MDG FINANCING STRATEGY FOR BANGLADESH

General Economics Division
Planning Commission
Government of the People's Republic of Bangladesh

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Publication: April 2011

Published by

Support to Monitoring PRS and MDGs in Bangladesh
General Economics Division, Planning Commission
Government of the People's Republic of Bangladesh &
UNDP, Bangladesh

MESSAGE

Air Vice Marshal (Retd.) A. K. Khandker
Minister Ministry of Planning
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I am happy to learn that the General Economics Division (GED) of the Planning Commission has prepared the 'MDG Financing Strategy for Bangladesh' with the technical support from UNDP.

Bangladesh is committed to achieve the MDGs within the given timeframe of 2015; and accordingly has integrated MDGs into the successive Bangladesh PRSPs and Annual Development Programmes (ADPs). The Government has decided to pursue our development goals through Five Year Plan and accordingly preparing Sixth Five Year Plan (2011-2015) that focuses on achieving the MDGs within stipulated time.

The MDG Financing Strategy mapped out the actual expenditures by the Government, private sector and donors and identified the resource requirement for achieving MDGs in Bangladesh. It has also identified the areas in need for additional attention by the Government and our Development Partners. This will help the Government agencies to plan for future resource mobilization to achieve MDGs in Bangladesh by 2015 as envisaged in MDG Needs Assessment and Costing 2009-2015.

I commend GED officials for their efforts in carrying out this exercise which will be beneficial for the policy makers, researchers, planners and development partners alike dealing with the MDGs financing issues. I convey my thanks to the researchers from SANEM and also appreciate the UNDP for providing necessary support in finalizing the report through the 'Support to Monitoring PRS and MDGs in Bangladesh' project.

Air Vice Marshal (Retd.) A. K. Khandker

Foreword

Current status of Bangladesh with respect to MDGs suggests that additional sector specific interventions are needed to achieve the MDG targets. Accordingly, the MDG Needs Assessment and Costing that outlines the major interventions needed and the required costs to be borne to achieve the MDGs was completed earlier under the same project titled "Support to Monitoring PRS and MDG in Bangladesh". With a view to developing a credible financing strategy, it is imperative to put together MDG Needs Assessed Costs within an integrated macroeconomic framework. This is because the MDG Needs Assessment does not explicitly tell us the implied growth rate which is necessary to estimate government revenue collection and household contribution to the MDG financing. Besides, it does not give a holistic picture of total investment required to attain the desired economic growth. The South Asian Network on Economic Modelling (SANEM) has been entrusted to study on MDG Financing Strategy for Bangladesh.

According to the original MDG Needs Assessment and Costing, the total cost required to achieve MDGs in Bangladesh was estimated to be US$ 104.18 billion for the 7 years period (i.e. FY09 to FY15). Two scenarios were considered for the MDG Financing Assessment- (i) Baseline Scenario and (ii) High Growth Scenario. Economic and budgetary indicators are superior under the high growth scenario compared to the baseline scenario with higher revenue efforts and larger fiscal space. It is interesting to note that as a result of combined impacts of MDG provisioning from public expenditure and household contribution, MDG resource gaps declined significantly under both scenarios compared to the original MDG Need Assessment and Costing. More specifically, final MDG resource gaps as percent of baseline GDP dropped on average of 1.5% under the baseline scenario compared to original average share of 12%.

On the other hand, salutary effects of better economic outlook improved the MDG resource gap situations in the high growth scenario compared to both the original estimate and the baseline scenario. Final MDG resource gaps as percent of GDP dropped on average of 0.7% under high growth scenario.

Bangladesh needs foreign assistance of US$ 5 and 3 billion per year under the baseline and high growth scenario respectively, if the entire deficits are to be covered from the external source. It is recommended that in the case of baseline scenario, development partners may raise foreign grants by about US$ 1.5 billion and provide remaining resource in the form of loans. In particular, government may seek foreign grants in the range of US$ 1.4 billion to US$ 1.7 billion and foreign loans in the range of US$ 2.3 billion to US$ 3.2 billion yearly over the next five year period. On the contrary, under the high growth scenario, it is suggested that development partners may provide foreign grants by about US$ 1 billion and remaining resource in the form of loans in the range of US$ 1.9 billion to 2.4 billion yearly over the next five year period for attaining all the MDGs.

It is true that to attain all the MDGs in Bangladesh the estimated resource requirement is a huge amount that would require mobilization of resources by the development partners of Bangladesh. As in the Millennium Declaration the rich countries have already committed to develop a global partnership with the poor countries (MDG 8) to attain MDG goals by 2015, it is now obvious for them to act accordingly and decisively.

Prof. Dr. Shamsul Alam
Member
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Executive Summary

In Bangladesh, it is now recognized that MDGs may not be attained under a business as usual scenario. Additional interventions are needed to push forward the MDG agenda. Accordingly, the MDG Needs Assessment costs are derived for 7 clusters through five Thematic Working Groups (TWGs) under the aegis of the project "Support to Monitoring PRS and MDG in Bangladesh". In line with convention, the MDG NA estimates are reported for 7 clusters under re-current and capital expenditure types.

Total NA cost required to achieve MDGs in Bangladesh is estimated to be $104.18 billion for the 7 year period (i.e. FY09 to FY15). More than $74 billion will need to be spent for re-current expenditure for the 7 year period while only around $29 billion will required to be allocated for capital expenditure. Both types of expenditure are showing an increasing trajectory over the 7 year period. Re-current expenditure shows an increasing trajectory rising to approximately $14 billion in 2015 from $7.5 billion in 2009. Capital expenditure is also tracking a rising pattern to around $5 billion in 2015 from $3.4 million in 2009. Framed by the population outlook, the per capita MDG expenditure in USD will rise to $118/person in 2015 from $75/person in 2009.

Composition of total MDG costs between capital and re-current cost reveals predominance of the re-current type over the capital type. Share of re-current type is around 70% while the share for capital type is about 30 percent. The prescribed composition (70:30) is different from the observed composition (65:35) and hence calls for a marginal re-orientation of expenditure towards re-current type.

Estimated MDG NA expenditures to achieve MDGs in Bangladesh appear high on the basis of observed expenditure patterns of the last 6 years. It thus suggests that expenditure allocation needs to be raised substantially through additional resource mobilization to accommodate

the prescribed MDG NA expenditure within the government budget preserving the sustainable deficit threshold.

Both measures-revenue effort and revenue productivity are low in Bangladesh compared to its economic expansion; potential tax bases and tax rates suggesting huge scope for improvement in revenue mobilization in Bangladesh. It is argued that (even after controlling for her low per capita income) revenue potential is likely to be in the range of 14-15 % of GDP compared to the observed ratio of 10 percent.

Low resource mobilization has also partly been constraining the expenditure growth. Inefficiency in project implementation is another reason for low expenditure growth. Observed total expenditure has been around 13% to 14% of GDP. Period average share of the re-current type is around 65% while the share for the capital type is around 35%.

Low levels of revenue and expenditure resulted in low budget deficits at around 4% of GDP. The low level of budget deficit does not reflect fiscal prudence rather it epitomizes the features of a typical Bangladesh budget: setting a high revenue target and a high ADP target and a fiscal deficit in the rage of 3.5-5 % of GDP. In the event, a large revenue shortfall is generally offset by a large ADP implementation shortfall, thereby achieving the target for the overall budget deficit. This practice needs to be changed with the formulation of a realistic budget-high revenue, high expenditure and low sustainable deficit which may support financing of MDG NA costs.

Exercises with development (capital) and non-developmental (re-current) expenditures envisage that both of these expenditures are reasonably MDG oriented. On average 55% of ADP spending are meant for MDGs, while the corresponding share for non-development expenditure ranged between 58% (i.e. by including salaries of all ministries) and 45% (i.e. by including salaries of 15 ministries).

An assessment of the expenditure pattern of households under various conditions reveals that the extent of resource mobilization from this source to cover MDG costs is small. In particular, exclusions of certain consumption items on 'non-MDG orientation' criterion from the household's consumption basket and imposition of 'ability to pay' criterion suggests on average 2 to 3% of household's consumption expenditure can be targeted for covering MDG cost.

Two scenarios are considered for the MDG financing assessment. These are: (i) baseline and (ii) high growth scenario. Economic and budgetary indicators are superior under the high growth scenario compared to the baseline scenario with higher revenue efforts and larger fiscal space. More specifically, revenue efforts and expenditure/GDP ratios are respectively 3 and 4 percentage points higher under the high growth scenario compared to the baseline scenario. Similarly, levels of household consumption are higher in the high growth scenario than the baseline scenario. Household contribution is 6% higher under the high growth scenario than the baseline scenario. MDG provisioning from existing expenditure and household contribution is incorporated into the MDG resource gap analysis.

As a result of combined impacts of MDG provisioning from expenditure and household contribution on top of economic outlook, MDG resource gaps declined significantly under both scenarios compared to the original MDG NA cost. More specifically, final MDG resource gaps as percent

of baseline GDP dropped on average to 1.5% under the baseline scenario compared to original average share of 12%. In terms of per capita estimate, cost decline to $13 under the baseline scenario compared to the original per capital estimate of $100.

Salutary effects of better economic outlook improved the MDG resource gap situations in the high growth scenario compared to both the original estimate and the baseline scenario. Final MDG resource gaps as percent of GDP dropped on average to 0.7% under this scenario. In terms of per capita estimate, MDG cost decline to $6 under this scenario compared to the baseline scenario estimate of $13 and the original per capital estimate of $100.

Even after allowing for the downward adjustment of the original MDG NA costs, inclusion of additional MDG NA cost into the government budget deteriorated government budget deficits by about 1.5 percentage points in the baseline scenario and by about 0.4 percentage points under the high growth scenario.

Fiscal space expansions and household contributions have already been included in the MDG resource gap calculation. Scope of raising additional resource from the domestic sources is also limited due to various factors. Hence, additional amounts needed to bridge the budget deficit should ideal be tapped from the external sector. Bangladesh needs foreign assistance of USD 5 and 3 billion per year under the baseline and high growth scenario respectively if the entire deficits (i.e. inclusive of MDG NA expenditure) are to be covered from the external source. Ideally these resources should come in the form of grants. However, realities suggest that raising 3 to 5 billion dollars per year as grants may be an implausible option. Under this circumstance following proposals are made:

(i) In the case of baseline scenario, development partners may raise foreign grants by about 1.5 billion and provide remaining resource in the form of loans. In particular, government will seek foreign grants in the range of $1.4 billion to $1.7 billion and foreign loans in the range of $2.3 billion to $3.2 billion over the next five year period. Additional foreign resources for MDG NA purposes amount to $9.5 billion over the 5 years period (i.e. FY11-FY15).
(ii) Under the high growth scenario, development partners may provide foreign grants by about a billion and remaining resource in the form of loans. In particular, government may seek foreign grants in the range of 1 billion and foreign loans in the range of USD 1.9 billion to 2.4 billion over the next five year period. Additional foreign resources for MDG NA purposes amount only to USD 2.4 billion over the 5 years period.

The composition of external financing requirement under the two scenarios is shown below:

	MDG Cost Inclusive Baseline Scenarios						**MDG Cost Inclusive High Growth Scenario**				
A. External (Billion USD)	4.8	4.7	4.6	4.2	3.8		3.5	3.3	3.0	3.0	2.9
Net Loan (Billion USD)	3.1	2.9	3.2	2.8	2.4		2.4	2.2	1.9	2.0	1.9
Grants (Billion USD)	1.7	1.7	1.4	1.4	1.4		1.1	1.1	1.1	1.0	1.0
	MDG Cost Excluding Baseline Scenario						**MDG Costs Excluding High Growth Scenario**				

B. External (Billion USD)	2.1	2.4	2.5	2.7	2.8		2.2	2.6	2.6	3.0	2.9
Net Loan (Billion USD)	1.3	1.6	1.8	2.0	2.0		1.4	1.7	1.8	2.1	2.1
Grants (Billion USD)	0.8	0.8	0.8	0.8	0.8		0.9	0.9	0.8	0.8	0.8
	External Resources for MDGs Baseline						**External Resources for MDGs High Growth**				
C. External (Billion USD)=A-B	2.7	2.3	2.1	1.5	1		1.3	0.7	0.4	0	0

On the basis of thresholds and ability to pay (both observed and projected) criteria, it is argued that Bangladesh is a low external debt country. Hence inflow of additional foreign resources in the form of loans unlikely to move her external debt position above the sustainable debt thresholds.

When MDG financings are categorized by four types of sources namely re-current budget, capital budget, household contribution and overseas development assistance (or foreign aid), they reveal heavy reliance on domestic sources rather than the external source. In particular, in the case of base scenario almost 88 percent of the total MDG resources would come from domestic source composed of government budget (i.e. 72%) and household contribution (i.e. 16%). Only around 12 percent of resources may need to be sought from the external source.

Reliance on external source for MDG financing declined significantly in the high growth scenario compared to the baseline situation due to expanded fiscal space and household income as a result of higher economic growth. In this case, only around 3 percent of resources may need to be sought from the external source. Remaining 97 percent of total resources for MDGs would come from domestic source made of government budget (i.e. 82%) and household (i.e. 15%).

The composition of MDG financing by sources under the two scenarios is shown below:

Cost Type	Total MDG NA (FY11-15)	Re-Current	ADP	Household	ODA	Total Resource (FY11-15)
Recurrent (Bill $)	56.5	39.5	0.0	12.3	4.7	56.5
Capital (Bill $)	21.7	0.0	17.0	0.0	4.7	21.7
Total (Bill $)	**78.2**	**39.5**	**17.0**	**12.3**	**9.5**	**78.2**
Share (%) : Baseline Scenario		***50.5***	***21.7***	***15.7***	***12.1***	***100.0***
Recurrent (Bill $)	56.5	42.7	0.0	11.4	2.3	56.5
Capital (Bill $)	21.7	0.0	21.7	0.0	0.0	21.7
Total (Bill $)	**78.2**	**42.7**	**21.7**	**11.4**	**2.3**	**78.2**
Share (%) : Baseline High Growth Scenario		***54.7***	***27.8***	***14.6***	***3.0***	***100.0***

Chapter 1

Introduction and Background

1. Introduction and Background

Millennium Development Goals (MDGs) was set up in September 2000 at the Millennium Summit by the member states of the United Nations, committing themselves to a series of targets under the following eight goals – (i) eradicate extreme poverty and hunger, (ii) achieve universal primary education, (iii) promote gender equality and empower women, (iv) reduce child mortality, (v) improve maternal health, (vi) combat HIV/AIDS, malaria and other diseases, (vii) ensure environmental sustainability, and (viii) develop a global partnership for development – which are to be achieved by 2015.

It is now recognized that MDGs may not be attained under a business as usual scenario. Additional interventions are needed to push forward the MDG agenda. Realizing the importance of the additional interventions for MDG attainment, countries have engaged themselves in assessing the intervention requirements in the form of re-current and capital expenditures. Evidence suggests that assessed intervention needs are much higher than the existing budgetary allocations in member countries leading to resource gaps in both forms of the expenditure budget i.e. re-current and capital expenditures. Thus macro consistent financing strategies are being developed to examine the scope as well as the extent of resource mobilization from domestic and external sources to cover the resource gap.

Current status of Bangladesh with respect to MDGs suggests that additional sector specific interventions are needed achieve the MDG target (please see annex 7.1 on Bangladesh's current MDG status). Accordingly, at the national level, the MDG Needs Assessment and Costing that outlines the major interventions needed and the required costs to be borne to achieve the MDGs have been completed under the project titled "Support to Monitoring PRS and MDG in Bangladesh". The MDG Needs Assessment and Costing is a joint effort of Government of People's Republic of Bangladesh and the UN family through five Thematic Working Groups (TWGs).

After the completion of the MDG Needs Assessment activity, it is imperative to put together a macro-economic framework and the MDG Needs Assessed Costs into an integrated framework to develop a credible financing strategy. Thus, proposals was sought by the project to develop a MDG financing strategy for Bangladesh using the MDG NA costing information within the purview of a macro economic framework. The South Asian Network on Economic Modeling (SANEM) has been entrusted to conduct the study to assess the financing of MDG NA costs.

The paper is composed of 7 sections. Section 1 provides introduction and background. Salient features of expenditure financing in Bangladesh are presented in section 2. Major findings of the MDG needs assessment exercise are discussed in section 3. Methodology and data issues are presented in section 4. Outcomes of MDG allocation parameter calculation and MDG financing options are discussed in section 5 and section 6 respectively. Annexes are presented in section 7.

Chapter 2

Salient Features of Bangladesh Economy and Expenditure Financing

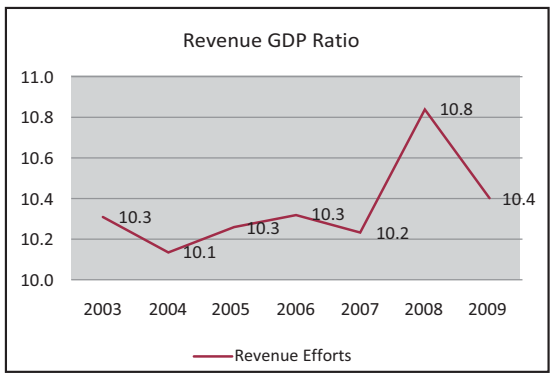
2. Salient Features of Bangladesh Economy and Expenditure Financing

This section provides salient features of fiscal structure and deficit financing during 2003 and 2009 period.

2.1 Revenue Efforts and Revenue Productivity

Revenue system is inefficient in Bangladesh failing to mobilize adequate resources needed to undertake projects and programmes in line with the desired development goals/targets. Problems and prospects of revenue system are assessed in terms two measures—(i) revenue efforts; and (ii) revenue productivity.

Figure 1: Revenue Efforts 2003-2009



The 'revenue effort' of a country is defined as the total revenue (tax plus non-tax revenue) as a share of GDP. The levels of revenue efforts have historically been low in Bangladesh.

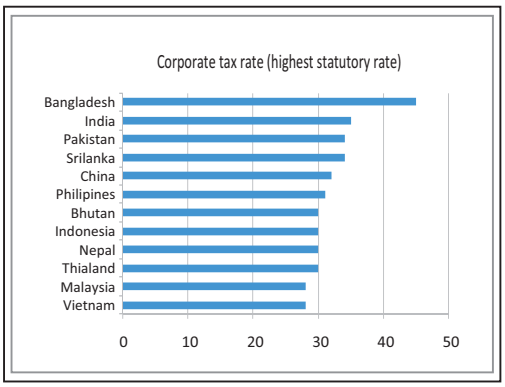
The adjacent graph shows the revenue efforts in Bangladesh between 2003 and 2009. The revenue effort has been low hovering around 10% between 2003 and 2009. Low revenue effort in Bangladesh is due to the combined effects of serious base erosion owning to incentives, deficient tax design, weak tax administration and low compliance.

Furthermore, an analysis of the revenue productivity of Bangladesh tax system with comparable developing nations clearly reflects inefficiency of our tax system. Revenue productivity is a measurement of how much tax revenue expressed in percent of GDP that each percentage point of the nominal rate is able to raise. In other words it is expressed as the tax/GDP ratio divided by the applicable nominal tax rate[1]. Revenue productivity thus suggests that, given an efficient revenue administration, the higher the tax rate the higher would be the revenue productivity. Tax Rates and revenue productivity estimates for selected countries are shown in Figures 2 and 3 below.

It is observed that, the statutory nominal tax rates in Bangladesh are generally high among the comparators. Except for China, the Value added tax (VAT) rate (15%) in Bangladesh is higher than the VAT rates in other countries in the Asia and Pacific region. The corporate income tax (CIT) rate for publicly-listed companies (30 percent) is more or less at a comparable level. However, the higher corporate income tax rates applied to non-listed companies (40%) and financial institutions (45%) are significantly above the CIT rates in the comparator countries.

[1]Revenue Productivity = (Tax Effort/Nominal Tax Rate) where Tax Effort = Tax Revenue/GDP

Figure 2: Selected Asian Pacific Countries: CIT and VAT Rates



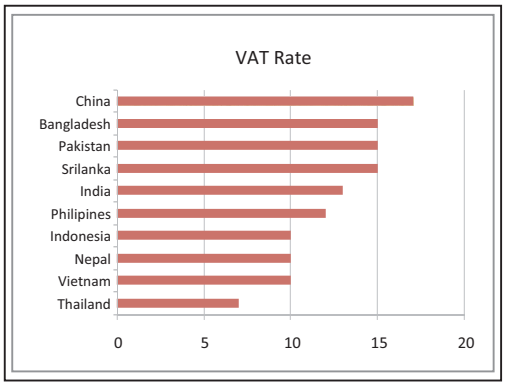
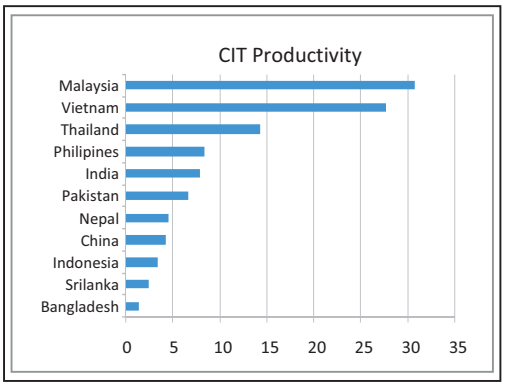
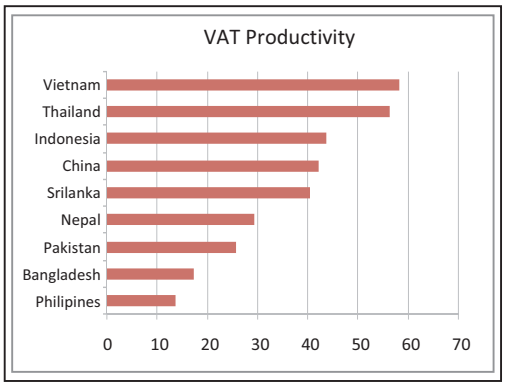


Figure 3: Selected Asian Pacific Countries: CIT and VAT Revenue Productivity





With comparatively high nominal tax rates, one would except that revenue productivity in Bangladesh should be much higher than the revenue productivity of countries with lower nominal tax rates. Despite having higher nominal tax rate, due to low revenue yields, Bangladesh's revenue productivity for CIT and VAT is much lower than her comparators. "The low efficiency in revenue collection is due both to narrow tax bases- reflecting base erosion from incentives, structural deficiencies in tax design, and poor compliance and weak tax administration (IMF, 2007)".

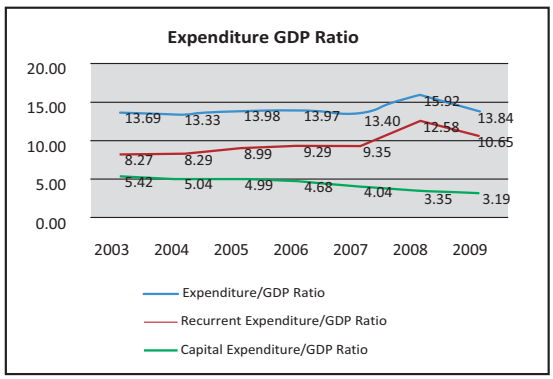
Above analysis envisages that although Bangladesh collects only 10% of GDP as revenue, the revenue potential is likely to be in the range of 14-15 percent. The gap between this potential and actual collection is an indication of poor tax administration in Bangladesh which needs to be addressed. For widening the tax base, tax authority would need measures to phase-out tax incentives, improve structural tax characteristics, administration and compliance. It is assumed that current initiatives to reform the VAT and income tax system within FY11 will help raise the revenue effort substantially.

2.2 Expenditures

Revenue earnings are the main source of finance for the government expenditures. Typically, current expenditures are fully covered by revenue earnings and the revenue surplus (revenue earning minus current expenditure) is allocated to finance capital expenditure. The revenue surplus (over the current expenditure) is then allocated towards capital expenditure. Thus, the higher the revenue surplus becomes the more funding is available for capital expenditure.

The expenditure side of the budget consists of two components-current expenditure and capital expenditure. The purpose of current expenditure is to ensure the smooth functioning of government agencies. The principal objective of the capital expenditure is to promote private sector growth and to broaden access to public goods through provisioning.

Figure 4: Expenditure to GDP (2003-2009)

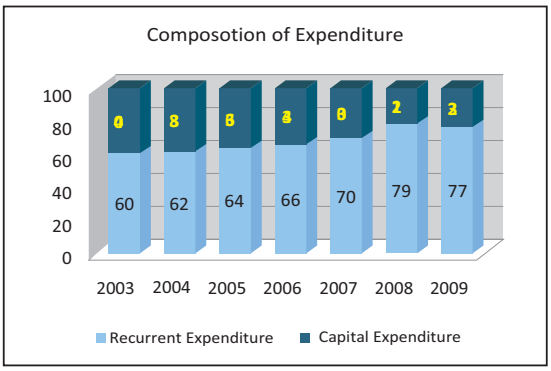


Total expenditure accounts for approximately 14% of GDP. Current expenditure accounts for about 10% and the rest is attributable to capital expenditure. It is important to note that such low level of recurrent expenditure may turn out to be inadequate for MDG purpose.

The share of capital expenditure in total expenditure has historically been low. Moreover, in recent years' capital expenditure as proportion of GDP has been showing a declining trend. The ratio has fallen from 5.5 % of GDP in 2003 to 3.2 % in 2009. Both the size and share of expenditure (i.e. especially that of recurrent expenditure) in the total expenditure may need to be raised with a MDG-based realignment of the budget.

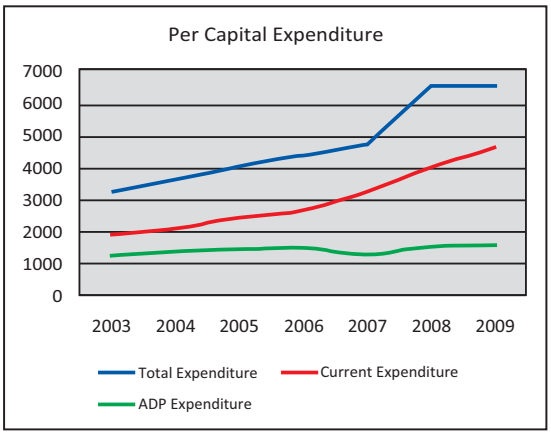
Capital expenditure affects the supply of energy inputs (e.g. electricity, gas, and water), improvement in communication networks, infrastructure and the creation of objective conditions for the formation of a high quality work force. The nature of these investment programmes fall under the category of public goods or quasi-public goods; hence, provisioning for such goods and services has been the prime focus of capital expenditure.

Figure 5: Expenditure Shares (2003-2009)



The share of capital expenditure to total expenditure has been falling steadily. The share has declined to 23% in 2009 from 40% in 2003. The falling share of capital expenditure may suggest a lesser engagement by the government to raise the productive capacity within the economy. More resources are being allocated for re-current expenditure, mainly due to inelasticity of some items (i.e. interest payment, salary and allowance etc.) of re-current expenditure.

Figure 6: Per Capita Expenditure (2003-2009)

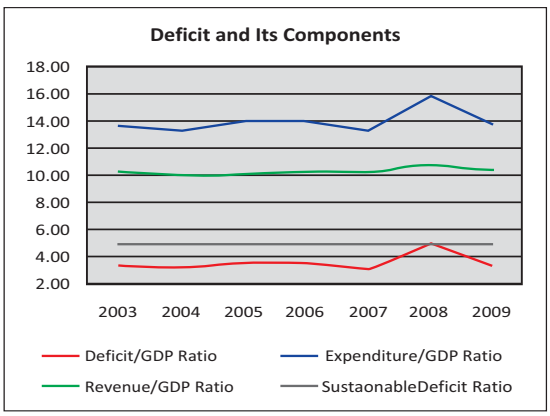


Per capita re-current expenditure shows an increasing trend (especially onward 2006). Per capita re-current expenditure has increased to Taka 4,700 in FY09 from Taka 2,000 in FY03. Although an increasing pattern is observed for the re-current expenditure a large part of that has been due to the rising share of interest payment and payment for goods and services implying that such an upward trend in re-current expenditure may not be helpful for MDGs. Per capita capital expenditure on the other hand, virtually remained unchanged at around Taka 1,500.

2.3 Budget Deficit

In Bangladesh, total expenditures are higher than the resources mobilized through tax and non-tax revenue sources. The implied resource gaps, or deficits, are bridged by inflows from domestic and external sources.

Figure 7: Budget Deficit (2003-2009)



As noted earlier, government expenditure accounts for about 13% to 14% of GDP of which the current expenditure accounts for about 11% and the remaining 4 % is attributed to the capital expenditure.

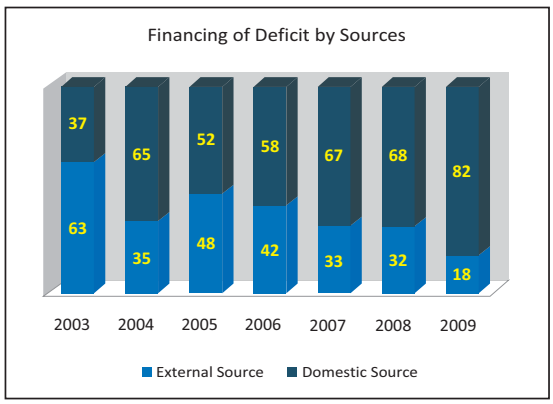
Further, the total revenue as a ratio of GDP has remained stable at around 10% between 2003 and 2009. Resultant deficits have also been low at around 3.5% of GDP. On the basis of

sustainable fiscal deficit limit[2] (usually 5% of GDP), it is argued that the deficit-GDP ratios have remained within the 'sustainable' level.

2.4 Expenditure Financing

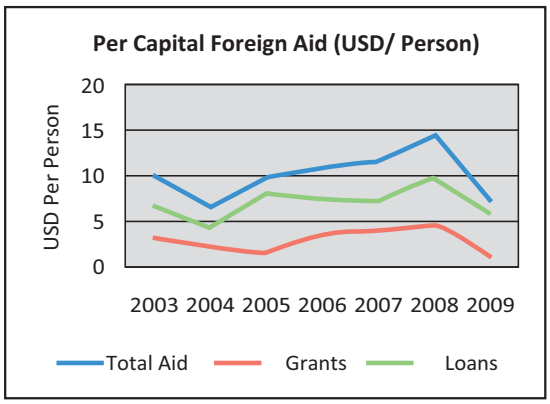
Budget deficits are usually covered by resources drawn from the external and domestic sources. Significant variations have observed in the composition of financing of budget deficits in Bangladesh between 2003 and 2009.

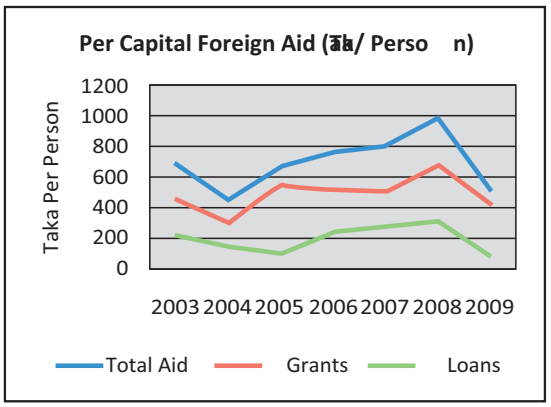
Figure 8: Composition of Deficit Financing (2003-2009)



The adjacent graph shows the composition of deficit financing in Bangladesh between 2003 and 2009. The share of deficit financing from external sources (i.e. in the form of loan and grants) declined from 63% in 2003 to only 18% in 2009. During the same period, share of foreign grants in total external financing has also declined. On the other hand, share of domestic financing – predominantly non-bank financing-increased to 82% in 2009 from 37% in 2003. Average interest rates (i.e. 10% and more) on domestic debts are significantly higher than the cost of fund of external debts. Shifts in composition of deficit financing in Bangladesh suggests that the country has been allocating higher amount of resources to pay interest perhaps narrowing the scope of financing for items desirable from the perspective of development targets/goals realization.

Figure 9: Per Capital Foreign aid (2003-2009)





Except for the year 2004, Bangladesh has been receiving foreign aid in the range of $10 to $15 between 2003 and 2008 on per capita basis. In FY09, per capital aid flow dropped to $7, the level recorded for 2004. Average per capita loan receipt during this period is $7, more than doubled than

[2]The measurement of sustainable budget deficit was developed by Buiter (1983) and van Wijnbergen (1989). The sustainable condition for external borrowing is estimated by $f_{row}(t) \leq [r_{row}(t) - g(t)] \cdot Debt_{row}(t_{-1})$ where f_{row} is non-interest current foreign deficit to GDP ratio, r_{row} is real foreign interest rate and $Debt_{row}$ refers to initial foreign debt-GDP ratio. For domestic borrowing the condition is $dom^{use}(t) \leq [r_{dom}(t) - g(t)] \cdot Debt_{dom}(t_{-1})$ where dom^{use} non-interest current deficit to GDP ratio is, r_{dom} is real domestic interest rate and $Debt_{dom}$ refers to initial domestic debt-GDP ratio (see World Bank, 1997).

the flow of grants (i.e. $3 per capita) on a per capita basis. Such low aid flows on per capital basis appear inconsistent with MDG goal 8.

2.5 Public Debt Situation and Sustainability

Bangladesh's external debt service ratio is low at less than 4 percent of export and remittance receipts. Domestic debt has been relatively stable over the past five years. Gross domestic debt has remained at around 17 % of GDP during the period end-June 2002 through end-2008. The majority of the domestic debt is in the form of treasury bills and savings certificates held by nonbanks, and just a quarter is held by the central bank. The above indicators suggest that Bangladesh does not have a debt sustainability problem. Projections carried out by IMF/WB and other agencies also envisage that Bangladesh is unlikely to face debt sustainability problem in future.

IMF/WB Projection: Bangladesh's external debt burden indicators do not breach the relevant indicative thresholds established under the IMF-World Bank debt sustainability analysis (DSA) framework. Table below summarizes Bangladesh's indicative thresholds, actual 2009 ratios, and average debt service ratios under the baseline scenario prepared by the IMF-World Bank staff in 2008.

Table 1: Policy-Based External Debt Burden Thresholds for Bangladesh

	Threshold	Bangladesh's Ratio		
PV of external debt in % of		In 2009	In 2009-28[1]	In 2009-28[2]
GDP	40	19.5	16	17
Exports	150	100.1	95	97
Revenues	250	185.1	97	99
External debt in % of				
Exports	20	8.2	3.8	3.9
Revenues	30	13.2	7.1	7.5

1/Average period of the base line scenario (5% fiscal deficit)
2/ Average period (FY11-15) of the shock scenario (7.5 % fiscal deficit, on an average)
Source: Article IV Consultation Report-2009, IMF.

Debt Sustainability[33]: Debt sustainability analysis carried out by IMF also suggests on the basis of baseline projection that Bangladesh does not have a debt sustainability problem. According to the analysis, all external debt indicators remain well below the policy-dependent debt burden threshold under the baseline scenario. Given the growing dependence on domestic debt over time and the fiscal deficit at its historical level of about 4% of GDP (excluding grants), external debt in relation to GDP would tend to fall very rapidly (Table 2). Given the buoyant trend in export projected in the DSA analysis, external debt service in relation to exports will decline to around 2.3% by 2030 (IMF, 2009).

Table 2: Bangladesh's Debt Sustainability Base Line Scenario (2007-2030)

[3]The DSA has been prepared jointly by World Bank and IMF staffs and in consultation with the Asian Development Bank using the debt sustainability framework for low-income countries approved by the Boards of both institutions. The DSA is based on macroeconomic data gathered in the context of IMF missions to Dhaka in 2009. Estimated debt outstanding and disbursed as of end–FY2009 provides the basis for the debt figures.

Year	Total Govt. Debt Outstanding in % of GDP	External Debt in % of GDP	Total external debt service as % of export
2007	46.8	27.3	5.2
2008	46.8	26.6	4.9
2009	45.3	24.3	4.5
2010	43.8	22.6	6.0
2011	44	22.0	6.0
2012	43.7	21.0	6.4
2013	43.3	20.1	6.0
2014	43.1	19.3	5.2
2015	42.8	18.6	4.8
2020	41.8	15.5	4.2
2030	40.0	12.0	2.3

Source: Article IV Consultation Report-2009, IMF.

The baseline scenario entails a steady decline in the public debt-to-GDP ratio, with external debt declining but domestic debt increasing in relation to GDP. This is the natural outcome of the trend observed in the last two decades with growing reliance on domestic financing of the budget deficit. As a result of this change in debt composition total public debt in relation to GDP will also fall, albeit at a much slower pace, by 7 percentage points to 40 percent of GDP by 2030.

Summary:

Both measures-revenue effort and revenue productivity are low in Bangladesh compared to its economic expansion; potential tax bases and tax rates suggesting huge scope for improvement in revenue mobilization in Bangladesh. It is argued that (even after controlling for her low per capita income) revenue potential is likely to be in the range of 14-15 % of GDP.

Low resource mobilization has also partly been constraining the expenditure growth. Inefficiency in project implementation is another reason for low expenditure growth. Observed total expenditure has been around 13% to 14% of GDP. Period average share of re-current type is around 65% while the share for capital type is around 35%.

Low levels of revenue and expenditure resulted in low budget deficits at around 4% of GDP. The low level of budget deficit does not reflect fiscal prudence rather it epitomizes the features of a typical Bangladesh budget: setting a high revenue target and a high ADP target and a fiscal deficit in the rage of 3.5-5 % of GDP. In the event, a large revenue shortfall is generally offset by a large ADP implementation shortfall, thereby achieving the target for overall budget deficit. This practice needs to be changed with the formulation of a realistic budget-high revenue, high expenditure and low sustainable deficit which may support financing of MDG NA costs.

Chapter 3

MDG Needs Assessment Costing: Major Observations

3. MDG Needs Assessment Costing: Major Observations

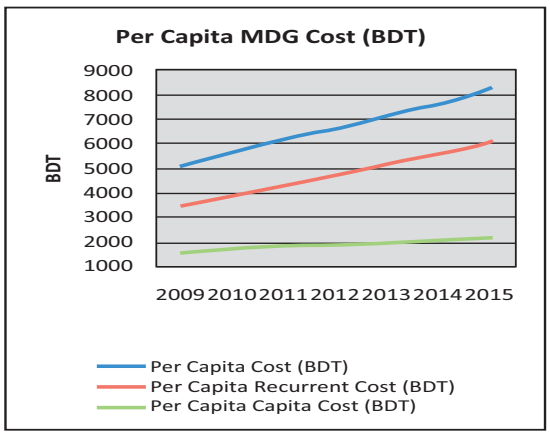
The MDG Needs Assessment costs are derived for 7 clusters through five Thematic Working Groups (TWGs) under the aegis of the project "Support to Monitoring PRS and MDG in Bangladesh". In line with convention, the MDG NA estimates are reported for 7 clusters under the re-current and capital expenditure types. In this section, some key features of the costing exercise are discussed (see Table 3). The assessed MDG needs are reported in terms of total capital and re-current cost, per capita expenditure and composition of capital and re-current cost. The expenditures are converted into US dollar applying the projected exchange rates.

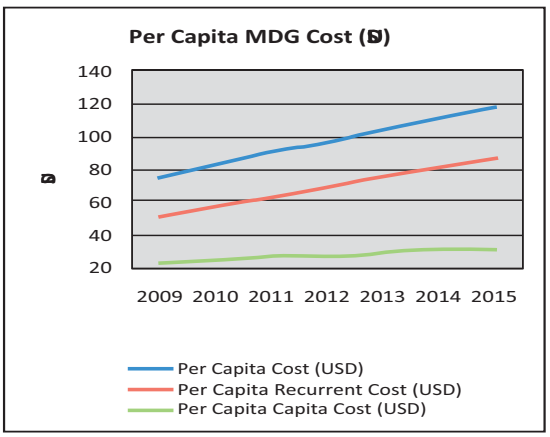
Table 3: MDG Needs Assessed Cost by Types

Cost Types	2009	2010	2011	2012	2013	2014	2015	09-15
Total MDG Cost (Million BDT)	**745,350**	**836,640**	**935,110**	**1,004,450**	**1,101,240**	**1,193,010**	**1,309,970**	**7,125,770**
Recurrent Cost (million BDT)	511,449	582,007	653,623	723,299	798,056	866,516	963,173	5,098,123
Capital Cost (million BDT)	233,901	254,633	281,487	281,151	303,184	326,494	346,797	2,027,647
Total MDG Cost (Billion USD)	**10.90**	**12.23**	**13.67**	**14.68**	**16.10**	**17.44**	**19.15**	**104.18**
Recurrent Cost (million USD)	7,477	8,509	9,528	10,513	11,650	12,631	13,701	74,010
Capital Cost (million USD)	3,420	3,723	4,103	4,087	4,426	4,759	4,933	29,451
Per Capita Cost (BDT)	5,116	5,660	6,241	6,619	7,156	7,652	8,289	
Per Capita Recurrent Cost (BDT)	3,511	3,937	4,363	4,766	5,186	5,558	6,095	
Per Capita Capital Cost (BDT)	1,605	1,723	1,879	1,853	1,970	2,094	2,194	
Per Capita NA Cost (USD)	75	83	91	96	104	112	118	
Per Capita Recurrent Cost (USD)	51	58	64	69	76	81	87	
Per Capita Capital Cost (USD)	23	25	27	27	29	31	31	
Memorandum Items								
Exchange Rate	68.4	68.4	68.6	68.8	68.5	68.6	70.3	
Population (Million Person)	146	148	150	152	154	156	158	

Source: MDG Needs Assessment and Costing 2009-15, Bangladesh, UNDP

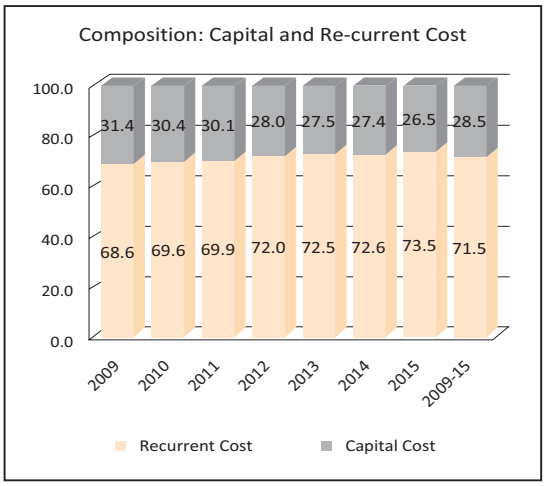
Total NA cost required to achieve MDGs in Bangladesh is estimated to be $104.18 billion for the 7 year period (i.e. FY09 to FY15). More than $74 billion will need to be spent for re-current expenditure while only around $29 billion will required to be allocated for capital expenditure. Both types of expenditure are showing an increasing trajectory over the 7 year period. Re-current expenditure shows an increasing trajectory rising to approximately $14 billion in 2015 from $7.5 billion in 2009. Capital expenditure is also tracking a rising pattern to around $5 billion in 2015 from $3.4 million in 2009.





Population is expected to grow at an annual rate of 1.3 percent. According to this projection Bangladesh is expected to have 158 million persons by 2015, up from the population level of 146 million persons in 2009. Framed by this population outlook, the per capita MDG expenditure in US dollar will rise to $118/person in 2015 from $75/person in 2009. The estimated per capita requirements are significantly higher than the historical magnitudes.

Figure 10: Composition of MDG Costs



Composition of total MDG costs between capital and re-current type reveals predominance of re-urrent type over the capital type.

The share of re-current type is around 70% over the 7 year period. On the other hand, except for the first three years, the share for capital cost is less than 30% of total expenditure.

The composition may thus suggest that:

- Physical infrastructures in Bangladesh are adequate with respect to achieving MDG targets.
- The country needs to spent large sums of funds in the forms of salaries, purchase of goods and services, and maintenance etc.

Summary:

Estimated MDG NA expenditures to achieve MDGs appear high on the basis of observed expenditure patterns of last 6 years. It thus suggests that expenditure allocation needs to be raised substantially through additional resource mobilization to accommodate the prescribed MDG NA expenditure within government budget preserving the sustainable deficit threshold.

Composition of total MDG costs between capital and re-current cost reveals predominance of re-current type over the capital type. Share of re-current type is around 70% while the share for capital type is less than 30 percent for most years of the MDG reference period (i.e. 2009-2015). The prescribed composition (70:30) is not substantially different from the observed composition (65:35) and hence calls for a marginal re-orientation towards the re-current type.

Chapter 4

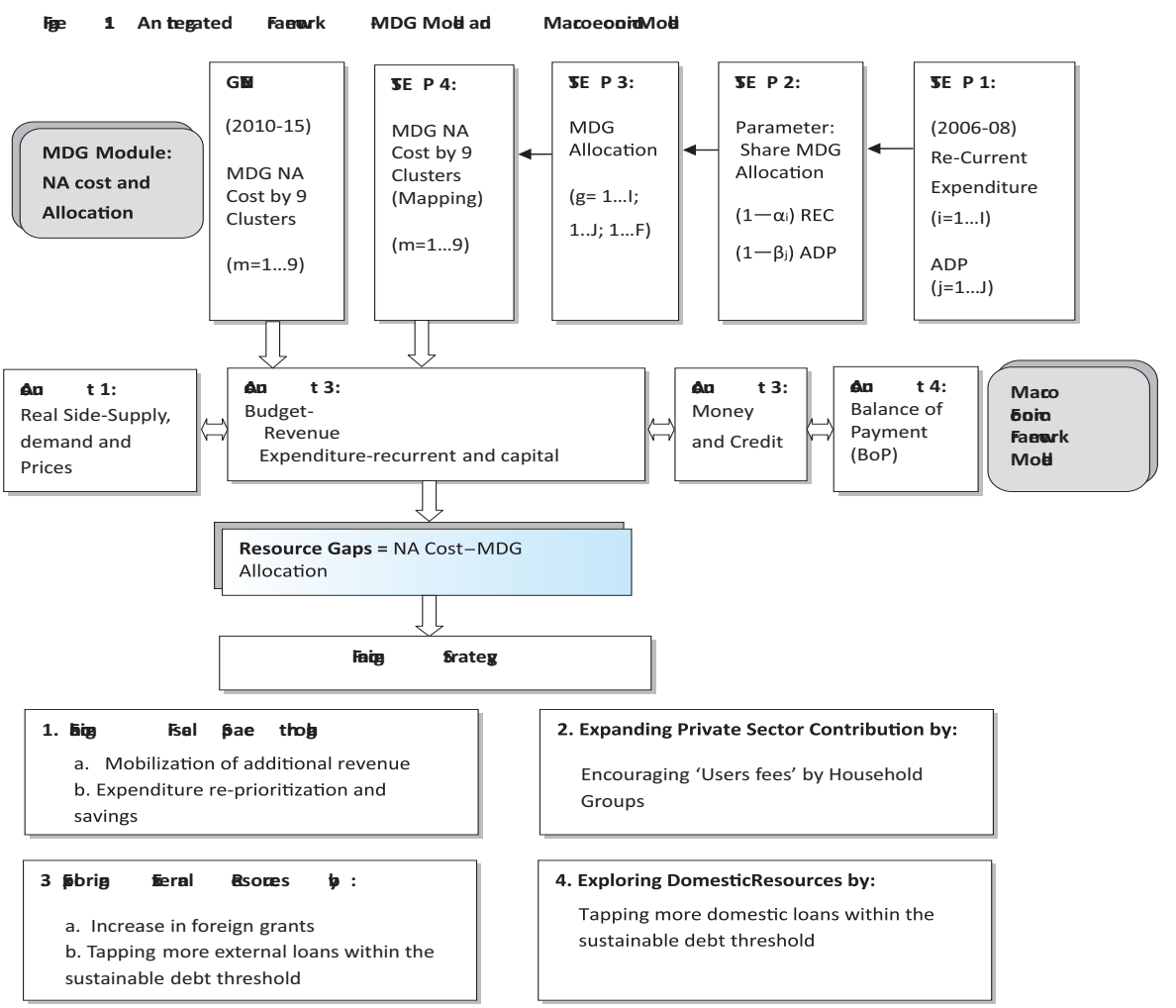
Methodology and Data

4. Methodology and Data

The general methodology is to use an integrated framework to develop the MDG financing strategy for Bangladesh. The integrated framework consists of an MDG module and a macro-economic module. The MDG module includes an assessment of MDG allocation shares in the existing annual budget of the government (especially re-current and capital expenditure). The macro-economic module incorporates MDG allocation share information (e.g. derived in the module) and the estimated MDG NA estimates (given) into the 'macro-economic framework' to determine resource gaps and sources of the gap financing.

A schematic description of the integrated framework is shown below. It suggests that MDG allocation parameters will be determined in step 1 and 4. Potential contribution from households may also be included at this stage. In the next step, the contribution information will be incorporated into the macro economic framework to examine resource gaps and explore alternative financing options to cover the resource gaps.

Figure 11: An Integrated Framework-MDG Module and Macroeconomic Module



4.1 Methodology—Derivation of MDG Allocation Parameter

Government's total expenditure consists of two components i.e. capital expenditure or Annual Development Program (ADP) and non-development expenditure. Since both of these types of expenditure may contain programmes which are of MDG types, an attempt has been made to assess MDG orientation of the government expenditure.

MDG Orientation of Capital Expenditure or ADP: Programmes/projects under the ADP are classified under 17 broad sectors (i.e. they are also known as ADP sectors). Two considerations have been made for this exercise:

(i) even though all ADP projects are in principle directed for development, not all of them are MDG oriented. Accordingly, out of 17 ADP sectors, 11 sectors have been considered for MDG orientation assessment. These are:

1. *Agriculture*
2. *Rural Development and Rural Institution*
3. *Electricity*
4. *Transport*
5. *Physical Infrastructure*
6. *Water Supply and Housing*
7. *Education and Religion*
8. *Health, Nutrition, Population and Family welfare*
9. *Mass communication*
10. *Social welfare, Women and Youth Development, and*
11. *Labor force and employment.*

(ii) Projects under ADP are usually implemented through two sources namely 'government fund/ budget' and 'donors assistance'. Furthermore, projects under ADP get allocation under following four criteria within these two sources:

a. *Investment*
b. *Technical Assistance*
c. *JDCF and*
d. *Unsanctioned Project Allotment.*

For this exercise, allocations under the last two criteria (i.e. c and d) are not considered since projects under criterion 'c' are few and rarely MDG oriented, while allocation under criterion 'd' do not reveal any systematic pattern or allocation. Thus, projects allocations under the first two criteria 'a' and 'b' are considered.

(iii) Again a number of criteria have been considered to derive MDG orientation of the projects implemented under the 11 selected ADP sectors. All projects under the 11 ADP sectors have been assigned MDG shares by using two criteria—(a) whether the projects affect MDG goals '*directly'; or* (b) whether it affects them '*indirectly*'. In the case of projects which are directly influencing MDGs, 100 % allocation shares have been assigned. Varying allocation shares (based on the objectives, and target beneficiary groups etc.) have been assigned for projects which are indirectly influencing MDGs.

Although the allocation share may vary between 0 and 100%, average allocation for the 'indirect' projects have found to be less than 30% of allocation assigned for the direct projects. The following table shows some of the excluded ADP projects (i.e. projects with zero MDG allocation shares).

Table 4: Projects with zero MDG allocation share

Sectors	Excluded Projects (MDG Allocation Shares=0)
1. Agriculture	a) Product Developments such as orange, soybeans, etc. b) Recovery of natural disaster cyclone, and flood c) Census Project
2. Rural Development and Rural Institution	a) Projects related with the development of co-operative system b) Project related with community basis resource management c) Establishment of union complex building d) Local governance support projects
3. Transport	a) Development of roads in the cities like Dhaka, Chittagong b) Development of district roads c) Development of national Highways d) Development of air port, sea port and land port
4. Physical Infrastructure, Water Supply and Housing	a) Structure plans for district cities b) Establishment of new office buildings c) Construction of terminal buildings in district cities d) Construction of training centre for police, fire brigade and civil defense
5. Education & Religion	a) Development program for universities b) Development of universities and colleges for civil defense staffs c) Development of Mosques
6. Health, Nutrition, Population and Family welfare	a) Construction of office building
7. Social welfare, Women and Youth Development	a) Establishment of academy complex building b) Women and children prisoners project

MDG Orientation of Non-development Expenditure: The major heads of the re-current expenditure are: (i) Salary and allowances; (ii) Purchase of goods and services; (iii) Interest payment; (iv) Subsidies and current transfers; (v) Block allocation and (vi) Deduction. MDG allocation shares for interest payments, purchase of goods and services, block allocation and deduction may easily be set at zero considering that these re-current expenditures are not MDG oriented. Similarly, items under the 'Non Development Capital Expenditure' i.e. (a) total acquisition of assets and works; and (b) total investment in shares and equities, are deemed non-MDG expenditure. According to the above categorization of re-current expenditures, the items identified for the MDGs under the 'Non-Development Expenditure' are the followings:

1. *Salary and allowance*
2. *Subsidies*
3. *Grants-in aid*
4. *Pension and Gratuity*

5. *Construction and Works*
6. *Net Outlay for Food Account Operation*
7. *Non ADP Employment Generation Programs, and*
8. *Structural Adjustment Expenditure.*

Salary and allowance item includes salary and allowance for public servants of all ministries (i.e.around 40), whereas activities of 15 ministries are considered to be MDG oriented. Under this circumstance, two estimates may be considered for salary and allowance item of the re-current budget. In the first estimate, salary and allowance of all ministries may be included on the assumption that activities of all ministries are assisting the MDGs, either directly and indirectly. In the second estimate, salary and allowance of 15 ministries may only be accounted for on the ground that their activities have been impacting MDGs. Average observed allocation to per ministry (i.e. derived from the salary and allowance data) has been allocated to the 15 ministries to arrive at estimates of salary and allowance expenditure by them. These ministries are:

1. *Ministry of Primary and Mass Education*
2. *Ministry of Education*
3. *Ministry of Health and Family Welfare*
4. *Ministry of Social Welfare*
5. *Ministry of Women and Children Affairs*
6. *Ministry of Labor and Employment*
7. *Ministry of Housing and Public Works*
8. *Local Government Division*
9. *Rural Development and Co-operatives Division*
10. *Ministry of Agriculture*
11. *Roads and Railways Division (Ministry of Communication)*
12. *Ministry of Environment and Forest*
13. *Ministry of Water Resources*
14. *Ministry of Food & Disaster Management*
15. *Power Division*

Household Contribution: Information of 'Household Income Expenditure Survey' 2005 has been used to examine the extent and scope of contribution in the form of 'users' fees by household groups against MDG provisioning. In accordance to the strategies adopted in other studies, following factors have been considered in designing such a strategy:

i. Evidence suggests that direct and indirect user fees for primary education and essential healthcare are a barrier to access for the poor. Thus, the user fees are not projected to contribute to the cost of primary school education, adult literacy programs, improving gender equality, basic healthcare, nutritional interventions, and transport infrastructure.

ii. As richer households can bear some of the cost of agricultural interventions, secondary school education, energy provision, water supply and sanitation, make a provision for that in the financing strategy.

Furthermore, household groups have been divided into 3 groups to assess households' ability to pay for these interventions[4]:

- The first group (HH1) consists of households whose per capita income is below the national or other accepted poverty line. These households are unable contribute to either capital or operating costs, because their incomes are already insufficient to meet food and other basic needs.

- The second group of households (HH2) has levels of per capita income that are above the poverty line but below twice the national or other accepted poverty line. These households are expected to partially cover the re-current (operating) costs as well as capital costs.

- The remainder of the household (HH3) is assumed to be able to pay for a significant share of the operating and capital costs.

4.2 Data Sources for MDG Costing and MDG Allocation Parameter

Data on the above expenditure categories and MDG NA costs have been collected from secondary sources. These are:

- Annual Development Programmes- FY07, FY08 and FY09. Planning Commission.
- Non Development Expenditures- FY07, FY08 and FY09. Various Volumes-Bangladesh Economic Review, Ministry of Finance.
- Household Income and Expenditure Survey 2005. Bangladesh Bureau of Statistics.
- MDG Needs Assessment Costs-UNDP 2008 "Millennium Development Goals Needs Assessment and Costing 2009- 2015, Bangladesh".

4.2.1 Macro Economic Framework

A consistent macro economic framework has been used to determine financing Strategy for Bangladesh. The use of a consistent macro economic framework is recommended for three important reasons (Please see Yuba Raj Katiwada, UN RCC)[5]:

a) MDG NA does not (i) explicitly tell us the implied growth rate that can be achieved by investing in MDG related areas; (ii) give a holistic picture of total investment required to attain the desired economic growth; and (iii) take financing as a major constraint while arriving at investment requirements.

b) Growth estimation is necessary to (i) estimate government revenue collection and household contribution to MDG financing; and (ii) projecting key macro indicators like consumption, saving, private investment, exports and imports. A macro model can only give a credible projection of GDP growth.

[4]Please UN Regional Centre in Colombo (2008), where similar approaches were advocated for Bhutan.
[5]Colombo Workshop on MDG-based Planning, and the Development of a Pro-Poor Policy and Budgeting Framework, 2-6 October 2006, Nadi, Fiji.

c) Macro framework is essential to examine that the investments made in line with MDG NA and costing do not misalign the macro-economic fundamentals.

Building a consistent macro economic framework is a complex task which may not be feasible given the strict time frame. Hence a consistent macro economic framework built by Khondker and Raihan (2008) for the Finance Division under the aegis of Asian Development Bank have has been extended to determine the MDG financing strategy for Bangladesh. The existing macroeconomic framework consists of five accounts: (i) real side; (ii) fiscal; (iii) money and credit; (iv) balance of payment; and (v) poverty and distribution. The reference period of the framework is from 2003 to 2015. Model calibrates data up to 2010[6] and projects outcomes over 2011 to 2015. The framework provides medium term and long term profiles of the economy encompassing real side, fiscal side, monetary survey, external sector variables and poverty.

Following tasks have been performed to extend the existing macroeconomic framework for MDG financing:

1. Collecting data for the FY 2009 and 2010 by the above four accounts from secondary sources.
2. Adding of another account (i.e. sixth account) containing MDG NA costs and MDG allocation parameters.
3. Recalibrating framework over 2003-2010 period and generating Baseline (Base) scenario.
4. Estimating MDG resource gap, growth and other impacts of additional MDG expenditure.
5. Exploring alternative financing options to close the estimated resource gap.
6. Generating a macro consistent MDG scenario.

4.2.2 Main Features of Bangladesh Macroeconomic Framework

The Macroeconomic Framework (MEF) has been developed to assist the preparation of short and medium term macroeconomic outlook for Bangladesh. The MEF architecture is best described as an extension of the 'Finance Programming' family of models.[7],[8] The MEF *extends* the characteristics of the Finance Programming Model by incorporating an *explicit specification of output generation* that takes into account production and factor market behaviour, incorporation of response parameters for key behaviours. It accounts for the linkages of production with money-and-credit, the balance of payments, and the government budget. The system has an integrated distribution and poverty module for examining the linkage between growth and poverty, which further extends MEF analytical capability.

The main feautres of the MEF are:

1. The MEF consists of five accounts: (i) real side; (ii) fiscal; (iii) money and credit; (iv) balance of payments (BoP); and (v) poverty and distribution. In addition to these blocks, a debt block is appended to capture debt dynamics.

[6]Quick or provisional estimates for 2010 as provided in the official documents.

[7]Barth, R.C., and Hemphill, W. (2000): Financial Programming and Policy: The Case of Turkey, Washington: IMF Publication Services.

[8]'*Theoretical Aspects of the Design of Fund-supported Adjustment Programmes*' Occasional Paper 55, Washington DC: International Monetary Fund, Sept 1987. "... A Financial Programming Model is an instrument composed of accounting identities complemented by a set of behavioural relationships. For analysis, this instrument can be applied to any package of policy measures designed to achieve a given set of user-defined macroeconomic goals. The MEF architecture expresses exactly these attributes; and the expression occurs within the context of consistent economic frameworks (SAM/Flow-of-Funds) that can be moved forward in time to analyze and forecast policy impacts on the economy.

2. Behavioural specifications for some keys variables namely the production function; revenue function; capital formation; private investment function; private consumption, CPI etc are defined. Real income generation is specified by a Cobb-Douglas function. Real private consumption, real private investment, CPI, real exports and imports are specified using estimated response parameters.

3. There are three ways of estimating the parameters of individual equation of the specified model. The choices are: (i) econometric/statistical estimation, (ii) exact computation/ calibration, (iii) a mixture of econometric and calibration method. In MEF, paramters of the framework are specified using a mixture of econometric and calibration tecjniques.

4. All accounts are inter-linked. Inter-dependence between variables of different blocks namely between real side and government budget; government budget, money and BoP; money and real side are active. For instance, domestic revenue generation critically depends on two components: (i) revenue base and (ii) rate. The normal growth of revenue base depends on the growth of the economy i.e. the revenue base is linked to the estimated GDP and import values.

5. All key prices are endogenous. These include:
   - Consumer price index
   - Investment price
   - Export price
   - Import price
   - GDP deflator
   - Exchange rate

Data and Parameters for Macro Economic Framework

Data period considered in MEF is FY03 to FY10. The figures for FY10 are quick estimate. Almost all data used in the macroeconomic framework has been collected from the secondary source such as the Finance Division. Data sets (e.g. from mid-1980s to current years) for regression analyses were obtained from various officials documents such as Economic Review and Bangladesh Statistical Year Books. The deficit data covering 1980 to 2006 have been provided by the Finance Division. Breakdown of value added (i.e. GDP) by labour and capital was obtained from the updated social accounting matrix (SAM) for Bangladesh for 2007. The World Economic Outlook forecasts were reviewed to get parameters for external sector (e.g. world prices of imports and exports, world inflation rate etc.).

As mentioned above, the time series data covering the period between the mid 1980s and 2008 (in most cases thereby providing 20 to 25 year time series) are available to assess the regression coefficients (i.e. response parameters) of the explanatory variables. Regressions are conducted for real private investment; real private consumption; real exports; real imports; and consumer price index. The values of response parameters (i.e. estimated regression coefficients) are then linked to the relevant explanatory variables to assess the generation of the series of explained variables in question.

Chapter 5

Result: MDG Allocation Parameter

5. Result: MDG Allocation Parameter

A thorough desk review has been conducted by the consultant team to derive MDG allocation share parameters by expenditure items of the re-current and ADP on the basis of project documents, value judgement, findings of other countries (where applicable) and guidelines of UN Millennium projects etc. The above procedure allowed the consultant team to develop matrices of MDG allocation parameters by expenditure items and expenditure categories. A consultation[9] meeting was held with officials of General Economics Division to review and validate outcomes. Desk review and consultation process helped the consultant team to finalize the following two important Parameters.

Expenditure Category	Parameter	Range
Re-current (i=1.....I)	α_i	0-1; where, 0=Zero MDG Allocation and 1=100% MDG Allocation
Capital or ADP (j=1...J)	β_j	0-1; where, 0=Zero MDG Allocation and 1=100% MDG Allocation

5.1 MDG Allocation Parameters for ADP Projects

Following tables summarizes sectoral distribution of ADP projects according to their MDG orientation, and derived MDG shares for the identified projects. According to the methodology discussed in section above, as many as 376 projects have been identified to have impacted MDGs in Bangladesh during the last three fiscal years (i.e. FY08 to FY10). Out of them, 71% of the projects are found to have impacted MDGs directly. Around 17% of the projects have indirectly affected MDGs.

Table 5: Sectoral Distribution of ADP Projects according to MDG Orientation

	Direct	Indirect	Both	Total
Agriculture	30	45	29	104
Rural Development and Rural Institution	58	2	0	60
Industry	1	0	1	2
Electricity	0	14	0	14
Transport	0	0	13	13
Physical Infrastructure, Water Supply and Housing	46	0	0	46
Education & Religion	50	0	0	50
Health, Nutrition, Population and Family welfare	27	2	2	31
Mass communication	1	0	0	1
Social welfare, Women and Youth Development	46	1	0	47
Labour force and employment	7	0	1	8

[9]The meeting was organized by the GED-UNDP project "Support to Monitoring PRS and MDG in Bangladesh.

	Direct	Indirect	Both	Total
Total	**266**	**64**	**46**	**376**
Share (%)	**71**	**17**	**12**	**100**

Source: Author's Calculation based on Annual Development Program-FY08, FY09, FY10.

The results of capital/ADP share parameter derivation exercise are presented in Table 6. The contribution towards MDGs in Bangladesh under this expenditure head during FY08 to FY10 has been estimated to be around 54%.

Table 6: MDG Share Parameters for ADP Projects for Selected Years

	FY07-08	FY08-09	FY09-10	Average (Fy08-10)
Agriculture	2.76	3.75	3.15	3.22
Rural Development and Rural Institution	10.82	9.65	8.68	9.72
Industry	0.03	0.00	0.02	0.01
Electricity	5.09	4.51	1.93	3.84
Transport	9.15	7.70	9.75	8.87
Physical Infrastructure, Water Supply and Housing	2.58	3.47	5.29	3.78
Education & Religion	12.08	11.57	11.63	11.76
Health, Nutrition, Population and Family welfare	10.98	9.79	13.21	11.33
Mass communication	0.02	0.02	0.01	0.02
Social welfare, Women and Youth Development	0.55	0.64	1.04	0.74
Labour force and employment	0.31	0.34	0.05	0.23
Capital or ADP Share Parameter β_j	**54.37**	**51.44**	**54.77**	**53.53**

Source: Author's Calculation based on Annual Development Program-FY08, FY09, FY10.

5.2 MDG Allocation Parameters for Non-development Expenditure

The results of non development share parameter derivation exercise are presented in Table 7. As mentioned above in the methodology section, two estimates are considered for salary and allowance item of the re-current budget. In the first estimate, salary and allowance of all ministries may be considered on the assumption that activities all ministries are assisting the MDGs, either directly and indirectly. In the second estimate, salary and allowance of only 15 ministries are considered on the ground that their activities have been impacting the MDGs. When salary and allowance of all ministries are included, almost 58% of non-development or re-current expenditure found to contribute towards MDGs in Bangladesh. Confinement of 'salary and allowance' item to 15 ministries drops the contribution of re-current expenditure to around 45 percent.

Table 7: MDG Share Parameters for Non Development Expenditure for Selected Years

	FY07-08	FY08-09	FY09-10	Average (Fy08-10)
Total Pay and Allowances				
A. Total Pay and Allowances (All Ministries)	21.76	21.61	19.46	20.94

	FY07-08	FY08-09	FY09-10	Average (Fy08-10)
B. Total Pay and Allowances (15 Ministries)	8.16	8.10	7.30	7.85
Subsidies	9.44	11.98	8.50	9.98
Grants-in-aid	16.14	19.82	18.37	18.11
Pension and gratuity	5.45	5.17	4.42	5.02
Construction and works	0.45	0.42	0.36	0.41
Net Outlay for Food Account Operation	1.29	0.01	0.40	0.56
Non-ADP Employment Generation Programs	0.87	1.42	1.49	1.26
Structural Adjustment Expenditure	2.71	1.07	0.40	1.39
A. Recurrent Share Parameter α_i	**58.11**	**61.49**	**53.40**	**57.67**
B. Recurrent Share Parameter α_i	**44.51**	**47.99**	**41.24**	**44.58**

5.3 Household Contribution

Household is an important institution in Bangladesh. Their consumption pattern as contained in HIES 2005 has been examined to find out scope of contribution from this source against MDG provisioning. As mentioned above, several conditions have been considered in assessing the scope and extent. Certain consumption items have been excluded on the basis of their 'non-MDG orientation'. Some of these excluded items are: (i) food; (ii) clothing; (iii) entertainment; and (iv) miscellaneous.

Furthermore, household groups have been divided into 3 groups to assess households' ability to pay for these interventions:

- The first group (HH1) consists of households whose monthly per capita income is below the one dollar poverty line (i.e. Taka 2,170=Taka 70 x 31 days). These households are unable contribute to either capital or operating costs, because their incomes are already insufficient to meet food and other basic needs.

- The second group of households (HH2) has levels of per capita income that are above the poverty line but below twice the one dollar poverty line (i.e. Taka 4,340). These households are expected to cover half of the re-current (operating) costs as well as capital costs.

- The remainder of the household (HH3) is assumed to be able to pay for a significant share (i.e. 100%) of the operating and capital costs.

- Estimated household contribution is provided in Table 8. It is noted that on average 2 to 3% of household's consumption expenditure can be targeted for covering MDG cost.

Table 8: Household Contribution

Households	HIES Classification (Monthly Income)*	Water and Sanitation	Lighting and Fuel	Education	Health	Average
HH1	<750 to 2,499	0.00	0.00	0.00	0.00	0.00
HH2	2,500 to 4,999	1.67	0.00	1.48	1.66	1.51
HH3	5,000 to 20,000+	5.09	6.96	5.20	3.54	3.61
Average		**3.38**	**3.48**	**3.34**	**2.60**	**2.56**

Note: *Second column shows correspondence between the three household groups (i.e. HH1 to HH3) classified on the basis of 'ability to pay' and households classified in the HIES 2005 by monthly income.

Summary:

Exercises with development (capital) and non-developmental (re-current) expenditures envisage that both of these expenditures are reasonably MDG oriented. On average 55% of ADP spending are meant for MDGs, while the corresponding share for non-development expenditure ranged between 58% (i.e. by including salaries of all ministries) and 45% (i.e. by including salaries of only 15 ministries).

An assessment of the expenditure pattern of households under various conditions reveals that the extent of resource mobilization from this source to cover MDG costs is small. In particular, exclusions of certain consumption items on 'non-MDG orientation' criterion from the household's consumption basket and imposition of 'ability to pay' criterion suggests on average 2 to 3% of household's consumption expenditure can be targeted for covering MDG cost.

Chapter 6

Results: MDG Financing

6. Results: MDG Financing

MDG financing exercise has been carried out against two macro economic scenarios. These scenarios closely resemble the scenarios prepared for the sixth-five plan (i.e. FY11 to FY15).

Baseline Scenario

The scenario is considered as the 'base' and its key economic parameters have been set to allow current economic trends to unfold into the future. The scenario closely retraces historical economic trends and creates the baseline pathway of future development. However, in cases where no clear trend exists value judgments are used. Since the focus is on financing of the MDG cost, the budget part of the 'baseline' scenario is elaborated in the table below.

Table 9: Major Feature of Baseline Scenario

Major Variables	2011	2012	2013	2014	2015
Growth: Real GDP (%)	6.3	6.4	6.7	6.9	7.1
CPI Inflation (%)	6.4	6.4	6.4	6.3	6.3
Gross Domestic Investment (% of GDP)	23.5	23.6	24.6	25.3	26.2
Budget					
Total Revenue	886.5	1023.2	1181.1	1363.6	1572.1
Tax	719.3	837.2	974.5	1134.2	1317.4
Non-Tax	167.2	186.0	206.6	229.4	254.7
Total Expenditure	1272.6	1444.4	1649.9	1885.0	2154.3
Recurrent Expenditure	924.3	1056.7	1217.7	1404.5	1616.2
Development Expenditure	348.3	387.6	432.2	480.5	538.1
Overall Balance (excluding grants)	-386.1	-421.1	-468.9	-521.4	-582.2
Financing	386.1	421.1	468.9	521.4	582.2
External	145.3	166.4	180.3	194.6	202.5
Grants	55.0	55.0	55.0	55.0	55.0
Disbursement	144.6	165.7	188.4	202.7	221.5
Amortization	-54.3	-54.2	-63.1	-63.2	-74.0
Domestic	240.8	254.7	288.6	326.8	379.8
Bank	183.2	197.1	234.1	278.4	336.6
Non-Bank	57.6	57.6	54.4	48.4	43.1
Revenue Efforts	11.4	11.9	12.3	12.8	13.2
Expenditure/GDP Ratio	16.4	16.8	17.2	17.6	18.1
Deficit/GDP Ratio	-5.0	-4.9	-4.9	-4.9	-4.9
Nominal GDP	7749.2	8610.3	9603.2	10688.4	11929.5

Major Variables	2011	2012	2013	2014	2015
Household consumption (i.e. 70% of Nominal Income)	5424.4	6027.2	6722.2	7481.9	8350.6
External (Billion USD)	2.1	2.4	2.5	2.7	2.8
Net Loan (Billion USD)	1.3	1.6	1.8	2.0	2.0
Grants (Billion USD)	0.8	0.8	0.8	0.8	0.8

- In this scenario, economic growth is expected rise to slightly over 7% in FY15. The investment-GDP ratio (I/Y ratio) will increase to 26% in FY15 from 23.4 percent in FY11. Thus, over the SFYP period, I/Y ratio is required to increase by about 3 percentage points. Growth in the general price level is expected to be stable at around 6.5 percent following an accommodating monetary policy.

- Revenue effort will increase from 11.4% in FY11 to 13% in FY15. The predominant source of revenue will still be the tax revenue collected by National Board of Revenue (NBR). Annual development program (ADP) is expected to be stable at around 4.5% of GDP while revenue expenditure is set to increase to 13.6% in FY15 from 11.9% in FY11. Thus total expenditure is set to increase to 18% in FY15 from 16.4% in FY11. The resultant budget deficits are estimated to be slightly less than 5% of GDP. Resources from the external source are expected to be around 1.9% of GDP implying a brighter outlook compared to the foreign aid situation of the last five years. Despite a brighter foreign aid outlook, larger resources will need to be tapped from domestic bank and non-bank system to finance the deficit.

Table 10: MDG Financing under the Baseline Scenario

(Billion Taka unless Otherwise Stated)

Major Items	2011	2012	2013	2014	2015
1. MDG Resource GAP					
A. MDG Re-current cost (Given)	653.6	723.3	798.1	866.5	963.2
B. MDG Capital cost (Given)	281.5	281.2	303.2	326.5	346.8
Stage 1: MDG Orientation of Budget					
C. Re-current expenditure	924.3	1056.7	1217.7	1404.5	1616.2
D. MDG Orientation@0.45 of C	416.0	475.5	548.0	632.0	727.3
E. GAP Recurrent MDG = (A-D)	237.7	247.8	250.1	234.5	235.9
F. Capital expenditure	348.3	387.6	432.2	480.5	538.1
G. MDG Orientation@ 0.55 of F	191.6	213.2	237.7	264.3	295.9
H. GAP Capital MDG = (B-G)	89.9	68.0	65.5	62.2	50.9
K. MDG Resource GAP (Re-current + Capital)	327.6	315.7	315.5	296.7	286.7
Stage 2: Household Contribution					
M. HH Contribution @0.0256 of HH Consumption	138.9	154.3	172.1	191.5	213.8
N. Total MDG GAP =(K-M)	188.7	161.4	143.5	105.2	73.0
Stage 3: MDG Inclusive Expenditure Budget					
P. MDG Inclusive Re-current Expenditure	1023.1	1150.2	1295.7	1447.4	1638.3
Q. MDG Inclusive Capital Expenditure	438.2	455.6	497.7	542.7	588.9
2. MDG Inclusive Budget					
Total Revenue	886.5	1023.2	1181.1	1363.6	1572.1

Major Items	2011	2012	2013	2014	2015
Tax	719.3	837.2	974.5	1134.2	1317.4
Non-Tax	167.2	186.0	206.6	229.4	254.7
Total Expenditure	1461.4	1605.8	1793.4	1990.2	2227.2
Recurrent Expenditure	1023.1	1150.2	1295.7	1447.4	1638.3
Development Expenditure	438.2	455.6	497.7	542.7	588.9
3. Overall Balance and Financing	**-574.8**	**-582.6**	**-612.3**	**-626.6**	**-655.2**
Financing	574.8	582.6	612.3	626.6	655.2
External	334.1	327.9	323.8	299.8	275.4
Net Loan	214.1	207.9	223.8	199.8	175.4
Grants	120.0	120.0	100.0	100.0	100.0
Domestic	240.8	254.7	288.6	326.8	379.8
4. Memorandum Items					
MDG Cost as % of GDP	12.1	12.6	12.5	12.2	12
MDG Resource GAP (Stage 1) as % of GDP	3.1	2.9	2.6	2.2	2.0
Per Capita MDG Resource GAP (Stage 1) USD/ Person	23.1	23.7	23.7	21.9	21.2
Total MDG Resource GAP (Stage 2) as % of GDP	2.4	1.9	1.5	1.0	0.6
Per Capita MDG Resource GAP (Stage 2) USD/ Person	18.3	15.5	13.6	9.8	6.6
Revenue Efforts (%)	11.4	11.9	12.3	12.8	13.2
Expenditure/GDP Ratio (%)	18.9	18.6	18.7	18.6	18.7
Deficit/GDP Ratio (%)	**-7.5**	**-6.7**	**-6.4**	**-5.8**	**-5.5**
External (Billion USD)	4.8	4.7	4.6	4.2	3.8
Net Loan (Billion USD)	3.0	2.9	3.2	2.8	2.4
Grants (Billion USD)	1.7	1.7	1.4	1.4	1.4

Estimated MDG resource gap and financing options are provided in Table 10. First part of the table shows MDG resource gap calculation and sizes of re-current and capital budgets inclusive of MDG NA costs. Rows A and B show the estimated MDG NA re-current and capital costs respectively. Re-current expenditure of the baseline scenario is shown in row C. As mentioned above (in section 5), almost 45% of the re-current expenditure can be treated as MDG expenditures. This procedure provided us with amounts of MDG provisioning from the projected baseline re-current budget over the FY11 to FY15 period. MDG provisioning from re-current budget ranged between 416 billion taka in FY11 to 727 billion taka in FY15. These amounts are deducted from the MDG NA re-current costs to derive resource gap of MDG re-current cost. The size of re-current resource gaps are still large ranging between 238 billion taka in FY11 and 236 billion taka in FY15.

MDG provisioning from capital expenditure (i.e. estimated at 55% of capital expenditure of the baseline scenario) is marginally lower than the MDG NA capital costs implying that there are small resource gaps under this expenditure head. The size of capital expenditure resource gaps range between 90 billion taka in FY11 and 51 billion taka in FY15. MDG resource gaps at stage 1 equal the sum of resource gaps estimated under the re-current head and the capital expenditure head. More specifically, total MDG resource gaps at stage 1 range between 328 billion taka in FY11 and 287 billion taka in FY15.

Potential contributions from the household are invoked at stage 2 to calculate MDG NA resource gap. Contribution from household towards MDGs is estimated to be around 2.5% of their consumption expenditure. Accordingly, household contribution may range from 139 billion taka in FY11 to 214 billion taka in FY15. Although these items together constitute small portion of total household consumption, their estimated contributions to MDG expenditure are substantial. Inclusion of household contribution reduced final MDG resource gaps by about 44% from the MDG resource gaps estimated at stage 1. Thus, this is an important source of MDGs financing in Bangladesh.

In stage 3, total MDG resource gaps estimated at stage 2 are added to the expenditures of the baseline scenario to derive MDG inclusive expenditures. As a result, on average, increase in total expenditure is around 8% from the original baseline estimate. Surge in total expenditure amounts, with revenue efforts remaining more or less unchanged, led to the deterioration of budget deficits by about 1.5 percentage points. What options are available to government to finance the additional deficits?

Fiscal Space: As noted above, rise in revenue efforts by about 3 percentage points (i.e. 13% in base scenario compared to historical ratio of 10%) rules out any further scope of fiscal space expansion by raising revenue.

Household Contribution: Potential contribution from household has also been factored to derive the MDG resource gap limiting the scope for further resource mobilization from this head.

Domestic Borrowing: Although additional resources to cover the budget deficits may potentially be tapped from this source, further use of this source is discouraged due to the following factors:

- In recent years, government had relied heavily on this source for deficit financing leading to a sharp rise in domestic debt/GDP ratio and debt composition limiting its expansion.
- Use of resources from this source to cover baseline budget deficit is on the higher side. Further use of this source may crowd out private sector.
- It is an expensive source and hence should not be preferred over the less expensive external sources.

	FY11	FY12	FY13	FY14	FY15
MDG Cost Inclusive Baseline Scenarios					
A. External (Billion USD)	4.8	4.7	4.6	4.2	3.8
Net Loan (Billion USD)	3.1	2.9	3.2	2.8	2.4
Grants (Billion USD)	1.7	1.7	1.4	1.4	1.4
Baseline Scenario without MDG costs					
B. External (Billion USD)	2.1	2.4	2.5	2.7	2.8
Net Loan (Billion USD)	1.3	1.6	1.8	2.0	2.0
Grants (Billion USD)	0.8	0.8	0.8	0.8	0.8
External Resources for MDGs					
C. External (Billion USD)=A-B	2.7	2.3	2.1	1.5	1

External Source: Foreign grants and loans are two types of resources available from the external source. Foreign grants are interest free and hence it is the most desired option to cover the additional budget deficit. Bangladesh needs foreign grants of US dollar 4 to 5 billion per year *if the entire deficits*

are to be covered from foreign grants. Although this may very well be consistent with the global community's commitment under MDG 8, inflows of foreign grants in recent years suggest this as an improbable option. Bangladesh has been receiving grants in the range of $0.6 billion per year. Under this circumstance, it is proposed that Bangladesh development partners may raise foreign grants by more than one billion (at least during initial years) and provide remaining resource in the form of loans. In particular, government may seek foreign grants in the range of $1.4 billion to $1.7 billion and foreign loans in the range of $2.4 billion to $3.2 billion over the next five year period. The composition of external financing is provided in the adjacent table. Thus total additional foreign resources for MDG NA purposes amount to $9.5 billion over the 5 years period. On the basis of debt thresholds and ability to pay-both observed and projected, it is argued that Bangladesh is a low external debt country. Inflows of additional foreign resources in the form of loans are unlikely to push the external debt into the unsustainable region.

MDG Financing Sources[10]: Following table summarises the financing of MDG re-current and capital costs by four types of sources namely re-current budget, capital budget, household contribution and overseas development assistance (or foreign aid). More than 70 percent of the total resources required to cover MDG costs would come from government budget. Household contributions towards MDG are estimated to be around 16 percent. Remaining only around 12 percent of resources may need to be sought from the external source.

Table 11: MDG financing by source under the Base Scenario

	Cost Type	Total MDG NA (FY11-15)	Re-Current	ADP	Household	ODA	Total Resource (FY11-15)	Balance
MDG All: (in Billion BDT)	Recurrent	4005	2799	0	871	335	4005	0
	Capital	1539	0	1203	0	336	1539	0
	Total	**5544**	**2799**	**1203**	**871**	**672**	**5544**	**0**
MDG All (in Billion USD)	Recurrent	56.5	39.5	0.0	12.3	4.7	56.5	0
	Capital	21.7	0.0	17.0	0.0	4.7	21.7	0
	Total	**78.2**	**39.5**	**17.0**	**12.3**	**9.5**	**78.2**	**0**
Share (%)			**50.5**	**21.7**	**15.7**	**12.1**	**100**	

High Growth Scenario

The High Growth scenario is an optimistic one and corresponds to the growth and other targets set out in the election manifesto of the present government. The realization of targets set out in this scenario requires large shifts in fiscal, monetary, trade, energy and financial sector policies and strategies. Again, since the focus is on financing of the MDG cost, the budget part of this scenario is elaborated in the table below.

Table 12: Major Feature of High Growth Scenario

(Billion Taka unless Otherwise Stated)

[10]Detailed estimates of financing by 7 MDG clusters under the two growth scenarios are shown in Table 21 and Table 22.

Major Variables	2011	2012	2013	2014	2015
Growth: Real GDP (%)	6.5	7.1	8.0	8.5	9.0
CPI Inflation (%)	6.7	6.7	7.0	7.4	7.9
Gross Domestic Investment (% of GDP)	25.0	27.9	29.6	30.7	31.5
Budget					
Total Revenue	**1063.1**	**1245.2**	**1462.4**	**1738.1**	**2059.8**
Tax	876.4	1025.2	1205.1	1437.9	1710.0
Non-Tax	186.7	220.0	257.3	300.3	349.8
Total Expenditure	**1463.6**	**1687.5**	**1948.2**	**2278.8**	**2668.2**
Recurrent Expenditure	989.3	1142.5	1320.5	1557.7	1838.2
Development Expenditure	474.2	545.0	627.6	721.1	830.0
Overall Balance (excluding grants)	-400.5	-442.3	-485.8	-540.7	-608.4
Financing	400.5	442.3	485.8	540.7	608.4
External	156.3	180.3	186.9	210.5	210.3
Grants	60.0	60.0	60.0	60.0	60.0
Disbursement	150.6	174.5	190.3	214.1	225.7
Amortization	-54.3	-54.2	-63.4	-63.6	-75.4
Domestic	244.1	262.0	298.9	330.1	398.1
Bank	186.5	204.1	243.9	280.8	353.5
Non-Bank	57.6	57.8	55.0	49.4	44.6
Revenue Efforts (%)	**13.7**	**14.2**	**14.6**	**15.1**	**15.5**
Expenditure/GDP Ratio (%)	**18.9**	**19.2**	**19.4**	**19.8**	**20.1**
Deficit/GDP Ratio (%)	**-5.2**	**-5.0**	**-4.8**	**-4.7**	**-4.6**
Nominal GDP	7743.3	8778.5	10025.6	11506.8	13260.2
Household Consumption	5420.3	6145.0	7017.9	8054.8	9282.2
External (Billion USD)	2.2	2.6	2.6	3.0	2.9
Net Loan (Billion USD)	1.4	1.7	1.8	2.1	2.1
Grants (Billion USD)	0.9	0.9	0.8	0.8	0.8

- Economic growth would rise to 8% in FY13 and 9% in FY15. This implies a 2 percentage points increase in national income in FY15 compared with the income growth reported under the baseline scenario. The projected huge increase in real income requires large increase in investment. The investment-GDP ratio (I/Y ratio) will have to increase to around 32% in FY15 from 23.4% in FY11. Thus, over the five years period, I/Y ratio is required to increase by over 6 percentage points. Inflation is expected to be higher under this at around 7.5% compared to the baseline average of 6.3 percent.

- Improvements in revenue effort are required to finance higher ADP/PPP[11] projects to attract higher private sector investments to achieve stipulated GDP growth. Revenue effort will increase from 13% in FY11 to 16% in FY15. ADP is expected to be stable at around 6.25 percent of GDP, significantly higher than in the baseline scenario. The total expenditure is set to increase to 20% of GDP in FY15 from 17% in FY11. The resultant budget deficits are estimated to be slightly less than 5% of GDP. Resources from external source are expected to range between 1.5 and 2% of GDP implying again a brighter outlook compared with the foreign aid situation of the last five years. Despite the brighter foreign aid outlook, larger resources will need to be tapped from domestic bank and non-bank system to finance the deficit.

Table 13: MDG Financing under the High Growth Scenario

Major Items	2011	2012	2013	2014	2015
1. MDG Resource GAP					
A. MDG Re-current cost (Given)	653.6	723.3	798.1	866.5	963.2
B. MDG Capital cost (Given)	281.5	281.2	303.2	326.5	346.8
Stage 1: MDG Orientation of Budget					
C. Re-current expenditure	989.3	1142.5	1320.5	1557.7	1838.2
D. MDG Orientation@0.45 of C	445.2	514.1	594.2	700.9	827.2
E. GAP Recurrent MDG = (A-D)	208.4	209.2	203.8	165.6	136.0
F. Capital expenditure	474.2	545.0	627.6	721.1	830.0
G. MDG Orientation@ 0.55 of F	260.8	299.8	345.2	396.6	456.5
H. GAP Capital MDG = (B-G)	20.7				
K. MDG Resource GAP (Re-current + Capital)	229.1	209.2	203.8	165.6	136.0
Stage 2: Household Contribution					
M. HH Contribution @0.05 of HH Consumption	138.8	157.3	179.7	206.2	237.6
N. Total MDG GAP =(K-M)	90.3	51.9	24.2		
Stage 3: MDG Inclusive Expenditure Budget					
P. MDG Inclusive Re-current Expenditure	1059.0	1194.3	1344.7	1557.7	1838.2
Q. MDG Inclusive Capital Expenditure	494.9	545.0	627.6	721.1	830.0
2. MDG Inclusive Budget					
Total Revenue	1063.1	1245.2	1462.4	1738.1	2059.8
Tax	876.4	1025.2	1205.1	1437.9	1710.0
Non-Tax	186.7	220.0	257.3	300.3	349.8
Total Expenditure	1553.9	1739.3	1972.3	2278.8	2668.2
Recurrent Expenditure	1059.0	1194.3	1344.7	1557.7	1838.2
Development Expenditure	494.9	545.0	627.6	721.1	830.0
3. Overall Balance and Financing	**-490.8**	**-494.2**	**-509.9**	**-540.7**	**-608.4**
Financing	490.8	494.2	509.9	540.7	608.4
External	246.6	232.2	211.0	210.5	210.3
Net Loan	166.6	152.2	131.0	140.5	140.3

[11]PPP refers to the public-private partnership initiative.

Major Items	2011	2012	2013	2014	2015
Grants	80.0	80.0	80.0	70.0	70.0
Domestic	244.2	262.0	298.9	330.1	398.1
4. Memorandum Items					
MDG Cost as % of GDP	12.1	12.4	11.9	11.3	10.8
MDG Resource GAP (Stage 1) as % of GDP	2.7	2.4	2.0	1.4	1.0
Per Capita MDG Resource GAP (Stage 1) USD/ Person	20.3	20.0	19.3	15.5	12.2
Total MDG Resource GAP (Stage 2) as % of GDP	1.2	0.6	0.2		
Per Capita MDG Resource GAP (Stage 2) USD/ Person	8.8	5.0	2.3		
Revenue Efforts (%)	13.7	14.2	14.6	15.1	15.5
Expenditure/GDP Ratio (%)	20.1	19.8	19.7	19.8	20.1
Deficit/GDP Ratio (%)	**-6.3**	**-5.6**	**-5.1**	**-4.7**	**-4.6**
External (Billion USD)	3.5	3.3	3.0	3.0	2.9
Net Loan (Billion USD)	2.4	2.2	1.9	2.0	1.9
Grants (Billion USD)	1.1	1.1	1.1	1.0	1.0

Estimated MDG resource gap and financing options under the High Growth scenario are provided in Table 13. First part of the table provides estimated MDG resource gap and sizes of re-current and capital budgets inclusive of MDG NA cost. Rows A and B show the estimated MDG NA re-current and capital costs respectively. Re-current expenditure of the High Growth scenario is shown in row C. Under this scenario, MDG provisioning from re-current budget ranged between 445 billion taka in FY11 to 827 billion taka in FY15. These amounts are deducted from MDG NA re-current costs to derive resource gap of MDG re-current cost. The size of re-current resource gaps are still large ranging between 208 billion taka in FY11 and 136 billion taka in FY15. However, due to expanded fiscal space led by better economic performance, re-current resource gap is declined by around 7 % in this scenario compared to the baseline resource gaps.

Except for the first year (i.e. FY11), MDG provisioning from capital expenditure (i.e. estimated at 55% of capital expenditure of baseline scenario) is higher than the MDG NA capital costs implying that there no resource gaps for other four years under the capital expenditure head. The size of capital expenditure resource gap is around 20 billion taka. Thus, total MDG resource gaps virtually equal the resource gaps estimated under the re-current head under this scenario. Total MDG resource gaps at stage 1 range between 229 billion taka in FY11 and 136 billion taka in FY15.

Potential contributions from the households are factored in at stage 3 to calculate MDG NA resource gap. It is estimated that household contribution may range from 139 billion taka in FY11 to 238 billion taka in FY15. Household contribution is 6% higher under this scenario than the baseline scenario. In stage 3, total MDG resource gaps estimated at stage 2 are added to the expenditures of High Growth scenario to derive MDG inclusive expenditures. As a result, on average, the increase in total expenditure is around 1.7 percent.

Increase in total expenditure, with revenue efforts remaining more or less unchanged, led to the

deterioration of budget deficits by only about 0.4 percentage points. Like the baseline scenario, Bangladesh may have to rely on resources from the external sources to bridge the additional budget deficits. Financing options are discussed below.

Fiscal Space: As noted above, rise in revenue efforts by about 6 percentage points (i.e. 16% in this scenario compared to the historical ratio of 10%) rules out any further room for fiscal space expansion by raising revenue.

Household Contribution: Potential contribution from household has also been invoked to derive the MDG resource gap limiting scope for further resources from this head.

Domestic Borrowing: As mentioned above, use of resources from domestic source is discouraged due to following factors:

- In recent years, government had relied heavily on this source for deficit financing leading to a sharp rise in domestic debt/GDP ratio and debt composition limiting its expansion.
- Use of resources from this source to cover baseline budget deficit is on the higher side. Further use of this source may crowd out private sector.
- It is an expensive source and hence should not be preferred over the less expensive external sources.

	FY11	FY12	FY13	FY14	FY15
MDG Cost Inclusive High Growth Scenario					
A. External (Billion USD)	3.5	3.3	3.0	3.0	2.9
Net Loan (Billion USD)	2.4	2.2	1.9	2.0	1.9
Grants (Billion USD)	1.1	1.1	1.1	1.0	1.0
High Growth Scenario without MDG costs					
B. External (Billion USD)	2.2	2.6	2.6	3.0	2.9
Net Loan (Billion USD)	1.4	1.7	1.8	2.1	2.1
Grants (Billion USD)	0.9	0.9	0.8	0.8	0.8
External Resources for MDGs					
C. External (Billion USD)=A-B	1.3	0.7	0.4	0	0

External Source: Bangladesh needs foreign grants of $3 billion per year *if the entire budget deficits are to be covered from foreign grants*. Given the observed inflows of $0.6 billion foreign grants per year, demand for $3 billion per year may turn out to be an implausible option. Under this circumstance, it is proposed that Bangladesh development partners may provide foreign grants by about a billion and remaining resource in the form of loans. In particular, government will seek foreign grants in the range of 1 billion and foreign loans in the range of $2 to $3 billion over the next five year period. The composition of external financing is provided in the adjacent table. Additional foreign resources for MDG NA purposes amount only to $2.4 billion over the five years period. Given that Bangladesh is low debt country, inflows of additional foreign resources in the form of loans unlikely to move her external debt position above the sustainable debt thresholds.

MDG Financing Sources: Following table summarises the financing of MDG re-current and capital

costs by four types of sources namely re-current budget, capital budget, household contribution and overseas development assistance (or foreign aid) under the high growth scenario. More than 80 percent of the total resources required to cover MDG costs would come from government budget. Household contributions towards MDG are estimated to be around 15 percent. Thus, only around 3 percent of resources may need to be sought from the external source. Benefits of higher economic growth and revenue efforts may likely to reduce burden significantly on the external source for MDG gap financing.

Table 14: MDG financing by source under the High Growth Scenario

	Cost Type	Total MDG NA (FY11-15)	Re-Current	ADP	Household	ODA	Total Resource (FY11-15)	Balance
MDG All: (in Billion BDT) :	Recurrent	4005	3032	0	807	166	4005	0
	Capital	1539	0	1539	0	0	1539	0
	Total	**5544**	**3032**	**1539**	**807**	**166**	**5544**	**0**
MDG All (in Billion USD) :	Recurrent	56.5	42.7	0.0	11.4	2.3	56.5	0
	Capital	21.7	0.0	21.7	0.0	0.0	21.7	0
	Total	**78.2**	**42.7**	**21.7**	**11.4**	**2.3**	**78.2**	**0**
Share (%)			**54.7**	**27.8**	**14.6**	**3.0**	**100.0**	

Summary:

Two scenarios are considered for the MDG financing assessment. These are: (i) baseline and (ii) high growth scenario. Economic and budgetary indicators are superior in the high growth scenario compared to the baseline scenario with higher revenue efforts and larger fiscal space. More specifically, revenue efforts and expenditure/GDP ratios are respectively 3 and 4 percentage points higher under the high growth scenario compared to the baseline scenario. Similarly, levels of household consumption are higher in the high growth scenario than the baseline scenario. Household contribution is 6% higher under the high growth scenario compared to the baseline scenario.

As a result of combined impacts of MDG provisioning from expenditure and household contribution on top of economic outlook, MDG resource gaps declined significantly under both scenarios compared to the original MDG NA cost. More specifically, final MDG resource gaps as percent of baseline GDP dropped on average to1.5% under the baseline scenario compared to original average share of12%. In terms of per capita estimate, MDG cost decline to USD 13 under the baseline scenario compared to the original per capital estimate of 100 USD.

Salutary effects of better economic outlook improved the MDG resource gap situations in the high growth scenario compared to both the original estimate and the baseline scenario. Final MDG resource gaps as percent of GDP dropped on average to 0.7% under this scenario. In terms of per capita estimate, MDG cost decline to USD 6 under this scenario compared to the baseline scenario estimates of USD 13 and the original per capital estimate of 100 USD.

Even after allowing for downward adjustment of the original MDG NA costs, inclusion of additional MDG NA cost into the government budget deteriorated government budget deficits by about 1.5 percentage points in the baseline scenario and by about 0.4 percentage points under the high growth scenario.

Fiscal space expansions and household contributions have already been included in the MDG resource gap calculation. Scope of raising additional resource from the domestic sources is also limited due to various factors. Hence, additional amounts needed to bridge the budget deficit should ideal be tapped from the external sector.

Bangladesh needs foreign assistance of USD 5 and 3 billion per year under the baseline and high growth scenario respectively if the entire additional deficits are to be covered from the foreign source. Ideally these resources should come in the form of grants. However, realities suggest that raising 3 to 5 billion dollars per year as grants may be an implausible option. Under this circumstance following proposals are made:

(i) In the case of baseline scenario, development partners may raise foreign grants by about 1.5 billion and provide remaining resource in the form of loans. In particular, government will seek foreign grants in the range of 1.4 billion USD to 1.7 billion USD and foreign loans in the range of USD 2.3 billion to 3.2 billion over the next five year period.

(ii) Under the high growth scenario, development partners may provide foreign grants by about a billion and give remaining resource in the form of loans. In particular, government will seek foreign grants in the range of 1 billion and foreign loans in the range of USD 1.9 billion to 2.4 billion over the next five year period.
On the basis thresholds and ability to pay (both observed and projected) criteria, it is argued that Bangladesh is a low external debt country. Hence inflow of additional foreign resources in the form of loans unlikely to move her external debt position above the sustainable debt thresholds.

When MDG costs financings are categorized by four types of sources namely re-current budget, capital budget, household contribution and overseas development assistance (or foreign aid), they reveal heavy reliance on domestic sources rather than external source. In particular, in the case of base scenario almost 88 percent of the total MDG resources would come from domestic source composed of government budget (i.e. 72%) and household contribution (i.e. 16%). Only around 12 percent of resources may need to be sought from the external source.

Reliance on external source for MDG financing declined significantly in the high growth scenario compared to the base line situation due to expanded fiscal space and household income as a result of higher economic growth. In this case, only around 3 percent of resources may need to be sought from the external source. Remaining 97 percent of total resources for MDGs would come from domestic source made of government budget (i.e. 82%) and household (i.e. 15%).

Chapter 7

Annexes

Annex 7.1: MDG Status of Bangladesh

Goals	Targets	Current Status
Goal 1 Eradicate extreme poverty and hunger	Reduce proportion of people below US$1 per day (PPP) from 58.8% in 1991 to 29.4% by 2015	38.7% (2008, est)
	Reduce proportion of people in extreme poverty from 28% in 1991 to 14% by 2015	19.5% (2005)
Goal 2 Achieve universal primary education	Increase net enrolment rate from 73.7% in 1992 to 100% by 2015	91.9% (2008)
Goal 3 Promote gender equality and empower women	Eliminate gender disparity in primary and secondary education preferably by 2005 and in all levels of education no later than 2015	Girls to boys ratio: (2008) Primary – 1.01 Secondary - 1.20 Tertiary – 0.32
Goal 4 Reduce child mortality	Reduce under five mortality rate from 146 deaths per thousand live births in 1990 to 48 by 2015	53.8 (2008)
Goal 5 Improve maternal health	Reduce maternal mortality from 574 deaths per 100,000 live births in 1990 to 144 by 2015	348 (2008)
	Increase the proportion of births attended by skilled birth personnel to 50% by 2010	24% (2009)
Goal 6 Combat HIV/ AIDS, malaria and other diseases	Have halted by 2015 and begun to reverse the spread of HIV/AIDS	Condom use rate at high risk sex 43-66 (2009)
	Reduce by 50% the incidence of cases and the number of deaths from malaria by 2015	Prevalence of Malaria per 100,000 Population: 586 (2009)
	Detect 70% and cure 80% of detected cases	Tuberculosis: Detection: 70% (2009) Cure: 92% (2009)
Goal 7 Ensure environmental sustainability	Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources	Forest area: reached 19.2% (2007) from 9.0% (1990). On track but will reverse if sea level start to rise
	Proportion of Population using an improved drinking water sources	86 (2009)
	Proportion of Population using an improved sanitation facility	54 (2009)

Goals	Targets	Current Status
Goal 8 Develop a global partnership for development	Net ODA Total received by Bangladesh (million US$)	1460(m)
	Net ODA Total Received by Bangladesh, as percentage of OECD/DAC donors' GNI	0.005%
	Proportion of total bilateral sector-allocable ODA to basic social services, %	35%
	Proportion of bilateral ODA of OECD/DAC donors that is untied (received by bangladesh) ,%	94 (2007)
	Average tariffs imposed by developed countries on agricultural products, textiles and clothing from developing country (Bangladesh), %	0-15.3% (2009)
	Debt service as a percentage of exports of goods and services, %	3.9% (2009)

Source: The MDGs, Bangladesh Progress Report 2009

Annex 7.2: Description of Macroeconomic Framework

Variables	Description and Specification
Real Side	
Real GDP	R_GDP= f (L, K, T, P) Where, L = Labour; K= Capital Stock T=technical change; P = Productivity Technical change will be a fixed parameter but P will vary depending on the expenditure on infrastructure, education and research.
Nominal GDP	N_GDP= R_GDP * P_GDP
Labour Demand	Ld= f(K, w, e_absorption) Where, w=wage rate; and e_absorption= absorption elasticity.
Capital Stock	K= K-1 + (I/PI) Where, K-1= last period capital stock; I=investment. It is important to note that data on capital stock is not readily available. Hence it needs to be derived. To overcome this problem, it is found from other studies that investment of a particular period (or year) is divided by the average return on capital (or investment) to derive an estimate of capital stock.
Savings	S=Sh + Sg + Sf Total savings is composed of household savings, government savings and foreign savings. Estimates of household savings are not readily available but given the amount of total domestic savings and government savings, it is possible to generate estimates of household savings.
Investment	I = Ipv+ Ipb or I = S + Resource Where, R=FDI+CrPb+CrPv+Loan The size of resource requirement (i.e. planned) will depend on S-I gap and realized I will depend on the availability of resources (FDI+CrPb+CrPv+Loan).
Household Savings	$S_h = Y_h^d - C_h^p$ Where Y_h^d is household disposable income
Disposable Income	$Y_h^d = Y_h * (1 - t_{ih})$ Where t_{ih} is household income tax rate

Variables	Description and Specification
Household Income	Yh = §* N_GDP + Remittance + Transfer **[Inter-linked with BoP and Budget]** Where, § refer to household share of GDP. Remittance and transfers are policy instruments. It is noted that introduction of new measure may encourage additional inflow of remittances thereby influencing the income without any repercussion on budget. Transfers are mainly from government to household with implication on household income and budget balance. Introduction of household accounts e.g. household income and expenditure will allow assessment poverty consistent with the macro-economic settings.
Household Consumption	$C_h^P = \frac{Y_h^d * (1 - MPS)}{CPI}$
Private Investment	Ipv=Sh + FDI + CrPv **[Inter-linked with BoP and Money]** FDI inflow may enhance with new incentive and liberalization hence it may be considered as a quasi policy instrument. CrPv refers to credit to private sector. This is a policy variable.
Government Budget	
Government Savings	Sg=Yg Re_Cg
Government Income	Yg=Tm*M + Tvat *(N_GDP*Ω) + Tnontax*(N_GDP*∞) + (Yh*µ)*thy + (1 §)* N_GDP + Grant. **[Inter-linked with BoP, Real Side, Household]** Tm, Tvat, Tnontax and thy denote tax rate for imports, value added tax, non tax revenue and income tax respectively. These are all tax instrument. Symbols Ω, and ∞ and µ refer to existing coverage of tax system. The revenue specification will also allow alternative presentation by source categories such as: NBR Revenue; Non-NBR Revenue; and Non Tax Revenue.
Re-current Expenditure	$\sum_i^n \text{Re}\_Cg$ Re_Cg=Re_Cg-1*(1+gRe_Cg) , where i=1…n Where, i refer to expenditure categories. Growth of re-current expenditure is a (gRe_Cg) is policy instrument. Data on re-current expenditure will come from the MTMF 'expenditure' component.
Development Expenditure	Ipb=Sg+CrPb+Net Loan **[Inter-linked with BoP and Money]** Development expenditure and public investment are assumed equal. A wedge may be introduced between these two components.
Overall Budget Balance	Ov_Budget_Bal= Yg-(Re_Cg+Ipb)

Variables	Description and Specification
Primary Budget Balance	Prm_Budget_Bal = Yg-(Re_Cg+Ipb+ Interest Payment)
Financing	Ov_Budget_Bal = CrPb+Loan+ Non-Bank
Monetary Survey	
Money Supply	M2=NFA+NDA
Net Foreign Assets	NFA = NFA-1* (1+g_NFA)
Net Domestic Assets	NDA= NOA +DC
Net Other Assets	NOA = NOA-1*(1+g_N_GDP)
Domestic Credit	DC=CrPv+CrPb
Credit Private	CrPv =CrPv-1*(1+g_CrPv) This refers to realized CrPv, which may be different than the planned credit which is estimated as $CrPv^{/}$ =$Ipv^{/}$ (Sh+FDI)
Credit Public	CrPv =CrPv-1*(1+g_CrPb) This refers to realized CrPv, which may be different than the planned credit which is estimated as $CrPb^{/}$ =$Ipb^{/}$ (Sg+Net_Loan)
Balance of Payment	
Trade Balance	TB= X M
Exports	X = QX * PX Where, QX and PX refer to volume and price respectively.
Imports	M = QM * PM Where, MX and PM refer to volume and price respectively.
Service Net	SrvNet = SrvNet-1*(1+g SrvNet)
Income Net	YNet = YNet-1*(1+g YNet)
Current Transfer	C_Transfer = Remittance + Official Transfer
Current Account Balance	CaB= TB+SrvNet+YNet+C_Transfer
Capital & Financial Account	CaPFin= FDI+PoI+Net Loan+ ST_Loan
Foreign Direct Investment	FDI = FDI-1*(1+gFDI)
Portfolio Investment	POI = POI-1*(1+gPOI)
Net Loan	Net Loan = Disbt Amor
Disbursement	Disbt = Disbt-1*(1+gDisbt)
Amortization	Amort = Amort-1*(1+gAmort)
Short Term Loan	ST_Loan = ST_Loan -1*(1+g ST_Loan)

Variables	Description and Specification
Overall Balance	OvBal= CaB+ CaPFin
Financing	FinOvBal = ΔReserve + Other
Outstanding Debt	OutDebt=OutDebt-1+ Net Loan
Reserve	Reserve=Reserv-1+ ΔReserve
Price and Quantity	
GDP Deflator	P_GDP= P_GDP-1 * % Δ P_GDP Where, %ΔP_GDP=((CPI*(C/R_GDP))+((PI*(I/R_GDP)) + ((PX*(X/R_GDP))+((PM*(M/R_GDP)). This is adopted from IMF specification.
Consumer Price Index	CPI= CPI-1*Inflation
Investment Deflator	PI= *PM+(1)*CPI Where, refers to weights for capital goods in M.
Export Price	XP= Δ world X price * Δ AER World Price will be obtained from 'World Economic Outlook Forecasts (WEO)'. AER refers to average Exchange rate assumed.
Import Price	MP= Δ world M price * Δ Tm * Δ average exchange rate World Price will be obtained from 'World Economic Outlook Forecasts'.
Export Volume	QX = f (R_GDP, AER*PX/P_GDP, GAP) Where, GAP refers to excess demand in the domestic economy as measured by real spending minus potential output. It will be proxied by R-GDP minus potential GDP (or trend).
Import Volume	QM = f (R_GDP, AER*PM/P_GDP, GAP) Where, GAP denotes minus potential output. It will be proxied by actual trend R-GDP.

Annex 7.3: MDG Allocation Parameter

Detailed distribution of ADP projects and their MDG orientation over FY08 to FY10 according 11 ADP sector classifications has been provided in table below.

Table 15: Number of MDG Oriented Projects in ADP

Sectors		Number of Projects in ADP					
		2007 - 08		2008 – 09		2009 - 10	
		Total	MDG Oriented	Total	MDG Oriented	Total	MDG Oriented
Agriculture							
	Investment	121	59	118	64	107	62
	Technical Assistance	24	8	25	12	28	13
Rural Development and Rural Institution							
	Investment	50	36	56	42	52	43
	Technical Assistance	3	2	3	3	3	3
Industry							
	Investment	15	1	18	0	17	1
	Technical Assistance	14	0	11	0	10	0
Electricity							
	Investment	43	8	36	8	34	7
	Technical Assistance	6	3	6	3	7	4
Transport							
	Investment	164	10	133	3	131	4
	Technical Assistance	7	0	8	0	5	0
Physical Infrastructure, Water Supply and Housing							
	Investment	92	23	90	40	94	34
	Technical Assistance	11	3	9	3	10	4
Education & Religion							
	Investment	66	38	51	27	52	25
	Technical Assistance	23	1	23	2	20	2
Health, Nutrition, Population and Family welfare							
	Investment	13	12	15	15	17	16
	Technical Assistance	10	10	13	9	13	9
Mass communication							
	Investment	8	1	7	1	6	1
	Technical Assistance	0	0	1	0	1	0
Social welfare, Women and Youth Development							

Sectors		Number of Projects in ADP					
		2007 - 08		2008 – 09		2009 - 10	
		Total	MDG Oriented	Total	MDG Oriented	Total	MDG Oriented
	Investment	30	25	24	21	24	23
	Technical Assistance	8	8	9		9	9
Labour force and Employment							
	Investment	7	6	6	5	3	2
	Technical Assistance	1	0	2	2	2	2

Source: Author's Calculation based on Annual Development Program-FY08, FY09, FY10.

Detailed distribution of estimated allocation shares over FY08 to FY10 according 17 ADP sector classifications has been provided in table below.

Table 16: Number of MDG Oriented Projects in ADP

Sectors	MDG Allocation Share			
		2007 - 08	2008 - 09	2009 - 10
Agriculture				
	Investment	47.52	57.24	60.30
	Technical Assistance	57.02	67.62	72.33
Rural Development and Rural Institution				
	Investment	83.83	72.05	77.18
	Technical Assistance	96.97	100.00	100.00
Industry				
	Investment	3.70	0.00	1.35
	Technical Assistance	0.00	0.00	0.00
Electricity				
	Investment	37.99	33.78	18.43
	Technical Assistance	11.10	19.17	57.83
Transport				
	Investment	77.44	76.33	81.46
	Technical Assistance	27.54	3.59	0
Physical Infrastructure, Water Supply and Housing				
	Investment	46.25	50.21	51.31
	Technical Assistance	29.44	49.90	31.32

Sectors	MDG Allocation Share			
		2007 - 08	2008 - 09	2009 - 10
Education & Religion				
	Investment	89.08	90.80	91.14
	Technical Assistance	7.54	47.24	54.85
Health, Nutrition, Population and Family welfare				
	Investment	99.77	100.00	99.87
	Technical Assistance	74.05	88.16	86.90
Mass communication				
	Investment	3.71	7.38	9.33
	Technical Assistance	0.00	0.00	0.00
Social welfare, Women and Youth Development				
	Investment	86.24	93.17	98.20
	Technical Assistance	100.00	100.00	100.00
Labour force and employment				
	Investment	95.88	95.11	72.73
	Technical Assistance	0.00	100.00	100.00

Source: Author's Calculation based on Annual Development Program-FY08, FY09, FY10.

Annex 7.4: Household Contribution

Table 17: Patten of Household Consumption by Major Items

Monthly Household Income (Tk.)	National								Average	
	Housing*	Fuel and Lighting	Education	Health	Transport	Food	Others	Total	MDG	Total
< 750	7.89	7.98	3.12	4.13	5.04	64.92	6.91	100.00	5.63	14.28
750-999	7.34	8.53	2.09	5.15	3.87	65.42	7.62	100.00	5.40	14.29
1000-1249	9.13	7.71	1.9	4.99	3.75	65.08	7.44	100.00	5.50	14.29
1250-1499	6.73	7.51	2.42	4.09	3.96	66.84	8.45	100.00	4.94	14.29
1500-1999	7.43	7.27	1.86	6.89	3.57	65.36	7.63	100.00	5.40	14.29
2000-2499	8.06	7.34	2.17	4.26	3.59	66.51	8.08	100.00	5.08	14.29
2500-2999	8.45	7.16	2.63	4.05	3.95	65.45	8.31	100.00	5.25	14.29
3000-3999	8.97	6.96	3.5	4.06	4.32	63.58	8.61	100.00	5.56	14.29
4000-4999	9.68	6.63	3.83	4.07	4.46	61.21	10.11	100.00	5.73	14.28
5000-5999	10.52	6.38	4.27	4.49	5.06	59.02	10.27	100.00	6.14	14.29
6000-6999	10.28	6.29	4.61	4.57	6.11	57.99	10.16	100.00	6.37	14.29
7000-7999	11.27	6.03	5.64	3.32	6.27	56.25	11.22	100.00	6.51	14.29
8000-8999	13.02	5.74	5.89	4.08	7.97	52.25	11.05	100.00	7.34	14.29
9000-9999	11.49	5.98	4.45	4.1	5.77	54.1	14.10	100.00	6.36	14.28
10000-12499	13.65	5.52	6.68	3.6	8.0	50.02	12.53	100.00	7.49	14.29
12500-14999	13.96	5.61	6.9	4.37	9.55	47.43	12.18	100.00	8.08	14.29
15000-17499	13.76	5.1	7.1	5.03	12.2	44.9	11.84	100.00	8.65	14.29
17500-19999	15.43	4.87	6.28	5.54	10.4	44.23	13.16	100.00	8.52	14.28
20000+	19.44	4.24	6.66	4.16	16.1	35.82	13.56	100.00	10.13	14.29
Average	10.87	6.47	4.32	4.47	6.53	57.18	10.17		6.53	14.29

* Includes expenditure on water and sanitation.

Source: HIES 2005

Table 18: Household Contribution Matrix based on Exclusion and Ability to Pay

Monthly Household Income (Tk.)	National				
	Water and Sanitation	Fuel and Lighting	Education	Health	Average
< 750	0	0	0	0	0
750-999	0	0	0	0	0
1000-1249	0	0	0	0	0
1250-1499	0	0	0	0	0
1500-1999	0	0	0	0	0
2000-2499	0	0	0	0	0
2500-2999	1.80	3.58	1.32	2.03	1.74
3000-3999	1.91	3.48	1.75	2.03	1.83
4000-4999	2.06	3.32	1.92	2.04	1.86
5000-5999	4.47	6.38	4.27	4.49	3.92
6000-6999	4.37	6.29	4.61	4.57	3.97
7000-7999	4.79	6.03	5.64	3.32	3.96
8000-8999	5.53	5.74	5.89	4.08	4.25
9000-9999	4.88	5.98	4.45	4.10	3.88
10000-12499	5.80	5.52	6.68	3.60	4.32
12500-14999	5.93	5.61	6.90	4.37	4.56
15000-17499	5.85	5.10	7.10	5.03	4.62
17500-19999	7.10	4.87	6.28	5.54	4.76
20000+	9.72	4.24	6.66	4.16	4.96
Average	3.38	3.48	3.34	2.60	2.56

Annex 7.5: Re-current and Capital Costs by MDG Clusters

Table 19: Distribution of MDG Clusters of by Re-current and Capital Cost (BDT)

(In Billion BDT)

MDG Clusters		2009	2010	2011	2012	2013	2014	2015	Total
MDG 1: Agriculture	Recurrent	182.53	191.26	201.61	211.16	221.17	231.65	242.68	1482.05
	Capital	60.84	63.75	67.20	70.39	73.72	77.22	80.89	494.02
	Total	**243.37**	**255.01**	**268.81**	**281.55**	**294.89**	**308.87**	**323.57**	**1976.07**
MDG 1: Road Infrastructure	Recurrent	0	0	0	0	0	0	0	0
	Capital	47.09	47.41	47.72	48.03	48.34	48.65	48.96	336.2
	Total	**47.09**	**47.41**	**47.72**	**48.03**	**48.34**	**48.65**	**48.96**	**336.2**
MDG 2: Education	Recurrent	62.21	72.39	84.54	99.42	118.33	143.55	179.10	760
	Capital	24.80	29.99	36.35	44.22	54.00	66.23	72.85	328.43
	Total	**87.01**	**102.38**	**120.89**	**143.64**	**172.33**	**209.78**	**251.95**	**1087.98**
MDG 3: Gender	Recurrent	21.48	26.65	31.84	36.93	43.73	49.13	54.45	264.21
	Capital	2.53	2.54	2.52	2.35	2.43	2.36	1.97	16.70
	Total	**24.01**	**29.19**	**34.36**	**39.28**	**46.16**	**51.49**	**56.42**	**280.91**
MDG 4,5,6: Health	Recurrent	57.19	67.91	85.06	100.80	111.86	110.27	120.92	654.00
	Capital	10.89	12.93	16.20	19.20	21.31	21.00	23.03	124.57
	Total	**68.08**	**80.84**	**101.26**	**120**	**133.17**	**131.27**	**143.95**	**778.57**
MDG 4: Child Health	Recurrent	27.39	38.55	43.71	47.93	52.25	54.59	58.22	322.64
	Capital	0	0	0	0	0	0	0	0
	Total	**27.39**	**38.55**	**43.71**	**47.93**	**52.25**	**54.59**	**58.22**	**322.64**
MDG 5: Maternal Health	Recurrent	11.19	13.29	15.64	17.99	20.68	23.07	24.58	126.44
	Capital	0	0	0	0	0	0	0	0
	Total	**11.19**	**13.29**	**15.64**	**17.99**	**20.68**	**23.07**	**24.58**	**126.44**
MDG 6: HIV, Malaria	Recurrent	18.53	23.83	27.08	31.19	36.04	42.66	52.17	231.5
	Capital	0	0	0	0	0	0	0	0
	Total	**18.53**	**23.83**	**27.08**	**31.19**	**36.04**	**42.66**	**52.17**	**231.5**
MDG 7: Environment	Recurrent	8.9	10.9	11.8	13.0	13.9	14.8	15.7	88.91
	Capital	5.7	5.2	4.3	5.1	4.6	4.5	4.0	33.3
	Total	**14.62**	**16.07**	**16.1**	**18.09**	**18.47**	**19.27**	**19.61**	**122.23**

MDG 7: Energy	Recurrent	64.71	75.37	84.60	94.99	106.68	119.82	134.62	680.80
	Capital	19.22	23.22	26.41	30.08	34.30	39.17	44.78	217.17
	Total	**83.93**	**98.59**	**111.01**	**125.07**	**140.98**	**158.99**	**179.4**	**897.97**
MDG 7: Water-Supply and Sanitation	Recurrent	57.34	61.89	67.71	69.92	73.41	76.98	80.77	488.03
	Capital	62.79	69.59	80.83	61.76	64.52	67.39	70.37	477.23
	Total	**120.13**	**131.48**	**148.53**	**131.68**	**137.93**	**144.37**	**151.14**	**965.26**
MDG All:	Recurrent	511.45	582.01	653.62	723.30	798.06	866.52	963.17	5098
	Capital	233.90	254.63	281.49	281.15	303.18	326.49	346.80	2028
	Total	**745.35**	**836.64**	**935.11**	**1004.45**	**1101.24**	**1193.01**	**1309.97**	**7125.77**

Table 20: Distribution of MDG Clusters of by Re-current and Capital Cost (USD)

(In Billion USD)

MDG Clusters		2009	2010	2011	2012	2013	2014	2015	Total
MDG 1: Agriculture	Recurrent	2.67	2.80	2.94	3.07	3.23	3.38	3.45	21.53
	Capital	0.89	0.93	0.98	1.02	1.08	1.13	1.15	7.18
	Total	**3.56**	**3.73**	**3.92**	**4.09**	**4.30**	**4.50**	**4.60**	**28.71**
MDG 1: Road Infrastructure	Recurrent	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Capital	0.69	0.69	0.70	0.70	0.71	0.71	0.70	4.89
	Total	**0.69**	**0.69**	**0.70**	**0.70**	**0.71**	**0.71**	**0.70**	**4.89**
MDG 2: Education	Recurrent	0.91	1.06	1.23	1.45	1.73	2.09	2.55	11.15
	Capital	0.36	0.44	0.53	0.64	0.79	0.97	1.04	4.76
	Total	**1.27**	**1.50**	**1.76**	**2.09**	**2.52**	**3.06**	**3.58**	**15.91**
MDG 3: Gender	Recurrent	0.31	0.39	0.46	0.54	0.64	0.72	0.77	3.83
	Capital	0.04	0.04	0.04	0.03	0.04	0.03	0.03	0.24
	Total	**0.35**	**0.43**	**0.50**	**0.57**	**0.67**	**0.75**	**0.80**	**4.11**
MDG 4,5,6: Health	Recurrent	0.84	0.99	1.24	1.47	1.63	1.61	1.72	9.49
	Capital	0.16	0.19	0.24	0.28	0.31	0.31	0.33	1.81
	Total	**1.00**	**1.18**	**1.48**	**1.74**	**1.94**	**1.91**	**2.05**	**11.30**
MDG 4: Child Health	Recurrent	0.40	0.56	0.64	0.70	0.76	0.80	0.83	4.68
	Capital	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.40**	**0.56**	**0.64**	**0.70**	**0.76**	**0.80**	**0.83**	**4.68**
MDG 5: Maternal Health	Recurrent	0.16	0.19	0.23	0.26	0.30	0.34	0.35	1.84

	Capital	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.16**	**0.19**	**0.23**	**0.26**	**0.30**	**0.34**	**0.35**	**1.84**
MDG 6: HIV, Malaria	Recurrent	0.27	0.35	0.39	0.45	0.53	0.62	0.74	3.36
	Capital	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.27**	**0.35**	**0.39**	**0.45**	**0.53**	**0.62**	**0.74**	**3.36**
MDG 7: Environment	Recurrent	0.13	0.16	0.17	0.19	0.20	0.22	0.22	1.29
	Capital	0.08	0.08	0.06	0.07	0.07	0.07	0.06	0.48
	Total	**0.21**	**0.23**	**0.23**	**0.26**	**0.27**	**0.28**	**0.28**	**1.78**
MDG 7: Energy	Recurrent	0.95	1.10	1.23	1.38	1.56	1.75	1.91	9.88
	Capital	0.28	0.34	0.39	0.44	0.50	0.57	0.64	3.15
	Total	**1.23**	**1.44**	**1.62**	**1.82**	**2.06**	**2.32**	**2.55**	**13.03**
MDG 7: Water-Supply and Sanitation	Recurrent	0.84	0.90	0.99	1.02	1.07	1.12	1.15	7.09
	Capital	0.92	1.02	1.18	0.90	0.94	0.98	1.00	6.94
	Total	**1.76**	**1.92**	**2.17**	**1.91**	**2.01**	**2.10**	**2.15**	**14.03**
MDG All:	Recurrent	7.48	8.51	9.53	10.51	11.65	12.63	13.70	74.01
	Capital	3.42	3.72	4.10	4.09	4.43	4.76	4.93	29.45
	Total	**10.90**	**12.23**	**13.67**	**14.68**	**16.10**	**17.44**	**19.15**	**104.18**

Table 21: Sectoral MDG Cost Financing by Sources under the Base Scenario

(In Billion BDT)

MDG Clusters	Cost Type	Total MDG NA (FY11-15)	Re-Current	ADP	Household	ODA	Resource (FY11-15)	Balance
MDG 1: Agriculture	Recurrent	1108	1064	0	0	45	1108	0
	Capital	369	0	301	0	69	369	0
	Total	1478	1064	301	0	113	1478	0
MDG 1: Road Infrastructure	Recurrent	0	0	0	0	0	0	0
	Capital	242	0	216	0	25	242	0
	Total	242	0	216	0	25	242	0
MDG 2: Education	Recurrent	625	336	0	261	28	625	0
	Capital	274	0	216	0	57	274	0
	Total	899	336	216	261	85	899	0
MDG 3: Gender	Recurrent	216	198	0	0	19	217	0
	Capital	12	0	2	0	9	12	0
	Total	228	198	2	0	28	228	0
MDG 4,5,6: Health	Recurrent	529	280	0	174	75	529	0
	Capital	101	0	84	0	17	101	0
	Total	630	280	84	174	91	630	0
MDG 4: Child Health	Recurrent	257	70	0	122	65	257	0
	Capital	0	0	0	0	0	0	0
	Total	257	70	0	122	65	257	0
MDG 5: Maternal Health	Recurrent	102	28	0	44	30	102	0
	Capital	0	0	0	0	0	0	0
	Total	102	28	0	44	30	102	0
MDG 6: HIV, Malaria	Recurrent	189	70	0	87	32	189	0
	Capital	0	0	0	0	0	0	0
	Total	189	70	0	87	32	189	0
MDG 7: Environment	Recurrent	69	44	0	0	26	70	0
	Capital	22	0	0	0	22	22	0
	Total	92	44	0	0	48	92	0
MDG 7: Energy	Recurrent	541	448	0	87	6	541	0

	Capital	175	0	144	0	30	175	0
	Total	715	448	144	87	36	715	0
MDG 7: Water-Supply and Sanitation	Recurrent	369	263	0	96	10	369	0
	Capital	345	0	238	0	107	345	0
	Total	714	263	238	96	117	714	0
MDG All:	Recurrent	4005	2800	0	870	335	4005	0
	Capital	1539	0	1203	0	336	1539	0
	Total	**5544**	**2800**	**1203**	**870**	**672**	**5544**	**0**
Memorandum Item								
MDG All (in Billion USD):	Recurrent	56.5	39.5	0.0	12.3	4.7	56.5	0
	Capital	21.7	0.0	17.0	0.0	4.7	21.7	0
	Total	**78.2**	**39.5**	**17.0**	**12.3**	**9.5**	**78.2**	**0**

Table 22: Sectoral MDG Cost Financing by Sources under the High Growth Scenario

(In Billion BDT)

MDG Clusters	Cost Type	Total MDG NA (FY11-15)	Re-Current	ADP	Household	ODA	Resource (FY11-15)	Balance
MDG 1: Agriculture	Recurrent	1108	1091	0	0	17	1108	0
	Capital	369	0	369	0		369	0
	Total	1478	1091	369	0	17	1478	0
MDG 1: Road Infrastructure	Recurrent	0	0	0	0		0	0
	Capital	242	0	242	0		242	0
	Total	242	0	242	0	0	242	0
MDG 2: Education	Recurrent	625	364	0	242	19	625	0
	Capital	274	0	274	0		274	0
	Total	899	364	274	242	19	899	0
MDG 3: Gender	Recurrent	216	207	0	0	9	216	0
	Capital	12	0	12	0		12	0
	Total	228	207	12	0	9	227	0
MDG 4,5,6: Health	Recurrent	529	358	0	161	10	529	0
	Capital	101	0	101	0		101	0
	Total	630	358	101	161	10	630	0
MDG 4: Child Health	Recurrent	257	136	0	113	7	257	0
	Capital	0	0	0	0		0	0
	Total	257	136	0	113	7	257	0
MDG 5: Maternal Health	Recurrent	102	45	0	40	16	102	0
	Capital	0	0	0	0		0	0
	Total	102	45	0	40	16	102	0
MDG 6: HIV, Malaria	Recurrent	189	91	0	81	18	189	0
	Capital	0	0	0	0		0	0
	Total	189	91	0	81	18	189	0
MDG 7: Environment	Recurrent	69	40	0	0	29	69	0
	Capital	22	0	22	0		22	0
	Total	92	40	22	0	29	91	0

MDG 7: Energy	Recurrent	541	440	0	81	20	541	0
	Capital	175	0	175	0		175	0
	Total	715	440	175	81	20	715	0
MDG 7: Water-Supply and Sanitation	Recurrent	369	259	0	89	21	368	0
	Capital	345	0	345	0		345	0
	Total	714	259	345	89	21	713	0
MDG All:	Recurrent	4005	3032	0	807	166	4005	0
	Capital	1539	0	1539	0	0	1539	0
	Total	**5544**	**3032**	**1539**	**807**	**166**	**5544**	**0**
Memorandum Item								
MDG All (in Billion USD):	Recurrent	56.5	42.7	0.0	11.4	2.3	56.5	0
	Capital	21.7	0.0	21.7	0.0	0.0	21.7	0
	Total	**78.2**	**42.7**	**21.7**	**11.4**	**2.3**	**78.2**	**0**

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