Borrowing HHs p.a.	Loan Demanded in Billion Tk
Urban	Decile-7	24428.86	1099847	32995	26.88
	Decile-8	29937.95	1112523	33376	33.32
	Decile-9	38783.17	1120740	33622	43.48
	Subtotal		3333110	99993	103.68
Rural	Decile-8	20167.95	2971040	59421	35.82
	Decile-9	26484.68	3009927	60199	47.65
	Decile-10	59497.67	3019261	60385	107.38
	Subtotal		9000228	180005	190.85
Total			12333338	279998	294.53

Again another aspect needs to be attended which is the growth of improvement of housing structure status in Bangladesh. The following chart describes that the growth of the pucca house (which is normally the formally built house) deserves formal/ institutional finance:

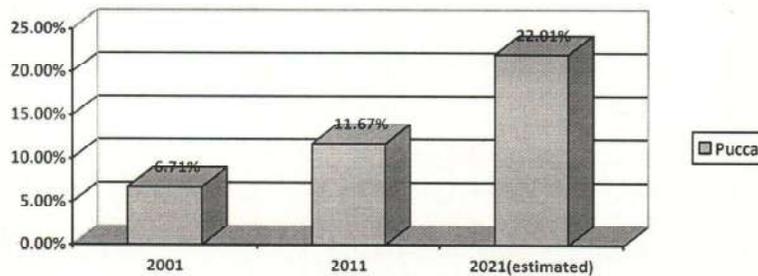


Figure-7.1: The growth rate of pucca, the formally built houses in last two decades.

Source: HIES- 2010, 2016, National Housing Census-2011.

The growth rate of pucca housing also infers the ever-increasing potential demand of formal housing finance. Moreover, still the 80% of HHs live in non-pucca (combined in semi-pucca, tin shade, and kutchajhupri) which infers that the scope of the expanding housing finance is enormous and far distant to saturation. Therefore, the aforementioned demand projection is no more exaggerate. Again, the estimated demand will address annually approx. 1.46 million

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people out of 164 million populations which is only 0.89%. Therefore, the estimation is modest in any consideration.

The housing finance demand for the LMIH population has been estimated for 05 years period of 2021-2025 is BDT 1472.5 billion, visibly large compared to the present outstanding of the total home loan market. This estimation concurs with the statements of the international development agencies where they have asserted about the ever increasing demand of the formal housing finance market in Bangladesh.

7.2 BHBFC Specific Demand and Supply

(a) Target market of BHBFC: BHBFC is missioned to provide financial assistance in order to resolve the housing problems of the low, lower-middle and middle income group of people. These income group people always has the strong preference towards the low cost service. Though privatized Banks and Non-bank financial institution have home loan disbursement portfolios bigger than BHBFC, but their sanction policy is income-oriented and their target group is the top 20 percentile of major cities mainly Dhaka and Chattogram areas. The key differences between the target market of BHBFC and other home loan providers are, BHBFC extends financing service targeting the apparently excluded LMIH segment.

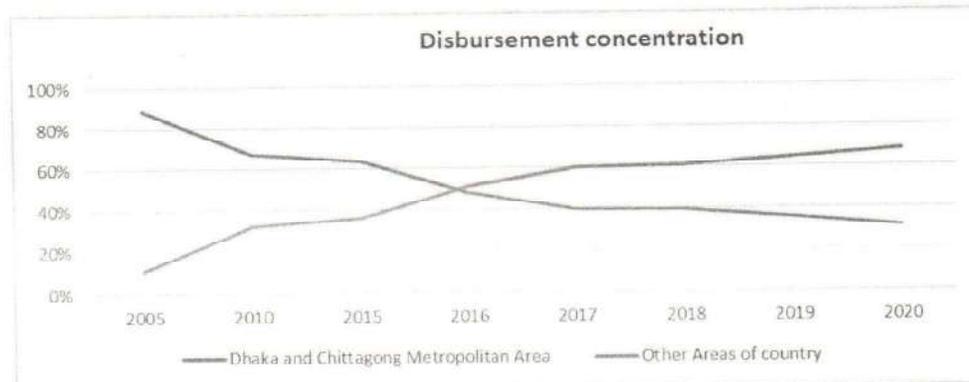


Figure-7.2: Area wise loan disbursement concentration (%) from 2005 to 2020 in BHBFC.

As the major shares of LMIH people predominately live outside of Dhaka and Chattogram or periphery of the major cities and those people are visibly less attended by the home loan providers other than BHBFC. Therefore, the state owned agency, BHBFC is currently diverting its loan portfolios from Dhaka and Chattogram to other areas of Bangladesh to penetrate the main hub of the LMIH

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Table-7.5: Division wise average income level of BHBFC borrowers compared to the division wise income level of LMIH of country.

Divisions	No of Loans	Amount of Loan	Avg. Income of BHBFC borrowers	Avg. ⁵ income of LMIH of country
Dhaka	14585	17,957,302,170.11	49,873	41170.91
Chattogram	2433	3,776,624,453.62	48,077	34722.37
Rajshahi	2059	3,144,392,515.89	29,350	29516.12
Khulna	2218	3,049,104,299.73	36,693	42404.4
Sylhet	401	635,144,080.54	25,933	30903.03
Barisal	935	1,651,576,767.56	24,724	33813.01
Rangpur	1371	2,298,211,536.28	21,961	22784.61
Mymensingh	1107	2,197,126,442.42	27,130	30419.22
Bangladesh	25109	34,709,482,266.15	32967.63	33216.71

BHBFC operates its loan servicing whole over Bangladesh with its extended organizational setup targeting the LMIH segment of populations in urban and predominantly peri-urban and rural growth centers. Analyzing the above tables it is enumerated that the average income of BHBFC borrowers is similar to the income level of national LMIH described who are enabled to service low cost debt extended by BHBFC. As the compliance to the explicit mandate set up by govt. to address the low income people for housing finance, BHBFC has shifted its loan service favoring the rural and periphery of the urban area. Also BHBFC enjoys the extensive branch network easily accessible by the remote clients as a door step service provider. Moreover, BHBFC has presented itself as a prima facie suitable candidate to drive a focused expansive of housing for LMIH segment. Due to the fund constraint, BHBFC could not address the potential service expectants satisfactorily. Therefore, a huge demanding clients remains unserved. The credit service extended and the application received by BHBFC, described in the earlier, it is found that the gap between the BHBFC loan approval and loan application is large which implies that the strength of BHBFC is under-utilized.

Table-7.6: The summarization of the loan approval and unmet demand during last 5 FYs.

(In Crore BDT)

Sl.	Fiscal year	Loan applied	Loan Approved	Unmet Demand
1	2015-16	639	260	379
2	2016-17	727	346	381
3	2017-18	1359	401	958
4	2018-19	1201	575	626
5	2019-20	1483	455	1028
Total		5409	2037	3372

⁵ Derived from the HIES-2016 for the year June, 2020.

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Figure-7.3: The trend of unmet demand against the attended demand of BHBFC finance.

The previous chart/table describes that the total application for the loan in BHBFC offices for last five years was amounted to BDT 54.09 billion which is termed as the **attended demand** in BHBFC. BHBFC was financially capable of approving only BDT 20.37 billion. Hence, the direct attended demand in BHBFC, per say, was unmet BDT 33.72 billion during this period. The average unmet demand of the attended borrowers during the last five years was enumerated 6.71%.

For the purpose of deriving an estimation of the fund requirement on the basis of the effective demand attended in BHBFC and the demand for the LMIH segment in market a simplistic inference has been adopted from the table 17 and table 20 and is placed below:

Table-7.7: Projected demand in BHBFC for the next five FY's (2020-21 to 2022-25).

Years	Applied demand	Effective Demand ⁶	Catered Demand with existing fund inflow	(In billion BDT)	
				Unmet demand/ required fund	Total market demand for LMIH
2020-21	18.53	9.27	6.50	2.77	294.53
2021-22	23.16	11.58	7.00	4.58	294.53
2022-23	28.95	14.48	7.50	6.98	294.53
2023-24	36.19	18.10	8.00	10.10	294.53
2024-25	45.24	22.62	8.50	14.12	294.53
Total	152.07	76.04	37.50	38.54	1472.65

Moreover, the projected demand for the LMIH segment, the lion share of the segment aspirants of the BHBFC financing service BDT 1472.65 billion which implies that BHBFC has the huge potential to expand its service coverage if the sufficient fund base is available along with the convenient operational policy.

⁶ It is assumed that 50% of the applicants in BHBFC will be qualified in terms of eligibility criteria and acceptable title and required other documents for the loan approval.

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CHAPTER: 08

COVID-19 PANDEMIC AND BHBFC

The global economic turbulence created by the corona pandemic would certainly be causing huge challenges for the banking and financial industry. The effects of the ongoing corona virus (Covid-19) crisis are being felt in almost every sector in Bangladesh, along with the housing sector, mostly real estate and housing finance sector. The housing sector of Bangladesh had a promising future, which has been backpedaled due to the corona outbreak. One of the most immediate effects of the COVID-19 is assumed to be a loss of income for many households and a subsequent inability to meet mortgage loan or rent payments. A bounce back in housing markets would particularly help the economic recovery and employment generation.

8.1 Effects of Pandemic on BHBFC

There are several effects of Covid-19 pandemic has been realized on the housing finance market in Bangladesh. These are described in details in the different sections of preceding chapters. In this section the impact on BHBFC, the specialized service provider for LMIF has been outlined in a bid to get necessary policy support to recover the situation. BHBFC has been affected in this pandemic and consequent lockdown as the operational activities was held. The following section is an attempt to identify the direct impacts on BHBFC in this pandemic as the primary concern of this study.

- (i) **Reduction in recovery** is the first impact to be mentioned. Due to COVID-19 pandemic, recovery of housing loan has shown downward tendency. Vulnerability in the mortgage market is getting higher due to payment defaults. Unemployment and reduced income are creating pressure on the borrowers to turn up as defaulters. The tenants are failing to pay the rents properly and many household units are getting vacant, hurting the landlords who may have home loan installments to clear. The landlords are defaulting also. This will ultimately reduce the capital recycling and will shrink for next disbursement.
- (ii) **Change in payment behavior and increase in intentional defaulter** among the existing clients are another concurrent impact of the pandemic. Some of borrowers are expecting stimulus package from government. So, this section remains intentionally reluctant in repaying loan. Many potential borrowers also affected by this crisis are expecting special loan package from government. Unemployment, loss in business and reduced earnings are causing change in the payment behavior of existing clients. The renters couldn't pay the rent properly and many household units are getting vacant which have been affected the borrowers for the repayment of their installments.
- (iii) **Unemployment and reverse migration** is another effect of Covid-19. Because of a fall in income many the employees have lost their job in various sectors and have become unemployed. Most of them don't have any other ways but to leave the big cities and returning to their villages which alters the urbanization scenario for a period and makes provisional backlash in big cities. They are of either low-income or lower-middle income group of people mainly.
- (iv) **Increasing of dormant and deferred demand** is an offshoot of the ongoing pandemic. The current income of a segment of a people has reduced or unstable who would intended to enter into the housing market. As they has provisionally lost their purchasing ability to bear expenses of a house construction/purchase, they now need more the low cost finance which can stir the latent demand.

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Similarly, the uncertain present income pushes a section of demand to deferral. But their demand is deferred due to inadequate low cost housing finance. In future, they will come into the housing market. Both the sections, the dormant and deferred demand require the supply of low cost housing finance which will eventually retain the balance of equilibrium in the housing market.

- (v) **Reduction of overall money circulation** is a concern which needs to amplify as the expert suggestions. There has been stagnancy in the rural and peri-urban economy due to the pandemic. BHBFC's target groups are low and lower-middle people who reside in rural and peri-urban areas. The segments are capable of multiplying the rural economy as the nonfarm actors where a multiple groups of people from formal and informal sectors are involved. Construction labours, suppliers, the local retailers and sellers of construction materials, a significant stakeholders of rural and peri urban economy, are directly affected for low circulation of money due to less development works of housing. They are now worthy of having Government support for money circulation for vibrating the rural and peri-urban economy.

8.2 Sustenance of BHBFC Demand Side Trajectory

- (i) **Durability of housing commodity and mixed impact:** It has been observed that the Pandemic impact on housing finance demand is mixed especially the BHBFC's addressable segment of demand. Housing is a durable and essential product so that the income return from this sector is less hampered compared to the other development sectors. The other productive sector was severely affected as the lockdown was going on whereas the home owners get rent though in some cases in reduced rate. In consideration of real income, the housing rental income is relatively more than the income from other sectors in the corona affected economy.
- (ii) **Internal Consumption Market:** Moreover, housing is a product of high internal consumption as Bangladesh is an over-populated country. The housing income is not directly depended on export; it is less prone to external shock. So, it has been observed that an internal trend of the investment flow is entering into this sector, after the learning of the corona situation, as less risk in return of the sector comparatively to other volatile sector.
- (iii) **Illiquid and sluggish market:** The housing finance market is illiquid and a stable market in context of Bangladesh. Due to lack of capital market involvement, housing market shows less dynamism which eventually leads to a resilient type of nature. This resilience of housing market is apparently less prone to bubble/ volatile in exposure to any shock. This has been proved in corona pandemic as well as in the time of housing bubble in 2007-08 in USA or western countries. It has been impacted less than the other financial markets. As housing is a durable good, the vulnerability in the housing finance system is much lower compared to other financial sectors in exposure to the covid-19 pandemic. This durability leads to a sluggish movement towards the equilibrium. After any shock, the market response is sluggish or the adjustment occurs sluggishly as the housing product is a durable in nature. This exclusive character gives a shield on the housing market and becomes less disrupted compared to other dynamic markets.
- (iv) **Appreciation of Property Value:** Investment in housing sector is safe and secure and a viable source of income. Also, it has a long term repayment schedule which makes the monthly installments attainable to borrowers. As in this unprecedented pandemic, housing sector investment will not be constrained like other sectorial investments because the values of the land backed property always increase. Our recent study

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shows, though there were one or two units of a house got vacant in the pandemic, the vacancy is totally provisional and the crisis is getting subsided now.

- (v) **Upper grade coming down into service Box:** As reciprocal to the nature of normal goods, BHBFC's low cost housing finance is also showing the nature of inferior good when the reduction of income segment leads to addition of new demand. New demands for BHBFC have been created on the basis on the corona pandemic situation, though some of the demands have been foregone. There is a perception that the upper and upper-middle income people who was able to finance of their own or they were tended to private sector finance; the current economic standstill has pushed this segment to BHBFC for its low cost and convenient repayment nature. So, they will become potential borrowers for housing loan which is the addition in BHBFC demand side.
- (vi) **Speculation Impact:** The perception among the people that the ongoing mega projects- Padma Bridge, Karnaphuli Tunnel and Metro Rail projects etc of national developments will create momentum on housing demand too will make geographic alteration and communication development, which will boost the urbanization dispersion from Dhaka and Chittagong cities. BHBFC will get the advantage of the demand generation for owning the broader service network over the country.

Over viewing the issues described above it is to assert that the regular demand of BHBFC housing loan will sustain, without loss of any more relevance in the demand side ecosystem of housing finance. Hence, the required fund projected in the earlier section remains essential for financing the Low and Middle Income Group to avert the effect of Corona virus Pandemic ensuring the housing, the basic need of this particular income segment.

8.3 Necessity of the Additional Fund Flow to Combat Corona Consequence

Serving the analyses of the demand supply ecosystem of housing finance market in Bangladesh it has been enumerated that there is huge demand for housing loan in Bangladesh. Yet, BHBFC could not spread its loan programs up to the expectation level of the borrower because of fund constraints. Moreover, the Covid impact has made the situation relatively worse for the BHBFC to expand invest in the housing finance market. To enhance the financing capacity, BHBFC has been seeking for low cost fund from government sources and side by side also approaching toward donor agencies.

At the moment, loan programs of BHBFC have been continuing based on the recovery of the investment. Due to the Covid impact, recovery of the investments has stumbled little basically in the urban areas. BHBFC needs the special financing scheme concentrating the areas mainly in sub-districts, growth centers and other rural areas of country. Without sufficient fund inflow, BHBFC misses the opportunity to finance in these potential market areas of housing finance.

Housing is a durable goods and the adjustment of housing product is occurred sluggishly in establishing the equilibrium in housing market. The finance of housing especially the low cost finance is a catalyst in supply side through enabling the LMIH segment to conduct housing construction. The lack of financing ability due to the income fall will eventually lead to a supply side crisis in housing for a near future. To avoid the ensuing supply side crisis. The needful of the fund inflow in housing finance is an effective initiative/resolution.

To meet up the fund constrains and to deal with the impact of Covid-19, BHBFC has been looking for borrowing fund at a concession rate of interest as described in the Long Term Action plan of BHBFC. In that move, an official request with an action plan have been submitted to the Financial Institutions Division, Ministry of Finance by BHBFC for

providing financial aid of 1000.00 crore BDT to BHBFC. The main objective of this action plan is to provide financial assistance to overcome the Covid impact and enhance the fund flow to LMIH. This will obviously ensure to mitigate the needs of affordable housing and boost up the financial market.

An effective policy support is required for possible short- and medium-term interventions for creating an appropriate enabling environment that would enhance the access to middle- and low-income housing finance. BHBFC as a pioneer in housing finance could help governments design and implement structural solutions to alleviate the adverse shocks for housing borrowers, notably low and lower-middle income groups, home-loan lenders, investors, and tenants. Smart subsidies, for example through mortgage guarantee funds or targeted rental subsidies, could help. Those initiatives would be part of a long-term agenda, but some could be initiated as soon as possible which is reflected in long terms action plan of BHBFC.

8.4. The Utilization of Proposed Fund

The proposed fund will be disbursed on the basis of the effective demand of the housing loan of BHBFC, preferably towards the LMIH segment throughout the country. To consider the preference, the fund disbursement will be carried on taking the urban-rural segmentation into account as the concentration of LMIH is supposed to be more outside the urban, more precisely outside major two cities- Dhaka and Chattogram. As per the fund proposal backed by the action plan, BHBFC will disburse the proposed BDT 1000 crore over the next five fiscal years, BDT 200 crore in each year in addition to the regular disbursement from BHBFC's own sources. Following is the table which describes the distributional arrangement of the proposed fund with periodic and locational differentials.

Table 8.1: The utilization of the proposed fund through the disbursement against the sanctioned loan cases with zonal segmentation per annum for the next five year. (In Crore BDT)

Utilization of Proposed fund	Dhaka			Chattogram			Rajshahi	Khulna	Syhel	Barisal	Rangpur	Mymensing	Faridpur	Grand Total
	Metro	Outside	Total	Metro	Outside	Total								
Average loan applied during last two years	332.5	118.7	451.2	65.6	93.6	159.1	206.4	161.1	15.8	82.1	78.9	126.9	60.5	1342.1
The zonal trend (% of average loan applied)	24.8	8.8	33.6	4.9	7.0	11.9	15.4	12.0	1.2	6.1	5.9	9.5	4.5	100.0
Estimated disbursement (p.a) following the trend	49.6	17.7	67.2	9.8	13.9	23.7	30.8	24.0	2.3	12.2	11.8	18.9	9.0	200.0
Estimated disbursement for next five years	247.8	88.5	336.2	48.9	69.7	118.6	153.8	120.1	11.7	61.2	58.8	94.5	45.1	1000.0
Total estimated loan disbursement for 5 years in Dhaka and Chattogram Metro = 296.6 Crore BDT @ 30%.														
Total estimated loan disbursement 5 years outside Dhaka and Chattogram Metro = 703.4 Crore BDT@70%.														

In the above table the trend of the demand (in %) has been calculated on the basis of the average applied loan (zonal office wise) last two fiscal years. This trend has been applied in the distribution as the indices of fund demand of the respective zonal offices. Again, the disbursement estimation has been separately mentioned considering the frequently used dichotomy of Dhaka-Chattogram metro areas versus other areas to focus the LMIH segment.

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CHAPTER: 09

OUTPUT, OUTCOME AND IMPACT ANALYSIS

BHBFC as the government's specialized housing finance institution, has the commitment to back up the overall housing finance sector as national point of view. Therefore, BHBFC has adopted timely measures to respond the crunch evolved from the corona pandemic. As the part of initiatives, BHBFC has proposed the fund as a policy support mainly to address the LMIH group of people apparently the less focused segment for housing finance in the corona crisis. The fund subsidy will be utilized to meet the unmet demand of BHBFC's loan expectants and the new demand created on the ground of the new normal situation. Eventually this fund will be an addition in money circulation mainly in the peri-urban and rural areas. It will contribute in constructing multi-storied buildings for residential purpose as well as improve the employment scenario, linkage markets and the overall social wellbeing. Now, the impact of the utilization of the proposed fund is analyzed with a view to justifying this investment. Following are the sections have been added where the analyses carried out on the output, outcome and impact analyses separately.

9.1 Output

This proposed fund will be invested to construct multistoried buildings with the related basic facilities. Each year BDT 200 crore of proposed funds will be financed along with the required borrowers' equity (minimum 20%) in building houses tracing the potential demand with the special focus towards LMIH segment of urban, peri-urban and rural areas. The tentative output will be obtained from the utilization of the fund-flow described in detail in the annexure (i) and annexure (i) are briefed in the following:

Table-9.1: Estimated output returns investing the proposed funds.

Year	Area	Loans to be disbursed	Number of family unit to be built	Number of multi-storied building to be built ⁷
Expected output in each year	In Dhaka and Chattogram Metropolitan areas	BDT 60 cr.	436	43
	In outer areas except Dhaka and Chattogram Metropolitan areas	BDT 140 cr.	1458	182
Sub-total		BDT 200 cr.	1894	225
Expected output in total 05 years		BDT 1000 cr.	9470	1125

Therefore, it is expected that the total number of 1125 multistoried buildings (presumably 6-4 storied) will be built with 9470 family units. Moreover, improved citizen amenities will upgrade the living standard of the intended borrowers from LMIH segment of the population.

9.2 Outcome

It is contemplated that this fund will create the opportunity for 9470 number of households to get the benefit of low cost housing finance in the deficient financial condition of the corona pandemic. Moreover, a huge number of people, nominally 68184, will be the beneficiaries of the improved housing facility through financing the house construction. The probable outcomes are placed in the following table.

⁷ The output of Number of multi-storied building may vary depending on the clients' ultimate choice and approved design.

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Table-9.2: Estimated outcome

Year	Area	Number of beneficiary
Expected output in each year	In Dhaka and Chattogram Metropolitan areas	8748
	In outer areas except Dhaka and Chattogram Metropolitan areas	2616
Sub-total		11364
Expected output in total 05 years		68184

9.3 Key Impacts

The output and outcome obtained from the fund utilization will impact the overall economy of the areas and the living standards of the segment of the people. The money injection of the fund disbursement will impact the other sectors of the economy including the housing sector whereas 269 linkage industries are directly related with this business and the labour employment sectors. The proposed fund could be injected in the following segments of the economy.

Table-9.3: Estimated key monetary involvements with relevant areas.

Sl.	Impact Areas	Amount of Finance to be Injected
1.	Labour cost	BDT 250 cr.
2.	Linkage Industry	BDT 120 cr.
a.	Bricks (12%)	BDT 50 cr.
b.	Sand + Brick tips (5%)	BDT 130 cr.
c.	Cement (13%)	BDT 100 cr.
d.	Rod (10%)	BDT 120 cr.
e.	Door + Window (12%)	BDT 80 cr.
f.	Electricity (8%)	BDT 100 cr.
g.	Plumbing + Sanitary (10%)	BDT 50 cr.
h.	Finishing / Others	BDT 1000 cr.
	Total	BDT 1000 cr.

The above mentioned table describes the possibility of the expense incurred in labour and linkage industry. This labour expense will create employment and the labour will expand the money in purchasing daily essentials and some extent of amount may be saved as private savings. This will create an impulse in the related fields of economy. On the other hand, the linkage industry will grow with these real estate developments through contributing in overall national growth through multiplying the effect. This analytical purview which has been mentioned above is assumed to result in overall impact which is presented in the following section as broad description:

9.3.1 Economic Impacts**(i) Employment generation**

Constructions generate demand for professional, skilled, semi-skilled, and unskilled labor. Thus, housing construction generates employment. The type of employment ranges from unskilled and lowly skilled workers to highly paid professions, and includes a considerable proportion of technically skilled workers. The employment elasticity can vary considerably. According to the ILO's Global Wage Report 2020/21, the monthly minimum wage in Bangladesh is \$48. Considering the fact, it is enumerated that around 50,000 day labourers can work in this sector from the flow fund. So, the fall down arisen in labour employed from the corona pandemic will improve with this initiative.

(ii) Development of linkage industry

This fund will extend the construction sector of the country beyond the regular frontiers, and effectively inject several growth-generating points of Bangladesh. The tremendous multiplier

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effect in terms of generation of employment and income will be oriented. This will, thus, help in some extent the stimulating this back paddled sectors due to pandemic.

(iii) Growth of Housing Market

Housing finance market targeting low-income people of the country will get an progress through this initiative.

(iv) Increasing Tax Revenues

There are strong links between housing activities and government revenues, which in turn can contribute to redistributive activity to reduce poverty. As a result of expansionary fiscal policy revenue sources during the construction phase include sales taxes on building materials, corporate taxes on builders' profits, income taxes on construction workers, and fees for other government inspections etc. In addition to immediate fiscal benefits, housing construction also provides on-going benefits to the local economy. These include residential property taxes, property taxes from the businesses supported by the residents, and utility user fees.

(v) Increasing savings

Improved housing finance may also lead to increased savings in the economy. As the additional money will be in the hand of labourer and the professionals of linkage industry. Moreover, expectant loan seekers save to make the required down payment and to maintain the asset.

(vi) Small business aspect

Housing provides a place of employment for many micro and small businesses and can be used as collateral to secure a loan.

9.3.2 Social Impact

(i) Social stability and security aspect

The purchase of a housing unit can provide an asset from which to generate security in old age. Private ownership of housing can provide security in old age as housing assets are leveraged to generate income. More generally, housing assets provide economic and social stability as assets are accumulated, passed from one generation to the next and used as security in times of economic stress. The housing units built form this fund flow will give these sense of social and security feelings which is deteriorated for the shock of pandemic.

(ii) Reducing slum living

Slum reduction may occur because of the new affordability brought about by deepening of housing finance and an increase in housing supply. New construction in the upper end of housing markets allows for the movement of middle-income groups; this in turn motivates lower-income households to avail of the lower-cost housing units previously occupied by the middle-income groups.

(iii) Access to better education

There is a link between education and housing. Having a house as an asset improves homeowners' borrowing capacity and so housing finance could lead to more investment in human capital. And to the extent that housing finance improves housing affordability for the poor, it may improve the probability of education opportunities for the poor. Without access to finance, shocks to income cause poor families to discontinue schooling for children. Housing provides an asset that can be used to smooth such shocks and thereby reduce the vulnerability among the poor. In the pandemic situation this has been learnt that the housing returns is less volatile.

(iv) Health and human welfare

More and better housing increases the welfare of housing occupants. The evidence points specifically to improved health conditions, but there are other benefits such as less stress and

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increased security, especially for children and women. A key impact of better housing is the improved health of occupants. This link is obvious as the healthiness of a household's environment will be determined in no small manner by housing, along with housing-related infrastructure such as water and sanitation. Therefore quality housing can add more labour productivity.

(v) Social and political stability and engagement

Greater homeownership may increase civic engagement and stability through the creation of a property-owning society with a stake in the local and national community. The idea is that having a stake in the country in the form of home results in greater allegiance to the nation, which would translate into increased political stability and greater motivation to work hard.

9.3.3 Environmental Impact:

Safe and sound living against natural calamities (e.g. cyclone, thunder-storm, heavy rain fall etc.) will take the life-style of people to a much better level. Create social bondage within the community and open up scope of social and economic activities. The number of improved quality housing through finance can make further scope for this sound environmental impact.

9.4 Capacity Development of BHBFC

Besides economic and social impact the fund flow will also help to enhance the financing capacity of BHBFC with the following assumptions and analysis.

Financial analysis of the proposed fund of BDT 1000

Assumptions for Government Finance to BHBFC:

1. BDT 1000 crore will be financed in 5 installments.
(BDT 200 crore in each year starting from 2021.)
2. Rate of interest 3% (Concessional Rate).
3. Repayment period will be 15 years.
4. Grace Period will be 5 year.

Yearly repayment installment will be BDT 83.77 crore per annum. In this process, BHBFC has to pay against 1000 crore in 20 years:

Principal Payment (2026-2040)	-	10,000,000,000.00	BDT
Regular Interest (2026-2040)	-	2,564,987,069.30	"
Interest during Grace Period (2021-2025)	-	600,000,000.00	"
Total payment	=	13,164,987,069.30	BDT

Assumption for BHBFC's financing to end beneficiaries:

1. BDT 1000 crore will be disbursed in 5 tranches.
(BDT 200 crore in each year starting from 2021.)
2. Rate of interest 8%.(for simplicity)
3. Repayment period will be 15 years.
4. Grace Period will be 1 year.

If the loan aid from GoB is invested in full and the 94%⁸ of the recovered amount of that aid is kept reinvesting every year @ 8%, after the completion of GoB's repayment scheduled in 2040, the Principal Balance of the corporation will stand as – 4,429,103,712.67 BDT. The detailed is provided with relevant financial analyses of IRR (12.89), NPV, and BCR (2.28) in **annexure-3**.

⁸ The average rate of recovery of BHBFC loan in last years.

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CHAPTER: 10

CONCLUSION

Bangladesh, with growing economy and over population has been facing acute shortage of affordable housing in recent past. Especially the low-middle and middle income group of population are the worst sufferers of shortage of housing. Though a huge demand of housing is increasing periodically the resources to meet the demand are limited. To enhance the purchasing capacity and mitigate the demand of housing, the banks and financing institutions have been playing very active role by providing financing assistants to the expected clients specially the LMIH group. The Non-Banking Financial Institutions (NBFI) has more capability to protect the asset and liability maturity in the long term financing. Therefore, the NBFIs need to be facilitated more from the government perspective for the continuation of flow fund in the housing sector.

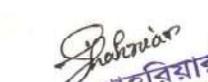
Moreover, Bangladesh government is aware of its massive housing shortage in both the rural and urban areas. Constitutionally, Bangladesh government has an obligation to provide shelter in the form of housing to upgrade the living standard and to provide better accommodation facilities. In that sense, polices has been adopted by the government to ensure the access to shelter for all citizens specially favouring the LMIH group.

As a state owned body in the housing finance sector, BHBFC also has responsibilities and obligations to comply the government policies and contributes to overcome the problem of housing through financing this sector. This body holds a mission to serve the LMIH sector to resolve the housing problem. Hence, government policy and plan can be efficiently executed and implemented through BHBFC.

Though it is suffering from fund constrains and corona pandemic creates the situation worse, this institution can act actively and effectively to attain the government goal upon ensuring a continuous fund flow in less focused housing segments. BHBFC has already come up with a time benefitting plan to overcome the emergent situation by proposing a stimulus package through the government subsidized-fund.

As a state-owned institution BHBFC deserves a fund assistance for extending finance to LMIH segments, which are in deficiency of money circulation in this corona pandemic situation. Realising the situation, BHBFC's action plan mentioning a loan assistance of BDT 1000 crore from government.

For this purpose this feasibility study has been conducted to identify the gaps and ways to implement the proposed financing assistance under the final action plan. The feasibility report reveals the unmet demand of BHBFC in total for next five years is BDT 38.5 billion which is needed to be supported from the government sources to finance focusing its LMIH clients in addition to its regular financing. BHBFC has the expanded presence over the country with its branch network so as to address properly the housing needs of LMIH.


নাজিম শাহরিয়ার
সিনিয়র অফিসার/শফিকুল হক
সিনিয়র অফিসার/সিনিয়র অফিসার(বেসন)
পিএইচআর/ডিসিনিয়র অফিসার


মোঃ জাহিদুল ইসলাম
প্রিন্সিপাল অফিসার (খল)



Annexures

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Estimate for Construction of Building in Dhaka and Chattogram Metropolitan Areas by investing BDT 60cr per annum

LEGEND:

- Flat Size : 750~ 850 sft Each Unit (Average : 800 sft)
- Each Floor : 02- Unit
- No. of Story of Building : 6- Storied
- Each Building Contain : 10-Unit
- Ground Floor : Garage
- Construction Rate : i) Ground Floor (Garage): BDT. 2251/sft
ii) Ground Floor R/A : BDT. 2774/sft
iii) Typical Floor: BDT. 1693/sft
[Existing rates of BHBFC]

Construction Cost

Sl. No	Description of construction Cost	Amount of Taka (BDT)
1	2	3
1.	Ground Floor (Parking 800 sft @ Tk. 2251/sft)	= 18,00,800.00
2.	Typical Floor (800*5sft @ Tk. 1693/sft)	= 67,72,000.00
	Total	= 85,72,800.00
3.	Average Construction Cost for 1-Unit (Ground floor to 5 th floor)	= 17,14,560.00 ≈17,20,000.00 (Say)
4.	Avg. Construction Cost for Each Floor (2-Unit)	= 34,40,000.00
5.	Avg. Construction Cost for Each Building (10-Unit)	= 1,72,00,000.00

Element wise Break down:

i.	Labor (25%)	=	43,00,000.00
ii.	Bricks (12%)	=	20,64,000.00
iii.	Sand + Brick tips(5%)	=	8,60,000.00
iv.	Cement (13%)	=	22,36,000.00
v.	Rod (10%)	=	17,20,000.00
vi.	Door + Window (12%)	=	20,64,000.00
vii.	Electricity (8%)	=	13,76,000.00
viii.	Plumbing + Sanitary (10%)	=	17,20,000.00
ix.	Finishing / Others	=	8,60,000.00
	Total	=	1,72,00,000.00

Investment Details:

- Investment from BHBFC = BDT 60 cr. per annum
- Investment from owner's side = BDT 15 cr. per annum [considering 20% equity investment]
- Total investment = BDT 75 cr. per annum
-

Investment Output:

- Number of Building to be built =43
- Number of family unit to be built =436

Employment Generation Impact:

- Labour cost = BDT 43,00,000.00
- Per Labour cost = BDT 4500.00/month [As per ILO report, Labour Cost of BD is \$48/month]
- Average time to complete a construction building = 12 months [As BHBFC considers construction period is 01 year]
- Per labour cost = 4500*12 = BDT 54,000.00
- Number of labour to construct a building = (labour cost/ per labuor cost) = 43,00,000.00/54,000.00 = 79.62 ≈ 80
- Total number of labour = 43*80*5 = 17200

Estimate for Construction of Building in all over Bangladesh except Dhaka Chattogram Metropolitan areas by investing BDT 140 crore per annum.

LEGEND:

- Flat Size : 550 ~ 650 sft Each Unit (Average : 600 sft)
- Each Floor : 2- Unit
- No. of Story of Building : 4- Storied
- Each Building Contain : 8-Unit
- Ground Floor : Habitants (No Parking)
- Construction Rate : i) Ground Floor: BDT. 1580/sft
ii) Typical Floor: BDT. 1230/sft
[Existing rate of BHBFC]
- Construction Cost :

Sl. No	Description of construction Cost		Amount of Taka
1.	Ground Floor (600sft @ Tk. 2774/sft)	=	16,64,400.00
2.	1st, 2nd, 3rd Floor (600*3 sft @ Tk. 1693/sft)	=	30,47,400.00
	Total	=	47,11,800.00
3.	Average Construction Cost for 1-Unit (From Ground floor to 3 rd floor)	=	11,77,950.00 ≈12,00,000.00
4.	Avg. Construction Cost for Each Floor (2-Unit)	=	24,00,000.00
5.	Avg. Construction Cost for Each Building (8-Unit)	=	96,00,000.00

Element wise Break down:

i.	Labor (25%)	=	24,00,000.00
ii.	Bricks (12%)	=	11,52,000.00
iii.	Sand + Brick tips(5%)	=	4,80,000.00
iv.	Cement (13%)	=	12,48,000.00
v.	Rod (10%)	=	9,60,000.00
vi.	Door + Window (12%)	=	11,52,000.00
vii.	Electricity (8%)	=	7,68,000.00
viii.	Plumbing + Sanitary (10%)	=	9,60,000.00
ix.	Finishing / Others	=	4,80,000.00
	Total	=	96,00,000.00

Investment Details:

- Investment from BHBFC = BDT 140 cr. per annum
- Investment from owner's side= BDT 35 cr. per annum [considering 20% equity investment]
- Total investment = BDT 175 cr. per annum

Investment Output:

- Number of Building to be built =182
- Number of family unit to be built =1458

Employment Generation Impact:

- Labour cost = BDT 24,00,000.00
- Per Labour cost = BDT 4500.00/month [As per ILO report, Labour Cost of BD is \$48/month]
- Average time to complete a construction building = 12 months [As BHBFC considers construction period is 01 year]
- Per labour cost = 4500*12 = BDT 54,000.00
- Number of labour to construct a building = (labour cost/ per labuor cost)
- = 24,00,000.00/54,000.00 = 44.44 ≈ 45
- Total number of labour = 182*44*5 = 40040

IRR, NPV & Benefit Cost Ratio of the 1000 crore investment

Assumptions	
Principal	10,000,000,000.00
Interest Rate	8.00%
Installment	12 Per Year
Recovery Rate	91.00%
Grace Period	1 Year

Assumptions	
BBBFC Investment	11,00,00,000.00
Interest Rate	8.00%
Installment	12 Per Year
Recovery Rate	91.00%
Grace Period	1 Year

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Sl	Year	Disbursement Per year	Cumulative Disbursement By BBBFC	Expected Total Return @ 94.00% (Principal +)	Principal Returned	Principal Balance	Interest Return	Total Return	Schedule Payment	IRR Calculation	NPV calculation	BCR
1	2	3	4	5	6	7	9	10	11	12	6.00%	6.00%
1	2021	2,603,000,000.00	2,603,000,000.00	2,15,595,110.22	55,595,110.22	2,000,000,000.00	160,000,000.00	215,595,110.22	60,000,000.00	(10,000,000,000.00)	(10,000,000,000.00)	6.00%
2	2022	2,215,595,110.22	4,218,055,110.22	2,15,595,110.22	55,595,110.22	1,840,000,000.00	160,000,000.00	215,595,110.22	60,000,000.00	215,595,110.22	215,595,110.22	215,595,110.22
3	2023	2,394,430,846.33	6,670,925,956.45	454,430,846.33	121,630,846.33	6,432,800,000.00	332,800,000.00	454,430,846.33	120,000,000.00	454,430,846.33	454,430,846.33	454,430,846.33
4	2024	2,595,012,450.64	9,308,838,447.09	719,012,450.64	204,388,450.64	8,827,422,000.00	514,622,000.00	719,012,450.64	180,000,000.00	719,012,450.64	719,012,450.64	719,012,450.64
5	2025	2,833,115,359.45	12,401,153,836.55	1,012,115,359.45	305,971,450.45	11,353,000,000.00	706,192,000.00	1,012,115,359.45	240,000,000.00	1,012,115,359.45	1,012,115,359.45	1,012,115,359.45
6	2026	3,099,834,064.15	15,797,167,900.70	1,336,814,064.15	428,544,630.55	12,021,997,333.60	908,289,433.60	1,336,814,064.15	337,665,894.62	1,336,814,064.15	1,336,814,064.15	1,336,814,064.15
7	2027	3,402,252,547.29	19,218,167,252.61	1,480,919,351.91	519,146,763.62	12,145,092,137.27	961,752,548.29	1,480,919,351.91	337,665,894.62	1,480,919,351.91	1,480,919,351.91	1,480,919,351.91
8	2028	3,650,892,652.74	22,859,144,008.97	1,640,538,837.36	668,379,306.38	12,280,007,163.62	971,672,530.58	1,640,538,837.36	337,665,894.62	1,640,538,837.36	1,640,538,837.36	1,640,538,837.36
9	2029	3,929,879,741.26	26,788,315,950.01	1,817,407,069.05	835,006,439.95	12,424,742,368.09	982,430,539.09	1,817,407,069.05	337,665,894.62	1,817,407,069.05	1,817,407,069.05	1,817,407,069.05
10	2030	4,231,119,107.74	30,690,172,286.76	2,013,319,107.74	1,019,339,692.89	12,480,064,198.51	993,979,415.05	2,013,319,107.74	337,665,894.62	2,013,319,107.74	2,013,319,107.74	2,013,319,107.74
11	2031	4,559,684,150.59	34,990,172,251.97	2,230,349,965.21	1,221,865,481.33	12,749,872,967.77	1,008,482,503.88	2,230,349,965.21	337,665,894.62	2,230,349,965.21	2,230,349,965.21	2,230,349,965.21
12	2032	4,913,110,456.64	39,391,156,511.64	2,470,776,260.66	1,450,786,200.84	12,832,199,162.87	1,019,898,990.82	2,470,776,260.66	337,665,894.62	2,470,776,260.66	2,470,776,260.66	2,470,776,260.66
13	2033	5,294,454,056.17	44,818,418,411.41	2,737,119,900.79	1,702,544,605.35	13,129,109,133.79	1,034,572,935.44	2,737,119,900.79	337,665,894.62	2,737,119,900.79	2,737,119,900.79	2,737,119,900.79
14	2034	5,704,508,959.53	50,562,347,581.58	3,032,174,754.15	1,981,345,688.24	13,341,772,165.07	1,030,224,745.50	3,032,174,754.15	337,665,894.62	3,032,174,754.15	3,032,174,754.15	3,032,174,754.15
15	2035	6,142,894,523.54	56,755,128,004.71	3,359,035,757.16	2,291,693,975.95	13,571,448,121.65	1,027,941,781.21	3,359,035,757.16	337,665,894.62	3,359,035,757.16	3,359,035,757.16	3,359,035,757.16
16	2036	6,614,885,754.70	63,240,160,501.04	3,721,131,599.32	2,653,415,729.99	13,819,448,196.36	1,025,712,539.35	3,721,131,599.32	337,665,894.62	3,721,131,599.32	3,721,131,599.32	3,721,131,599.32
17	2037	7,119,594,613.36	70,240,099,204.41	4,122,259,487.98	3,016,790,624.27	14,087,292,155.44	1,025,559,863.71	4,122,259,487.98	337,665,894.62	4,122,259,487.98	4,122,259,487.98	4,122,259,487.98
18	2038	7,654,964,215.50	77,905,113,419.91	4,566,630,050.12	3,439,638,701.63	14,376,917,939.26	1,026,097,388.44	4,566,630,050.12	337,665,894.62	4,566,630,050.12	4,566,630,050.12	4,566,630,050.12
19	2039	8,221,235,844.31	86,306,152,731.10	5,058,901,648.04	3,908,764,213.80	14,689,119,169.77	1,026,131,435.34	5,058,901,648.04	337,665,894.62	5,058,901,648.04	5,058,901,648.04	5,058,901,648.04
20	2040	8,821,573,033.62	95,392,151,009.34	5,604,238,878.25	4,429,103,711.67	15,026,068,950.73	1,025,131,165.58	5,604,238,878.25	337,665,894.62	5,604,238,878.25	5,604,238,878.25	5,604,238,878.25
									13,164,987,046.34	12.89%	10,848,744,517.03	1.28

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Page 39