

**ISSN-1811-5195**  
**Bangladesh Journal**  
**Of**  
**Administration**  
**And**  
**Management**

**Volume-15-27, No-1**

**January-June 2017**

**Articles**

1. The Instrumental Relationship of Special Economic Zones and Foreign Direct Investment: From the Context of Bangladesh  
**Md. Shakil Ahmad and Towheed Elahi**
2. A Study on Employment of Women in the Government Sector of Bangladesh  
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**Md. Shafiul Islam, Ph.D**



**Bangladesh Civil Service Administration Academy**  
**Shahbag, Dhaka**

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Published by  
BCS Administration Academy, Shahbag, Dhaka-1000  
Bangladesh  
Published in May-2017



**Bangladesh Civil Service Administration Academy**  
**Shahbag, Dhaka**

**ISSN-1811-5195**  
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**Bangladesh Civil Service Administration Academy  
Shahbag, Dhaka**

## **The Instrumental Relationship of Special Economic Zones and Foreign Direct Investment: From the Context of Bangladesh**

Md. Shakil Ahmad,<sup>1</sup> Towheed Elahi<sup>2</sup>

### **Abstract**

Bangladesh has been planning to establish 100 SEZs in next 15 years. Generally, it is believed that Special Economic Zones will attract FDI and develop the host country. We intend to find some concrete evidence to evaluate the decisions taken by Bangladesh regarding establishing SEZs. We used instrumental variables expressing the growth of EPZs (main form of SEZ in Bangladesh) to find relationship of those variables with FDI. Our Granger Causality analysis with instrumental variables proves SEZs have causal relationship with FDI. But our graphical analysis shows that most of the FDI is going to the non-SEZ sectors. This proves that our SEZs are not being able to accommodate the FDI coming in our country; hence we require more SEZs to attract more FDI. We have conducted experimental analysis of the causality on other developing countries which shows that many developing countries were not successful in reaping the benefit of SEZs as they lacked domestic backward linkages, skill transfer and innovation. These results are also consistent with literatures studied for this analysis. We provide evidence that SEZs and favorable macroeconomic condition cause FDI inflow. Hence, our research yields the recommendation that Bangladesh should restructure its rules and regulations regarding SEZs so as to foster inward linkages, increase domestic capabilities, arrange efficient technology transfer, improve labor skills and ensure strict government tax management.

**Keywords:** Special Economic Zone (SEZ), Foreign Direct Investment (FDI), Export Processing Zone (EPZ)

### **1 Introduction**

#### **1.1 Statement of the problem**

Special Economic Zones (SEZ) are defined as the zones within a country where the rules and regulations are not the same as they prevail in the other areas of the same country. In simple terms the business organizations in SEZs enjoy certain benefits and eases from the government and other regulatory authorities than business organizations outside of SEZs. Inspired by China, many developing countries have started to build SEZs since the 80s. With the exception of India, almost all the developing countries implementing SEZs have enjoyed the benefits (Shah 2008). Bangladesh is one of them (Shah 2008). But why the developing

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Corresponding author's email: [myshakil@live.com](mailto:myshakil@live.com)

<sup>1</sup> The corresponding author, currently the student of MBA program of IBA, Dhaka University and working as Assistant Manager at United Finance Limited.

<sup>2</sup> Currently the student of MBA Program of IBA, Dhaka University and working as an Assistant Commissioner at Office of the Deputy Commissioner, Dhaka.

countries would want to establish SEZs in the first place in where they forgo the benefits they are supposed to receive? Farole and Akinci (2011) have mentioned four prime objectives why developing countries would want FDI: (1) to attract foreign direct investment (FDI), (2) serve as “pressure valves” to alleviate large-scale unemployment, (3) work in support of a wider economic reform strategy, (4) perform as experimental laboratories for the application of new policies and approaches (Farole and Akinci 2011). From these four objectives, Bangladesh is relatively successful in achieving objective 1 and 2. Now the government of Bangladesh is pursuing the latter two (Shakir and Farole 2011). For this purpose, Bangladesh government has already approved the proposal of establishing 24 SEZs and planning to increase this number to 100 (Byron 2016). In this paper, we evaluate this decision based on the past performance of SEZs in attracting FDI.

## **1.2 Objectives**

Special Economic Zones have proved to be useful in attracting FDI. We have seen this from the empirical examples of the developing countries (Farole and Akinci 2011). However, FDI also can be attracted by other macroeconomic and social factors. The main objective of this article is to find the causality of SEZs in attracting FDI by taking the examples of Export Processing Zone (EPZ), the major form of SEZ, of Bangladesh. Beside this main objective, following objectives have also been pursued:

1. To find if there are any other factors other than SEZs that can attract FDI
2. To analyze the FDI inflow of Bangladesh
3. To evaluate the SEZ initiatives of Bangladesh with the example of other developing countries.

## **1.3 Methodology**

There are numerous factors that can affect the flow of FDI into any developing country. The factors can be qualitative and quantitative. The methodologies of analyzing both these kinds of data are different in nature. In this article both the qualitative data and quantitative data have been used. Therefore, we used mainly two techniques for this article; the secondary publications analysis for analyzing the qualitative data and statistical analysis for the quantitative data. Statistical analysis includes Granger Causality test which has given the statistical proof of the causality of SEZ in causing FDI inflow and regression analysis to understand the explaining capability of other macroeconomic variables. After having the stochastic framework from these tests, as forms of controlled experiment, the SEZ implementation in similar developing countries has been analyzed. One of the objectives of this paper is to evaluate the SEZ implementation decision taken by the government of Bangladesh and for this we have analyzed the FDI inflow history of Bangladesh.

For testing the Unit Root problem of each of these time series data, we used Augmented Dickey Fuller (ADF) Test. To remove the problem of Unit Root problem we have transformed the data whenever necessary.

#### 1.4 Sources of data

Only secondary data have been used in this article. The secondary data are ensured to have the required authenticity before using in this article. For regression analysis, as dependent variable, we have used FDI inflow, collected from the World Bank Database and as independent variables we have used EPZ export, employment and investment collected from Export Promotion Bureau<sup>3</sup> and macroeconomic variables from World Bank database. The secondary publications analysis has been made from the earlier publications.

## 2 Literature review

In 1983, first EPZ as first SEZ was introduced in Bangladesh. Though set up in 80s, Bangladesh started to get the benefit of this initiative from the early 90s. In a working paper, Debapriya Bhattacharya (1998) has analyzed the economic and social impact of EPZs of Bangladesh. He sets up his analysis stating the rationale behind the establishment of EPZs and uses trade regime argument and structural bottleneck argument for evaluating the rationales (Bhattacharya 1998). He stipulates that from trade regime argument the establishment of EPZs will yield welfare for Bangladesh's economy as benefits of these sorts of establishment are analogous to those of free trade because, he argues that, elimination of tariffs and other distortions cause the factor intensity of production activities to correspond more closely with the factor endowment of the host country. However, he lessens the strength of this argument by stating that "free trade" enclaves are diminishing from the present world as structural reforms and liberalization are widely being implemented. But he uses the second argument to emphasize the impact of EPZs in attracting FDI. By supporting the argument with "significant public investment in utility services" and "absence of collective bargaining rights for worker", he proves that EPZs attract FDI through providing a congenial business environment to those foreign investors who remain shy if the structural bottlenecks remain present in the host country. Likewise, Aggarwal (2005) has also proposed new growth theory, neo institutionalism and the developmental state theory evolved in the 1980s to describe the necessity of the establishment of SEZs. These theories reaffirm that economic, social and political organizations have key role in developing any country. He argues that underdeveloped and developing countries face acute shortage of necessary technology which results in production failure as well as bottlenecks which characterize their economies (Aggarwal 2005).

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<sup>3</sup><http://bepza.gov.bd/investments>, <http://bepza.gov.bd/employments>,  
<http://bepza.gov.bd/exports>

The structural bottlenecks argument of Debapriya (1998) and similar theory by Aggarwal (2005) are supported by a report by Semil Shah (2008). In his paper prepared for The World Bank from Harvard, he has attributed the lack of infrastructural facilities behind the unsuccessfulness of the SEZs of India. He mentioned situational problems such as not being in the close proximity of key transportation links such as railheads, seaports, airports and highways, not exporting products in related or clustered industry, lack of domestic backward linkages and wrong measurement of performance of SEZs. His research conducted after 10 years of Debapriya's research yielded results consistent with the Debapriya's findings. Semil (2008) correlates the low performance by the EPZs of Bangladesh with inadequate infrastructures, slow window service, weak governance, bureaucratic bottlenecks and labor unrest. Each of these variables is mentioned by Debapriya (1998) as the requisite behind the EPZ's success of Bangladesh. In a journal article, Bhuiya, et al., (2014) is inconsistent with the underperformance notion of Semil (2008). They proved that from 1990s, EPZs are effectively contributing in the economy of Bangladesh. But they agree with Semil (2008) regarding the reasons of lack of performance of some of the EPZs, commonly measured by the flow of FDI, with the lack of proximity with main transportation links. They also attributed shortage of gas and electricity supply as one of the major reasons behind being unsuccessful. They have compared the performance of EPZs of Bangladesh cross-sectionally and found out the reasons behind the underperformance of EPZs. But they lacked the substantiality in proving whether the EPZs were successful in attracting FDI. Though they were not substantial in proving this fact, earlier in a World Bank publication, Shakir and Farole (2011) say that EPZs successfully attracted FDI in Bangladesh which is consistent with what Bhuiya, et al., (2014) say in their journal article. Shakir and Farole (2011) attempt to demonstrate the attractiveness of FDI with the EPZs of Bangladesh by exhibiting some key success factors and they are, among exogenous variables wages and market size, provision of serviced land and supporting infrastructure, efficiency of the administrative regime and incentives regime. They try to prove qualitatively the impact of SEZs over the FDI. Any of the above literatures haven't proved anything quantitatively or specifically and nor did establish any certain prediction that increase in the number of SEZs will attract more FDI in Bangladesh.

In 2011, in a journal article, Islam and Mukhtar (2011) endeavored to find the impact of SEZs on the economic growth with the help of regression analysis and they find encouraging results on the association of SEZs and FDI (Islam and Mukhtar 2011). Their time series data table considered the trend of investment, export and employment national as well contribution of EPZ with respect to economic growth and they find DEPZ predictors are high relation with GDP growth as well economic growth, where the adjusted R-square explained 50.1% of total variance at 5% level of significance. Though their analyses were quantitative, they were not specific about the relationship of FDI and SEZs.

In a discussion paper, Kim (2013) analyzed the relationship of FDI and SEZs from another point of view. He evaluated China's recent initiatives of establishing SEZs in Africa. For establishing the soft power, a term coined by Joseph Nye of Harvard University, of China in Africa, these SEZs are being constructed (Kim 2013). If this is the intention behind any FDI, the host country should be aware that it is not being dependent on the foreign fund. On the other hand, in World Bank paper, Brautigam, et al. (2010) are postulating that China's recent moves to establish SEZ in several African countries can make a significant contribution to industrialization in Africa. In both of these literatures, it is found that it is not the interest of the host country that attracts FDI, it is the interest of the foreign countries. With the establishment of SEZ, foreign country investors will normally be attracted. Following the trails of China, Iran has also established 15 SEZs in its territory, but yet to get the benefit of these zones, though it is a little early to tell considering the time of the set up and serious lack of information (Hakimian 2009).

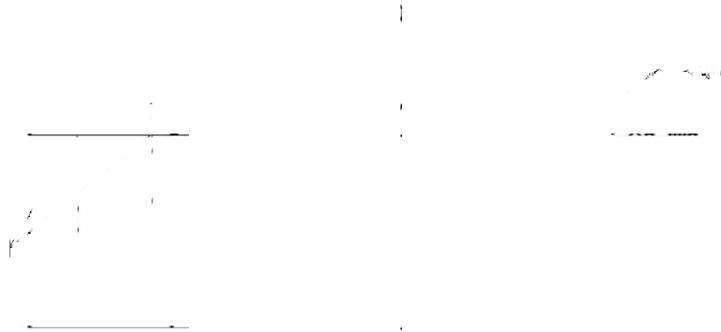
## **2.1 Finding the research gap**

Now, after going through these literatures, we can identify the following aspects which have not been cleared earlier:

1. All of the literatures have considered the performance of SEZs and theoretically shown building SEZs will attract the foreign investors but none proved or tried to prove it with the evidence of past results, especially for Bangladesh.
2. No variable has been identified by which we can measure whether SEZs can attract the FDI or not.
3. The integration of theoretical aspects with the real world is missing in the literatures.

## **3 Theoretical framework**

Let's assume the cost of a foreign firm doing business in Bangladesh is  $C$  per unit. The foreign firm will do business in Bangladesh as it is cheap to produce goods and services and sell the product to the world market. Here we assume that the world market is a perfect market where average revenue is equal to price which is equal to marginal revenue which is a horizontal line and the firms will invest more in the area where the return on investment is higher than any other sector. Special Economic Zone with its special purposes gives the foreign investors some benefits such as one stop service, logistic support and tax benefits (BEZA, 2015). These services will reduce the cost of the foreign investors by  $T$ . Following graph depicts the whole scenario:



Here, let us consider two places- one with the facilities of a SEZ and another a normal place. In the normal place, there will be additional cost T, which will be per unit cost as without any production this cost will not incur. As this is additional cost, the slope of the normal cost function will be steeper than that of a firm of SEZ. Normal cost curve and SEZ cost curve intersect the Average Revenue or Price curve at point 1 and 2 producing the quantity Q and Q<sub>s</sub> respectively. The investment is denoted by I and the fixed cost is denoted by F. Now, from the graph we find:

$$Q_s > Q$$

$$P * Q_s > P * Q$$

$$P * Q_s - C * Q_s - F > P * Q - C * Q * T - F$$

$$\frac{P * Q_s - C * Q_s - F}{I} > \frac{P * Q - C * Q * T - F}{I}$$

Return on Investment in SEZ > Return on Investment in Normal Place

Above simple mathematical illustration suggests that as the return is higher, investment in the SEZ will be more attractive and FDI inflow would be caused by the establishment of SEZs. In the data analysis part this mathematical framework is supported by statistical proof. If any firm has the profit motive and no other scope related limitations, this mathematical model should always hold. However, firms may have limitations and this aspect is described in the FDI inflow analysis section.

## 4 Data analysis and interpretation

### 4.1 Setting the analysis

Based on the literatures explored for this analyses and research gaps identified, in this section we set the background of the analysis. As per the first research gap, we analyze the data of past thirty years to evaluate the establishment of SEZs in attracting FDI in Bangladesh. From that analysis, we get a clear and concise idea regarding whether SEZs are successful in achieving the first and prime target of causing the FDI inflow. We have used three instrumental variables for expressing the growth in SEZs: Investment, Export and Employment to test the relationship. Following is the graph depicting the data trend over the years:



Figure 4-1: Instrumental Variables

From the above presentation of the data, it is apparent that the data will have Unit Root problem. We have also tested each dataset with ADF test which yielded Unit Root problem for each data set. Then we have transformed the data taking log difference. When we have found no unit root problem with the transformed dataset, only then we have conducted other statistical tests (e.g. Granger Causality Test). Here we will also analyze the alternative options of FDI. We will scrutinize the FDI pattern of the same time period to find the

effectiveness of establishing SEZs in Bangladesh. It will give us the alternatives for FDI, if any, where currently it is getting invested.

At the last part of the analysis, we will conduct an empirical analysis bringing all the examples of the real world SEZs and their FDI attracting capabilities. Through this part, we try to integrate the theories with the real-life experiences.

## **4.2 Relationship of SEZ to FDI**

To evaluate the relationship of the SEZs to FDI, we have taken the example of the EPZs that we have since 1983. The EPZs are taken in this analysis because this is the only form of SEZs that are available in Bangladesh for the time period considered for this analysis. Here for expressing the growth of the EPZs, we have taken three instrumental variables. One is Export from the EPZ, another is Employment in EPZs and the other is Investment in EPZs. The rationales behind taking all of these variables as instrumental variables for the growth of EPZs in Bangladesh are as follows:

- Export is the sales from the EPZ; hence higher the sales, higher the growth and higher FDI in EPZs. Therefore, the year wise FDI inflow behavior should be defined by the variability of the year wise export. But as the export data contain Unit Root problem, we cannot test this variable as the instrumental variable for SEZ development in Bangladesh.
- Employment in EPZ also expresses the growth in flourishing the EPZ which is assumed to be done by the FDI; hence year wise employment should also be able to define behavior of FDI. We have tested the data series for Unit Root Problem<sup>4</sup> and in the first difference level of this variable, found no Unit Root problem. The first difference level of this data set is the year wise employment availability in the SEZ. Hence, we have used this variable in testing the relationship.
- Investment in EPZ, if comes mostly from FDI, it should also be able to define the behavior of FDI inflow. But this data set also has the Unit Root problem disqualifying it from the relationship test.

## **4.3 Causality test**

For testing the causality, we have used Granger Causality test. As specified earlier, the causality of employment with its first difference has been tested against the FDI inflow in Bangladesh. The result of the causality is stated below:

---

<sup>4</sup> For testing the Unit Root Problem, we have used Augmented Dicky Fuller test.

Pairwise Granger Causality Tests  
 Date: 03/28/17 Time: 09:22  
 Sample: 1 30  
 Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
YEAR_WISE_FDI does not Granger Cause D(CUMULATIVE_EMPLOYMENT__N)	27	2.73296	0.0871
D(CUMULATIVE_EMPLOYMENT__N) does not Granger Cause YEAR_WISE_FDI		4.12755	0.0301*

\*- indicates the significance level.

On the basis of the significance level, we reject the null hypothesis that first difference level of cumulative employment does not Granger Cause FDI. However, only on the basis of this test we cannot say that development of SEZ (as employment is a proxy for SEZ) is causing FDI. For proving on the causality, we have to conduct at least some controlled experiments. As the study field does not allow us to do such experiments, we have taken the examples of other developing countries. We have analyzed the development of SEZs and the behavior of FDI inflow in those countries (presented in the later sections).

#### 4.4 FDI to macroeconomic variables

We have seen the predictability of the EPZs' performance in predicting FDI. Now we will check if the macroeconomic variables have anything in attracting FDI into our country. Following variables are selected for this analysis:

1. **Exchange Rate:** This is an important factor which affects the international trade between two countries (Madura 2010). For bringing consistency in terms of the time period, first four years' exchange dollar value is assumed at the growth rate of the period 2004-05 to 2005-06 as these periods are the last available data period.
2. **Inflation Rate:** This is another important factor affecting the value of the host country's currency (Madura 2010).
3. **Foreign Assets:** This variable implies the strength of the host country in paying the import payments. This also inspires the foreign investors to invest in the host country; thus, resulting in FDI (Madura 2010).

We ran a multiple regression with three variables as independent variables and FDI as dependent variable. But inflation rate and the exchange rate do not

have such explanatory power over FDI inflow of Bangladesh. Then we have reduced these two variables and found the following results:

Dependent Variable: D(FDI)  
 Method: Least Squares  
 Date: 03/28/17 Time: 11:36  
 Sample (adjusted): 1988 2015  
 Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.127662	0.182537	0.699374	0.4905
D(FOREIGN_ASSETS)	0.523499	0.166768	3.139089	0.0042*

\*- implying 95% significance level.

Only foreign assets have explanatory power to analyze the behavior of FDI inflow into Bangladesh. Here both the stochastic data set are tested for non-stationarity and transformed accordingly to remove Unit Root problem. After this regression, we have tested for Granger Causality test which yielded the following results:

Pairwise Granger Causality Tests  
 Date: 03/28/17 Time: 11:50  
 Sample: 1987 2015  
 Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
FOREIGN_ASSETS does not Granger Cause FDI	27	4.88694	0.0175*
FDI does not Granger Cause FOREIGN_ASSETS		0.70214	0.5063

\*- implying the significance level.

From the result, we reject the null hypothesis that Foreign Assets does not Granger cause FDI. This result is also consistent with our literature review (Bhattacharya 1998) (Demirhan and Masca 2008).

#### 4.4.1 Interpretation

This result opens up another dimension in our theory that SEZ attracts FDI into any country. There are macroeconomic variables such as foreign assets can also cause FDI inflow. In the experimental analysis of other developing countries this second dimension will be tested. In the light of this analysis we can have the following situations:

1. There are other variables which are contributing in attracting FDI, along with establishing SEZs. This is consistent with the literature by Semil

Shah (2008) which tells us that establishment of SEZs in India has not yielded that much success which was predicted due to other deficiencies. The analysis proves that foreign assets significantly affect the FDI flow in a host country along with SEZs establishment.

#### 4.5 FDI inflow analysis

In this section of the analysis, we see the pattern of the FDI inflow of past 16 years. The purpose of this analysis is to see whether the FDI in Bangladesh is going to its SEZ which is designed for the foreign investors. For this analysis, we use simple graph showing the FDI in EPZ and Non-EPZ area and after that sector wise FDI flow will be shown. The darkest line below of the figure 3.1 implies the FDI in EPZ area, the middle dark line is the FDI in Non-EPZ area and the light dark line above is the total FDI line. Here we see that the flow of FDI in non-EPZ area is more consistent with the total FDI inflow and it is much closer to the total FDI area which means most of the FDI goes to the non-EPZ area.

From the FDI survey by Bangladesh Bank we see the following sectors get most of the FDI (ranked according to the amount) (Bangladesh Bank 2016):

1. Banking Sector- \$ 389.58 million (21.24%)
2. Textiles & Wearing- \$ 351.62 million (19.17%)
3. Gas & petroleum- \$ 199.54 million (10.88%)
4. Telecommunication- \$ 197.22 million (10.75%)
5. Food- \$ 96.59 million (5.27%)

These are first 5 sectors where more than 60% of the FDI is engaged from which more than 40% is in the Banking Sector and Gas & Petroleum sector and these sectors are not included in the list of SEZs sectors. From this point of view, here we find that SEZs are not being able to attract as they are supposed to.

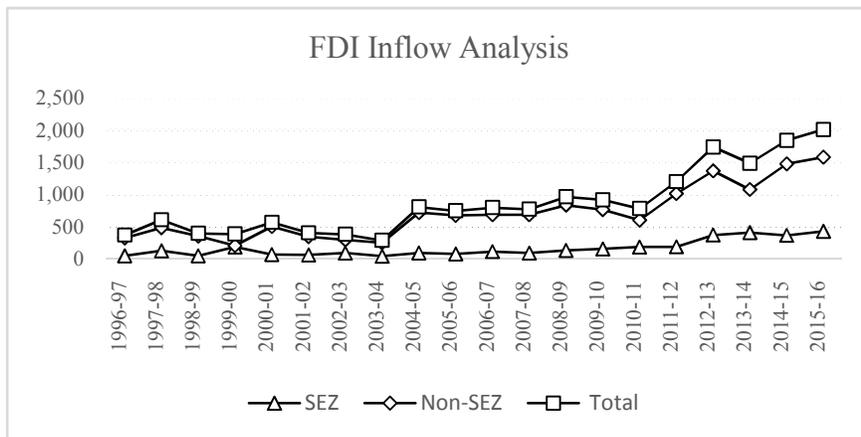


Figure 4-2: Total FDI distribution in EPZ and Non-EPZ  
Source: Bangladesh Bank FDI Survey (2016- January to June)

#### 4.6 Experimental analysis on other developing countries

We have analyzed both mathematically and graphically the attractiveness of FDI to the SEZs implementation. The results prove, though EPZs are attracting FDI, other sectors of Bangladesh are accommodating more of the total FDI. The implication of this finding is that Bangladesh requires more SEZs to attract more FDI.

Now we will see the SEZs of other countries to validate whether the mathematical results are consistent with the real world, or the result is only applicable for Bangladesh.

One of the first countries where the concept of free trade zone has arisen is Honduras. The Maquila concept by which in Latin America and the Caribbean mean the factories which use duty-free materials and equipment to assemble products that are predominantly exported to US market was first implemented in Honduras (Engman 2011). Though started early, the main revolution started from 1998, when all the national area is declared as the free zone area allowing privately owned and managed EPZs (or “ZIPs,” Zonas Industriales de Procesamiento) to be established anywhere in the country. The main objective of SEZs in that country was employment generation and evidently, they have achieved that. Behind the success of the free zone area following factors have been identified:

1. Willingness to evolve the legal framework for the program
2. Effective use of preferential trade agreements
3. Effective institutional support, particularly in marketing and promotion; and, most important, a dynamic, entrepreneurial domestic private sector etc.
4. The most critical success factor according to the researcher is that all the factors came at the nick of time.

These key success factors mostly imply the factors that work outside the country. The preferential trade agreement, the US recession in the early 90's and Honduras's environmentally stable position are outside of the establishment of SEZs. So, the SEZs have enabled this country to take the timely advantage.

We see the same situation in terms of China's investment in Africa. The main objectives identified by the researcher are increasing the demand for Chinese-made machineries and equipment, avoiding export frictions imposed on China's export by European and North American countries, boosting domestic restructuring, creating economies of scale in the overseas economy and the intention of transferring China's success strategy to other developing countries (Brautigam and Xiaoyang, China's Investment in Special Economic Zones in Africa 2011). The government of the continents of Africa is also taking necessary

steps to facilitate China with its initiative. Therefore, SEZs are attracting China's investment and fostering the development process in Africa.

This argument gets weakened when we look at the Free Zones of the Republic of Dominica. It is also one of the countries bringing the concept of free zones from 1960s and was considered one of the glorious success stories in the literatures describing the effectiveness of SEZs. But from 2003, the stagnation of FZs of this country starts because of the oil price rising, global economic slowdown; the impact of September 11, 2001, on tourism; and the collapse of the second-largest Dominican private bank, Baninter. To improve upon this situation, following steps were taken: customs procedures were streamlined, tariffs were reduced, import surcharges and export taxes were eliminated, and new legislation was adopted on government procurement, competition policy, and intellectual property rights and other trade policies were adopted. But again, with the crash of 2008-09, this situation got worse. Till now, this country is not getting what it is supposed to get for the FZs it has implemented (Burgaud and Farole 2011). For Dominica, though they are providing incentives, SEZs are not being able to attract FDI and dependency on foreign fund has worsened the situation.

Therefore, this controlled experiment suggests that SEZ can attract FDI and can cause FDI inflow into the country. The experiment also suggests that the development of SEZs should be accompanied by a structured planning from the government, congenial policies for the investors and SEZs' resilience of any economic downturn of the country. This is consistent with the findings of the literatures studied and our statistical analysis (White 2011). In the next section, we evaluate the decision taken by the Government of Bangladesh regarding SEZs.

#### **4.7 SEZs and Bangladesh**

In 2015, Bangladesh Government approved the plan to establish 24 new Special Economic Zones (SEZs) with a vision to establish 100 SEZs within 2030, create employment of 10 million people and earn \$ 40 billion from exports per year. This step is in coherence with the target of middle income country status within 2021 and a developed country status by 2041 (BEZA 2015). This step will also help to achieve the targets of seventh five-year plan substantially. The newly approved SEZs include other sectors with EPZs, the only SEZs available in Bangladesh for the last couple of decades.

In the brochure of Bangladesh Economic Zone Authority (BEZA) we find that the objectives are set according to vision 2021. This is really a timely and required initiative from the government. For the following evaluation criteria, we have come up with this comment:

- We have seen SEZs' establishment attracts FDI and increasing proper development of SEZs will certainly bring more FDI and foster the economic development.
- The approved SEZs include other sectors such as industrial park, economic zone along with traditional EPZs. From the empirical analysis, we see only EPZs are not efficient enough to attract FDI; hence, including other sectors is expected to cause more FDI inflow.
- In the approved SEZs, some of them are dedicated for the investors of India, Japan and China. This will create an edge for the investors of those countries alluring them to invest in our country and improve the bilateral relations creating more synergies.
- The SEZs can be formed at fully foreign fund, fully domestic fund and partnership of foreign and domestic fund. The Public Private Partnership (PPP) is especially encouraged. This scope will significantly help the domestic investors to boost up their investment. Therefore, the factor endowment of our country is expected to flourish.
- Emphasis on the backward linkage industries with these economic zones is another significant step towards reaping the benefits of giving benefits through SEZs.

There are also some other important implications of this step which are expected to foster the planned development of Bangladesh: employment generation emphasis, establishing social rights of the workers in SEZs, encouraging efficient and effective monitoring and relocation of polluting and unplanned industries.

## **5 Recommendations and further research scope**

Bangladesh is following the path of other developing countries that used SEZs as their economic development ladder. But all the developing countries have not been able to reap the benefits of SEZs. We have shown those reasons in our empirical analysis. In the light of our analysis following recommendations are made:

- There are mainly two types of benefits of SEZs: direct benefits include current account enrichment, export growth, foreign exchange earnings, FDI and increased revenue as well as indirect benefits such as skill upgrading of workforce and management, technology transfers, backward linkages with domestic firms, demonstration effect, export diversification, and knowledge of international markets (White 2011). In BEZA brochure we find only the backward linkages with domestic firms as emphasized objectives but if we cannot get all the other indirect benefits we will not be benefitted more than the costs that we are incurring for these SEZs.

- For skill upgrading of workforce and management, all the foreign firms doing business in SEZs should be required to provide “on the job training” to the employees for a certain period. This is not any new concept. China, Republic of Korea, Malaysia, Mauritius, Sri Lanka, Thailand and Taiwan have such provisions in SEZs (White 2011).
- Labor or employee circulation should be increased among the domestic and foreign firms as in Korea, Taiwan and Ireland. This has increased the development of the domestic firms and lessened the dependency of the foreign funds. Dependence on the foreign funds can be harmful for the host country as we have seen in the Republic of Dominica in our empirical analysis.
- Currently the SEZs, in the form of EPZs that we have should be restructured. By restructuring we mean to change the rules and regulation with taxes and duties and implement the recommendations made for the new SEZs, as our analysis has yielded that FDI is attracted by the establishment of SEZs.

### **5.1 Further research scope**

We have done this analysis based on mostly secondary data that was easily available. Therefore, the authenticity of the data is dependent on the authenticity maintained by the data collection authority. More research can be done in this sector with more variables, cross sectional research methodologies, qualitative analysis etc. to find out the following aspects:

1. Other variables specifically affecting the EPZs of Bangladesh,
2. Current practices in the EPZ in real scenario in terms of reaping indirect benefits,
3. The costs including opportunity and real that Bangladesh is incurring can be identified to make a cost benefit analysis for finding whether the costs are less than the benefits.

## **6 Conclusion**

We have cleared the doubt about the fact that SEZs develop the economy of the host country. Through this analysis, we have been able to find the reasons why SEZs do not perform as they are supposed to, to know where the current FDI of Bangladesh is going and if there is any other factors that affect the FDI inflow, to evaluate the initiative of the government of Bangladesh with the examples of other successful and unsuccessful developing countries and to make some recommendations that are absent in the objectives behind the establishment of SEZs by BEZA. Bangladesh’s history of Economic Zones is successful but has little data and short period to conform to complete accuracy of this success. Further analysis should be made to find more exogenous variables that affect

FDI. Bangladesh should take steps by taking the examples of India and the Republic of Dominica in to consideration because she may not be as fortunate as Honduras. Competition in the world market is rising and our country's status is changing; hence she will no longer be considered as an adorable country that needs help but a steady country that is going to compete in international market. Therefore, the authority needs to be cautious in taking any initiative and SEZs is such an initiative. There lies the scope and background of our analysis.

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## **A Study on Employment of Women in the Government Sector of Bangladesh**

Mohammad Rafiqul Islam<sup>1</sup>

### **Abstract**

The study is aimed to analyze male and female employment ratio in the government sector of Bangladesh focusing on female employment in particular and to also to study the growth trend thereof from 1987 to 2010. Female employment is one of the vital indicators of women empowerment and social development. In 2010 the civil employees of the government were 1078082. Historically the involvement of female persons in formal sector was not bright. Women were mainly engaged in informal sector and a large portion of their contribution is not monetized. The study revealed that female employment in the government sector was being increased gradually. Maximum growth was being occurred in 3rd and 4th class employee level. Ratio of male employee had diminishing trend from 1987 to 2006. Then there was an upward trend of male employees till 2010. At the same time female employees had a constant upward trend from 1987 to 1998. Since 1998 this trend increased fast. Ratio of female employment in government sector increased dramatically in recent years from 2006-2010. Maximum number of female employees were engaged in the health and the education sectors. Some posts in the class-iii are reserved for women. A large quantity of female employment was generated in class-iii level post due to some policy interventions by government. Female employees will nearly be equal to male employees within 20-25 years subject to the condition that other related factors such as socio-economic, political and cultural environment contribute positively or at least not hinder the growth.

### **1.0 Introduction**

#### **1.1 Statement of the problem**

Since independence the government of Bangladesh endeavored to improve the quality of life of women. In the article 29 of the Constitution of Bangladesh, the discrimination on employment in government sector on the basis of gender is strictly prohibited. The government of Bangladesh has ratified the 'Platform for Action Plan' taken in the fourth conference of women held in Beijing in 1995. Various documents of the government, considered as the philosophical instruments, have been approached women as a priority agenda. Lastly Government has formulated 'National Women Development Policy 2008'

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Corresponding author's email: [rafiqueac\\_07@yahoo.com](mailto:rafiqueac_07@yahoo.com)

<sup>1</sup> Mohammad Rafiqul Islam is a Senior Assistant Chief, Secondary and Higher Education Division, Ministry of Education

and Women Development Action Plan. The state has undertaken some packages of arrangements in favour of women development. It is to be noted that the employment of women in the government as well as private sector is not satisfactory despite all these favourable steps. According to 'Report on Monitoring of Employment Survey (MES) 2009' a labour force (above 15 years) 51 million (male 38.5 million and female 12.5 million) out of 53.7 million were engaged in different professions (Economic Review 2011, page 27). It is to be stated that Labour Force Survey (LFS) 2004-05 indicated that a labour force of 47.4 million (male 36.1 million and female 11.3 million) were engaged in a range of professions. In 2002 the civil employees of the government were 930026 (male 825268 and female 104761). In the year 2010 the civil employees of the government became 1078082 (male 850968 and female 227114). Growth rate of civil employee was 16% over the last 8 years. On the other hand the number of female employees has increased by 117% in the same duration. Employment in government sector is highly formal sector of employment for the labour force. The overall development of a country is not possible keeping women outside the mainstream. With this end in view, a numerous policies have been formulated by the Government. Employment is one of the vital opportunities to engage women in economic activities. It will ultimately lead to economic and social development of the country.

## 1.2 Significance of the Study

The size of the economy of Bangladesh is not big enough to employ the entire workforce. As a result a huge number of people remain unemployed outside the boundary of public and private employment capacity. Due to this drawback a sizeable number of Bangladeshi professionals, skilled, semi-skilled and unskilled labour force is very much prone to seek expatriate employment. Historically the involvement of female in formal economic sector is not bright in Bangladesh. Female are mainly engaged in informal sector of economy and a large portion of their contribution remain unmonitized. Data show (Table:1) that more than 85% male labour force are employed. At the same time number of female employee is in upward trend but not up to the mark.

**Table: 1** showing the position of woman in the workforce in Bangladesh

Duration	% of employed male	% of employed female
1995-96	87	15.8
1999-00	84	23.9
2002-03	87	26.1

**Source:** Labour Force Survey 1995-96, 1999-00, 2002-03.

### **1.3 Scope of the Study**

The study has covered only civil employee in the government sector from 1987 to 2010. This sector has included all the Ministries, Divisions, Departments, Directorates, Subordinate Offices, Autonomous Bodies, Corporations, Constitutional Bodies, Offices of the Divisional Commissioners, Offices of the Deputy Commissioners, Field Offices of the various Ministries/Divisions at Divisional, Regional, District and Sub districts level as well as Foreign Missions & Embassies of Bangladesh. Educational institutions under Monthly Payment Order (MPO) are excluded here. Though they are getting greater portion of compensation and fringe benefit from government as like as civil employees but they are not considered as civil employee of Bangladesh. The data used here are secondary.

### **1.4 Objectives**

Employment of female persons is one of the significant indicators of women empowerment and social development. Employment in the government sector is lucrative and suitable to the people of Bangladesh due to its stability and duration. Nature, types and volume of female employment in government sector have changed over time. This paper has made an attempt to attain some objectives. The purpose of this paper is to:

- i) analyze the status of male and female employees in the government sector with special focus on women.
- ii) analyze the growth trend of male and female employees in the government sector from 1987 to 2010.
- iii) recommend some policy interventions/guidelines for enhancement of female employment in the government sector.

### **2.0 Methodology**

This study is mainly descriptive and analytical in nature. All the relevant data and information are collected from secondary sources. Most of them are taken from government publication such as Statistics of Civil Officers and Staff by Ministry of Public Administration; Economic Review by Finance Division; Various Census and Reports of Bangladesh Bureau of Statistics. Data have been selected and analyzed with 04 years interval. Some tables, graphs, diagrams are used for better analysis and representation of data. All the tables, graphs, diagrams are formulated and drawn by using data collected from available secondary sources. Government employees are divided into four classes and 20 grades of National Pay Scale. In this study data are analyzed based on gender, class, duration. All the data are categorized on the head of the four categories of offices- Ministries/Divisions, Departments / Directorates, Divisional / Deputy

Commissioner's Offices, Autonomous Bodies and Corporations based on the available sources of data.

### 3.0 Data analysis

#### 3.1 Male and female ratio

In the year 1987 number of male and female employees were 1037335 and 52998 respectively (100 : 5.1). Class-wise ratio of male and female employees was in class-i 100 : 4.21, class-ii 100 : 3.83, class-iii 100 : 8.78 and class-iv 100 : 1.36. Number of male and female employee were 850968 and 227114 respectively in 2010 (100 : 26.68). The ratio of female employee has been increased by  $(26.68 - 05) = 21.68\%$  during the last 23 years. Only in the last 8 years the ratio of female employee has been enhanced by  $(26.68 - 12.69) = 13.98$ . In the year 2010 the ratio between male and female employee was in class-i 100 : 17.61, class-ii 100 : 15.13, class-iii 100 : 30 and class-iv 100 : 24.57. From the data it is depicted that female employment in the government sector has increased as a whole to a great extent. Maximum growth has been occurred in 3rd and 4th class level. If this trend continues it will reach 50% within next 20 to 25 years.

**Table: 2** showing Male and Female Civil Employees in Government Sector

Year	Class-I		Class-II		Class-III		Class-IV		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1987	61481	2592	33914	1302	488859	42903	453078	6201	1037335	52998
1992	73619	5056	34362	2486	521782	58060	238939	12425	868712	78037
1994	77351	6312	34014	2984	527931	62990	218416	13368	857712	85654
1998	81379	7978	43589	3629	519623	75287	186781	13784	831372	100678
2002	82310	9108	46440	3953	511807	77307	184711	14393	825268	104761
2006	83328	10511	48857	4614	496189	114496	174963	17129	803337	146750
2010	88239	15539	46544	7044	526945	158017	189242	46514	850968	227114

**Source:** Statistics of Civil Officers and Staff, Ministry of Public Administration.

In the Ministries/Divisions 16% employees were female and 84% employees were male. One fourth employee was female in Departments/Directorates and their Subordinate Offices. But the scenario was opposite in Divisional/Deputy Commissioner's Office and Autonomous Bodies & Corporations having only 8% female employees.

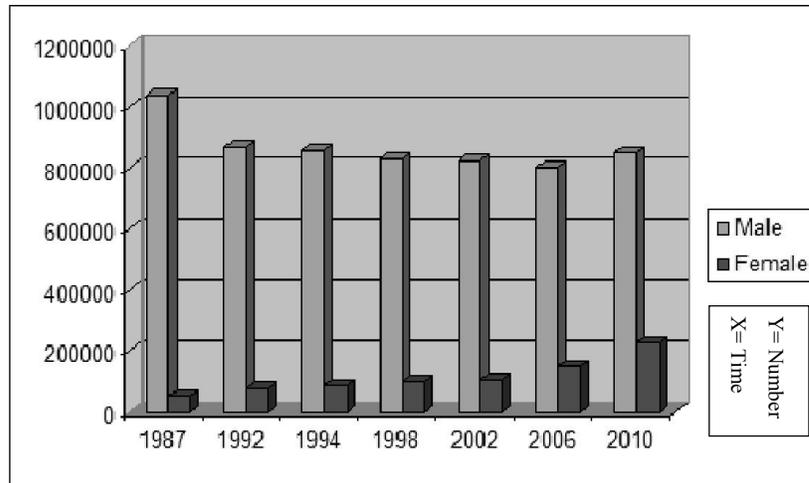
**Figure 1:** Ratio of Male & Female in  
the Ministries & Divisions

**Figure 3:** Ratio of Male & Female in  
Divisional & Deputy Commissioner's  
Offices

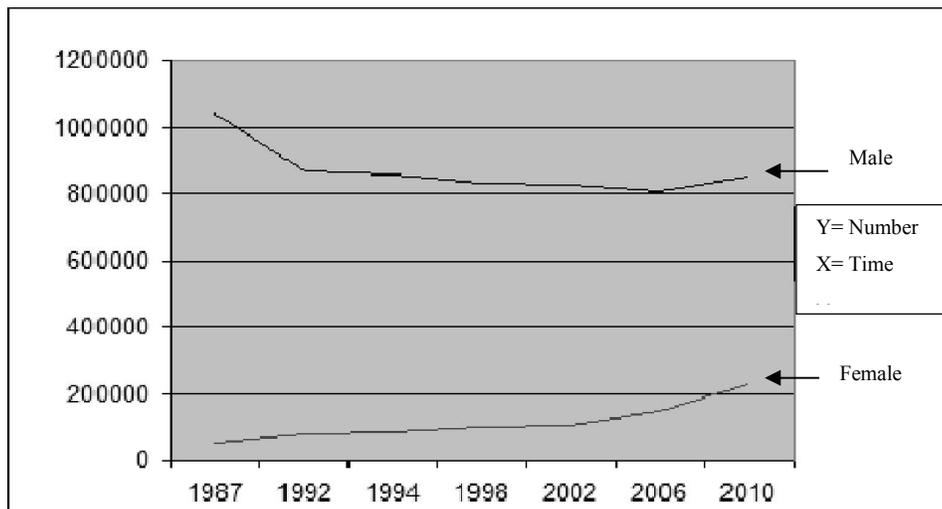
**Growth rate of male and female empl**

The number of female employees  
by 328.58% within last 23 years. In the

female employees had increased from 146750 to 227114 (54.78%) (Table: 2). The number of male employees had diminishing trend from 1987 to 2006. There had been an upward trend in the number of male employees up to 2010 (Figure-5).



**Figure 5:** Growth rate of male and female employee from 1987 to 2010.



**Figure: 6** Growth trend of male and female employee from 1987 to 2010.

At the same time the number of female employees had a constant upward trend from 1987 to 1998. From 1998 and onward this trend had increased fast (Figure: 6).

### **3.3 Class-wise female employees:**

Maximum number of female employees were engaged in class-iii in the departments and directorates and their Subordinate Offices. The class-iii female employees were 149742 (65.93% of total) out of 227114 (Figure: 7, Table: 2.1). Most of them were employed in health and education sector under the directorate of health, directorate of family planning, directorate of primary education, directorate of secondary and higher education. Under the directorate of health 26516 employees (33% of total) were female out of 79800 employees, and there were 2413 employees in the class I post (21% of total) were female out of 11257 employees and in the class III post 18430 employees (38.53% of total) were female out of 47829 employees. In the directorate of secondary and higher education 6898 employees (28.64% of total) were female out of 24080 employees and in the class I post 3497 employees (27.71% of total) were female out of 12617 employees. Under the directorate of family planning 33981 employees (70% of total) were female out of 48553 employees, and in the class I post 317 employees (31.35% of total) were female out of 1011 employees and in the class IV post 27673 employees (87.47% of total) were female out of 31634 employees (Statistics of Civil Officers and Staff, 2010). Among the female employee in class-1 was 6.84%, class-ii was 3.1%, class-iii was 69.58% and class-iv was 20.48% in the government sector. It is clearly noted that highest number of female employees were engaged in the class-iii level as a whole. Rate of change during the last 23 years in the class-1 post was 499.53%, Class-ii post was 441%, Class-iii post was 268.31% and Class-iv post was 650%.



1995	49	-	49	1	244	3	652	7	1474	129	2379	237
1999	48	1	54	1	271	4	652	7	1856	193	1757	196
2001	49	1	58	-	257	5	697	25	1874	192	1881	256
2004	49	-	81	2	280	10	722	47	1692	238	1454	232
2008	59	1	75	1	358	26	1422	166	1284	211	1101	258

**Source:** Public administration computer centre, 15 September 2008.

These are government posts beyond the particular cadre post of Bangladesh Civil Service (BCS). The jobholders in these posts play crucial role in government decision making and policy formulation process. The data represent a positive trend of female involvement in this process of the government.

### **3.5. Female employment and quota system**

As per government rules, 10% quota is reserved for female candidates in 1<sup>st</sup> class & 2<sup>nd</sup> class post and 15% quota is reserved for female candidates in 3<sup>rd</sup> class & 4<sup>th</sup> class post in government sector. But 60% quota is reserved for female candidate in the post of assistant teacher of government primary school and 30% quota for government secondary school. Some posts in the class-iii are very much specialized in nature for female such as Nurse, Family Welfare Visitor (FWV), Family Welfare Assistant (FWA), Aya etc. This reservation of quota and specialized nature of job has a great contribution to female employment in 3rd & 4th class post in the government sector.

### **4.0 Discussion**

Some important points of findings are drawn from the analysis and review of the relevant data. These are as follows:

- i) Only 2% manpower is employed in the government sector out of the total employed labour force.
- ii) Number of female employees in government sector increased dramatically in recent years from 2006 to 2010 compared to previous two decades before that.
- iii) Maximum number of female employees was engaged in the 3rd class post (69.58%) and the health and education sector were highest in 2010. Second position was class-iv post (20.48%) then.
- iv) Some posts are specially filled by female personnel such as Nurse, Family Welfare Visitor (FWV), Family Welfare Assistant (FWA), Aya etc due to specialized nature of job suitable & fit for women.

v) In general 10% quota is reserved for female candidates in 1<sup>st</sup> class & 2<sup>nd</sup> class post and 15% quota is reserved for female candidates in 3<sup>rd</sup> class & 4<sup>th</sup> class post in government sector. In addition to that 60% quota is reserved for female candidates in the post of assistant teacher of government primary school and 30% quota for government secondary school. This quota system has a great contribution to the enhancement of female employment in government sector.

vi) Since there was no special quota reservation and no specialized nature of job suitable and fit only for women in class i & class ii post, female employment was not satisfactory here only having 6.86% and 3.1% respectively in this level. This rate was very much insignificant compared to 3<sup>rd</sup> class and 4<sup>th</sup> class post.

vii) Without quota reservation either general or special, female employment in government sector might be around 50% of the existing female employees in 2010.

viii) Female employees will nearly be equal to male employees within 20 to 25 years subject to the condition that other related factors such as socio-economic, political and cultural environment will contribute positively or at least will not hinder this growth.

ix) Sometime family and social reasons may hinder the female from formal employment. They cannot manage the dual role of a mother and wife or a jobholder. As a result, some women are not interested to get a job in government sector through competitive examination process or may quit the job due to family and other pressure. A case study is illustrated to realize the situation in the Annexure-A.

x) Above all, policy intervention by the government and some sorts of assistance to female in the form of social safety net like stipend to female students has a great contribution to enhancement of women employment in formal sector like government sector.

## **5.0 Recommendation and conclusion**

Employment of female in government sector has increased gradually. This trend is very positive for women empowerment and women participation in government decision making process. But the ratio of female employment is not yet reasonable and satisfactory. From the analysis of data some policy interventions and guidelines are recommended for further action of the government. These are as follows:

i) The quota system has been adopted by government to make some positive discrimination for the enhancement of under privileged section like women

in the government employment. As a result, a significant contribution has been visualized in this area. So quota for female in the government employment may require to be continued up to next 20 years.

ii) Some hazards have been faced by female employees for their biological nature, family requirements and intensive care needed for their children. Most of the women feel very much discomfort in the working environment due to lack of sufficient health and sanitary arrangements. These issues should be addressed and institutional facility should be established and developed to overcome these problems for attracting more female employment in government sector.

iii) Education is the precondition to get employment in the government sector. Government has taken some initiatives to enroll more female students in education for balanced human development. It is to be noted that enrolment of girls in primary, secondary, and higher secondary levels outreached the boys. But dropout rate of girls is higher than that of the boys. So some special arrangements and initiatives in the form of social safety net should be continued and strengthened.

A female has to do job in the government sector along with a huge responsibility in her family and social life. Normally she is not in a position to avoid home making activities and entertainment of family guest. Actually she has to bear more responsibility in this area compared to her counterpart male employee. Trend of female involvement in the responsibility shouldering job in the government sector has brightened gradually. In the near future contribution of female in the government sector will be significant and fruitful. It will ensure actual economic and social development of the country.

## Annexure-A

### A case study

Mrs. Lyle Begum graduated and post graduated from the University of Dhaka. Before marriage she worked in a NGO. After getting married she tried to get a job in the government sector and took part in the various competitive examinations. Her husband also graduated and post graduated from the University of Dhaka. He was a banker and got handsome compensation packages from his job. A few years later she got a job in the government primary school as Headmistress in Munshigonj district. Her husband was posted to Narayangonj and resided in Jtrabari, Dhaka. She joined the job in Sreenagar, Munshigonj and became pregnant after one year of her job. A son was born. She joined the job again after completing her maternity leave. During office time her mother looked after her child. Her mother was busy with her family matters and did not pay due attention to her grandchild. The child was busy playing with toys instead of other children most of the time. At the age of two, Lyle Begum noticed that her son was not trying to utter a word that was usually done by other children of the same age. After few days she was feeling guilty for her child not growing well. She went to various prominent doctors to consult the issue about her child. The doctors advised her to spend more time with her child and to interact with him more and more verbally. After following this modality some improvement has been occurred. In consultation with family members she decided finally to leave the job for more physical and mental attachment with her child. That ultimately helped her reducing speech problem of her child. Here problem might not be correlated with the job of the mother rather there might have been other medical grounds. But the mother not the father had to leave the job.

### Appendices

**Table: 2.1.** Showing the male and female civil employees in Government sector (2010)

Name of Office	Class-I		Class-II		Class-III		Class-IV		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Ministries/ Divisions	1726	435	1597	277	1939	313	1966	315	7228	1340
Departments/ Directorates	42048	9546	17255	3866	433183	149742	111338	42072	603824	205226
Divisional/Deputy Commissioner's Office	1358	248	88	0	11544	940	13348	1124	26336	2312

<b>Autonomous Bodies and Corporations</b>	43107	5310	27604	2901	80279	7022	62590	3003	213580	18236
<b>Total</b>	<b>88239</b>	<b>15539</b>	<b>46544</b>	<b>7044</b>	<b>526945</b>	<b>158017</b>	<b>189242</b>	<b>46514</b>	<b>850968</b>	<b>227114</b>

Source: Statistics of civil officers and staff, 2010

**Table: 2.2.** Showing the male and female civil employees in Government sector (2006)

Name of Office	Class-I		Class-II		Class-III		Class-IV		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
<b>Ministries/ Divisions</b>	1588	335	1606	245	1937	308	1896	288	7027	1176
<b>Departments/ Directorates</b>	36575	5695	18722	1716	390222	107337	87522	12589	533041	127337
<b>Divisional/Deputy Commissioner's Office</b>	1543	198	127	0	13006	869	14434	1004	29110	2071
<b>Autonomous Bodies and Corporations</b>	43622	4283	28402	2653	91024	5982	71111	3248	234159	16166
<b>Total</b>	<b>83328</b>	<b>10511</b>	<b>48857</b>	<b>4614</b>	<b>496189</b>	<b>114496</b>	<b>174963</b>	<b>17129</b>	<b>803337</b>	<b>146750</b>

Source: Statistics of civil officers and staff, 2006

**Table: 2.3.** Showing the male and female civil employees in Government sector (2002)

Name of Office	Class-I		Class-II		Class-III		Class-IV		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
<b>Ministries/ Divisions</b>	1761	285	1697	212	1930	290	1989	264	7377	1051
<b>Departments/ Directorates</b>	35305	5171	14837	1304	399428	69610	90679	9813	540249	85898
<b>Divisional/Deputy Commissioner's</b>	1534	140	124	0	13771	789	17213	963	32642	1892

Office										
Autonomous Bodies and Corporations	43710	3512	29782	2437	96678	6618	74830	3353	245000	15920
Total	82310	9108	46440	3953	511807	77307	184711	14393	825268	104761

Source: Statistics of civil officers and staff of Government of the People's Republic of Bangladesh, 2002

**Table: 2.4.** Showing the male and female civil employees in Government sector (1998)

Name of Office	Class-I		Class-II		Class-III		Class-IV		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Ministries/ Divisions	1802	249	1663	152	1998	325	2118	246	7581	972
Departments/ Directorates	34791	4680	14043	1310	402219	68333	91106	9676	542159	83999
Divisional/ Deputy Commissioner's Office	1835	128	100	0	14347	643	17652	818	33934	1589
Autonomous Bodies and Corporations	42951	2921	27783	2167	101059	5986	75905	3044	247698	14118
Total	81379	7978	43589	3629	519623	75287	186781	13784	831372	100678

Source: Statistics of civil officers and staff of Government of the People's Republic of Bangladesh, 1998

**Table: 2.5.** Showing the male and female civil employees in Government sector (1994)

Name of Office	Class-I		Class-II		Class-III		Class-IV		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Ministries/ Divisions	1754	209	53	13	3379	376	2275	225	7461	823
Departments/ Directorates	30965	3663	11475	1343	392160	56019	107572	9588	542172	70613
Divisional/ Deputy	1886	94	111	1	14849	513	17762	656	34608	1264

Commissioner's Office										
Autonomous Bodies and Corporations	42746	2346	22375	1627	117543	6082	90807	2899	273471	12954
<b>Total</b>	<b>77351</b>	<b>6312</b>	<b>34014</b>	<b>2984</b>	<b>527931</b>	<b>62990</b>	<b>218416</b>	<b>13368</b>	<b>857712</b>	<b>85654</b>

**Source:** Statistics of civil officers and staff of Government of the People's Republic of Bangladesh, 1994

**Table: 2.6.** Showing the male and female civil employees in Government sector (1992)

Name of Office	Class-I		Class-II		Class-III		Class-IV		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Ministries/ Divisions	1711	154	45	6	3787	345	2144	199	7687	714
Departments/ Directorates	27954	2849	9486	1072	376580	50159	136446	8123	550476	62203
Divisional/ Deputy Commissioner's Office	2043	76	173	0	15674	446	17627	623	35517	1145
Autonomous Bodies and Corporations	41911	1977	24658	1408	125741	7110	82722	3480	275032	13975
<b>Total</b>	<b>73619</b>	<b>5056</b>	<b>34362</b>	<b>2486</b>	<b>521782</b>	<b>58060</b>	<b>238939</b>	<b>12425</b>	<b>868712</b>	<b>78037</b>

**Source:** Statistics of civil officers and staff of Government of the People's Republic of Bangladesh, 1992

**Table: 2.7.** Showing the male and female civil employees in Government sector (1987)

Name of Office	Class-I		Class-II		Class-III		Class-IV		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Ministries/ Divisions	1521	110	26	03	3230	209	1859	133	6636	455
Departments/ Directorates	25106	1041	10083	324	384721	37099	282106	3977	608836	42441

<b>Autonomous Bodies and Corporations</b>	34854	1441	23805	975	100908	5595	262293	2091	421863	10102
<b>Total</b>	61481	2592	33914	1302	488859	42903	453078	6201	1037335	52998

**Source:** Statistics of civil officers and staff of Government of the People's Republic of Bangladesh, 1987

Table: 4.1. Showing the distribution of quota in Government service.

No.	Various types of Quota	For 1st & 2nd class post (%)	For 3rd & 4th class post (%)
1.	<b>Merit Quota</b>	45	-
2.	<b>Inhabitants of Orphanage and Physically disabled (Excluding District Quota)</b>	-	10
3.	<b>District Quota (As per the population of district)</b>		
	a) <b>Freedom Fighter Quota</b>	30	30
	b) <b>Female Quota</b>	10	15
	c) <b>Tribal Quota</b>	5	5
	d) <b>Member of Ansar and VDP</b>	-	10
	e) <b>Remaining (General candidate of district)</b>	10	30
	<b>Total</b>	<b>100%</b>	<b>100%</b>

**Source:** O and M Manual 2009, page-311, Ministry of Public Administration

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## **Analysis of Adaptation and Mitigation Strategy of Bangladesh in Relation to Sustainable Built Environment**

A.K.M Fazlul Hoque<sup>1</sup>

### **Abstract**

This article introduces adaptation and mitigation strategy of Bangladesh as the national policy framework, assesses the strength and weakness and proposes some key ideas in relation to sustainable built environment. Government emphasizes on adaptation considering rural necessity rather than mitigation as opposed to present international focus. Secondly, there is lack of coordination in adaptation and mitigation activities. However, Bangladesh was placed *first* position in NAPA documentation in 2005 among the LDCs though NAPA ignored community's observation and experiences. Formulation of BCCSAP in 2009 was another 'living document' to properly address the adaptation and mitigation strategies through technological innovation and financing. Adaptation and mitigation comes hand in hand with some opportunities and threats. In addition, preventive adaptation always prevails on last moment emergency mitigation. Therefore, adapt and mitigate 'NOW', ensure a strong link to adaptation and mitigation with sustainable development, incentives on renewable energy and electricity generation, integrated urban solution, research & development and establishment of the code of sustainable built environment can make differences and can help in achieving national objectives.

**Keywords:** Adaptation, Mitigation, Sustainable, Built environment.

### **Introduction**

Adaptation can be defined as adjustment in ecological, social, or economical systems in response to actual or expected climatic stimuli and their effects or impacts - either beneficial or adverse (Smit and Olga, 2001, 881). Assessments of Impacts and Adaptations to Climate Change (2007) demonstrated that the adjustment process refers to learning about risk, evaluating alternatives response, revising suitable conditions for adaptation, and utilizing resources. A worker shifting from one business to another which is well suited to the respective environment is an example of adaptive process. Adaptation programs sometimes lead to sound mitigation and, successively, many mitigation options can promote adaptation also. On the other hand, IPCC (2001) defines mitigation as "anthropogenic intervention to reduce the sources or enhance the sinks of greenhouse gases." According to Danga, Michaelowaa and Tuanb (2003, 81-96),

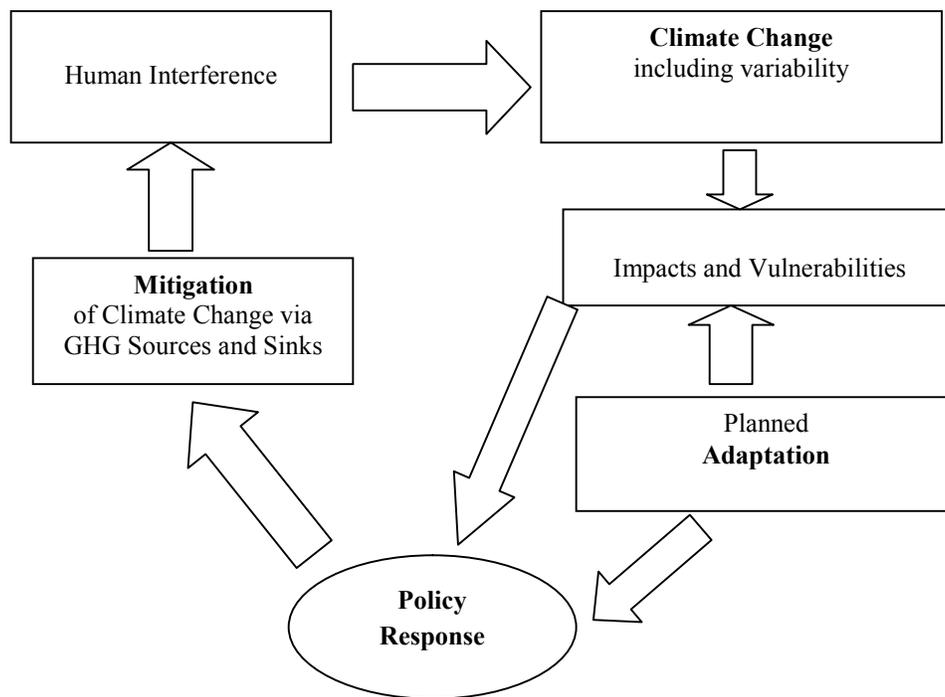
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Corresponding Author's email : [hoque15441@gmail.com](mailto:hoque15441@gmail.com)

<sup>1</sup> Deputy Director (Planning and development), Bangladesh Civil Service Administration Academy, Shahbag, Dhaka-1000

adaptation is used as a substitute for mitigation. Both of these are closely associated with each other-the more mitigation earlier adopts, the less adaptation later (Ayers and Huq, 2008). There is a growing trend of policy formulation in adaptation cost but mitigation research remained still in its initial state (Fankhauser, 2009, 3-4).

It is well recognized that Bangladesh is one of the most climate vulnerable countries in the world. Loss of life, infrastructure and economic assets, and severely impact on lives and livelihood are very regular phenomena of this territory. Adaptation and mitigation strategy in relation to policy issues are closely linked in areas of sustainable development (Figure:1). Due to proper adaptation and mitigation strategy; problems of sustainable built environment issues will exacerbate day by day. The challenge of Bangladesh now is to scale up the investments to create a sustainable built environment for the economic and social development of the country in the face of climate change.



**Figure 1:** Adaptation and mitigation to climate change in sustainable development (Smit and Olga, 2001, 881-882).

For Bangladesh case, the National Adaptation Program of Action (NAPA) was prepared according to the guidelines of the Conference of the Parties (CoP7) of the United Nations Framework Convention on Climate Change (UNFCCC) (MoEF, 2005, 3). Bangladesh is one of the most vulnerable LDCs to climate change due to its natural geographical settings, lack of institutional capacity, low investment, and excessive dependency on natural resources. All development policies of our country are greatly affected by climate change. Climate change is inevitable and challenges are also enormous but not unconquerable. However, much research on adaptation and mitigation policy issues in the light of Bangladesh has been done in segregated way and they failed to find out the crucial need of the challenge of climate change. To diminish those crucial challenges, strategy and policy are urgently needed in adaptation, mitigation and sustainable environmental development area. This paper represents a new approach in existing policy framework and critical analysis of the framework of that policy in relation to the strategy is taken.

### **Literature review**

Adaptation and mitigation offer a window of opportunities to revisit sustainable development strategies from a new perspective. Ayers and Huq (2008) revealed that mitigation and adaptation can bestow on sustainable development achievement in climate policy and practice issues. Mitigation study mainly concentrated on technological and economic issues through 'top-down' approach to limit 'greenhouse gases for a long time. However, adaptation research focused on local and situation based analysis is done to keep down immediate and short-term effects in most vulnerable countries. People, property, economic activities and environmental resources are at risk due to climate change (Fankhauser, 2009). It is evident from the study of Danga, Michaelowaa and Tuanb (2003, 81-96) that put into action of adaptation side by side with mitigation is a debatable issue from political, environmental and economical point of view. They also found that higher the aspiring target of adaptation and mitigation, higher the cost of implementation. Several other studies manifested that till today, mitigation and adaptation have been given little attention in planning process of national sustainable development agenda in many developing countries. However, some important benefits have been imparted, if mitigation and adaptation are implemented and integrated. These two strategies are deemed as mutually exclusive at worst and parallel at best.

IPCC (2014, 6-7) emphasized that climate change risk is reduced and managed through complementary strategies of adaptation and mitigation activities for sustainable environment. IPCC (2007) revealed that more extensive adaptation is badly needed to curb vulnerability to climate change because of

unknown barriers and limiting factors. In addition, integrated approaches link to adaptation and mitigation with other societal objectives largely contribute in effective implementation of proper policies and cooperation in all scales. IPCC (2007) also disclosed that vulnerability to climate change, green house gas emissions, and magnitude of adaptation and mitigation are strongly influenced by livelihood, lifestyles behavior and culture.

According to International Finance Corporation (IFC, 2010, 3) it is divulged that globally adaptation is more a public sector focused issue than mitigation. It is a crying need to fulfill adaptation and mitigation priorities of developing countries even by the private sector expertise in technology and service delivery arena.

### **Aim of study**

The aim of the study is to develop a policy framework in relation to the delivery of sustainable built environment for Bangladesh with special reference to ‘Adaptation and Mitigation’.

### **Objectives of the study**

The specific objectives of the study are as follows:

- a) To understand the current policy framework of adaptation and mitigation perspective in sustainable built environment for Bangladesh.
- b) To critically analyze and review the current policy framework of adaptation and mitigation strategy in sustainable built environment.
- c) To recommend some priority policy issues of adaptation and mitigation in response to upcoming challenges and to formulate a high-vision, well-suited policy framework from local, national and international perspective.

### **Limitation and scope of the study**

The study on ‘Analysis of Adaptation and Mitigation Strategy in Sustainable built Environment’ for more often natural calamity stricken developing country like Bangladesh was not easy. Notwithstanding the continuous efforts, this particular research has few limitations to review. Lack of available data on sustainable built environment in relation to adaptation and mitigation aspects restrained the selection of factors and indicators involved. No previous comprehensive study outcome was found to analyze for Bangladesh case. In addition, time and pertinent information constraints may affect the validity of the study findings, though expert interviewees were badly needed on the relevant issues.

Future study covering comprehensive data collection survey from different Government and Non-government departments/institutions, financial and regulatory body, commercial private organizations, academicians, researchers, policy takers and policy makers are recommended. Widening the factors involved and expand analysis domain of those factors and their relevant strength and weakness may be considered for further study. Scope of research can be extended through conducting econometric and financial impact on sustainable built environment in relation to adaptation & mitigation strategy with or without encompassing other developing country perspectives.

## **Methodology**

This study was carried out on the basis of secondary data such as published books, magazines, journals and newspapers, newsletters, official directories, manuals and adaptation & mitigation reports and brochures, archival records of government and private sector organization. Relevant Acts, Rules and Regulations of Bangladesh, articles and reports on climate change adaptation and mitigation were also taken into consideration. Internet was very important secondary sources of information for this research work. Original information was taken through utmost care with sincerity. For ensuring authenticity and reliability, Portable Document Format (PDF) articles for data and information were taken into consideration and editable documents and spam sites were avoided carefully. As proofs of evidences, exact URL along with date were noted down to retrace the same documents for proper referencing. Relevant information and data would be analyzed by a combined approach of content analysis and descriptive statistics. Quantitative and qualitative data from secondary sources were utilized for analysis of descriptive statistics.

## **Outline of existing adaptation and mitigation policy**

Bangladesh, like other LDCs, is least responsible for cause of climate change (Venema and Cisse, 2004, 47-63) but severely affected by it. Increasing awareness is the first and foremost initiative by national drive to climate change with a focus on adaptation rather than mitigation. During mid 1980s, these awareness programs were found in civil society groups and some NGOs (e.g. Bangladesh Centre of Advance Studies, BCAS) activities but not seen as government policy or programs. Bangladesh Centre of Advance Studies (BCAS) acts as a bridge between government and other NGOs in climate change efforts. Government has formulated two important documents such as Comprehensive Disaster Management Program (CDMP) in 2003 and National Adaptation Plan of Action (NAPA) in 2005. CDMP was adopted to lessen the vulnerability of natural and anthropogenic problems along with climate change impacts. Likewise, NAPA was designed to pay attention to the adverse impacts of climate change and to boost sustainable development of the country (MoEF, 2005, 4). The NAPA document covered 6 sectors: a) Water, coastal area, natural disaster

and health b) Agriculture, fisheries and livestock c) Biodiversity, forestry and land use d) Industry and infrastructure e) Food security, livelihood, gender and local governance and f) policies and institutions. Identification and analysis of problems of adaptation, preparation of framework for those and find out the adaptation necessities are the core task of NAPA document (MoEF, 2005, 5).

Bangladesh Climate Change Strategy and Action Plan (BCCSAP) has been formulated in 2009 to overcome the hurdle of climate change effects and impacts (MoEF, 2010, 1- 6). The BCCSAP was considered a 'living document' in implementation of adaptation and mitigation along with in-depth understanding of the phenomenon (MoEF, 2009, xiii). In order to address Climate change adaptation and mitigation through technological innovation, and financing, climate change trust fund (CCTF) was set in 2009. This 10-year Action Plan (2009-2018) has taken many projects in adaptation and mitigation arena such as food security and health, social protection, comprehensive disaster management, infrastructure, low carbon emission, capacity building and institutional empowerment by the financial assistance of CCTF. Bangladesh generate very negligible amount of carbon emission now. However, demand for energy consumption is increasing with increasing trend of economic development. To ensure energy security, government encourages more energy production and utilization of conventional energy sources. In addition, importance is also given on coastal greenbelt, social reforestation and renewable energy such as solar panel, and biogas plant for adaptation and mitigation strategy. Other mechanisms such as Reducing Emission from Deforestation and Forest Degradation (REDD), Clean Development Mechanism (CDM) and needed technology transfer from developed countries can be applied to keep low carbon generation paths. Bangladesh has placed its Initial and Second National Communication report to the UNFCCC secretariat in 2002 and 2012 respectively. The second report has affirmed the ultimate dedication of the government to achieve its goal and objectives in low carbon development (MoEF, 2012, 85-99).

### **Existing policy framework**

The National Adaptation Plan of Action was formulated in Bangladesh to adapt and sustain with the increase in temperature, sea level rise, and other natural and manmade calamities such as flood, salinity and drought. Different climate Models reported that there was a steady increase in temperature along with some seasonal variations. One Model reported that the trend of average increase in temperature would be 1.3<sup>0</sup>C and 2.6<sup>0</sup>C in 2030 and 2070 respectively (MoEF, 2005, 10). In addition, increasing or decreasing precipitation would play a crucial role on climate impacts resulting in water related disaster.

It is observed that country's economic growth is often halted and challenged by climate change. Frequent floods, cyclone, storm, droughts play havoc with the development and economy of the nation and thus jeopardize the future economic well-being and livelihoods of the people (MoEF, 2009, 1-13).

This Action Plan, important segment of overall country development strategy, is based on the four building blocks of Bali Action Plan- adaptation, mitigation, technology transfer and timely and adequate flow of investment fund. As adaptation is the short and medium term priority agenda for Bangladesh; putting the Bali roadmap into action, deep cut of GHGs emissions will be long-term expected agenda for climate resilience. The cornerstone of the Initial National Communication (INC) was on effects and vulnerability of climate change and on emission inventory, whereas the Second National Communication (SNC) emphasized both on INC report plus adaptation and mitigation issues. This document provides ideas, policies and actions on mitigation and its challenges and thus considered as a landmark event for Bangladesh (MoEF, 2012, 96-97). The emission inventory of GHGs was prepared from five major sectors such as energy (biomass burning, transport sector), industry (cement, fertilizer, paper and pulp), agriculture (ruminant livestock, manure management, wet rice cultivation), waste management and changing pattern of land use. It is estimated that in 2005, per capita carbon emission was 0.23 ton per year and total population was 137 million. From 2005 to 2030, total emission including all segments of GHGs measured by using LEAP Model and found that yearly growth was 2.96 percent and among them energy sector was the highest (6.39%) (MoEF, 2012, 90-91). To meet the target of 80% reduction of global emission by 2050, Bangladesh as a signatory of Kyoto Protocol, set a comprehensive carbon emission goal. Since renewable energy in the form of biomass comprises 35-60 of total energy use, government can achieve this target by utilizing renewable energy sources through 5% of total power demand by 2015 and 10% by 2020 (Power Division under MPEMR, 2008, 3-8). Therefore, low carbon development initiative taken by Bangladesh is regarded as a stepping stone for sustainable economic development.

### **Critical review of existing policy**

Integration of adaptation and mitigation plans into national policy approach is badly needed for international negotiations. International efforts in climate change impacts largely concentrate on mitigation issues especially in reduction of emissions of green houses gases (GHGs). Due to lack of political commitment, northern initiative was not available and in some cases, irrelevant for Bangladesh's priority policy agenda (Ayers and Huq, 2008). As government's focal point on adaptation due to rural priority consideration rather than mitigation, international incentives were out of hand in action. Here government's action plan could not meet with national strategy. Likewise, there is absence of concentrated efforts in adaptation along with disaster risk reduction management and mitigation activities in which former was coordinated by Department of Environment and later was organized by a high-powered body and MoEF. Despite this, Bangladesh has made notable achievement in adaptation especially in disaster risk reduction. In case of NAPA documentation, Bangladesh was placed in first position among the LDCs to the UNFCCC.

However, lack of awareness, inappropriate incorporation of climate change effects into development policy, planning and programs and scarcity of sufficient tools, knowledge and ineffective methodology act as barrier in implementation of NAPA.

Some new action areas were included in BCCSAP document such as water resources and its management, low carbon development paths, development of institutional and human capital in addition to adaptation for identifying intervention sector and proper management of investment through research and knowledge sharing (MoEF, 2009,1-13). It is both a core policy, strategy and action thrusts in response to the risk of climate change (MOEF, 2012, 85-99). In addition, this action plan considered the priorities of the poor and vulnerable, including women and children in its all activities. However, NAPA ignored community's observation and experiences.

Government has framed its vision and policy statement – ‘electricity for all by 2020’ in February 2000 in phases because of constitutional obligation (Article 16 of ‘The Constitution of the People’s Republic of Bangladesh’). However, at present national electricity coverage is only 76 percent. So, mitigation activity must be coinciding with energy security. Otherwise, low carbon development is not possible in response to the Kyoto Protocol and UNFCCC guidelines. Though Bangladesh has some success story in adaptation activities among LDCs. Till today, Bangladesh has no carbon emission policy, Rules, Regulation or Act or no binding targets, both now and in the future. On the other hand, UK Climate Change Act, 2008 clearly set some short and long term targets such as 34% cut by 2020 and 80% reduction in GHGs emission from 2009-2050 respectively and to reach these targets, five-year ‘carbon budget’, ‘green deal’ and ‘low-carbon transition plan, 2009 for heavy industry’ were established (Bowen and Rydge, 2011, 17-18). Government of India (2008, 1- 6) identified eight core ‘national mission’ including ‘Green India’ which deals with afforestation of 6 million of degraded forest area and increased new coverage from 23% to 33% inside Indian border.

## **Conclusion and way out for reforming policy**

Adaptation and mitigation activities have appeared and operated independently in Bangladesh (Ayers and Huq, 2008). Without planned adaptation and mitigation program, people will cope up with the changing conditions of sustainable built environment by huge cost and residual damage or harm (Smit and Olga, 2001, 881). These two strategies and comprehensive approaches are significantly important for managing sustainable built environment. It is evident from the study that the more mitigation now, the less adaptation in future. Government emphasizes more on adaption than mitigation due to local needs and priority consideration. In addition, Bangladesh has made significant advancement in NAPA documentation in 2005 and formulation of BCCSAP in 2009.

However, lack of coordination among different government departments, institutions and non-government organizations is frequently observed. There is no magic bullet in mitigation and adaptation policy in solving the adverse impacts of climate change. It can be concluded that the following recommendations may help the policy makers, and researchers to meet the new challenges and to formulate a high-vision, well-suited policy framework from local, national and global perspective.

### **Adapt and mitigate ‘now!’**

Adaptation and mitigation bring about both opportunities and threats. Effect of climate change cannot be completely avoided. Burton’s views on coercive and last-moment emergency is less effective, inappropriate and more costly than preventive adaptation (1996 cited in Smit and Olga, 2001) that supports the proverb ‘ A stitch in time saves nine.’

### **Link adaptation and mitigation with sustainable development**

Threats of adaptation and mitigation activities often force to underscore development goals. Without adaptation and mitigation, development is impossible. However, without development, adaptation and mitigation are useless. Strengthening cooperation among implementation institutions plays vital role in this regard.

### **Providing conditions for enabling adaptation and mitigation**

Scare resources, poor governance, weak institutional arrangement, and lack of relevant knowledge interfere in the path of adaptation and mitigation strategy. Therefore, favourable condition is a must to enable the adaptation and mitigation process.

### **Increase consciousness and knowledge based society**

Both consciousness and knowledge are critical issues for climate change and its potential risks, technical know-how, and vulnerability in adaptation and mitigation. Protection and preservation of natural resources will act as an added advantage.

### **Strategy should be case sensitive and place-specific**

GHGs emission varies with type and nature of environment along with design, construction materials, and other associated factors contributed in the adverse effects of climate change. Therefore, green deal strategy must be compatible with case sensitive and place-specific involving other risk factors in risk.

### **Incentives on renewable energy and electricity generation**

Renewable energy can be utilized as alternative source to meet the challenges of energy security. Strategy should be developed to use 100% renewable energy by 2050. Investment in renewable energy should be exempted from corporate income tax and it will be extended periodically through impact assessment of tax revenue. Enhancing energy efficiency and low carbon emission from electricity generation, at least 10% higher incentive tariff can be imposed.

### **Technological innovation along with research and development**

Technological innovation can make a difference in energy efficiency. There are lots of scope to enhance energy efficiency in air-conditioning, other environment, transport, and industrial plants by investing more in research and development in renewable energy. For example, to reduce emission over the long term, emphasis on solar energy can be one of the cost effective options in this regard.

### **Establishment of the code for sustainable built environment**

This Code will ensure minimum standard for design and construction stage along with energy, and water consumption, waste management and using materials.

### **Carbon emission reduction target**

This target will be reflective with emission inventory and its short and long term projections in the light of climate change effects and impacts.

### **Development of integrated urban solutions**

Promotion of energy efficiency especially in housing, transport and industrial cluster activities can be ensured by development of integrated urban solutions.

### **Energy efficiency and performance certificate**

Establishment of energy efficiency and performance certificate with a label 'A to E' based on some standard criteria is required. Here 'A' for most energy efficient and 'E' for the least especially for environment.

### **Green investment bank**

Free flow of sufficient investment in green deal can be ensured by development of special banking activities with low interest rate and flexible conditions.

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## **Resourcing Issues and Practices in the Cadre Service of Bangladesh: A Critical Overview**

Labani Yasmin<sup>1</sup>

### **Abstract**

This paper intends to study critically the present resourcing issues and practices in the cadre service of Bangladesh. It focuses on the existing recruitment and selection procedure of cadre services, its training system, performance appraisal process, transfer rule and promotion policy in Bangladesh. Present selection procedure in the cadre service of Bangladesh is merit and quota based. Only 45 percent posts are kept for meritorious students and 55 percent posts are reserved for various groups under quota system. In addition, nepotism, favoritism, corruption and political interference are hindering the brilliant graduates to join in the cadre service. Moreover, performance appraisal system is not overt and scientific. It is not evaluated on the basis of performance. Furthermore, training system is not modern and most of the training methods are class room based. For recruitment purpose, Bangladesh Public Service Commission does not follow campus recruitment process, consulting the firms of management or associations that have proven expertise in attracting the talented graduates. There are also other pressing issues that are considered to be casting far reaching negative impacts on services like cadre service choice and their selection process, ambiguous promotion policy, absence of proper transfer rule etc. This is basically a review of secondary research contents conducted earlier in this field of study. It finds that resourcing is very important tool for the development of public sector in any country. It is the technique to minimize the cost of employees and maximize their value to the organization. It helps to keep right people in the right place at the right time. The study has also found that resourcing aspects are inter-related to each other. Effective recruitment helps to avoid this kind of chain reaction. It saves time, money and effort. But in Bangladesh recruitment system it is not sound. The study therefore argues for changing traditional systems, developing resourcing issues scientifically which will attract bright graduates in the cadre services.

**Keywords:** Recruitment, selection, performance appraisal, training, cadre service, transfer, quota system.

## 1.0 Introduction

### 1.1 Statement of problem

Resourcing system at public sector of Bangladesh is not desirable since in an internal report on people resourcing aspects of Bangladesh Public

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Corresponding author's email: rangaprova@yahoo.com

<sup>1</sup>Senior Assistant Secretary, Ministry of Public Administration.

Administration, Asian Development Bank (ADB) 2007 expressed that public administration in Bangladesh is mainly centralized, hierarchy is prevalent and decision is taken by multiple layers. Incentive system is not present in this sector. Performance management system is subjective and out of date. Training is not related to career planning. Career opportunities are confined within a cadre (Ehsan 2008, 59). Faulty recruitment procedure can place a non-qualified person in a formalized organization. Defective recruitment procedure and the politicization of the civil service may be largely responsible for the lack of “good enough governance” in Bangladesh (Jahan 2006, 2).

### 1.2 Significance of the study

In 1999, in a report on Crisis of Governance in South Asia Human Development Centre (HDC) rated Bangladesh's bureaucratic efficiency at 4.7 on a 0 to 10 scale where 10 was considered best (Ehsan 2008, 59 and Jahan, 2006). This is the efficiency scenario of cadre servants at civil service in Bangladesh. For better performance right people should be kept at right place. Civil servants play a vital role for the development of any country. To achieve Sustainable Development Goals 2030 as well as Vision 2021 (be mid-earning country) resourcing of cadre service is very significant.

### 1.3 Scope of the study

This paper covers resourcing issues and practices at cadre service in Bangladesh. Firstly, the paper attempts to provide a conceptual framework. Secondly, it presents findings of the study 1) current resourcing issues and 2) present practices regarding cadre service. Thirdly, it makes a critical analysis of present resourcing issues and practices. Fourthly, it presents discussion. Fifthly, it draws conclusion of the study and finally, it suggests some recommendations.

### 1.4 Objective of the study

Objectives of this report are:

- ❖ To find out present resourcing issues and practices at cadre service in Bangladesh.

- ❖ To analyse these resourcing issues and practices critically and
- ❖ To provide recommendations for progressing resourcing issues and practices at cadre service in Bangladesh.

### **1.5 Limitation of the study**

Every social science study has more or less limitations. Accordingly, the present study also has a number of limitations. Only secondary data were collected from many sources for the study. The study did not cover all the areas of resourcing. There are a number of areas where future studies can be directed. In-depth studies may be conducted to evaluate the impact of resourcing issues on organizational performance. Studies may be carried out on resourcing practices of service sector enterprises.

## **2. Research methodology**

The article is basically a review of secondary research conducted in this area. Data were collected from many published documents such as books, journals, circulars of government, research reports, newspapers etc.

### **3.0 Conceptual framework**

#### **3.1 Definition of resourcing**

The term people resourcing are also known as ‘employee resourcing’ or resourcing. It refers to employment activities and ensures the right number of people that the organization needs. Staff turnover and absenteeism issues are also part of it. Workforce planning, recruitment and selection, management of staff turnover, absence management, attraction and retention of employees and talent management are the elements of employment activities. Training and development programs are also linked to it. It makes people adept for the institution (**Armstrong 2012, 239**).

Resourcing is not a single activity. It is the amalgamation of many activities that are undertaken by HR to conform that the institution has required employees. Main elements of employee resourcing are recruitment, HR administration, performance management and change management (**Taylor 2008, 3**).

#### **3.2 Cadre service**

In government bureaucracy cadre service is different functional sub division. Cadre service refers the service that is formed under laws with number of positions or structure, recruitment and promotion rules. In 1981 cadre service was first recognized officially at the time of the introduction of Bangladesh Civil Service Recruitment Rules in Bangladesh. There are 28 cadres in Bangladesh Civil Service now. Among these cadres some are general cadre at which public

servants do administrative and other functions and some are professional or technical cadre at which they do profession related works (**Morshed 1997, 77-78**).

### **3.3 Recruitment and selection**

Recruitment is a set of activities that are done by an organization to attract job applicants who have capabilities and attitudes that are needed to help the institution accomplish its targets (**Glueck 1978**). Selection means choosing of an applicant from a pool of applicants for a post by the institution (**Searle 2003**).

### **3.4 Training and development**

Training means system that is used to supply adeptness to the newly recruited employees so that they can perform their duties smoothly. The term development means to expand horizon of staffs (**Dessler 2006**).

## **4. Findings of the study**

### **4.1. Present resourcing issues at cadre service in Bangladesh**

#### **4.1.1 Recruitment and selection issues at cadre service in Bangladesh**

As a source of recruitment, public sector does not use campus recruiting, consulting firms of management, associations that are professional to attract talented graduates (**Abser 2012**). Nepotism and favoritism in selection process hinders applicants to come at public sector's job (**Mahmood and Abser 2011, 122**). Moreover, recruitment policy makes graduates disappointed since only 45 percent posts are kept for merited candidates and 55 percent posts are filled by various quotas. If there is no candidate for these reserve posts, it will remain vacant. At this case no chance for the meritorious graduates to come at these posts. Furthermore, politicization in recruitment is another problem for meritorious candidates. Similarly, corruption regarding recruitment and selection process of Public Service Commission discourages talented and poor graduates to come at cadre service (**Ehsan 2008, 64**).

#### **4.1.2 Performance appraisal**

Performance assessment of civil servants is done by supervisors. This is called Annual Confidential Report (ACR). It is the only system by which ability and productivity of civil servants are measured. But this system is very subjective and not scientific. It is evaluated not on the basis of competence. The funny matter is that the person for whom this evaluation is done, remains in the dark. He/ she has no opportunity to see the condition of his/her performance. As a

result, he/she has no opportunity to improve his/her performance (**Ehsan 2008, 66**).

#### **4.1.3 Training**

Different ministries have more than 150 attached training institutions. Bangladesh Public Administration Training Centre and Bangladesh Civil Service Administration Academy are two major and important training institutes. The first one is used for all cadres' training institute and the second one is used for Bangladesh Civil Service Administration Cadre. There are some problems regarding training and training institutions. Firstly, there is a lack of professionalism, competent as well as well-trained employees. Secondly, training method, techniques and syllabus of these institutions are not up to date. That's why; this fails to enhance the knowledge and capacity of learners. Thirdly, civil servants do not take training seriously since there is no link among training, performance appraisal and promotion (**Ehsan 2008, 64**). Contents of training, trainers' quality and training methods are not up to date. Furthermore, most of the training programs are classroom based academic style teaching. There are 25 institutions that provide training for cadre officers of civil service. Each of these institutions provides individual cadre training. (**World Bank 1998**).

#### **4.1.4 Other issues that hinder to choose the job of cadre service**

There are other issues that are considered negatively to take decision in case of choosing public sector's job: such as promotion, compensation, transfer and posting. Promotion of civil servants has been politicized. It is not given on the basis of merit, seniority and rules of conduct. Undue promotion is often given to politicized civil servants instead of competent and senior candidates. Furthermore, there are no specific rules and regulations for transfer of cadre servants. Frequent transfer hinders to career management of civil servants. Even transfer and posting of civil servants are also politicized (**Ehsan 2008, 66-67**).

All these resourcing issues have not only made inconsistencies, conflicts, confusions and imperfections in the cadre services but also have aided in undermining the graduate's belief about cadre service job.

### **4.2. Present practices at cadre service**

#### **4.2.1 Present cadre service recruitment methods**

On the basis of current recruitment policy, cadre servants are recruited by three methods.

- ✚ Open competitive direct exam
- ✚ Internal promotion and
- ✚ Transfer or deputation (**Ali 2007, 10**).

Among the three recruitment methods this report will cover open competitive direct exam method since entry level recruitment is performed by it.

#### **4.2.2 Present cadre service selection policy and practices**

According to **recruitment rules 1981** (known as **Bangladesh Recruitment Rules, 1981**) and elaborate **recruitment rules 19 82**, officers of various cadres are appointed. It is open for the candidates who have completed master degree from any university of Bangladesh or foreign countries' universities. Applicant must be at least 21 years old and maximum 30 years old for applying. For freedom fighters and disabled maximum age is 32 years. But there is a restriction to apply for the job in case of non-citizen and who marries foreigner. Applicants will choose his/ her cadre at the time of filling the application form. Recruitment policy preserves both 'merit' and 'quota' system in the principle to provide equal opportunity for all citizens to civil service. 55 percent seats are reserved for various quotas and 45 percent seats are reserved for merit. Bangladesh Public Service Commission performs all the activities of recruitment and selection (**Azizuddin 2008**).

#### **4.2.3 Examination system**

Public Service Commission operates examination according to 'The Bangladesh Civil Service (Age, Qualification and Examination for Direct Recruitment) Rules, 1982'. Some amendments have been brought both in examination system and syllabi of this rule. Now total marks of examination are 1100. Within 1100 marks 200 marks are for viva voce. Pass mark is 50 percent. (**37<sup>th</sup> Bangladesh Civil Service Circular of Bangladesh Public Service Commission**).

Both ministry of Public Administration and Public Service Commission of Bangladesh play vital role to recruit and select cadre servants. On the basis of the demand of Ministry of Public Administration, Public Service Commission advertises on national newspaper and it uses its web site for recruitment.

Steps that are taken by Public Service Commission to select cadre servants are mentioned below.

- ✚ Select application form.
- ✚ Preliminary examination.
- ✚ Written examination.
- ✚ Viva voce.
- ✚ Merit list
- ✚ Result publication.
- ✚ Sending list of selected candidates to Ministry of Public Administration recommending for appointment.

### **Steps that are taken by Ministry of Public Administration**

- ✚ Medical test.
- ✚ Police verification.
- ✚ Through gazette notification final appointment is done by Ministry of Public Administration (**Jahan 2012, 31**).

#### **4.2.4 Present training system in cadre service**

After selection as public servant, they have to undertake various trainings. There are different kinds of trainings to which civil servants have to take part. Principal trainings are:

- Six-month foundation training.
- One year on-the-job training at probationary period.
- One and a half month settlement training for cadre servants.
- Advanced training for the officers under Joint Secretaries.
- Advanced training for the officers whose rank is equal and above Joint Secretaries, and
- Foreign training.

First two years are rendered as probationary period. At this period they have to undergo foundation training at Bangladesh Public Administration Training Centre (BPATC). This is known as post-entry training. It is compulsory for a civil servant to do the training within these two years. Job confirmation depends on the successful ending of training during this probationary period. All civil servants of different cadres have to do the six-month training (**Ali 2004**).

#### **4.2.5 Present performance appraisal system of cadre service**

Present performance appraisal system of Bangladesh Civil Service is known as Annual Confidential Report (ACR). It is done through a prescribed form. There are eight different sections in it. Among 8 sections number 3 and 4 are performance appraisal sections since these two sections have Graphic Rating Scales of 4 to 1 for 25 items. Section 3 has 13 items and section 4 has 12 items that constitute a score of 100. Out of 100 total score is given by the appraiser according to his judgment. Score 95 to 100 is for outstanding performance. Score 85 to 94 is for very good performance. Score 61 to 84 is for good performance and score 41 to 60 is for average performance (**Alam, 2009**).

#### **4.2.6 Trainer**

Generally, transfer is to take place every after three years of tenure in 'public interest'. But to transfer civil servants Government does not follow any systematic transfer policy. Thereby, civil servants are transferred frequently.

There are two elements that influence to make transfer decision such as arbitrariness and personal-pull or tadbir (**Momen and Islam 1997, 49**).

#### **4.2.7 Promotion**

There is a rule for promotion of civil servants called Bangladesh Civil Service (Examination for Promotion) rules 1986. It considers many factors such as vacancy, service length, merit and record of performance etc. But in reality these are hardly followed. There are many committees for considering and recommending promotions of different levels and categories of civil servants. In Bangladesh promotion system of cadre servants is not smooth both in policy and process (**Azizuddin 2008**). Fairness and system of Promotion of cadre servants are very often criticized (**Momen and Islam 1997, 51**).

### **5.0 Critical analysis of findings and discussion**

#### **5.1 Resourcing issues and practices in cadre service in Bangladesh**

As resourcing is an amalgamation of many things, some of the main aspects of it will be critically analyzed below:

#### **5.2 Quota system**

55 percent posts are reserved for various groups and only 45 percent posts are for meritorious students. The main problem of this 'quota' system is that graduate gets less opportunity to enter into civil service. In a report published in (**The Daily Star, 13 July 2013, 1**) on Review of Quota System: Govt site on PSC recommendation it was stated that in the five Bangladesh Civil Service exams from 2005 to 2012, Public Service Commission recommended appointment of 3179 successful candidates to the posts of 15 class-1 general cadres. Of them, 1493 were picked on merit and 1686 from different quotas. It shows candidates from quota system get more opportunity to come at cadre service than merit. On the other hand, it is hard to select candidates 100 percent accurately due to complex 'quota' system. Moreover, a large number of posts stay vacant after civil service examination. Candidates are not available for 'quota' posts. It cannot be filled up by merit. At 21<sup>st</sup>, 22<sup>nd</sup> and 25<sup>th</sup> civil service examinations only 10.8 percent, 2.2 percent and 5.2 percent posts of 'quota' were filled and at 28<sup>th</sup>, 29<sup>th</sup>, 30<sup>th</sup> and 31<sup>st</sup> civil service examinations 813, 792, 784 and 773 posts under different quotas remained vacant. Akbor Ali Khan, former Cabinet Secretary told the Daily Star that only 45 percent candidates on merit in Bangladesh Civil Service examinations are unconstitutional and discriminatory. Quotas should not exceed 50 percent of government jobs and they cannot exist forever (**Habib and Chakraborty 2013, 1-2**). Many meritorious students do not get the job of civil service due to 'quota' system. Creation of equal opportunity

through quota system does not show equal efficiency. Quota system is rendered as one of the main problems for the gradual reduction of efficiency of civil servants. Judgment of merit is not transparent. Principles of recruitment and open competitive system are contradictory (**Mohammed 2008**). Furthermore, there is no transparency in implementing quota. All researchers recommend modification of quota system.

**a. Interference of corruption and political force**

Complain of corruption about the members and staffs of Public Service Commission is often raised and it loses its credibility (**TIB 2007, 7**). It is often said that governments in the past appointed Chairman and members of PSC to recruit candidates of their choice to the important cadres like Administration and Police (**TIB 2007, 8**). Thereby, it has made talent gap in civil service. The standard and quality of civil servants lessen when they are recruited politically.

**5.4 Faulty examination system**

Preliminary examination of 200 marks is taken on two-hour duration. But it is not the proper way of selecting talented candidates. Their academic performance is not considered at this stage. Questions are not critical and analytical. Most candidates memorize study guides, write the answer mechanically and pass (**Jahan 2006, 10**). To select candidates several viva voce examination boards are formed. Different questions are asked by the members of different boards. Structured interview is not followed to select candidates. As a result standard and quality of candidates differ very often.

**5.5 Training**

Training institutions of Bangladesh use traditional methods of training. Training systems are not multidisciplinary international training. Interactive lesson, use of case study, problem solving exercise, e-learning and mix learning are not found in training system. Demand and supply of training are not similar. Identification of training needs is not done properly. Systematic training is not provided to the participants.

**5.6 Performance appraisal**

Duration of performance appraisal is yearly not quarterly. It is done through a prescribed form. It is not linked to the plan of organization. There is no system of differentiation of performance. Pay is given not on the basis of performance; it is given equally without regarding performance. There is no Performance Review Board. Head of the Office gives counter sign in it. It is not evaluated on the basis of performance and merit. The funny matter is that the person for whom this is done does not know the result of his/her performance. So, there is no opportunity to correct his/her fault. It is not beneficial for both the

individual and the organization. It is subjective and not scientific. It is evaluated not on the basis of competence.

### **5.7 Promotion**

Promotion of civil servants has been politicized. It is given not on the basis of merit, seniority and rules of conduct. Undue promotion is often given to politicized civil servants instead of competent and senior candidates. Thereby, they are not active to their job as well as prompt to service delivery.

From the above critical analyses it can be said that there are lots of resourcing issues in Bangladesh. Present activities are not sufficient to deal with the issues. It is without question that a well-organized civil service is necessary for efficient service delivery and it leads to well performed government. But the above mentioned resourcing issues make the quality of bureaucracy low and the efficiency of civil servant less. As a result, civil service is not qualitative and civil servants are not dexterous, motivated and efficient. The prevalence of good governance is absent due to inefficiency in civil servants. Civil servants are not able to discharge their duties properly owing to defective recruitment, politicization regarding promotion and posting and ineffective training. Public sector feels the lack of efficient public servants.

The following things cannot be addressed for these resourcing issues:

- Up to the level of social and economic development of Bangladesh.
- Efficient and effective service delivery from public sector.
- Productive and ethical behavior from public servants.
- Sustainable high performance.
- Commitment of public interest.
- To be mid earning country.
- Digital Bangladesh. (**ibid, 2004**).

Resourcing issues should be given top priority for conforming to good governance, increased social and economic development, efficient and effective service delivery, productive and ethical behavior of public servant as well as to attain the sustainable development goals.

## **6. Conclusion**

The key objective of this study is to analyze present resourcing issues and practices critically in the cadre service of Bangladesh. This article is basically a review of secondary research contents conducted earlier in this field of study. It has found nepotism and favoritism in selection processes that hinder talented graduates to join in the civil service. Moreover, policy of recruitment and selection make graduates disappointed because 55 percent posts are reserved for various groups and only 45 percent posts are earmarked for meritorious graduates. Furthermore, corruption and politicization regarding recruitment and

selection are also vital causes that hinder talented graduates to enter in cadre service. Performance assessment report of civil servants is done by supervisors to be countersigned by the head of the office. This is called Annual Confidential Report (ACR). This is the only system by which ability and productivity of civil servants are measured. But the system is very subjective and unscientific. Promotion of cadre servants has been politicized. Merit, seniority and conduct are not considered for promotion. Moreover, equal pay is given for unequal work. There is no specific rule and regulation for transfer. Transfer is also politicized. It is high time to modify policies and practices of resourcing to make the bureaucracy an efficient, dynamic and strong force for better governance of the country.

## **7.0 Recommendation**

To develop resourcing issues and attract talented graduates, authority can change their traditional systems. The following things can be taken into consideration.

### **7.1 Recruitment**

Bangladesh Public Service Commission can use campus recruitment, consulting firms of management and professional associations to attract talented graduates.

### **7.2 Selection**

Selection process of cadre servants in Bangladesh should be clear cut and there should be a well defined selection policy in place. Selection should be on the basis of merit and performance through open competitive exam. Quota system cannot bring the standard, efficient and talented graduates. It gives opportunity of low quality candidates to join in civil service. For this reason, at first 'quota' system should be minimized gradually and to be abolished finally. To overcome gradual deterioration in the quality of cadre servants, pass marks of written examination should be 70 percent.

### **7.3 Performance appraisal**

Annual Confidential Report (ACR) is highly subjective in Bangladesh. Abolishment of subjective judgment is not possible but it can be minimized by some mechanistic standard design to gain maximum objectivity. It should be linked to organizational goal and individual development that are absent in Bangladesh performance appraisal system. A practice should be introduced to allow supervisors to give feedback to officers concerned from month after month so that he/she can improve his/ her performance.

## **7.4 Training**

To overcome poor quality and increase skill and knowledge a clear, bold and innovative training policy should be introduced so that useful and pertinent training and sufficient hours can be given to the trainees. Training system of Bangladesh should be modernized to face the challenges of civil service. Training Institutions can change the traditional methods of training and can introduce a modern system of training such as interactive lesson, use of case study, problem solving exercise, e-learning and mix-learning, creation of policy papers on training and public sector reform and advanced career long learning.

## **7.5 Promotion**

Promotion should be linked to performance, merit and seniority rather than political influence and favoritism. It should be given as reward of well-done job. Transparency should be ensured to give promotion so that present employees will get inspiration to do work efficiently and side by side talented graduates will be inspired to come to cadre service.

## **7.6 Transfer**

Specific policy can be made for transfer of cadre servants because it will keep their mental stability necessary for organizing their professional and personal plans. Concerned ministries can make specific policies for transfer of cadre servants.

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## Wheat Production in North West region of Bangladesh

Dr. Md Masumur Rahman<sup>1</sup> and M.G.Miah<sup>2</sup>

### Abstract

The present study was undertaken to investigate the changes of wheat production technologies and yield over time and to explore and analyze the opinion of the traditional and agro-forestry based wheat growing farmers during November 2014 to March 2015. The study was conducted at northwest region in Dinajpur sadar and Kaharul upazilas in Dinajpur district of Bangladesh. These areas were selected considering the high concentrations of wheat cultivation. One hundred and sixty wheat farmers were selected by using previously pre-tested interview schedules adopting multi-stage proportionate systematic random sampling technique. Most of the farmers of the study area had reported to use recommended varieties, optimum planting time and spacing, fertilizer doses and method of application. They also reported to irrigate their fields in appropriate time and do other management practices as and when necessary. Despite, farmers were not much aware on seed treatment and disease management of wheat. In order to get higher economic return and to avoid crop failure, some innovative farmers were found to practice mango and litchi based agro-forestry systems in association with wheat. These systems were also reported to conserve soil moisture by reducing air temperature and adding organic matter by decomposing tree leaves. The major points or suggestions were instance availability of good seed including drought tolerant varieties, availability of inputs at affordable prices especially irrigation water at reduced prices, improved management practices particularly disease management, credit with low rate of interest, improved marketing facilities and good prices of wheat during peak season. Based on the findings of the study it could be recommended to continue the present efforts of developing new varieties and technologies in view of future changing scenario of climate of Northwest region of Bangladesh and train up the wheat growers accordingly.

**Keywords:** Production technology, Wheat, Agro-forestry and Bangladesh

### Introduction

The effects of climate change on crop production are global concerns, but these are particularly very important for the sustainable agricultural development of Bangladesh (Hossain and da Silva, 2013). This is because of variant climatic conditions of the country due to its' geographic position and physiographic status. The biggest mountain the Himalayas in the north and the funnel-shaped Bay of Bengal in the south have made Bangladesh a meeting point of eternal

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\*Corresponding Authors Email: [rahman.masumur@gmail.com](mailto:rahman.masumur@gmail.com)

<sup>1</sup> Deputy Commissioner, Patuakhali, Bangladesh.

<sup>2</sup> Professor, Dept. of Agroforestry and Environment, Bangabandhu Sheikh Mujibur Rahman Agricultural University (BSMRAU), Gazipur.

monsoon precipitations and the catastrophic devastation of floods, droughts, cyclones, storm surges, etc. (Ferdous and Baten, 2011). Agriculture plays a significant role in Bangladesh economy socially and culturally. It accounts for about 18% of the country's GDP and is a means of livelihood that engages more than 47% of the labour force (World Bank, 2013). It also supplies food and confers livelihood security for the Bangladeshi people. Over 75% of agricultural production takes place in rural areas where more than 80% people are engaged in farming activities and growing crops to meet the basic needs of the people. But this agriculture sector is susceptible to unfavourable weather conditions and climatic events. In spite of noticeable technological progress (such as improved crop varieties and irrigation facilities), weather and climate are still the key determinants for agricultural productivity and sustainability. Agriculture in Bangladesh is already under pressure, both from huge and increasing demands for food as well as from obstacles related to the degradation of agricultural land and water endowments (Ahmed and Ryosuke, 2000). Any internal and external threats (social, political, natural and environmental) to agriculture directly affects food grain production as well as in providing food security of the country (Rahman and Parvin, 2009). Sometimes, the relation between these key factors and production losses are obvious, but often the relations are less direct. In spite of the recent strides regarding gaining sustainable development, Bangladesh's ability to restore its development is experienced with significant challenges and confounded by climate change (Ahmed and Haque, 2002).

Bangladesh has been facing steadily increase of higher temperature over the last three decades (Sarker *et al.*, 2012). Moreover, it is forecasted to experience a rise in annual mean temperatures of 1.0°C by 2030, 1.4°C by 2050 and 2.4°C by 2100. The average temperature during winter season (December, January and February) also showed a similar increasing pattern of 1.1°C by 2030, 1.6 °C by 2050 and 2.7°C by 2100. The projected values are 0.8°C by 2030, 1.1°C by 2050 and 1.9°C by 2100 for the monsoon months (Agrawala *et al.*, 2003; Ahmed, 2006). However, the Global Climate Model (GCM) data estimated more warming for winter than for the summer months (FAO, 2007). Based on the above projections, Bangladesh is likely to face more hot days and heat waves, longer dry spells and higher drought risk. In contrast, almost 80 percent of rainfall in Bangladesh has been occurring during monsoon season (June-September). The remaining 20 percent covers eight months, including the winter months in which the high-yielding rice Boro is grown. Though monsoon season's rainfall is projected to increase; the rainfall variability may increase significantly causing more intense rainfall and/or longer dry spells. Most of the climate models estimated that precipitation will increase during the summer monsoon (Mirza, 1997; Ahmed and Alam, 1998; GOB, 2009). This erratic and unevenly distributed pattern produces extreme events, such as floods and droughts, which have remarkable harmful effects on major food crops' yield, especially on Aman rice. As a result, rice production is likely to decline by 8%–17% by 2050 (Sarker *et al.*, 2012, BBS, 2005 and IPCC, 2007). It is

noticed that Aman rice had dominated in Bangladesh from 1980–1981 and contributed to 57% of the total share. However, due to drought and flood events, the trend of share of Aman rice to the total rice production decreased to 40% by 2005–2006, even though the total cultivated area devoted to this crop is much higher than others to date (Rahman and Parvin, 2009). In spite of this, rice, considered the staple food in Bangladesh, has doubled in production in the last two decades due to use of high yielding varieties, fertilizer, irrigation and pesticide through green revolution. Nevertheless, at the present time an upward trend is observed in food grain production, but it is losing out in the race against growth of population and per capita availability of food remains almost unchanged. The present food grain production is not sufficient to meet domestic requirements.

Bangladesh is a predominantly rice-consuming country. Prior to independence in 1971, wheat was virtually absent from the Bangladesh market. The Bengal Famine of 1943 encouraged a “grow-more food” campaign, but wheat cultivation did not really begin to develop until after 1965, after Dr. Norman Borlaug and the International Maize and Wheat Improvement Centre (CIMMYT) successfully introduced two Mexican wheat varieties (Sonora 64 and Penjamo 62) into northern Bangladesh. The success of the CIMMYT program, however, was disrupted by Bangladesh’s liberation war. A severe drought in 1973, followed by major floods in 1974, also led to widespread food shortages, prompting a massive international emergency relief effort to meet the country’s basic food security needs. With the influx of food aid shipments, wheat became a regular feature in the Bangladesh diet, particularly among urban consumers seeking to supplement their rice-based diet. But as wheat imports rose to 2.3 million metric tons in 1972/73, the Government of Bangladesh began to institute policies to encourage domestic wheat production. Wheat cultivation quickly expanded around Khulna and the generally less flood-prone areas of the northern and western districts. According to Bureau of Statistics, starting with an area of 0.126 million hectares, and production of 0.103 million metric tons in 1971, the area and production increased to 4,29,607 hectares and 13,02,998 million metric tons, respectively, in 2013 (BBS, 2014). Currently, Rajshahi and Rangpur Division contributed 36% and 30% respectively to total national wheat production. Wheat (*Triticum aestivum* L.) is the second staple cereal crop next to rice in Bangladesh. Wheat grain is rich in food value containing on an average of 12.1% protein which can go up to 21.1%. By the time of independence (1971), Bangladesh had become highly dependent on wheat imports while dietary preferences were changing such that wheat was becoming a highly desirable food supplement to rice. Now it is a common food next to rice.

The yield also increased from 0.86 t/ha to 2.21 t/ha during the period. This increased area, production, and yield of wheat spurred mainly because of the introduction of modern seed-water-fertilizer technologies. But still the yield of

wheat is low in comparison to the developed countries of the world like Japan, India, China, South Korea, Mexico, USA, EU-15 and Australia where yield were 3.17, 3.30, 3.90, 5.00, 4.44, 2.70, 6.36, 1.88, t/ha, respectively (Economic Research Service, 2007). However, the current climatic event especially drought has become the potential threat to wheat production that magnitude severe in near future. In spite of reaching its highest area (0.88 million hectares) and production of wheat (1.91 million tons) in 1999; the area and production were found to be decreasing during next seven years. In 2006, the area decreased to 0.48 million hectares and production to 0.74 million metric tons. Now, the climate change especially drought is the biggest issue for wheat production. Farmers are looking forward for technological and adaptation measures to continue or in increase wheat production by facing the climate change issues. Sporadically, it has been found that, trees have been planted in crop field or in boundary for keeping moisture in the field, reducing evaporation or evapo-transpiration.

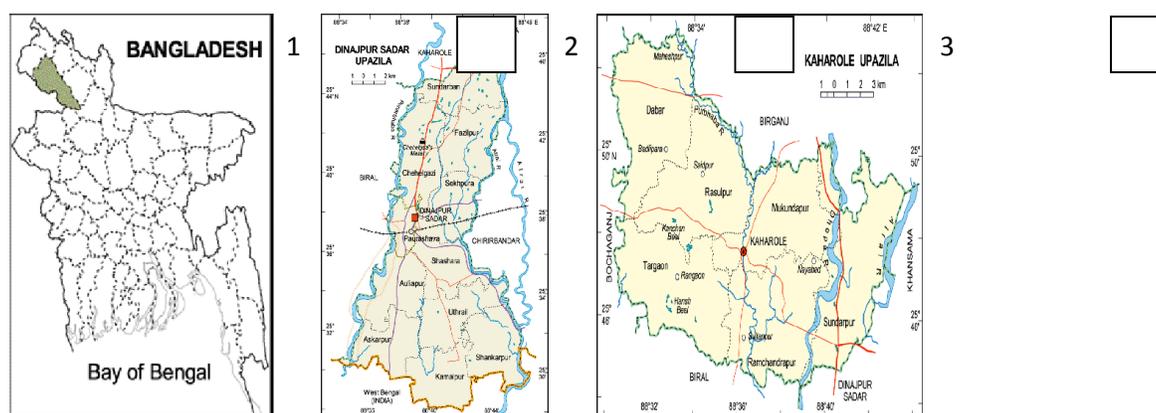
Nevertheless, to meet the future food requirement and to check the drain of foreign currency for importing a huge quantity of wheat grain, more attention on technology and policy should be given for the intensive and extensive cultivation of wheat in the country in view of current changes of weather and climatic events. Therefore, it is needed to examine the past and present performances to explore the potentialities and possibilities of area and production expansion of wheat in Bangladesh. Keeping these in mind the objectives undertaken are as follows:

- To investigate the changes of wheat production technologies and yield over time under the changing scenarios in the study area
- To explore the wheat production in agro-forestry and traditional systems.

## **Methodology**

The study was conducted among randomly selected 160 wheat farmers in two upazilas namely, Dinajpur sadar and Kaharul under Dinajpur district of Bangladesh based on highly concentrated wheat growing areas. Maps of two upazilas showing the study area have been presented in figure 1. It is done to determine the changes of wheat production technologies in agro-forestry and traditional systems during November 2014 to March 2015. For collecting primary data at household level, a pre-designed interview schedule was developed with balanced combination of both closed and open-ended questions, and the same was pre-tested before finalization. Participatory Rural Appraisal (PRA) tools and techniques like Focus Group Discussion (FGD), Direct Observation and case study were also applied for triangulation of data. In order to collect relevant information from the wheat farmers, three sets of instruments

(interview schedules) were carefully designed keeping the objectives of the study in view. Interviewer effect such as assuming the meaning of a response was then kept to a minimum (Hammersley and Atkinson, 1983). The selected variables were farmer's knowledge level, use of recommended seed, varieties, sowing time, methods of sowing. It also measured Average area (ha) coverage of balanced fertilizer and application method, irrigation, intercultural operation, plant protection, *etc.* Changes of wheat yield over time were also determined using secondary data from different sources. The SPSS package (Statistical Package for Social Sciences) was used to perform data analysis. All the collected data were then checked and cross checked, compiled, coded and entered into the computer for analysis and interpretation using this software. Descriptive statistical measures like range, mean, number and percentage distribution, standard deviation were used to describe and interpret the data. Statistical measures like number, range, mean and standard deviation were calculated in describing the changes of wheat production technologies over time.



**Figure 1:** Map showing the study area (1), Dinajpur sadar (2), and Kaharole upazila (3) of Dinajpur district

## Results and discussion

### Farmer's knowledge on wheat cultivation

It is evident from table 1 that more than 70% of the respondent farmers possessed correct knowledge on wheat cultivation except 'name of heat tolerant varieties of wheat'. Of them knowledge about 'irrigation scheduling' (83.75%) ranked first followed by 'optimum planting time' (83.12%), 'name of HYVs of wheat' (82.5%) and 'local varieties' (81.2%), 'soil suitable for wheat cultivation' (78.12%), 'spacing of wheat' (76.87), 'urea application in wheat cultivation' (75%), and 'seed rate of wheat' (73.75%).

**Table 1.** Farmer's knowledge level about wheat cultivation technologies

Knowledge area	Correct Response		Incorrect Response	
	Frequency	(%)	Frequency	(%)
Name of HYVs of wheat	132	82.5	28	17.50
Name of local varieties of wheat	130	81.25	30	18.75
Name of heat tolerant varieties of wheat	106	66.25	54	33.75
Soil suitable for wheat cultivation	125	78.13	35	21.88
Wheat seed production	118	73.75	42	26.25
Optimum planting time of wheat	133	83.13	27	16.88
Spacing of wheat	123	76.88	37	23.13
Urea application in wheat cultivation	120	75.00	40	25.00
Seed rate of wheat cultivation	118	73.75	42	26.25
Irrigation required for wheat cultivation	134	83.75	26	16.25
Diseases that cause damage to wheat cultivation.	114	71.25	46	28.75
Fungicides required to control wheat diseases	112	70.00	48	30.00

In spite of good knowledge regarding production technology of wheat, farmers had comparatively little awareness about name of disease and their management as well as stress tolerant cultivar. Virtuous knowledge regarding improved wheat cultivation technique of the respondents could be owing to regular training provided by Wheat Research Centre (WRC) as well as close supervision of their activities which will help them to upscale their knowledge level. Furthermore, different international NGOs such as CARE, USAID also provide training to the farmers.

## Changes in wheat production technology

Wheat production technologies recommended by BARI (Annon. 2009) like quality seeds, varieties, planting time, methods of sowing, fertilizer application, fertilizer application method, irrigation, intercultural operation and plant protection were considered as improved wheat production technologies. In this section the present farm level status of wheat production technologies is done in comparison to the status that existed ten years before.

### Quality seed of wheat

It was found that major area of the selected farmers is currently covered by the seed collected from WRC which was 2.5 times higher than 10 years back. In contrast, at present area under wheat production by reputed company seed, own stored seed, dealer provided seed and BADC seed decreased subsequently (Table 2). It might be due to BADC that cannot meet the requirement of growing demand of wheat seed. Therefore, farmers rely on Wheat Research Centre to get their seeds or due to existing seed regulation, they could not produce and preserve seeds of unreleased varieties though it provides higher yield. However, some farmers confidentially preserved those seeds and that quantity was good enough for seed increase in next season (Pandit *et al.*, 2007). It was observed from the relative change that the sources of quality seed has been changed significantly in the study area.

**Table 2.** Average area (ha) covered with quality seed in wheat production

Source	10 years back	Present time	Relative change
BADC seed	99 (34.85)	36 (16.51)	-52.62
Wheat Research Centre (WRC)	41(14.43)	103(47.24)	227.37
Dealer seed	57 (20.07)	27 (12.38)	-38.31
Reputed company seed	20 (7.04)	13 (5.96)	-15.34
Farmers own stored seed	67 (53.59)	39 (17.88)	-66.64

### BARI recommended varieties

It is manifested from table 3 that currently average area cultivated with BARI Gom-26 (38.64 ha) is 3 folds higher than the past (12.84ha). Similarly currently average area cultivated with BARI Gom-27 is 2.96 times and BARI Gom-28 is 2.18 times higher than the past. On the other hand, use of BARI recommended variety, *viz.*, Akbar, Sonalika, Prodiv is presently decreased concomitantly which might be due to changing climatic condition. Among the

new varieties, the area of BARI Gom27 was the highest due to farmers' higher preference and more availability of seeds. It was observed from the relative change that the use of BARI recommended varieties has been changed significantly in the study area.

**Table 3.** Average area (ha) covered with BARI recommended varieties in wheat production

Name of Variwety	10 years back	Present time	Relative change
Akbar	61.3 (27.66)	16.56 (9.30)	-66.38
Sonalika	40.48 (18.26)	14.72 (8.27)	-54.71
BARI Gom-24 (Prodiv)	75.44 (34.04)	27.68 (15.55)	-54.20
BARI Gom-26	12.84 (5.79)	38.64 (21.75)	275.64
BARI Gom-27	14.56 (6.57)	43.21 (24.28)	269.56
BARI Gom-28	16.97 (7.65)	37.13 (20.86)	172.67

#### Recommended sowing time

As shown in table 4, that 10 years back average major area was planted between 5-14 November (115.93 ha) which is now decreased to 0.26 times. However, owing to shifting winter season, at present farmers sow their wheat seed around 15-30 November which was 2.08 times higher than the past followed by 1<sup>st</sup> week of December (1.81 times) and mid-December (1.66 times). Sowing time is very important for wheat yield in Bangladesh, because for each day delay of seeding after 30 November (optimum time), wheat yield reduces @ 1.3% i.e. 43 kg/ha (Saunders, 1988). It was observed from the relative change that the planting time of wheat has been shifted significantly in the study area.

**Table 4.** Average area (ha) covered with recommended planting time in wheat production

Planting time	10 years back	present time	Relative change
5-14 November	115.93 (56.54)	31.28 (15.03)	-99.11
15-30 November	59.64 (29.09)	124.08 (59.65)	105.01
1st week of December	23.92 (11.66)	43.44 (20.88)	71.53
Mid December	5.52 (2.69)	9.21 (4.42)	64.31

### Methods of sowing

With regard to methods of sowing, broadcasting method gradually decreased from 153.17 ha to 63.33 ha while in contrast, line sowing tremendously increased from 51.84 ha to 144.68 ha over time (Table 5). It might be due to the fact that the line sowing is more suitable for intercropping operation as well as better management of fertilization. Corroborate findings were also reported by Pandit *et al.*(2007). It was observed from the relative change that the method of sowing of wheat has been changed significantly in the study area.

**Table 5.** Average area (ha) covered with methods of sowing in wheat production

Methods of sowing	10 years back	Present time	Relative change
Broadcasting	153.17 ( 74.71)	63.33 (30.44)	-59.26
Line sowing	51.84 (25.28)	144.68 (69.55)	175.12

### Balanced fertilizer

It is evident from the table 6, that, 10 years before only 21.92 ha of land was fertilized by recommended dose of urea which has now become 71.51 ha which is about 3.26 times higher than the previous adoption level. Similarly, in the past use of TSP was lower than the recommended dose which has now gradually increased. About 21.34 ha of the field is presently fertilized by the suggested MOP dose which was previously only 19.84 ha. However, area under recommended gypsum, boric acid and DAP gradually increased with increasing level of knowledge regarding modern wheat production technology though recommended cow dung application is somewhat decreased. The probable reason for low use of chemical fertilizers in the past is due to the fact that the land was so fertile for producing good yield with low cost while owing to successive cultivation land gradually lost its fertility. Hence, the use of chemical fertilizers increased at the present time. The results are supported by the findings of Rahman and Haque, (2013). It is observed from the relative change that the use of balanced fertilizer in wheat production has been changed significantly in the study area.

**Table 6.** Average area (ha) covered with balanced fertilizer used in wheat production

Fertilizers used	10 years back	Present time	Relative change
Urea (220-250 kg/ha)	21.92 (10.69)	71.51(34.88)	226.29
TSP (120-150 kg/ha)	17.85 (8.70)	24.01 (11.71)	34.60
MOP (100-120 kg/ha)	19.84 (9.67)	21.34 (10.40)	7.54

Gypsum (100-120 kg/ha)	18.28 (8.91)	24.54 (11.97)	34.34
Boric acid (6-7 kg/ha)	12.67 (6.18)	16.21 (7.90)	27.83
Cow dung (8-10 ton/ha)	105.42 (51.42)	38.49 (18.77)	-63.50
DAP	9.03 (4.40)	11.91 (5.80)	17.06

### Fertilizer application method

From table 7, it is evident that there was no distinct change in recommended basal doses of fertilizer application in the past and present years. However, second installment of fertilizer application after 17-20 days of sowing is increased 1.02 times which might be due to losing of soil fertility. Rahman and Haque (2013) also reported the similar findings. It is observed from the relative change that the fertilizer application method has been changed significantly in the study area.

**Table 7.** Average area (ha) covered with fertilizer application methods in wheat production

Fertilizer application methods	10 years back	Present time	Relative change
Total cow dung, TSP, MOP, Gypsum, Boric acid and 2/3 Urea used as basal dose.	125.18 (61.06)	126.03 (60.58)	
Rest 1/3 Urea used after 17-20 days of sowing.	79.83 (38.93)	81.98 (39.41)	

### Irrigation

The recommended number of irrigation in wheat crop is 2-3 times depending on the type of soil. The present study indicated that within 17-21 days of sowing area under 1<sup>st</sup> irrigation decreased presently as compared to the past. Second and third irrigation scheduling area were increased about 2.01 and 1.65 times respectively (Table 8). The feasible reason might be due to global warming of the atmosphere which increases the rate of evapotranspiration from the soil. Therefore, to fill the water demand of crop area under irrigation successively increased. Corroborate findings were also reported by Singh and Chahal (2009). It was observed from the relative change that the irrigation schedule has been shifted significantly in the study area.

**Table 8.** Average area (ha) covered with irrigation in wheat production

<b>Irrigation schedule</b>	<b>10 years back</b>	<b>Present time</b>	<b>Relative change</b>
Within 17 - 21 days of sowing	117.54 (57.33)	47.94 (23.04)	-59.81
Within 50-55 days of sowing	41.68 (20.33)	84.06 (40.41)	98.77
Within 70-80 days of sowing	45.79 (22.33)	76.01 (36.54)	63.64

### **Intercultural operation**

In case of intercultural operation, little divergence was noticed between present and past year which was almost similar in case of weeding but little higher for herbicide application (Table 9). The probable reasons might be due to practicing of line sowing and good tillage of land before wheat sowing which hinder germination of weeds thereby reduced the cost of intercultural operation. Mahmood *et al.* (2006) also reported the similar findings. It was observed from the relative change that the intercultural operation has not been changed significantly in the study area.

**Table 9.** Average area (ha) covered with intercultural operation in wheat production

<b>Intercultural operations</b>	<b>10 years back</b>	<b>Present time</b>	<b>Relative change</b>
Weeding: 25-30 days after sowing	123.57 (60.27)	124.76 (59.97)	-0.50
Herbicide: 2, 4-D Amine, Affinity or Fielder (35ml/10L) (25-30 DAS)	81.44 (39.72)	83.25 (40.02)	0.75

### **Plant protection**

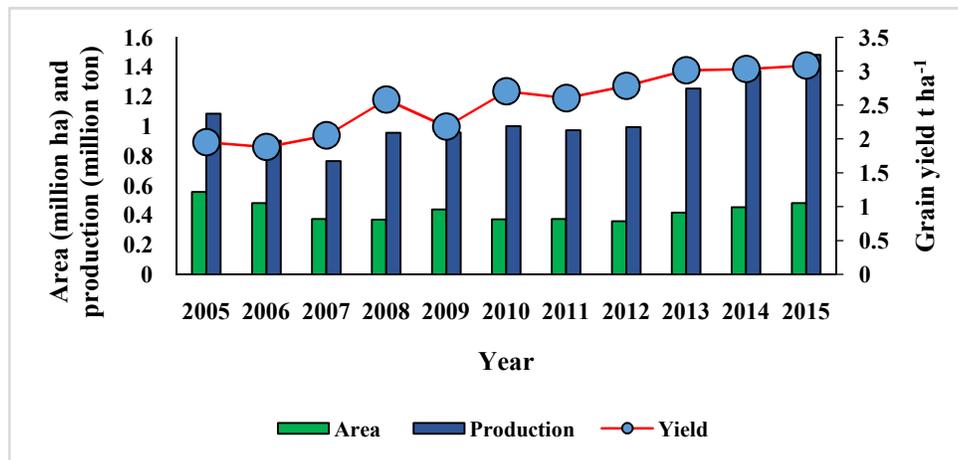
It is seen from table 10 that seed treatments with provax and vitavax were almost similar compared to previous year. However, as similar to seed treatment, area under insect and disease control was also increased slightly. The probable reason of increased pest infestation might be due to increased temperature of the earth which triggers insect and pest emergence. Therefore, necessary adoption steps to overcome this situation was also undertaken which helped the farmers to boost wheat yield. Similar finding were also reported by Rahman and Haque (2013). It was observed from the relative change that the plant protection measures has not been changed significantly in the study area.

**Table 10.** Average area (ha) covered with plant protection measure in wheat production

Plant protection measures	10 years back	Present time	Relative change
Seed treatment (Provax, Vitavax)	49.84 (24.31)	50.07 (24.07)	-0.99
Insect control	72.68 (35.45)	74.07 (35.60)	0.42
Disease control	82.49 (40.23)	83.87 (40.32)	0.22

### Changes of wheat yield over time

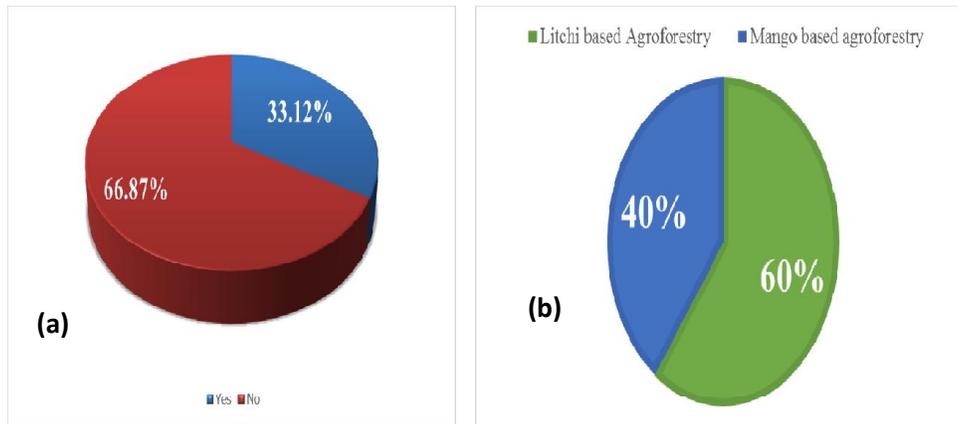
Wheat yield increased progressively though production area are tended to be reduced (Figure 2). Nevertheless, after 2005, wheat yield seemed to be reduced in the study area till 2012. Wheat yield and total production in the country have been decreasing mainly due to wide spread cultivation of disease susceptible variety (Sufian, 2005) and inadequate adoption of recommended management technologies. Interestingly, wheat yield increased enormously in recent years might be attributed to adoption of all modern technology including varietal development with changing climate, varietal diversity in a single field to curtail disease infestation as well as adoption of all modern technology as per recommendation, which help the farmers to increase wheat yield in spite of adverse climatic situation. Corroborate findings were also reported by Pandit *et al.* (2007).



**Figure 2:** Area, production and yield of wheat during the year 2005 to 2015

### Cultivation of wheat in agro-forestry and traditional systems

Data in figure 3a indicated that among 160 respondents, only 33.12% respondents practice agro forestry systems in association with wheat and rest of the respondents (66.87%) were engaged in traditional wheat cultivation. On the other hand, among agro forestry systems, around 60% farmers practice litchi based agro-forestry systems while only 40% farmers practice mango based (Figure 3b) systems. It implies that the GOs and NGOs should give emphasis to create scope and proper technical facilities regarding agro-forestry so that the farmers are encouraged to practice agro-forestry systems in association with wheat instead of traditional systems.



**Figure 3:** (a) Respondent percentage regarding practicing of agro-forestry and traditional systems.

(b) Percentage of people involved in two systems of agro-forestry

### Suggestions

Respondents gave some suggestions to solve their problems (Table 11). In regard to irrigation facilities most of the farmers opined that shallow tube well establishment (65.74%) would be the best solution followed by deep tube well (23.69%), surface water use (7.18%), dew use (3.39%) respectively. As regards good quality seed and higher input price, most of them expected WRC take more initiatives to ensure good quality seed followed by BADC. Furthermore, some of them stored their previous year seed to reduce input cost. In our country, most of the farmers are very poor hence they have no money to initiate their cultivation. Therefore, they opined that regarding solving the problem government as well as NGOs should extend loan with small interest. For storage facility problems, they suggested that govt. should build more store house (79.23%) followed by traditional drum systems (20.77%). In view of soil fertility, most of them

expected to get more quantity of fertilizers (47.63%) cow dung (31.49%) and green manure (20.88%) respectively. For inadequate labours problem during peak period, most of the respondents worked in their own field, sometimes women and relatives helped them. Problems regarding communication with extension worker, they opined that they might get help from experienced farmer as well as dealer. In case of marketing problems and lower price of the product, majority of the respondents suggested that govt. should take initiatives to improve marketing channel as well as transportation systems. To make wheat production more profitable most of the farmers suggested that, WRC should give more training as well as technology of wheat. Being conscious about environmental pollution and exploration of agro-forestry systems, most of the respondents suggested that, govt. should broadcast more programme on television so that people could easily understand how they would keep environment safe as well as reap diverse benefit of agro-forestry systems. Nevertheless, they gave suggestions to apply zero tillage regarding big tree roots problems of agro forestry systems. Last of all, as regards rodent infestation, some of them opted for use of rodenticides while others wanted to use rodent trap.

**Table 11.** Proposed suggestions to overcome the problems as suggested by the respondents for their better livelihood in the study area

<b>Sl. No</b>	<b>Nature of problem</b>	<b>Suggestions to overcome the problems</b>	<b>Percentage (%)</b>
1	Lack of irrigation facilities	Shallow tube-well	65.74%
		Deep tube-well	23.69%
		Surface water use	7.18%
		Dew use	3.39%
2	Lack of good quality seed	BADC	33.59%
		WRC	66.41%
3	Higher price of inputs	Stored their own seed	40.11%
		BADC or WRC produce more seed	59.89%
4	Lack of cash money	Loan from friend	17.67%
		Govt. loan should be in easy process	57.23%
		Loan from NGO	25.10%
5	Poor storage facilities	Build more store house	79.23%

		Drum	20.77%
		Cow dung	31.49%
6	Declining soil fertility	Fertilizer	47.63%
		Green manure	20.88%
7	Lack of adequate labor in the production period	Self-working	76.28%
		Women	17.39%
		Relative assistance	6.33%
8	Poor contact with extension media/agents	Assistance form Dealer	37.13%
		Assistance form experienced farmer	62.87%
9	Marketing problems of the products	Improvement of market channel	73.29%
		Govt. directly bought their product	26.71%
10	Lower price of product during harvesting period	Storage facilities	29.57%
		Improve transportation systems	70.43%
11	Arranging practical training for farmers	Initiative needed from –DAE	26.23
		WRC	67.43%
		NGOs	6.34%
12	Increasing farmers' awareness on environment pollution	Campaign	9.15%
		Mass media	90.85%
13	Formation of effective organization for the farmers	FFS	31.67%
		Group discussion	35.82%
		Co-operative	16.39%
		Club	16.12%
14	Ensuring much more publicity of agro forestry practices through national media	TV	93.49%
		Radio	2.31%
		Newspaper	4.20%

15	Big trees root in agro-forestry	Zero tillage	59.17%
	field	Root pruning	40.83%
16	Agro forestry create shade on wheat field	Shoot pruning	100%
17	Rodent problem	Trap	37.03%
		Rodenticides	62.97%

## Conclusion

Wheat is an integral part of the global food system including Bangladesh. Its consumption is also expanding, increasingly in developing countries, which now account for more than half of the global harvest. Shorter cultivation period and high energy content have made it a valuable cash crop for the millions of people. In the context of high population growth rate, reduction of cultivable land and crop losses due to frequent climatic hazards, the livelihood situation of Bangladesh will be more acute in the coming years. Increased wheat production definitely will contribute to overcome this situation. In respect of knowledge level, most of the farmers provided correct answer regarding high yielding varieties (82.5%), local varieties (81.25%), optimum planting time (83.13%), and irrigation scheduling (83.75%), while providing incorrect answer about heat tolerant varieties (33.75%) and suitable fungicides for controlling disease (30.00). However, regarding changes in wheat production technology over time, for seed source, most of the wheat growing area were found to cover by seed from WRC while previously they had collected seed from BADC; for variety, major area of the selected farmers used “Prodiv” which was now replaced by BARI Gom-26, BARI Gom-27, BARI Gom-28; for planting time, major areas were planted in 5-14 November which now shifted to 15-30 November due to changing climate. Having good training, most of the respondents used line sowing instead of broadcasting for better intercultural operation. Nevertheless, due to continuous wheat cultivation, soil fertility status declined drastically, therefore, use of chemical fertilizers increased dramatically compared to 10 years back. The farmers of the study area were found to have well experienced about wheat cultivation due to close contact with WRC, therefore, area covered by recommended irrigation scheduling increased fascinatingly compared to previous 10 years. In addition, practice of optimum weeding and control of pests and diseases increased notably compared to previous years to obtain higher yield. Nevertheless, owing to adoption of modern technology of wheat, yield increased almost twice than the previous time.

Based on the findings of the study and keeping the objectives in mind, the following conclusions are drawn:

1. Farmers of the wheat growing areas were well aware about the modern technologies of wheat cultivation because of the advantages of close contact with the Wheat Research Center (WRC) located at Dinajpur Sadar. Adoption level of using quality seed, suitable planting time, seed rate, fertilizer application and irrigation scheduling were found to be very high, while there were minimum awareness among the growers about the different diseases and control measures. Nonetheless, yield of wheat in the study area increased over time in spite of changing climate due to adoption of modern technologies particularly new varieties and cultural management practices.
2. A good number of suggestions and recommendations were drawn from the study for gaining maximum outputs by the growers combating the recent changes of local climate. These were visiting and monitoring of wheat fields by extension personnel, dissemination of modern technologies, training to improve technical knowledge and skills, and providing credit with low interest rate. Besides, more research particularly for developing heat tolerant and diseases resistant varieties of wheat should be high priorities for the study areas of North-West region of Bangladesh.

Based on key findings of the study, the following recommendations are put forward:

1. Technology performance gap i.e. gap between technology use and productivity need to be minimized by increasing yield per unit. Technology adoption qualities need to be improved through knowledge and skill enhancement as well as through its proper application.
2. Awareness through demonstration and training are required to promote fruit based agro-forestry systems in the study area to minimize the disparaging effect of climate change.

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## **Challenges of Career Development in Bangladesh**

Md. Shafiul Islam, Ph.D<sup>1</sup>

### **Abstract**

Sustainable development is very important for developing countries like Bangladesh for peaceful life of its citizens. For this, it needs planned development process and to materialize this process, skilled human resources are necessary. Therefore, planning for skilled human resource is pivotal and one of the major essential components for sustainable development. It is also a part of individual's career development plan. As planning is very important to run or manage an organization properly, it is also essential for every human being to chalk out a career plan that is needed not only for his or her own but for family, society as well as national development. Moreover, career planning is very important for skilled human resource which is indispensable for development of a country. Presently, Bangladesh is enjoying 'demographic dividend' and it is said that if this opportunity is capitalized, it would bring rapid national development as expected and set by the vision 2021. But is there any formal career planning mechanism in Bangladesh? Is there any specialized institution in the country which can play vital role to design career for human resource development? What are the essential components for career planning? Are the existing institutions playing their proper role for career planning or development in the country? This article explores answers to these questions and finds that there is neither formal mechanism nor specialized institution in the country. Educational institutions are playing limited role in this regard. They provide certificates as a qualification for career development or employment. Some private institutions are offering career planning tips commercially. Methodologically, however, this scholarship is qualitative in nature and both primary and secondary data have been used to prepare this article.

**Keywords:** Career Development, Planning, Education, Bangladesh

### **1. Introduction**

Sustainable development is very important for developing countries like Bangladesh for prosperous and peaceful life of its citizens. For this, planned development process is needed and to materialize this process, skilled human resources are urgently needed. Therefore, planning for skilled human resource is pivotal and one of the major essential components for sustainable development. It is also a part of individual's career development plan. Career planning is not an easy task. It depends on individual's needs, aspirations and skills. Despite such parameters, scope of employment opportunity of territory diktats very much in

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Corresponding author's email: [shafiul.pad@gmail.com](mailto:shafiul.pad@gmail.com)

<sup>1</sup>Associate Professor, Department of Public Administration, University of Rajshahi Bangladesh.

designing career plan of individuals. Besides, it is obvious that educational qualification, in many cases, cannot provide career guarantee. Special training, abilities, skills and so on often appears very much influential indicators in regard to career planning. According to Edgar Schein career planning is a continuous process of discovery in which an individual develops his own occupational concept as a result of skills or abilities, needs, motivations and aspirations (Manolescu 2003 cited in Antonie, E. 2010, 13-14). It can be said that career planning is a dream of individuals which would be accepted as profession in future. But the dream is dreamt in the context of society, territory, economic condition, employment opportunity and state's mechanism. In developing countries like Bangladesh, career planning is simply viewed as future profession which would be instrument of earning for living of an individual.

However, in 1971, Bangladesh was born as war ravaged country. The socio-economic conditions were very miserable. Shortly after independence of the country, people experienced famine. During this period the country was labeled 'bottomless basket.' In addition, the political situation was also volatile. After forty years, however, Bangladesh is now a 'role model' country in many cases in the world. The country has already achieved most of the Millennium Development Goals (MDG) and captured international recognition. In spite of such achievements, the country still lags behind in many indicators especially governance indicator in the world. On the other hand, despite being a small country, it has a huge population. Consequently, it faces multiple difficulties in terms of providing quality education, employment opportunities, skill development, and so on. Yet, with the demand of time, education and employment sectors have been widened. New area of job markets is explored. In this respect, information and communication technology (ICT) plays a great role to expand employment opportunities in the country. Despite such expansion of employment sectors, two types of reality are widely discussed. Firstly, the employers claim that they do not get qualified graduates to be employed, and, secondly, on the other hand, the job seekers demand that they are not being evaluated properly for any employment. They claim, further, that they are deprived of getting job due to various reasons such as nepotism, favoritism, corruption, bribery, and so on. However, scarcity of employment opportunity is another problem. But Islam reveals that in most of the cases, the job seekers do not get jobs according to their own choice owing to lack of their career planning (Islam, 2015). So, this scholarship investigates that when and how the process of career planning is started. What factors are considered as determinants to design career plan. Is there any specialized institution which works for designing career plan for human resource development in Bangladesh?

### **1.1 Statement of the problem**

Career development planning is a very important factor for an individual. So, it should be designed carefully. If it is not done properly, frustration grips

graduates. It is found in the report of The Economist. According to the news of The Economist (cited in the Prothom Alo, 2 March 2014), 47% graduates are unemployed in the country. It indicates that, among many others, it happens due to lack of proper career development planning.

## **1.2 Significance of the study**

Training is very important to make human being as skilled human resources that lead the country towards sustainable development rapidly. It begins during undertaking formal education as pre-service training. This leads proper guideline for future career development plan of an individual. For this, proper initiatives should be undertaken based on aspiration, skill and capability. This scholarship, it is believed, would contribute to take policy initiatives in this regard.

## **1.3 Objective of the study**

The fundamental objective of this article is to explore to what extent career planning is important for human resource development in Bangladesh. The specific objectives are to:

- Know the career planning process
- Explore the career planning problems

To materialize these objectives, some research questions have been set. These include:

- Is there any formal career development planning mechanism in Bangladesh?
- Is there any specialized institution which can play vital role to design career plan for human resource development in Bangladesh?

## **2.0 Methodology**

Methodologically, this scholarship is qualitative in nature. The logic for the choice of a qualitative study lied with the research problems dealing mostly with 'why' and 'how' questions. This research explored the specific case as a whole and was able to manage the systematic control over the sources of variation and make an understanding of the process of career development challenges in Bangladesh. It is, however, an output of a study which was conducted in 2015 to know graduates' perception about their career development plan. Participants of this study were graduated from Dhaka University and Rajshahi University. A total of 40 graduates, 20 from each university, were interviewed, administering close-ended and open-ended questionnaire. Moreover, four FGDs (two in Rajshahi University and Two in Dhaka University) were

conducted to explore career development phenomenon in Bangladesh. The selection of sample size is made on the basis of cost and time frame limitation. The sample selection has been done simply randomly and purposively to get information easily.

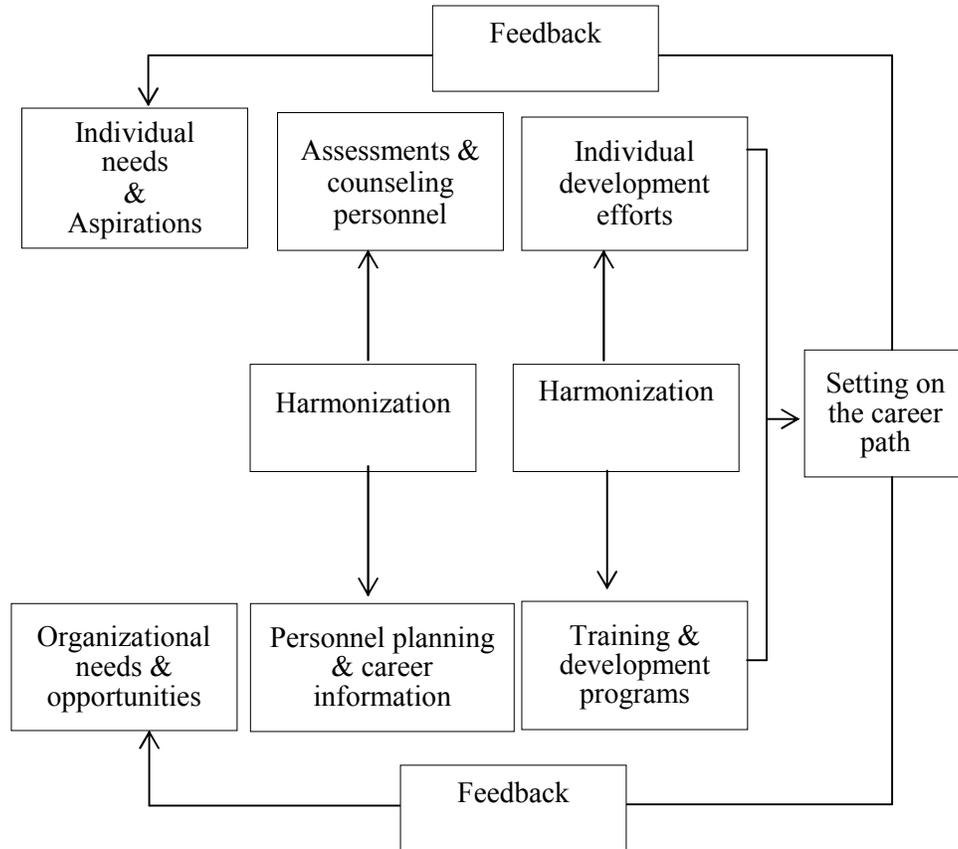
However, as it is mainly based on primary data, different methods have been used to collect primary data. These are: (a) Open-ended and closed ended questionnaire survey (b) In-depth Interview (c) Focus Group Discussion, and (d) Observation. These data collection techniques are used to get quality and qualitative data. Open-ended and closed ended questionnaire techniques have been used to collect general information easily. On the other hand, in-depth interview is very important to explore and get the real information about the research issue. Through this interview, researcher can realize the intensity, insight story, degree of untold history or so on of respondents and research issue. So, for qualitative research it is very much effectual. Besides, focus group discussion makes a clear conception about ambiguity of data and it also paves the way of cross-check of data. Nobody can deny or ignore the scene that has been seen by own eye. Observation does the same. Moreover, gestures of respondents reveal much information. So, researcher cannot keep eyes closed during his/her research or field visit to collect primary data. Therefore, it can be said that these data collection tools are very convenient for getting and collecting qualitative data. In addition, secondary data and experiences have also been accounted to prepare this piece of reading.

### **3.0 Definition of key term: Career development planning**

Career planning is perceived as self-generated career development goals of individuals that are spiritual in nature. However, the following figure 1 shows us career planning process. It is a general perception about career planning process. The figure illustrates that:

'the career planning process involves both the organization and the individual responsibility. Thus, the individuals must identify their aspirations and abilities, and through assessment and counseling to understand their needs of training and development; the organization needs to identify its needs and opportunities, to plan its employees and to ensure its staff the necessary information and appropriate training for career development (Antoniou, E. 2010, 14)'

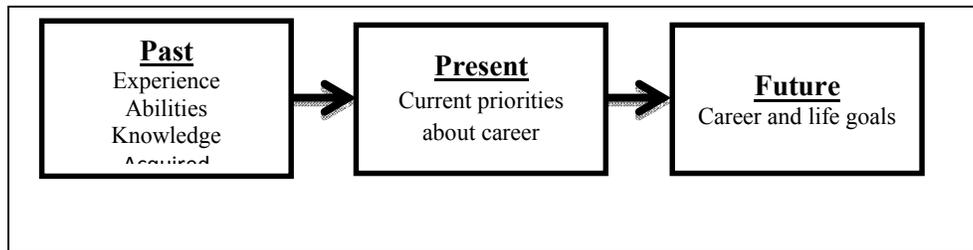
Figure1. The career planning process



Source: Adopted from: J. M. Ivancevich and W. F. Glueck, in AurelManolescu- Human Resource Management (cited in Antoniu, E. 201, 14).

Moreover, there are two approaches to career planning (Manolescu, 2003 cited in Antoniu, E. 2010, 16), depending on the emphasis on the needs of the organization or on the individual objectives. According to Chartered Institute of Personnel and Development, 2005, individual perspective on career is determined by the status of the individual professional and personal life, age, family circumstances, financial expectations, desired lifestyle, etc. (Cited in Antoniu, E. 2010, 16). It can be shown in the following figure 2.

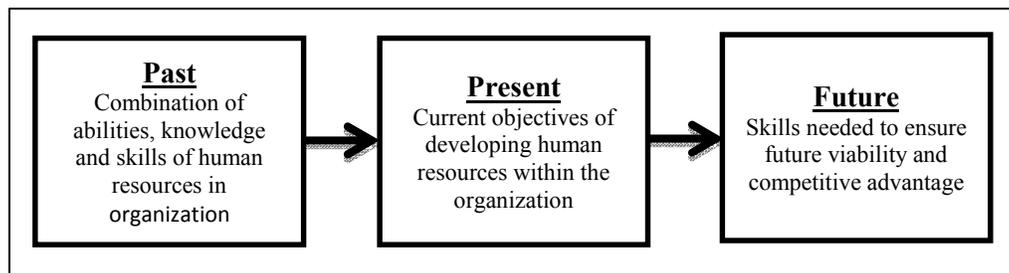
Figure 2 Individual's perspective on career



Source: Adopted from Antoniu, E. 2010, 17

On the other hand, organizational career planning has a critical role in attracting, developing and maintaining the staff (Antoniou, E. 2010, 17). It depends on organizational structure, economic strength, technological advancement, and so on. Many employers offer numerous opportunities, including promotion, to its employees for better achievement of the organizational goals. The following figure 3 shows the organizational perspective on career.

Figure 3 Organization's perspective on career



Source: Adopted from Antoniu, E. 2010, 17

After aforesaid discussions it is evident that career development planning is mainly a combination of individual's needs and aspirations along with the objectives of an organization.

#### 4.0 Data analysis

Career development planning is designed with the needs, aspirations and motivations of individuals. It is also influenced by existing circumstances of an environment. To know the career development planning process in the context

of Bangladesh, a study was conducted and it revealed that in many cases, especially it is found among the graduates of Rajshahi University, there is no specific career plan. It happened due to lack of clear perception about job markets or employment sectors. However, data gathered in this regard are presented below.

Table 4.1 Number of participants in the study

University	N	M	F	Business graduates	Social Science graduates	Arts/Humanities Graduates
Rajshahi University	20	10	10	6 (F-3, M-3)	8 (F-4, M-4)	6 (F-3, M-3)
Dhaka University	20	10	10	6 (F-3, M-3)	8 (F-4, M-4)	6 (F-3, M-3)
	40	20	20	12	16	12

Source: Author, field survey, N=total number of respondents, F denotes Female, M refers Male.

Table 4.1 presents that total number of participants under this study was 40. Among them, 20 were male and the rest 20 were female. Of them, 16 graduates belonged to social science, 12 were business graduates and the rest 12 were arts/humanities graduates. Under this study, graduates under science faculty, agriculture faculty, fine arts faculty, and engineering faculty were not included due to time limit and cost-involvement.

The study was conducted to know general perception about career development planning and job market in Bangladesh. It is qualitative in nature. For this four focus group discussions (FGD) were conducted to understand deeply the perception of graduates' about their career development plan and employment opportunities in the country. It was also tried to know the level of awareness of graduates about different categories and status of employment opportunities in Bangladesh. However, graduates from Dhaka University are more conscious about their career than the graduates of Rajshahi University.

However, this study reveals a comparative scenario about career development planning. Primarily, career development in Bangladesh is like a 'bread for living. It is not like a 'chocolate' for pleasure. So, individuals plan their career but it does not happen in a planned way. Moreover, there exists central and peripheral phenomenon in designing career plan. Graduates from Dhaka University are in better position in terms of career development planning

compared to Rajshahi University. In addition, groups of secondary school certificate (SSC) and higher secondary certificate (HSC) are very vital to determine the career plan in Bangladesh. However, when interviewed, graduates of Dhaka University seemed more confident compared to their counterparts of Rajshahi University. Why has it happened? Replying to this query, graduates of Rajshahi University argue that all sorts of career development oriented facilities are available in Dhaka. They (Rajshahi University graduates) enjoy such types of facilities very limited. When asked about technological advancement and facilities in the job market and employment opportunities, graduates of Rajshahi University again claim that they lag behind their counterparts in Dhaka University due to shortage of practical opportunities.

On the other hand, female graduates of Rajshahi University are more vulnerable compared to Dhaka University. Because, although the female graduates are allowed to pursue higher study at Rajshahi University, their parents are not interested to allow them to build their career based in Dhaka, they assert. However, in designing career plan, the graduates of Rajshahi University seemed to be indifferent. The study reveals that they are very much interested to complete their graduation and post-graduation degree first. Then, they think about career and try for job. When asked about future career one of my students said after completion of his honours graduation he wanted to be a sub-inspector (SI) of police. It reveals that they do not have clear idea about employment sector or status of job. Generally, graduates of Rajshahi University know about Bangladesh Civil Service (BCS), primary school, secondary school and college, bank and company jobs. But they do not know details about status or position in terms of rank, gazette, non-gazette, cadre, non-cadre jobs in the government services. Due to lack of such type of knowledge, graduates of Rajshahi University, in many cases, cannot design proper career development plan. Besides, they just want job after completion of their graduation. It happened as most of the individuals come from middle class of the society, it revealed.

Graduates of Dhaka University, however, seemed smart in terms of their career development thinking. During FGD, it is revealed that they all have fixed their future career plan. Now they are trying to materialize it. It is revealed that many graduates designed their career plan that can be achieved before completion of their master degree. They appear at BCS examination and many of them managed to get their expected jobs before leaving their hall (residential hall of university). The graduates belonging to arts and social science, start their career plan from the very beginning of their university life. Surrounding environment motivates them to do so, it is observed. It is also observed that many graduates plan for higher study abroad which is generally absent among the graduates of Rajshahi University. To pursue higher study abroad, Dhaka University graduates take extra preparation for getting scholarship. They complete IELTS, TOEFL, GRE, GMAT and so on. Besides, they engage in

different activities such as tuition, part-time research, part-time job, and so on. Such types of opportunities and facilities are not available in Rajshahi.

Although they seemed confident, there is some confusion to reach their destination. According to the news of The Economist (cited in the ProthomAlo, 2 March 2014), 47% graduates are unemployed in the country. Moreover, respondents participated in FGD said that corruption, nepotism, favoritism as well as quota system in most cases appear as major problems to materialize their career development plan in the government services. Under this circumstance, many of Dhaka University graduates are now interested in private sector employment as in many cases it is free from corruption and offers higher financial benefits and other facilities.

The study also reveals that graduates from arts group face multiple difficulties in terms of designing their career plan. They have limited career opportunity compared to science, commerce and social science graduates.

It is further observed that as first choice graduates mostly try for class-I cadre service through BCS examination which is conducted by the Public Service Commission (PSC). It is evident to see the increasing number of candidates every year in the BCS examination. According to the official record, a total of applicants were 146167 in the 31<sup>st</sup> BCS preliminary examination against the post of 2909 (PSC annual reports 2012, 10). In 33<sup>rd</sup> BCS preliminary examination, the total applicants were 193059 against the post of 8077 and in 34<sup>th</sup> BCS preliminary examination, the number of applicants was 221575 against the post of 2052 (PSC annual reports 2013, 11-12).

So, it is observed that graduates' first choice is to be BCS cadre officer in Bangladesh. But in many cases they become frustrated for the lengthy process of final selection.

However, ten economic zones were inaugurated on February 28, 2016 by the Prime Minister of the People's Republic of Bangladesh (ProthomAlo, 29 February 2016). It is supposed that by laying foundation stones of such kind of economic zones, huge employment opportunities would be created. But it is not clear to us that what kind of employment opportunities would be created. What kind of human resource would be needed? In the seventh five-year plan (2016-2020), it is forecasted that the share of employment opportunities in the manufacturing sector will be increased from 15 to 20 percent during this period (GoB 2015, xxxviii).

It needs, however, specific sectors so that individuals can design their career development plan based on needs, aspirations, skills as well as job security, promotion prospect and so on.

## 5. Discussion and interpretation

### Career Development Planning in Bangladesh: Process and Problems

There is a well-known proverb 'Education is the backbone of a nation.' So, education is the key determinant to design career plan irrespective of any nation or country. However, in Bangladesh career planning process mainly begins at secondary level, Secondary School Certificate (SSC) when students have no idea about their career development without a dream only. So, at this stage they dream only, observing surrounding context, nothing else.

But in the context of Bangladesh this stage is very important for designing career development plan. Because students are divided into different groups such as science, commerce, arts/humanities, technical, vocational and so on from class IX. They are divided either by the choice of their parents or teachers, well-wishers, and most importantly the surrounding environment. Parents diktat their kids, teachers influence their students and surrounding environment motivates them to belong to a particular group i. e., science, commerce, humanities, etc. Basically, the influential actors consider that this is high time for their kids to design career development plan here and it is obviously true in the context of Bangladesh. Because, to be a doctor (physician), engineer, pilot, D.C., S. P. (bureaucrats- although at this stage these concepts are not clear among students, even among many parents and teachers), university teacher, barrister, and so on, foundation stone of career development is laid down at this stage. However, table 5.1 shows the socio-background of the respondents, their groups at SSC level and the actors who took decision to choose their group at this stage.

Table 5.1 Respondents' socio-background, group at SSC and actors for choosing this group

Who did decide to take such group	Group at SSC level			Total	
		Arts/Humanities	Science		Commerce
Teacher	Rural	3	8	3	14
	Urban	3	4	3	10
	Total	6	12	6	24
Parents	Rural	2	0	3	5
	Urban	3	3	2	8
	Total	5	3	5	13
Well-wishers (uncle, elderly people of village)	Rural	0	2		2
	Urban	1	0		1
	Total	1	2		3
Total	Rural	5	10	6	21
	Urban	7	7	5	19
	Total	12	17	11	40

Source: Author, field survey

Later, at the stage of higher secondary (HSC) level, in many cases, the future career plan of students is deviated. Many students belonging to science group go to commerce group and many students belonging to commerce group go to humanities group at this level. But there is very little options of the students belonging to humanities group, to change their group. In most cases, results of SSC appear influential factors and to some extent students are compelled for this result to change their group at the HSC level. Here emotion disappears and reality becomes visible to individuals. But this is the final stage for designing future career development plan of individuals. Here the same factors as in SSC level remain active to determine the group at HSC level for future career. Very few students can take their own decision to choose their group that would lead them to build their career in future. The following table 5.2 represents the scenario.

Table 5.2 Respondents' socio-background, group at HSC and actors for choosing this group

Group at HSC level		Who did decide to take this group				Total
		Teacher	Parents	Well-wisher (Uncle, elderly people of village)	Do not know	
Arts/Humanities	Rural	5	2	0	-	7
	Urban	4	3	1	-	8
	Total	9	5	1	-	15
Science	Rural	3	-	2	1	6
	Urban	1	-	0	0	1
	Total	4	-	2	1	7
Commerce	Rural	7	0	-	1	8
	Urban	5	5	-	0	10
	Total	12	5	-	1	18
Total	Rural	15	2	2	2	21
	Urban	10	8	1	0	19
	Total	25	10	3	2	40

Source: Author, field survey

At tertiary level, i. e., university level, graduates finally design their career development plan. But in many cases, students again deviate from their future career plan. Because, limited students get admitted to medical colleges to be future physicians, limited students also get admitted to engineering universities, to be future engineers, although many of them are compelled to choose general job instead of engineering jobs. But a huge number of students get admitted to general universities under different faculties such as science, social science, arts, law, engineering, agriculture, fine arts and so on. At this stage, it is assumed that every individual designs his/her career plan. At this point, parents cannot dictate

their sons and daughters to choose or select their career. At best, they utter or encourage them saying that 'select such type of profession as career or choose it which you consider 'good''. Here teachers cannot influence their students other than encouragement and motivation to design career plan. But the most influential factor is surrounding environment where an individual live, and that leads an individual to design or redesign career plan in Bangladesh. The following table 5.3 presents the factors that dictate to design career plan of the graduates for their future.

Table 5.3 Subject choice at university and Factors dictate for career design plan

Who decided your subject choice at university?		Factors dictate for career design plan			Total
		Family needs	Surrounding environment	Family needs & surrounding environment	
	Teacher	1	3	1	5
	Parents	8	2	3	13
	Own/considering job market	0	2	7	9
	Surrounding environment	3	0	4	7
	University elder brother/sister (known during admission)	1	1	1	3
	Well-wisher (uncle/local elites)	0	0	3	3
Total		13	8	19	40

Source: Author, field survey

The foregoing discussions make it clear that foundation stone of career development plan is laid down by the choice of parents, teachers and well-wishers. And it happens at the early stage of an individual when he/she has no idea about prospects and problems of future career. When an individual realizes it, he has nothing to do to choose as per his choice but to search alternative options of career only. However, the educational institutions can play a vital role to design career plan of an individual. It is found, for example, in the Princeton University. Princeton University under its career services department publishes 'career guide' as a resource for its students to assist them in developing their career plans (Career Guide 2013-2014, available at <http://careerservice.princeton.edu>). Staff of career service department presents more than 250 career-related programs every year, including skill-building workshops, panel events and networking socials, career fair, and visits by graduate and professional schools.

But in Bangladesh, there is no such guideline for students studying in public universities. The higher educational institutions mostly public universities only provide `graduation, post-graduation certificates after completion of a four-year or one year academic calendar respectively. Obviously, it denotes qualification of an individual for getting or applying for employment. There are student advisor's offices both at Dhaka University and Rajshahi University. But unfortunately it has now become an office of `political advisor office' and in most cases it deals with political issues with the existing `political student front' belonging to power party, opposition party and so on. It is very much visible in the campus of Rajshahi University.

On the other hand, some commercial organizations occasionally arrange some events such as job fair in public university campuses for their commercial purposes. However, the private universities in Bangladesh are more advanced in this regard. They often organize such type of program like job fair, career counseling, and so on. It seems that they do that as part of their publicity which ultimately goes to profit making objectives of these institutions.

## **6. Findings**

After foregoing discussions, it is clear that there is no formal career development planning mechanism in Bangladesh. With the needs and aspirations, individuals design their career plan and it is shifted from time to time.

So far as it is known there is no specialized institution in the country which can play a vital role for career development of individuals. The educational institutions which are deemed as formal institutions play limited role in designing career of graduates. It provides graduation certificate which is the foremost requirement for applying and getting jobs. Extra programs like skill development, short course on technical issues, training programs on different matters are not possible alongside the formal education in higher educational institutions in the country.

Human resource development encompasses many issues along with the formal education. It seems the country lacks in this regard due to manifold problems such as huge population, lack of quality education, lack of technical know-how and so on.

In Bangladesh the career planning process begins at the early stage, secondary level, of an individual in which period one cannot take one's own decision in regard to his or her choice. They are compelled to go to a particular section such as science, commerce, arts and so on which ultimately indicates one's future career development plan. However, science graduates have manifold scope in designing career development plan whereas graduates from humanities or arts have limited scope in designing their career plan.

Except few government services such as Bangladesh Civil Service (BCS), at present, educational qualifications are not enough to get jobs. Most of the private employers offer employment opportunities with many extra qualifications such as experience, alongside formal educational qualification. In this regard, the study reveals that the graduates especially of Rajshahi University lag behind of their counterpart Dhaka University graduates.

All educational institutions are considered as career planning institutions in the country. Individuals graduated from these institutions obtain 'certificate' which is deemed basic requirement for getting jobs or designing career in future. Except providing graduation certificate, these institutions have nothing to do in designing career plan of individuals.

Individuals graduated from Dhaka University are smarter than that of Rajshahi University. In many cases, the study reveals, individuals have no clear career plan before completion of their graduation. On the other hand, individuals graduated from Dhaka University design their career development plan from the very beginning of their university life. An individual, for example, graduated from arts group plans to do his or her post-graduation from business group (Master of Business Administration) as this qualification would facilitate to get job or design career plan. This concept is found absent among the graduates of Rajshahi University.

Thinking about future career among the graduates of Rajshahi University is far behind of their counterpart graduates of Dhaka University. It is observed that most of the students of Rajshahi University first plan to complete their honours graduation and master degree. Then they try for getting jobs and get themselves engaged in 'job preparation coaching' either in Rajshahi or in Dhaka. On the other hand, graduates of Dhaka University plan to get job or build their career after completion of their honours graduation as it is terminal degree. Moreover, many graduates of Dhaka University plan to go abroad for higher education which is almost absent among the graduates of Rajshahi University. That means graduates of Dhaka University are highly ambitious in regard to building their future career development whereas this passion is not usually found among the graduates of Rajshahi University.

## **7. Conclusion and recommendation**

### **Conclusion**

Managing jobs and getting employment opportunities are not achievement of career development plan. Not only self-creating employment opportunity but also providing jobs are also achievement of career plan. All these go hand in hand. For this it is needed to design career plan. In the context of Bangladesh, huge employment creation by the government alone is not possible. Private

sectors should come forward with diverse opportunities so that individuals are interested to build their career in this sector. In addition, self-employment opportunities should be created and individuals should be motivated and encouraged to be self-employed. Because, lack of career development planning can lead to frustration that may bring negative consequences on individual's life, family life and so on.

### **Recommendations**

To overcome the limitations regarding career development planning in Bangladesh, revamping of institutional set up is very important. For this, career counseling unit or human resource development unit should be set up at all the higher educational institutions in the country. From this unit, career guideline as like Princeton University as should be published every year. They should arrange different types of career counseling programs. Besides, the government should have a clear target of employment creation for a certain period so that individuals can take decision on the basis of government plan. It is needed because individuals of the country still prefer government jobs to private sector ones for job security and other benefits. Not only government sector but also the private sectors should have job security so that individuals can design their career plan in this sector. Moreover, many career counseling oriented specialized institutions should be set up in different parts, especially at divisional town of the country. Individuals should be offered psychological, managerial, behavioral counseling with respect to career plan. Most importantly, individuals should be encouraged and motivated to build self-employment oriented career. For this, they should be offered different types of facilities such as credit, training, etc .It is needed because only through employment creation it is not possible to meet the growing demand.

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