Recent Trends of Growth in Agriculture, Industry and Power

Bangladesh Economic Update

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1. INTRODUCTION

The current issue of Bangladesh Economic Update attempts to understand the growth prospect in agriculture, industry and infrastructure sectors to explain the decline of growth in total gross domestic product (GDP).

The current issue of Bangladesh Economic Update attempts to understand the growth prospect in agriculture, industry and infrastructure sectors to explain the decline of growth in total gross domestic product (GDP). Agriculture and industry together comprise half of the GDP. As a result, the recent trend of these sectors is considered to be significantly associated with the expansion of economic growth.

The growth rate in GDP has declined from 6.71 percent FY 2010-11 to 6.23 percent in FY 2011-12 and then to 6.03 percent in 2012-13, which is projected to fall below the decadal average of 6.0 percent in FY 2023-14.

The rate of growth of agriculture and its share in GDP is decreasing. The rate of growth in agriculture came down from 5.24 percent in fiscal year (FY) 2009-2010 to 5.13 percent, and then to 3.11percent and 2.17 percent in FY2010-2011, FY2011-2012 and FY2012-2013 respectively. This declining trend in growth of agriculture sector can largely be attributed to gradual loss of cultivable land, lack of invention, adoption and dissemination of new technology, and lack of sufficient support for agricultural research and training in the country.
The manufacturing sector has been undergoing a declining rate of growth since the FY2010-2011. While in FY2010-2011, the rate of growth in manufacturing sector was 9.45 percent, the rate decreased to 9.37 percent and 9.34 percent in FY2011-2012 and 2012-2013 respectively. This falling trend of growth in manufacturing sector can be ascribed to the unavailability of infrastructural facilities, recent hiccups in garment sector, constraints originating from limited size of the domestic market, instability in property rights, and missing of institutions.

The underdevelopments in power sector have been exerting immense adverse impact on the economy through hindering agricultural and industrial production and development.

The underdevelopments in power sector have been exerting immense adverse impact on the economy through hindering agricultural and industrial production and development. Frequent power tariff hikes during last five fiscal years have caused the entrepreneurs in both agriculture and industry to face the challenge of cost-push in production.

2. AGRICULTURAL SECTOR

Ensuring food security for the vast population of Bangladesh is directly associated with the agricultural development in the country.

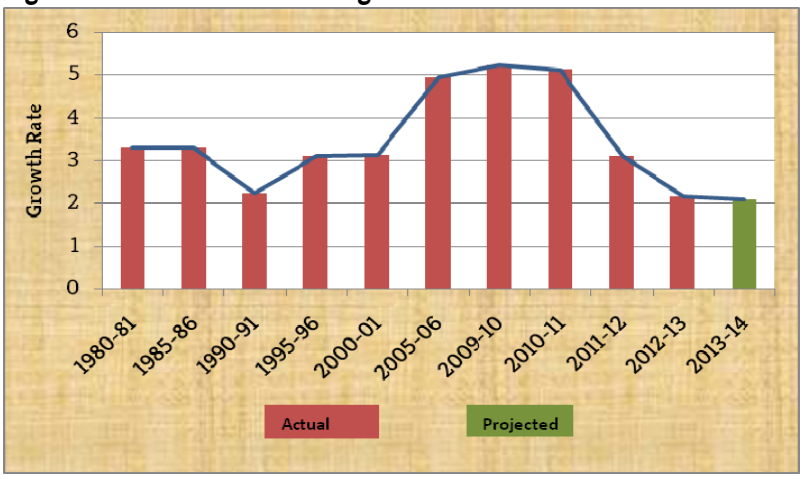
Ensuring food security for the vast population of Bangladesh is directly associated with the agricultural development in the country. The governments of Bangladesh have therefore been giving priorities to agricultural development with a view to ensuring food and nutritional security, poverty alleviation, and increased generation of employment. Whereas a profitable, sustainable, and environment-friendly agricultural system is required to achieve these objectives, agriculture in the country faces by a number of challenges every year. These challenges include population growth, climatic hazards, loss of arable land, lack of quality seeds, food habit of people (about 90 percent is rice based), inadequate credit support to the farmers, unfair pricing, insufficient investment in agricultural research and agricultural mismanagement in terms of irrigation, use of fertiliser and pesticides. The majority are small and marginal farmers who are endowed with poor financial resources and cannot afford high cost of frontier technology.

2.1 Agriculture: Growth and Share in GDP

Though there was an increasing trend in growth in agriculture from 1990 to 2010, since the FY2010-11 the rate of growth has been falling.

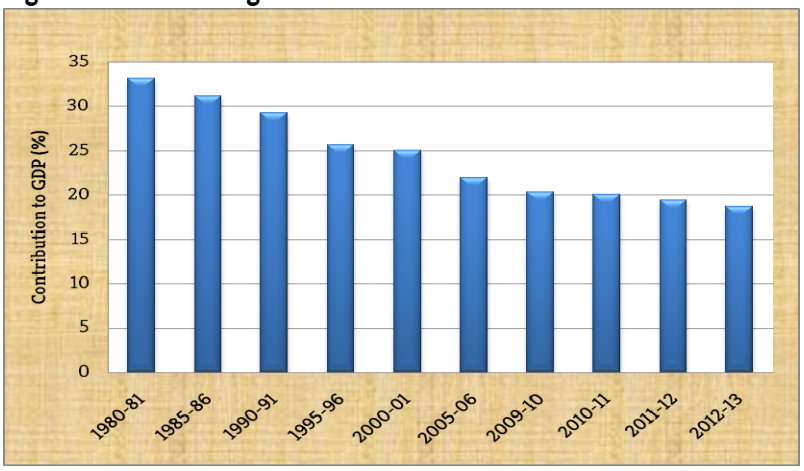
A declining trend in the growth of agricultural sector has recently been noticed, which, in turn, contributed to decelerating growth in GDP in the country. Though there was an increasing trend in growth in agriculture from 1990 to 2010, since the FY2010-11 the rate of growth has been falling. The rate of growth in agriculture was 5.24 percent in FY2009-10, whereas in FY2010-11, FY2011-12 and FY2012-13 the ratewas5.13 percent, 3.11 percent and 2.17 percent respectively. This falling growth in agriculture has been causing the share of agriculture in GDP to decline over the recent years. For instance, in FY2009-10, the share of agriculture in GDP was 20.29 percent, whereas in FY2010-11, FY2011-12 and FY2012-13the share was 20.01 percent, 19.42 percent and 18.70 percent respectively. As a result of this declining contribution of agriculture to national income, the growth of GDP in the country has also been found decelerating. If the current trend persists, the agricultural growth rate might reach as low as 2.09 percent in FY 2013-14.

Figure 1: Rate of Growth in Agriculture Sector



Source: Ministry of Finance, 2013

Figure 2: Share of Agriculture in GDP



Source: Ministry of Finance, 2013

Recent declining trend of growth in agriculture can be attributed to a number of reasons. First, the post-green revolution period has not experienced any breakthrough as regards technological advancement in the country on the one hand, and the poor and marginal farmers who comprise the majority of total farm population cannot afford the high cost of using high input technologies in agriculture on the other. Second, despite higher cropping intensity, the declining trend in the availability of arable land causes the growth in agricultural sector to fall. Third, though the budget allocation in agriculture is increasing, the large portion of this allocation goes for meeting non-development expenditure every year leaving a meager amount for development spending, thus constraining development in the sector. For instance, 85

percent of total agriculture-related budget was allocated for meeting non-development expenditure in FY2009-10, 84 percent in FY2010-11 and 85 percent in FY2011-12. Therefore, in order to raise productivity and profitability, reduce instability, and increase efficiency in resource use, increase of the allocation on the development side is important.

2.2 Agriculture: Growth in Subsectors

The scenarios of growth rates in agricultural subsectors indicate that the decline in overall growth in agriculture is mainly due to fall in the growth of crop production.

The scenarios of growth rates in agricultural subsectors indicate that the decline in overall growth in agriculture is mainly due to fall in the growth of crop production. While the growth of livestock and forestry is witnessing an increasing trend, the growth in crops is substantially declining. As a result, the share of agriculture in GDP is largely declining, since the crop production that renders the major contribution to national income from agriculture sector is growing at a decelerating rate over the recent periods. Table 1 and 2 show that crop with a growth rate of 2.67 percent comprises 11.64 percent share of GDP in FY2007-08, while the share came down to 10.25 percent with 0.15 percent rate of growth in FY2012-13. Consequently, increasing trend in the growth of livestock and forestry does not compensate the decline of growth in crop production. Meanwhile, contribution of fisheries to GDP is declining, although the trend of growth assumes an increasing trend.

Table 1: Rate of Growth in Different Subsectors of Agriculture

Sector/ Subsector	FY 2007-08	FY 2008-09	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13 (P)
Agriculture and Forestry (%)	2.93	4.10	5.56	5.09	2.46	1.18
Crop (%)	2.67	4.02	6.13	5.65	1.95	0.15
Livestock (%)	2.44	3.48	3.38	3.48	3.39	3.49
Forestry (%)	5.47	5.69	5.23	3.90	4.42	4.47
Fisheries (%)	4.18	4.16	4.15	5.25	5.39	5.52

Source: Ministry of Finance, 2013

Table 2: Share of Agricultural Subsectors to GDP

Sector/ Subsector	FY 2007-08	FY 2008-09	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13 (P)
Agriculture and Forestry (%)	16.18	15.91	15.81	15.58	15.02	14.33
Crop (%)	11.64	11.43	11.42	11.32	10.86	10.25
Livestock (%)	2.79	2.73	2.65	2.58	2.51	2.45
Forestry (%)	1.75	1.75	1.73	1.69	1.66	1.63
Fisheries (%)	4.65	4.58	4.49	4.43	4.39	4.37

Source: Ministry of Finance, 2013

2.3 Agriculture: Pattern of Use of Cultivable Land

In agriculture, cropping intensity, along with the cropping pattern, plays the vital role in production system since the cultivable land areas have continuously been decreasing. Given the law of diminishing marginal returns, such continuous reduction in cultivable land has been exerting adverse impact on the growth in agricultural sector, resulting in recent declining growth in the sector. Figure 4 shows the decreasing trend of per capita agricultural land. Per capita agricultural land came down to 0.056 hectare in 2011 from 0.17 hectare in 1961. Rapid population growth, along with unplanned urbanisation, causes the areas of cultivable land to be used for non-agricultural purpose, especially for building residence for increasing population. Statistics suggest that between the periods from 1961 to 2007, the agriculture experienced a two-fold reduction in the availability of cultivable land. Production during this period increased due mainly to the use of input by the farmers at a higher rate on the same piece of land. For instance, one metric ton of food was produced from 0.406 hectare of land in 1961, whereas same production was achieved from the land below 0.14 hectare in 2007 (Basak, 2012).

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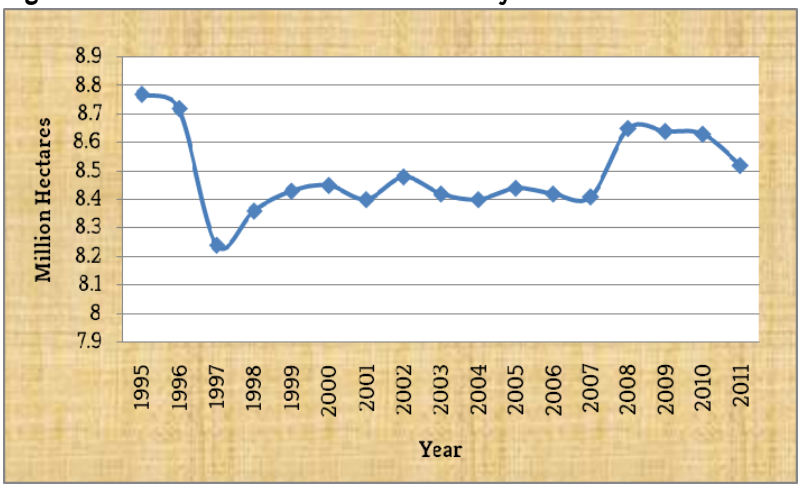
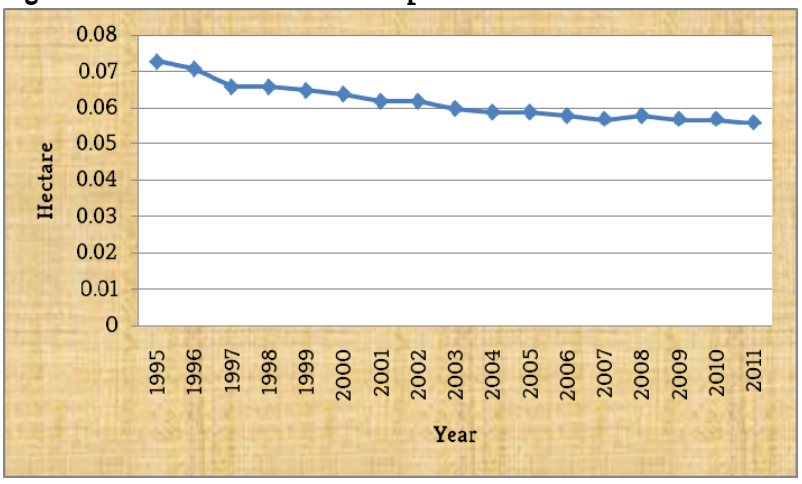
Figure 3: Trend of Loss in the Availability of Net Cultivable Land



Source: Ministry of Agriculture, 2013

Figure 4: Trend of Loss in Per Capita Cultivable Land



Source: Authors' calculation based on Ministry of Agriculture, 2013 and World Bank 2013

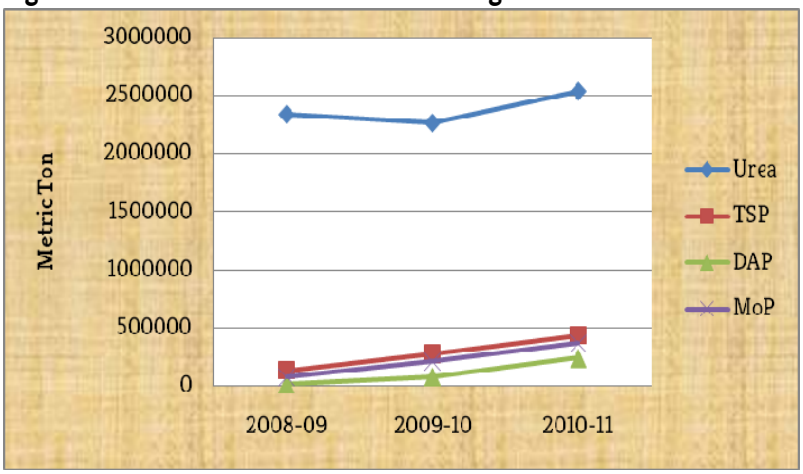
2.4 Agriculture: Management, Production, Pricing and Sustainability

The management of agriculture sector needs to aim at facilitating an innovative and modern agricultural system that will render increased production through invention of new technology and creation of greater opportunity for agricultural research. As mentioned earlier that the majority are small and marginal farmers, they cannot afford the adoption of technology-intensity beyond the current basic level of seed-fertiliser-irrigation technology. In addition, agriculture is characterised by tenancy of rent, mortgage and sharecropping and the relation between the adoption of new technology by a

farm and its tenurial arrangements is hardly inclined to move towards higher technological ladder. The argument is that sharecroppers have little to achieve from the spread of modern technology and institution of share tenancy as a feature of pre-capitalist modes of production and the sharecropping system are considered to be barriers to the spread and adoption of new technology. Therefore, the adoption of new technology by the poor tenants and sharecroppers needs to be ensured in order to foster the growth in agriculture. Though the agriculture sector has undergone considerable research and development in terms of the invention of salinity-resistant rice species, the spread and availability of these species need to be ensured and the research of inventing the species of rice which will be tolerant to drought and flood need to be extended immediately.

Therefore, the adoption of new technology by the poor tenants and sharecroppers needs to be ensured in order to foster the growth in agriculture.

Figure 5: Use of Various Fertilisers in Agricultural Land



Source: Department of Agricultural Extension, 2012

The use of fertiliser has been increasing in crop production in Bangladesh. Governments of Bangladesh have been allocating a good number of subsidies for with a view to making the farmers avail themselves of purchasing fertilisers at an affordable price. However, since 2008 the rise in fertiliser prices, especially the price of urea, has been exerting pressure on the poor and marginal farmers leaving them unable to procure fertiliser sufficiently. Besides, the rise in fertiliser price along with increased fuel and electricity price causes the food price to hike aggravating food insecurity for the ever-increasing population of the country. Though several social safety net programmes are underway with a view to ensuring

food security for the poor and marginalised people, ensuring food for a population increasing at a rate of two million every year will be nearly impossible for the government (Basak, 2012).

Population Division of United Nation has estimated that the total population of Bangladesh will be 194.353 million in 2050, when the total rice demand will be 49.07 million ton which is 30 percent higher than the total rice production in FY2009-10. Therefore, to ensure the increase in rice production at a certain rate that will guarantee rice security in the future is important. At the same time, the market price of food should be kept to the accessible limit of people, while maintaining fair price for the local farmers.

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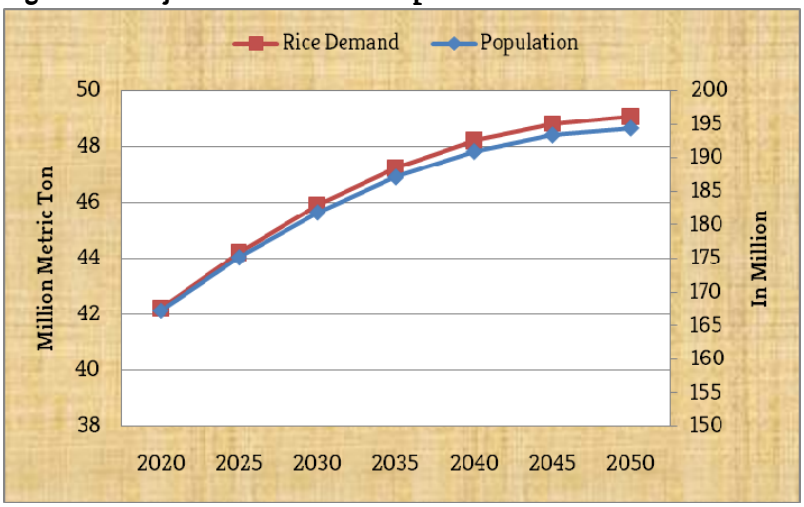
Figure 6: Projected Amount of Population and Demand for Rice



Source: Basak, 2012

However, in addition to higher productivity and vigilant pricing system in agriculture, sustainability must also to be ensured in the sector. Increasing use of fertiliser has forced land to yield higher production. For instance, the use of fertiliser in agriculture has increased 890 times on an average during the period of 1975-2007. Whereas in 1995, the use of fertiliser per hectare of land was 0.36 kg, in 2007, more than 298 kg was used per hectare of agricultural land (Basak, 2012). However, though higher use of fertiliser has increased the productivity of land, soil fertility in agricultural land has been decreasing because of the large scale application of chemical fertilizer. As a result, sustainability in agriculture may undergo a serious

challenge in the future. Besides, agriculture in Bangladesh is highly dependent on ground-water for irrigation, which may also cause increased salinity of soil as well as decline in the fertility of agricultural land. Therefore, in order to ensure sustainable agriculture, immediate responses need to be taken to increase the productivity and fertility of agricultural land simultaneously.

3. INDUSTRIAL SECTOR

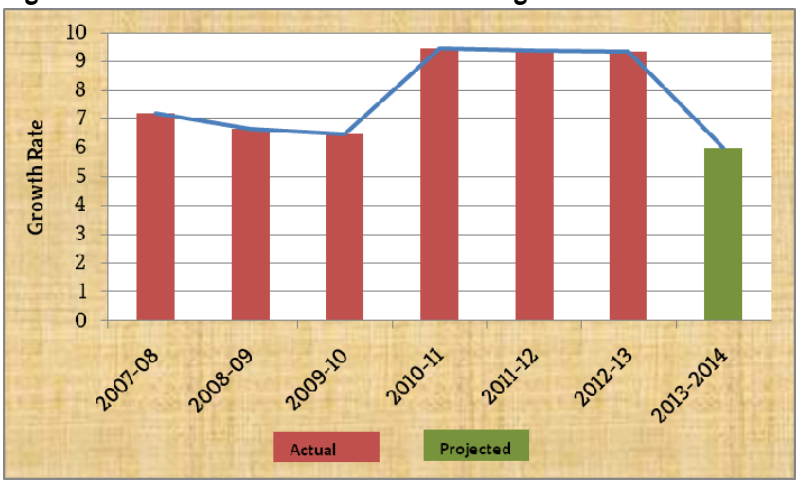
Industrialisation is considered to be the most important drivers of growth in an economy. Along this vein, the country has been demonstrating considerable performance in low-value-adding manufacturing. However, recent trends of different indicators that are considered in measuring the development of industrial sector appear to be unsatisfactory. From FY2010-11 to FY2012-13, the rates of growth in industrial sector have been showing a decelerated trend. As a result, the share of industry in GDP is increasing at a decreasing rate.

Industrialisation is considered to be the most important drivers of growth in an economy. Along this vein, the country has been demonstrating considerable performance in low-value-adding manufacturing.

3.1 Industry: Growth and Share in GDP

This recent stagnant situation of the growth in industrial sector can be attributed mainly to the unavailability of infrastructural facilities, recent hiccups in garment sector, constraints originating from limited size of the domestic market, instability in property rights, and missing of institutions.

Figure 7: Rate of Growth in Manufacturing Sector



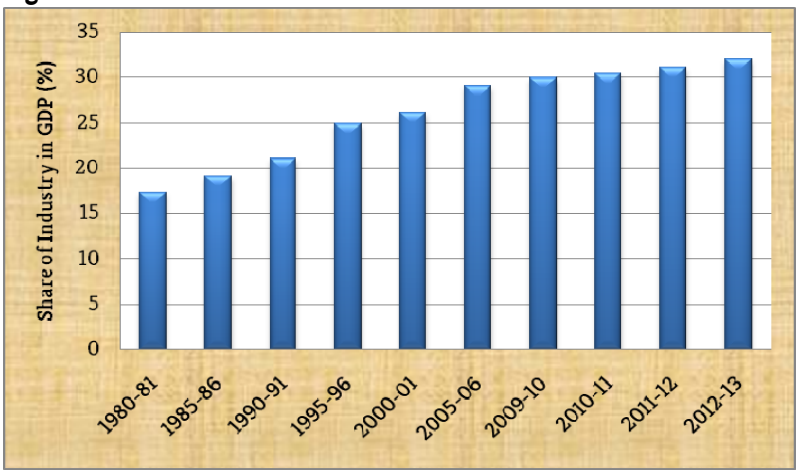
Source: Ministry of Finance, 2013

The rate of growth in industrial sector has been falling sinceFY2010-11. Whereas in FY2010-11, the rate of growth in

industrial sector was 9.45 percent which is 2.95 percentage point higher than that in FY2009-10, the rate came down to 9.37 percent and 9.34 percent in FY2011-12 and FY2012-13 respectively. As a result, the share of industrial sector in GDP is increasing at a decelerated rate. In FY2009-10, the rate of growth of the share of industrial sector in GDP was 6.49 percent, while in FY2010-11, FY2011-12 and FY2012-13, the rate became 8.20 percent, 8.90 percent and 8.99 percent respectively. Under the business as usual scenario, the manufacturing sector might observe a growth rate at 6.02 percent in FY 2013-14.

In FY2009-10, the rate of growth of the share of industrial sector in GDP was 6.49 percent, while in FY2010-11, FY2011-12 and FY2012-13, the rate became 8.20 percent, 8.90 percent and 8.99 percent respectively.

Figure 8: Share of Industrial Sector in GDP



Source: Ministry of Finance, 2013

3.2 Industry: Growth in Subsectors

The trend of growth rates in industrial subsectors shows that the small and cottage industries are growing at a decelerated rate, while the rate of growth in the medium and large industries is decreasing for the last three fiscal years. As a result, the overall scenario of rate of growth in industrial sector indicates a decreasing trend. The rise in the rate of growth in medium and large industry is much important, since the contribution of these sub-sectors to GDP is much higher than that of the small and cottage industries. For instance, in FY2009-10, the contribution of small and medium industries to GDP was Tk. 18340.9 crore, whereas the contribution of medium and large industries to GDP was Tk. 44229.8 crore. In the subsequent years, the contributions of small and medium industries to GDP were Tk. 19411.9 crore, Tk. 20664.7 crore and Tk. 22061.9 crore in FY2010-11, FY2011-12, and FY2012-13

respectively, while the contributions of medium and large industries to GDP were Tk. 49069.9 crore, Tk. 54232.3 crore and Tk. 59830.6 crore in the same fiscal years respectively.

Table 3: Rate of Growth in Manufacturing Sector

Industry	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013*
Small and Cottage Industry	7.93	9.21	9.69	7.10	6.90	7.77	5.84	6.45	6.76
Medium and Large Industry	8.30	11.41	9.74	7.26	6.58	5.98	10.94	10.52	10.32
Total	8.19	10.77	9.72	7.21	6.68	6.50	9.45	9.37	9.34

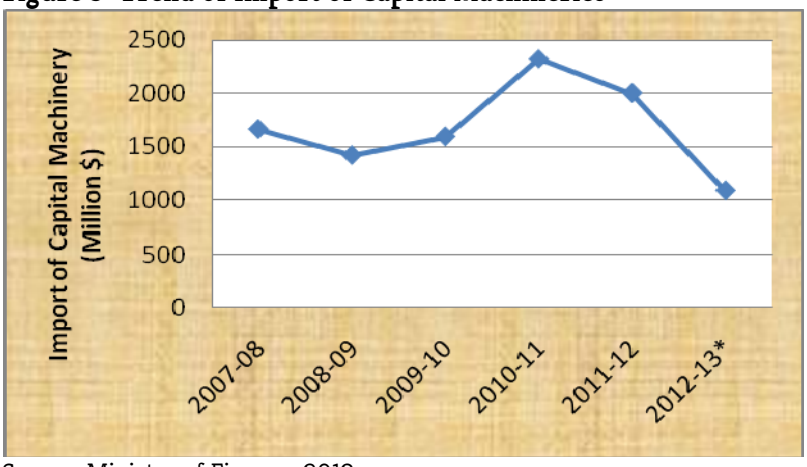
Source: Ministry of Finance, 2013

The import of capital machineries came down to USD 2005 million in FY2011-12 from USD 2325 million in FY2010-11, whereas in FY2012-13, the amount became USD 1087 million from July'12 to January'13.

3.3 Industrial Growth and Import of Capital Machineries

As proxy for measuring the development of industrial sector, the imports of capital machineries and other intermediate goods and the growth of export can be used, since the sector is largely dependent on imported machineries for production. The scenario of the import of capital machineries is somewhat compatible with the recent situation of declining growth in industrial sector. The import of capital machineries came down to USD 2005 million in FY2011-12 from USD 2325 million in FY2010-11, whereas in FY2012-13, the amount became USD 1087 million from July'12 to January'13.

Figure 9: Trend of Import of Capital Machineries



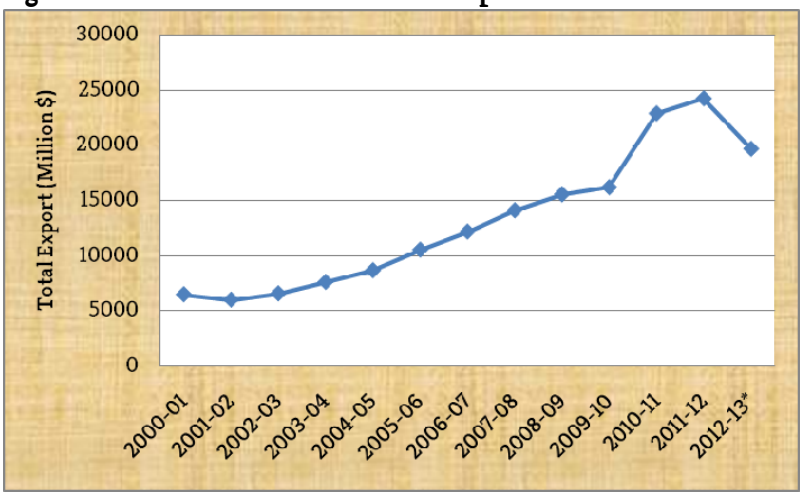
Source: Ministry of Finance, 2013

3.4 Industrial Growth and Export

On the other hand, the growth of export is not also up to the mark of satisfactory level. The trend of export growth indicates a sluggish increase in the last three fiscal years. However, the recent decline in the import of capital machineries resulting in the declining growth in industrial sector can largely be attributed to tightening monetary measures by the central bank.

On the other hand, the growth of export is not also up to the mark of satisfactory level. The trend of export growth indicates a sluggish increase in the last three fiscal years.

Figure 10: Trend of Growth in Total Export



Source: Ministry of Finance, 2013

3.5 The Quantum Index of Production in Industries

The quantum index of production (QIP) is one of the most important indicators to measure and explain the trend of industrial production. The index is calculated through putting weights for each manufacturing sub-group. However, the declining growth in industrial sector, especially in the medium and large industries can be explained by the negligible increase in quantum index of medium and large industries. As Bangladesh Bureau of Statistics (BBS) has not been publishing the QIP since November, 2013, the currently available statistics show that from October, 2012 to October, 2013 the quantum index of medium and large industries increased by only 1.04 percent, while two large subgroups of medium and large industries –apparels, chemicals and chemical products underwent negative growth reckoning further aggravation in the decline of industrial growth.

Table 4: Quantum Index of Production for Medium and Large Industries

Major Industry Group	Weight	Index		Growth
		Oct-12	Oct-13	Oct-13
General	100.00%	189.42	191.39	1.04%
Wearing apparel	34.84%	249.22	243.00	-2.50%
Textile	14.07%	140.33	142.05	1.23%
Food products	10.84%	227.82	240.14	5.41%
Pharmaceuticals and medicinal chemical	8.23%	170.08	191.61	12.66%
Non-metallic mineral products	7.12%	140.11	141.70	1.13%
Leather and related products	4.40%	138.74	144.66	4.27%
Chemicals and chemical products	3.67%	91.04	78.13	-14.18
Basic metals	3.15%	123.57	148.63	20.28%
Tobacco products	2.92%	147.87	152.80	3.33%
Fabricated metal products	2.32%	150.61	159.43	5.86%
Others	8.44%	154.31	151.28	-1.96%

Source: Bangladesh Bank, 2014

Development of power sector is an urgent requirement for an economy to thrive in an efficient manner.

The recent decline in the rate of growth of industrial sector can partly be attributed to the weak infrastructural facilities for industrial development. Growth in any sector, particularly in the industrial sector, highly depends on the availability of rapid transportation and communication system, electricity, gas etc. The scenarios of these facilities as regards their availability have been appearing dismal in recent periods. The shortage of electricity and gas along with frequent power tariff hikes during the last few years has not only hindered the existing industrial production, but also deterred new investment in the sector.

4. POWER SECTOR

Development of power sector is an urgent requirement for an economy to thrive in an efficient manner. As discussed earlier that inadequacy of power supply substantially hinder the growth in industrial sector, the development of other two sectors of economy i.e. agriculture and service sector is also challenged due to crisis in power supply along with frequent power tariff hikes. The matter of balancing the power supply against the demand for it has been remaining unresolved for years, together with the fact that the forecast of demand for power in the country is not considered being credible and realistic.

4.1 Power Sector: Gap between Installed Capacity and Maximum Generation

The recent scenarios of the performance of power sector tend to pose serious challenges before the viability of development projects underway in the country.

The recent scenarios of the performance of power sector tend to pose serious challenges before the viability of development projects underway in the country. Against the backdrop of current high demand for power, an increasing gap between installed capacity for power generation and maximum generation of power has been noticed since FY2008-2009. Although both the installed capacity and maximum generation have been increasing, the increasing gap between this two has offset the possible benefits of increased installed capacity. As the table 5 shows, in FY2008-2009, the gap between installed capacity and maximum generation was 1004 megawatts, the gap has nearly doubled within three years and become 2034 megawatts in FY2011-2012, and 2175 megawatts and 3271 megawatts in FY2012-2013 and FY2013-2014 (until March 25, 2014) respectively. This increasing gap results due mainly to poor productivity of the old power plants, shortage of gas supply and lack of proper maintenance and renovation of the power plants.

Table 5: Gap between Installed Generation Capacity and Maximum Generation

Year	Installed Generation Capacity (MW)	Maximum Generation (MW)	Gap (Installed Generation Capacity -Maximum Generation)
2001-2002	3218	3218	0
2002-2003	3428	3458	-30
2003-2004	3592	3622	-30
2004-2005	3721	3751	-30
2005-2006	3782	3812	-30
2006-2007	3718	3718	0
2007-2008	4130	4130	0
2008-2009	5166	4162	1004
2009-2010	5271	4606	665
2010-2011	6639	4890	1749
2011-2012	8100	6066	2034
2012-2013	8525	6675	1850
2013-2014	10241	6970	3271

Source: Ministry of Finance, 2013 and Bangladesh Power Development Board, 2014

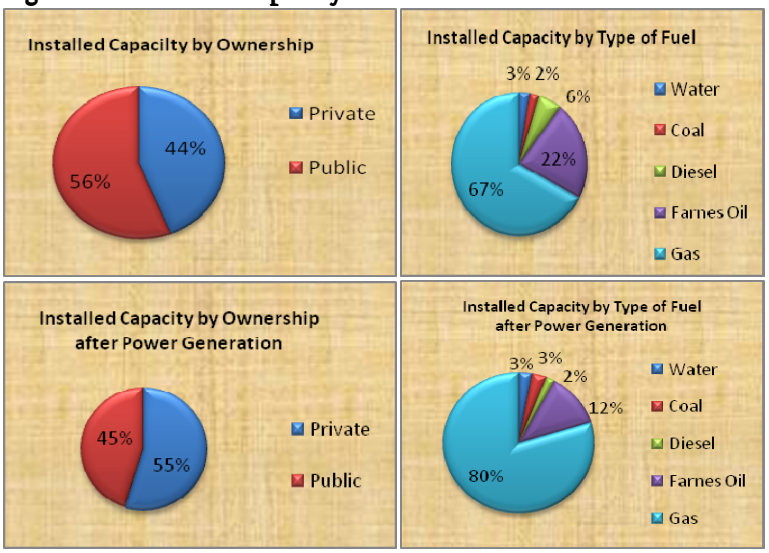
4.2 Power Sector: Public and Private Ownership

Because of the poor productivity in the old public power plants and the shortage of gas supply, public sector cannot utilise its

Because of the poor productivity in the old public power plants and the shortage of gas supply, public sector cannot utilise its full capacity of power generation. As a result, the government has to rely on the private sector power plants that generate power mainly using oil (farnes and diesel) leading to high cost of power generation.

full capacity of power generation. As a result, the government has to rely on the private sector power plants that generate power mainly using oil (farnes and diesel) leading to high cost of power generation. The following figures show that in FY2012-2013 (up to January, 2013), public sector had 56 percent of total installed generation capacity, while the private sector comprised 44 percent. Generation of power, however, shows that due to public sector's inability of utilizing full installed capacity, private sector comprised 54.70 percent of net power generation and public sector comprised only 45.30 percent. In addition, whereas the gas-based power plants had 67.21 percent of total installed capacity in FY2012-2013 (up to January, 2013) comprising 79.76 percent of net power generation reckons an increased gap between the installed generation capacity and maximum generation of power.

Figure 11: Installed Capacity and Power Generation



Source: Ministry of Finance, 2013

4.3 Power Sector: Cost and Use of Fuel in Power Generation

As regards the cost of power generation, table 6 shows that oil-based power plants are costlier than gas-based power plants. While the total cost of generating 1 kilowatt hour power by gas-based power plants is only Tk. 2.59, it becomes Tk. 20.73 and Tk. 16.37 for the diesel oil-based power plants and farnes oil-based power plants respectively. Due to the shortage of gas, most of public sector power plants cannot generate power up to their installed capacity; consequently the

Frequent power tariff hikes occur, which exert adverse impact on the economy, particularly on industrialisation in the country.

government has to rely on quick rental oil-based power plants in order to purchase power at much higher cost. As a result, frequent power tariff hikes occur, which exert adverse impact on the economy, particularly on industrialisation in the country. Of late, the power distribution boards and companies namely, Bangladesh Power Development Board, Dhaka Power Distribution Company Limited, Dhaka Electric Supply Company Limited, Bangladesh Rural Electrification Board, and West Zone Power Distribution Company Limited have proposed for an increase of power tariff by 15.50 percent, 23.50 percent, 15.90 percent, 12.58 percent, and 8.59 percent respectively to Bangladesh Energy Regulatory Commission. The commission, after taking the proposal of power tariff hike by the power distribution board and companies into account, has arranged a public hearing held on last 4th, 5th and 6th March, 2014 and decided to increase the power tariff by 6.96 percent while keeping the power tariff unchanged for lifeline (use of power from 1 to 50 units in residence) and irrigation. This increase in power tariff will be in effect from bill month March, 2014 resulting in another hike in power tariff in the country.

Table 6: Cost of Different Types of Fuel Used in Power Generation in FY2012-2013

Types of Fuel	Fuel Cost (Tk/kwh)	Non-fuel Cost (Tk/kwh)	Total Cost (Tk/kwh)
Hydra	0	1.12	1.12
Gas	0.83	1.76	2.59
Coal	4.70	2.05	6.75
Diesel Oil	15.80	4.93	20.73
Farnes Oil	13.30	3.07	16.37
Total	4.47	2.40	6.87

Source: Bangladesh Power Development Board, 2012

However, since the gas-based power plants generate power at a cost much lower than the oil-based power plants, increasing trend in the use of gas in power generation is expected. In reality, the picture is reverse. As table 7 indicates that use of gas in power generation has been decreasing, while the use of oil is increasing leading to hikes in power tariff. As a result, large scale criticisms against frequent power tariff hikes arise on the question that why government does not make attempts to increase gas use in power generation rather than increase oil use. If this trend of decreasing use of gas and increasing use

of oil in power generation continues, the power tariff hikes will also continue exerting pressure on agricultural and industrial production, leading to declined growth in the economy.

Table 7: Types of Fuel Used in Power Generation

Year	Percentage of Fuel Types used				
	Gas %	Oil %	Coal %	Hydra %	Total %
2009-10	88.90	4.68	3.78	2.66	100
2010-11	82.47	11.90	2.66	2.97	100
2011-12	77.79	17.40	2.56	2.32	100
2012-13	68.04	27.98	2.01	1.94	100

Source: Bangladesh Power Development Board, 2012

Increased purchase of power by government from oil-based rental power plants instead of going for gas-based power generation is to pose serious threats for the development of agriculture and industrial sector, thus to decline growth in the economy.

As discussed earlier, the purchase of power from the private rental power plants by the government causes the power tariff to hike; the table 8 shows a comparative picture of power tariff hike for the last four fiscal years. The table conspicuously shows that purchase of power by the government from rental plants has been increasing at a much higher rate than that from public power plants, causing people to pay high cost of using power. Whereas in FY2009-2010, BPDB expended Tk. 936.77 crore on purchasing power from rental plants, it paid Tk. 10340.05 crore to them in order to purchase power in FY2012-13, which is nearly 11 times higher than the amount expended in FY2009-2010. The cost of power generation is 5.6 times higher in rental plants than that in the public plants in FY2012-2013, whereas it was 2.27 times higher in FY2009-2010. As a result, increased purchase of power by government from oil-based rental power plants instead of going for gas-based power generation is to pose serious threats for the development of agriculture and industrial sector, thus to decline growth in the economy.

Recent declining growth in the economy can largely be attributed to the falling rate of growth in both agriculture and industrial sectors which together comprise half of the GDP in the country.

Table 8: Increasing Cost of Power Generation

Particulars	2009-2010		2010-2011		2011-2012		2012-2013	
	Amount (Crore Tk.)	Cost (Tk/kwh)	Amount (Crore Tk.)	Cost (Tk/kwh)	Amount (Crore Tk.)	Cost (Tk/kwh)	Amount (Crore Tk.)	Cost (Tk/kwh)
BPDB's Generation	2626.36	2.50	3282.39	3.19	3754.29	3.67	4708.51	3.80
Purchase from IPP	2528.00	2.78	3213.50	3.42	3470.50	3.66	3750.15	4.07
Purchase from Rental	963.77	4.26	4364.29	8.05	8833.83	10.18	10340.05	10.99
Purchase from Public Plant	789.59	1.88	792.31	1.80	983.56	2.02	1082.62	1.97
Total	6907.72	2.65	11652.49	3.95	17042.18	5.36	19881.33	5.77

Source: Bangladesh Power Development Board, 2011 & 2013

5. CONCLUSION

Recent declining growth in the economy can largely be attributed to the falling rate of growth in both agriculture and industrial sectors which together comprise half of the GDP in the country. This falling rate of growth in agriculture and industrial sectors has further been aggravated by frequent power tariff hikes in recent periods due to government's purchase of power from oil-based rental power plants at much higher costs. Sector specific measures need to be taken in order to cause the present decreasing trend of growth in the economy to assume an increasing trend.

In order to ensure food security through development of agriculture in Bangladesh, the invention, adoption and dissemination of 'new technology' must be ensured with a view to increasing production of diversified crops. Attention must be given at controlling the rice price within the accessible limit of the poor ensuring a fair price to farmers. In addition, agricultural credit disbursement, supply of fertiliser, increased development budget vis-à-vis non-development budget in agriculture, early weather warning system for farmers and 'environment friendly sustainable agriculture' must be emphasised with providing adequate support for agricultural research and training.

As the economy is characterised by consumption-led expansion, a stimulation of domestic demand is needed in

order to recover the increasing trend of growth in industrial sector. Diversification of growth should be endeavored through the acceleration of market and product diversifications. The growth of export must be emphasized as regards finding out new export market. Employment creation for the skilled and educated unemployed has to be prioritized. Management of industrial loan disbursement and collection and the provision of infrastructural facilities must be ensured in order to cause the industrial sector to grow rapidly and sustainably.

The development of power sector needs to be prioritised with a view to providing a conducive environment for investment and growth in the economy.

The development of power sector needs to be prioritised with a view to providing a conducive environment for investment and growth in the economy. Industrialisation in Bangladesh is largely hindered due to the underdevelopments in power sector. Frequent power tariff hikes cause the agricultural and industrial production to become unstable and exert immense pressure on the poor and marginalised section in the society. However, in order to keep the cost of using power affordable for the farmers and small and medium industries, the government has to reduce its dependence on oil-based quick rental power plants to a greater extent and to avail itself of adequate gas supply to generate power. Maintenance and renovation of less productive, old and closed power plants need to be ensured in order to modernise them through increasing thermal efficiency. The loss of gas must be minimised in order to facilitate gas-based power plants which are much less costlier than the oil-based power plants and minimise the gap between installed power generation capacity and maximum generation of power.

The government has to reduce its dependence on oil-based quick rental power plants to a greater extent and to avail itself of adequate gas supply to generate power.

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