# Flood Occurred in 2017 in BangladeshAnd It’s Economic Loss Estimation

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***Abstract***

*Bangladesh is one of the most vulnerable countries having great tendency to be affected by various natural disasters for its geographic location, deltaic configuration etc. So, Bangladesh is facing many disasters every year causing great hamper. But we are not concerned about the economic loss estimation immediately after facing this disaster. This paper discusses this meticulously and wants to show the economic loss Bangladesh faced last august , 2017. To reveal this, we would include the five newspaper’s report such as the Daily Star, the Bangladesh News bd 24,the Dhaka Tribune, the Daily Sun, the Prothom Alo, and also the report of Disaster Management Ministry and the directorate General of Health Services (DGHS). From this reports, we can identify the number of peoples death , the number of affected people, the amount of hampered infrastructures such as houses, institutions, communication sectors, the loss of agricultural production. Converting this with respective economic loss to taka, we would attempt to estimate the amount of loss. We can also show the effects in GDP Growth Rate, Per Capita Income etc due to this flood.*

**Introduction:**

Flood is a common affair in Bangladesh and the people of Bangladesh has also mostly adjusted with it because they are facing many floods every year such as monsoonal floods and the flash floods or annual floods. Floods increase the water level of rivers rapidly and it is very dangerous as Bangladesh is a riverine developing country. We can’t select only one reason for causing floods because there are a lot of reasons. Such as Bangladesh is a deltaic country , it’s low lying area i.e it’s land is at an advancement of less than 8 meters above sea level,70% of the total area is less than above sea level, 10% of the land area is made out of lakes and rivers, the snow melting of Himalayas, sediment dumping in the rivers of Bangladesh due to the tectonic uplift of the Himalayas, monsoon rainfall, convergence of the three massive rivers in Bangladesh, Himalayan aerographic rainfall increases the total rainfalls and then increasing the water level of rivers etc are occurred naturally. Without these, there are also many causes which are created by humans. These are deforestation, increasing of the embankments leak and collapse in times of high discharge, increasing population pressure, the location of the main cities in the coastal areas , urbanization of the flood plain increased magnitudes of flood and frequency of floods,the sinking of many new wells, for being decreased the depth of the rivers etc. Climate change is the most important reason for causing this harmful flood.

In this year, Bangladesh faces many natural disasters like other years. But among these, the flood which occurred in this august inundating the northern part was very burning issue not only in Bangladesh but also the whole world. Because it caused great harms to the people, the society and also the country. It caused several deaths of people, damaged lakhs of houses, affected many peoples, damaged infrastructures, hampered agricultural productions etc. It also affected the entire economy of Bangladesh. During this, many people took shelter in shelter centre and Gov.t had to provide food, clothing treatment etc . Again, the Gov.t had to distribute much amount of rice, taka and other things as relief among the flood affected peoples. And after occurring such type of flood, Gov.t also had to provide a large amount of taka for repairments. Thus it caused great hamper in the economy of Bangladesh. Not only the Gov.t but also the people of stages around the whole country and the institutions kept great contribution in providing relief materials. So, we can tell that the flood affected the whole people of Bangladesh directly or indirectly.

This paper makes an attempt to show the probably Economic loss Bangladesh faced last month of 2017 and how it affected the entire economy of Bangladesh. And if Bangladesh is facing such disasters every year, then it will be a great threat for Bangladesh to become a developed country in the world. So, everyone should try to attempt for preventing it.

**Literature Review:**

From the previous history of Bangladesh, we can know that Bangladesh faced many floods small or big every year. But Bangladesh faced the most devastating floods in 1988, 1998, 2004, 2007 in the last two decades. These are described in the followings:

**Flood of Bangladesh in 1988**

In 1988 (Flood in Bangladesh, 1988), the most devastating flood was occurred in August. 35 Districts out of 64 wrere affecte’ 20 million people were affected , 1708 people were dead, 370,000 Hectares of crop areas were fully and 391,000 Hectares were partially damaged, 35 km of embankments fully and 687 km partially damaged, 510 bridges, culverts were damaged. As a result, Gov.t gave 2 million tons of food grain and 8 transport helicopters with crews. And in this flood, total financial loss was 4,000 million taka. Again, in this flood 25 million people became homeless and about two thirds of total population were affected in this flood.

**Flood of Bangladesh in 1998**

In the time of July-September 1998 (Flood of Bangladesh, 1999) , Bangladesh suffered one of its worse ever floods. Despite being flooding being common in this country, the floods of 1998 were particularly severe resulting in over 1050 deaths, affecting 30 million of people,25 million people were homeless, 26000 livestock lost, 575,000 hectares of crops were destroyed, 2000 schools and educational institutions were damaged, 300,000 tube wells were damaged, 1600 kilometers of roads were flooded, 4500 km of river embankments were damaged . As a result, different diseases such as bronchitis, diarrhea, cholera etc. were spread over the affected area. There was a serious shortage of drinking water and dry food. 2 million tons of rice was destroyed as over 57% of the total land area of Bangladesh was flooded. 1 or 2 million poultry and cattle were lost. Overall the floods cost our country almost $1 billion.

**Flood of Bangladesh in 2004**

The 2004 monsoon floods (Flood of Bangladesh, 2004) commenced around 8 July to September. 39 districts out of total 64 were submerged in those year.25% of the total population and 36 million people were affected in that year. 747 people were died off. 352,000 houses were submerged, 600,000 were destroyed, 1.1 million hectares of crops submerged. It also damaged many educational institutions, embankments, bridges & culverts etc. During this time, Cholera, Diarrhoea, Typhoid etc disease were spreaded over rapidly. The Economic cost of that flood was $ 2,200,000. In this flood, 6 million children were also affected in that flood.

**Flood of Bangladesh in 2007**

The flood of Bangladesh in 2007 (Kiron, 2007) was occurring in August. It was also caused by monsoonal excess rainfall and the level of rivers water was increased. It was one of the devastating flood in Bangladesh as it caused great hampers in the economy of Bangladesh. It was lasting from 3 July 2007 to 15 August 2007. About 800 people were died and ten millions of people were affected. Half of the part of this country was inundated by the flood water. The economic loss of this flood was 1.06 billion dollars.-https://www.slideshare.net.com

|  |  |  |
| --- | --- | --- |
| **Year** | **Death** | **Economic costs($)** |
| 1988 | 1708 | 2137000^8 |
| 1998 | 918 | 4300000 |
| 2004 | 747 | 2200000 |
| 2007 | 800 | 1.06 billion |

The above table gives a clear idea about the damages of the monsoonal floods those faced Bangladesh in the last two decades.

**Methodology:**

This paper tries to show the economic loss due to monsoonal flood in Bangladesh. To do so, we would collect 5 news report such as the Daily Star, the Bangladesh News 24 bd.com ,the Dhaka Tribune, the Daily sun, the Prothom Alo and also the news report of Disaster Management Ministry, the report of Directorate General of Health Services (DGHS). Then we got the data within various categories such as No. of affected districts, No. of people’s death, No. of affected people, No. of affected families , No. of damaged infrastructures such as houses, embankments, institutions, roads, bridges, culverts, tubewells etc, amount of destroyed agricultural land and the summation of different help aids. In this case, we assume that the number of death’s peoples average age was 35 and so their opportunity cost of income assumed as $ 1200. Then we multiply them with the no. of death. Again, if we assume that every family were affected by $100, then we multiply $100 with the amount of affected families. If we assume that the cost of affected per house is $500, we will multiply $500 with the amount of damaged houses. Thus, for each embankment the cost is $1500, for each institutions the cost is $500, for each kilometer road the cost is $100, for each bridge and culvert the cost is $1000, for each tubewell it can be $500, per hectare destruction of agricultural product we can let it as $500 and thus multiply them with the respective amounts and then convert them into taka by using respective laws. We also add different amounts of help aids from different sources and for the relief materials, fixing it’s per unit price and multiplying them with the amount ,we will sum up the whole amount. In this regard , the per kg price of relief’s rice assumed as 48 taka. The per bundle of tin’s price was 1000 taka, the dry food packet’s price was 90 taka, the food grains packets was 60 taka etc. For the data of Directorate General of Health Services, we will include the opportunity cost of the medical team workers as per worker is $500, different diseases affected peoples cost was $10 dollar per people and thus we can get the total loss of affected peoples by different diseases due to this flood. We also show the difference of GDP Growth Rate between pre and post flood affected years by using table and effects of them in the economy of Bangladesh those data are available. The rationality of this per unit estimation lies on the opportunity cost approach as well as physical value.

**Geography of the Affected Regions:**

In August, 2017 the flood caused by monsoon was severely affecting the northern part of Bangladesh. This flood affected much of the districts such as Dinajpur, Rangpur, Lalmonirhat, Kurigram, Thakurgaon, Panchagarh, Gaibandha, Sunamgonj, Netrokona, Rangamati, Brahmmanbaria, Chandpur, Shariatpur, Madaripur, Faridpur, Rajbarhi, Gopalgonj, Moulovibazar, Hobigonj etc. They are located mostly in the neares t area of the kingdom , Assam in India. Due to excessive rainfall and the melting of snow of the Himalayas because of deforestation in the Himalayas area and for rapid increase of the temperature of the world , the water level of Ganga, Bhrammaputra, Jamuna, Padma, Teesta caused this flood. Again the affected areas were situated in the low lying areas of Bangladesh.

From this figure, we can show the affected areas by the flood 2017 in Bangladesh and also the location of different large rivers of the world. Mainly this flood affected Bangladesh because it is the nearest low lying area of Himalaya’s areas.

**Loss Estimation:**

From the reports of the contents of the five newspapers and also the two reports, we can the result of the recently occurred flood’s loss and these comes to nearly 1 trillion taka. Again, from the another table in the following we would try to show the effects in the Bangladesh’s Economy as the Growth Rate of GDP increasing pre-year of occurring flood but in the next year though it should be increasing , it was decreasing because of facing flood.

**Conclusion Remarks:**

Bangladesh has great proneness to be affected by the different natural disasters and it is also very common to all people of Bangladesh that they have to do the struggle of living and adjusting with the such environmental situation. And they also do this. As a result of such disasters or hazards, many people died and other’s loss have been occurred. The economy of this country will be much affected in this regard. This paper wants to show the probable amount of loss Bangladesh faced in this year in last August. We show that it have already crossed about half trillion taka and it goes to nearly one trillion taka. Actually it is a great loss for any country mostly for Bangladesh because Bangladesh is a poor developing country. Such type of devastating flood is really unwanted. But we can not avoid these hazards because of our country’s geographic location, change of climate among the whole world and the most important factor is the unawareness of illiterate people of Bangladesh. These type of flood is also more harmful for Bangldesh as it’s economy is agriculture based economy. So, after happening such monsoonal flood, the agricultural lands are going under water and they are submerging all the agricultural products of the land of the affected regions. For this result, after the time of flood, the country faces a great scarcity of food and a shortage in the economy. And the country then wants to increase the amount of external debt from othe developed country. Every year, Bangladesh have to pay a large amount of Public Revenue as the Interest for this debt. Thus the floods keep influence over the whole economy of Bangladesh and it is also happens for the contented flood in this paper.

**The Table of Loss Estimation**:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Newspaper’s**  **Name** | **Affected Areas** | **No. of people’s death** | **No. of Affected People** | **No. of Affected Families** | **No. of Damaged Houses** | **No. of Damaged Infrastructures** | **Amount of destroyed Agricultural production** | **Amount of relief costs and help aid in taka** | **Sum of amount in TK** |
| The Daily (www. thedailystar.net) Star | About 25 districts | 88 | 6 Lakhs nearly | 9 Lakhs | 65,769 | 44km of embankments,1000 institutions | 42,351hectares | 122,39,52,140 | 6124,64,70,000 |
| The (www.bdnews24.com)Bangladsesh News 24 bd.com | 25 districts | 27 | 6 lakhs |  |  | 7130km of road | 25,630hectares | 317,49,40,800 | 936,66,59,460 |
| Dhaka (www.dhakatribune.com) Tribune | 32 districts | 150 | 8,202,0251 | 300,000 | 737,577 | 949 bridges and culverts,70705 tubewells | 104,949hectares fully and 498,660hectares partially | 19,14,37,440 | 6367,94,50,000 |
| The Daily Sun (www.dailysun.com) | 27 districts | 55 | 570000 | 284573 | 54465 | 3000 | 141,000 | 7113,51,60,000 | 8193,55,40,000 |
| Prothom Alo  (www.en.prothom-alo.com) | 20 districts | 37 | 3.9million | 75,0000 | 558625 | 1200 institutions and 6960km of roads | 172217 | 248,47,39,476 | 3928,95,30,000 |
| The Report by Disaster Management Ministry (www.disastermin.gov.ik/web.com) | 32 | 145 | 8 million | 832348 | 55383 | 9000km of roads,500bridges,100km of rail-lines,714km of embankments | 309542hectares | 246,09,00,140 | 1180,03,90,000 |

**The table of the loss by the report of DGHE which occurred after the flood in health sectores :**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| The report of Directorate General of Health Services (DGHS) (www.dghs.gov.bd>index.php) | No. of people’s Death | No. of affected people by Diarrhoea | No. of affected people by Waterborne diseases | No. of people by Drowning causes | No. of people by snake bites affecting | No. of people by affecting Skin diseases | No. of affecting people by RTI cases | No. of Medical Teams | Total amount of loss in taka |
|  | 198 | 27,595 | 24,669 | 219 | 61 | 3,148 | 3,787 | 3,000 | 96,91,29,900 |

**Table of the GROWTH RATE of Bangladesh in nearly year of occurance of large flood** (www.ieconomics.com)**:**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **year** | **GDP** | **YEAR** | **GDP** | **YEAR** | **GDP** | **YEAR** | **GDP** | **YEAR** | **GDP** |
| **1987** | **2.9%** | **1997** | **5.39%** | **2003** | **5.26%** | **2006** | **6.63%** | **2016** | **6.9%** |
| **1988** | **2.9%** | **1998** | **5.23%** | **2004** | **6.27%** | **2007** | **6.43%** | **2017** | **7.11%** |
| **1989** | **2.5%** | **1999** | **4.87%** | **2005** | **5.96%** | **2008** | **6.19%** | **2018** | **Not published** |

This table gives the data of Bangladesh of Economic growth rate of the pre year and the post year Bangladesh faced the most devastating flood in the five years as 1988, 1998, 2004, 2007 and 2017. But the GDP of 2018 has not been published yet. Here we can see the the GDP growth rate of the previous year and the post year of the affected year is not same. In every context, it is decreasing than the previous year.

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