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বাংলাদেশ ট্যারিফ কমিশন

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## Editorial Note

By the grace of Almighty Allah, we have successfully published the inaugural issue of journal “Bangladesh Journal of Tariff and Trade”. As a quarterly journal we have taken further initiatives to publish the second issue incorporating six articles contributed by different scholars.

This issue has been enriched with the articles on Edible Oil, Ornamental Flower, Tourism at the coastal environment and Preferential Trade Agreement (PTA)/ Free Trade Agreement (FTA) of Bangladesh with Bhutan, Mauritius and Myanmar. These articles focused on economic overview, trade performance, trade regime, bilateral trade, potential products, environmental impacts, and the risk of trade diversion of Bangladesh along with some policy recommendations.

We hope these articles will contribute to develop our understanding on tariff and trade related issues. We also hope that researchers from other organizations will volunteer from the next issue to disseminate their knowledge and ideas for policy formulation.

I convey my gratitude and thanks to the Chairman of the Commission Dr. Md. Azizur Rahman, members of the advisory and editorial board, the contributors and concerned executive staff of BTC to the unbreakable journey.

Mohd. Khalid Abu Naser  
Editor in Chief  
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# An Analysis of Assistance to Edible Oil Manufacturing Industry and Examining Export Possibilities

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## Abstract

Demand for Edible Oil in Bangladesh is about 15.09 lac MT. Estimation has been made on the basis of per capita consumption of 9.70 kg per annum. Most of the demand is met by refiners. Contribution of local produced seeds is too little. Since the 2011 some entrepreneurs started to produce Rice Bran Oil and till now established fifteen (15) Rice Bran Oil industries in the country. In the year 2021 demand for the edible oil would be increased to 24.91 lac MT with the increase of population. 30.59% of the demand in 2021 could be possible to meet by Rice Bran Oil, if bran is available from rice plant (Paddy) properly. Based on the discussion of Production Process, import, export, production capacity of the industries, recommendation such as crude import by refiners only, utilize full capacity, increased supply of seed, to increase production of seeds by HYV seeds, convert all manual rice mill to semi auto (introduce Rubber Roll Huller Mill in place of Angle burg Huller Mill) and auto mill, full utilization of Rice Bran, imposition of VAT on one stage for refining crude etc. have been made. This is an updated concise version of the total report of “An Analysis of Assistance to Edible Oil Manufacturing Industry and Examining Export Possibilities” which was published on December, 2014 by Bangladesh Tariff Commission.

**Key Words:** Edible Oil, Oil Seed, Oil Production

## 1. INTRODUCTION

The demand for edible oils in Bangladesh is being met up in every year by imports of crude soybean and palm oil. Contribution of locally produced mustard seed along with sesame seed, lin seed and ground nut seed to the production of edible oils are very negligible. Total acreage under the cultivation of oil seed increased and the total production of oil seeds has remained more or less constant during the last three financial years. The average production of 2.19 lac M.Tons oil from domestic source per annum is obtained. Some ground nut seed, rape seed and canola seed, sesame seed, mustard seed is imported for domestic extraction, but the bulk of the imports consist of crude soybean and palm oil along with too little quantity of refined soybean and refined palm oil.

The Perspective Plan of Bangladesh (PPB) 2010-21 aimed at increasing the production of domestic seeds for providing the population with 40 gm per day (14.6 kg per year) of edible oil in 2021

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at page 81 of PPB as against 57.43 gm (20.96 kg per year) advised by FAO. Population would reach to the 17.06 crores as estimated in 2021 if population increases at the rate of 1.32%. As per PPB the demand for edible oil would be 24.91 lac MTs in 2021 as estimated. On the contrary, present per capita consumption of Pakistan and India is 14 kg and 13.92 kg per annum respectively. On the basis of the present consumption pattern (9.70 kg per annum or 26.57 gm per day), the total requirement of oil become 15.09 lac M.Tons for a population of 15.56 Crores. Since the domestic production of edible oil is only 2.19 lac M.Tons on an average per annum, the country needs to import around 12.90 lac M.Tons of edible oil from outside that means to import crude soybean or palm about 13.44 lac M.Ton. In reality, however, actual average import during 2002-03 to 2013-14 were only around 11.89 lac M.Tons on an average per annum including the oil extracted out of imported seed, refining imported crude and refined edible oil there by making the total availability of edible oil in the country on an average 14.08 lac M.Tons. At present, on an average domestic production can only supply around 14.51% of current apparent consumption or around 8.79% of targeted requirement in 2021.

Edible oil seeds were usually crushed in traditional bullock powered ghanis (Mills). The crushing capacity of these ghanis were very small, hardly 14-18 kg of seed working for 8-9 hours. Due to the dearth of bullocks and low extraction capacity, these mills have already been abolished. Gradually, these Mills have been replaced by power driven mechanical mills. Edible oil seeds are now crushed in power driven mills though the information on the number of power driven mills are not known. But it is apparent that the demand of seeds for these mills is not able to meet only by domestic production. It depends on import of seeds also. Domestic seed hardly covers to continue the production for only three months. In addition to those oil mills for crushing the oil seeds, there are twelve refineries, currently in the position of refining imported crude soybean or crude palm oil within the country. These refineries are all 100% import oriented plants. The total production capacity of these refineries is 50,76,000 M.Tons per year though capacity has now been reduced due to the closure of some refineries.

On the other hand, Rice Bran Oil is considered to be good oil for health as it contains orzonal- considered to be good for heart. Rice Bran is a light red covering upper part of the rice under the husk of paddy. This type of industry in our country has already been established. This should be noted here that as per PPB rice production must be increased by over 3,00,000 MT (Page 27 of PPB) annually to feed the additional population. Therefore, rice production will have to be increased to 3.54 Crores MT by 2015 and 3.68 Crore MT by 2021 (page 28 of PPB). If it is possible to increase the quantity of production of rice, this will increase the production of rice bran oil. Supply of Rice Bran Oil can be able to meet the increased demand of edible oil in 2021 by about 30.59% of the total demand. But it depends on the rice production and proper utilization of rice plant (Paddy) to bring about Rice Bran. Therefore, it is needed to turn all the manual Rice Mill to Semi Auto (introduce Rubber Roll Huller Mill in place of Angle burg Huller Mill) and Auto Mill.

Unless measures are taken to increase the domestic production of edible oil out of domestic seeds or Rice Bran, there will be more drainage of foreign currency to meet the increased demand in 2021.

## **2. AVAILABILITY OF EDIBLE OIL**

Domestic Production of Edible Oil can be divided into three such as oil produced out of domestic seeds of all varieties, oil produced out of imported rape seed, canola seed, mustard seed and last of all by refining crude oil (both soya bean and palm oil). It is observed that rape and mustard seed along with



others were not imported in the year 2007-08 and 2008-09. But very small quantities of mustard seed were imported in 2008-09. It is known that because of high price in the year 2007-08 and 2008-09 no seed were imported into the country. Therefore, it is needed to increase the production of seed in the country. On the other hand, since recently growing up manufacturing of Rice Bran Oil is contributing to meet the demand of edible oil in Bangladesh, emphasis should be given to establish the rice bran manufacturing industry.

## 2.1 EDIBLE OIL PRODUCED FROM IMPORTED SEED

Production of edible oil from imported seed has been assessed as the aggregate of oil seeds imported converting using the appropriate oil recovery factor 0.35 m.ton of oil per M.Tons of seed. This is shown in following Table-1.

**Table 1: Oil Production out of imported seeds**

| Year    | Imported Seed | Oil Production |
|---------|---------------|----------------|
| 2002-03 | 186576        | 65302          |
| 2003-04 | 201574        | 70551          |
| 2004-05 | 209965        | 73487          |
| 2005-06 | 222391        | 77837          |
| 2006-07 | 3             | 1              |
| 2007-08 | 0             | 0              |
| 2008-09 | 511           | 179            |
| 2009-10 | 236350        | 82723          |
| 2010-11 | 117231        | 41031          |
| 2011-12 | 252967        | 88538          |
| 2012-13 | 175120        | 61292          |
| 2013-14 | 1162          | 407            |

Source: National Board of Revenue (NBR), Bangladesh Data and calculated by Author

It has been observed from the above table that very negligible quantities of seed imported from 2006-07 to 2008-09. From the import data it is understood that increased price of seeds lead to import negligible quantities of seed. It is also observed that oil production from imported seed remain more or less same if compare the year 2002-03 with 2012-13. It is also observed that small quantities of seeds are imported in the country in 2013-14.

## 2.2 IMPORTED CRUDE OIL

There are eleven refineries in the country engaged in refining the crude oil to produce refined edible oil. It is known that in order to produce refined edible oil about 4.25% of imported crude is being wastage. It may be noted here that Palm Oil are of different kinds such as Crude Palm Oil, Refined Palm Oil and Refined Palm Olien. It is observed from February 2014 that RBD Palm Olien is being imported into the country. In that case, fractionation is needed to separate Super Palm Olien and Hard Olien and thereby can be possible to reduce cost. However, following Table-2 shows the production of edible oil out of crude soya bean and crude palm oil.

**Table-2: Edible Oil production out of Crude Soybean and Crude Palm Oil**

| Year    | Crude Soya bean | Processed/Refined | Crude Palm | Processed/Refined |
|---------|-----------------|-------------------|------------|-------------------|
| 2002-03 | 472831          | 452736            | 470900     | 450887            |
| 2003-04 | 285940          | 273788            | 541420     | 518410            |
| 2004-05 | 533585          | 510908            | 648623     | 621057            |

|         |        |        |         |         |
|---------|--------|--------|---------|---------|
| 2005-06 | 431430 | 413094 | 727031  | 696132  |
| 2006-07 | 205881 | 197131 | 641666  | 614395  |
| 2007-08 | 325435 | 311604 | 603674  | 578018  |
| 2008-09 | 202720 | 194104 | 737631  | 706282  |
| 2009-10 | 307256 | 294198 | 842382  | 806581  |
| 2010-11 | 799843 | 465849 | 741647  | 710127  |
| 2011-12 | 878287 | 440960 | 582663  | 557899  |
| 2012-13 | 718582 | 688042 | 28500   | 27289   |
| 2013-14 | 449569 | 430462 | 1062368 | 1017217 |

Source: NBR Data Base and Chittagong Customs House (CCH)

From the above table, it is observed that import of crude palm oil is more than that of Crude Soybean Oil. But it may be noted here that since last February 2014 Customs Authority mentioned RBD Palm Oil as imported oil in their data base. Palm oil is of different types such as Crude Palm Oil, Refined Palm Oil and Refined Palm Oil.

### 3. HISTORICAL OIL SEED PRODUCTION

Total cultivable land in Bangladesh is 210.53 lac acres. Total seed production takes place at 8.71% of total cultivated land. It is known that all lands are not suitable for the production of oil seeds. Besides, every year more and more lands are to be brought under the cultivation of food crops in order to cope with increased demand for food due to increased population. Bangladesh is in the fourth position of the producing paddy in the world. This is also very helpful for us to increase the quantity of edible oil. Even then effort is being made to increase the quantity of land under production of oil seeds. However, land utilization for seed production for the last twelve year was maximum 18.33 lac acre. These are shown in Table-3.

**Table-3: Historical Oil Seed Production**

| Year    | Acre in lac and MT in lac |            |              |            |                 |            |          |            |       |            |
|---------|---------------------------|------------|--------------|------------|-----------------|------------|----------|------------|-------|------------|
|         | Mustard Seed              |            | Se same Seed |            | Ground Nut Seed |            | Lin seed |            | Total |            |
|         | 1                         | 2          | 3            |            | 4               |            | 5        |            | 6     |            |
|         | Acre                      | Production | Acre         | Production | Acre            | Production | Acre     | Production | Acre  | Production |
| 2002-03 | 7.36                      | 2.18       | 0.96         | 0.25       | 0.67            | 0.34       | 0.89     | 0.92       | 9.88  | 3.69       |
| 2003-04 | 9.36                      | 2.11       | 0.96         | 0.26       | 0.64            | 0.34       | 1.08     | 1.36       | 12.06 | 4.07       |
| 2004-05 | 5.97                      | 1.91       | 0.96         | 0.27       | 0.72            | 0.39       | 0.32     | 0.31       | 7.98  | 2.88       |
| 2005-06 | 5.36                      | 1.84       | 0.77         | 0.39       | 0.72            | 0.38       | 0.62     | -          | 7.46  | 2.61       |
| 2006-07 | 9.32                      | 3.67       | 0.63         | 0.61       | 1.80            | 1.20       | 0.22     | 0.06       | 13.05 | 5.54       |
| 2007-08 | 13.52                     | 5.52       | 1.85         | 0.70       | 1.80            | 1.31       | 0.12     | 0.04       | 17.37 | 7.57       |
| 2008-09 | 12.43                     | 4.99       | 2.14         | 0.88       | 2.20            | 1.55       | 0.12     | 0.05       | 17.00 | 7.47       |
| 2009-10 | 11.42                     | 4.89       | 2.03         | 0.86       | 2.20            | 1.25       | -        | -          | 15.64 | 7.00       |
| 2010-11 | 11.88                     | 5.36       | 1.97         | 1.87       | 2.22            | 1.29       | 0.10     | 0.04       | 16.17 | 8.56       |
| 2011-12 | 11.95                     | 5.25       | 2.12         | 1.81       | 2.15            | 1.26       | 0.15     | 0.06       | 16.37 | 8.38       |
| 2012-13 | 12.80                     | 5.68       | 2.15         | 1.63       | 2.05            | 1.26       | 0.15     | 0.06       | 17.15 | 8.63       |
| 2013-14 | 13.14                     | 6.24       | 2.87         | 1.02       | 2.20            | 1.36       | 0.12     | 0.05       | 18.33 | 8.67       |

Source: 00/01 to 05/06 = Bangladesh Bureau of Statistics (BBS)

05/06 to 09/10 = Department of Agriculture Extension (DAE), BD

From the above table it is found that all seeds such as mustard seed, sesame seed, ground nut seed, lin seed were cultivated in 9.88 acres of land in the year 2002-03. The cultivation of land for the production of seeds has been increased to 18.33 acres of land in the year 2013-14. It is also observed that yield per acre of seeds increases from 0.34 MT in 2002-03 to 0.47 MT in 2013-14.

### 4. TOTAL AVAILABILITY OF EDIBLE OIL

Edible oil in Bangladesh is available from domestic seeds, imported seeds, Crude Degummed Soya bean Oil (CDSO) and Crude Palm Oil (CPO). Recently refined palm oil are added to the production of refined edible oil. The quantities of derived edible oil out of different sources altogether counted total availability of edible oil. This is shown in Table-4 below.

**Table 4: Total Availability of Edible Oil**

| Year               | Population (in crore) | Production in lac MT                    |   |                                 |   |                            |  |                    |  |                           |
|--------------------|-----------------------|---|---|---------------------------------|---|----------------------------|--|--------------------|--|---------------------------|
|                    |                       | Production of Oil out of domestic seeds | Production of Oil out of Imported seeds | Import of Refined Soya bean Oil | Production of oil out of Imported Crude Soya bean Oil | Import of Refined Palm Oil | Production of oil out of Imported Crude Palm Oil | Total Availability | Domestic Production of oil out of local seeds as % of total availability | Per Capita consumption Kg |
| 1                  | 2                     | 3                                       | 4                                       | 5                               | 6   | 7                          | 8  | 9                  | 10   | 11                        |
| 2002-03            | 13.34                 | 1.29                                    | 0.65                                    | 0.05                            | 4.53  | 0.003                      | 4.51   | 11.03              | 11.69  | 8.27                      |
| 2003-04            | 13.52                 | 1.42                                    | 0.71                                    | 0.001                           | 2.74  | 0.01                       | 5.18   | 10.06              | 14.11  | 7.44                      |
| 2004-05            | 13.70                 | 1.01                                    | 0.73                                    | 0.009                           | 5.11  | 0.002                      | 6.21   | 13.07              | 7.73   | 9.54                      |
| 2005-06            | 13.88                 | 0.91                                    | 0.78                                    | 0.001                           | 4.14  | 0.02                       | 6.96   | 12.81              | 7.10   | 9.23                      |
| 2006-07            | 14.06                 | 1.94                                    | -                                       | 0.001                           | 1.97  | 0.008                      | 6.14   | 10.06              | 19.29  | 7.15                      |
| 2007-08            | 14.24                 | 2.65                                    | -                                       | 0.008                           | 3.12  | 0.03                       | 5.78   | 11.59              | 22.87  | 8.14                      |
| 2008-09            | 14.42                 | 2.61                                    | -                                       | 0                               | 1.94  | 1.61                       | 7.06   | 13.22              | 19.74  | 9.17                      |
| 2009-10            | 14.61                 | 2.45                                    | 0.83                                    | 0.002                           | 2.94  | 1.03                       | 8.06   | 15.31              | 16.00  | 10.48                     |
| 2010-11            | 14.97                 | 3.00                                    | 0.41                                    | 0.005                           | 4.66  | 1.48                       | 7.40   | 16.66              | 18.01  | 11.13                     |
| 2011-12            | 15.16                 | 2.93                                    | 0.88                                    | 0.006                           | 4.41  | 4.74                       | 5.58   | 18.55              | 15.80  | 12.23                     |
| 2012-13            | 15.36                 | 3.02                                    | 0.61                                    | 1.22                            | 6.88  | 7.04                       | 0.29   | 19.06              | 15.84  | 12.41                     |
| 2013-14            | 15.56                 | 3.03                                    | 0.0041                                  | 0.00                            | 4.30  | 0.01                       | 10.17  | 17.51              | 17.30  | 11.25                     |
| Average            |                       | 2.19                                    | 0.70                                    | 0.13                            | 3.90  | 1.33                       | 6.09   | 14.08              | 15.46  | 9.70                      |
| Average of 5 years |                       | 2.89                                    | 0.68                                    | 0.31                            | 4.64  | 2.86                       | 6.24   | 17.42              | 16.59  | 11.50                     |

Source: Economic Review, Bangladesh: Table-1, Table-2 and NBR Data Base

Data on production of oil out of domestic seeds from the yearly production of seeds as well as imported seeds has been calculated on the basis of 0.35 M.Ton of oil out of one M.T. of seeds. On the other hand, production of oil out of imported crude soya bean and crude palm oil has been calculated on the basis of 4.25% wastage while refining. Import figures indicate both of refined soybean and palm oil as well as crude soya bean and palm oil are being imported into the country. It is observed that the supply of oil out of domestic source increased little bit with the increase in the size of the population, percentage of domestic production out of the total availability has been increased constant with the exception of years 2004-05 and 2005-06 in compare with 2002-03. The improvement in the per capita consumption has been negligible with the exception of three financial years seen in the Table above. The per capita consumption always remained less than 11 kg per annum.

#### 4.1 RICE BRAN OIL INDUSTRY

Rice Bran is a light red covering upper part of the rice under the husk of paddy. Oil produced from rice bran contains a high level of gamma oryzanol which increases HDL (good) cholesterol and lowers LDL (bad) cholesterol and triglycerides. Rice Bran Oil is a by-product of rice plants. Rice Bran Oil is the oil that is extracted from the rice bran. 100% of produced paddy processed by semi auto (introduce Rubber Roll Huller Mill in place of Angleburg Huller Mill) or auto rice mill brings out Rice Bran 36.1 lac MT from paddy produced 516.4 lac MT. It can be possible to produce 7.20 lac MT of Rice Bran Oil from available Rice Bran.

#### 5. PRODUCTION CAPACITY AND ITS UTILIZATION OF EDIBLE OIL REFINERIES

There are twelve refineries under different name refining the crude soyabean and crude palm oil. Some refinery has one unit and others have three or four unit located at Dhaka and Chittagong. The production capacity of these refineries are about 50,76,000 M.Ton per year. The following Table-5 shows the production capacity of edible oil refineries in Bangladesh.

**Table-5: Production Capacity of Edible Oil Refineries**

| Sl # | Name of the Refineries  | Brand        | Production Capacity |                |
|------|---|--------------|---------------------|----------------|
|      |   |              | Per day in MT       | Per year in MT |
|      | 1   | 2            | 3                   | 4              |
| 1    | City Group  | Teer         | 2000                | 600000         |
|      | VOTT Oil Refineries Ltd.  |              |                     |                |
|      | Farzana Oil Refineries Ltd.   |              |                     |                |
|      | Deepa Food Products Ltd.  |              |                     |                |
| 2    | Meghna Group  | Fresh        | 2000                | 600000         |
|      | United Edible Oils Ltd.   |              |                     |                |
|      | Tanveer Oils Ltd.   |              |                     |                |
| 3    | Merin Vegetables Oil Ltd.   | Nurjahan     | 2000                | 600000         |
|      | Nurjahan Vegetable Oil Industries                                     |              |                     |                |
|      | Jesmin vegetable oil Industries                                       |              |                     |                |
|      | Jesmin Super Vegetable Oil Industries                                 |              |                     |                |
| 4    | T.K. Group  | Pusti        | 2000                | 600000         |
|      | Super Oil Refinery  |              |                     |                |
|      | Shabnam Vaegetable Oil Industries                                     |              |                     |                |
|      | Bay Fishing Corporation Ltd.  |              |                     |                |
| 5    | S. Alam Group   | Murog        | 420                 | 126000         |
|      | S. Alam Vegetable Oil Ltd.  |              |                     |                |
|      | S. Alam Super Oil Vegetable   |              |                     |                |
| 6    | S.A. Oil Refinery Ltd.  | Muskan       | 2000                | 600000         |
|      | Kamal Vegetable Oils Ltd.   |              |                     |                |
|      | Shariza Oil Refinery Ltd.   |              |                     |                |
|      | Shamannaz Super Oil Ltd.  |              |                     |                |
| 7    | Elias Brothers  | Dada         | 2000                | 600000         |
| 8    | Mostofa Vegetable Oil Industries                                      | Mostofa      | 1000                | 300000         |
|      | M.M. Vegetable Oil Products Ltd.                                      |              |                     |                |
| 9    | Rubaya Vegetable Oil Industries                                       | Rubaya       | 2000                | 600000         |
| 10   | Bangladesh Edible Oil Ltd.  | Rupchada     | 500                 | 150000         |
| 11   | Shun Shing Edible Oil Ltd. (Seven Circle Bitumen and Edible Oil Ltd.) | Veola, Olien | 1000                | 300000         |
| 12   | Kazi Edible Oil Industry  | NA           | NA                  | NA             |
|      | Total   |              | 16920               | 5076000        |

From the above table it is shown that there are twelve refineries engaged in refining crude oil. But from observation it is found that City Group, Meghna Group, T.K. Group, S.Alam Group, Bangladesh Edible Oil and Shun Shing Edible Oil Ltd. are now in operation and others are closed. It has been observed from the import data that Nurjahan, Dada, Mostofa and Rubaya are not importing crude palm or soyabean. They might have continued production through purchasing crude from others. From past experience it is found that purchase crude from others increased the price of refined. However, production capacity now has been decreased to 29,76,000 MT per year (5076000-2100000) MT. From the Table-2 it is found that all of the existing refineries has produced 14,47,679 MT in the year 2013-14. Therefore, capacity utilization takes place at 48.64%. At present, it is observed that Kazi Edible Oil Industry is importing Crude Oil. But it is not possible to locate this industry.

## 5.1 PRODUCTION CAPACITY OF MUSTARD OIL PRODUCING MILL

It is known that a large number of mustard oil mills are operating in the country. But it is not possible to get the information regarding the production capacity. It is known that Produced Mustard Oil available in market is in crude form. Prices of mustard oil are varied to different producer. However, following table shows the name of three mustard oil manufacturers and their prices as well.

**Table 6: Number of Mustard Oil mills and their Production Capacity**

| Sl. | Name of the Mill       | Year of Starting Production | Name of Brand | Address of Mill and Head Office         | Production Capacity/ Year MT | Price/liter |
|-----|------------------------|-----------------------------|---------------|---|------------------------------|-------------|
| 1   | Teer Pure Mustard Oil. | NA                          | Teer          | City Oil Mills, Konapara, Demra, Dhaka. | NA                           | 188.00      |

|   |                            |    |          |   |    |                   |
|---|----------------------------|----|----------|---|----|-------------------|
| 2 | Suresh Pure Mustard Oil.   | NA | NA       | Annapurna Oil Mill, Lakoripatti, Narsingdi Bazar, Narsingdi.    | NA | 230.00            |
| 3 | Bangladesh Edible Oil Ltd. | NA | Rupchada | North Rupsi, Rupsi Bazar, Rupgonj, Narayangonj.<br>Tel: 8815319 | NA | 200.00            |
| 4 | Square Consumer Products   | NA | Radhuni  | Meril Sarak, Shalgaria-660, Pabna                               |    | 220.00            |
| 5 | ACI Oil Mills              | NA | NA       | Kutirchar, Sirajgonj  |    | 110.00 (500 Gram) |

Source: Market Survey, 2014-15

From the above table it is shown that price charged by different producers are different.

## 5.2 PRODUCTION CAPACITY OF OIL MILL FOR PRODUCING RICE BRAN OIL

It is popular as cooking oil in several Asian countries including India, Japan and China. It requires 20% less usage in cooking in comparison with other edible oil. By-product of this oil is De-Oiled Rice Bran (DOB), Gums, Waxes, Fatty Acid etc. To encourage investment in rice brain oil, the Government is offering tax exemption facilities, starting from fiscal year 2012-13. However, a number of mills producing rice bran oil have already been established in Bangladesh. The name and address of these mills including production capacity are given in Table-7 below.

**Table 7: Number of Rice Bran Oil mills and their Production Capacity**

| Production Capacity of the Rice Bran Oil Industry |                             |             |  |  |                         |                          |
|---|-----------------------------|-------------|--|--|-------------------------|--------------------------|
| SI no.  | Rice Bran Oil Industries    | Brand       | Office Address   | Factory Address                        | Production Capacity/Day | Production Capacity/Year |
| 1   | KBC Agro Products Pvt Ltd   | Health Care | 63/C Asad Avenue (4 <sup>th</sup> Floor), Mohammadpur, Dhaka-1207                            | Bathuli, Dhamrai, Savar, Dhaka         | 100                     | 30000                    |
| 2   | Rashid Oil Mills Ltd.       | White Gold  | BSEC Bhaban, (1 <sup>st</sup> Floor), 102 Kazi Nazrul Islam Avenue, Karwan Bazar, Dhaka-1215 |  | 60                      | 18000                    |
| 3   | Emerald Oil Mills Ltd.      | Spandan     | Saihan Sky View Tower, Floor 15/A, 45, Bijoyogor, Dhaka.                                     |  | 60                      | 18000                    |
| 4   | Majumdar Products Ltd.      | Sarna       | Planars Tower, Sonargaon Road, Dhaka   |  | 160                     | 48000                    |
| 5   | Green Oil Ltd.              | Basmati     |  |  | 50                      | 15000                    |
| 6   | Ali Natural Oil Mill        | Kallayani   | Sonotia Bazar, Jamalpur, Bangladesh  |  | 60                      | 18000                    |
| 7   | Majumdar Agro Products Ltd. | Pure Gold   |  | Chengutia, Noapara, Avoynogor, Jessore | 60                      | 18000                    |
| 8   | Al Noor Oil Company Ltd.    | Al Noor     |  |  | 50                      | 15000                    |
| 9   | Weaster Agro Ltd.           | Branola     |  |  | 50                      | 15000                    |
| 10  | Jamuna Agro Products Ltd.   |             |  |  | 50                      | 15000                    |
| 11  | Agrotech                    |             | House: 272 (1 <sup>st</sup> Floor), Lane: 19 Lake Road, New DOHS, Mohakhali, Dhaka, 1206     |  | 40                      | 12000                    |
| 12  | Tamim Agro Industries Ltd.  |             |  |  | 50                      | 15000                    |
| 13  | Abdul Monem                 |             |  |  | 70                      | 21000                    |
| <b>14</b>   | <b>Sub-Total</b>            |             |  |  | <b>860</b>              | <b>258000</b>            |
| 15  | Roy Heart Oil Ltd.          |             |  |  | 50                      | 15000                    |
| 16  | Prodhan Oil                 |             |  |  | 50                      | 15000                    |

|    |                      |  |  |     |        |  |
|----|----------------------|--|--|-----|--------|--|
|    | Mill                 |  |  |     |        |  |
| 17 | Sub Total of =15+16  |  |  | 100 | 30000  |  |
| 18 | Grand Total of=14+17 |  |  | 960 | 288000 |  |

It is observed from the above table that there are fifteen (15) industries to produce Rice Bran Oil have already been established. But actually there are thirteen (13) industries operating now. Their production capacity is 2.58 lac MT per year. They are producing 89,816 MT of Rice Bran Oil. In order to produce 89,816 MT of rice bran oil, bran is used 4.50 lac MT and to utilize production capacity fully 13 lac MT of rice bran is required. It is known that 70% of the produced paddy is processed in semi-auto or auto rice mill, which produces 25.30 lac MT of bran. But producer of Rice Bran Oil are not getting the rice bran to utilize their production capacity fully.

## 6. IMPORT AND EXPORT OF RICE BRAN OIL

It is learned that rice bran is exporting to India. Therefore, it is needed to see the how much of rice bran is imported from India or exported from Bangladesh to India. This is shown in Table-8.

**Table 8: Import and Export of Rice Bran (HS Code 2302.40.10 and 2302.40.00)**

| Year    | Import    |                |          |                   | Export    |                |          |                   |
|---------|-----------|----------------|----------|-------------------|-----------|----------------|----------|-------------------|
|         | Qty in MT | Value in Crore | Price/KG | Exporting Country | Qty in MT | Value in Crore | Price/KG | Importing Country |
| 2010-11 | 13446     | 16.93          | 12.59    | India             | NA        | NA             | NA       | NA                |
| 2011-12 | 1475      | 1.87           | 12.70    | Pakistan, India   | 49922     | 70.65          | 14.15    | India             |
| 2012-13 | 382       | 1.13           | 29.71    | India             | 90781     | 129.63         | 14.28    | India             |
| 2013-14 | 1611      | 2.71           | 16.82    | India             | 27076     | 37.15          | 13.72    | India             |

Source: NBR Data Base

It is observed from the above table that rice bran is imported from India and Pakistan. The rice bran is exported to India as well. But it is noticed that, quantity of importing rice bran is less than that of quantity of exporting rice bran in last three financial years. It should be mentioned here that Government has imposed 10% export duty on exporting rice bran in 2014-15 budget.

### 6.1 IMPORT OF MUSTARD OIL AND RICE BRAN OIL

In order to see the export possibilities it is required to know the information regarding import of mustard oil and rice bran oil. This is shown in Table-9 below.

**Table-9: Information on import of mustard oil and rice bran oil**

| HS Code    | Name of Items     | 2011-12   |              |                  | 2012-13   |              |                  | 2013-14   |              |                  |
|------------|-------------------|-----------|--------------|------------------|-----------|--------------|------------------|-----------|--------------|------------------|
|            |                   | Qty in MT | Value in Lac | Price/MT in Taka | Qty in MT | Value in Lac | Price/MT in Taka | Qty in MT | Value in Lac | Price/MT in Taka |
| 1514.11.00 | Crude Mustard Oil | 0         | 0            | 0                | 0         | 0            | 0                | 0         | 0            | 0                |
| 1514.19.00 | Other             | 168.65    | 241.75       | 145217           | 188.72    | 298.23       | 187975           | 0.787     | 1.03         | 131213           |
| 1515.90.00 | Rice Bran Oil     | 62.67     | 186.54       | 827719           | 27.61     | 131.37       | 1055809          | 29.26     | 56.03        | 294929           |

Source: NBR data base

From the above table it is shown that 62.67 MT of rice bran oil was imported in 2011-12 which comes down to 29.26 MT in 2013-14.

### 6.2 EXPORT POSSIBILITIES

At the present moment if more manufacturers come to produce oil from rice bran then there is the great possibility of exporting the edible oil. Refineries have the refinery unit and therefore, only extract plant is required. Consequently, investment on rice bran oil manufacturing plant may be less. This is why, incentive can be provided to encourage the establishment of extract plant. Total quantities of edible oil

produced from rice bran, domestic seeds and imported crude oil would be far more than that of our demand. Therefore, excess quantities produced edible oil can be possible to export. In this connection, it is necessary to know, has there been any edible oil now exported to any country and if so, at what price. This is shown in following Table-10.

**Table-10: Export of Edible Oil (Mustard and Rice Bran Oil)**

**Qty in MT**

| HS Code    | Item              | 2011-12       |                                | 2012-13       |                                       | 2013-14       |                         |
|------------|-------------------|---------------|--------------------------------|---------------|---------------------------------------|---------------|-------------------------|
|            |                   | Qty of export | Country of Import              | Qty of export | Country of Import                     | Qty of export | Country of Import       |
| 1514.11.00 | Crude Mustard Oil | 2.88          | United Arab Emirates           | 0             | -                                     | 0             | -                       |
| 1514.19.00 | Other             | 1.32          | Singapore, Australia, Malaysia | 0.7914        | Singapore                             | 4.80          | Malaysia                |
| 1515.90.00 | Rice Bran Oil     | 1217.61       | India, Malaysia, US            | 1703.35       | Spain, India, Mauritius, Malaysia, US | 390.40        | Spain, India, Singapore |

Source: NBR Data Base

From the above Table it has been observed that the importing countries of our exported edible oil such as mustard and rice bran oil are UAE, Singapore, Australia, Malaysia, India, Spain, US etc.

## 7. REFINING PROCESS

### 7.1 EXTRACTION OF CRUDE SOYBEAN OIL AND PALM OIL

- i) **Crude Soybean Oil:** Crude Soybean oil is obtained as a result of the extraction.
- ii) **Crude Palm Oil:** The process of getting Crude Palm Oil (CPO) is given below:  
Palm Oil Fresh Fruit Bunch (POFFB) – Transport POFFB to Mill – POFFB enters the plant - Sterilization in large pressure vessels/cages – stripping rotating drum stripper - Extraction in a homogenous oil mash – Purification in a continuous clarification tank - Crude Palm Oil (CPO).

#### 7.1.1 BASIC STEPS

Basic steps of the refining process are given in following Table 11.

**Table-11: Basic Steps of the Refining Process**

| Akali or Chemical Refining | Main Groups of Compounds removed | Physical Refining |
|----------------------------|----------------------------------|-------------------|
| Degumming                  | Phospholipids                    | Degumming         |
| Neutralisation             | Free Fatty Acids                 | -----             |
| Bleaching                  | Pigments/Metals/Soaps            | Bleaching         |
| Winterization              | Waxes/Saturated triacylglycerols | Winterization     |
| Deodorization              | Volatiles/Free Fatty Acids       | Deodorization     |

Chemical Process is the most common process in refining from crude soybean. When the palm oil refining industry first started in 1970s it had employed mainly alkali or chemical refining process as alkali refining was the more established process for edible oil at that time. This mode produced neutralized palm oil and its products. In the late of 1970's, however, physical refining began to be preferred as it is more cost effective. The efficiency of the process is checked by the use of Refining Factor (RF). Values of 1.5 to 2.0 were normal for chemical refining plants. CPO is the oil obtained from the meso carp part of palm oil fruit. The differences between two types of refining are basically based on type of chemical used and mode of removing the Free Fatty Acid (FFA). The physical refining is prove to have a high efficiency, less losses (RF is less than 1.3), less operating cost, less capital input and less effluent to handle. RF is calculated by the following formula-

Oil Loss %

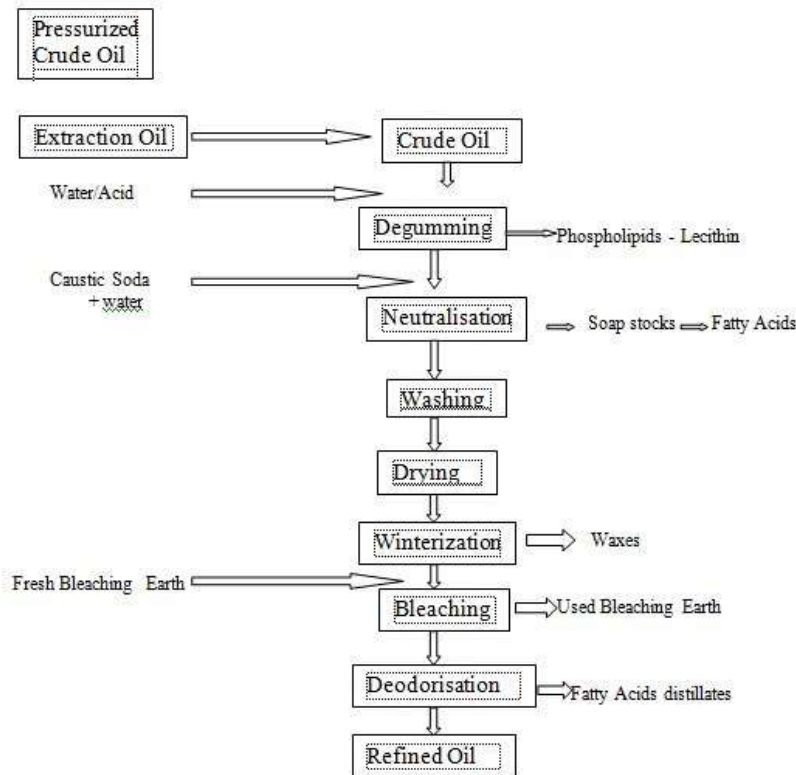


$$RF = \frac{\text{FFA}\%}{\text{FFA}\%}$$

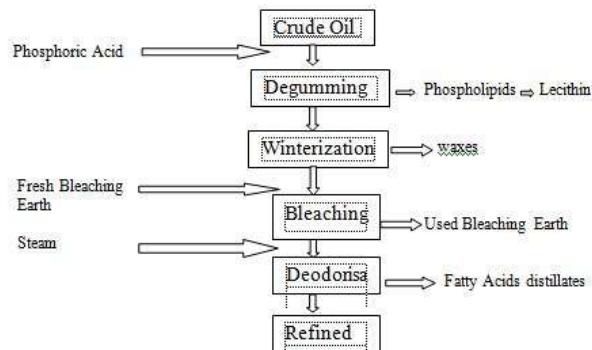
where FFA is Free Fatty Acid. A certain amount of neutral oil is saponified along with the FFA and is lost by emulsifications.

Chemical/alkali refining and physical refining process is shown in following steps:

### 1) Chemical/alkali refining:

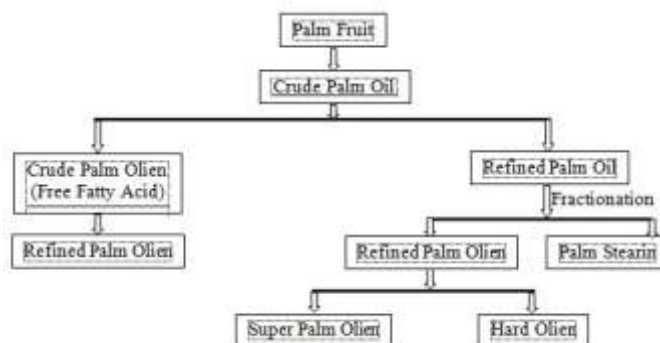


### 2) Physical refining:



To produce a wide variety of products, palm oil requires to go further downstream processing. Palm Oil may be fractionated, using simple crystallization and separation processes. Fractionation, which takes advantage of the different melting characteristics of palm oil triglycerides, produces liquid palm

olien and solid palm stearin fractions. The different characteristics of the fractions make them suitable for a variety of food and non-food products. This discussion can be summarized in the following way:



Refined Palm Oil is obtained from fractionising Refined Palm Oil to separate Liquid parts (Oil) from solid parts (Stearin). Refined Palm Oil is used as frying oil for food industries such as snack food manufacturing and fast food manufacturing. It is also used as raw materials for such other products like Margarine and shortenings. It is also a source of Vitamin E. Palm Stearin is mainly used in Margarine and shortening industries. It is also used in soap, candles and oleo chemical industries. Refined Palm Oil can be fractionized again into Super Palm Oil and Hard Oil. Hard Oil is supplied to the Poultry Industry. It should be noted here that 65% of the imported Refined Palm Oil comes as Super Palm Oil and rest is sold as Oil Cake at the rate of 15 Taka per kg.

## 8. OIL SEED PROCESSING INDUSTRY

Other than palm oil, two different categories of edible oil both of domestic origin consumed in Bangladesh. These categories are as follows:

- i) **Mustard Oil:** This can only be produced from imported or local mustard seed/rape seed. It is supplemented by the addition of imported sunflower seed, Sesame seed, ground nut seed, and lin seed. It may be mentioned here that ground nut and lin seed have not been imported since 2011-12.
- ii) **Soybean Oil:** It is manufactured at present from CDSO imported mainly from Argentina, Brazil and USA. But soybean oil can be produced from soybean seed. The import of soybean seed for the year 2012-13 is given below in Table-12.

**Table-12: Import of Soybean seed (2012-13)**

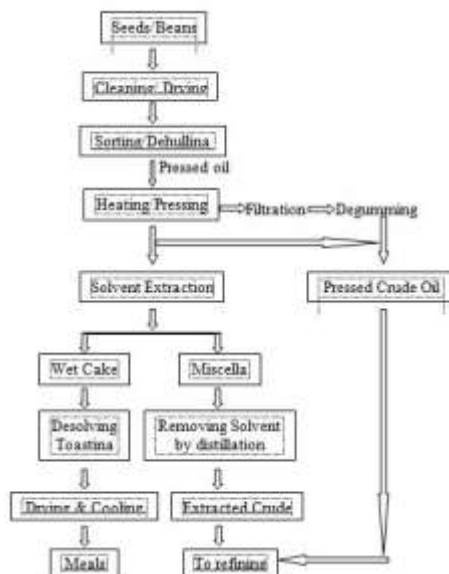
|                      | Qty in KG          | Value                | Price/kg     | Country of export | % of Import |
|----------------------|--------------------|----------------------|--------------|-------------------|-------------|
|                      | 2875.00            | 262134.55            | 91.18        | China             | 0%          |
|                      | 13445670.00        | 663845069.10         | 49.37        | Argentina         | 26%         |
|                      | 39054330.00        | 1935367072.00        | 49.56        | Uruguay           | 74%         |
|                      | 20.00              | 1111.73              | 55.59        | Korea             | 0%          |
| <b>Total/Average</b> | <b>52502895.00</b> | <b>2599475387.38</b> | <b>49.51</b> |                   | <b>100%</b> |

Source: NBR Data Base

From the above table it is found that Soybean seed is imported into our country. But no soybean seed is imported in the year 2013-14. Maximum quantities of soybean seed have been imported from Uruguay. It is known that soybean seed contains about 19% oil. The remaining soybean is oil cake used mainly as animal feed. Therefore, from the quantity of one MT seed, oil is obtained about 190 kg. Then

price of this 190 kg would be 17110.00 (49,510-32,400) taka that is price of extracted oil would be 90.45 taka per kg. It should be noted here that price of oil cake has been assumed here 40.00 taka per kg.

**The way to crush seeds/beans is given below:**



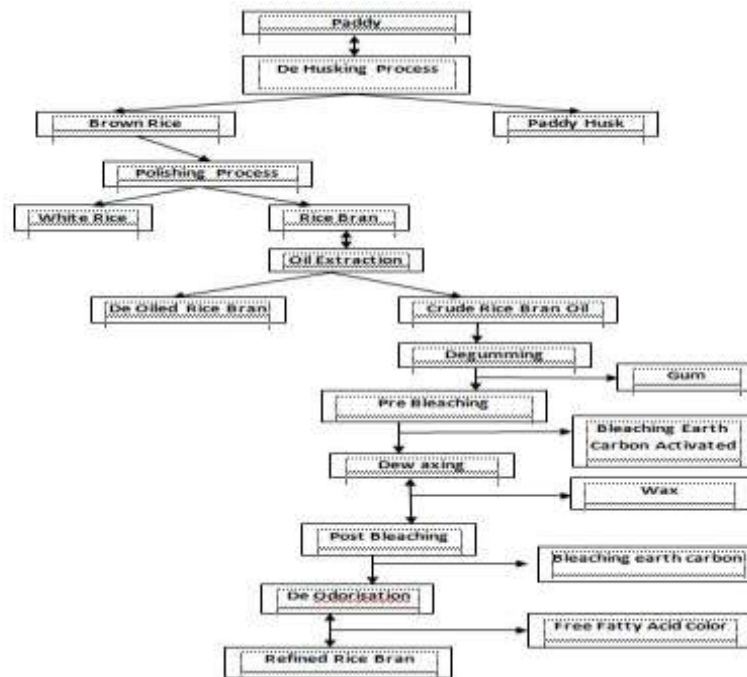
At present, City Group and Bangladesh Edible Oil Industries are producing mustered oil from mustard seed. City Group depends on imported mustard seeds. But Bangladesh Edible Oil Ltd. (BEOL) is producing mustard oil from local mustard seed. There are three types of seed available in Bangladesh such as Black, Red and White. BEOL purchase red seed from the farmer and purchase imported white seed from the market. BOEL has hired a plant in Pabna named Sarkar Oil Mill to extract crude oil from mustard oil. Under their supervision Sarkar Oil Mill mixed red seed with white seed to turn the crude in quality. Quantity of red mixing with white seed is 80% and 20% respectively. At present Suresh Pure Mustard Oil, Annapurna Oil Mill, Lakripatti, Narsingdi Bazar and Teer Mustard Oil, City Oil Mills (Unit-1), Konapara, Demra, Dhaka are producing mustard oil as collected from market. They are selling mustard oil at MRP of Taka 120.00/500 ML and 188.00/liter respectively.

There are three species such as Brassica Rapa, Brassica Juncea and Brassica Napus of mustard seed are under the aegis of production in our country. There are two chemical elements such as Glucosinolates and erucic acid are available in prevailing caste of these three species. These are injurious for human health. But it has been possible to reduce these two elements at the lowest level in the cast of these species. This is called “Double Zero Oil” (Source: Farm House-A Monthly Agro-business Magazine-VOI-03, Issue-4). It denotes both low Glucosinolates and low erucic acid. In addition to varieties from the traditional rapa and napus species, recent cross breeding of multiple lines of Brassica Juncea have enabled this mustard variety to be classified as a canola variety by lowering both.

### 8.1 PROCESS OF RICE BRAN OIL

Rice Bran is available through polishing process of brown rice. By this process white rice and rice bran is separated. Quantity of paddy production has been increased in our country due to the invention of various varieties of paddy. It is known that 516.4 lac MT of rice plant (Paddy) is produced in our country in the year 2014-15. 36.15 lac MTs of rice bran is available while processing paddy. But this processing should be done by semi-auto or auto rice mill. This quantity of rice bran produces about 7.16 lac MTs of Rice Bran

Oil. Production Process form paddy to Rice Bran and then crude to refined Rice Bran Oil has been seen in following diagram.



De oiled Rice Bran is used in fishing and poultry industry and market price of this by product is 10 taka/kg. Fatty Acid, Wax and Gum are used in soap producing industry and sold at the price of 40-45 taka/ kg, 2010-21 Taka/kg and 20-30 taka/kg respectively.

Rice Bran Oil is produced by Rice Bran a byproduct of rice plants (Paddy). It is one of the most versatile oils available for consumption. Rice bran Oil is the oil that extracted from inner husk of rice plants. After it undergoes a stabilization and extraction process, the rice bran oil is carefully processed to make sure that its flavor is preserved and it does not lose any of its natural benefits.

## 9. ASSISTANCE POLICY

### 9.1 REFINERIES

In order to meet the demand for the increased population in every year a large quantity of edible oil such as Crude Degummed Soybean Oil and Crude Palm Oil as well as refined soya-bean and palm oil are imported into the country. Besides, the different types of seeds as well as chemicals needed for refining the CDSO and CPO is also being imported into the country. The tariff structures of these are given in following Table-15.

**Table 13: Tariff Structure**

| HS Code    | Items                         | 2013-14 |    |    |     |     |     |       | 2014-15 |    |    |     |     |     |       |
|------------|-------------------------------|---------|----|----|-----|-----|-----|-------|---------|----|----|-----|-----|-----|-------|
|            |                               | CD      | RD | SD | VAT | AIT | ATV | TTI   | CD      | RD | SD | VAT | AIT | ATV | TTI   |
| 1507.90.10 | RSO                           | 0       | 0  | 0  | 15  | 0   | 4   | 20.07 | 0       | 0  | 0  | 15  | 0   | 4   | 20.07 |
| 1511.9090  | RPO                           | 0       | 0  | 0  | 15  | 0   | 4   | 20.07 | 0       | 0  | 0  | 15  | 0   | 4   | 20.07 |
| 1507.10.00 | CDSO                          | 0       | 0  | 0  | 15  | 0   | 0   | 15    | 0       | 0  | 0  | 15  | 0   | 0   | 15    |
| 1511.10.00 | CPO                           | 0       | 0  | 0  | 15  | 0   | 0   | 15    | 0       | 0  | 0  | 15  | 0   | 0   | 15    |
| 1202.20.90 | Ground Nut Seed               | 12      | 0  | 0  | 0   | 5   | 0   | 17.0  | 12      | 0  | 0  | 0   | 5   | 0   | 17.0  |
| 1204.00.90 | Lin Seed                      | 0       | 0  | 0  | 0   | 0   | 0   | 0     | 0       | 0  | 0  | 0   | 0   | 0   | 0     |
| 1206.00.90 | Sun Flower Seed               | 0       | 0  | 0  | 0   | 0   | 0   | 0     | 0       | 0  | 0  | 0   | 0   | 0   | 0     |
| 1207.40.90 | Sesame Seed                   | 0       | 0  | 0  | 0   | 0   | 0   | 0     | 0       | 0  | 0  | 0   | 0   | 0   | 0     |
| 1207.50.90 | Mustard Seed                  | 0       | 0  | 0  | 0   | 0   | 0   | 0     | 0       | 0  | 0  | 0   | 0   | 0   | 0     |
| 2508.40.00 | Bleaching Earth/Fullers earth | 5       | 0  | 0  | 15  | 5   | 4   | 31.07 | 5       | 0  | 0  | 15  | 5   | 4   | 31.07 |
| 2809.20.00 | Phosphoric Acid               | 10      | 0  | 0  | 15  | 5   | 4   | 37.07 | 10      | 0  | 0  | 15  | 5   | 4   | 37.07 |
| 2815.11.00 | Caustic Soda                  | 25      | 5  | 0  | 15  | 5   | 4   | 61.08 | 25      | 5  | 0  | 15  | 5   | 4   | 61.08 |
| 3802.10.00 | Activated Carbon              | 10      | 0  | 0  | 15  | 5   | 4   | 37.07 | 10      | 0  | 0  | 15  | 5   | 4   | 37.07 |
| 8421.22.00 | Filter                        | 5       | 0  | 0  | 15  | 5   | 4   | 31.07 | 5       | 0  | 0  | 15  | 5   | 4   | 31.07 |
| 3001.90.00 | Nickel Catalyst               | 0       | 0  | 0  | 0   | 5   | 4   | 10.07 | 0       | 0  | 0  | 0   | 5   | 4   | 10.07 |
| 2936.21.00 | Vitamin A                     | 0       | 0  | 0  | 0   | 5   | 4   | 10.07 | 0       | 0  | 0  | 0   | 5   | 4   | 10.07 |
| 2936.90.00 | Vitamin D                     | 0       | 0  | 0  | 0   | 5   | 4   | 10.07 | 0       | 0  | 0  | 0   | 5   | 4   | 10.07 |

Source: NBR Data Base

It is observed from the above table that Advanced Trade VAT is applicable only for importing refined soya bean or palm oil. 15% VAT is applied on importation of crude soybean or crude palm oil. In order to turn the crude into refined the chemical such as bleaching earth/fuller earth, phosphoric acid, caustic soda, activated carbon, filter etc. are needed. Average customs duties on these are 24.49%. Therefore, it appears that total tax incidence on importing refined soya bean or refined palm oil is less than that of duty applied on chemicals being used for refining. These chemicals are so negligible that refineries purchased these chemical from the local market rather than import. Besides, in order to assist the refineries to reduce the cost and to keep the price level low tariff value of 4110.00 taka is imposed on producing one MT of the refined soybean oil and 3700.00 taka on producing per MT of refined palm oil.

### 9.2 MUSTARD OIL

VAT on both production and import of mustard oil under HS Code 1514.11.00 and 1514.19.00 are exempted as well since 2012-13. The tariff structure of mustard oil and mustard seed are given in following table-16.

**Table 14: Tariff Structure for Mustard Oil and Mustard Seed**

| 2014-15    |                     |    |    |    |     |     |     |       |
|------------|---------------------|----|----|----|-----|-----|-----|-------|
| HS Code    | Items               | CD | RD | SD | VAT | AIT | ATV | TTI   |
| 1514.11.00 | Mustard Oil (Crude) | 10 | 0  | 0  | 0   | 5   | 4   | 20.57 |
| 1514.19.00 | Other               | 25 | 5  | 0  | 0   | 5   | 4   | 41.59 |
| 1207.50.90 | Mustard Seed        | 0  | 0  | 0  | 0   | 0   | 0   | 0     |

Source: NBR Data Base

Mustard Oil (Crude) and others are imported in low erucic acid rape. This erucic acid is injurious for the human health. Glucosinolates is another element injurious for the human health. Others are not explained. But it may be Canola Oil. However, from this tariff rate it can be said that mustard oil manufacturers are getting assistance.

### 9.3 RICE BRAN OIL

To encourage investment in rice bran oil producing industry, the Government is offering tax exemption facilities, starting from fiscal year 2012-13. Investors wishing to set up factories in Dhaka and Chittagong (except hill tracts Districts) would get a five year tax exemption facility, with full exemption in first two years, next two years 50% and last one year 25%. On the other hand, Investors wishing to set up factories in Rajshahi, Khulna, Sylhet and Barisal Division and Rangamati, Bundorbon and Khagrachari district would get a seven year tax exemption facility, with full exemption of first three years, next three years 50% and last one year 25%. This exemption facility has been increased to ten years in 2014-15. But these facilities would be provided to such type of factory that would start commercial production by 30.06.2015. In order to produce oil rice bran is required. HS Code of Rice Bran is 2302.40.00. Under this Code rice bran is imported or exported. There is no any duty paid to import rice bran. In spite of this, quantity of export is more than that of quantity of import as shown. Exemption of VAT on production of Rice Bran Oil is made since 2012-13 but not in imported rice bran oil.

De Oiled Rice Bran, fatty acid etc. are obtained as by-product while producing Rice Bran Oil by solvent extraction method from rice bran. It is observed that India import rice bran from Bangladesh and obtained by-product the De Oiled Rice Bran (HS Code 2306.90.00) while producing rice bran oil. Then this De Oiled Rice Bran is exported to Bangladesh from India. It is used as animal food. There is no CD and VAT on import of this item other than AIT.

At present, there is a lot of demand for the by-product De-Oiled Rice Bran and fatty acid in our country. In order to sale this products 15% VAT has to be paid and there by market price of this product is increased in comparison with other neighbouring countries. Consequently, considering the countries demand some of the importers has expressed the eagerness to import the by-product De-Oiled Rice Bran (DORB) and fatty acid from different neighbouring countries. DORB is widely used in the manufacture of cattle feed, poultry feed, fish feed, as fuel for boilers and used for manufacturing Sodium Silicate, Silica gel, Insulation bricks etc. (using fully burnt white ash of husk).

In order to produce refined Rice Bran Oil some chemicals are used and those have to be imported after paying high duty. These are shown in Table 17 below.

**Table 15: Import Duty on Rice Bran Oil, Rice Bran and Chemicals**

| Sl # | HS Code    | Name of the Items | CD% | RD% | SD% | VAT% | AIT% | ATV | TTI%  |
|------|------------|-------------------|-----|-----|-----|------|------|-----|-------|
| 1    | 1515.90.00 | Rice Bran Oil     | 10  | 0   | 0   | 15   | 5    | 4   | 37.07 |
| 2    | 2302.40.10 | Rice Bran         | 0   | 0   | 0   | 0    | 0    | 0   | 0     |
| 3    | 2901.10.00 | Hexane            | 10  | 0   | 0   | 15   | 5    | 0   | 31.50 |
| 4    | 2508.40.00 | Bleaching Earth   | 5   | 0   | 0   | 15   | 5    | 0   | 25.75 |
| 5    | 3802.10.00 | Carbon            | 10  | 0   | 0   | 15   | 5    | 0   | 31.50 |
| 6    | 2809.20.00 | Phosphoric Acid   | 10  | 0   | 0   | 15   | 5    | 0   | 31.50 |
| 7    | 2918.14.00 | Citric Acid       | 5   | 0   | 0   | 15   | 5    | 0   | 25.75 |

Source: NBR Data Base

From the above table it is observed that in order to refine the crude bran oil industry pays high duty.

## 10. POLICY ISSUES AND RECOMMENDATIONS

### 10.1 POLICY ISSUES

- i) There is a provision under Import Policy 2012-2015 that Crude Soya been Oil under HS Code 1507.10.00 will be importable for refining by the recognized edible oil producing industrial units having their own refineries or it can be imported by any commercial unit having contract with any refinery up to the quantity limit as contracted with prior permission from the MOC. In this context the commercial unit will be treated as an industrial unit. On the other hand, the edible oil producing industry having Fractionation Plant shall be allowed to import refined and crude palm oil on the basis of the recommendation of the Board of Investment (BOI). The BOI will monitor the matter. Edible oil producing industry having their own refining or if there is any agreement with any other commercial unit then that industry or commercial unit will be eligible to import crude palm oil or Crude Palm Olien the quantity agreed to supply with prior permission from MOC. Crude Soya-been oil and crude Palm olien imported by importers will be reserved in tank terminal under the supervision of custom authority through tanker from mother vessel and the reserved oil may be released under bonded ware house system on payment of customs duties properly. Besides, before supply of edible oil from tank terminal to local unit customs authority will ensure whether correct amount of duties, VAT etc. paid or not. Information relating to import, sale and return of each imported consignment will be sent to Foreign policy Department of Bangladesh Bank. In respect of importing crude soybean or crude palm oil, refined palm oil, refined palm olien, policy should be to keep provision of import only by refineries not by a commercial unit. Because, it would increase price of crude oil thereby increasing the price of refined edible oil.
- ii) Refineries currently functioning within the country should be allowed to function to their fullest production capacity. Because, it seems that the overhead costs of most of these refineries are much higher than what they should actually have been. Demand for edible oil is about 15.09 lac MT. Out of this demand, 2.19 lac MT is met by domestic production of seeds and remaining is met by imported crude edible oil of 13.44 lac M.Ton. But the Production Capacity of these

refineries is more than that of demand of edible oil. Therefore, it is needed to run the refineries in full capacity by keeping provision in the export policy so that they are able to export after meeting the domestic demand. But before that it is necessary to improve the quality of refined edible oil. It is found that most of the refineries sold loose in drum. In that case there is more possibility of adulteration resulting domestic consumer are affected. It may be mentioned here that while finalizing distributor system it was decided that in future there will be no sale of edible oil in loose form. In this connection every refineries were requested to start the work on turning from the loose to packed. Therefore it is needed to pack the edible oil in plastic container. It is known that most of the refining plant has their separate plastic container manufacturing plants. They manufacture plastic container out of imported raw material. Government may take initiative to make the raw material less expensive through reducing the duty on imported raw material. In order to have the opportunity to export, refineries must go to packaging of edible oil and success the distributorship system introduce in 2011. The preference of packed oil over loose has increased due to affordability and increased attention to health and hygiene.

- iii) Most of the power driven oil mills which extract oil out of seeds operate only 3 months in a year immediately after harvesting and for most of the period of the year they remain idle. Consequently, imported rape seeds are necessary to make available to them. Unfortunately, the imports of rape seed in financial Year 2007-08 and 2008-09 were very unsatisfactory. The benefits for increasing rape seed import accrued to the consumers will also be quite substantial. Increased supply of mustard seeds is likely to reduce the price of this oil and since this oil is primarily consumed by the poorer sections of the rural society, it will be a positive national social gain. But effort should be given to reduce chemical elements in mustard seed which are injurious to the human health.
- iv) It has been discussed earlier that the production of various type of oil seeds has remained almost constant for the last few years. Since there is little possibility of bringing more acreage of land under the cultivation of various types of oil seeds in future because of increased efforts for the production of food crops like paddy and wheat, the only way of increasing the production of oil out of the seeds product within the country is to encourage the farmers to use HYV Seeds of various oil crops on a very large scale. Massive campaign must be undertaken through various types of mass media in this regard. The DOA can also perform an important task in this field.
- v) It is estimated from the quantity of producing paddy in the year 2014-15 that it could have been possible to produce about 7.20 lac MT of edible oil. Bangladesh is in the fourth position to produce rice in the world. Production of rice is increasing year after year because of inventing new varieties of rice. Therefore, prospect of producing oil from the rice bran is great. This would increase the capacity of the country to export edible oil. Success of obtaining edible oil from rice bran leads to open the way for exporting edible oil by the refineries. But all depends on the conversion of manual rice mill to semi auto or auto rice mill.
- vi) Estimated population of 17.06 crore in 2021, require 24.91 lac MT of edible oil if per capita consumption of edible oil is to be increased to 40 GM per day or 14.6 kg per annum. It is also estimated that total requirement of oil for the population of 15.56 crore is 15.09 lac MT at present per capita consumption of 9.70 kg. But in 2021 population would be increased and effort would



be made to increase the per capita consumption to 14.6 kg. Under the circumstances, rice bran oil can be able to meet about 30.59% of the total requirement. So, if it could have been possible to utilize the rice bran, then there is the possibility of excess supply in the market. Since, it is not possible for taking land under seed cultivation because of pressure upon increasing paddy or wheat, Rice Bran Oil can play an important role to meet demand in 2021. Therefore, encouragement of this type of edible oil producing industry to set up leads to meet the requirement in 2021 only about 30.59% by using local raw material. 516.4 lac MTs of paddy is produced in our country in 2014-15. Through polishing process of brown rice, white rice and rice bran is available. It is the process that can be done by only semi auto or auto rice mill. It is known that 70% of the produced paddy is processed by semi-auto or auto rice mill and remaining processed manually. Therefore, rice bran is obtained about 25.30 lac MT. Present production capacity of Rice Bran Oil Industries required 13 lac MT of rice bran. But it is known that they actually received only 4.50 lac MTs of rice bran. Remaining portion are either used in fish feed industry or poultry industry. If 100% of produced paddy is processed in semi auto and auto rice mill then 36.15 lac MTs of rice bran is obtained. From which about 7.16 lac MTs of Rice Bran Oil can be produced.

- vii) The benefit of increasing crude oil import accrued to the consumers of urban areas. But this has drained away the foreign exchange which will not be desirable. Soybean is produced in USA, Brazil, Argentina, China, India, Paraguay, Canada and others. Japan and Mexico imported the Soybean. In the financial year of 2009-10 about 81% of Soybean production has been crashed in the world. Through crushing it has been possible to produce at the rate of 18.66% to 19.16% return of Soybean oil. On the other hand, largest producer and exporting countries of palm oil are Indonesia and Malaysia. Other countries also produce palm oil such as Thailand, Nigeria and Colombia. Since refining is not possible to stop because of consumer interest, efforts can be given to produce Soybean oil from imported soybean seed.
- viii) In accordance with the Para 2.4.5 of the 2012-15 export policy "Import Price" under entre-port trade shall refer to the C&F price of the imported product as declared at the port of Bangladesh. Besides, Para 2.4.6 of the export policy explain the Re-export that the export of an imported product within a specified period of time with a value addition of at least 10% to the imported price by changing the quality or shape or both of the product by means of local reprocessing. Actually Value Addition means Value of Output minus Value of Input. Considering this definition refineries make value addition 1.17% to 1.41%. But following export policy these are 17.39% of CDSO, 24.78% of CPO and 11.75% of Mustard oil. Therefore, export of refined edible oil is eligible following export policy.
- ix) Soybean oil is imported in Crude or Refined form under HS Code 1507.10.00 and 1507.90.10 respectively. HS Code of these two is specified clearly. But in case of importing crude palm oil HS Code is 1511.10.10. On the other hand, while importing refined palm oil it is under HS.Code 1511.90.90. This H.S.Code describes item as other including refined palm oil. But it is observed that Crude Palm Oil and refined Palm Oil are produced from Crude Palm Oil. Again Refined Palm Oil is produced from crude Palm Oil. On the other hand by fractionation process Refined Palm Oil and Palm Stearin are produced from Refined Palm Oil. Again Super Palm

Olien and Hard Olien are produced from Refined palm Olien. So, it is found that there are a number of products are produced from Crude Palm Oil. Therefore, it is needed to differentiate product by using different HS.Code.

- x) Export of rice bran can be discouraged to encourage establish rice bran oil industry. Government imposes 10% export duty on export of rice bran in the financial year 2014-15. As far as obtained the information regarding production capacity of rice bran oil industry, it is known that country has capacity at present about 2.5 lac MT for which rice bran is required about 13 lac MT. There is the huge scope to establish rice bran oil industry in the country.
- xi) Refineries applies to the MOC that they are paying VAT at three stages and that three stages should be reduced to one stage by imposing VAT 5000 taka per MT so that they can free from harassment of VAT collector at three times. Actually, at present international price of crude soybean refineries are paying about 12000/= VAT per MT and palm oil refiners paying about 11,000/= taka per MT. Therefore, VAT may be imposed at one stage in MT.
- xii) Existing refineries production capacities have been reduced due to the closure of some refineries. Therefore, it is necessary to find out the reason for closure of these refineries and make them able to start refining.

## 10.2 RECOMMENDATIONS

- 1) Make provision in Import Policy Order 2015-18 to import crude soybean or palm oil only by refineries. But exception may be made in respect of Government Organisation;
- 2) Make environment so that refineries can be able to utilize production capacity fully. Majority of the existing refineries have their own separate plastic manufacturing plants. Raw marital for making plastic container if imported and duties is high, this should be reduced;
- 3) Production of mustard oil through importing rape/mustard seed can be encouraged. Effort may be made by MOA to find out the chemical elements which are injurious to human health and ensure to avail the mustard oil at reasonable price as well;
- 4) Since there is very little scope for any increase in the acreage of land under the cultivation of oil seeds because of national priority on the production of food crops like paddy and wheat, the only way to increase the domestic supply of oil is to encourage the farmers to adopt HYV seeds of various oil crops on a very large scale. At the same time, since the production of edible oil from rice bran is possible, this should be encouraged. Because it relates to the national priority of increasing crops like paddy;
- 5) Since the preference of packed oil over loose has increased due to affordability and increased attention to health and hygiene, marketing of loose edible oil should be discouraged;
- 6) Recently all the refiners are importing refined palm olien rather than importing crude palm oil or refined palm oil. Therefore, cost for fractionation should be considered rather than considering the imported crude palm to refine;
- 7) With the increase of paddy production, edible oil production would be increased. In this connection, establishing extract plant of obtaining crude oil from rice bran can be

encouraged. Government has already provided the facilities for the establishment of rice bran oil industry. Therefore, there is the huge scope for exporting the edible oil from Bangladesh by refining the imported crude oil. Besides, refined oil can be exported in accordance with the export policy;

- 8) Separate HS Code can be created for Crude Palm Oil, Refined Palm Oil, Crude Palm Oil and Refined Palm Oil;
- 9) Effort can be made to charge Value Added Tax (VAT) at one stage on refining from CDSO and CPO respectively;
- 10) Facilitate the existing closed refineries to start their refining process so that they can be remained active;
- 11) In order to obtain rice bran properly out of produced paddy all the rice mill can be converted in to semi auto and auto rice mill;
- 12) VAT on import of De Oiled Rice Bran (DORB) can be imposed;
- 13) Fish feed and poultry industry can be encouraged to utilize DORB rather than rice bran;
- 14) Encourage refineries to use less cost method such as physical refining process while refining crude palm oil

## 11. CONCLUSION

There are eight refineries in operation and their production capacity is 29.76 lac MT. They can utilize only 48.64% of the production capacity. Most of the demand for edible oil is met by these refineries. Therefore, it is needed to reduce the dependence on the imported crude oil. Since 2011 RBO industries have been established in the country. Production Capacities of these industries are 2.88 lac MTs at present. But if all the manual rice mill converted to semi auto or auto rice mill there would be possible to obtain Rice Bran about 36 lac MT. This will provide about 7 lac MTs of edible oil. Besides, it is very good for health. Locally produced seeds can meet only 14.51% of the demand for edible oil. Therefore, it is needed to emphasise on increasing oil seeds production and properly obtained Rice Bran to reduce dependence on import of crude oil. Locally produced seeds and rice bran can be expected to be the source of edible oil supply in future.

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# Possibility of Formation of Preferential Trade Agreement (PTA) between Bangladesh and Bhutan

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## Abstract

This paper investigates the formation of Preferential Trade Agreement (PTA) between Bangladesh and Bhutan. The role of PTA is increasingly important given the emergence of the trade agreement. The paper examines the country's economic overview, trade performance, trade regime, bilateral trade, potential products etc. The paper attempts to explore problems and prospects of forming PTA. Quantitative analysis such as Revealed Comparative Advantage (RCA) analysis used for this study. It has large potential for enhancing economic growth by increasing trade between Bangladesh & Bhutan and will have a positive impact on economic development.

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**Keyword:** PTA, Bangladesh, Bhutan, RCA

## 1. Introduction

Over the last 25 years, countries around the world have increasing trade agreements. PTA is a formal undertaking between signatory's countries to eliminate or reduce tariff barriers. Bangladesh government is willing to create a PTA with Bhutan. Bhutan's economy is small and less developed and based largely on agriculture and forestry, which provide the main livelihood for more than half of the population. Because rugged mountains dominate the terrain and make the building of roads and other infrastructure difficult and expensive, industrial production is primarily of the cottage industry type. The economy is closely aligned with India's through strong trade and monetary links and is dependent on India for financial assistance and migrant laborers for development projects, especially for road construction. Multilateral development organizations administer most educational, social, and environment programs, and take into account the government's desire to protect the country's environment and cultural traditions. Bhutan's largest export - hydropower to India - is creating employment and will probably sustain growth in the coming years. Only 5% of Bhutan's 30,000 megawatt hydropower potential is currently tapped. The large amount of equipment needed to import materials to build hydropower plants has expanded Bhutan's trade and current account deficits. Bhutan's GDP has rebounded strongly since the global recession began in 2008.

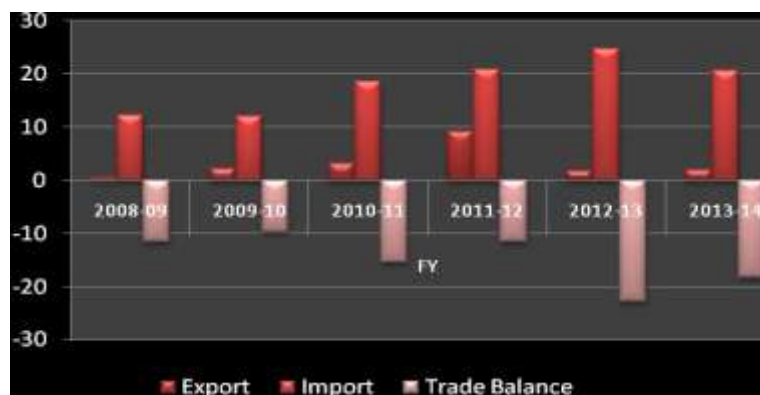
### 1.1 Bilateral Trade Scenario of Bangladesh

Bangladesh has a bilateral trade agreement with Bhutan. It is found that Bangladesh's trade balance is traditionally negative with Bhutan since 2009. But the existing trade facts indicate that formation of PTA with the Bhutan would bring noteworthy trade potential.<sup>7</sup>

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**Bar gram 1: Bangladesh's Bilateral Trade Scenario with Bhutan**



Source: Export Promotion Bureau (EPB) and Bangladesh Bank (BB)

## 1.2 Objectives of the Study

The objectives of the study are as follows a) To identify the existing problems and constraints to forming bilateral PTA with Bhutan; b) To identify the future potentials of expanding and promoting trade with Bhutan; and c) To make appropriate recommendations to the government.

## 1.3 Methodology

Several sources of data/information have been used for accomplishing the study. For the purpose of the study, Bangladesh trade and economic related data/information has been taken from National Board of Revenue (NBR), Export Promotion Bureau (EPB) and Bangladesh Bank etc. The ITC Trade Map provided trade data/information for Bangladesh as well as Bhutan till 2011 (Latest data). Tariff data/information has been obtained from ITC Market Access Map and World Integrated Trade Statistics (WITS) database. Policy related data/information has been taken from World Trade Indicator of Bhutan. Besides, some other databases such as World Development Indicator, Database of World Bank, CIA World Fact Book, Wikipedia etc have been used.

All data/information have been presented in tabular format and accordingly explained aimed at preparing an analytic and informative quality report. In order to make a qualitative analysis of impact of PTA with Bhutan, the Commission has run Trade Sift software under Sussex Framework<sup>27</sup> which has developed a set of Rules of Thumbs (RoT), grounded on trade theory, allowing one to capture the probable impact of engaging or being left out of PTAs. The welfare impact of PTA is measured by trade creation and trade diversion.

The index of Revealed Comparative Advantage (RCA) has been tested with the idea that if two countries have comparative advantage in their major export products, the PTA will be welfare enhancing. Besides, Finger-Kreinin (FK) index has been examined in order to find the degree of similarity with the idea that more similarity in the export products of the two countries, higher will be the potential for specialization and intra industry trade.

In order to further analyze the possible impact of proposed PTA, RCA index was calculated using the following formula:

$$RCA_{iw}^k = \left( \frac{x_{iw}^k}{X_{iw}^k} \right) / \left( \frac{x_{iw}^k}{X_{ww}^k} \right)$$

Where,

$x_{iw}^k$  represents the export of sector k by country i and  
 $X_{iw}$  denotes total exports from country i to the world.

And

$$\text{Normalized RCA or NRCA} = (RCA-1) / (RCA+1)$$

In order to assess how the proposed FTA will help specialization, Finger Kreinin Index (FKI) between exports of Bhutan and Bangladesh have been calculated. While, FKI shows the degree of similarity between the structure of exports between two countries FKI by export destination

The mathematical formula for FKI is as follows

$$FK_{i_1i_2j} = \sum_k \min \left[ \left( \frac{x_{i_1j}}{X_{i_1j}} \right), \left( \frac{x_{i_2j}}{X_{i_2j}} \right) \right]$$

Where  $FK_{i_1i_2j}$  denotes the similarity between country  $i_1$  and  $i_2$  (two exporting countries) to country j (the export destination) and  $\left( \frac{x_{i_1j}}{X_{i_1j}} \right)$  shows the share of a particular product in country  $i_1$ 's total export to destination j

## 1.4 Limitation of the Study

A limitation of the study was **lack of available and/or reliable data** for Bhutan. National Board of Revenue, Bangladesh does not store Bhutan's import data due to ASYCUDA could not capture some land port data. Without reliable data it was a significant obstacle in finding trend and meaningful relationship with Bhutan and Bangladesh. Global trend data for Bhutan was available up to 2011 in International Trade Center (ITC) and World Bank website. Another limitation Bhutan has no Trade Policy Review (TPR) at World Trade Organization. That's why it was very difficult to represent Bhutan's trade fact and regime in this report.

## 2. Result & Discussion

### 2.1 Bangladesh Major Export Products to Bhutan

It is found in Table 1 that Tableware and Kitchenware articles of plastics, Containers of plastics for keeping ice & foods, Men's or boys' shirts, not knitted or crocheted, Men's or boys' jackets & blazers, not knitted or crocheted, medicaments (excluding goods of headings 30.02, 30.05 or 30.06), toilet use (including medicated products), women's or girls' trousers, bib & brace overalls etc are exporting to Bhutan from Bangladesh. The following table is showing that Tableware and Kitchenware articles of plastics, prepared foods obtained by the swelling or roasting of cereals or cereal products, containing cocoa, men's or boys' shirts, not knitted or crocheted, of cotton of and synthetic fibres items contribute more than 61% of Bangladesh's total export to Bhutan.

**Table 1. Composition Bangladesh's Exports to Bhutan in FY 2013-14 at 8 digit level**

(Value in '000' US\$)

| Sr. No. | HSCode        | Description  | Export Value    | Share         |
|---------|---------------|--|-----------------|---------------|
| 1       | 39241000      | Tableware and kitchenware articles of Plastics   | 382.29          | 20.06         |
| 2       | 19041010      | Prepared foods obtained by the swelling or roasting of cereals or cereal products, containing cocoa.   | 347.94          | 18.26         |
| 3       | 62052000      | Men's or boys' shirts, not knitted or crocheted, of cotton.  | 271.59          | 14.25         |
| 4       | 76049100      | other  | 187.88          | 9.86          |
| 5       | 62033300      | Men's or boys' jackets & blazers, not knitted or crocheted, of synthetic fibres.   | 161.40          | 8.47          |
| 6       | 20091900      | Orange juice, other than frozen & not frozen of Brix Value not exceeding 20.   | 134.41          | 7.05          |
| 7       | 30041000      | Medicaments (excluding goods of headings 30.02, 30.05 or 30.06) containing pencillin or stroptomycins or their derivatives, consisting of mixed or unmixed products for therapeutic or prophylactic uses, put up in measured doses or in forms or packings for | 85.36           | 4.48          |
| 8       | 34011100      | For Toilet use (including medicated products)  | 63.86           | 3.35          |
| 9       | 20079900      | Other  | 50.38           | 2.64          |
| 10      | 39231000      | Boxes, cases, crates and similar articles  | 50.23           | 2.64          |
|         | <b>Others</b> |  | <b>170.14</b>   | <b>8.94</b>   |
|         | <b>Total</b>  |  | <b>1,905.48</b> | <b>100.00</b> |

Source: Export Promotion Bureau website

## 2.2 Bangladesh Major Import Products from Bhutan

Bangladesh's top import items from Bhutan are Limestone, Ferro-silicon, Gypsum, Pebbles, Gravel, Broken or crushed stone, Dolomite, Orange, Apple, Cardamoms, etc. Bangladesh needs Gypsum, Pebbles, Gravel, Broken or crushed stone, Dolomite for domestic use and Orange, Apple, Cardamoms for its local consumption. The compositions of Bangladesh's import from Bhutan indicate that trade potential between Bangladesh and Bhutan per se would be significant by forming PTA.

**Table 2. Major Import Products from Bhutan to Bangladesh in 2011**

(value in '000'US\$)

| Sr. No | HS     | Description  | Year |      |      |
|--------|--------|--|------|------|------|
|        |        |  | 2009 | 2010 | 2011 |
| 1      | 080510 | Oranges, fresh or dried  | 7278 | 6660 | 6597 |
| 2      | 252100 | Limestone flux;limestone & other calcareous stone,for lime or cement | 2931 | 5162 | 6064 |
| 3      | 090830 | Cardamoms  | 1013 | 2312 | 5395 |
| 4      | 251810 | Dolomite not calcined  | 1529 | 1880 | 3070 |
| 5      | 080810 | Apples, fresh  | 676  | 1662 | 1542 |
| 6      | 720221 | Ferro-silicon, containing by weight more than 55% of silicon         | 802  | 541  | 1512 |
| 7      | 252620 | Natural steatite, crushed or powdered                                | 491  | 656  | 604  |



| Sr. No | HS     | Description  | Year |      |      |
|--------|--------|--|------|------|------|
|        |        |  | 2009 | 2010 | 2011 |
| 8      | 230230 | Wheat bran, sharps and other residues, pelleted or not           | 0    | 0    | 385  |
| 9      | 252010 | Gypsum; anhydrite  | 291  | 384  | 351  |
| 10     | 251710 | Pebbles, gravel, broken or crushed stone used for aggregates etc | 0    | 37   | 290  |

Source: Analyzed by Author's from ITC Database

### 2.3 Bangladesh's Export Potential to Bhutan

In order to examine the export potential of Bangladesh to Bhutan, the Commission has analyzed global export of Bangladesh and global import of Bhutan (2011) and identified top 10 export potential items (at 6 digit level). Subsequently, the Commission has identified major items in which Bangladesh has significant export potential (e.g. US\$ 1 ml or more) considering the local market demand of Bhutan (US\$ 1 ml or more). Among top 10 export potential items only two items such as Portland cement, Single citrus fruit juice, unfermented are under SAFTA sensitive list.

**Table 3: Top 10 Export Potential Items of Bangladesh to Bhutan with MFN duties**

(Values in '000' USD)

| Sr. No. | HS     | Description  | BD's Export to Bhutan 2011 | BD's Global Export 2011 (Range 1 ml) | Bhutan's Global Import 2011 (Range 1 ml) | MFN Duty applied by Bhutan |
|---------|--------|--|----------------------------|--------------------------------------|--|----------------------------|
| 1       | 271019 | Other petroleum oils and preparations                                  | 0                          | 25,185                               | 90,962                                   | Non SL                     |
| 2       | 740811 | Wire of refind copper of which the max cross sectional dimension > 6mm | 0                          | 3,587                                | 42,446                                   | Non SL                     |
| 3       | 271011 | Light petroleum oils and preparations                                  | 0                          | 50,829                               | 29,582                                   | Non SL                     |
| 4       | 252329 | Portland cement nes  | 0                          | 19,944                               | 7,964                                    | SL                         |
| 5       | 390110 | Polyethylene having a specific gravity of less than 0.94               | 0                          | 1,040                                | 2,963                                    | Non SL                     |
| 6       | 261900 | Slag, dross, (exc granulated slag) scaling & other waste etc           | 4                          | 37,907                               | 2,663                                    | Non SL                     |
| 7       | 151590 | Veg fats&oils nes&their fractions,refind or not but not chemically mod | 0                          | 11,988                               | 2,087                                    | Non SL                     |
| 8       | 200931 | Single citrus fruit juice, unfermented, Brix value <= 20 at 20°C, whet | 1,778                      | 1,790                                | 1,783                                    | SL                         |
| 9       | 720917 | Cold rolled iron/steel, coils >600mm x 0.5-1mm                         | 0                          | 5,036                                | 1,447                                    | Non SL                     |
| 10      | 030559 | Fish nes, dried, whether or not salted but not smoked                  | 0                          | 11,693                               | 1,381                                    | Non SL                     |

Source: Analyzed by Author's from ITC Database

Bhutan's item wise import data shows that its major import products are other petroleum oils and preparations, wire of refind copper of which the max cross sectional dimension > 6mm, shovels and excavators with a 360 revolving superstructure, dump trucks designed for off-highway use, ferrous products obtained by direct reduction of iron ore, nes, light petroleum oils and preparations, wood charcoal, incl. shell or nut charcoal, whether or not agglomerate, automobiles with diesel engine displacing more than 2500 cc, rice, semi-milled or wholly milled, whether or not polished or glazed, automobiles with diesel engine displacing more than 1500 cc to 2500 cc etc. There are similarities between Bangladesh and Bhutan's import products which are petroleum oils, dump trucks designed, automobiles with diesel engine etc.

**Table 4. Import composition of Bhutan at 6 digit level**

[Values in '000' USD]

| Sr. No.              | HS     | Items   | Import Value  |                | Share in Total Import | Import Growth |
|----------------------|--------|---|---------------|----------------|-----------------------|---------------|
|                      |        |   | 2010          | 2011           |                       |               |
| 1                    | 271019 | Other petroleum oils and preparations                                   | 70703         | 90962          | 8.65                  | 28.65         |
| 2                    | 740811 | Wire of refined copper of which the max cross sectional dimension > 6mm | 40388         | 42446          | 4.04                  | 5.10          |
| 3                    | 842952 | Shovels and excavators with a 360 revolving superstructure              | 25714         | 33173          | 3.15                  | 29.01         |
| 4                    | 870410 | Dump trucks designed for off-highway use                                | 20128         | 32845          | 3.12                  | 63.18         |
| 5                    | 720310 | Ferrous products obtained by direct reduction of iron ore, nes          | 26934         | 30715          | 2.92                  | 14.04         |
| 6                    | 271011 | Light petroleum oils and preparations                                   | 21186         | 29582          | 2.81                  | 39.63         |
| 7                    | 440290 | Wood charcoal, incl. shell or nut charcoal, whether or not agglomerate  | 15547         | 23437          | 2.23                  | 50.75         |
| 8                    | 870333 | Automobiles with diesel engine displacing more than 2500 cc             | 6260          | 19276          | 1.83                  | 207.92        |
| 9                    | 100630 | Rice, semi-milled or wholly milled, whether or not polished or glazed   | 18508         | 18403          | 1.75                  | -0.57         |
| 10                   | 870332 | Automobiles with diesel engine displacing more than 1500 cc to 2500 cc  | 4122          | 17857          | 1.70                  | 333.21        |
| <b>Others</b>        |        |   | <b>604314</b> | <b>713051</b>  | <b>67.80</b>          |               |
| <b>Total Imports</b> |        |   | <b>853804</b> | <b>1051747</b> | <b>100.00</b>         |               |

Source: Analyzed by Author's from ITC Database

**2.4 Bangladesh:** Bangladesh's economic growth is formidably depended on imports. Its major import items are cereal, capital machineries and equipments, chemicals, edible oil, fuel, iron and steel, textiles, fertilizer, petroleum products and cement clinker. Industrialization of Bangladesh is extremely depended on import of raw materials, capital machineries, and parts and accessories. Food items, petroleum, industrial raw materials and capital machineries occupied the major share of total import. ( Bangladesh Economic Review 2012 and Annual Report, Bangladesh Bank 2012)

## 2.5 Item wise Export Data

Bhutan's item wise export data showed that it's major export products are Ferro-silicon,; wire of refined copper, bars & rods, portland cement; calcium carbide; dolomite not calcined; manganese and articles thereof, silicon carbide; gypsum anhydrite etc. There was very few similarities between Bangladesh and Bhutan's export basket such as Portland cement and no similarities between rests of the items. That means formation of PTA may increase trade between the two countries.

**Table 5: Bhutan's Major Export Products at 6 digit**

[Values in '000'USD]

| Sl. no              | HS     | Des   | Export value 2010 | Export value 2011 | Share of total export (2011) | Annual Growth |
|---------------------|--------|---|-------------------|-------------------|------------------------------|---------------|
| 1                   | 720221 | Ferro-silicon, containing by weight more than 55% of silicon              | 1,23,596          | 1,30,921          | 35.94                        | 5.93          |
| 2                   | 852380 | Gramophone records and other media for the recording of sound or of ot    | 46,915            | 71,906            | 19.74                        | 53.27         |
| 3                   | 740819 | Wire of refined copper of which the max cross sectional dimension <=6mm   | 37,688            | 42,940            | 11.79                        | 13.94         |
| 4                   | 721430 | Bars & rods, i/nas, hot rolled drawn or extruded of free cuttg steel, nes | 16,150            | 25,061            | 6.88                         | 55.18         |
| 5                   | 252329 | Portland cement nes   | 29,604            | 21,990            | 6.04                         | -25.72        |
| 6                   | 284910 | Calcium carbide   | 21,115            | 19,863            | 5.45                         | -5.93         |
| 7                   | 251810 | Dolomite not calcined   | 16,099            | 16,508            | 4.53                         | 2.54          |
| 8                   | 811100 | Manganese and articles thereof, including waste and scrap                 | 16,738            | 13,419            | 3.68                         | -19.83        |
| 9                   | 284920 | Silicon carbide   | 9,833             | 11,073            | 3.04                         | 12.61         |
| 10                  | 252010 | Gypsum; anhydrite   | 9,634             | 10,558            | 2.90                         | 9.59          |
| <b>Others</b>       |        |   | <b>86,110</b>     | <b>88,724</b>     |                              | <b>3.04</b>   |
| <b>Total Export</b> |        |   | <b>4,13,482</b>   | <b>4,52,963</b>   | <b>100.00</b>                |               |

Source: Analyzed by Author's from ITC Database

**Bangladesh:** Bangladesh's major export items are woven garments, knitwear, frozen food, tea, jute & jute products, leather and leather products, ceramic products, footwear, melamine products, chemical fertilizer, light engineering products, home textile, agriculture products etc. Bangladesh's export is

extremely concentrated to woven garments and knitwear. Lion share of Bangladesh's export earning was receiving from woven garments and knitwear which ranges from 75-80% of total export.

## 2.6 Assessment of potential impact of proposed PTA between Bangladesh and Bhutan

### 2.6.1 Trade Creation

The possibilities of trade creation are analyzed by selecting products in which Bhutan has comparative advantage (positive value for Normalized RCA), Bangladesh imposed high tariff (5% or greater, except Gypsum anhydrite) on which it has significant import (greater than USD 4 million) and Bhutan has export capacity of more than 1 million US\$. Finally nine products have been found where most of the products were raw materials/intermediate products. Since Bhutan has comparative advantage in these products, reduction/removal of tariff would lead to increase social welfare. However, it could be concluded from this analysis that the overall prospect for trade creation is meager because the number of products having possibility of trade creation from imports perspective is very few.

**Table 6: Products with the Possibility of Trade creation**

| SL | HS Code | Product Name   | BDs avg import of FY 12 and FY13 (000 USD) | Bhutan's export in global market 2013 (000USD) | RCA of Bhutan in 2013 | Normalized RCA of Bhutan in 2013 | RCA of BD in 2013 | Normalized RCA of BD in 2013 | BD's MFN tariff 2012-13 |
|----|---------|--|--|--|-----------------------|----------------------------------|-------------------|------------------------------|-------------------------|
| 1  | 284910  | Calcium carbide  | 1577                                       | 13053  | 49.13                 | 0.96                             | 0.00              | -1.00                        | 10%                     |
| 2  | 284920  | Silicon carbide  | 44   | 9374   | 12.43                 | 0.85                             | 0.02              | -0.95                        | 10%                     |
| 3  | 392092  | Film and sheet etc, non-cellular etc, of polyamides                    | 634  | 850  | 1.26                  | 0.11                             | 0.00              | -1.00                        | 20%                     |
| 4  | 680221  | Monumental/buildg stone,cut/sawn flat/even,marble/travertine/alabaster | 1396                                       | 1889   | 1.25                  | 0.11                             | 0.00              | -1.00                        | 25%                     |
| 5  | 720221  | Ferro-silicon, containing by weight more than 55% of silicon           | 117  | 102109   | 41.66                 | 0.95                             | 0.00              | -1.00                        | 5%                      |
| 6  | 720299  | Ferro-alloys, nes  | 90   | 2600   | 3.69                  | 0.57                             | 0.00              | -1.00                        | 5%                      |
| 7  | 720610  | Ingots, iron or non-alloy steel, of a purity of less than 99.94% iron  | 122  | 1184   | 3.37                  | 0.54                             | 0.00              | -1.00                        | BDT 2500 per MT         |
| 8  | 720719  | Semi-fin prod, iron or non-alloy steel, cntg by wght <.25% carbon, nes | 173320                                     | 1816   | 1.55                  | 0.21                             | 0.00              | -1.00                        | BDT 2500 per MT         |
| 9  | 721430  | Bars & rods,i/nas,hot rolled drawn or extruded of free cuttg teel,nes  | 515  | 3649   | 8.31                  | 0.79                             | 0.00              | -1.00                        | 10%                     |

Source: Analysed based on ITC and NBR database

### 2.6.2 Trade Diversion

A number of 17 products has been identified where Bhutan has positive RCA with negative NRCA and at the same time Bangladesh's average import from global market as well as Bhutan's global export are greater than US\$ 1 million while Bangladesh imposed MFN tariff 5 percent or more on these products. This implies that if Bangladesh removes/reduces tariff for Bhutan by the virtue of a PTA, there will be a possibility that Bangladesh's import of these products will increase from the inefficient source of these products i.e. Bhutan as the country has comparative disadvantage in these products. So, there is some possibility of trade diversion for these products.

**Table 7: Products with the Possibility of Trade Diversion**

| Sr. No. | HS     | Product name  | BDs avg import of FY 12 and FY13 (ooo uSD) | Bhutan's export in global market 2013 (000 market) | RCA of Bhutan 2013 | Normalized RCA of Bhutan 2013 | RCA of BD in 2013 | Normalized RCA of BD in 2013 | BD's MFN tariff 2012-13 |
|---------|--------|---|--|--|--------------------|-------------------------------|-------------------|------------------------------|-------------------------|
| 1       | 220290 | Non-alcoholic beverages nes,excludg fruit/veg juices of headg No 20.09  | 768.50                                     | 103.00   | 0.01               | -0.98                         | 0.18              | -0.70                        | 25%                     |
| 2       | 220710 | Undenaturd ethyl alcohol of an alcohol strngth by vol of 80% vol/higher | 243.00                                     | 434.00   | 0.07               | -0.87                         | 0.00              | -1.00                        | 25%                     |
| 3       | 220720 | Ethyl alcohol and other spirits, denatured, of any strength             | 35.00                                      | 1308.00  | 0.86               | -0.08                         | 0.00              | -1.00                        | 25%                     |
| 4       | 250510 | Silica sands and quartz sands   | 290.50                                     | 222.00   | 0.27               | -0.57                         | 0.00              | -1.00                        | 5%                      |
| 5       | 252329 | Portland cement nes   | 587.00                                     | 108.00   | 0.02               | -0.97                         | 1.03              | 0.01                         | 25%                     |
| 6       | 270119 | Coal nes, whether or not pulverised but not agglomerated                | 82457.00                                   | 559.00   | 0.05               | -0.91                         | 0.00              | -1.00                        | 5%                      |
| 7       | 270600 | Tar distilled from coal, lignite or peat & other mineral tars etc       | 3785.50                                    | 413.00   | 0.62               | -0.23                         | 0.00              | -1.00                        | 8.5%                    |
| 8       | 350300 | Gelatin and gelatin derivs; singlass; glues of animal origin, nes       | 885.00                                     | 149.00   | 0.09               | -0.84                         | 0.29              | -0.55                        | 7.50                    |
| 9       | 392099 | Film and sheet etc, non-cellular etc, of plastics nes                   | 4802.50                                    | 3837.00  | 0.81               | -0.10                         | 0.00              | -1.00                        | 17.50%                  |
| 10      | 410792 | Grain splits leather "incl. parchment-dressed leather", of the portion  | 11517.00                                   | 342.00   | 0.13               | -0.76                         | 5.30              | 0.68                         | 5%                      |
| 11      | 441011 | Waferboard, including oriented strand board of wood                     | 1988.00                                    | 2621.00  | 0.62               | -0.24                         | 0.00              | -1.00                        | 17.50                   |
| 12      | 740313 | Billets, copper, unwrought  | 8.00                                       | 534.00   | 0.70               | -0.17                         | 0.15              | -0.74                        | 5.00                    |
| 13      | 740811 | Wire of refind copper of which the max cross sectional dimension > 6mm  | 6190.00                                    | 1001.00  | 0.07               | -0.87                         | 0.00              | -1.00                        | 10.00                   |
| 14      | 740819 | Wire of refind copper of which the max cross sectionl dimension <=6mm   | 1071.50                                    | 1791.00  | 0.60               | -0.25                         | 0.09              | -0.83                        | 10.00                   |
| 15      | 842911 | Bulldozers and angledozers, crawler type                                | 4634.50                                    | 434.00   | 0.14               | -0.75                         | 0.00              | -1.00                        | 2.00                    |
| 16      | 852351 | Solid-state, non-volatile data storage devices for recording data from  | 3937.50                                    | 165.00   | 0.01               | -0.97                         | 0.00              | -1.00                        | 13.50                   |
| 17      | 901920 | Oxygen therapy,artificial respiration/oth therapeutic respiration app   | 5130.00                                    | 164.00   | 0.04               | -0.93                         | 0.00              | -1.00                        | 1.00                    |

Source: Analysed based on ITC and NBR database

**Finger Kreinin Index (FKI)** indices have been estimated at both 2 digit and 6 digit level which show how similar in the export products of Bangladesh and Bhutan. Results showed that FKI index was decreasing at both level which means that the similarity in the structure of export of two countries has declined.

**Table 8: FKI between Bangladesh's exports to the world and Bhutan's export to the world**

| HS Level | 2009 FKI | 2010 FKI | 2011 FKI | 2012 FKI | 2013 FKI |
|----------|----------|----------|----------|----------|----------|
| 6 digit  | 0.0752   | 0.0914   | 0.0853   | 0.1135   | 0.1105   |

Source: Calculation based on ITC database

## 2.7 Major NTMs in Bhutan

### 2.7.1 Salient Features of Bhutan's NTMs

Bhutan's national policies, including its trade, industry, and economy related policies are predominantly protective of its own people, culture, and the environment. With the small size of its economy and population and no direct access to international ports, Bhutan's trade with the world is severely limited. Being a landlocked country, and having its currency equally pegged with Indian currency, Bhutan conducts the majority of its cross-border trade with India. Its regulatory regime still carries some restrictive measures as a carryover from the past when the country was a closed economy. Some of the salient features of Bhutan's NTMs are listed below:

- i) Importers need to register themselves with the Ministry of Economic Affairs.
- ii) All import consignments originating from countries other than India and entering Bhutan by road through India (transit) need an import license, issued for up to one year validity period, and free of cost. Imports to Bhutan from countries other than India that enter by air need not have import license.
- iii) Importers are required to report the landing of imports in their approved retail outlets to the Regional Trade and Industry Offices along with the required transportation documents. The Regional Offices' verification shall form a part of obligations of the importers for issuance of next Import License. This landing certificate is required for imports transiting through India to discourage deflection. Landing certificates are not required for imports entering Bhutan by air.
- iv) Three categories of products, e.g., narcotics, pornography, and items that are considered contraband internationally are prohibited for import.
- v) Used clothes and textile items are also restricted for import.
- vi) A total of 14 categories of items are restricted for import from all countries and are subject to licensing requirement with special permission issued by relevant authorities, e.g., special permission from Ministry of Agriculture for import of chemicals and fertilizer.
- vii) Import of raw materials for industrial use must have a value addition of minimum 40%.

### 2.7.2 Most Cited Specific NTMs in Bhutan

The following broad categories of NTMs are:

- i) **Port Restrictions:** Bhutanese exports are required to pass through notified exit/entry points (Land Customs Stations) in India, Bangladesh and Nepal. The SPS-related inspection and testing requirements are major reason for such port entry related restriction in case of India. Being a landlocked country, Bhutan has to use Indian Territory and Indian ports for transshipment of its products to other countries. For transshipments to Bangladesh and Nepal, Bhutanese exports have to use specific ports of entry as per the requirements of relevant trade protocols existing between India, Bangladesh, Nepal, and Bhutan.
- ii) **Quantitative Restrictions:** For imports from countries other than India, an importer can import only up to 4 container loads a year. However, this quantitative restriction is applied in a very lenient manner, when imports from SAARC countries, particularly, from Bangladesh and Nepal is concerned. Imports from SAARC countries do enter Bhutan in truck-loads and not in the standardised containers, and the complexities of converting the truck-loads of quantity into comparable container-loads of quantity is

avoided, and thus this quantitative restriction on imports is not applied for imports from SAARC countries.

iii) **License Requirements:** Each import consignment is required separate import license for the already registered importer. However, this import license is issued free of cost, and does not take more than 1 to 2 working days.

### 2.7.3 Most Cited Cross-Cutting Issues and Emerging Economic Trends in Bhutan

As a landlocked country, Bhutan significantly depends on India for port access. This is a major concern expressed by the Bhutanese business community. They believed that pegged with a decreasingly devalued Indian currency, Bhutanese import payment was getting higher, contributing more to liquidity crisis of foreign currency. Recent agreement with Bangladesh for accessing several land, sea, river and airports for Bhutanese export and import was a major reason for enthusiasm. Irregularity in banking transaction with a particular Bangladeshi bank was a concern. However, a major initiative has already been taken by forming a Bhutan-Bangladesh Banking Sub-Group to address the financial transaction irregularities. Bhutan Chamber of Commerce and Industry (BCCI) took this initiative by persuading the Bhutanese government when this issue was discussed by the consultant of this NTM Study during his visit to Bhutan, and a major improvement is expected to follow. Absence of any bank branches at the major border port on the Bangladeshi side at Burimari was pointed out as a cause of inconvenience to Bhutanese traders. Large informal trade with India, and complexities in port entry restrictions in India and Bangladesh were also frequently cited as cross-cutting issues of regional trade.

### 2.7.4 Some Major NTMs in Bangladesh

- 1) **Import licensing:** Although import licences, *per se*, are not required for any imports into Bangladesh, in addition to the standard LCA import procedure, a permit, clearance, prior permission or approval may be required for a number of imported products. Crude soya bean oil and methanol/methyl alcohol can only be imported by recognized industrial units.
- 2) **Prohibitions:** The banned list generally includes two categories of products on the grounds of religious and social morals.
- 3) **Restrictions:** Restricted items are controlled on the grounds of social, religious, health, environmental, security or trade reasons. These can be classified generally as: (i) products that require a certificate, prior permission or clearance from the relevant authorities; (ii) products that can be imported only by registered industrial consumers, including export-oriented readymade garments, hosiery and specified textile industries operating under the bonded warehouse system, the pharmaceutical (allopathic) industries, and foreign exchange hotels, within the import entitlement specified in their IRCs; (iii) state-trading products, including arms and ammunition, that can be imported only by government-designated firms; and (iv) products required to meet certain conditions. Meanwhile Bangladesh has withdrawn all trade related restrictions imposed for BOP reasons.
- 4) **Country of Origin:** In all cases of import, “Country of Origin” shall be mentioned clearly on goods, package/container. A certificate regarding “Country of Origin” issued by the concerned government agency/approved authority/organization of the exporting country must be submitted along with

import documents to the customs authority at the time of release of goods, except some specified goods and conditions. For example, imports for coal and export-oriented industries.

- 5) **Registration (IRC) and renewal fees:** Registered commercial importers and industrial consumers have been classified into six categories on the basis of their value ceiling of overall annual import for the year 2012-13 to 2014-15. They have to pay fees for their registration (IRC) and renewal as prescribed in the Import Policy Order 2012-2015.
- 6) **Radioactive test for import of food for human consumption:** In case of import of milk, milk food, milk products, edible oil and other food items produced in any country, test of radioactivity levels in those items is mandatory. It is to be noted that test of radioactivity levels of vegetables and seeds, which may be used, as food directly is also mandatory, except international hotels and diplomatic bonded warehouses.
- 7) **Analysis certificate** duly authenticated by the competent authority of the exporting country for non-fat dried milks and the date of manufacture and date of expiry of fitness of the contents for human consumption shall be printed on each container/ bags.

### 3. Problems & Prospects

Above mentioned data/information, facts and analyses, the Commission has identified the following key problems and prospects:

#### 3.1 Problems

- i. At present, Bangladesh is not a significant trading partner of Bhutan. Bangladesh may face challenges in this country from strong competitors which have large export baskets (like India);
- ii. There are higher average tariff rates in Bhutan which may act as crucial impediment for tariff reduction in commodities (especially in agricultural products) in the initial stage of PTA implementation.
- iii. Since Bhutan is characterized by weak and small economy and narrow trade baskets, PTA with them would not create any significant trade creation or trade diversion for Bangladesh.
- iv. Though Bhutan is not situated in the remote region and Bangladesh has no direct transport connection with them that is why trade with this country would not be so cost effective.
- v. Bhutan has no market demand for Bangladesh's major exportable products such as readymade garments, frozen foods, pharmaceuticals, leather and leather products, jute and jute products, ceramic products etc.
- vi. Complexities in port entry restrictions in India may hamper trade between the two countries.

#### 3.2 Prospects

- i. There are some significant exports potential products of Bangladesh, e.g. Plastics, Fish nes, dried, whether or not salted but not smoked, Wire of refined copper, Cold rolled iron/steel of which have huge demand in Bhutan. Therefore a new opportunity of trade creation and trade diversion may be created by forming PTA.

- ii. Since Bangladesh is providing duty free market access to 18 Bhutanese products (6 digit level) pursuant to the decision made by our Hon'ble Prime Minister and Bhutan's exportable products are limited, Bangladesh will not face threat of revenue loss for formation of PTA with Bhutan.
- iii. Bhutan's request of duty (import) free market access to 15 products in addition to 18 products may be considered in the proposed PTA.
- iv. PTA may create opportunity for Bangladesh to import some raw materials of industries such as limestone, ferro-silicon, gypsum, pebbles, gravel, broken or crushed stone, dolomite at lower price.
- v. Bangladesh has export potential to Bhutan's market especially in agricultural products which are not open in SAFTA. PTA may open the market for these products.
- vi. There are more opportunities for both countries to provide/obtain deeper tariff concession and more product coverage than that of SAFTA and BIMSTEC agreements while these are related to other LDCs members.

#### 4. Conclusion

This paper has made an insight analysis on the possibility of forming a bilateral PTA between Bhutan and Bangladesh focusing relevant economic, trade issues and its possible impact on the trade and economy of Bangladesh. It is observed that formation of bilateral PTA with Bhutan could bring significant expansion and promotion in trade. In fact, degree of benefit would depend on how extent of trade liberalisation would be covered by PTA. Based on the above analyses, the Commission is of the view that Bangladesh may proceed to form PTA with Bhutan. In this context, the Commission would like to following recommends : a.PTA may cover only trade in goods; b. Ensure considerable preferential market access through duty free market access/substantial tariff reduction; c. Establish electronic network for exchanging data/information, laws, rules and regulations related to trade; and d. Final decision may be taken through consulting with the stakeholders.

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# Ornamental Flower: Local and Export Market of Bangladesh

Mohsina Begum<sup>8</sup>

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## 1. Introduction

Flowers are the most beautiful objects of nature. They have made our country beautiful. Everybody loves flower. A flower is a think of beauty. A think of beauty is joy forever. Bangladesh is a land of Varieties flower. Different kinds of flower bloom all the year round. People uses flower as a token of love and respect. Besides this flowers uses on happy ceremonies and festivals. Herbal product honey get from flowers.

Flower is used as raw materials for extracting ingredients for drugs. It is also used as an aroma product. There has been demand of flowers more or less all over the year. But the demand reaches its peak mainly in the months of December to April. Now many people are conducting business on flowers. The business of flower helps them to solve unemployment problem and it contributes much in the economy of the country.

Flowers have a wide range of use in the country. Flowers are used in decorating stage, cars used in marriage ceremonies, nuptial chambers and others.

## 2. Types of Flower

There are different kinds of flower in size, shape, color, smell and usefulness. Mainly Flower classified two types. That is Ornamental flower (cultivated flower) and wild flower.

### 2.1 Ornamental flower (Cultivated Flower)

Flowers are cultivated in Bangladesh on commercial purpose, e.g. Rose, Marigold, Gladiolus, Gerbera, Lilli am, Tuberose, Petunia, Cosmos, Zinnia, Orchid, Dahlia, Chrysanthemum, Rod stick, Dainties ,Golden sour ,Flocks , Sunflower ,Fancy , Verbena ,Poinsettia ,Calendula, Candytuft etc .

Flower business has been grown up in Bangladesh since last two decades. Gerbera and Orchid is still much more attractive compared to other flowers in Bangladesh for its beauty and longtime freshness. Local cultivators say, Orchid farming is harder and price is much higher than that of other flowers.

### 2.2 Wild Flowers

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About 3, 00,000 types of wild flower plant species have so far been identified, while tens of thousands more remain undescribed. Of them only about 1,500 species (0.5%) are nurtured for food, fodder, fiber, beverage, timber, medicine and flower. The rest are still wild.

### 3. Present Cultivated Land

Different types of flower are cultivated at selected areas in Bangladesh. These are Gadkhali and Kaliganj in Jessore , Meherpur, Rangamati, Gazipur, Manikganj Savar and Tangail etc. Approximately 10,000 Hecter land are used for the cultivated different type of Flowers. Table-1 shows the total cultivated land in Bangladesh.

**Table-1: Total cultivated land in Bangladesh**

| Sl.no. | Description          | Cultivated Land ( Hecter) |
|--------|----------------------|---------------------------|
| 1.     | Tuberose(single)     | 70                        |
| 2.     | Tuberose (double)    | 200                       |
| 3.     | Rose                 | 6000                      |
| 4.     | Marigold             | 3000                      |
| 5.     | Gladiolus            | 600                       |
| 6.     | Gerbera              | 100                       |
| 7.     | Chrysanthemum        | 02                        |
| 8.     | Dahlia               | 06                        |
| 9.     | Togoor ( single)     | 10                        |
| 10.    | Solid ago(Rod Stick) | 15                        |
| 11.    | Gypsy                | 10                        |
| 12.    | Lilli am             | 02                        |
|        | Total                | <b>10,000 Hecter</b>      |

Source: Field survey April 2012 Gazipur, Savar, Manikganj and May 2012 ( Jessore, Jhikorgasa, Godkhali)

The cultivation of flower in Bangladesh is increasing day by day. But no reliable data is still available about the cultivation area of the most attractive flower Orchid.

### 4. Flower Cultivation more Profitable Than other crops

Presently flower cultivation is more profitable than that of other crops such as paddy, maize, jute, onion, garlic etc. It is also reported that cultivation of flower returns near about 3-5 times more than that of rice and vegetable cultivation.

\* Sher-Ali Sarker the biggest flower cultivator at Godkhali in Jessore cultivated Gerbera, Rose, Tuberose, China rose and Gladiolus. He earned at average tk. 1.5 lakhs – 2.00 lakhs per month by selling different type of flowers. Ismail Hossain, Dulal Sarkar, Liakat Hossain, Abdul Kader and Abdur Razzak were the pioneer to cultivate Gerbera in the country at the beginning of 2007, later joined Sher Ali in 2008. Farmers introduced Gerbera, a variety that was imported from Holland about 5 years ago. The variety can be found in 14 vibrant colors. One stick of Gerbera is sold at Tk 8-10 on the wholesale market at Gadkhali.

\* Abdur Rahim cultivated Liliun on a 10-decimal leased land at a cost of five lakh takas. A total of 4,000 pieces of Liliun were planted in the Jhikargachha area. Abdur Rahim hoped that a stick of Lilium would fetch Tk. 100 to 150 in the wholesale markets.

He further added that the farmers earned a total of Tk 10 crore by selling Tuberose last year. By selling rose they pocketed Tk 2 crore, glandulous gave them Tk. 3 crore, Marigold Tk 1 crore and Garbera Tk 5 crore. Besides, one crore takas have been earned from selling other flowers.

Neighboring country India, flower farming is nearly 5% more profitable than rice cultivation, 2% more profitable than growing vegetable.

\* A cultivator of Chuadanga told that he cultivates Gladiolus. Now some other farmers are also cultivating it because of having favorable weather. It is well assumed that there is the possibility of cultivating Gladiolus twice a year. It is learnt that the cultivation of Gladiolus in 33 decimals of land costs Tk 1.00 -1.25 lakhs only. After three months, one can earn Tk 3 lakhs from the land. But roses have gained popularity in this area also because of high profit.

### **5. Manpower Involvement.**

Nearly 2 lakhs farmers in the country have selected flower cultivation as source of livelihood. Flower cultivation has already been proved as a profitable business. Different farmers opined that flower plants have fetched them a much greater net profit compared to other agricultural products.

Gathered information from different sources show that this sector has created employment opportunities to more than ten lakhs people. More than 10,000 people are cultivating foliage and other greenery.

### **6. Capital Requirements**

Flowers cultivators mentioned that investment of about 200 crore taka have been made on this sector. About 70% of this investment is incurred on fixed capital and the rest on current capital. Expenditure made on seed, sap, fertilizer and labor are current capital. Government finance (Loan) is negligible. As this is a new sector, the commercial loans are not available. Sometimes liquidity is a problem for poor cultivators. Banks are interested in financing for working capital. But cultivators expect that bank will charge low interest rate on bank loan without mortgage.

### **7. Tissue Culture**

Tissue culture is Necessary for Flower Cultivation. Healthy and large number of plantation will be made possible by tissue culture within a short period of time. The Advantage of Plant Tissue Culture are:-

- It can create a large number of clones from single seed or explants.
- It takes shortened time, no need to wait for the whole life cycle of seed development.
- For species that have long generation time, low levels of seed production, or seeds that do not readily germinate, rapid propagation is possible.
- It overcomes seasonal restrictions for seed germination.
- It helps to control plant disease through careful stoke selection and sterile techniques.

In Bangladesh many public and private institution successfully completed flower tissue culture.

## 8. Production Cost

It is very difficult to get the production cost of a flower. Farmers generally use labor, planting materials, Poly shade or glass fiber shade, manure, irrigation and pesticides in flower cultivation. Production Cost per Hectar for different type flower in one year (approximate) is shown in Table-2

**Table -2 Production Cost per Hectar for different type Flower in one year (approximate ) InTaka**

|    | Raw materials                           | Gerbera          | Gladiolus        | Tuber rose      | Rose            | Marigold      |
|----|---|------------------|------------------|-----------------|-----------------|---------------|
| 1. | Labor                                   | 40,000           | 35,000           | 35,000          | 40,000          | 20,000        |
| 2. | Planting material                       | 25,000           | 11,000           | 10,000          | 60,000          | 12,000        |
| 3. | Supporting materials(Shade, Bamboo etc) | 50,00,000        | 10,000           | -               | 50,000          | -             |
| 4. | Fertilizer                              | 30,000           | 25,000           | 26,000          | 60,000          | 35,000        |
| 5. | Pesticide                               | 15,000           | 10,000           | 10,000          | 20,000          | 5,000         |
| 6. | Irrigation                              | 30,000           | 10,000           | 8,000           | 15,000          | 8,000         |
| 7. | Interest on operating capital           | 18,000           | 18,000           | 18,000          | 18,000          | 18,000        |
|    | Total Production cost                   | <b>51,58,000</b> | <b>1, 19,000</b> | <b>1,07,000</b> | <b>2,63,000</b> | <b>98,000</b> |

Source: Field survey April 2012 Savar, Gazipure, Manikganj and May 2012 Jessore , Jhikorgasa, Godkhali .

From this table it is found that production cost of attractive Gerbera compared to the others is higher.

## 9. Marketing Cost of some selected flower

Production cost, marketing cost and profit altogether determine the price of a flower.

Table -4 shows marketing cost of different types of flowers

**Table 4: Marketing cost of different types of Flower**

(Tk. per 100 Flower)

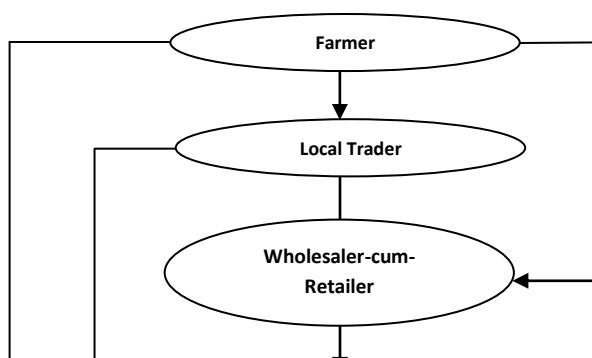
|    | Cost description      | Gerbera       | Rose         | Gladiolus    | Marigold    | Tuber rose   |
|----|-----------------------|---------------|--------------|--------------|-------------|--------------|
| 1. | Plucking              | 25.00         | 4.00         | 4.00         | 2.00        | 4.00         |
| 2. | Poly paper            | 25.00         |              |              |             |              |
| 3. | Transportation        | 50.00         | 3.00         | 4.00         | 1.00        | 3.00         |
| 4. | Cleaning and sorting  | 5.00          | 1.00         | 2.00         | 0.50        | 2.00         |
| 5. | Grading               | 5.00          | 1.00         | 3.00         | 0.30        | 1.00         |
| 6. | Loading and Unloading | 5.00          | 1.00         | 2.00         | 0.50        | 1.00         |
| 7. | Spoilage and damage   | 5.00          | 4.00         | 5.00         | 0.20        | 3.00         |
| 8. | Other                 | 10.00         | 6.00         | 5.00         | 0.50        | 2.00         |
|    | <b>Total</b>          | <b>130.00</b> | <b>20.00</b> | <b>25.00</b> | <b>5.00</b> | <b>16.00</b> |

Source: Field survey April 2012. Savar, Gazipure, Manikganj and May 2012 Jessor, Jhikorgasa, Godkhali)

It is found in the above table that cost for marketing a Gerbera flower is more than that of others.

## 10. Market Channel of Flower Trade

The flower marketing channels in Bangladesh are vast and complex. Following graph shows common flower market channel.





### 11. Quality of Local Flower

Flower cultivators admitted that the quality of our flowers is falling short due to lack of skill exercised in handling of the delicate product. Live plant of Gerbera and Tuberose (Double) is imported from India, China, Holland and England. Bangladeshi Gerbera is better than that of China Gerbera for its color, size and life days. Over all the quality of local flower is good.

### 12. Wholesale and Retail Market

Flower is cultivated abundantly in Gadkhali of Jessore. Consequently, Gadkhali has turned into a wholesale hut of different varieties of flower. Businessmen buy valuable flowers at low price from this market in different times during the day.

There is no permanent whole sale flower market in Dhaka. But whole and retail sale of flower is being made in Shabag and Agargoan market. Whole sale trade on flowers continues in the morning only. But retail trade continues for the whole day. Whole country the everyday sale of flowers nearly 35-40 lakhs taka on average, while during the eves of different festivals amount climbs too high.

Besides this, there are a number of retail flower markets in the capital city namely Sahabag, High Court mazar, Baily Road, Katabon, Gulshan, Banani, Uttara, Jatrabari, Asadgate and everywhere in Dhaka.

### 13. Profitability

The commercial cultivation of flowers, a new sector in the agricultural economy, shows a good prospect in the country. At present, the government has been emphasizing the need to accelerate diversified agricultural production. Flower production is a profitable business than other crops. Table -5 shows per hector profit of some selected flowers.

**Table 5: Per hector profit of some selected flowers (One Year)**

| Sl. | Items      | Gross return (tk) | Total cost(tk) | Profit/Net return (tk) |
|-----|------------|-------------------|----------------|------------------------|
| 1.  | Gerbera    | 50,00,000         | 25,000,00      | 25,00,000              |
| 2.  | Tuber rose | 3,00,000          | 2,00,000       | 1,00,000               |
| 3.  | Gladiolas  | 3,00,000          | 2,00,000       | 1,00,000               |
| 4.  | Rose       | 6,00,000          | 4,00,000       | 2,00,000               |

|    |          |          |          |          |
|----|----------|----------|----------|----------|
| 5. | Marigold | 2,00,000 | 1,00,000 | 1,00,000 |
|----|----------|----------|----------|----------|

Sources: Field survey April 2012. Savar, Gazipure, Manikganj and May 2012 Jessor, Jhikorgasa, Godkhali)

#### 14. Import Duty structure of Flower

In import policy 2012–2015 there is no restriction imposed on importing fresh flower. It can be noted here that different type of raw materials such as plastic shade for Gerbera, fertilizer, seeds, sap, insecticides, plant medicine etc. are used in this sector. Out of these some are locally produced and some are imported. Table- 6 shows the duty structure of imported flowers, FY 2012 -13.

**Table- 6: Duty structure of imported flowers in FY 2012 -13.**

| Sl. no                        | Live Plant , Roots |  | FY 2012-2013 |     |     |      |      |      |        |
|-------------------------------|--------------------|--|--------------|-----|-----|------|------|------|--------|
|                               | Hs code            | Description                                  | CD%          | RD% | SD% | VAT% | AIT% | ATV% | TOTAL% |
| Fresh , not fresh /cut flower |                    |  |              |     |     |      |      |      |        |
| *<br>1                        | 06.03 all HS code  | Rose, Carnation, Orchids, Chrysanthemum etc. | 12           | 0   | 0   | 0    | 5    | 3    | 21.03% |

Source: National Board of Revenue (NBR), Bangladesh Data base

\*It may be noted that BTC recommended increasing the CD 25% on importation of Flower under HS Code 06.03 (all HS code). Accordingly this recommendation has been implemented in the 2013-14 budget. This is shown in table – 7 below:

**Table- 7 Duty structure of imported flowers in FY 2013 -14**

| Sl. no | Fresh , not Fresh /Cut flower |                   | 2013-2014 |      |      |       |       |       |         |
|--------|-------------------------------|-------------------|-----------|------|------|-------|-------|-------|---------|
|        | Hs code                       | Description       | CD %      | RD % | SD % | VAT % | AIT % | ATV % | TOTAL % |
| 1.     | 0603.11.00                    | Roses             | 25        | 5    | 0    | 15    | 5     | 4     | 61.09   |
| 2.     | 0603.12.00                    | Carnations        | 25        | 5    | 0    | 15    | 5     | 4     | 61.09   |
| 3.     | 0603.13.00                    | Orchids           | 25        | 5    | 0    | 15    | 5     | 4     | 61.09   |
| 4.     | 0603.14.00                    | Chrysanthemums    | 25        | 5    | 0    | 15    | 5     | 4     | 61.09   |
| 5.     | 0603.15.00                    | Lilies (Lillian.) | 25        | 5    | 0    | 15    | 5     | 4     | 61.09   |
| 6.     | 0603.19.00                    | Other             | 25        | 5    | 0    | 15    | 5     | 4     | 61.09   |
| 7.     | 0603.90.00                    | Other             | 25        | 5    | 0    | 15    | 5     | 4     | 61.09   |

Source: NBR Data base

This Custom duty of high slab (25%) has been effective since 2013-14 and continued up to the 2015-16 as well.

#### 15. Import figure of Flower

Imported flowers from China, India and Thailand meet the demand in any festive occasions of Bangladesh. It is evident that the local supply of some flowers fail to meet its demand because of the high demand in our country. Now a day variety of flowers are cultivated here. Still some flowers are imported in Bangladesh from different countries. Because, quantity of producing flowers in the country could not meet the total demand. To make up the shortfall, it is known from the same source that flowers worth about Tk 20 crore are imported per year.

Following Table -8 shows the imported figure of cut flowers and other flowers.

**Table -8: Imported figure of cut flower, other flower and Foliage**

| Value | HS code    | Description | 2011-12 |          | 2012-13 |          | 2013-14 |          |
|-------|------------|-------------|---------|----------|---------|----------|---------|----------|
|       |            |             | Qty/ Kg | Value/tk | Qty/ Kg | Value/tk | Qty/ Kg | Value/tk |
| 1.    | 0603.11.00 | Rose        | 1977    | 370284.4 | 30      | 6292.11  | -       | -        |

|    |            |                 |          |           |       |          |       |          |
|----|------------|-----------------|----------|-----------|-------|----------|-------|----------|
| 2. | 0603.12.00 | Carnations      | 467      | 93525.39  | -     | -        | -     | -        |
| 3. | 0603.13.00 | Orchids         | -        | -         | -     | -        | -     | -        |
| 4. | 0603.14.00 | Chrysanthemums  | -        | -         | 80    | 13423.63 | -     | -        |
| 5. | 0603.19.00 | Others          | 210950.6 | 10859334  | 70061 | 5203246  | 47272 | 2026649  |
| 6. | 0604.10.00 | Mosses, lichens | -        | -         | -     | -        | -     | -        |
| 7. | 0604.91.00 | Foliage (fresh) | -        | -         | -     | -        | -     | -        |
| 8. | 0604.99.00 | Other           | 20958.54 | 1318440   | -     | -        | -     | -        |
|    |            | Total           | 234353.1 | 126,41584 | 70171 | 52,22962 | 47272 | 20,26649 |

Source: NBR Data base

## 16. Export Figure of Flowers

A small number of exporters are involved in the business of sending flowers to some foreign countries.. Bangladesh has already exported cut flower and ornamental greenery. Following Table-9, shows total export value of cut flower and foliage from Bangladesh.

**Table-9: Total export value of cut flower and foliage**

|    |  | Value in million US\$                                      |         |         |         |         |         |         |         |
|----|--|--|---------|---------|---------|---------|---------|---------|---------|
| Sl | HS Code  | Items  | 2008-09 | 2009-10 | 2010-11 | 2011-12 | 2012-13 | 2013-14 | 2014-15 |
| 1. | 0603.11.00<br>0603.12.00<br>0603.13.00<br>0603.14.00<br>0603.19.00 | Cut flowers and flower buds (Fresh, Dried, dyed etc)       | 33.67   | 39.84   | 42.89   | 50.44   | 41.42   | 39.31   | 11.35   |
| 2. | 0604.10.00<br>0604.91.00<br>0604.99.00                             | Foliage, branches, parts of plant (Fresh, Dried, dyed etc) |         |         |         |         |         |         |         |

Source: Export Promotion Bureau, Bangladesh (EPB)

## 17. Preservation System in Local Market

Nevertheless, the construction of a flower processing centre where flowers could be preserved for about a month, Government, not a lot has been done at a policy level to improve infrastructure for flower cultivation.

Now a days, cut flowers are presented in beautifully fluorites with decorative sleeves and sloping side wall. A special flower gel at the bottom of bouquets instead of water is used making it possible to present flowers horizontally. Cutting edge technology is employed in designing crates, containers and bouquets with protective tubes suitable for wet packing of upright flower, all with a view to prolong the vase life of flowers. Trader of flower says everyday many flower were destroyed due to lacking of preservation system. Flower is very sensitive. Everyone wants fresh flower, not a pale Patel. Following Table-8 shows price and life days of different type of flower.

## 18. Export Potentiality of this Sector

Bangladesh is well suited for the production of cut flower and foliage due to its favorable climate. Other causes may be identified such as scope to expand cultivation in unutilized homestead lands, cheap labor, relatively low capital investment in contrast with high value addition and good prospect for exports. Presently Bangladesh exports different types of cut flower, live trees, root etc. to the different countries. Following table -10 shows export of live trees, plants, bulbs, roots, cut flowers etc. ( FY 2013 -14) for a year only.



**Table-10 shows export of live trees, plants, bulbs, roots, cut flowers etc. ( FY 2013-14)**

| SL. No | H.S.Code      | Item   | Country name     | Value in US\$        |
|--------|---------------|--|------------------|----------------------|
| 1.     | 0603          | Cut flowers and flower buds for bouquets, fresh or dried | Belgium          | 40.32                |
| 2.     | All H.S.Code  |  | Saint Bartheleme | 7,832.77             |
| 3.     |               |  | Germany          | 20.17                |
| 4.     |               |  | France           | 80.70                |
| 5.     |               |  | Japan            | 2,400.79             |
| 6.     |               |  | Qatar            | 13,618.13            |
|        |               |  | Total            | <b>23,992.87</b>     |
| 1.     | 0604          | Foliage, branches and other parts of plants              | Australia        | 116.06               |
| 2.     | All H. S Code |  | Bahrain          | 24,886.71            |
| 3.     |               |  | Canada           | 15,131.24            |
| 4.     |               |  | China            | 4,035                |
| 5.     |               |  | India            | 14,097.84            |
| 6.     |               |  | Italy            | 99,866.19            |
| 7.     |               |  | Kuwait           | 39,341.22            |
| 8.     |               |  | Malaysia         | 6,556.87             |
| 9.     |               |  | Oman             | 15,716.42            |
| 10.    |               |  | Pakistan         | 354,393.49           |
| 11.    |               |  | Qatar            | 29,847.65            |
| 12.    |               |  | Saudi Arabia     | 38,669,365.20        |
| 13.    |               |  | Sweden           | 15,131.24            |
| 14.    |               |  | United States    | 383.00               |
|        |               |  | <b>Total</b>     | <b>39,288,868.12</b> |

Source: EPB, 2012-13

From the above table it is observed that foliage, branches and the parts of plants have been exported to Australia, Canada, France, UK, Malaysia, Qatar and India etc.

**19. Strength, Opportunities Weakness and Threat (SOWT) of this sector.**

|  |   |
|--|---|
| <b>Strengths</b>   | <b>Weakness</b>   |
| <ul style="list-style-type: none"> <li>i) Low investment</li> <li>ii) Cheap labor</li> <li>iii) Color and size good</li> <li>iv) Favorable climate</li> </ul>  | <ul style="list-style-type: none"> <li>i) Lack of support from Govt. policy level</li> <li>ii) Lack of entrepreneurial training for the cultivators</li> <li>iii) Unscientific ways of handling and preservation of cut flowers</li> <li>iv) Due to weather and inferior quality</li> </ul> |
| <b>Opportunities.</b>  | <b>Threats</b>  |
| <ul style="list-style-type: none"> <li>i) Favorable climate</li> <li>ii) Change of people choice</li> <li>iii) Increase demand</li> <li>iv) Export volume expands.</li> <li>v) increase per capita Income</li> </ul> | <ul style="list-style-type: none"> <li>i) No restriction of flower import</li> <li>ii) Inadequate transport system</li> <li>iii) Spoilage due to lack of preservation system</li> <li>iv) Strike and Hartal</li> <li>v) No permanent flower wholesale market.</li> </ul>                    |

**20. Recommendation**

According to the findings of the study the following actions may be taken into consideration for development of the sector. These are:

- i) Provision can be made to train up the real flower cultivators in abroad by Ministry of Agriculture.
- ii) Orchid is still much more attractive and price is higher. So cultivators can be encouraged to produce more orchids in Bangladesh.
- iii) There is no permanent Wholesale market in Dhaka. Effort can be taken to establish permanent flower Wholesale market under Works Ministry and Dhaka city Corporation. This may increase the revenue of the Government.
- iv) Presently interest rate on bank loan is too high. Interest rate on bank loan can be reduced from existing to 4 - 5%.
- v) It is necessary to establish permanent preservative storage.
- vi) It is also necessary to establish Tissue Culture Laboratory under Agriculture Ministry to develop healthy and large number of plantation within a short period.
- vii) Loan payment period (present 3 years) may be increased to 6 years.
- viii) Incentives can be given to encourage the exporters.
- ix) To assist the local flower cultivators Custom Duty on live plants, sapling, UV Polly film, liquid fertilizer, flower cap and packing materials can be reduced.

## **21. Conclusions**

Analyzing collected data /information it is clear that a lot of scopes remain to improve the high value flower in Bangladesh. The quality, color and size of local flowers are good. Presently a small number of exporters involved to export flowers to some countries .Flower export will increase if high-profile companies come to the business and start exporting large quantities of cut flowers and foliage. It is expected that Flower Sector will flourish near future as a growing sector.

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# Possibility of Forming Free Trade Agreement (FTA) between Mauritius and Bangladesh

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## Abstract

A free-trade area is the region encompassing a trade bloc whose member countries have signed a Free Trade Agreement (FTA). Such agreements involve cooperation between at least two countries to reduce trade barriers—import quotas and tariffs—and to increase trade of goods and services with each other. In the WTO, Regional Trade Agreements (RTAs) are defined as reciprocal trade agreements between two or more partners. RTA has several forms such as (i) Preferential Trading Arrangement (PTA)-where tariffs are reduced among the member countries but maintained against the outside countries; (ii) Free Trade Agreement (FTA)-where tariffs are removed among member countries but maintained against the outside (non-member) countries; (iii) Customs Union-where all tariffs amongst the member countries are eliminated and all the member countries maintain same level of tariff (common tariff) for the outside countries. (iv) Common Market-which is a Customs Union plus free movement of labor and capital among the member countries and finally (v) Economic Union-which is a Customs Union plus common economic laws and monetary system for the member countries (i.e. EU). The emphasis in RTA is on regionalism-the rapid spread of which has become one of the most important recent developments in the global trade system.

- 1.1 Over the last two decades or so, Regional Trade Agreements (RTAs) have become increasingly prevalent among WTO member states. As per WTO database, there were as 381 RTAs in force by November 2013, of these RTAs, Free Trade Area Agreements (FTAs) and Partial Scope Agreements account for 90%, while customs union account for 10%. In recent years, it has been an increasing concern for the Government of the People's Republic of Bangladesh to form FTA with potential trade partners as well as analyze possible impact as a third country with a view to exploring the export opportunities and challenges faced in the world market and in the specific market.
- 1.2 In this report the possibility of forming a Free Trade Area (FTA) Agreement between Mauritius and Bangladesh has been examined and accordingly made a comprehensive report in light of the Bangladesh government's Policy Guidelines on Free Trade Agreement 2010. This report focused on the overall economic condition of the two countries, its present trade and investment position and regimes, bilateral and regional trade relations, possible problems and prospects as well as economic justification of forming FTA and other relevant issues.
- 1.3 In addition to that some Rules of Thumb developed by Sussex University, UK under Sussex Framework have been used in this study to analyze the impact of an FTA on Bangladesh. The Finger Kreinin Index (FKI) has been used to reveal the degree of similarity between the structure of exports or production between two countries (say country i1 and i2.). If  $FKI = 0$ , two structures are completely different, that is the products exported by country i1 are not exported by country i2 to the market of j. If  $FKI = 1$ , exports of two countries are fully identical. If exports of two countries are very similar,

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FTA may lead to trade creation since both countries can choose to import from more efficient supplier. Another important index Intra-industry trade (IIT) has been used in this report which can be defined as simultaneous import and export of goods of same kind and can be measured in different ways. Trade Concentration Index (TCI) has also been used to measure the degree of concentration a given country exports in terms of products being exported or imported. A TCI of 1 implies full concentration of trading structures in one sector. As the measure approaches zero, trade is said to be less concentrated (or diversified). Revealed Comparative Advantage (RCA) is used to calculate the comparative advantage measures how much a country is exporting a given goods relative to its total trade, in comparison to the share of that good in world trade. A country is said to have “Revealed Comparative Advantage” in a good when the share of that good in its export is bigger than the share of that good in world exports. RCA greater than 1 implies that the given country has a comparative advantage in that sector in a sense that compared with the world as a whole; this sector has a large share of the country’s export.

- 1.4 Mauritius is a small but globally competitive economy and moving speedily to a Duty Free Island. Among the major sources of imports of Bangladesh, about more than 20% of its imports come from IORA countries of which Mauritius’s portion is very insignificant. This study shows that here is a great possibility of increasing intra-IORA trade and investment through an effective RTA rather than forming bilateral FTA between Bangladesh and Mauritius. Another important finding is that Bangladesh’s competitors like India and Pakistan are enjoying duty free accesses or substantial tariff preference on their many products. IITs and RCAs indicate that there is a minor possibility of specialization through forming FTA between the two countries. There is a possibility of losing certain amount of revenue from Mauritius for cutting tariffs under the bilateral FTA at the same time it would be less welfare enhancing. Import of some exportable products of Bangladesh such as potatoes, drugs, cut flowers, table salt, pharmaceuticals, black tea, meat, fish & sea products and vegetables is subject to some NTBs which may act as a prime hindrance for export from Bangladesh to Mauritius. Since Bangladesh along with other countries has been enjoying duty free access in almost all products (except some banned and restricted items) in Mauritius (especially Bangladesh enjoys duty free on 100% of fish and fish products, 94.3% on textile, 50.6% of clothing and 79% of leather, footwear etc); there is limited scope of obtaining further benefit from Mauritius by forming FTA. As Mauritius has a strong textile sector and has been well poised to take advantage of the Africa Growth and Opportunity Act (AGOA), hence Bangladesh might face competition in this sector through this FTA. In terms of geographical proximity, Mauritius is neither adjacent and nor has easy transport connectivity with Bangladesh. There is less trade potential via sea and air routes that is why there is small possibility of securing benefit from forming FTA.
- 1.5 There is a good demand of some products in the market of Mauritius of which Bangladesh has strong supply capacity such as frozen fishes, pharmaceuticals, woven garments, knitwear, furniture, paper & paperboard and articles thereof, vegetable products, plastic products, etc. Since Mauritius does not apply much unnecessary NTBs there is a possibility of increasing export from Bangladesh to their market. Though Mauritius is a small but a strong economy with continuous economic growth which might gradually intensify its trade capacity. Though Mauritius’s average tariffs on agro and non-agro products are very lower such as 1.00% and 1.4% respectively but import of clothing in Mauritius is subject to average 5.7% customs tariff of which maximum tariff rate ranges to highest at 110% and

import of leather, footwear etc is subject to average 5.9% customs tariff where maximum tariff rate ranges to 105% which indicates that forming a bilateral FTA may bring some export potential in these products. There is no common RTA in which both Bangladesh and Mauritius are members that means there is a possibility to create trade diversion as well as trade creation by forming a bilateral FTA.

1.6 At present, Bangladesh is not a significant trading partner of Mauritius. So, formation of FTA may bring new possibility to increase bilateral trade between the two countries. Increasing export from Bangladesh to Mauritius may show a new avenue of creating trade with other African countries.

1.7 This paper has made meticulous analyses on the possibility of forming FTA between Bangladesh and Mauritius focusing all issues related to economy, trade and investment and its possible impact on the economies. It is anticipated that implementation of this FTA may bring a small outcome in trade and investment. In fact, since the economy of Mauritius is very small so their trade absorbing capacity is very limited. On contrast, India and Pakistan are enjoying duty free accesses or substantial tariff preference on their many products that is why Bangladesh has to face stiff competition with them. Establishment of FTA between Bangladesh and Mauritius might enhance competitiveness of the products of Bangladesh and thus export may increase and diversify to Mauritius.

## **2. ECONOMY AND TRADE OF MAURITIUS**

### **2.1 Economic Overview of Mauritius**

2.1.1 Republic of Mauritius is a South African small island country located in the Indian Ocean with a population of 1.3 million and area of 2,040 sq km.<sup>i</sup> It is larger than the other small-island states in the Indian Ocean (Seychelles has a population of only 90,000, Maldives around 340,000 and Comoros of around 700,000). It is one of the 20 member countries of the *Indian Ocean Rim Association (IORA)* in which Bangladesh is also a member country. World Development Report 2011 classified it as an upper middle-income country and according to the *2013 Index of Economic Freedom* produced by the Heritage Foundation; globally it is among the top ten. Since independence in 1968, Mauritius has developed from a low-income, agriculturally based economy to a middle-income diversified economy with growing industrial, financial, and tourist sectors. For most of this period, annual growth has been on the order of 5% to 6%. This achievement has been reflected in more equitable income distribution, increased life expectancy, lowered infant mortality, and a much-improved infrastructure. The economy is dependent on sugar, tourism, textiles and apparel, and financial services and gradual expansion of fish processing, information and communications technology, and hospitality and property development is contributing to the economy to going ahead. Sugarcane is grown on about 90% of the cultivated land area and accounts for 15% of export earnings. The government's development strategy centers on creating vertical and horizontal clusters of development in these sectors. Mauritius has attracted more than 32,000 offshore entities, many aimed at commerce in India, South Africa, and China. Investment in the banking sector alone has reached over \$1 billion. Mauritius, with its strong textile sector, has been well poised to take advantage of the Africa Growth and Opportunity Act (AGOA). Mauritius's sound economic policies and

prudent banking practices helped to mitigate negative effect of the global financial crisis in 2008-09. GDP grew at 3-4% per year during the period of 2010-12, and the country continues to expand its trade and investment outreach around the globe.<sup>ii</sup>

2.1.2 The World Economic Forum's *Global Competitiveness Index* ranked Mauritius at 54 out of 133 countries in 2011-12, behind only South Africa in the African Region. The country scored the highest in the 2011 Ibrahim Index of African Governance. "The Mauritian economy has remained resilient in spite of the recession in the euro area that has weakened its external demand. At 3.3% in 2012, the real Gross Domestic Product (GDP) growth rate remained positive although it continues to ease after growth rates of 4.2% and 3.8% in 2010 and 2011 respectively. Growth was anchored by strong performances in the financial services, Information and Communication Technology (ICT) and seafood sectors. The 2013 outlook is positive, but may be tempered by downside risks if external demand remains timid. Growth is projected at 3.8% and 4.2% for 2013 and 2014, respectively, driven by continued expansion in the financial services, ICT and seafood sectors. The Cost Price Index (CPI) inflation steadily declined from 6.5% in 2011 to 4.1% in 2012 as the base effects were absorbed and global prices trended downward. As risks to growth outweighed price stability challenges the Key Repo Rate (KRR) was cut by 50 basis points to 4.9% in March 2012".<sup>iii</sup>

## 2.2 Gross Domestic Product (GDP)

2.2.1 The following table shows that Mauritius has an impressive growth in current GDP throughout the period between 2007 and 2013 although a decline in 2009. This country experienced a positive GDP growth throughout 2007 to 2013.

**Table 01: GDP of Mauritius**

| Country                               | 2007    | 2008    | 2009    | 2010    | 2011    | 2012    | 2013    |
|---------------------------------------|---------|---------|---------|---------|---------|---------|---------|
| GDP(Current US\$ billion)             | 7.79    | 9.64    | 8.83    | 9.71    | 11.31   | 10.49   | 11.93   |
| GDP growth (annual %)                 | 5.88    | 5.52    | 3.03    | 7.68    | 3.77    | 3.17    | 3.20    |
| GDP per capita (current US\$)         | 6182.20 | 7599.98 | 6928.96 | 7586.97 | 8741.40 | 8124.17 | 9202.52 |
| Total trade (Current US\$ billion)    | 4.51    | 5.10    | 4.33    | 5.10    | 6.01    | 6.25    | 6.48    |
| Inflation, consumer prices (annual %) | 8.80    | 9.73    | 2.55    | 2.89    | 6.53    | 3.85    | 3.54    |

Source: World Development Indicators

## 2.3 Economic Trajectory of Mauritius

2.3.1 Mauritius was ranked 19th out of the 185 countries in the *2013 Doing Business Report*, improving five ranks from the previous year. The country's ranking of *Ease of Doing Business* is always the focus of attention of the government and private sector. For example, when Mauritius lost three ranks in the 2012 Report, both the government and private sector took this issue seriously (even though it has remained top rank in Africa). The JEC memorandum on 2013 budget suggests that Mauritius improve its "Ease of Doing Business" environment and aim at the top 15 countries in the next three years.

2.3.2 Although James Meade, British recipient of the Nobel Prize in economics, prophesied in the early 1960s that Mauritius's development prospects were poor—that the country was a strong candidate for failure, with its heavy economic dependence on one crop (sugar), vulnerability to terms of trade shocks, rapid population growth, and potential for ethnic tensions. Later Mauritius proves its worth through diversification.

2.3.3 Services act as the main sector for further economic diversification of Mauritius. A strategy is being put in place to promote Mauritius as an export-oriented centre for value-added services. In addition to financial services and tourism, the following emerging sectors have been identified as the highest potential for growth: information technology enabled services (ITES), including business process outsourcing (such as call centres, back-office operations, and data processing); logistics services; health care, medical and education services; creative arts and media entertainment; and consultancy services. The development of the port is also considered to be crucial, due to its dual role of handling external trade and supporting the development of Mauritius into a hub for regional and international sea trade. Mauritius is also encouraging the development of emerging sectors like the seafood hub and real estate development, as well as the use of built-up capacities and competencies in its traditional sectors (sugar and garments) by investing in more competitive locations abroad. Export market diversification is also envisaged.

2.3.4 Figure 1 (Economic Trajectory of Mauritius) shows that Mauritius's economy was heavily concentrated to only one product (sugar) in 1970 which was diversified to textile and tourism sector in 1980. In 1990 its economy became more diversified in financial, services and Freeport sectors. In 2000 the economy achieved huge diversification which covers textile, sugar, tourism, financial service, Information and Communication Technology/Balance of Payment, real estate, seafood, aquaculture, knowledge and health. From then it was continuing its diversification.

**Figure 01: Economic Trajectory of Mauritius**



Source: Joint Economic Council (2012).

## 2.4 Trade Performance of Mauritius

### 2.4.1 Major Export Products

2.4.1.1 Major export products of Mauritius are textile and clothing, sugar, cut flowers, molasses, fish; prepared/preserved foodstuffs especially, fish & caviar, cane or beet sugar and chemically pure sucrose, frozen fishes, chemical and chemical products, manufactured products.

### 2.4.2 Major import products

2.4.2.1 Major import products of Mauritius are animal and animal products, manufactured goods, capital equipment, foodstuffs, vegetable products, mineral products, petroleum products, chemicals, petroleum



oils (not crude), frozen fishes, medicament mixtures, coal; briquettes, ovoids & similar solid fuels manufactured from coal; electric appliances for line telephony; milk and cream; wheat and meslin; automatic data processing machines, plastic and rubber and products thereof, textile and textile products.

## 2.5 Trade Openness of Mauritius

2.5.1 The table captioned below gives an idea of the trend in openness throughout the years 2004 and 2011 in Mauritius. Trade openness is taken as the sum of imports and exports expressed as a significant percentage of GDP. It is evident from the table that trade openness index is decreasing from 2007 to 2011. So there is no significant possibility of trade openness in Mauritius.

**Table 02: Trade openness of Mauritius**

| 2004 | 2005 | 2006  | 2007  | 2008 | 2009  | 2010  | 2011  |
|------|------|-------|-------|------|-------|-------|-------|
| 55.2 | 49.3 | 55.25 | 61.45 | 59.7 | 55.95 | 54.65 | 54.15 |

Source: World Development Indicators

2.5.2 Global imports of Mauritius (Table 3) reveal that global import is almost stable during 2007-2012 which fluctuated between USD 4 and USD 5 billion.

**Table 03: Global imports of Mauritius**

(US Dollar Billion)

| Country   | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|-----------|------|------|------|------|------|------|
| Mauritius | 4    | 5    | 4    | 4    | 5    | 5    |

Source: World Development Indicators

2.5.3 Following table shows export composition of Mauritius at 2-digit level. It is observed that from 2010 to 2012 Mauritius has experienced a steady export growth. Top ten export items covers 80% of the global export of Mauritius in 2012.

**Table 04: Export composition of Mauritius**

[Values in US\$ Million]

| SL | HS-2 | Description  | Value in 2008 | Value in 2009 | Value in 2010 | Value in 2011 | Value in 2012 |
|----|------|--|---------------|---------------|---------------|---------------|---------------|
| 1  | '61  | Articles of apparel, accessories, knit or crochet      | 560.61        | 471.09        | 384.29        | 574.89        | 492.34        |
| 2  | '16  | Meat, fish and seafood food preparations nes           | 219.68        | 220.86        | 250.48        | 277.83        | 344.69        |
| 3  | '62  | Articles of apparel, accessories, not knit or crochet  | 277.28        | 257.30        | 258.94        | 306.28        | 320.07        |
| 4  | '17  | Sugars and sugar confectionery                         | 296.63        | 224.31        | 268.32        | 306.91        | 273.72        |
| 5  | '71  | Pearls, precious stones, metals, coins, etc            | 85.17         | 78.49         | 123.24        | 137.69        | 140.64        |
| 6  | '03  | Fish, crustaceans, molluscs, aquatic invertebrates nes | 61.82         | 62.77         | 73.34         | 56.88         | 76.52         |
| 7  | '90  | Optical, photo, technical, medical, etc apparatus      | 24.52         | 27.56         | 30.31         | 41.07         | 42.91         |
| 8  | '85  | Electrical, electronic equipment                       | 96.70         | 17.22         | 27.05         | 20.14         | 42.83         |
| 9  | '52  | Cotton   | 35.73         | 25.81         | 30.93         | 45.87         | 38.05         |
| 10 | '84  | Machinery, nuclear reactors, boilers, etc              | 28.49         | 17.57         | 22.64         | 19.80         | 31.37         |
| 11 |      | Other  | 714.82        | 362.81        | 379.99        | 468.07        | 454.61        |
| 12 |      | Total  | 2,401.47      | 1,765.79      | 1,849.52      | 2,255.42      | 2,257.74      |

Source: ITC Trade Map

2.5.4 Two digit level import composition of Mauritius (Table 5) shows that there is a steady import growth from 2009 to 2012. Major portion of import is coming from chapter 03 (Fish, crustaceans,

molluscs, aquatic invertebrates nes) which covers 21% of Mauritius's global import in 2012. Top ten items covers 61% of global import in 2012.

**Table 05: Import composition of Mauritius**

[Values in US\$ Million]

| SL | HS-2 | Description   | Value in 2008   | Value in 2009   | Value in 2010   | Value in 2011   | Value in 2012   |
|----|------|---|-----------------|-----------------|-----------------|-----------------|-----------------|
| 1  | '03  | Fish, crustaceans, molluscs, aquatic invertebrates nes  | 1,001.41        | 588.29          | 846.06          | 1,119.59        | 1,213.36        |
| 2  | '30  | Pharmaceutical products                                 | 357.55          | 342.98          | 369.27          | 370.85          | 479.82          |
| 3  | '62  | Articles of apparel, accessories, not knit or crochet   | 318.78          | 229.79          | 280.66          | 277.18          | 373.13          |
| 4  | '61  | Articles of apparel, accessories, knit or crochet       | 284.94          | 208.37          | 239.49          | 304.22          | 363.58          |
| 5  | '52  | Cotton  | 224.36          | 178.81          | 224.02          | 253.60          | 314.40          |
| 6  | '94  | Furniture, lighting, signs, prefabricated buildings     | 197.66          | 138.15          | 164.97          | 239.46          | 185.33          |
| 7  | '85  | Electrical, electronic equipment                        | 97.91           | 91.73           | 141.22          | 151.59          | 168.68          |
| 8  | '60  | Knitted or crocheted fabric                             | 125.10          | 101.05          | 128.96          | 144.85          | 149.68          |
| 9  | '48  | Paper and paperboard, articles of pulp, paper and board | 144.76          | 114.79          | 127.98          | 124.04          | 142.57          |
| 10 | '19  | Cereal, flour, starch, milk preparations and products   | 105.86          | 80.47           | 99.06           | 112.81          | 118.43          |
| 11 | -    | Others  | 1,811.42        | 1,650.68        | 1,780.65        | 2,060.44        | 2,263.04        |
| 12 | -    | <b>Total Import</b>                                     | <b>4,669.75</b> | <b>3,725.10</b> | <b>4,402.34</b> | <b>5,158.62</b> | <b>5,772.01</b> |

Source: ITC Trade Map

2.5.5 Major import sources of Mauritius in 2012 (Table 6) shows that its import is heavily concentrated to India (23.1%), European Union (22.6%), China (16.0%) and South Africa (6.5%) which constitute a total of 68.2% where Bangladesh shared only 0.08%. In 2010, its major import sources were India (23%), China (18%), France (11%), African Customs Union (5%), Japan (4%) which constituted a total of 61% and Bangladesh individually 0.06% which increased only 0.02% during 2010-2012.

**Table 06: Major import sources of Mauritius 2012**

|    | Partner        | Value in Million USD | Share (%) in World |
|----|----------------|----------------------|--------------------|
|    | World          | 5,495.02             | 100.0              |
| 1  | India          | 1,271.23             | 23.1               |
| 2  | European Union | 1,242.22             | 22.6               |
| 3  | China          | 880.89               | 16.0               |
| 4  | South Africa   | 358.69               | 6.5                |
| 5  | Malaysia       | 146.38               | 2.7                |
| 6  | Japan          | 139.78               | 2.5                |
| 7  | Australia      | 125.28               | 2.3                |
| 8  | Thailand       | 109.45               | 2.0                |
| 9  | U.A.Emirates   | 98.90                | 1.8                |
| 10 | USA            | 96.27                | 1.8                |

Source: Eurostat IMF

2.5.6 Major export destinations of Mauritius in 2012 (Table 7) proved that Mauritius's export is concentrated on European Union (59.5%), USA (9.9%), South Africa (9.8%) and Madagascar (6.8%) which constituted a total of 86%. In 2010, major export destinations were United Kingdom (17%), France (15%), United States (9%), Italy (6%), Madagascar (6%) where Bangladesh shared only 0.10%.

**Table 07: Major export destinations of Mauritius 2012**

| Serial | Partners       | Value in Million USD | Share in World % |
|--------|----------------|----------------------|------------------|
|        | World          | 2,323.55             | 100.0            |
| 1      | European Union | 1,382.00             | 59.5             |
| 2      | USA            | 229.45               | 9.9              |
| 3      | South Africa   | 228.14               | 9.8              |

|    |             |        |     |
|----|-------------|--------|-----|
| 4  | Madagascar  | 158.24 | 6.8 |
| 5  | Japan       | 35.60  | 1.5 |
| 6  | Switzerland | 31.65  | 1.3 |
| 7  | Seychelles  | 30.33  | 1.3 |
| 8  | Vietnam     | 19.78  | 0.8 |
| 9  | India       | 18.46  | 0.8 |
| 10 | Singapore   | 18.46  | 0.8 |

Source: Eurostat IMF

## 2.6 Trade Regime of Mauritius

### 2.6.1 Trade Policy

2.6.1.1 Trade policies in Mauritius are an integral part of economic policies, and as such are aimed at improving the living standards of the population and securing full employment through accelerated transition towards a globally competitive economy, growing at high rates. This objective is expected to be achieved by further opening up the economy and facilitating business, massively investing in public infrastructures, as well as implementing sound macroeconomic policies, with trade and investment promotion playing an important role.

2.6.1.2 Mauritius intends to gradually move from its current partial openness to full openness. It intends to pursue tariff simplification for transforming "Mauritius into a globally competitive economy and moving speedily to a Duty Free Island"<sup>iv</sup> within three years. The new economic model aims to make Mauritius "an integrated, clean and efficient platform in the global supply chain, mainly in services and driven by good governance, an open transparent investment climate, high skills and state of the art infrastructure".<sup>v</sup> This change in policy orientation has been triggered by the changing international environment (erosion of preferences, increasing competition from lower cost economies, and rising oil prices). The economic development strategies are therefore less dependent on trade preferences, but rather on the global competitiveness of local products. The latter is to be achieved through, inter alia, the reduction of production costs, enforced competition, increased public investment in infrastructure, and education and training.

2.6.1.3 In order to further enforce competition, the Government intends to set up a Competition Commission, whose main role would be to act as a watchdog against restrictive business practices, to establish norms and guidelines with the power to take sanctions, to deal with complaints, and to regulate the advertising sector.<sup>vi</sup>

### 2.6.2 Tariff Policy

#### 2.6.2.1 External Duties

2.6.2.1.1 The following table shows the recent past years' simple average MFN applied tariff rates of Bangladesh and Mauritius. It is observed that Mauritius maintains a much lower MFN tariffs than that of Bangladesh which indicates that there is a least scope of liberalization of trade for Bangladesh in Mauritius. For agriculture sector, it also applies lower tariff rates which indicate that any FTA may bring trifle scope of trade liberalization for Bangladesh to increase export of agricultural products in Mauritius. In case of non-agricultural products, it also applies very lower tariffs which indicate almost same least

potential of increasing export of industrial products in this country. Since Bangladesh levies comparatively much higher MFN tariffs both in agricultural and non-agricultural products; Mauritius has a great opportunity to increase their export to Bangladesh than that of Bangladesh to Mauritius by forming FTA.

**Table 08: Tariffs (simple average MFN applied)**

| Country    | Year | Total | Agri | Non-Agri |
|------------|------|-------|------|----------|
| Bangladesh | 2011 | 14.4  | 17.2 | 14.0     |
| Mauritius  | 2011 | 1.4   | 1.0  | 1.4      |

Source: [http://www.wto.org/english/tratop\\_e/tariffs\\_e/tariff\\_data\\_e.htm](http://www.wto.org/english/tratop_e/tariffs_e/tariff_data_e.htm)

2.6.2.1.2 The following table shows that import of some major export potentials items of Bangladesh to Mauritius is subject to comparatively higher tariffs. In order to analyze the impact of tariff preferences to be offered for Bangladesh, the Commission has identified some export potential products such as fish & fish products, textiles, clothing, leather and leather products, footwear, etc. The table shows that Bangladesh enjoys duty free facility in 100% fish and fish products and 94.3% products of textile sector in Mauritius and the rest of the products have facility to enjoy very lower tariff such as almost 1%. In clothing sector, Bangladesh enjoys duty free access in 50.6% products and the rest of the products face comparatively higher tariff such as 5.7% as average. In leather and footwear sector, Bangladesh enjoys duty free in 79.1% products and the rest of the products are subject to higher tariff at 5.9% as average.

**Table 09: Tariffs faced by major export potentials items of Bangladesh to Mauritius**

| Country   | Fish & fish products |             |       | Textiles |             |       | Clothing |             |       | Leather, footwear, etc. |             |       |
|-----------|----------------------|-------------|-------|----------|-------------|-------|----------|-------------|-------|-------------------------|-------------|-------|
|           | AVG %                | Duty-free % | Max % | AVG %    | Duty-free % | Max % | AVG %    | Duty-free % | Max % | AVG %                   | Duty-free % | Max % |
| Mauritius | 0.0                  | 100.0       | 0     | 1.0      | 94.3        | 36    | 5.7      | 50.6        | 110   | 5.9                     | 79.1        | 105   |

Source: WTO Tariff Profile

2.6.2.1.3 Following table shows the detailed duty structure of Mauritius in 2012. It is seen that simple average MFN applied tariff has been lowered in 2012.

**Table 10: Duty Structure of Mauritius in 2012**

| Categories                 | Tariffs and imports: Summary and duty ranges |       |       |        |
|----------------------------|--|-------|-------|--------|
|                            |  | Total | Ag    | Non-Ag |
| Summary                    |  |       |       |        |
| Simple average final bound |  | 94.0  | 119.7 | 22.1   |
| Simple average MFN applied | 2012   | 1.1   | 0.9   | 1.1    |
| Trade weighted average     | 2011   | 1.0   | 1.0   | 1.0    |
| Imports in billion US\$    | 2011   | 5.1   | 0.9   | 4.3    |

Source: WTO Tariff Data

2.6.2.1.4 Mauritius enjoys duty-free access on its goods in European Union and Africa through trade agreements. Indian companies setting up shop in the island nation will not only enjoy duty-free in

Mauritius but also gain preferential access in these markets. The special arrangement of Mauritius with common market for Eastern and Southern Africa (COMESA) and the Duty Free and Quota Free (DFQF) regime with EU will come into effect in this policy.

2.6.2.1.5 The Mauritius Freeport is a duty-free logistics, distribution and marketing hub for the Eastern and Southern African region. Logistics and warehousing facilities are readily available for the transshipment, consolidation, storage and minor processing of goods.

2.6.2.1.6 Mauritius has offered a zero customs duty for Indian firms to gain easier access to European Union and Africa. It has agreed to incorporate a limitation of benefit clause in the tax treaty to assuage India's concerns on the abuse of tax treaty by investors from third countries without making substantial investment in the island nation by operating through post box companies. Under the IOC Agreement, all goods are traded freely between Mauritius and Madagascar. Since 30 November 2007, Mauritius also granted preferences (on a bilateral basis) on imports from Pakistan. However, these preferences remain limited to few product groups.

2.6.2.1.7 The above analyses revealed that there is a tiny opportunity to bring positive outcome for Bangladesh through formation of bilateral FTA with Mauritius. If Bangladesh really wants to achieve considerable trade expansion and augmentation then it might emphasize on formation of FTA/PTA with the region rather than individually with Mauritius. In that case it will have to cover a large number of tradable goods of Bangladesh otherwise any FTA/PTA with only Mauritius would not be fruitful.

## **2.6.2.2 Internal duties/taxes**

2.6.2.2.1 Other than customs duty Mauritius applies the following internal duties/taxes such as excise duty and VAT.

### **2.6.2.2.1.1 VAT**

VAT is levied at 15% which is levied on the duty-inclusive value (the customs value plus border charges, including excise duty) of imports and on the sale price (including the excise duty) of locally produced goods and services. In 2007, 4,987 tariff lines were subject to rate of 15%, 625 lines were subject to 0%, and 628 lines were exempted.

### **2.6.2.2.1.2 Excise Duties**

Excise duty is collected on a certain number of imported and locally produced goods. In principle, it is levied on the c.i.f. value of imports and the ex-factory price of domestic goods.

### **2.6.2.2.1.3 Cess**

A cess of MUR 0.20 per kg. and a 20% Tea-Board fee on the c.i.f. value are collected on imports of tea.

### **2.6.3 Non-Tariff Barriers/Measures (NTB/Ms)**

2.6.3.1 Various types of NTMs/NTBs are applied by importing countries in the form of government laws, regulations, policies, conditions, restrictions or specific requirements, and private sector business practices, or prohibitions for protecting the domestic industries might squeeze international trade. Among these the most common NTMs/NTBs are customs procedures; documental requirements, import prohibition/restriction; license requirement; marking labeling & packaging obligation; consumer safety protective measures, environment protective measures, other TBT and SPS measures. The most NTMs/NTBs are applied on the grounds of public morals; religious reason; protection of human, animal and plant life/health; national security; and environmental protection. Other measures are also applied such as for preservation of exhaustible natural resources and conservation of historical and archaeological values. NTBs/NTMs have a sturdy impact on trade, possibly even more than tariffs. So, to the interest of significant trade liberalization in the region, an effective effort regarding reducing/eliminating unnecessary barriers to trade is unavoidable. Mauritius's key NTBs/NTMs are concisely described below:

#### **2.6.3.1.1 Customs procedures and valuation**

All importers must be registered with the Mauritius Revenue Authority (MRA) and with the Registrar of Businesses, from which they receive a Tax Account Number (TAN) and Business Registration Number (BRN) respectively.

As at June 2014, applications for import permits and authorizations from government agencies other than MICCP must be obtained directly from the agencies concerned.

The customs declaration is channeled to the Customs Compliance Section. The compliance officer, based on a documentary check, may: (a) release the goods; (b) require clarifications about the documents submitted; (c) direct for scanning; or (d) channel the declaration for verification by customs officers from the examination team and/or other controlling agencies.

Mauritius' risk-management system comprises four channels. The channels are assigned automatically by the CMS based on a combination of criteria such as selected products, sensitivity, value, and consistency of data. Most imports are subject to permit or inspection requirements from different government departments, pass through the yellow channel and are subject to a detailed document verification.

Companies must apply to MRA Customs for certification under Authorized Economic Operators (AEO) programme. Criteria for certification relate to financial solvency, compliance, safety and security, and a proper system of records. Certified operators receive various benefits depending on the type of certification they obtain. These include: simplified declaration procedures, a low level of physical examination, expedited release of goods; the services of a Customs Relations Manager; and fast-track processing of certificates of origin and tariff rulings.

Mauritius primarily uses the transaction value for assessing the customs value of imports, except for imports of used machinery and equipment and second-hand motor vehicles. Where the transaction method cannot be used, the five other methods set out in the WTO Customs Valuation Agreement may be applied. A 2010 amendment to the Customs Regulations requires fuller information to be supplied on the invoice, including the contact details of the exporter and importer, the date of issue of the invoice, and the quantity and description of the goods. Invoice amounts must be converted into Mauritian rupees using the exchange rate in force on the date of entry of the imports. The exchange rates used by Customs are the rates received from the Bank of Mauritius. They are set for a one week period, are published in the *Government Gazette* and made available three to four days in advance at Customs offices. It also imposes a 50% penalty for underpaid duties and taxes.

#### **2.6.3.1.2 Import prohibitions and restrictions**

There are 33 categories items which are prohibited. In addition, importation of certain drugs, second-hand goods (other than motor vehicles) for resale, as well as the importation of second-hand motorcycle/auto cycle parts and accessories for resale or local assembly is prohibited.

Importation of black tea is not allowed.

The Mauritius Sugar Syndicate is the sole marketer and importer of sugar.

#### **2.6.3.1.3 Quantitative restrictions (QR)**

QR is applied to imports of potatoes and tables salt.

Alcoholic beverages require a certificate of the MoHQL on first importation.

Imports of drugs (other than controlled drugs) for use in the public sector are subject to international tenders. Imported pharmaceuticals must be registered for sale in their country of origin.

Imported pesticides must be registered in the country of origin before an import permit can be granted.

#### **2.6.3.1.4 Import license**

An import permit from the MAIF is required prior to the importation of animal foodstuffs, meat, live animals, and fish and sea products.

#### **2.6.3.1.5 Technical barriers to trade (TBT)**

The Mauritius Standards Bureau (MSB) develops standards and provides metrology, calibration, testing, and quality assurance services to the manufacturing and services sectors. Since November 2007, Mauritius maintains 160 standards in areas such as chemicals, construction material, engineering, food

processing, and management systems. Technical regulations are applied on imported and locally produced goods. Since 2007, Mauritius applied 25 technical regulations which were 12 in 2001.

#### **2.6.3.1.6 SPS measures**

Imports of plants, plant parts and any other regulated product (including seeds, cuttings, cut flowers, fruits, vegetables, bulbs, and rhizomes) require a plant import permit from the National Plant Protection Office (NPPO).

A permit is also required for importation of used agricultural equipment, tools, and machinery. Importation of certain specific planting materials is subject to post-entry quarantine.

All animals to be imported into Mauritius must be accompanied by a veterinary certificate; they are inspected by a veterinary officer at the point of entry. Importation of animal and vegetable fats requires a certificate of analyses delivered by a recognized authority of the exporting country.

Fishing and other vessels for processing or preserving fishery products require a seaworthiness certificate and a declaration of survey of the vessel.

#### **2.6.3.1.7 Environmental protection measures**

Several restrictions are applied both on imported and domestic goods for environmental protection purposes. Imports of dangerous chemicals are subject to a licence from the MoHQL. A Green Tax, equal to 0.75% of their monthly turnover, is imposed by the Ministry of Environment under the Environment Protection Act 2002. An applicant for the permit will have to submit a risk assessment report and a contingency plan.

#### **2.6.3.1.8 Government procurement**

Under the Public Procurement Act 2006, a public body cannot advertise, invite, solicit or call for bids in respect of a major contract unless authorized by the Board, and no major contracts may be awarded or contracts signed, without approval by the Board.

### **2.7 Export Policy of Mauritius**

2.7.1 Mauritius applies no taxes, charges or levies on exports. Export prohibitions, restrictions, and licensing export bans are maintained under international conventions to which Mauritius is a signatory.

2.7.2 In order to export goods, a customs declaration has to be lodged electronically by a TradeNet user. Any exporter can file the declaration provided she/he is registered with Customs as a declarant and is



owner of a TradeNet front end system. Other commercial documents required by Customs are: the invoice, packing list, bill of lading or airway bill, and if applicable, insurance certificate, certificate of inspection, sanitary and phytosanitary certificates, and certificate of origin. Some controlled products also require export permits. The same registration requirements apply to exporters and importers. Tea may only be exported by companies or individuals licensed by the Tea Board.

2.7.3 Export permits are required for products considered "strategic" or "sensitive" to the economy, and goods eligible for preferential treatment in importing. The only change to the list of products requiring export permits during the review period is the removal of fish products (HS items 03.01-03.07). Permits are issued by the Ministry in charge of commerce and are valid for a maximum of six months. In certain cases, prior approval is required from the relevant authorities, e.g. the Mauritius Sugar Syndicate for sugar, the Tea Board for tea, the Agricultural Marketing Board (AMB) for spices, the Ministry in charge of health for pharmaceuticals, and the Ministry of Agro Industry and Fisheries (MAIF) for certain agricultural products. The export of certain agricultural and fishery products must be cleared by the AMB. A quota continues to apply to exports of chilled fish. During the period under review, Mauritius has revised its export and other incentives schemes. Many have been repealed or are scheduled to expire in the near future. At the end of December 2007, the Freeport Scheme, the Freight Rebate Scheme (revised in 2005), and the Global Business Scheme remained available to companies producing for export. Several schemes were repealed by the Finance Act 2006, including the Export Enterprise Scheme, the Export Service Zone, the Export Promotion Scheme, the Hotel Management Scheme, and the Hotel Development Scheme. Benefits granted under these repealed acts remain however in force for the existing beneficiaries.

2.7.4 The Export Enterprise Scheme, Freeport Scheme, Export Promotion Scheme, and Pioneer Enterprise Scheme have been notified to WTO as containing export subsidies.<sup>vii</sup> Only the Freeport scheme remains in force. The authorities have indicated that, while Mauritius has not undertaken any commitment to provide export subsidies beyond 2009 to new beneficiaries, the prospect could not be excluded.<sup>viii</sup> The Export Enterprise Scheme (known as export-processing zone (EPZ) scheme) has been the most important incentive scheme in Mauritius. EPZ scheme was eliminated, effective, 1 October 2006. The number of EPZ enterprises had been decreasing in parallel with the multilateral liberalization of the textile and clothing subsector. Output of EPZ enterprises had also been falling, but recorded positive growth in 2006, as a result of government efforts to sustain development of the textiles and clothing subsector. EPZ exports also recovered, and represented about 49% of total exports in 2006. In 2005, investment in the EPZ was 6% of total investment, and the contribution of the EPZ to GDP was estimated at 7.4%. Textiles and garments accounted for 70% of EPZ export value in 2006. In principle, EPZ enterprises were allowed to sell up to 20% of their production duty free on the domestic market, subject to authorization by the Industry Ministry. In addition to fiscal benefits, EPZ companies benefited also from preferential access to foreign markets under various trade agreements.

2.7.5 Exporters are also entitled to duty drawback on goods imported for the purpose of processing, manufacturing or repair and then exported; and on goods re-exported in the same state. Customs has also introduced an inward processing scheme for 100% export-oriented enterprises allowing them VAT exemption on imported raw materials inputs.<sup>ix</sup> During most of the period under review, local companies producing primarily for the domestic market were eligible for reductions of corporate tax: 30% reduction

(from the standard rate of 25%, to 17.5%) when exports accounted for between 10% and 30% of production; when over 50% of output was exported, the tax rate fell to 15%. This provision was removed by the Finance Act 2006.

2.7.6 In 2001, the Government set up Business Parks of Mauritius (BPML) to lead the development of business parks. One of its subsidiaries – Business processing model Language (BPML) Freeport Services Ltd (BFSL) - is in charge of developing and providing logistics and ancillary telecommunications facilities and services to operators trading under the Freeport Scheme (previously, also EPZ), and to local enterprises.<sup>x</sup> The Agricultural Marketing Board operates a Freight Rebate Scheme (FRS) under which partial refunds of freight costs or f.o.b. value (whichever is lower) are granted for selected exports. Until 2005, the FRS covered horticultural produce, and granted a rebate of 50% of the air freight for exports of fresh fruits and vegetables (including pineapples, which accounted for around 90% of annual refunds), and small chilies; and 25% for okra, green beans, avocados, star fruit, mangoes, lychees, and sweet potatoes. The FRS was restricted to exports to Europe only. In 2005, the FRS was revised to reorient exports from fresh to minimally processed fresh/dried horticultural produce and to include new long-haul destinations. Under the revised scheme, all processed products (i.e. peeled, sliced, and packed before export) benefit from 50% freight refund; all unprocessed fresh products benefit from 25% freight refund with the exception of green chilies, which continue to benefit from 50% freight refund.<sup>xi</sup>

2.7.7 Mauritius notified the WTO that its subsidies (including the amount of revenue forgone) are not compiled systematically.<sup>xii</sup> Nonetheless, according to the data available, customs duty forgone under the Export Enterprise Scheme amounted to US\$ 25 million in 2004, down from US\$30 million in 2001. Under the Export Promotion Scheme, tax credits were claimed by 20 companies in fiscal year 2005/06, and amounted to MUR 4.9 million, up from MUR 0.8 million claimed by 9 companies in 2003/04.

2.7.8 Export credits are provided, insured, and guaranteed on market terms by commercial banks. Exporters are free to contract insurance and export credit guarantees with foreign companies. Mauritius grants preferential tariff treatment to imports under the Common Market for Eastern and Southern Africa (COMESA), South African Development Community (SADC) and IOC treaties, and (on a bilateral basis) to Pakistan, subject to the relevant certificates of origin. With the exception of some agricultural products, most goods are traded freely between Mauritius and other Common Market for Eastern and Southern Africa (COMESA) members that have fully met the free-trade area commitments.<sup>xiii</sup> Preferential treatment consisting of a 90% tariff reduction is granted to imports from other COMESA members.

## **2.8 Fiscal Policy**

2.8.1 Consistent with the overall macroeconomic framework, the authorities' fiscal policy continues to underpin their efforts to bolster the domestic economy and reinforce public service delivery and social protection. Following a series of fiscal stimulus measures since the onset of the crisis, the Government of Mauritius has strengthened its resolve to return to a more sustainable fiscal position. The 2012 budget performed well with outcomes showing a commitment to fiscal consolidation while supporting resilience to the global economic slowdown. Although total revenues at MUR 73.74 billion (USD 2.43 billion) were 4% lower than the budget estimates, they marginally increased to 21.5% of GDP from 21.4% in 2011. Tax revenues stood at 18.3% of GDP, thus reaching the 2012 target. They were buoyed by expanded tax

audits and registration of 14 090 new taxpayers. The authorities reigned in spending, with total expenditure and net lending declining to 24.4% of GDP from 24.7% in 2011 as interest payments fell.

2.8.2 Estimated at MUR 91.8 billion (USD 3.01 billion), the 2013 budget aims to support growth while maintaining sound macroeconomic management. Spending is in line with national priorities and fits within the government's medium-term expenditure framework objective. As the authorities accelerate implementation of their USD 10 billion infrastructure programme, capital budget spending is expected to increase by more than 50% to MUR 28.6 billion (USD 0.94 billion); although under spending is likely to occur due to capacity bottlenecks. The public sector wage bill reached MUR 26.89 billion (USD 0.88 billion) in 2012 representing 5.6% of GDP. An increase in public sector wage by about 1.3% of GDP is expected as the government implements the recommendations of the Pay Review Bureau during the 2013 fiscal year. At MUR 39.7 billion (USD 1.31 billion) in 2011, spending on oil imports accounted for 9% of GDP and 19% of the total import bill highlighting the country's vulnerability to terms of trade shocks. Falling to 54.2% of GDP in 2012 from 56.8% in 2011, public sector debt is trending down and remains within the legal limit. In line with the authorities' medium-term fiscal consolidation plans the fiscal deficit and the public sector debt are projected to fall further in 2013 to 2.6% and 53.7% of GDP respectively.

## **2.9 Foreign Direct Investment (FDI) in Mauritius**

### **2.9.1 FDI performance**

2.9.1.1 For the first nine months of 2012, FDI reached MUR 6.2 billion with South Africa as the main source. About half of the total FDI went into real estate. In 2011, FDI amounted to MUR 9.4 billion. In 2013 and 2014, FDI should remain subdued, but within the medium term range, as the euro area economy struggles to recover and the government takes reflective steps to monitor the impact of accelerated real estate sector growth on prices and rapid rental growth.

### **2.9.2 FDI Policy**

2.9.2.1 Mauritius has several investment-related treaties and international agreements. Investment is basically conducted by the Board of Investment (BOI) through Investment Promotion Act (2000). The BOI issues registration certificates to enterprises wishing to benefit from investment promotion schemes and has the mandate to negotiate bilateral investment treaties. In 2013, the Investment Promotion Act was amended to provide for the establishment of an Investment Projects Fast-Track Committee (IPFTC). The IPFTC's mandate is to coordinate and expedite the processing of permit approvals for large investment projects deemed to be in the economic interest of Mauritius. The Business Facilitation (Miscellaneous Provisions) Act 2006 amended various laws in order to allow businesses to start their operations on the basis of self-adherence to established guidelines and for ex-post control of compliance, to facilitate business activities and acquisition of property by foreigners and to enable small enterprises to start business activities within three working days. The investment promotion and protection an agreement (IPPAs) to which Mauritius is a signatory require Mauritius to grant national treatment to foreign investors. Since 2008, new IPPAs have entered into force with Burundi, Senegal, Belgium/Luxembourg,

the Republic of Korea, Finland, and Tanzania. Additionally new double-taxation avoidance agreements (DTAAs) have entered into force with Germany, Sweden, Tunisia, Qatar, Bangladesh, and Zambia.<sup>xiv</sup>

2.9.2.2 A recent study on “OECD Investment Policy Reviews: Mauritius 2014” shows that Mauritian laws and regulations dealing with investments and investors provide for a predictable and transparent regime. Mauritius’ investment climate is generally open, although several restrictions apply in various sectors to both domestic and foreign investors. Investors’ rights are soundly protected both by domestic law and through international commitments. Over the last decade, the government has also updated its Intellectual Property Rights framework to enable the country to become a leading knowledge-based economy. Access to dispute settlement by investors has been facilitated with the establishment of a Commercial Division of the Supreme Court. There have thus been a wide range of laudable efforts to modernize and streamline the regulatory framework for investment. Nevertheless this framework is still dispersed over various legal and regulatory instruments, and sectoral regulations are administered by distinct public agencies.<sup>xv</sup>

2.9.2.3 It is observed that Mauritius’s investment policy is fully compliant with WTO TRIMs provisions; they maintain no local-content requirements. However, there are some foreign investment restrictions which are given below:

#### **2.9.2.3.1 Television broadcasting**

Foreign capital in a company must be less than 20%.

#### **2.9.2.3.2 Sugar companies**

Non-citizens may not hold more than 15% of shares in listed sugar companies without prior written consent of the Financial Services Commission.

#### **2.9.2.3.3 Real estate property**

Certificates of authorization from the Prime Minister’s Office non-citizens require to acquire real estate property in Mauritius, or to acquire shares in a company that owns immovable property in Mauritius. Purchases must be financed with funds transferred from abroad through the banking system.

#### **2.9.2.3.4 Banks holding immovable property in Mauritius**

Approvals are required from the Prime Minister and Minister of Home Affairs for investments in banks that hold immovable property in Mauritius.

#### **2.9.2.3.5 Diving centers**

Maximum foreign equity participation of 30%

#### **2.9.2.3.6 Legal services**

Foreign law firms can provide legal services only in relation to non-judicial proceedings (arbitration, mediation, conciliation and other forms of consensual dispute resolution), or in relation to foreign law or international law.

### 2.9.2.3.7 Fisheries

Licenses to operate a Mauritian fishing vessel may only be granted to Mauritian nationals or to bodies incorporated in Mauritius and having a place of business in Mauritius.

## 2.10 Mauritius's Trade in Services

### 2.10.1 Performance in Trade in Services

2.10.1.1 Contribution of trade in services in Mauritius was 51.47% of GDP) in 2011. Its highest value over the past 6 years was 51.47% in 2011, while its lowest value was 43.54% in 2009. The World Bank Report 2012 reported it 48.16% in 2010. Table 10 shows evolution of trade in services (% of GDP) in Mauritius from 2005 to 2011.

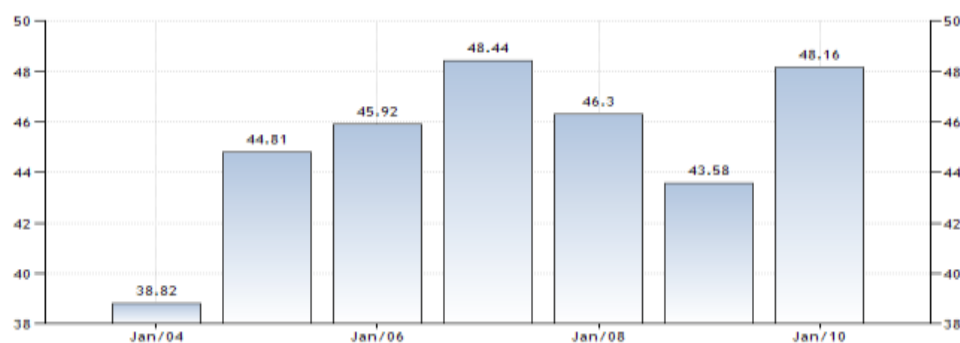
**Table 11:** Evolution of Trade in services (% of GDP) in Mauritius

| Year | Value |
|------|-------|
| 2005 | 44.81 |
| 2006 | 45.92 |
| 2007 | 48.44 |
| 2008 | 46.30 |
| 2009 | 43.54 |
| 2010 | 48.16 |
| 2011 | 51.47 |

Source: IMF, WB and OECD GDP estimates.

2.10.1.2 The following Figure shows an upward trend of service sector in Mauritius (January 2004 - January 2010).

**Figure 02:** Mauritius Growth in Service Sector



Source: World Bank

2.10.1.3 Table captioned below shows trade in services scenario of Mauritius with respect to balance of payments. It is observed that trade in services as a percentage of GDP in Mauritius has decreased 2.1% in

the last year in comparison with previous year. Imports of goods and services have increased 1.1 billion USD in last year. Insurance and financial services remain the same in the last two years. Service imports in Mauritius have increased slightly (0.3 billion USD) in last two years. Transport services as a percent of service imports in Mauritius have been decreased by 4.7% in last year.

**Table 12: Trade in services scenario (Balance of Payments)**

|   | Previous | Last |
|---|----------|------|
| Trade in services (% of GDP) in Mauritius                                 | 48.4     | 46.3 |
| Imports of goods and services (BoP; US dollar Bn) in Mauritius            | 5.2      | 6.3  |
| Insurance and financial services (% of service imports; BoP) in Mauritius | 5.5      | 5.5  |
| Service imports (BoP; US dollar Bn) in Mauritius                          | 1.6      | 1.9  |
| Transport services (% of service imports; BoP) in Mauritius               | 38.3     | 33.6 |

**Source: World Bank Indicators - Mauritius**

## **2.11 Work Permit Policy of Mauritius**

2.11.1 Work Permits in respect of non-citizens are issued by the Employment Division of the Ministry of Labour, Industrial Relations and Employment under the Non-Citizens (Employment Restriction) Act 1973. A non-citizen cannot engage in any occupation in Mauritius for reward or profit or be employed in Mauritius unless there is in force in relation to him a valid work permit. Besides, no person shall have a non-citizen in his employment in Mauritius without there being in force a valid permit in relation to that employment.

2.11.2 Foreign nationals wishing to work, live or retire in Mauritius may explore various avenues either through the Occupation Permit, the Residence Permit or the Permanent Residence Permit. They are also eligible to acquire property in Mauritius under prescribed conditions. Applications for Occupation Permits or Residence Permits are made through the BOI to the Passport and Immigration Office of Mauritius (PIO). BOI and PIO jointly operate the Occupation Permit Unit which facilitates the issuance of Occupation and Residence Permits to foreign investors, self-employed individuals and professionals within five working days. Mauritius is offering a very conducive business environment to investors. Mauritius is ranked first in Africa on the World Bank Ease of Doing Business Index. Mauritius also tops the African continent on key international benchmarks namely the Heritage Foundation Index of Economic Freedom, the Forbes Survey of Best Countries for Business, the Democracy Index, the Mo Ibrahim Index of African Governance and the Environmental Performance Index amongst others. The fiscal regime is among the most globally competitive ones with the personal and corporate tax harmonized at a low rate of 15%. A Business Facilitation Act is in force to further ease doing business. Nowadays, launching of business operations and delivery of Occupation Permit (combination of work and residence permits) are possible only after three working days.

## **3. ECONOMY AND TRADE OF BANGLADESH**

### **3.1 Economic Overview of Bangladesh**

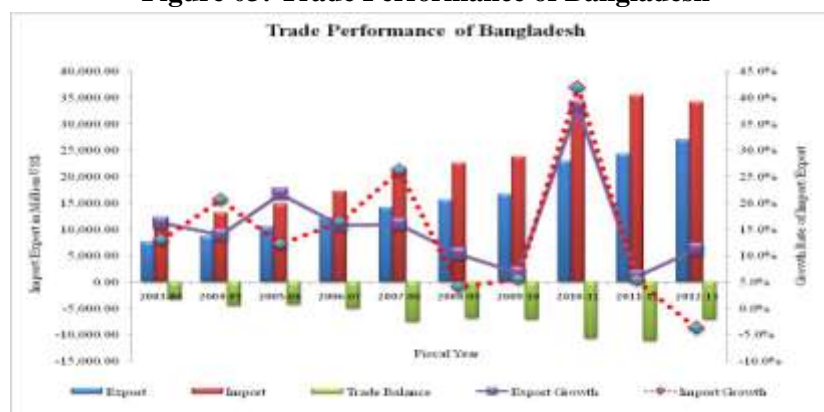
3.1.1 Economy of Bangladesh has achieved a sustainable economic growth during last decade. The real GDP growth over the last five years consistently remained on an average above 6 percent. During the last three years, the economy is constituted with GDP of US\$ 133.40 billion with per capita GDP of US\$ 880 in 2011-12, US\$ 150.00 billion with per capita GDP of US\$ 976 in 2012-13 and US\$ 173.82 billion with

per capita GDP of US\$ 1,115 in 2013-14.<sup>xvi</sup> Bangladesh is one of the most densely populated countries in the world wherein food security is one of the major challenges. Its natural resources are only natural gas, fertile soil, water and coal. The land is devoted mainly to rice, jute, wheat and sugar cane cultivation. The main agriculture products of Bangladesh are rice, jute, tea, sugarcane and wheat. Its main industrial products are woven garments, knitwear, jute goods, frozen fish, seafood, pharmaceuticals, textiles, chemical fertilizer, leather products, light engineering products, melamine/plastic products, ship breaking for scrap, ceramic products and sugar.

### 3.2 Trade Performance of Bangladesh

3.2.1 Over the recent past years, Bangladesh's economy has become more exposed to the global economy. Both export and import have increased rapidly in last ten years, which also resulted in increase of trade deficit (Figure 3).

**Figure 03: Trade Performance of Bangladesh**



Source: Bangladesh Economic Review 2013

3.2.2 Bangladesh's export is concentrated to a limited number of products, e.g. clothing which constitutes more than three fourth of country's total export earnings. Its major export items are woven garments, knitwear, jute and jute goods, frozen foods, leather & leather products, pharmaceuticals, chemical products, home textiles, footwear, light engineering products, ceramic products, melamine products and bicycle (Table 13).

**Table 13: Composition of Bangladesh's Export**

(Values in million USD)

| Commodity classification          | 2007-08 | 2008-09 | 2009-10 | 2010-11 | 2011-12 | 2012-13 | 2013-14 |
|-----------------------------------|---------|---------|---------|---------|---------|---------|---------|
| 1. Primary commodities of Which   | 988     | 870     | 884     | 1,316   | 1,267   | 1,310   | 1,380   |
| a) Frozen food                    | 534     | 455     | 445     | 625     | 598     | 544     | 638     |
| b) Tea                            | 15      | 12      | 6       | 3       | 3       | 2       | 4       |
| c) Agricultural Products          | 120     | 147     | 189     | 262     | 304     | 350     | 421     |
| d) Raw Jute                       | 165     | 148     | 196     | 357     | 266     | 230     | 126     |
| e) Others                         | 153     | 108     | 48      | 69      | 96      | 183     | 209     |
| 2. Industrial goods, Of which     | 13,123  | 14,695  | 15,713  | 21,612  | 23,035  | 25,718  | 28,797  |
| a) Woven garments                 | 5,167   | 5,919   | 6,013   | 8,432   | 9,603   | 11,040  | 12,442  |
| b) Knitwear                       | 5,533   | 6,429   | 6,483   | 9,482   | 9,486   | 10,476  | 12,050  |
| c) Leather                        | 284     | 177     | 226     | 298     | 330     | 400     | 506     |
| d) Jute goods                     | 318     | 269     | 540     | 758     | 701     | 801     | 698     |
| e) Fertilizer & chemical products | 216     | 280     | 103     | 105     | 103     | 93      | 93      |
| f) Footwear                       | 170     | 187     | 204     | 298     | 336     | 419     | 550     |
| g) Ceramic products               | 38      | 32      | 31      | 38      | 34      | 38      | 48      |
| h) Engineering products           | 3       | 189     | 311     | 310     | 375     | 367     | 367     |
| i) Petroleum by products          | 185     | 142     | 301     | 261     | 275     | 314     | 162     |
| g) Handicrafts                    | 6       | 6       | 4       | 4       | 5       | 6       | 8       |

|                    |        |        |       |        |        |        |        |
|--------------------|--------|--------|-------|--------|--------|--------|--------|
| k) Others          | 1,203  | 1,065  | 1,497 | 1,626  | 1,787  | 1,764  | 18,74  |
| Total Export (1+2) | 14,111 | 15,565 | 16597 | 22,928 | 24,302 | 27,028 | 30,177 |

Source: Bangladesh Economic Review 2012

3.2.3 The major export destinations of Bangladesh are the United States, Germany, United Kingdom, France, Italy, Belgium, the Netherlands, Spain, Canada and India (Table 14).

**Table 14: Prime export destinations of Bangladesh**

(Values million USD)

| Fiscal Year | USA   | Germany | UK    | France | Canada | Italy | Belgium | Nether Land | Japan | Others | Total  |
|-------------|-------|---------|-------|--------|--------|-------|---------|-------------|-------|--------|--------|
| FY 01       | 2,500 | 790     | 598   | 366    | 126    | 296   | 254     | 328         | 108   | 1,102  | 6,467  |
| FY 02       | 2,219 | 681     | 648   | 414    | 110    | 262   | 211     | 283         | 96    | 1,061  | 5,986  |
| FY 03       | 2,155 | 821     | 778   | 419    | 170    | 259   | 290     | 278         | 108   | 1,271  | 6,548  |
| FY 04       | 1,967 | 1,299   | 898   | 553    | 284    | 316   | 327     | 290         | 118   | 1,551  | 7,603  |
| FY 05       | 2,412 | 1,354   | 943   | 626    | 335    | 369   | 325     | 292         | 122   | 1,875  | 8,655  |
| FY 06       | 3,030 | 1,764   | 1,049 | 678    | 406    | 426   | 359     | 327         | 138   | 2,350  | 10,526 |
| FY 07       | 3,441 | 1,955   | 1,174 | 732    | 457    | 516   | 436     | 459         | 148   | 2,861  | 12,178 |
| FY 08       | 3,591 | 2,175   | 1,374 | 953    | 533    | 579   | 488     | 654         | 173   | 3,591  | 14,111 |
| FY 09       | 4,052 | 2,270   | 1,501 | 1,031  | 663    | 616   | 410     | 971         | 203   | 3,849  | 15,565 |
| FY 10       | 3,950 | 2,187   | 1,509 | 1,026  | 667    | 624   | 391     | 1,017       | 331   | 4,504  | 16,205 |
| FY 11       | 5,108 | 3,439   | 2,065 | 1,538  | 945    | 866   | 666     | 1,107       | 434   | 6,760  | 22,928 |
| FY 12       | 5,101 | 3,689   | 2,445 | 1,380  | 994    | 977   | 742     | 691         | 601   | 7,682  | 24,302 |
| FY 13       | 5,420 | 3,963   | 2,765 | 1,514  | 1090   | 1037  | 731     | 712         | 750   | 9,046  | 27,028 |

Source: Bangladesh Economic Review 2009 and 2013

3.2.4 Bangladesh's economy is characterized by severe dependence on imports. Its major import items are cereal, capital machineries and equipments, chemicals, edible oil, fuel, iron and steel, textiles, fertilizer, petroleum products and cement clinker. Industrialization of Bangladesh is extremely depended on import of raw materials, capital machineries, and parts and accessories. Data presented in Table 15 shows that food items, petroleum, industrial raw materials and capital machinery occupied the major share of total import.

**Table 15: Composition of Bangladesh's import**

[Values in million USD]

| Major Commodities                        | FY 07  | FY 08  | FY 09  | FY 10  | FY 11  | FY 12  | FY 13  | FY 14  |
|--|--------|--------|--------|--------|--------|--------|--------|--------|
| 1. FOOD GRAINS                           | 581    | 1,410  | 882    | 837    | 1,911  | 901    | 726    | 1,465  |
| i. Rice                                  | 180    | 874    | 239    | 75     | 830    | 288    | 30     | 347    |
| ii. Wheat                                | 401    | 536    | 643    | 761    | 1,081  | 613    | 696    | 1,118  |
| 2. Milk & cream                          | 83     | 137    | 96     | 106    | 161    | 221    | 214    | 289    |
| 3. Spices                                | 76     | 80     | 62     | 109    | 127    | 138    | 118    | 183    |
| 4. Oil seeds                             | 106    | 136    | 159    | 130    | 103    | 177    | 242    | 508    |
| 5. Edible oil                            | 583    | 1,006  | 865    | 1,050  | 1,067  | 1,644  | 1,402  | 1,761  |
| 6. Pulses (all sorts)                    | 195    | 327    | 234    | 350    | 292    | 243    | 422    | 455    |
| 7. Sugar                                 | 294    | 396    | 413    | 650    | 654    | 1,177  | 731    | 902    |
| 8. Clinker                               | 240    | 347    | 314    | 333    | 446    | 504    | 487    | 619    |
| 9. Crude petroleum                       | 524    | 695    | 584    | 535    | 923    | 987    | 1,102  | 929    |
| 10. POL                                  | 1,709  | 2,058  | 1,997  | 2,021  | 3,186  | 3,922  | 3,642  | 4,070  |
| 11. Chemical                             | 668    | 890    | 960    | 972    | 1,254  | 1,210  | 1,302  | 1,498  |
| 12. Pharmaceutical products              | 49     | 62     | 80     | 103    | 116    | 119    | 119    | 120    |
| 13. Fertilizer                           | 357    | 632    | 955    | 717    | 1,241  | 1,381  | 1,188  | 1,026  |
| 14. Dyeing, tanning etc. materials       | 161    | 218    | 259    | 275    | 333    | 375    | 399    | 538    |
| 15. Plastics and rubber articles thereof | 643    | 808    | 840    | 966    | 1,302  | 1,366  | 1,366  | 1,793  |
| 16. Raw cotton                           | 858    | 1,212  | 1,291  | 1,439  | 2,689  | 2,084  | 2,005  | 2,426  |
| 17. Yarn                                 | 582    | 691    | 792    | 718    | 1,391  | 1,384  | 1,356  | 1,506  |
| 18. Textile and articles thereof         | 1,892  | 1,892  | 2,099  | 1,986  | 2,680  | 3,023  | 3,273  | 3,584  |
| 19. Staple fibre                         | 97     | 110    | 112    | 118    | 180    | 428    | 455    | 493    |
| 20. Iron, steel and other base metals    | 985    | 1,179  | 1,502  | 1,453  | 2,004  | 2,224  | 2,335  | 2,657  |
| 21. Capital machinery                    | 1,929  | 1,664  | 1,420  | 1,595  | 2,325  | 2,005  | 1,835  | 2,332  |
| 22. Others including EPZ                 | 4,545  | 5,679  | 6,591  | 7,275  | 9,273  | 10,003 | 9,365  | 8,604  |
| Grand Total :                            | 17,157 | 21,629 | 22,507 | 23,738 | 33,658 | 35,516 | 34,084 | 37,757 |

Source: Bangladesh Bank



3.2.5 Major sources of imports of Bangladesh are India, China, Singapore, Japan, Hong Kong, Taiwan, South Korea, the USA and Malaysia (Table 16) of which India, Singapore and Malaysia are IORA countries. Although Mauritius is an IORA country it is not a significant import partner of Bangladesh. It can be observed from the table that about more than 20% of Bangladesh's imports is coming from IORA countries. Of them Mauritius is not a major source. It is necessary to state that as formation of PTA among IORA countries, each member country has to implement tariff reduction program (TRP) from the date of its coming into force. As a result, Bangladesh has to cut tariff on the products covered by the Agreement for which Bangladesh has to lose a definite amount of revenue.

**Table 16: Major import sources of Bangladesh**

[Values in million US\$]

| Fiscal Years | China | India | Malaysia | Singapore | South Korea | Japan | Taiwan | Hong Kong | USA | Others | Total  |
|--------------|-------|-------|----------|-----------|-------------|-------|--------|-----------|-----|--------|--------|
| FY 09        | 3,452 | 2,864 | 694      | 1,769     | 865         | 1,016 | 498    | 851       | 461 | 10,029 | 22,507 |
| FY 10        | 3,819 | 3,214 | 1,232    | 1,550     | 839         | 1,046 | 542    | 788       | 469 | 10,239 | 23,738 |
| FY 11        | 5,918 | 4,569 | 1,760    | 1,294     | 1,124       | 1,308 | 731    | 777       | 677 | 15,500 | 33,658 |
| FY 12        | 6,440 | 4,743 | 1,406    | 1,710     | 1,544       | 1,455 | 792    | 703       | 709 | 16,014 | 35,516 |
| FY 13        | 6,301 | 4738  | 1,497    | 1,076     | 1,297       | 1,181 | 734    | 606       | 537 | 16,117 | 34,084 |

Source: Bangladesh Economic Review 2013 and Bangladesh Bank

Notes: The import values by countries represent only the imports under cash. Import under IDB loans, grants are incorporated in "Others" Column.

### 3.3 Trade Regime of Bangladesh

3.3.1 Till today tariffs remains the main instrument of Bangladesh for protecting domestic industries from imports and one of the major sources of revenue earnings. In FY 2011-12, simple average tariff was 14.83% which slightly increased to 15.10% in 2012-13<sup>xvii</sup>. Other than customs duty Bangladesh levies supplementary duty (SD), regulatory duty (RD), VAT, advance trade VAT (ATV), and advance income tax (AIT) on imports. Among these taxes, VAT, ATV and AIT are trade neutral. If SD and RD are added to import tariffs then average total protective tariff may rise to 28% which increased to 30.25% in 2012-13.<sup>xviii</sup> Product wise tariff summary of Bangladesh applied in 2011-12 is given below:

**Table 17: MFN tariff structure in Bangladesh, 2011-12**

|                 | MFN applieda |       | Final bound |       |            | TTIb |         |
|-----------------|--------------|-------|-------------|-------|------------|------|---------|
|                 | Avg.         | Range | Avg.        | Range | %age bound | Avg. | Range   |
| Overall average | 14.9         | 0-25  | 172.4       | 0-200 | 17.8       | 54.5 | 0-830.1 |

|   | MFN applied <sup>a</sup> |       | Final bound |        |            | TTI <sup>b</sup> |            |
|---|--------------------------|-------|-------------|--------|------------|------------------|------------|
|   | Avg.                     | Range | Avg.        | Range  | %age bound | Avg.             | Range      |
| HS01-24                                     | 19.4                     | 0-25  | 191.0       | 15-200 | 79.9       | 54.8             | 0-598.8    |
| HS25-97                                     | 13.9                     | 0-25  | 92.7        | 0-200  | 4.1        | 54.5             | 0-830.1    |
| WTO agriculture                             | 13.1                     | 0-25  | 192.3       | 15-200 | 100.0      | 54.6             | 0-598.8    |
| Animals and products thereof                | 14.5                     | 0-25  | 196.5       | 50-200 | 100.0      | 42.4             | 0-59.2     |
| Dairy products                              | 20.7                     | 5-25  | 167.3       | 30-200 | 100.0      | 61.2             | 29.5-90    |
| Fruit, vegetables and plants                | 14.7                     | 0-25  | 191.8       | 30-200 | 100.0      | 44               | 0-90       |
| Coffee and tea                              | 16.3                     | 12-25 | 187.5       | 50-200 | 100.0      | 69.3             | 37.8-151.7 |
| Cereals and preparations                    | 10.3                     | 0-25  | 194.1       | 50-200 | 100.0      | 56.8             | 0-598.8    |
| Oil seeds, fats and oils and their products | 7.2                      | 0-25  | 194.6       | 50-200 | 100.0      | 30.8             | 0-105.4    |
| Sugars and confectionary                    | 16.4                     | 0-25  | 191.7       | 50-200 | 100.0      | 62.2             | 3.6-151.7  |
| Beverages, spirits and tobacco              | 22.8                     | 25-25 | 200.0       | 200    | 100.0      | 285.1            | 59.2-598.8 |
| Cotton                                      | 1.9                      | 0-5   | 200.0       | 200    | 100.0      | 20.3             | 0-29.5     |
| Other agricultural products n.e.s.          | 9.0                      | 0-25  | 189.3       | 15-200 | 100.0      | 30.6             | 0-90       |
| WTO non-agriculture                         | 11.5                     | 0-25  | 38.8        | 0-200  | 2.7        | 54.5             | 0-830.1    |
| Fish and fishery products                   | 16.0                     | 0-25  | 45.0        | 30-50  | 1.8        | 47.7             | 0-90       |
| Minerals and metals                         | 10.2                     | 0-25  | 39.5        | 0-50   | 1.1        | 45.4             | 0-151.7    |
| Chemicals and photographic supplies         | 8.7                      | 0-25  | 53.7        | 5-200  | 3.3        | 40.5             | 3.6-151.7  |
| Wood, pulp, paper and furniture             | 13.0                     | 0-25  | 38.9        | 15-50  | 3.2        | 51.4             | 3.6-151.7  |
| Textiles                                    | 16.8                     | 3-25  | 37.5        | 10-50  | 0.7        | 75.3             | 6.7-151.7  |
| Clothing                                    | 19.6                     | 12-25 | n.a.        | n.a.   | 0.0        | 123.5            | 37.8-151.7 |
| Leather, rubber, footwear and travel goods  | 10.7                     | 0-25  | 3.0         | 3      | 0.6        | 51.4             | 8.6-128.6  |
| Non-electric machinery                      | 5.4                      | 0-25  | 46.4        | 3-125  | 5.0        | 33.4             | 3.6-151.7  |
| Electric machinery                          | 11.5                     | 0-25  | 44.1        | 3-50   | 2.7        | 43.2             | 5-151.7    |
| Transport equipment                         | 16.0                     | 0-25  | 20.1        | 3-50   | 3.7        | 107.2            | 3.6-830.1  |
| Non-agricultural articles n.e.s.            | 10.6                     | 0-25  | 21.7        | 15-50  | 6.7        | 47.2             | 3.6-213.4  |
| Petroleum                                   | 15.4                     | 5-25  | n.a.        | n.a.   | 0.0        | 49.1             | 24.5-90    |

a Based on custom duties only.

b Total tax incidence (TTI) includes custom duties, supplementary duties, VAT, advance income taxes, regulatory duties and advanced trade VAT.

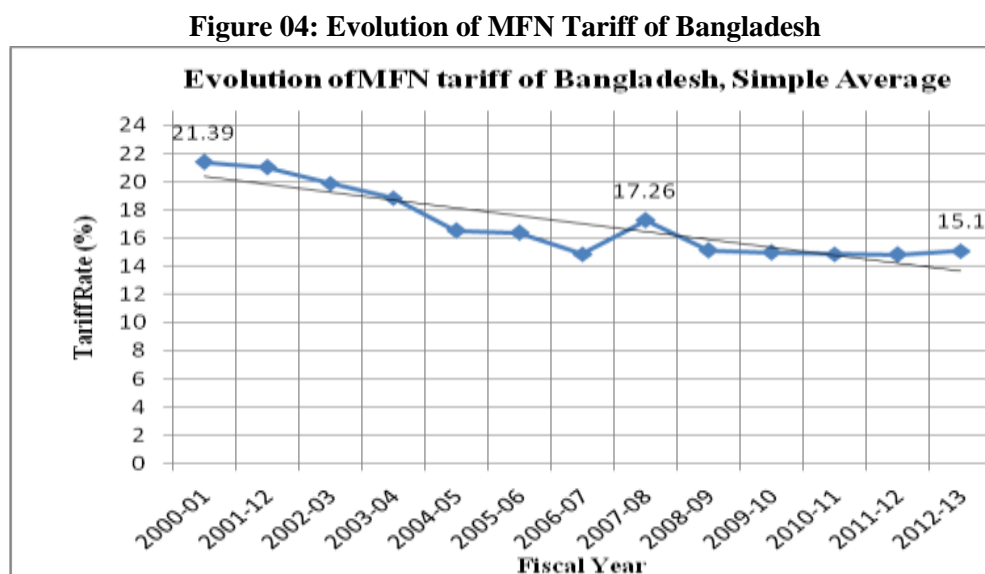
Note: Calculations exclude specific rates. Calculations on bindings are based on the 2011/12 tariff schedule.

Source: Trade Policy Review 2012, Bangladesh

### 3.4 Evolution of MFN Tariff of Bangladesh

3.4.1 There are a number of rules of thumb, which are well grounded in economic theory, that help in evaluating the relative importance of trade diversion and trade creation. One of the rules is that the higher are the initial tariffs, the greater is the likelihood of both trade creation and trade diversion. In other words, the impact of a PTA/FTA is expected to be higher if there is a higher initial tariff. The logic behind this argument is that reduction of tariffs may increase consumer welfare through trade creation or increase social welfare through trade diversion if the country has significant volume of trade with the PTA/FTA partner(s). Bangladesh provided tariff concessions to some IORA countries such as India, Indonesia, Iran, Malaysia, Mozambique, Singapore, Sri Lanka, Tanzania and Thailand under the Global System of Trade Preferences (GSTP). Besides, India and Sri Lanka have been enjoying tariff concessions from Bangladesh under SAFTA agreement. Since the rest IORA countries have not been enjoyed any preferential tariff from Bangladesh; MFN tariff rate would be applicable for them. That means comparatively higher tariffs have to pay for imports from Bangladesh that is why tariff preference to be offered by Bangladesh for trade liberalization under proposed IORA PTA may create an impact on trade in Bangladesh. In fact, the impact of trade liberalization under PTA with IORA or bilateral FTA with Mauritius on trade in Bangladesh depends on how extent of tariff preference would be provided by Bangladesh to the PTA/FTA partner countries and thereby how extent of import would increase. Higher tariff preference on well traded goods would generate large surge of import and lower tariff preference and preference on non-traded or negligible traded goods would generate little increase in import. The

following figure shows the evolution of MFN (un-weighted) tariff rate of Bangladesh. The evolution of MFN tariff shows that Bangladesh's average MFN tariff has been declining over the last decade, reduced from 20.38% in FY 2000-01 to 15.10% in FY 2012-13, which is shown in the following figure:



Source: Bangladesh Economic Review 2013

### 3.5. Workers Remittance

3.5.1 Workers' inward remittance is one of the most important factors in the economic growth of Bangladesh. The substantial share of remittance is coming from mainly Saudi Arabia, UAE, Kuwait, USA, Libya, Qatar, Oman, Singapore, Germany and Bahrain. Among those countries UAE, Oman and Singapore are included in the IORA. In the recent years, significant amount of remittance is also coming from Iran, Japan, Malaysia, Australia, Italy, South Korea and Hong Kong (Table 18) of which Iran, Malaysia and Australia are the members of the IORA. Inward remittance has an impressive growth trend which remained strong in 2009-10 even in the face of global economic slowdown and continued to play an important role in strengthening the current account. During the last decade total remittance has increased about to six fold and in the next fiscal year it further increased. Total remittance was US\$ 3,848.29 million in 2004-05 which increased to US\$ 12,842.76 million in 2011-12. The country wise remittance contained in the following table shows that some IORA countries like UAE, Oman, Malaysia and Singapore are important destinations for human resources of Bangladesh. So, obviously it has a positive impact whenever Bangladesh will sign an FTA with those countries. It is evident from the above discussion that Mauritius is not a significant destination of earning remittance for Bangladeshi workers.

**Table 18: Country wise remittance expatriate Bangladeshi**

(Figures in million US\$)

| Countries | 2006-07  | 2007-08  | 2008-09  | 2009-10  | 2010-11  | 2011-12  | 2012-13  |
|-----------|----------|----------|----------|----------|----------|----------|----------|
| KSA       | 1,734.70 | 2,324.20 | 2,859.10 | 3,427.10 | 3,290.00 | 3,686.89 | 3,834.02 |
| UAE       | 804.84   | 1,135.10 | 1,754.90 | 1,890.30 | 2,002.60 | 2,406.84 | 2,831.22 |
| USA       | 930.33   | 1,380.10 | 1,575.20 | 1,451.90 | 1,848.50 | 1,495.44 | 1,858.46 |
| Kuwait    | 680.70   | 863.70   | 970.80   | 1,019.20 | 1,075.80 | 1,186.55 | 1,187.01 |
| Malaysia  | 11.84    | 92.40    | 282.20   | 587.10   | 703.70   | 848.59   | 996.77   |
| UK        | 886.90   | 896.10   | 789.70   | 827.50   | 889.60   | 987.33   | 993.90   |

|           |          |          |          |           |           |           |           |
|-----------|----------|----------|----------|-----------|-----------|-----------|-----------|
| Oman      | 196.47   | 220.60   | 290.10   | 349.10    | 334.30    | 401.27    | 609.95    |
| Singapore | 80.24    | 130.10   | 165.10   | 193.50    | 202.30    | 313.71    | 498.36    |
| Bahrain   | 79.96    | 138.20   | 157.40   | 170.10    | 185.90    | 299.81    | 361.60    |
| Qatar     | 233.17   | 289.80   | 343.40   | 360.90    | 319.40    | 335.21    | 287.49    |
| Others    | 339.32   | 444.50   | 501.30   | 710.70    | 798.20    | 881.12    | 1,009.65  |
| Total     | 5,978.47 | 7,914.80 | 9,689.20 | 10,987.40 | 11,650.30 | 12,842.76 | 14,468.43 |

Source: Monthly Economic Trends, Bangladesh Bank, Bangladesh Economic Review 2012

### 3.6 Foreign Direct Investment Inflow of Bangladesh

3.6.1 Foreign direct investment (FDI) has played a key role in the modernization of the Bangladesh economy for the last 15 years. As a least developed country, it needs FDI for its ongoing development process. Since independence, Bangladesh has been trying to be a suitable location for FDI. For this purpose, Bangladesh has gradually liberalized the investment policy and set up special zones and introduced lucrative incentive packages to attract FDI. Despite these initiatives, FDI inflow in Bangladesh has not yet been reached at optimum level because of some crucial challenges, such as political unrest, weak institutional factors, lack of government initiatives, infrastructural deficiencies and unfriendly economic environment. Hundred percent (100%) FDI inflow registered in the Board of Investment (BOI) during 1977-2010 shows that the most FDI has been coming from the UAE, KSA, UK, USA, the Netherlands, Egypt, Malaysia, South Korea, India, China, Singapore, Thailand and Hong Kong (Table 18). Among these UAE, Malaysia, India, Singapore and Thailand are members of Indian Ocean Rim association (IORA) region. The other countries are Japan, Taiwan, Switzerland, Pakistan, Sri Lanka, Denmark, Finland, etc where Sri Lanka is a member of IORA. On the other hand, in terms of employment opportunities, the most important investor countries in Bangladesh are South Korea, UK, Hong Kong, Taiwan, China, USA and Japan including two IORA member countries such as India and UAE. The country wise joint venture investment shows that the most investment has been coming from KSA, Norway, USA, UK, Japan, Hong Kong, the Netherlands, France, South Korea, Germany, Italy, Canada and four IORA countries like UAE, Malaysia, Singapore and Thailand. The most employment generation has been made by the joint venture of UK, China, Japan, South Korea, Hong Kong, USA, Germany, the Netherlands and three IORA countries: India, Malaysia and Singapore. Therefore it is observed from the following table that some of the IORA countries have been investing in Bangladesh where Mauritius's investment is quietly absent in Bangladesh. In this situation, it seems better for Bangladesh to proceed towards forming PTA with IORA countries rather than only with Mauritius which has a possibility of increasing FDI inflows from these countries.

**Table 19: The major investing countries in Bangladesh (1977-2010)**

| SL | Country               | No of units | Investment in (USD million) | Employment opportunities (in person) |
|----|-----------------------|-------------|-----------------------------|--------------------------------------|
| 01 | UAE                   | 6           | 2,229.898                   | 6,513                                |
| 02 | KSA                   | 4           | 1,850.406                   | 2,154                                |
| 03 | UK                    | 45          | 952.035                     | 26,194                               |
| 04 | USA                   | 23          | 735.376                     | 3,881                                |
| 05 | The Netherlands       | 7           | 351.197                     | 595                                  |
| 06 | Egypt                 | 2           | 177.149                     | 243                                  |
| 07 | Malaysia              | 7           | 162.006                     | 833                                  |
| 08 | South Korea           | 88          | 123.708                     | 46,089                               |
| 09 | India                 | 43          | 93.803                      | 7,982                                |
| 10 | China                 | 54          | 55.622                      | 7,071                                |
| 11 | Singapore             | 9           | 51.636                      | 1,842                                |
| 12 | Thailand              | 8           | 48.418                      | 804                                  |
| 13 | Hong Kong, SAR, China | 18          | 45.121                      | 11,147                               |

Source: Board of Investment, Bangladesh

## 4. Bilateral Relation between Bangladesh and Mauritius

### 4.1 Trade of Bangladesh with Mauritius

4.1.1 The following table regarding bilateral trade between Bangladesh and Mauritius shows that Bangladesh has an upward trend in export to Mauritius during 2006-2012 but not in very significant amount. There is insignificant import from this country during the same period (less than million US\$).

**Table 20: Bangladesh's bilateral trade (USD Million)**

|                | 2006-07 | 2007-08 | 2008-09 | 2009-10 | 2010-11 | 2011-12 | 2012-13 | 2013-14 |
|----------------|---------|---------|---------|---------|---------|---------|---------|---------|
| <b>Export</b>  | 0.23    | 0.98    | 0.90    | 1.04    | 2.57    | 3.12    | 3.73    | 4.75    |
| <b>Import*</b> | NA      | NA      | NA      | NA      | NA      | NA      | NA      | NA      |

**Source:** BTC's own calculation from Bangladesh Bank and EPB Data

\*Note: Import figure is not available in Bangladesh Bank database

4.1.2 The following table regarding Mauritius's export to Bangladesh shows that there is an upward trend of export during the period of 2008-2012, except in 2010. In 2012, Mauritius's export to Bangladesh has tremendously increased such as from USD 2.29 million to US\$ 4.85 million that means more than double.

**Table 21: Mauritius's export to Bangladesh**  
(USD million)

| Year | Export to Bangladesh |
|------|----------------------|
| 2008 | 1.75                 |
| 2009 | 2.15                 |
| 2010 | 0.61                 |
| 2011 | 2.29                 |
| 2012 | 4.85                 |

Source: UNCTAD Statistics

### 4.2 Export potential items of BD to Mauritius

4.2.1 In order to examine the export potential of Bangladesh to Mauritius, the Commission has analyzed global export of Bangladesh and global import of Mauritius (2013) as a group and identified 750 export potential items (at 6 digit level) which export value is greater than USD 100 thousand. Subsequently, the Commission has identified 69 major items (at 6 digit level) in which Bangladesh has significant export potential (e.g. US\$ 50,000 or more) keeping in view the local market demand of Mauritius (US\$ 50,000 or more) of the same products. Among these the principal items are under chapters 61, 62, 63, 53, 03, 64, 41, 65, 08, 27, 24, 69, 74 and 87. However, finally the Commission has identified 28 most potential export products to Mauritius which are shown below:

**Table 22: Top 28 export potential items** (Values in USD million)

| SL | HS     | Product label  | BD Export to World |
|----|--------|--|--------------------|
| 1  | 620342 | Mens/boys trousers and shorts, of cotton, not knitted        | 4,568.15           |
| 2  | 610910 | T-shirts, singlets and other vests, of cotton, knitted       | 4,252.645          |
| 3  | 620462 | Womens/girls trousers and shorts, of cotton, not knitted     | 2,519.402          |
| 4  | 611020 | Pullovers, cardigans and similar articles of cotton, knitted | 2,155.283          |

|    |        |  |           |
|----|--------|--|-----------|
| 5  | 620520 | Mens/boys shirts, of cotton, not knitted   | 1,826.771 |
| 6  | 611030 | Pullovers, cardigans and similar articles of man-made fibres, knitted                      | 1,607.465 |
| 7  | 610510 | Mens/boys shirts, of cotton, knitted   | 764.715   |
| 8  | 610462 | Womens/girls trousers and shorts, of cotton, knitted                                       | 617.643   |
| 9  | 611120 | Babies garments and clothing accessories of cotton, knitted                                | 517.3     |
| 10 | 030617 | Other frozen shrimps and prawns  | 516.682   |
| 11 | 620630 | Womens/girls blouses and shirts, of cotton, not knitted                                    | 406.947   |
| 12 | 610990 | T-shirts, singlets and other vests, of other textile materials, knitted                    | 388.595   |
| 13 | 620920 | Babies garments and clothing accessories of cotton, not knitted                            | 368.368   |
| 14 | 620343 | Mens/boys trousers and shorts, of synthetic fibres, not knitted                            | 335.554   |
| 15 | 610610 | Womens/girls blouses and shirts, of cotton, knitted  | 290.384   |
| 16 | 620530 | Mens/boys shirts, of man-made fibres, not knitted  | 288.813   |
| 17 | 620193 | Mens/boys anoraks and similar articles, of man-made fibres, not knitted                    | 283.115   |
| 18 | 610711 | Mens/boys underpants and briefs, of cotton, knitted  | 257.296   |
| 19 | 530710 | Yarn of jute or of other textile bast fibres, single                                       | 243.431   |
| 20 | 610821 | Womens/girls briefs and panties, of cotton, knitted  | 232.009   |
| 21 | 621210 | Brassieres and parts thereof, of textile materials   | 231.305   |
| 22 | 630221 | Bed linen, of cotton, printed, not knitted   | 199.541   |
| 23 | 640399 | Footwear, outer soles of rubber/plastics uppers of leather, nes                            | 193.016   |
| 24 | 610831 | Womens/girls nightdresses and pyjamas, of cotton, knitted                                  | 172.106   |
| 25 | 650500 | Hats and other headgear, knitted or crocheted, or made up from lace, felt or other textile | 169.275   |
| 26 | 610342 | Mens/boys trousers and shorts, of cotton, knitted  | 166.753   |
| 27 | 621040 | Mens/boys garments nes, made up of impreg, ctd, cov, etc, textile woven fab                | 164.002   |
| 28 | 620293 | Womens/girls anoraks & similar article of man-made fibres, not knitted                     | 163.233   |

Source: ITC Trade map

### 4.3 Inward FDI flows in Bangladesh and Mauritius

4.3.1 Following table shows the inward FDI flows in Bangladesh and Mauritius during 2002-2013. It is noticeable that Inward FDI flows in Bangladesh and Mauritius has been increased rapidly during 2002-2013 although there is a declining trend in case of Mauritius in 2013.

**Table 23: Inward FDI flows in Bangladesh and Mauritius**

(US Dollars at current prices and current exchange rates in millions)

| Years            | 2002   | 2003   | 2004   | 2005   | 2006   | 2007   | 2008     | 2009   | 2010   | 2011     | 2012     | 2013    |
|------------------|--------|--------|--------|--------|--------|--------|----------|--------|--------|----------|----------|---------|
| <b>Economies</b> |        |        |        |        |        |        |          |        |        |          |          |         |
| Bangladesh       | 335.50 | 350.25 | 460.40 | 845.26 | 792.48 | 666.36 | 1,086.31 | 700.16 | 913.30 | 1,136.40 | 1,293.00 | 1599.00 |
| Mauritius        | 32.11  | 62.08  | 11.16  | 41.56  | 105.30 | 339.05 | 382.91   | 247.84 | 429.96 | 433.00   | 589.00   | 259.00  |

Source: UNCTAD Statistics

### 4.4 Outward FDI flows from Bangladesh and Mauritius

4.4.1 Following table shows the outward FDI flows from Bangladesh and Mauritius annually from 2002 to 2011. Significant outward FDI flows in Bangladesh have been observed in 2007, 2009, 2012 and 2013 but in some years it decreases sharply. In case of Mauritius, the value is much higher than that of Bangladesh in most of the years.

**Table 24: Outward FDI flows from Bangladesh and Mauritius (annual, 2002-2013)**

(US Dollars at current prices and current exchange rates in millions)

| Year             | 2002 | 2003   | 2004  | 2005  | 2006  | 2007  | 2008  | 2009  | 2010   | 2011   | 2012   | 2013   |
|------------------|------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| <b>Economies</b> |      |        |       |       |       |       |       |       |        |        |        |        |
| Bangladesh       | 4.10 | 6.20   | 5.70  | 3.30  | 3.60  | 21.00 | 9.30  | 29.30 | 15.40  | 13.04  | 52.78  | 32.27  |
| Mauritius        | 8.58 | (5.48) | 31.67 | 47.53 | 10.16 | 58.03 | 52.16 | 37.45 | 128.70 | 157.81 | 180.37 | 134.59 |

Source: UNCTAD Statistics

### 4.5 RTAs Involved with Bangladesh and Mauritius

4.5.1 Regional trade agreements (RTAs) have become increasingly increased since the early 1990s. As of 10 January 2013, some 546 notifications of RTAs (counting goods and services and accessions separately) had been received by the GATT/WTO.

4.5.2 Bangladesh is a party to a number of bilateral and regional trade agreements. Bangladesh has bilateral trade agreements with 44 countries, all of which are general in nature of good will trade agreement aimed at promoting bilateral diplomatic relation except PTA between Bangladesh and Iran. Bangladesh has signed bilateral agreements on promotion and protection of foreign investment with 29 countries. Bilateral agreements on avoidance of double taxation with 27 countries are currently in force. There are agreements on joint economic cooperation in place with 18 countries, which aims to expand economic cooperation between the countries.

4.5.3 Bangladesh is a party of SAARC Preferential Trade Arrangement (SAPTA), Asia Pacific Trade Agreement (APTA), South Asian Free Trade Area (SAFTA), Bay of Bengal Initiatives for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), Trade Preferential System among the OIC Countries (TPS-OIC) and Preferential Trade Agreement among Developing Eight Countries (D-8). Bangladesh is also a member of Global System of Trade Preference (GSTP). BIMSTEC is yet to be effective and D-8 has come into force but its tariff preference is not applicable for Bangladesh. Because Bangladesh has not yet ratified this PTA due to divergent views of value addition criteria stipulated in the Agreement of Rules of Origin.

4.5.4 Mauritius is keen to accelerate economic integration to reduce dependency on the troubled euro area. A comprehensive strategy on Africa has been announced under which the authorities have mobilized five like-minded countries within the Southern African Development Community (SADC) to co-operate on business and trade policy reforms. In 2012, they signed Double Taxation Avoidance Agreements (DTAA) with Nigeria, Kenya and Republic of Congo, and are currently renegotiating their DTAA with India. They are party to the Tri-partite Free Trade Area negotiations under the SADC, the Common Market for Eastern and Southern Africa (COMESA) and the East African Community (EAC). They continue to negotiate favourable access for their exports to the European Union through the Economic Partnership Agreement (EPA) and to the US through the African Growth and Opportunity Act. The World Bank Report *Doing Business 2013* ranks Mauritius at 15 among 185 economies, while the World Economic Forum *Global Competitiveness Report 2012-2013* ranks Mauritius at 27 out of 144 economies on “trading across borders” and on “prevalence of trade barriers” respectively. It is ranked first in Africa on both indicators.

4.5.5 The RTAs with Bangladesh and Mauritius are in operation or under negotiations have been notified to the WTO can be seen in the table captioned below. The most noticeable thing is that there is no overlapping in membership among various RTAs between Bangladesh and Mauritius.

**Table 25: List of RTAs Involved with Bangladesh and Mauritius**

| Country    | List of notified RTAs in force  | List of RTAs yet to be effective   |
|------------|---|--|
| Bangladesh | Asia-Pacific Trade Agreement (APTA)<br>SAARC Preferential Trade Arrangement (SAPTA)<br>South Asian Free Trade Agreement (SAFTA) | Bay of Bengal Initiative on Multi-Sectoral Technical and Economic Cooperation (BIMSTEC)<br><br>Though Preferential Trade Agreement among D-8 Member States (D-8) has come into force but it is |

| Country   | List of notified RTAs in force                                       | List of RTAs yet to be effective   |
|-----------|--|--|
|           | Trade Preferential System among OIC Countries (TPS-OIC)              | not applicable for Bangladesh because it has not yet ratified the Agreement. |
|           | Global System of Trade Preferences among Developing Countries (GSTP) |  |
| Mauritius | Common Market for Eastern and Southern Africa (COMESA)               |  |
|           | EU - Eastern and Southern Africa States Interim EPA                  |  |
|           | Southern African Development Community (SADC)                        |  |
|           | Turkey – Mauritius   |  |

Source: <http://rtais.wto.org/UI/PublicSearchByMemberResult.aspx?MemberCode=480&lang=1&redirect=1>

## 5. Examination of Trade Indicators

### 5.1 Examination of the Finger Kreinin Index (FKI)

5.1.1 The Finger Kreinin Index (FKI) reveals the degree of similarity between the structure of exports or production between two countries (say country  $i_1$  and  $i_2$ ). Then FKI by export of two countries to destination  $j$  is expressed as

$$FKI_{i_1 i_2 j} = \sum_k \min \left[ \left( \frac{X_{i_1 j}}{X_{i_1 j}} \right), \left( \frac{X_{i_2 j}}{X_{i_2 j}} \right) \right]$$

If  $FKI=0$ , two structures are completely different, that is the products exported by country  $i_1$  are not exported by country  $i_2$  to the market of  $j$ . If  $FKI=1$ , exports of two countries are fully identical. If exports of two countries are very similar, FTA may lead to trade creation since both countries can choose to import from more efficient supplier. FKI has been estimated at both 2 digit and 6 digit level which shows how similar are the export products of Bangladesh and Mauritius which resulted as follows:

**Table 26: FKI 2-digits**

| Reporter1  | Reporter2 | Partner | 2008 | 2009 | 2010 | 2011 | 2012 |
|------------|-----------|---------|------|------|------|------|------|
| Bangladesh | Mauritius | World   | 0.41 | 0.48 | 0.44 | 0.48 | 0.46 |

Source: BTC's own calculation using Trade Sift

**Table 27: FKI 6-digits**

| Reporter1  | Reporter2 | Partner | 2008 | 2009 | 2010 | 2011 | 2012 |
|------------|-----------|---------|------|------|------|------|------|
| Bangladesh | Mauritius | World   | 0.33 | 0.36 | 0.34 | 0.37 | 0.34 |

Source: BTC's own calculation using Trade Sift

5.1.2 Though two tables captioned above show that similarity at 2-digits level is slightly higher than that of at 6 digit level there are almost similar degrees of similarities between the two tables in the products exported from Bangladesh and Mauritius to the world market during 2008-2012. That means the similarity in exports of the two countries remains the same and the possibility of inter-industry trade are also the same. In this regard, it can be argued that an FTA is expected to have less impact as the possibility of intra-industry trade is less.

### 5.2 Examination of the Intra Industry Trade (IIT)

5.2.1 Intra Industry trade (IIT) is defined as simultaneous import and export of goods of same kind and can be measured in different ways. The standard measure is the Grubel Lloyd (GL) index introduced by



Grubel Lloyd (GL) in 1975. It measures the overlap of exports and imports at a given aggregate level (i.e., it can be calculated for total trade, HS 2 digit or HS 4 digit or HS 6 digit level and each type of calculation has different interpretation). The product wise GL index is measured by the following formula:

$$GL_{ij}^k = 1 - \left( \frac{|x_{ij}^k - m_{ij}^k|}{X_{ij}^k + M_{ij}^k} \right)$$

where  $x_{ij}^k$  means export of product k from country i to country j and  $m_{ij}^k$  means import of product

k from country i to country j. IIT lies between 0 and 1. Higher IIT for any industry or product means higher degree of overlap between exports and imports of one country with the other country for that industry or product. GL can also be expressed as a summary measure by taking simple average of IITs achieved by the above formula or it can be expressed by weighted average where GL of each product is weighted by shares of each good in total export and import as shown in the following formula:

$$GL_{ij} = \sum_k GL_{ij}^k \left( \frac{x_{ij}^k + m_{ij}^k}{X_{ij}^k + M_{ij}^k} \right) = 1 - \frac{\sum_k |x_{ij}^k - m_{ij}^k|}{X_{ij}^k + M_{ij}^k}$$

Tables 28 and 29 show top IIT industries of Bangladesh with Mauritius measured at HS 2 and HS 6 digit level respectively with a view to observe the level of vertical specialization<sup>xix</sup> at industry level. It is observed that lesser intra-industry trade was achieved during 2008-2012. So, there is less scope for Bangladesh to achieve vertical specialization.

**Table 28: IIT 2-digits**

| Partner    | IIT Simple Average |      |      |      |      | IIT Weighted Average |      |      |      |      |
|------------|--------------------|------|------|------|------|----------------------|------|------|------|------|
|            | 2008               | 2009 | 2010 | 2011 | 2012 | 2008                 | 2009 | 2010 | 2011 | 2012 |
| Bangladesh | 0.10               | 0.02 | 0.08 | 0.07 | 0.07 | 0.02                 | 0.01 | 0.04 | 0.01 | 0.11 |

Source: BTC's own calculation using Trade Sift

**Table 29: IIT 6-digits**

| Partner    | IIT Simple Average |      |      |      |      | IIT Weighted Average |      |      |      |      |
|------------|--------------------|------|------|------|------|----------------------|------|------|------|------|
|            | 2008               | 2009 | 2010 | 2011 | 2012 | 2008                 | 2009 | 2010 | 2011 | 2012 |
| Bangladesh | 0.00               | 0.01 | 0.02 | 0.01 | 0.01 | 0.00                 | 0.00 | 0.02 | 0.00 | 0.00 |

Source: BTC's own calculation using Trade Sift

### 5.3 Examination of the Trade Concentration Index (TCI)

5.3.1 TCI measures the degree of concentration a given country exports in terms of products being exported or imported. It is calculated using the following formulae:

$$TCI \text{ by Product}_{ij} = \sum_k \left( \frac{x_{ij}^k}{X_{ij}} \right)^2$$

A TCI of 1 implies full concentration of trading structures in one sector. As the measure approaches zero, trade is said to be less concentrated (or diversified).

TCI of Bangladesh and Mauritius exports to world (HS 2 and HS 6 digit Level) is shown in tables 30 and 31. The table 30 (2 digit level TCI) shows that export of Mauritius is lesser concentrated in the world market than that of Bangladesh. That means export of Mauritius is much more diversified in the world market than that of Bangladesh. On the other hand, the table 31 (6 digit level TCI) shows that export concentration of Mauritius is almost similar to that of Bangladesh.

**Table 30: TCI HS 2-digits**

| Reporter   | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|------------|------|------|------|------|------|------|
| Bangladesh | 0.35 | 0.35 | 0.35 | 0.34 | 0.34 | 0.35 |
| Mauritius  | -    | 0.11 | 0.13 | 0.15 | 0.16 | 0.16 |

Source: BTC's own calculation using Trade Sift

**Table 31: TCI HS-6**

| Reporter   | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|------------|------|------|------|------|------|------|
| Bangladesh | 0.06 | 0.07 | 0.07 | 0.06 | 0.06 | 0.06 |
| Mauritius  | -    | 0.07 | 0.06 | 0.08 | 0.07 | 0.07 |

Source: BTC's own calculation using TradeSift

## 5.4 Examination of Revealed Comparative Advantage

5.4.1 The calculation of revealed comparative advantage (RCA) measures how much a country is exporting a given goods relative to its total trade, in comparison to the share of that good in world trade. A country is said to have "Revealed Comparative Advantage" in a good when the share of that good in its export is bigger than the share of that good in world exports.

5.4.2 RCA greater than 1 implies that the given country has a comparative advantage in that sector in a sense that compared with the world as a whole; this sector has a large share of the country's export. One difficulty with RCA measure as detailed above is that the upper bound is stable across countries but varies across sectors and years. This makes the index very suitable for cross country comparisons but it is difficult to make sectoral comparisons and year wise comparisons. An alternative version of the index is often used therefore is Normalized RCA or NRCA =  $(RCA-1) / (RCA+1)$ .

5.4.3 This index ranges from -1 to 1 where an index of less than 0 implies that the product has comparative disadvantage and an index of greater than 0 implies that the product has comparative advantage. The essence of normalization is that the normalized RCA is suitable for cross country, cross sectors and cross time comparisons.

5.4.4 The following table shows Bangladesh's top 10 RCA products at 2-digit level. Top 10 RCA products are under chapters: 53, 62, 61, 65, 63, 41, 03, 64, 46, and 67.

**Table 32: Bangladesh top 10 RCA at 2-digits level**

| Product | Product Name  | 2008 | 2010 | 2012 |
|---------|---|------|------|------|
| 53      | Other vegetable textile fibres; paper yarn and wov... | 0.99 | 0.99 | 0.98 |
| 62      | Articles of apparel and clothing accessories, not ... | 0.94 | 0.94 | 0.95 |
| 61      | Articles of apparel and clothing accessories, knit... | 0.95 | 0.95 | 0.95 |
| 65      | Headgear and parts thereof                            | 0.90 | 0.87 | 0.88 |
| 63      | Other made up textile articles; sets; worn clothin... | 0.85 | 0.84 | 0.84 |
| 41      | Raw hides and skins(other than furskins) and leath... | 0.80 | 0.72 | 0.70 |
| 03      | Fish and crustaceans, molluscs and other aquatic ...  | 0.74 | 0.66 | 0.60 |

|    |   |       |       |      |
|----|---|-------|-------|------|
| 64 | Footwear, gaiters and the like; parts of such arti... | 0.35  | 0.36  | 0.38 |
| 46 | Manufactures of straw, of esparto or of other plai... | 0.04  | 0.09  | 0.14 |
| 67 | Prepared feathers and down and articles made of fe... | -0.73 | -0.53 | 0.14 |

Source: BTC's own calculation using Trade Sift

5.4.5 The following table shows Mauritius's top 10 RCA products at 2-digit level. Top 10 RCA products include chapters: 16, 17, 61, 62, 51, 60, 01, 11, 91 and 52.

**Table 33: Mauritius top 10 RCA at 2-digit level**

| Products | Product Name  | 2008 | 2010 | 2012 |
|----------|---|------|------|------|
| 16       | Preparations of meat, of fish or of crustaceans, m... | 0.94 | 0.97 | 0.97 |
| 17       | Sugars and sugar confectionery                        | 0.97 | 0.97 | 0.96 |
| 61       | Articles of apparel and clothing accessories, knit... | 0.91 | 0.91 | 0.92 |
| 62       | Articles of apparel and clothing accessories, not ... | 0.83 | 0.88 | 0.89 |
| 51       | Wool, fine or coarse animal hair; horsehair yarn a... | 0.79 | 0.81 | 0.82 |
| 60       | Knitted or crocheted fabrics                          | 0.57 | 0.72 | 0.78 |
| 01       | Live animals; animal products                         | 0.85 | 0.87 | 0.78 |
| 11       | Products of the milling industry; malt; starches; ... | 0.38 | 0.65 | 0.68 |
| 91       | Clocks and watches and parts thereof                  | 0.63 | 0.57 | 0.61 |
| 52       | Cotton  | 0.67 | 0.62 | 0.57 |

Source: BTC's own calculation using Trade Sift

5.4.6 The following table shows Bangladesh's top 10 RCA products at 6-digit level. Top 10 RCA products include chapters: 53, 62 and 63; most of which are jute and jute products.

**Table 34: Top 10 RCA products of Bangladesh at 6-digits level**

|        |   |      |      |      |
|--------|---|------|------|------|
| 530710 | Yarn of jute/of other textile bast fibres of 53.03... | 1.00 | 1.00 | 1.00 |
| 530310 | Jute & other textile bast fibres, raw/retted          | 1.00 | 1.00 | 1.00 |
| 530720 | Yarn of jute/of other textile bast fibres of 53.03... | 1.00 | 1.00 | 1.00 |
| 630510 | Sacks & bags, of a kind used for the packing of go... | 1.00 | 1.00 | 1.00 |
| 530390 | Jute & other textile bast fibres (excl. flax, true... | 1.00 | 1.00 | 0.99 |
| 531090 | Woven fabrics of jute/other textile bast fibres of... | 0.98 | 0.98 | 0.99 |
| 531010 | Woven fabrics of jute/other textile bast fibres of... | 1.00 | 0.99 | 0.99 |
| 621111 | Swimwear (excl. knitted/crocheted), men's/boys'       | 0.99 | 0.99 | 0.99 |
| 620920 | Babies' garments & clothing accessories (excl. kni... | 0.98 | 0.98 | 0.99 |
| 620530 | Men's/boys' shirts (excl. knitted/crocheted), of m... | 0.99 | 0.98 | 0.99 |

Source: BTC's own calculation using Trade Sift

5.4.7 The following table shows Mauritius's top 10 RCA products at 6-digit level. Top 10 RCA products include chapters: 01, 53, 60, 16, 91, 55, 51 and 61.

**Table 35: Top 10 RCA product of Mauritius at 6-digits level**

| Product | Product Name  | 2008 | 2010 | 2012 |
|---------|---|------|------|------|
| 010611  | Live primates   | 1.00 | 1.00 | 1.00 |
| 530290  | True hemp (Cannabis sativa L.), processed but not ... | 0.98 | 0.99 | 1.00 |
| 600390  | Knitted/crocheted fabrics other than of wool/fine ... | 1.00 | 0.93 | 1.00 |
| 600320  | Knitted/crocheted fabrics of cotton, a width not >... | 0.16 | 0.98 | 1.00 |
| 160414  | Tunas, skipjack & bonito (Sarda spp.), prepared/pr... | 0.99 | 1.00 | 1.00 |
| 600121  | Looped pile fabrics, of cotton, knitted/crocheted     | 0.99 | 0.99 | 1.00 |
| 911430  | Dials for clocks/watches                              | 1.00 | 1.00 | 1.00 |
| 550520  | Waste (incl. noils, yarn waste & garnetted stock) ... | 0.62 | 1.00 | 0.99 |
| 510610  | Yarn of carded wool, not put up for retail sale, c... | 0.99 | 0.99 | 0.99 |
| 610899  | Women's/girls' n?glig's, bathrobes, dressing gowns... | 0.93 | 0.96 | 0.99 |

Source: BTC's calculation using Trade Sift

5.4.8 It is observed from the tables 30 and 31 (2 digit level RCAs) that there is an immense similarity between Bangladesh and Mauritius's RCAs that both countries have strong RCAs in chapters 61 and 62 which are almost at same level. On the other hand, the tables 32 and 33 (6 digit level RCAs) shows a single similarity between Bangladesh and Mauritius's RCAs that is only chapter 53.

5.4.9 The above analysis reveals the fact that Bangladesh has comparative advantages only on a very few products at 6-digit level such as chapters 53, 63 and 62 which indicates that Bangladeshi export market is less diversified and more concentrated. On the other hand, Mauritius has comparative advantages on a

number of products at 6-digit level (chapters 01, 53, 60, 16, 91, 55, 51 and 61) which indicates that export market of Mauritius is more diversified and less concentrated than that of Bangladesh.

## **6. KEY FINDINGS OF THE STUDY**

### **6.1 Realities**

6.1.1 Sussex framework suggests that the higher the percentage of trade with potential partners the more likely the RTA is to be welfare enhancing. If the countries are already trading substantially with each other, tariff preference might lead to a rise in the trade flows and to welfare gains linked to reduction of import prices and to more efficient patterns of production. Trade scenario of IORA member countries suggests that there is an immense potential in trade and investment. Unique and lucrative business opportunities are available in various sectors in the region, e.g. tourism, agro and agro processing, food products, construction, energy and mining, fisheries, textile and clothing, IT, plastic etc. Therefore there is a great possibility of increasing intra-IORA trade and investment through an effective RTA rather than forming bilateral FTA between Bangladesh and Mauritius.

6.1.2 Mauritius is a small but globally competitive economy and moving speedily to a Duty Free Island.

6.1.3 Among the major sources of imports of Bangladesh, about more than 20% of its imports come from IORA countries of which Mauritius's portion is very insignificant.

### **6.2 Problems**

6.2.1 Mauritius is a very small country with very small population, economy and trade that is why their absorbing trade capacity is very limited which indicates a tiny possibility of increasing bilateral trade through forming FTA.

6.2.2 There is a modest similarity in export structures between the two countries; especially in the most export potential products of Bangladesh under chapters 53, 62 and 63. On contrast, there is also a modest similarity between import structures of Bangladesh and Mauritius which include textile, capital equipments, mineral products, chemical, petroleum oil etc. Therefore there is no significant possibility of increasing trade between the two countries through forming FTA.

6.2.3 IITs and RCAs indicate that there is a small possibility of specialization through forming FTA between the two countries.

6.2.4 There is a possibility of losing certain amount of revenue from Mauritius for cutting tariffs under the bilateral FTA at the same time it would be less welfare enhancing.

6.2.5 Import of some exportable products from Bangladesh such as potatoes, drugs, cut flowers, table salt, pharmaceuticals, black tea, meat, fish & sea products and vegetables are subject to some NTBs which may act as a prime hindrance for export from Bangladesh to Mauritius. Formation of FTA may endeavor to reduce/eliminate these barriers.

6.2.6 Since Bangladesh along with other countries have been enjoying duty free access in almost all products (except some banned and restricted items) in Mauritius (especially Bangladesh enjoys duty free

on 100% of fish and fish products, 94.3% on textile, 50.6% of clothing and 79% of leather, footwear etc); there is limited scope of obtaining further benefit from Mauritius by forming FTA.

6.2.7 As Mauritius has a strong textile sector and has been well poised to take advantage of the Africa Growth and Opportunity Act (AGOA), hence Bangladesh might face competition in this sector through this FTA.

6.2.8 In terms of geographical proximity, Mauritius is neither adjacent and nor has easy transport connectivity with Bangladesh. There is less trade potential via sea and air routes that is why there is small possibility of securing benefit from forming FTA.

### **6.3 Prospects**

6.3.1 There is a good demand of some products in the market of Mauritius of which Bangladesh has strong supply capacity such as frozen fishes, pharmaceuticals, woven garments, knitwear, furniture, paper & paperboard and articles thereof, vegetable products, plastic products, etc

6.3.2 Though Mauritius is a small but a strong economy with continuous economic growth which might gradually intensify its trade capacity.

6.3.3 Bangladesh's competitors like India and Pakistan are enjoying duty free accesses or substantial tariff preference on their many products in Mauritius. So, bilateral FTA with Mauritius may intensify competitiveness of the Bangladeshi products in the market of Mauritius.

6.3.4 Though Mauritius's average tariffs on agro and non-agro products are very lower such as 1.00% and 1.4% respectively but import of clothing in Mauritius is subject to average 5.7% customs tariff of which maximum tariff rate ranges to highest at 110% and import of leather, footwear etc is subject to average 5.9% customs tariff where maximum tariff rate ranges to 105% which indicates that forming a bilateral FTA may bring some export potential in these products.

6.3.5 There is no common RTA in which both Bangladesh and Mauritius are members that means there is a possibility to create trade diversion by forming a bilateral FTA.

6.3.6 At present, Bangladesh is not a significant trading partner of Mauritius. So, formation of FTA may bring new possibility to increase bilateral trade between the two countries.

6.3.7 Bangladesh has immense agricultural resources which may be explored through drawing investment from Mauritius under this FTA. It may result in improving the agricultural sector of Bangladesh through skill development, job creation, supply of quality inputs like seed, better supply chain management, biotechnology and hence, enhance farm productivity in this country.

6.3.8 Gradual removing of impediments to trade and trade and economic cooperation over time under the FTA may enhance economic progress of Bangladesh and Mauritius.

6.3.9 As growth of Mauritius was anchored by strong performances in the Information and Communications Technology (ICT) sectors, so there is a possibility of creating opportunity of exchange of technology under the FTA.

## **7. CONCLUSIONS AND RECOMMENDATIONS**

7.1 This paper has made meticulous analyses on the possibility of forming FTA between Bangladesh and Mauritius focusing all issues related to economy, trade and investment and its possible impact on the economies. It is anticipated that implementation of this FTA may bring a small outcome in trade. In fact, since the economy of Mauritius is very small so their trade absorbing capacity is very limited. On contrast, India and Pakistan are enjoying duty free accesses or substantial tariff preference on their many products that is why Bangladesh currently has to face stiff competition with them. Therefore establishment of FTA between Bangladesh and Mauritius might enhance competitiveness of the products of Bangladesh and thus export may increase and diversify to Mauritius.

7.2 In this context, the Commission would like to recommend the following:

- a) Since starting of IORA PTA will take a very long time Bangladesh may proceed to form a FTA with Mauritius.
- b) Initially FTA may cover only trade in goods which may gradually extend to other areas subject to obtaining outcome to be derived from the FTA.
- c) Bangladesh and Mauritius together should encourage the IORA forum to expedite the implementation of IORA PTA.

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- <sup>xiii</sup> Group I consists of Djibouti, Egypt, Kenya, Madagascar, Malawi, Sudan, Zambia, and Zimbabwe.
- <sup>xiv</sup> Trade Policy Review of Mauritius 2014
- <sup>xv</sup> Trade Policy Review of Mauritius 2014
- <sup>xvi</sup> Bangladesh Economic Review 2014
- <sup>xvii</sup> Bangladesh Economic Review 2013
- <sup>xviii</sup> BTC's calculation based on NBR data
- <sup>xix</sup> Vertical specialization means splitting production process into several parts that can be done in different location including different countries.

# A brief overview on the Impact of Tourism at the Coastal Environment: the Global Perspective

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## ABSTRACT

It is often difficult to distinguish between tourism and recreation, as they are interrelated. Tourism implies traveling a distance from home, while recreation is defined as the activities undertaken during leisure time (McIntosh & Goeldner, 1990, p.10). Outdoor recreation is even more closely related to tourism. The overlap is partly dependent upon the length of time of the recreational activity. Therefore while tourism is the primary focus of discussion, selected recreational activities and their impacts are considered as well. This discussion paper presents environmental impacts of tourism especially tourism at the coastal areas through which the readers will be able to understand about the impacts of tourism & coastal tourism and this writing may provide some ideas towards the readers to rethink about the recent trend of tourism management and persuade them to think about new policies for tourism.

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**Key Words:** Tourism, Impact, Environment.

## 1. INTRODUCTION

For decades tourism industry growth has been a major contributor to increased economic activity throughout the world. It has created jobs in both large and small communities and is a major industry in many places. It is the dominant economic activity in some communities. Yet, the impacts of tourism to a community are not widely understood – even where tourism is growing dramatically and should be of the greatest interest or concern. Most people think of tourism in terms of economic impacts, jobs, and taxes. However, the range of impacts from tourism is broad and often influences areas beyond those commonly associated with tourism. Leaders as well as residents who understand the potential impacts of tourism can integrate this industry into their community in the most positive way. Tourism especially, marine and coastal tourism is one the fastest growing areas within the world's largest industry. Yet despite increased awareness of the economic and environmental significance of tourism, it is only in recent years, scientific researches have emerged (Hall, 2001).

## 2. REVIEW OF RELATED LITERATURE

### 2.1 Overview

The quality of the environment, both natural and man-made, is essential to tourism. However, the relationship of tourism with the environment is complex (Sunlu, U., 2003). It involves many activities that can have adverse environmental effects. Many of these impacts are linked with the construction of general infrastructure such as roads and airports, and of tourism facilities, including resorts, hotels, restaurants, shops, golf courses and marinas (Sunlu, U., 2003). The negative impacts of tourism development can gradually destroy environmental resources on which it depends (Sunlu U, 2003). On the other hand, tourism has the potential to create beneficial effects on the environment by contributing to environmental protection and conservation. It is a way to raise awareness of environmental values and it

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can serve as a tool to finance protection of natural areas and increase their economic importance (Sunlu, U., 2003).

Negative impacts from tourism occur when the level of visitor use is greater than the environment's ability to cope with this use within acceptable limits of change. Uncontrolled conventional tourism poses potential threats to many natural areas around the world (Sunlu U, 2003). It can put enormous pressure on an area and lead to impacts such as soil erosion, increased pollution, discharges into the sea, natural habitat loss, increased pressure on endangered species and heightened vulnerability to forest fires. It often puts a strain on water resources, and it can force local populations to compete for the use of critical resources.

## **2.2 Background of Tourism**

Tourism is often viewed as an expression of human behavior (Kim, 2002). Tourism is an invisible industry, encompassing transportation, lodging, and entertainment (Harrill and Potts, 2003). Tourism as the set of ideas, theories, or ideologies for being a tourist, and that it is the behavior of people in tourist roles, when these ideas are put into practice (Przeclawski, 1986). Once a community becomes a destination, the lives of residents in the community are affected by tourism, and the support of the residents is essential for the development, planning, successful operation and sustainability of tourism (Kim, 2002). Therefore, the quality of life of the residents should be a major concern for community leaders (Tamakloe, 2011).

Thus, tourism is a complex industry which provides employment opportunities and tax revenues and supports economic diversity (Tamakloe, 2011). It has very different impacts, both positive and negative, or even mixed ones and comes in many shapes and forms such as social, cultural, economic, and environmental (Godfrey & Clarke, 2000). Tourism has been a source of social-economic change in many developing countries (Tamakloe, 2011). Tourism is one of the world's fastest growing industries and one of the global engines of development (World Tourism Organization Network, 2012). As one of the largest industry in the world, tourism employs 192.3 million workers (World Tourism Organization Network, 2012). International tourism arrivals will grow by an estimated 4.3 percent per year and spending will grow by an estimated 6.7 percent per year, providing communities and tourism interests with both a problem of managing such growth and the possibility of sustainable economic development (Tamakloe, 2011).

Mobility, disposable income, communication technologies and more discretionary time have all contributed to the diversification of tourism (Wearing, 2001). In 2005, tourism generated around US\$ 735 billion which is most often attributed to mass tourism (World Tourism Organization Network, 2012).

Early planning of tourism focused on the economic benefits with little regard to the socio-cultural or environmental impacts (Tamakloe, 2011). During the 1960's and 70's the prevalent thinking was that tourism was a clean industry with no fumes or pollution and had an economic multiplier effect to drive high employment (Tamakloe, 2011). This attitude was soon challenged and the ideal of tourism for producing high foreign exchange earnings were negated by the tourism related jobs that were seasonal and low paying in nature among others (Tamakloe, 2011). This led to the 1990's where tourism policy makers and development agencies began to evaluate the economic, social, cultural, and political

sustainability of tourism (Tamakloe, 2011).

### 2.3 Tourism's General Impact

A goal of developing the tourism is maximizing the net benefit of tourism for the local people while minimizing potential negative impacts (Tamakloe, 2011). The impacts have been categorized into seven main areas as observed by Glenn (2001):

- Economic
- Environmental
- Social and cultural
- Crowding and congestion
- Services
- Taxes
- Community attitude

Each category includes positive and negative impacts but all impacts are not applicable for every community because conditions or resources differ (Tamakloe, 2011). Community and tourism administrators must balance an array of impacts that may either improve or negatively affect communities and their residents (Tamakloe, 2011). The planning and marketing of tourism have been primarily oriented towards the needs of the tourist, but this planning should include efforts to manage the welfare of the host population (Tamakloe, 2011). If unmanaged, these impacts can result in the disruption or destruction of local cultures and values and the deterioration of the social fabric of the host community (Kim, 2002).

Tourism's unplanned growth has damaged the natural and socio-cultural environments of many tourism destinations. These undesirable side-effects have led to the growing concern for the conservation and preservation of natural resources, human well-being and the long term economic viability of communities (Akis, Peristianis, & Warner, 1996; Butler & Boyd, 2000; Cater, 1993; Hall & McArthur, 1998; Haralambopoulos & Pizam, 1996; Healy, 1994; Mowforth & Munt, 1998; Place, 1995; Richard & Hall, 2000). Much of the recent literature on the development of world tourism has been concerned with the impact of tourists on the host community (Ahammed, 2010). As the countries have turned to tourism as the means of raising national income and as a means of ending dependency on a limited range of primary products for export (Ahammed, 2010). So the diverse pressures from tourism and its associated development have begun to affect the local population (Ahammed, 2010). The attitudes of residents towards the visitors and the tourism development are interrelated (Butler, 1980). As the number of tourists to a region increases, residents who at first were overwhelmingly positive in their attitudes to their guests develop increasing reservations concerning the long-term benefits of the visitors (Ahammed, 2010). This may be the original expectations of the benefits of tourism were unrealistic (and so are incapable of being fulfilled) or because the benefits are perceived to accrue only to a small number of people (Ahammed, 2010).

The negative impacts of tourism go beyond economic losses (Knollenberg et al, 2011). Although tourism has a bad negative impact upon the nature and environment but tourism is often encouraged by the locality just because of its economic benefit purpose (Liu et al 1987). The impacts tourism has on many environments including: natural resources, the natural environment, wildlife, and the built

environment (Swarbrooke 1999). Tourism may lead to increased levels of pollution, overuse of fresh water supplies and the loss of wildlife habitat due to development (Swarbrooke 1999). Tourism in coastal areas leads to negative environmental impacts such as erosion caused by the overuse of beaches and increased water pollution due to poor management of sewage (Hunter and Green, 1995). Cultural and social activities are another major attraction for tourists and may also become irreversibly damaged due to tourism (Hunter and Green, 1995). The intrusion of guests, along with their monetary power, transforms the host' native environment and culture into commodities (King and Stewart, 1996, p. 296). Tourism contains the seeds of its own destruction: tourism can kill tourism, destroying the very environmental attraction which visitors come to a location to experience (Glasson et al., 1995, p. 7).

The intensity of destination use and development can be related to Butler's destination life cycle (Butler, 1980). Destinations pass through the life cycle stages based on the volume and type of tourist it attracts (Butler, 1980). A small number of exploratory and adventurous travelers 'discover' the destination and are followed by mass tourism as the destination becomes more popular (Butler, 1980). Destination planners and tourism companies must supply the needed tourism development and infrastructure to accommodate increasing numbers of tourists (Butler, 1980). As tourist arrivals increase, the cumulative impact of tourists on the environment and demand for resources also increase (Christensen & Beckmann, 1998). The destination's absorptive capacity for tourists and tourist impacts is another important feature for determining tourism impacts (Cohen, 1978). Urban infrastructure can better receive and accommodate large numbers of visitors compared to natural areas; therefore, natural environments give way to development (Cronk, 1997). Residents' relationships with the local environment become decontextualized (Gössling, 2002). Residents in mass tourism destinations face congestion, noise, neighborhood and environmental dereliction, and higher prices resulting from competition with tourists for scarce resources consequently resulting in decreased community satisfaction (Cavus & Tanrisevdi, 2003).

## **2.4 Tourism's General Impact on Environment**

### **2.4.1 Depletion of Natural Resources**

Tourism development can put pressure on natural resources when it increases consumption in areas where resources are already scarce.

#### **2.4.1.1 Water Resources**

Water, and especially fresh water, is one of the most critical natural resources. The tourism industry generally overuses water resources for hotels, swimming pools, golf courses and personal use of water by tourists. This can result in water shortages and degradation of water supplies, as well as generating a greater volume of waste water. In dry and hot regions like the Mediterranean, the issue of water scarcity is of particular concern. Because of the hot climate and the tendency of tourists to consume more water when on holiday than they do at home, the amount used can run up to 440 liters a day. This is almost double what the inhabitants of an average Spanish city use (UNEP, 1999). Golf course maintenance can also deplete fresh water resources. In recent years golf tourism has increased in popularity and the number of golf courses has grown rapidly. Golf courses require an enormous amount of water every day and as with other causes of excessive extraction of water, this can result in water scarcity. If the water comes from wells, over-pumping can cause saline intrusion into groundwater. Golf

resorts are more and more often situated in or near protected areas or areas where resources are limited (Sunlu U, 2003).

#### **2.4.1.2 Local Resources**

Tourism can create great pressure on local resources like energy, food, and other raw materials that may already be in short supply. Greater extraction and transport of these resources exacerbates physical impacts associated with their exploitation. Because of the seasonal character of the industry, many destinations have ten times more inhabitants in the high season than in the low season (Sunlu U, 2003). High demand is placed upon these resources to meet the high expectations tourists often have (proper heating, hot water, etc.) (Sunlu, U., 2003).

#### **2.4.1.3 Land Degradation**

Important land resources include minerals, fossil fuels, fertile soil, forests, wetland and wildlife. Increased construction of tourism and recreational facilities has increased pressure on these resources and on scenic landscapes. Direct impact on natural resources, both renewable and non-renewable, in the provision of tourist facilities can be caused by the use of land for accommodation and other infrastructure provision, and the use of building materials. Forests often suffer negative impacts of tourism in the form of deforestation caused by fuel wood collection and land clearing. For example, one trekking tourist in Nepal and area already suffering the effects of deforestation can use four to five kilograms of wood a day (UNEP, 1999).

#### **2.4.2 Pollution**

Tourism can cause the same forms of pollution as any other industry: air emissions, noise, solid waste and littering, releases of sewage, oil and chemicals, even architectural/visual pollution.

##### **2.4.2.1 Air Pollution and Noise**

Transport by air, road, and rail is continuously increasing in response to the rising number of tourists and their greater mobility. The International Civil Aviation Organization reported that the number of international air passengers worldwide rose from 88 million in 1972 to 344 million in 1994. One consequence of this increase in air transport is that tourism now accounts for more than 60% of air travel and is therefore responsible for an important share of air emissions. One study estimated that a single transatlantic return flight emits almost half the CO emissions produced by all other sources (lighting, heating, car use, etc.) consumed by an average person per year (ICAO, 2001). Transport emissions and emissions from energy production and use are linked to acid rain, global warming and photochemical pollution. Air pollution from tourist transportation has impacts on global level, especially from carbon dioxide (CO<sub>2</sub>) emissions related to transportation energy use. And it can contribute to severe local air pollution. Some of these impacts are quite specific to tourist activities. For example, especially in very hot or cold countries, tour buses often leave their motors running for hours while the tourists go out for an excursion because they want to return to a comfortably air-conditioned bus.

Noise pollution from airplanes, cars, and buses, as well as recreational vehicles such as snowmobiles and jet skis, is a problem of modern life. In addition to causing annoyance, stress, and even

hearing loss for humans, it causes distress to wildlife, especially in sensitive areas ([www.unepie.org/tourism](http://www.unepie.org/tourism)).

#### **2.4.2.2 Solid Waste and Littering**

In areas with high concentrations of tourist activities and appealing natural attractions, waste disposal is a serious problem and improper disposal can be a major despoiler of the natural environment, rivers, scenic areas, and roadsides. For example, cruise ships in the Caribbean are estimated to produce more than 70,000 tons of waste each year. Solid waste and littering can degrade the physical appearance of the water and shoreline and cause the death of marine animals (UNEP, 1997).

In mountain areas, trekking tourists generate a great deal of waste. Tourists on expedition leave behind their garbage, oxygen cylinders and even camping equipment. Such practices degrade the environment with all the detritus typical of the developed world, in remote areas that have few garbage collection or disposal facilities.

#### **2.4.2.3 Sewage**

Construction of hotels, recreation and other facilities often leads to increased sewage pollution. Wastewater pollutes seas and lakes surrounding tourist attractions, damaging the flora and fauna. Sewage runoff causes serious damage to coral reefs because it contains lots of nutrients and it stimulates the growth of algae, which cover the filter-feeding corals, hindering their ability to survive. Changes in salinity and transparency can have wide-ranging impacts on coastal environments. And sewage pollution can threaten the health of humans and animals (Sunlu, U., 2003).

#### **2.4.2.4 Aesthetic Pollution**

Often tourism fails to integrate its structures with the natural features and indigenous architectural of the destination. Large resorts of disparate design may look out of place in a natural environment and may clash with the indigenous structural design. A lack of land-use planning and building regulations in many destinations has facilitated sprawling developments along coastlines, valleys and scenic routes. The sprawl includes tourism facilities themselves and supporting infrastructure such as roads, employee housing, parking, service areas, and waste disposal (Sunlu, U., 2003).

#### **2.4.3 Physical Impacts**

Attractive landscape sites, such as sandy beaches, lakes, riversides, and mountaintops and slopes, are often transitional zones, characterized by species-rich ecosystems. Typical physical impacts include the degradation of such ecosystems. An ecosystem is a geographic area including all the living organisms (people, plants, animals, and microorganisms), their physical surroundings (such as soil, water, and air), and the natural cycles that sustain them. The ecosystems most threatened with degradation are ecologically fragile areas such as alpine regions, rain forests, wetlands, mangroves, coral reefs and sea grass beds. Threats to and pressures on these ecosystems are often severe because such places are very attractive to both tourists and developers. Physical impacts are caused not only by tourism-related land clearing and construction, but by continuing tourist activities and long-term changes in local economies and ecologies (Sunlu, U., 2003).

### 2.4.3.1 Physical Impacts of Tourism Development

- *Construction activities and infrastructure development:* The development of tourism facilities such as accommodation, water supplies, restaurants and recreation facilities can involve sand mining, beach and sand erosion, soil erosion and extensive paving. In addition, road and airport construction can lead to land degradation and loss of wildlife habitats and deterioration of scenery (Sunlu, U., 2003).
- *Deforestation and intensified or unsustainable use of land:* Construction of ski resort accommodation and facilities frequently requires clearing forested land. Coastal wetlands are often drained and filled due to lack of more suitable sites for construction of tourism facilities and infrastructure. These activities can cause severe disturbance and erosion of the local ecosystem, even destruction in the long term (Sunlu, U., 2003).
- *Marina development:* Development of marinas and breakwaters can cause changes in currents and coastlines. Furthermore, extraction of building materials such as sand affects coral reefs, mangroves, and hinterland forests, leading to erosion and destruction of habitats. In the Philippines and the Maldives, dynamiting and mining of coral for resort building materials has damaged fragile coral reefs and depleted the fisheries (Hall, 2001).
- Overbuilding and extensive paving of shorelines can result in destruction of habitats and disruption of land-sea connections (such as sea-turtle nesting spots). Coral reefs are especially fragile marine ecosystems and are suffering worldwide from reef-based tourism developments. Evidence suggests a variety of impacts to coral result from shoreline development, increased sediments in the water, trampling by tourists and divers, ship groundings, pollution from sewage, over-fishing, and fishing with poisons and explosives that destroy the coral habitat (Hall, 2001).

### 2.4.3.2 Physical Impacts from Tourist Activities

- *Trampling:* Tourists using the same trail over and over again trample the vegetation and soil, eventually causing damage that can lead to loss of biodiversity and other impacts. Such damage can be even more extensive when visitors frequently stray off established trails (Sunlu, U., 2003).

- **Trampling impacts on vegetation Trampling impacts on soil**

| Trampling impacts on vegetations | Trampling impacts on soil              |
|----------------------------------|--|
| Breakage and bruising of stems   | Loss of organic matter                 |
| Reduced plant vigor              | Reduction in soil macro porosity       |
| Reduced regeneration             | Decrease in air and water permeability |
| Loss of ground cover             | Increase in run off                    |
| Change in species composition    | Accelerated erosion                    |

(source: [www.unepie.org/tourism/](http://www.unepie.org/tourism/)).

- *Anchoring and other marine activities:* In marine areas (around coastal waters, reefs, beach and shoreline, offshore waters, uplands and lagoons) many tourist activities occur in or around fragile ecosystems. Anchoring, snorkeling, sport fishing and scuba diving, yachting, and cruising are

some of the activities that can cause direct degradation of marine ecosystems such as coral reefs, and subsequent impacts on coastal protection and fisheries (Hall, 2001).

### **3. IMPACT OF TOURISM IN COASTAL AREAS: A GLOBAL PERSPECTIVE**

Recreation and leisure now form a major component of human activity and, when combined with travel, comprise the growing tourist industry. Since the 1992 Earth Summit in Rio de Janeiro, there is increasing awareness of the importance of sustainable forms of tourism ([www.coastalwiki.org](http://www.coastalwiki.org)). Although tourism was not the subject of a chapter in Agenda 21, the Program for the further implementation of Agenda 21, adopted by the General Assembly at its nineteenth special session in 1997, included sustainable tourism as one of its sectoral themes ([www.coastalwiki.org](http://www.coastalwiki.org)). Furthermore in 1996, The World Tourism Organization jointly with the tourism private sector issued an Agenda 21 for the Travel and Tourism Industry, with 19 specific areas of action recommended to governments and private operators towards sustainability in tourism.

#### **3.1 Specific situation of coastal areas**

“Coastal areas are transitional areas between the land and sea characterized by a very high biodiversity and they include some of the richest and most fragile ecosystems on earth, like mangroves and coral reefs. At the same time, coasts are under very high population pressure due to rapid urbanization processes. More than half of today’s world population lives in coastal areas (within 60 km from the sea) and this number is on the rise” ([www.coastalwiki.org](http://www.coastalwiki.org)). Additionally, “among all different parts of the planet, coastal areas are those which are most visited by tourists and in many coastal areas tourism presents the most important Economic activities. In the Mediterranean region for example, tourism is the first economic activity for islands like Cyprus, Malta, the Balearic Islands and Sicily” ([www.coastalwiki.org](http://www.coastalwiki.org)). WTO estimated that international tourist arrivals to the Mediterranean coast will amount to 270 millions in 2010 and to 346 millions in 2020 ([www.pub.unwto.org](http://www.pub.unwto.org)).

##### **3.1.1 Resulting problems occurred by the tourism ([www.coastalwiki.org](http://www.coastalwiki.org))**

- ✓ Loss of marine resources due to destruction of coral reefs, overfishing
- ✓ Pollution of marine and freshwater resources
- ✓ Soil degradation and loss of land resources (e.g. desertification and salinification due to excessive water use, overuse of fertilizers, erosion)
- ✓ Air pollution
- ✓ Loss of cultural resources, social disruption
- ✓ Loss of public access
- ✓ Natural hazards and sea level rise
- ✓ Climate change

##### **3.1.2 How does tourism damage coastal environment**

Massive influxes of tourists, often to a relatively small area, have a huge impact. They add to the pollution, waste, and water needs of the local population, putting local infrastructure and habitats under enormous pressure. For example, 85% of the 1.8 million people who visit Australia's Great Barrier Reef are concentrated in two small areas, Cairns and the Whitsunday Islands, which together have a human population of just 130,000 or so (Sunlu, U., 2003).

### 3.1.2.1 Tourist infrastructure

In many areas, massive new tourist developments have been built - including airports, marinas, resorts, and golf courses. Overdevelopment for tourism has the same problems as other coastal developments, but often has a greater impact as the tourist developments are located at or near fragile marine ecosystems (Sunlu, U., 2003). For example:

- ✓ mangrove forests and seagrass meadows have been removed to create open beaches
- ✓ tourist developments such as piers and other structures have been built directly on top of coral reefs
- ✓ nesting sites for endangered marine turtles have been destroyed and disturbed by large numbers of tourists on the beaches

### 3.1.2.2 Careless resorts, operators, and tourists

The damage doesn't end with the construction of tourist infrastructure. Some tourist resorts empty their sewage and other wastes directly into water surrounding coral reefs and other sensitive marine habitats. Recreational activities also have a huge impact. For example, careless boating, diving, snorkeling, and fishing have substantially damaged reefs in many parts of the world, through people touching reefs, stirring up sediment, and dropping anchors. Marine animals such as whale sharks, seals, dugongs, dolphins, whales, and birds are also disturbed by increased numbers of boats, and by people approaching too closely. Tourism can also add to the consumption of seafood in an area, putting pressure on local fish populations and sometimes contributing to overfishing. Collection of corals, shells, and other marine souvenirs - either by individual tourists, or local people who then sell the souvenirs to tourists - also has a detrimental effect on the local environment (Sunlu, U., 2003).

### 3.1.2.3 Cruise ships: Floating towns

The increased popularity of cruise ships has also adversely affected the marine environment. Carrying up to 4,000 passengers and crew, these enormous floating towns are a major source of marine pollution through the dumping of garbage and untreated sewage at sea, and the release of other shipping-related pollutants ([www.panda.org](http://www.panda.org)). A development that has turned out to be a severe problem for many coastal areas in the last decade is the increase in cruise ship tourism. The cruise ship business is the segment that has grown most rapidly during the last decade. While “world international tourist arrivals in the period 1990 – 1999 grew at an accumulative annual rate of 4.2%, that of cruises did by 7.7%. In 1990 there were 4.5 million international cruise arrivals which had increased to a number of 8.7 million in 1999. Particularly for many islands in the Caribbean, cruise tourism is an important market segment. In the period from 1990 to 1999 there was an increase from 13.71 million international tourist arrivals to 20.32 million (CTO). Meanwhile the number of cruise passengers increased from 7.75 million to 12.14 million in the same period. This means that in 1999 almost 2/3 of all arrivals to the Caribbean were cruise passengers” ([www.coastalwiki.org](http://www.coastalwiki.org)).

#### 3.1.2.3.1 Problems by the cruise ships

According to (Yunis, E., 2001), the problems are as follows:

- ✓ Discharge of sewage in marinas and near shore coastal areas.



- ✓ The lack of adequate port reception facilities for solid waste, especially in many small islands, as well as the frequent lack of garbage storing facilities on board can result in
- ✓ solid wastes being disposed of at sea, and being transported by wind and currents to shore often in locations distant from the original source of the material.
- ✓ “Tar balls” on beaches indicate that oil tankers and other ships dump their oil and garbage overboard (despite laws against such practice), while pollution off Florida and in
- ✓ the Gulf of Mexico is causing serious concern.
- ✓ Land-based activities such as port development and the dredging that inevitably accompanies it in order to receive cruise ships with sometimes more than 3000 passengers can significantly degrade coral reefs through the buildup of sediment. Furthermore, sand mining at the beaches leads to coastal erosion.
- ✓ In the Cayman Islands damage has been done by cruise ships dropping anchor on the reefs. Scientists have acknowledged that more than 300 acres of coral reef already been lost to cruise ship anchors in the harbour at George Town, the capital of Grand Cayman.
- ✓ The potential socio-cultural stress produced by cruise tourism needs to be mentioned as well, since it means that during very short periods there is high influx of people, sometimes more than the local inhabitants of small islands, demanding food, energy, water, etc. and possibly overrunning local communities.

### **3.2 Environmental Impacts of Tourism at Global Level**

Tourism can create great pressure on local resources such as energy, food, land and water that may already be in short supply. According to the Third Assessment of Europe’s environment (EEA, 2003), the direct local impacts of tourism on people and the environment at destinations are strongly affected by concentration in space and time (seasonality).

They result from:

- ✓ The intensive use of water and land by tourism and leisure facilities.
- ✓ The delivery and use of energy.
- ✓ Changes in the landscape coming from the construction of infrastructure, buildings and facilities.
- ✓ Changes the sea bed through anchoring which is one of basic reasons of the erosion of coral islands.
- ✓ Air pollution and waste.
- ✓ The compaction and sealing of soils (damage and destruction of vegetation).
- ✓ The disturbance of fauna and local people (for example, by noise).
- ✓ Deforestation

#### **3.2.1 Loss of biological diversity**

Tourism can cause loss of biodiversity in many ways, e.g. by competing with wildlife for habitat and natural resources. More specifically, negative impacts on biodiversity can be caused by various factors (Sunlu, U., 2003):

- It threatens our food supplies, opportunities for recreation and tourism, and sources of wood, medicines and energy.
- It interferes with essential ecological functions such as species balance, soil formation, and greenhouse gas absorption.
- It reduces productivity of ecosystems.

- It destabilizes ecosystems and weakens their ability to deal with natural disasters such as floods, droughts, and hurricanes, and with human-caused stresses, such as pollution and climate change.

Tourism, especially nature tourism, is closely linked to biodiversity and the attractions created by a rich and varied environment. It can also cause loss of biodiversity when land and resources are strained by excessive use, and when impacts on vegetation, wildlife, mountain, marine and coastal environments and water resources exceed their carrying capacity. This loss of biodiversity in fact means loss of tourism potential. Introduction of exotic species which tourists and suppliers can bring in species (insects, wild and cultivated plants and diseases) that are not native to the local environment can cause enormous disruption and even destruction of ecosystems (WWF, 1992; WWF, 1994).

### **3.2.2 Decline of the ozone layer**

The ozone layer, which is situated in the upper atmosphere (or stratosphere) at an altitude of 12-50 kilometers, protects life on earth by absorbing the harmful wavelengths of the sun's ultraviolet (UV) radiation, which in high doses is dangerous to humans and animals. For example, one of the reasons scientists have put forward for the global decrease of amphibian populations is increased exposure to UV radiation.

Ozone diminishing substances (ODSs) such as CFCs (chlorofluorocarbon) and halons have contributed to the destruction of this layer. The tourism industry may be part of the problem; direct impacts start with the construction of new developments and continue during daily management and operations. Refrigerators, air conditioners and propellants in aerosol spray cans, amongst others, contain ODSs and are widely used in the hotel and tourism industry. Emissions from jet aircraft are also a significant source of ODSs. Scientists predict that by 2015 half of the annual destruction of the ozone layer will be caused by air travel (UNEP, 1997; UNEP, 1998).

### **3.2.3 Climate change**

Climate scientists now generally agree that the Earth's surface temperatures have risen steadily in recent years because of an increase in the so-called greenhouse gases in the atmosphere, which trap heat from the sun. One of the most significant of these gases is carbon dioxide (CO<sub>2</sub>), which is generated when fossil fuels, such as coal, oil and natural gas are burned (e.g. in industry, electricity generation, and automobiles) and when there are changes in land use, such as deforestation. In the long run, accumulation of CO and other greenhouse gases in the atmosphere can cause global climate change a process that may already be occurring (Sunlu, U., 2003).

Global tourism is closely linked to climate change. Tourism involves the movement of people from their homes to other destinations and accounts for about 50% of traffic movements; rapidly expanding air traffic contributes about 2.5% of the production of CO<sub>2</sub>. Tourism is thus a significant contributor to the increasing concentrations of greenhouse gases in the atmosphere (Sunlu, U., 2003).

Air travel itself is a major contributor to the greenhouse effect. Passenger jets are the fastest growing source of greenhouse gas emissions. The number of international travelers is expected to increase from 594 million in 1996 to 1.6 billion by 2020, adding greatly to the problem unless steps are taken to reduce emissions (WWF, 1992).

## 4. HOW TOURISM CAN CONTRIBUTE TO ENVIRONMENTAL CONSERVATION

The tourism industry can contribute to conservation through:

### 4.1 Financial Contributions

- *Direct financial contributions:* Tourism can contribute directly to the conservation of sensitive areas and habitat. Revenue from park entrance fees and similar sources can be allocated specifically to pay for the protection and management of environmentally sensitive areas. Special fees for park operations or conservation activities can be collected from tourists or tour operators (Sunlu, U., 2003).
- *Contributions to government revenues:* Some governments collect money in more far-reaching and indirect ways that are not linked to specific parks or conservation areas. User fees, income taxes, taxes on sales or rental of recreation equipment, and license fees for activities such as hunting and fishing can provide governments with the funds needed to manage natural resources. Such funds can be used for overall conservation programs and activities, such as park ranger salaries and park maintenance (WTO, 1997; WTO, 1998).

### 4.2 Improved Environmental Management and Planning

Sound environmental management of tourism facilities and especially hotels can increase benefits to natural areas. But this requires careful planning for controlled development, based on analysis of the environmental resources of the area. Planning helps to make choices between conflicting uses, or to find ways to make them compatible. By planning early for tourism development, damaging and expensive mistakes can be prevented, avoiding the gradual deterioration of environmental assets significant to tourism.

Cleaner production techniques can be important tools for planning and operating tourism facilities in a way that minimizes their environmental impacts. For example, green building (using energy-efficient and non-polluting construction materials, sewage systems and energy sources) is an increasingly important way for the tourism industry to decrease its impact on the environment. And because waste treatment and disposal are often major, long-term environmental problems in the tourism industry, pollution prevention and waste minimization techniques are especially important for the tourism industry (UNEP, 1995, 1997, 1998; WTO, 1995).

### 4.3 Environmental Awareness Rising

Tourism has the potential to increase public appreciation of the environment and to spread awareness of environmental problems when it brings people into closer contact with nature and the environment.

This confrontation may heighten awareness of the value of nature and lead to environmentally conscious behavior and activities to preserve the environment. If it is to be sustainable in the long run, tourism must incorporate the principles and practices of sustainable consumption. Sustainable

consumption includes building consumer demand for products that have been made using cleaner production techniques, and for services including tourism services that are provided in a way that minimizes environmental impacts. The tourism industry can play a key role in providing environmental information and raising awareness among tourists of the environmental consequences of their actions. Tourists and tourism-related businesses consume an enormous quantity of goods and services; moving them toward using those that are produced and provided in an environmentally sustainable way could have an enormous positive impact on the planet's environment (UNEP, 1992).

#### **4.4 Protection and Preservation**

Tourism can significantly contribute to environmental protection, conservation and restoration of biological diversity and sustainable use of natural resources. Because of their attractiveness, pristine sites and natural areas are identified as valuable and the need to keep the attraction alive can lead to creation of national parks and wildlife parks. In Hawaii, new laws and regulations have been enacted to preserve the Hawaiian rainforest and to protect native species. The coral reefs around the islands and the marine life that depend on them for survival are also protected. Hawaii now has become an international center for research on ecological systems and the promotion and preservation of the islands' tourism industry was the main motivation for these actions (Sunlu, U., 2003).

Grupo Punta Cana, a resort in the Dominican Republic, offers an example of how luxury tourism development and conservation can be combined (Sunlu, U., 2003). The high-end resort was established with the goal of catering to luxury-class tourists while respecting the natural habitat of Punta Cana. The developers have set aside 10,000 hectares (24,700 acres) of land as a nature reserve and native fruit tree garden (Sunlu, U., 2003). The Punta Cana Nature Reserve includes 11 fresh water springs surrounded by a subtropical forest where many species of unusual Caribbean flora and fauna live in their natural state. Guests can explore a "nature path" leading from the beach through mangroves, lagoons of fresh water springs and dozens of species of Caribbean bird and plant life (Sunlu, U., 2003). Other environmentally protective policies have been put into effect at the resort, such as programs to protect the offshore barrier reefs and the recycling of wastewater for use in irrigating the grounds (Sunlu, U., 2003).

Tourism has had a positive effect on wildlife preservation and protection efforts, notably in Africa but also in South America, Asia, Australia, and the South Pacific. Numerous animal and plant species have already become extinct or may become extinct soon. Many countries have therefore established wildlife reserves and enacted strict laws protecting the animals that draw nature-loving tourists. As a result of these measures, several endangered species have begun to thrive again (IUCN, 1996; UNEP and WTO, 1992; WWF, 1992; [www.unepie.org/tourism](http://www.unepie.org/tourism)).

#### **4.5 Regulatory Measures**

Regulatory measures help offset negative impacts; for instance, controls on the number of tourist activities and movement of visitors within protected areas can limit impacts on the ecosystem and help maintain the integrity and vitality of the site. Such limits can also reduce the negative impacts on resources (Sunlu, U., 2003).

Limits should be established after an in-depth analysis of the maximum sustainable visitor capacity. This strategy is being used in the Galapagos Islands, where the number of ships allowed to cruise in this remote archipelago is limited, and only designated islands can be visited, ensuring visitors have little impact on the sensitive environment and animal habitats (UNEP, 1998; UNEP, 1997; [www.unepie.org/tourism](http://www.unepie.org/tourism)).

## **5. HOW GLOBAL ENVIRONMENTAL IMPACTS AFFECT TOURISM**

### **5.1 Natural Disasters**

Catastrophes like floods, earthquakes, wildfires, volcanoes, avalanches, drought and diseases can have a serious effect on inbound and domestic tourism and thus on local tourism industries. The outbreak of foot and mouth disease epidemic in England earlier this year (2001), for instance, severely affected Great Britain's inbound tourism market. A BHA/Barclays Hospitality Business Trends Survey found that 75% of hotels in England, 81% in Scotland and 85% in Wales continued to be affected by the foot and mouth outbreak, and over 60% forecast a decline in business in the June-September 2001 period ([www.unepie.org/tourism](http://www.unepie.org/tourism)).

### **5.2 Climate Change**

Tourism not only contributes to climate change, but is affected by it as well. Climate change is likely to increase the severity and frequency of storms and severe weather events, which can have disastrous effects on tourism in the affected regions. Some of the other impacts that the world risks as a result of global warming are drought, diseases and heat waves. These negative impacts can keep tourists away from the holiday destinations. Global warming may cause:

- Less snowfall at ski resorts, meaning a shorter skiing seasons in the Alpine region. In already hot areas like Asia and the Mediterranean, tourists will stay away because of intense heat, and out of fear of diseases and water shortage (Sunlu, U., 2003).
- Harm to vulnerable ecosystems such as rainforests and coral reefs because of rising temperatures and less rainfall. A major risk to coral reefs is bleaching, which occurs when coral is stressed by temperature increases, high or low levels of salinity, lower water quality, and an increase in suspended sediments. These conditions cause the zooxanthallae (the single-celled algae which forms the colors within the coral) to leave the coral. Without the algae, the coral looks white, or "bleached" and rapidly dies (Hall, 2001).
- Rising sea levels, the result of melting glaciers and polar ice. Higher sea levels will threaten coastal and marine areas with widespread floods in low-lying countries and island states, increasing the loss of coastal land. Beaches and islands that are major tourism attractions may be the first areas to be affected (Hall, 2001).
- Increased events of extreme weather, such as tornadoes, hurricanes and typhoons. These are already becoming more prevalent in tourist areas in the Caribbean and South East Asia. Hurricane Mitch in 1998, for instance, heavily affected tourism in the Caribbean. Wind damage, storm waves, heavy rains and flooding caused major losses in the local tourism sector (UNEP, 1997).

### **5.3 EFFECTS OF OTHER INDUSTRIES ON TOURISM**

Impacts from other industries often have a dramatic effect on the environment and can seriously affect tourism.

- Oil spills, like the oil tanker disasters can cause severe short-term damage to tourist attractions. In that case, local marine and land species and the tourism potential of the area can be badly affected (Sunlu, U., 2003).
- Agricultural runoff or industrial discharges can cause water pollution and may cause algae blooms. In spite of improved control of sewage from tourism developments, the Mediterranean sea floor is increasingly carpeted with these quick-growing invaders, many rising 30 inches or more above anchoring runners. They appear equally adept at colonizing rock, mud, and sand in a virtually continuous swath that can extend from the beach out to a depth of about 150 feet, smothering coral reefs, fish and other sea flora and fauna in the process (Sunlu, U., 2003).
- Destructive practices such as blast fishing, fishing with poisonous chemicals like cyanide, directly destroy corals. They can also destroy a major attraction for tourists (UNEP, 1992).

## **6. IMPACT OF TOURISM IN THE COASTAL AREAS OF BANGLADESH**

The Phenomena of Bangladesh is not different from the other countries of the world. Tourism became popular in Bangladesh during the decades of 1980 and it flourished at the end of the decades of 1990s. From that time, Cox's Bazar became to start as a tourist area and now it is the most visited tourist area of Bangladesh. The basic reason of becoming as a most visited place in Bangladesh is: the communication facilities. Cox's Bazar is the only one coastal area where the people of Bangladesh can go easily. Now-a-days, Cruise ship transportation system started from Cox's Bazar to St. Martin's Island so that, people are starting to go there randomly. The impacts of Tourism in these 2 places environment are not so positive. Like other coastal areas of this world, some common demerits are going on there like: Deforestation, Demolishing Hills, Changing the Physical Structure of Sea Shore, Destroying and submerge the Coral Island, Over fishing, and so on.

## **7. HOW THE GOVERNMENT OF BANGLADESH WILL OVERCOME THIS SITUATION**

The environmental problem by tourism and the tourism were not built in a day. A lot of peoples earning and livelihood are related along with the tourism issue in coastal areas of Bangladesh. So, whatever the Government will do, it should be justified at first. The Government has to recover the environmental damages as well as increase the pace of tourism by the sake of national and local economy. To generate some policy measures to mitigate the environmental hazards, the Government has to consider these issues, i.e.: Urban Settlements, Housing, Waste Disposal, preserving the sea shore areas, sound pollution and so on.

## **8. CONCLUSION**

Tourism is one of the most promising sectors of any country. It is a very useful way of earning. So, the authority should never take any steps against Tourism. The Government should find out the way which is sustainable for the ecology and the environment. Thus, the government has to find out the proper way of sustainable Eco-friendly tourism through eco-friendly tourism policies.

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- <http://www.unwto.org>
- <http://www.wttc.org>

# Should Bangladesh Form Preferential Trading Arrangement with Myanmar? -A Qualitative Assessment

Kazi Monir Uddin<sup>11</sup>

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## Abstract

Myanmar has caught the eyes of international community following the political, economic and administrative reforms over the last five years, allowing them to be more integrated into global economy. Thus, in recent years the country has improved the relationship with international community as well as neighbouring country like Bangladesh. Though two neighbouring countries geographically adjacent to one another and the same status of Least developed countries, they have difference in resource endowments and areas of comparative advantages. In analyzing whether Bangladesh should go for forming a PTA with Myanmar, this paper finds Myanmar having comparative advantage in agriculture and resource based sectors in most part and Bangladesh having more comparative advantage in few industrial sectors. The paper also identifies the products with the potential for trade creation, the risk of trade diversion and export potential, once the PTA is signed and gets effective. The paper positively speaks in favour of potential Bangladesh-Myanmar PTA.

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**Key Words:** Preferential Trading Arrangement, Tariff, Non Tariff Measures, Rules of Origin, Revealed Comparative Advantage, Trade Creation, Trade Diversion, Export Potential.

Myanmar and Bangladesh are two neighboring countries sharing a long history of political, economic and cultural relationship. Myanmar is being applauded by political, economic and administrative reforms in recent years especially since November 2010. These reforms include holding parliamentary elections, the release of National League for Democracy (NLD) leader Aung San Suu Kyi from house arrest and subsequent dialogues with her, establishment of the National Human Rights Commission, transferring power to civilian government, general amnesties of more than 200 political prisoners, institution of new labor laws that allow labor unions and strikes, relaxation of press censorship, successful general election with participation of NLD, economic liberalization, gradual reunification of the market and official exchange rates, the introduction of a daily foreign exchange auction, the approval of a new foreign investment law, granting independence to central bank, introduction of anti corruption law etc. Such massive progress yielded an excellent response from global community. Myanmar's new economic and political reforms have drawn considerable support from the international community. The International Monetary Fund is once again actively engaged in providing macroeconomic advice. The World Bank and the Asian Development Bank are conducting economic assessments of the country's most pressing needs. On May 21, 2013, the United States and Myanmar signed a Trade and Investment Framework Agreement (TIFA), creating a platform for ongoing dialogue and cooperation on trade and investment issues between the two governments<sup>12</sup>. In July 2013, the EU reinstated Myanmar/Burma's access to the Generalized System of Preferences (GSP), which provides for duty-free and quota-free access for the country's products to the European market<sup>13</sup>. In recent years the diplomatic relationship

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<sup>12</sup> United States Trade Representative viewed at <https://ustr.gov/countries-regions/southeast-asia-pacific/burma>

<sup>13</sup> European Union, External Action, EU Relations with Myanmar, viewed at [http://eeas.europa.eu/myanmar/index\\_en.htm](http://eeas.europa.eu/myanmar/index_en.htm)

between Bangladesh and Myanmar has also strengthened through bilateral trade talks. Over the last few years, especially since the constitution of FTA policy guideline in 2010, such bilateral trade talks of Bangladesh with many countries have been involving the discussions of forming Preferential Trading Arrangements (PTAs) and Free Trade Areas (FTAs). Bangladesh is looking forward to form bilateral Free Trade Area potential trade partners. Having this context of positive political and economic momentum of Myanmar and intent of Bangladesh towards FTAs/PTAs, it is right time for Bangladesh to think the ways how bilateral economic cooperation could be widened with the neighbour Myanmar. This paper finds whether Bangladesh should form a Preferential Trading Arrangement with Myanmar.

### Objectives and Scope

2. In the world of competition, bilateral/regional trade agreement (RTA) is thought as a congenial strategy for expanding and increasing trade as well as achieving overall economic growth. In this regard, the Government of the People's Republic of Bangladesh has adopted policy of forming FTAs/PTAs with potential trade partners with a view to explore the export opportunity in the world market. The study aimed at examining whether any arrangement of reciprocal tariff preference with Myanmar would be helpful to increase Bangladesh's export to Myanmar, whether there is any possibility of adverse impact on Bangladesh's local industries and trade. However, this paper focuses on the possibility of PTA in goods only.

### Methodology

3. This paper implicitly uses Rules of Thumbs (RoT) developed by The Sussex Framework<sup>14</sup>. In addition, this paper assesses prospects of trade creation and trade diversion with qualitative analysis. **Trade creation** happens when imports increase and replace inefficient domestic production. Trade liberalization leads to a reduction in the landed price of products and hence yields benefits to consumers (although at the cost of domestic producers). **Trade diversion** occurs when a country 'switches' import origins from more efficient partners outside the preferential area to less efficient ones inside. It is welfare reducing since it implies a loss in tariff revenue which arises from switching towards preferential imports that do not pay tariff duties. Though measurement of trade creation and diversion requires Partial Equilibrium Analysis like SMART model, this paper attempts a qualitative analysis to identify products with the most possibility of trade creation and products with most possibility of trade diversion. The advantage of this type of qualitative analysis is the fact this type of analysis require data requirement is less than economic models like SMART and the analysis is not so sensitive to elasticity values like import demand elasticity, export supply elasticity and substitution elasticity which varies across countries and products depending on tastes of consumers, nature of goods, resource endowments, technology etc. Thus, imposing same elasticity value for a wide range of products and suppliers may lead misleading idea.

4. Trade creation and diversion can take effect simultaneously from a given trade liberalization and the net effect depends on the size of trade creation and diversion. If trade creation effect is greater than trade diversion, welfare increases. But if trade diversion effect is greater than trade creation effect,

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<sup>14</sup> **The Sussex Framework** has developed a set of Rules of Thumbs (RoT), grounded on trade theory, allowing one to capture the probable impact of engaging or being left out of PTAs.

welfare decreases. This paper classifies the products separately as the products with the most possibility of trade creation (i. e. the possibility of increase of welfare) and the products with the most possibility of trade diversion (i. e. the possibility of decrease of welfare). The possibility of either of these two effects is assessed using Revealed Comparative Advantage<sup>15</sup> as an indicator of comparative level efficiency, Import Performance as an indicator of taste and import demand, Export Performance as an indicator of export capacity and Average Tariff as indicator of possible scope trade liberalization.

5. Trade Creation occurs when inefficient domestic production replaced by increased imports from more producers due to price fall of imported products as a result of trade liberalization. The justification of efficiency is a complex one and production and domestic consumption data is difficult to come by. It's a good and convenient idea to guess domestic taste or preference from import demand or global import data and efficiency from Revealed Comparative Advantage. So, if Bangladesh has some import demand for product from global market as well as Comparative Disadvantage and import tariff is high, it could be argued that trade liberalization may lead to trade creation if Myanmar has Revealed Comparative Advantage and the capacity to increase production (can be judged from global export performance). To help compare between Revealed Comparative Advantage of Two Countries, Balasa index of RCA is used in normalized form.

6. This paper is based on desk level study using secondary data. Numerous Data Sources are used to making this paper such as ITC Trade Map, WTO Trade Policy Review, WTO Tariff Analysis Online TAO, IMF e-library, website of Bangladesh Bank, Export Promotion Bureau, National Board of Revenue (Bangladesh), Bangladesh Economic Review, CIA World Fact Book, Wikipedia etc.

### Overview of Economy and Trade

7. Myanmar is an agriculture based country<sup>16</sup>. Agricultural sector contributes 38% to its GDP (2013 est.) while industrial sector contributes 20.3% and service sector contributes 41.7%. Myanmar's major agricultural products include rice, pulses, beans, sesame, groundnuts, sugarcane; fish and fish products; hardwood. Agricultural processing; wood and wood products; copper, tin, tungsten, iron; cement, construction materials; pharmaceuticals; fertilizer; oil and natural gas; garments, jade and gems are amongst major industrial products of Myanmar<sup>17</sup>. Myanmar is a land of natural resources which include petroleum, timber, tin, antimony, zinc, copper, tungsten, lead, coal, marble, limestone, precious stones, natural gas and hydropower.

8. Since the beginning of the civilian government in 2011, Myanmar has become one of the emerging countries for attracting foreign investment and integrating to the global economy. In addition to political reform, several socio-economic reforms program like enacting a new Anti-corruption Law (2013),

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<sup>15</sup> RCA is calculated using the formula:  $RCA_{iw}^k = \left( \frac{x_{iw}^k}{X_{iw}} \right) / \left( \frac{x_{ww}^k}{X_{ww}} \right)$  where where  $x_{iw}^k$  represents the export of sector k by country i to the world,  $X_{iw}$  denotes total exports of all sectors by country i to the world,  $x_{ww}^k$  represents the export of sector k by world to the world (i.e total export of all countries of sector k to the world and  $X_{ww}$  denotes total world to world (i.e. total exports of all sectors by all countries to the world. Normalized RCA or NRCA =  $(RCA-1) / (RCA+1)$  where  $-1 \leq \text{Normalized RCA} < 1$ . A country is said to have revealed comparative advantage if the value of Normalized RCA is positive for any product and the country have comparative disadvantage if the value of this index is negative.

<sup>16</sup> 70 percent of its labour force was engaged in agriculture sector in 2001.

<sup>17</sup> Source CIA World Fact book

introduction of managed floating foreign exchange system (2012), ensuring operational independence to Central Bank (2013), modernizing and opening the financial sector, increasing budget allocations for social services, and accelerating agricultural and land reforms largely enhanced the acceptance of the Myanmar government to the global community. Inflow Foreign Direct Investment (FDI) grew from US\$ 0.83 billion in 2008 to US\$ 2.62 billion in 2013<sup>18</sup>. In spite of these achievements, poor infrastructure, endemic corruption, underdeveloped human resources, and inadequate access to capital have made Myanmar one of the poorest countries of South East Asia.

9. During the last four decades, Bangladesh has achieved significant socio-economic development following generous economic and trade policy. Between 2004 and 2014, it averaged a GDP growth rate of 6%. The economy is increasingly led by export-oriented industrialization. Over the last three years, the economy is constituted with GDP of US\$ 133.40 billion with per capita GDP of US\$ 880 in 2011-12, US\$ 150.00 billion with per capita GDP of US\$ 976 in 2012-13 and US\$ 173.82 billion with per capita GDP of US\$ 1115.00 in 2013-14. Service sector plays the key role in the economy of Bangladesh which contributes the largest share of total GDP. Its share of total GDP was 54.05 percent in 2013-14 while agricultural sector contributed 16.34 percent and industry sector contributed the rest 29.61 percent. But till date agricultural sector remains a key source of employment generation. According to the Labor Force Survey 2010, 47.50 per cent of employed labor force is engaged in agriculture and the rest is engaged in different non agricultural sectors. Natural gas, fertile soil, water and coal are the only natural resources of Bangladesh. The land is devoted mainly to rice, jute and wheat cultivation. The main agriculture products of Bangladesh are rice, jute, tea, sugarcane and wheat and main industrial products are woven garments, knitwear, jute goods, frozen fish, seafood, pharmaceuticals, home textiles, chemical fertilizer, leather products, light engineering products, melamine products, ship breaking for scrap, ceramic tableware etc.

10. Bangladesh looks forward to be integrated with global economy by building necessary capacity in trade sector, ensuring a larger share for the country in the global trade in goods and services, and by encouraging both product and market diversification. This requires efficiency trade facilitation, ensuring political stability, efficient utilization of natural and human resources incorporation into global value chain.

11. Bangladesh's trade performance in goods in recent years shows that both export and import have increased rapidly during the last ten years while trade deficit have also increased. Bangladesh's export is concentrated to a limited number of products, e.g. clothing which constitutes more than three fourth of country's total export earnings. Her major export items are woven garments, knitwear, jute and jute goods, pharmaceuticals, leather & leather products, frozen foods, chemical products, home textiles, footwear, light engineering products, ceramic products, melamine products and bicycle. The major export destinations of Bangladesh are the United States, Germany, United Kingdom, France, Italy, Belgium, the Netherlands, Spain, Canada and India. Though Bangladesh has done well so far in exporting goods, still she is an import dependent country. The major export sector, the readymade garments extremely depends on imported raw materials. Thus economic growth is formidably depended on import. Its major import items are fuel, cotton fabric, cereal, capital machineries and equipments, chemicals, edible oil, fuel, iron and steel, textiles, fertilizer, petroleum products and cement clinker. Industrialization of Bangladesh is extremely depended on import of raw materials, capital machineries, and parts and accessories. However,

<sup>18</sup> Source: UNCTAD Stat Viewed at <http://unctadstat.unctad.org/wds/TableViewer/tableView.aspx> at 28.06.2015

food items, petroleum, industrial raw materials and capital machineries occupied the major share of total import. Major sources of imports of Bangladesh are India, China, Singapore, Japan, Hong Kong, Taiwan, South Korea, the USA and Malaysia.

12. Over the last few years Myanmar also has experienced significant progress in external trade. Volume of export of goods increased from US\$ 8.8 billion in FY 2010-11 to US\$ 12.2 billion in FY2013-14. At the same time the import volume grew even better way. It grew from US\$ 8.2 billion to US\$ 14.9 billion during the same period<sup>19</sup>. This feature is consistent with the more open socio-economic environment that Myanmar has been maintaining so far after the political shift in 2011. HS Chapter wise, Myanmar's major export items includes Mineral fuels, oils, distillation products, etc, Wood and articles of wood, wood charcoal, Pearls, precious stones, metals, coins, etc, Articles of apparel, accessories, not knit or crochet, Edible vegetables and certain roots and tubers, Ores, slag and ash, Fish, crustaceans, molluscs, aquatic invertebrates nes, Rubber and articles thereof, Oil seed, oleagic fruits, grain, seed, fruit, etc, nes, Footwear, gaiters and the like, parts thereof. At HS 4 (four) digit level, Petroleum Gas occupies the lion share of exports, accounted for 35% of total exports in 2013 (as per calculation based on ITC's mirror data). However, Myanmar's major import items include Machinery, nuclear reactors, boilers, etc, Vehicles other than railway, tramway, Electrical, electronic equipment, Mineral fuels, oils, distillation products, etc, Iron and steel, Articles of iron or steel, Plastics and articles thereof, Animal, vegetable fats and oils, cleavage products, etc, Pearls, precious stones, metals, coins, etc, Furniture, lighting, signs, prefabricated buildings. Analysis of the trade performance of the last ten years<sup>20</sup> suggests that Myanmar's major export partners include Thailand, India, China, Japan, Republic of Korea, Malaysia, Germany, Singapore, United Kingdom, Chinese Taipei, etc while its major import partners are China, Thailand, Singapore, Republic of Korea, Japan, Malaysia, India, Indonesia, Chinese Taipei, , Russian Federation etc.

### **Trade and Foreign Economic Policies**

13. The Ministry of Commerce (MoC) and the Ministry of Finance (MoF) share the main responsibility for making trade policy in Bangladesh. MoC leads the Government's multilateral, regional and bilateral trade policies through the Bangladesh Tariff Commission<sup>21</sup>, the Export Promotion Bureau, and the Office of the Chief Controller of Imports and Exports. Bangladesh Tariff Commission as the key think tank of the country in trade arena, advises the MoC to formulate trade related policies and strategies. The Bangladesh Foreign Trade Institute is responsible for providing analysis. A formal WTO Cell within the Ministry of Commerce handles WTO and other multilateral trade issues. The Ministry of Finance (MoF) makes the final decisions regarding tariffs through the National Board of Revenue (NBR). The NBR is the central authority for tax administration in Bangladesh and is under the Internal Resources Division (IRD) of the MoF. Its main responsibility is to collect domestic revenue, primarily import duties and taxes, VAT and income tax for the Government, as well as administer tax holidays and other tax concessions.

<sup>19</sup> Source: International Monetary Fund Report, Myanmar 2014 Article IV Consultation-Staff Report; Press Release; and Statement by the Executive Director for Myanmar, Series: Country Report No. 14/307, page 22, viewed at <http://www.imf.org/external/pubs/ft/scr/2014/cr14307.pdf> (24.11.2014)

<sup>20</sup> To identify the major evolution of trade partners, ten years average data is used for ranking of partners so that no significant partners are excluded for diminishing volume of trade in the recent past.

<sup>21</sup> The Bangladesh Tariff Commission, a statutory advisory public institution of the Ministry of Commerce, works for the protection of indigenous industries, promotes fair trade through antidumping, safeguards and countervailing duties and recommends the government on bilateral, multilateral and regional trade related issues.

14. “International trade related policies of Myanmar are formulated by the Ministry of National Planning and Economic Development (MNPED), in close cooperation with the President's Office, the Ministries of Commerce, and of Finance, and other trade-related ministries. The Ministry of Commerce (MOC) is in charge of policy coordination and implementation for all trade-related matters, and issues export/import licenses”<sup>22</sup>. The government also organized various commissions (namely Planning Commission, Finance Commission, Privatization Commission and Myanmar Investment Commission), to facilitate its economic reform, improve the business environment, and promote competition. Tariffs are determined by the Ministry of Finance in consultation with the Ministry of Commerce and other concerned ministries. Tariffs must be approved by the Cabinet and then adopted by the Parliament. Myanmar's trade policy objectives include: "systematically" implementing trade policies in accordance with the market-oriented economic policy; producing value-added products from primary goods to increase value-added in exports; promoting international trade; and facilitating exports and imports. Myanmar promotes its exports of traditional and value-added products as well as new exportable products. Its import policy encourages imports of capital goods as per major requirement of the economy, as well as construction materials, hygienic materials for people's health, and goods that support export-promotion activities.

15. Bangladesh is a founding member of World Trade Organization (WTO). Besides, Bangladesh is involved in Multilateral Trade Agreements such as South Asia Preferential Trading Agreement (SAPTA), South Asia Free Trade Agreement (SAFTA), Asia Pacific Trade Agreement (APTA), Trade Preferential System among the Members States of the Organization of the Islamic Conference (TPS-OIC), The Developing-8 (or D-8), Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC FTA). Bangladesh has bilateral trade agreements with 43 countries, namely: Albania, Algeria, Belarus, Bhutan, Brazil, Bulgaria, Cambodia, China, Czech Republic, Egypt, Germany, Hungary, India, Indonesia, Iran, Iraq, Kenya, Democratic People's Republic of Korea, Kuwait, Libya, Malaysia, Mali, Morocco, Myanmar, Nepal, Pakistan, the Philippines, Poland, Romania, Senegal, Sri Lanka, Sudan, Thailand, Turkey, Uganda, Ukraine, the United Arab Emirates, Uzbekistan, Viet Nam, Zambia and Zimbabwe. All the agreements are general in nature and aimed at promoting bilateral trade<sup>23</sup>. Myanmar is a founding Member of the WTO. It has not been party to any dispute settlement proceeding at the WTO. It is granting most-favored-nation (MFN) treatment to all trading partners, complainant, respondent, or third party. Myanmar is party to few RTAs. Myanmar became member of the Association of South East Asian Nation (ASEAN) member in 1997 and Chaired ASEAN in 2014. As an ASEAN member, Myanmar participates in ASEAN's preferential agreements with Australia and New Zealand, China, India, Japan, and the Republic of Korea. As a member of ASEAN, Myanmar, together with the other ASEAN Members, is negotiating with ASEAN FTA partners (Australia, China, India, Japan, Republic of Korea, and New Zealand) a Framework for Regional Comprehensive Economic Partnership (RCEP), which is to be concluded by the end of 2015. Myanmar signed the Global System of Trade

<sup>22</sup> A Trade Promotion Department was set up under the Ministry of Commerce in April 2013, to promote exports and to facilitate imports through: facilitating the trading activities of the private sector and SMEs, (WTO Trade Policy Review Secretariat report 2014)

<sup>23</sup> WTO Trade Policy Review for Bangladesh Secretariat Report 2012

Preferences among Developing Countries (GSTP) in 1988, which entered into force on 19 April 1989. Myanmar is a party to the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Co-operation (BIMSTEC), BIMSTEC parties are negotiating a BIMSTEC Free Trade Area Framework Agreement in goods, services, and investment. Myanmar is a party to the Greater Mekong Sub-region (GMS) program. In 1992, Myanmar, together with Cambodia, Lao PDR, Thailand, Viet Nam, and Yunnan Province of China, launched the program on sub-regional economic cooperation. To enhance bilateral trade with neighboring countries, Myanmar has signed four MoUs on establishing bilateral joint trade commissions, with Bangladesh, India, Thailand, and Viet Nam. With a view to promoting and facilitating bilateral trade with neighboring countries through border points mainly by road transport "border trade". Myanmar has 14 main border trade points with four neighboring countries. Myanmar has signed five border trade agreements, with China, India, Bangladesh, Thailand, and Lao PDR. It appears that no preferential treatment is accorded to border trade compared with other means of trade.

16. Both Bangladesh and Myanmar encourages foreign direct investment. Bangladesh provides national treatment in bilateral treaties for the promotion and protection of foreign investment. Treaties have been concluded with 30 countries (UK, Germany, Belgium, France, ISA, South Korea, Romania, Italy, Canada, Netherlands, Malaysia, Pakistan, China, Poland, Philippine, Indonesia, Japan, North Korea, Uzbekistan, Switzerland, Austria, Iran, Thailand, Singapore, Vietnam, India, Denmark, UAE, Turkey Belarus) among which 24 agreements are ratified. On the other hand, Myanmar also concluded eight bilateral investment treaties with Philippines, Viet Num, China, LAO PDR, Thailand, India, Kuwait and EU.

### **Tariff Policies and Non Tariff Measures**

17. Bangladesh's national tariff line consists of HS 8 digit. Most Favoured Nation Tariff is applied to all partner countries, with exception for FTAs/PTAs and duty and tax free imports from Bhutan for 18 products<sup>24</sup> including vegetable, fruits, fruit juices, jams, pickles, pebbles and other mineral products. In 2013, Bangladesh's tariff comprised 6,511 lines at the HS 8 digit of which 10.4% was duty free .In 2008 Bangladesh's Simple Average MFN tariff for all products was 14.8% while for agricultural products it was 17.6% and for WTO non agricultural products it was 14.3%. The next five years tariff was liberalized slightly and the simple average MFN tariff as 13.9% for all products, 16.8% for agricultural products and 13.4% for WTO non agricultural products.

18. It is observed that Myanmar applies tariff on Most Favored Nation basis to its trading partners at HS 8 digit level as its 2013 tariff comprised 9,558 lines at the HS 8 digit of which 3.98% was duty free where 94.74% of total tariff line was ranging from 0-15% (zero to fifteen percent) of tariff. Myanmar relies on ad valorem tariff with no specific duty was imposed in 2013. Myanmar's simple average tariff did not changed by a good deal in recent years, slightly decreased in agricultural products. The simple average applied MFN tariff was 6.1% in 2008 where the average MFN tariff was 8.9% for agricultural products and 5.7% for non agricultural products as per WTO definition of products. In 2013, the simple

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<sup>24</sup> Source: The Daily Star, "Hydropower-ed talks likely/ Bhutanese PM due today" viewed at <http://www.thedailystar.net/hydropower-ed-talks-likely-53598>



average MFN tariff as 5.5% for all products, 8.9% for agricultural products and 5.0% for WTO non agricultural products<sup>25</sup>

19. Standard Rules of Origin (SORs) is applied by Bangladesh when rules of origin are not specified in any kind of RTAs to which Bangladesh is a party. At present, rules of origin are specified in SAPTA, SAFTA, APTA and TPS-OIC. So when imports are made under these agreements, preferential rule of origin as directed by the particular agreement is applied. Under SORs, the general rule is that the minimum local value-addition must be 50% of the f.o.b. value. On contrary, Myanmar does not have any non-preferential rules of origin. Preferential rules of origin for imports under ATIGA and other FTAs are detailed in the appendices to those agreements.

20. Both Bangladesh and Myanmar maintains few non tariff measures but have taken positive actions to promote international trade. For example, Bangladesh is becoming increasingly liberal year after year. Bangladesh abolished import licensing in 1984 and pre-shipment inspection (PSI) has been phased out in 2013. The control list of Import Policy Order (IPO) 2012-15 contains banned and restricted items. The banned list generally includes two categories of products: those that run counter to the religious and social morals of the Bangladeshis ("non-trade reasons"). Restricted items are importable subject to the conditions specified in the Order. In addition to customs duty, Bangladesh levies value added tax, supplementary duty, regulatory duty, advance trade VAT and advance income tax on import. Still, there is a lot of scope for Bangladesh to liberalize trade. On the other hand, Myanmar also maintains a list of import prohibited products like counterfeit currency and coins; pornographic material; all kinds of narcotic drugs and psychotropic substances; playing cards; goods bearing the imprint or reproduction of the flag of Myanmar; goods bearing the emblem of Buddha and pagodas of Myanmar; arms and ammunition; antiques and archeologically valuable items; wildlife and endangered species and; alcoholic beverages and cigarettes. Myanmar also restricts certain imports for which a recommendation is required from the relevant government department and agencies. In 2013, import licensing requirement of 166 commodities (1,900 tariff lines) was abolished.

### **Sectors with Comparative Advantage**

21. In order for a PTA or FTA to be a successful one, the countries need to have difference in the areas of comparative advantages. The idea behind this is that each country can specialize in the areas of their comparative advantages and gain from mutually beneficial trade. Revealed Comparative Advantage (RCA) Index is calculated for Bangladesh and Myanmar in Harmonized System (HS) Chapter wise to find the area of comparative advantage. It is found that Bangladesh has comparative advantage in the global market in 6 sectors where Myanmar has comparative disadvantage. Myanmar has comparative advantage in 12 sectors where Bangladesh has comparative disadvantage. Both countries have comparative advantage in 5 sectors in the global market. More close look on the sectors shows that Myanmar is ahead of Bangladesh in agricultural sector and understandably so the country is endowed with greater land area as compared to their population, allowing them to export in the global market which translated into higher RCA. Bangladesh has higher revealed comparative advantage than Myanmar

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<sup>25</sup> In 2013, 9821 Tariff lines at 10 digit level were used for statistical purpose although Tariff rates were determined at HS 8 digit level. Tariff averages are calculated at HS 8 digit level. For more information, WTO Trade Policy Review 2014, Secretariat Report for Myanmar (page 34) and WTO Tariff Analysis Online (TAO) is being referred.

in industrial products, except few natural resource and agro based industrial sectors. Even where both Bangladesh and Myanmar have comparative advantages, Bangladesh has the higher one.

**Table 1: Comparison of the Areas of Revealed Comparative Advantages (RCA) of Bangladesh and Myanmar in the Global Market**

| HS Chapter | Product label  | NRCA of Bangladesh | NRCA of Myanmar | Only Bangladesh, Not Myanmar | Only Myanmar, Not Bangladesh | Both |
|------------|--|--------------------|-----------------|------------------------------|------------------------------|------|
| 01         | Live animals   | -1.000             | 0.407           |                              | ✓                            |      |
| 03         | Fish, crustaceans, molluscs, aquatic invertebrates nes | 0.570              | 0.699           |                              |                              | ✓    |
| 07         | Edible vegetables and certain roots and tubers         | -0.399             | 0.914           |                              | ✓                            |      |
| 10         | Cereals  | -0.963             | 0.368           |                              | ✓                            |      |
| 12         | Oil seed, oleagic fruits, grain, seed, fruit, etc, nes | -0.773             | 0.445           |                              | ✓                            |      |
| 14         | Vegetable plaiting materials, vegetable products nes   | -0.289             | 0.699           |                              | ✓                            |      |
| 20         | Vegetable, fruit, nut, etc food preparations           | -0.768             | 0.185           |                              | ✓                            |      |
| 24         | Tobacco and manufactured tobacco substitutes           | 0.134              | -0.910          | ✓                            |                              |      |
| 25         | Salt, sulphur, earth, stone, plaster, lime and cement  | -0.566             | 0.253           |                              | ✓                            |      |
| 26         | Ores, slag and ash                                     | -0.864             | 0.522           |                              | ✓                            |      |
| 27         | Mineral fuels, oils, distillation products, etc        | -0.962             | 0.351           |                              | ✓                            |      |
| 40         | Rubber and articles thereof                            | -0.955             | 0.255           |                              | ✓                            |      |
| 41         | Raw hides and skins (other than furskins) and leather  | 0.747              | -0.696          | ✓                            |                              |      |
| 44         | Wood and articles of wood, wood charcoal               | -0.983             | 0.911           |                              | ✓                            |      |
| 46         | Manufactures of plaiting material, basketwork, etc.    | 0.235              | 0.375           |                              |                              | ✓    |
| 53         | Vegetable textile fibres nes, paper yarn, woven fabric | 0.978              | -0.407          | ✓                            |                              |      |
| 61         | Articles of apparel, accessories, knit or crochet      | 0.942              | -0.096          | ✓                            |                              |      |
| 62         | Articles of apparel, accessories, not knit or crochet  | 0.948              | 0.790           |                              |                              | ✓    |
| 63         | Other made textile articles, sets, worn clothing etc   | 0.820              | -0.700          | ✓                            |                              |      |
| 64         | Footwear, gaiters and the like, parts thereof          | 0.433              | 0.248           |                              |                              | ✓    |
| 65         | Headgear and parts thereof                             | 0.850              | -0.900          | ✓                            |                              |      |
| 67         | Bird skin, feathers, artificial flowers, human hair    | 0.214              | 0.184           |                              |                              | ✓    |
| 71         | Pearls, precious stones, metals, coins, etc            | -0.994             | 0.494           |                              | ✓                            |      |

Source: Author's calculation, based on ITC Trade Map data for the year 2013

## Bilateral Trade Relation

22. Bangladesh has a historical connection with Bangladesh as Myanmar is amongst the earlier countries recognizing the independence of Bangladesh (13 January 1972). Before the independence of Bangladesh, Myanmar opened counselor office at Dhaka on 26 March 1951. Since the independence of Bangladesh both countries built close and cordial ties. The diplomatic relationship between Bangladesh and Myanmar was established on 21 March 1972 when both countries established their Embassy to the other countries<sup>26</sup>. Bangladesh has a number of bilateral trade agreements with Myanmar among which Bilateral Trade Agreement (1973), Air Transport Agreement (1977), Boundary Agreement on Demarcation of the Land Section of the Boundary North of the Naaf River (1979), Agreement on Border Arrangement and Cooperation (1980), Agreement for Physical Arrangements for Repatriation of Myanmar Residents (1992), Agreement on Border Trade between the two countries (1994), Banking Arrangement between the Sonali Bank and the Myanmar Investment and Commercial Bank for Implementation of the Border trade Agreement (1994), Agreement on Prevention of Illicit Trafficking in Narcotic Drugs, Psychotropic Substances and Precursors (1994), Treaty on Demarcation of the land section of the Boundary North of the Naaf River (1998), Agreement on Cultural Co-operation (2002), Agreement on Coastal and Maritime Shipping (.2003) are mentionable.

23. Despite two countries has long historical and commercial relationship the volume of bilateral trade is negligible as the total trade volume of goods accounted for US\$ 104.26 million in FY 2013-14 with export value of US\$ 16.09 and Import value of US\$ 92.17. The recent trend of bilateral trade between

<sup>26</sup> Official Website of the Embassy of Myanmar in Bangladesh viewed at <http://www.myanmarembassydhaka.com/myanmar-bangladesh-bilateral-relations-2/>

Bangladesh and Myanmar reveals that Bangladesh is facing continuous trade deficit. Over the last five years Bangladesh's exports to Myanmar is rising slowly but imports had ups and downs. However, trade balance was negative during the period considered.

24. Composition of Bangladesh exports to Myanmar shows that a lion share of Bangladesh's export to Myanmar is captured by pharmaceutical products. In 2013-14, total export of pharmaceutical products was US\$ 11.7 million which accounted for 72.6% of total export to Myanmar while Bangladesh's major globally exportable item readymade garments accounted for 11.0% with export value of US\$ 1.8 million. Composition of Bangladesh's major export products at HS 6 digit (product) level shows that among the pharmaceutical products, export of medicaments stood tall with US\$ 6.42 million having 39.88 percent of Bangladesh's total export to Myanmar. Thus Bangladesh's export basket for Myanmar is dominated by pharmaceutical products while other products like Knitwear Garments, Towers and lattice masts, iron or steel, Footwear, outer soles/uppers of rubber or plastics, Portland cement and Articles of human hair were amongst the major export products. However, Bangladesh's imports from Myanmar are also concentrated on limited number of products. Such concentration is even more than that in case of export of products in Myanmar. "Wood in the rough" captures 72.6 percent of Bangladesh's total import from Myanmar. Among few other import products import of rice dried leguminous vegt...shelled stood tall having import value of US\$ 9.69 million and US\$ 6.26 million respectively. Besides, Nuts (fresh/dried), Fish fresh or chilled excld. fish fillets, Onions, shallots garlic, fresh or chilled. Ginger saffron, turmeric & other spices, Fruit & nuts, uncooked or cooked, Fish, dried, salted or in brine, Fruit, dried other not coconut etc were amongst major import products.

### Implication for Trade Creation or Diversion

25. Neither Myanmar is a significant trade partner of Bangladesh nor Bangladesh is a significant trade partner of Myanmar both in terms of export and import. PTA may not bring significant benefit in the short run. Because PTA may bring significant outcome when two countries have considerable volume of bilateral trade. From trade in goods perspective, it can be anticipated that the possibility of either trade creation or diversion to a great extent is low since Bangladesh does not have any significant trade with them. The Products with the most possibility of trade creation is shown in the table below.

**Table 2: List of products with the most possibility of trade creation**

| SL | HS code | Description  | NRCA of Bangladesh | NRCA of Myanmar | Tariff of Bangladesh |
|----|---------|--|--------------------|-----------------|----------------------|
| 1  | 030389  | Frozen fish, n.e.s.  | 0.552              | 0.924           | 25.0                 |
| 2  | 030559  | Fish nes, dried, whether or not salted but not smoked                                    | 0.265              | 0.793           | 25.0                 |
| 3  | 070310  | Onions and shallots, fresh or chilled  | -0.986             | 0.647           | 15.0                 |
| 4  | 080450  | Guavas, mangoes and mangosteens, fresh or dried  | -0.905             | 0.412           | 25.0                 |
| 5  | 081340  | Fruits, dried nes  | -0.173             | 0.912           | 25.0                 |
| 6  | 090421  | Fruits of the genus Capsicum or of the genus Pimenta : Dried, neither crushed nor ground | -0.739             | 0.885           | 15.0                 |
| 7  | 091030  | Turmeric (curcuma)   | 0.390              | 0.970           | 7.5                  |
| 8  | 110814  | Manioc (cassava) starch  | -1.000             | 0.463           | 5.0                  |
| 9  | 121190  | Plants &pts of plants(incl sed&fruit) usd in pharm,perf,insect etc nes                   | -0.956             | 0.358           | 9.1                  |
| 10 | 251511  | Marble and travertine, crude or roughly trimmed  | -1.000             | 0.026           | 25.0                 |
| 11 | 253090  | Mineral substances, nes  | -1.000             | 0.825           | 10.0                 |
| 12 | 260111  | Iron ores&concentrates,oth than roasted iron pyrites,non-agglomerated                    | -1.000             | 0.089           | 5.0                  |
| 13 | 400121  | Natural rubber in smoked sheets  | -0.449             | 0.967           | 7.5                  |
| 14 | 400122  | Technically specified natural rubber (TSNR)  | -1.000             | 0.829           | 10.0                 |
| 15 | 440349  | Logs, tropical hardwoods nes   | -1.000             | 0.997           | 5.0                  |
| 16 | 620293  | Womens/girls anoraks & similar article of man-made fibres,not knitted                    | 0.872              | 0.933           | 25.0                 |
| 17 | 701400  | Signallg glassware&optical elemnts glass (o/t 7015) nt optically workd                   | -1.000             | 0.711           | 10.0                 |
| 18 | 730799  | Fittings, pipe or tube, iron or steel, nes   | -0.700             | 0.554           | 25.0                 |
| 19 | 740311  | Copper cathodes and sections of cathodes unwrought                                       | -1.000             | 0.348           | 5.0                  |
| 20 | 853610  | Electrical fuses, for a voltage not exceeding 1,000 volts                                | -0.999             | 0.206           | 10.0                 |

|    |        |   |        |       |     |
|----|--------|---|--------|-------|-----|
| 21 | 900190 | Prisms,mirrors & other optical elements of any material,unmounted,nes | -0.421 | 0.643 | 7.5 |
|----|--------|---|--------|-------|-----|

Note: NRCA of both countries are calculated for 2013 using ITC Trade Map data) and National Board of Revenue (for tariff)

26. A number of 21 products has been identified where Myanmar has *Revealed Comparative Advantage* and at the same time Bangladesh's average import from global market) as well as Myanmar's global export are greater than US\$ 1 million (averages taken for 2011, 2012 and 2013) while Bangladesh imposed tariff 5 percent (simple average) or more on MFN basis. It is noteworthy that in these products Myanmar has higher RCA than that of Bangladesh. This implies that if Bangladesh removes/reduces tariff for Myanmar by the virtue of a PTA, there will be a possibility that Bangladesh's import will increase from an efficient source Myanmar as the country is likely to have *comparative advantage* in these products. So there is a **possibility of trade creation** for these products.

27. In similar manner, a number of (19) products has been identified where Myanmar has *RCA* and at the same time Bangladesh's average import from Global Market as well as Myanmar's average global export are greater than US\$ 1 million (averages taken for 2011, 2012 and 2013) while Bangladesh imposed tariff 5 percent (simple average) or more on MFN basis. This implies that if Bangladesh removes/reduces tariff for Myanmar by the virtue of a PTA, there will be a possibility that Bangladesh's import of these products will increase from the inefficient source of these products i.e Myanmar as the country has comparative disadvantage in these products. So, there is a possibility of *trade diversion* for these products.

**Table3: List of products with most possibility of trade diversion**

| SL | HS code | Description  | NRCA of Bangladesh | NRCA of Myanmar | Tariff of Bangladesh | Top Three Import Sources         |
|----|---------|--|--------------------|-----------------|----------------------|----------------------------------|
| 1  | 240120  | Tobacco, unmanufactured, partly or wholly stemmed or stripped          | 0.590              | -0.944          | 25.0                 | Brazil, USA, Singapore           |
| 2  | 271012  | Light petroleum oils and preparations                                  | -0.751             | -1.000          | 13.2                 | Singapore Malaysia, Taipei       |
| 3  | 271019  | Other petroleum oils and preparations                                  | -0.934             | -1.000          | 15.8                 | Singapore, Malaysia, South Korea |
| 4  | 271119  | Petroleum gases and other gaseous hydrocarbons nes, liquefied          | -1.000             | -1.000          | 5.0                  | Malaysia, Vietnam, Taipei        |
| 5  | 281410  | Anhydrous ammonia  | -0.269             | -1.000          | 10.0                 | Saudi Arabia, India, Nigeria     |
| 6  | 330210  | Mixtures of odoriferous substances for the food or drink industries    | -1.000             | -0.770          | 17.5                 | Singapore, India, Switzerland    |
| 7  | 382490  | Chemical/allied industry preparations/prods nes                        | -0.932             | -0.779          | 11.7                 | Vietnam, India, China            |
| 8  | 420292  | Containers,with outer surface of sheeting of plas or tex materials,nes | 0.307              | -0.557          | 25.0                 | China, Belgium, Hon Kong         |
| 9  | 610462  | Womens/girls trousers and shorts, of cotton, knitted                   | 0.964              | -0.301          | 25.0                 | China, Belgium, Thailand         |
| 10 | 610990  | T-shirts,singlets and other vests,of other textile materials,knitted   | 0.905              | -0.335          | 25.0                 | China, India, Singapore          |
| 11 | 611020  | Pullovers, cardigans and similar articles of cotton, knitted           | 0.965              | -0.441          | 25.0                 | China, Indonesia, Malaysia       |
| 12 | 640299  | Footwear, outer soles/uppers of rubber or plastics, nes                | -0.049             | -0.849          | 25.0                 | China, Thailand, Malaysia        |
| 13 | 640419  | Footwear o/t sports,w outer soles of rubber/plastics&uppers of tex mat | 0.529              | -0.670          | 25.0                 | China, India, Netherlands        |
| 14 | 800110  | Tin not alloyed unwrought  | -1.000             | -0.041          | 5.0                  | Malaysia, Singapore, Thailand    |
| 15 | 850431  | Transformers electric power handling capacity not exceeding 1 KVA, nes | -0.845             | -0.066          | 10.0                 | China, Germany, Japan            |
| 16 | 852580  | Television cameras, digital cameras and video camera recorders         | -0.997             | -0.239          | 17.5                 | Singapore, Taipei, Russia        |
| 17 | 852990  | Parts suitable f use solely/princ w the app of headings 85.25 to 85.28 | -0.911             | -0.764          | 20.0                 | China, Malaysia, Singapore       |
| 18 | 900211  | Objective lenses f cameras, projectors/photographic enlargers/reducers | -0.156             | -0.133          | 10.0                 | Thailand Singapore, Germany      |
| 19 | 940360  | Furniture, wooden, nes   | -0.988             | -0.646          | 25.0                 | China, Singapore, Thailand       |

Note: NRCA of both countries are calculated for 2013 using ITC Trade Map data and National Board of Revenue (for tariff)

### Bangladesh's Export Perspective

28. Export potential products are identified by examining Revealed Comparative Advantage of Bangladesh, the supply capacity of Bangladesh (indicated from export performance in the global market), import demand of Myanmar and tariff applied by Myanmar. Export capacity of Bangladesh as well as import demand of Myanmar is considered upon three years (2011, 2012 and 2013) average basis. Potential Products are identified at 6 digit level where Bangladesh has RCA, Bangladesh's export

capacity as well as Myanmar's import demand is more than US\$ 1 million and on which Myanmar imposes tariff at least 5 percent.

**Table 4: List of Bangladesh's potential export products with Myanmar having Revealed Comparative Disadvantage in Global market**

| SL | HS code | Description  | NRCA of Bangladesh | NRCA of Myanmar | Tariff of Myanmar |
|----|---------|--|--------------------|-----------------|-------------------|
| 1  | 190510  | Crisp bread  | 0.161              | -0.991          | 15.0              |
| 2  | 240120  | Tobacco, unmanufactured, partly or wholly stemmed or stripped            | 0.590              | -0.944          | 15.0              |
| 3  | 392321  | Sacks and bags (including cones) of polymers of ethylene                 | 0.122              | -0.983          | 5.0               |
| 4  | 392390  | Articles for the conveyance or packing of goods nes, of plastics         | 0.051              | -0.811          | 5.0               |
| 5  | 410449  | Hides and skins of bovine "incl. buffalo" or equine animals, in the dr   | 0.835              | -1.000          | 7.5               |
| 6  | 410712  | Grain splits leather "incl. parchment-dressed leather", of the whole h   | 0.879              | -1.000          | 7.5               |
| 7  | 410719  | Leather "incl. parchment-dressed leather" of the whole hides and skins   | 0.558              | -1.000          | 7.5               |
| 8  | 410791  | Full grains leather "incl. parchment-dressed leather", unsplit, of the   | 0.607              | -0.785          | 7.5               |
| 9  | 410792  | Grain splits leather "incl. parchment-dressed leather", of the portion   | 0.632              | -0.923          | 7.5               |
| 10 | 410799  | Leather "incl. parchment-dressed leather" of the portions, strips or s   | 0.640              | -0.988          | 7.5               |
| 11 | 420292  | Containers, with outer surface of sheeting of plas or tex materials,nes  | 0.307              | -0.557          | 7.5               |
| 12 | 460219  | Basketwork, wickerwork and other articles, made directly to shape from   | 0.525              | -0.143          | 5.0               |
| 13 | 460290  | Basketwork,wickerwork&other article made up from oth plaited materials   | 0.427              | -0.627          | 5.0               |
| 14 | 520841  | Plain weave cotton fabric,>=85%, not more than 100 g/m2, yarn dyed       | 0.958              | -1.000          | 5.0               |
| 15 | 600634  | Printed fabrics, knitted or crocheted, of synthetic fibres, of a width   | 0.198              | -0.996          | 15.0              |
| 16 | 610422  | Womens/girls ensembles, of cotton, knitted                               | 0.795              | -0.937          | 15.0              |
| 17 | 610423  | Womens/girls ensembles, of synthetic fibres, knitted                     | 0.122              | -0.343          | 20.0              |
| 18 | 610432  | Womens/girls jackets, of cotton, knitted                                 | 0.257              | -0.905          | 15.0              |
| 19 | 610990  | T-shirts, singlets and other vests, of other textile materials, knitted  | 0.905              | -0.335          | 20.0              |
| 20 | 611020  | Pullovers, cardigans and similar articles of cotton, knitted             | 0.965              | -0.441          | 15.0              |
| 21 | 621290  | Corsets, braces & similar articles & parts thereof, of textile materials | 0.601              | -0.718          | 15.0              |
| 22 | 621710  | Clothing accessories nes, of textile materials, not knitted              | 0.682              | -0.871          | 15.0              |
| 23 | 630221  | Bed linen, of cotton, printed, not knitted                               | 0.959              | -0.974          | 10.0              |
| 24 | 630231  | Bed linen, of cotton, nes  | 0.916              | -1.000          | 10.0              |
| 25 | 630260  | Toilet & kitchen linen, of terry towellg or similar terry fab, of cotton | 0.878              | -0.975          | 10.0              |
| 26 | 630291  | Toilet and kitchen linen, of cotton, nes                                 | 0.881              | -1.000          | 10.0              |
| 27 | 630612  | Tarpaulins, awnings and sunblinds, of synthetic fibres                   | 0.170              | -1.000          | 20.0              |
| 28 | 640419  | Footwear o/t sports, w outer soles of rubber/plastics &uppers of tex mat | 0.529              | -0.670          | 7.5               |

Note: NRCA of both countries are calculated for 2013 using ITC Trade Map data and tariff of Myanmar shows simple average tariff using WTO TAO database

**Table 5: List of Bangladesh's potential export products where both countries have Revealed Comparative Disadvantage in Global market**

| SL | HS code | Description  | NRCA of Bangladesh | NRCA of Myanmar | Tariff of Myanmar |
|----|---------|--|--------------------|-----------------|-------------------|
| 1  | 610332  | Mens/boys jackets and blazers, of cotton, knitted                      | 0.488              | 0.356           | 15.0              |
| 2  | 610342  | Mens/boys trousers and shorts, of cotton, knitted                      | 0.948              | 0.488           | 15.0              |
| 3  | 610433  | Womens/girls jackets, of synthetic fibres, knitted                     | 0.696              | 0.082           | 20.0              |
| 4  | 610463  | Womens/girls trousers and shorts, of synthetic fibres, knitted         | 0.898              | 0.486           | 20.0              |
| 5  | 610510  | Mens/boys shirts, of cotton, knitted                                   | 0.976              | 0.196           | 15.0              |
| 6  | 610910  | T-shirts, singlets and other vests, of cotton, knitted                 | 0.982              | 0.239           | 15.0              |
| 7  | 620349  | Mens/boys trousers and shorts, of other textile materials, not knitted | 0.946              | 0.046           | 20.0              |
| 8  | 620520  | Mens/boys shirts, of cotton, not knitted                               | 0.978              | 0.835           | 10.0              |
| 9  | 621143  | Womens/girls garments nes, of man-made fibres, not knitted             | 0.701              | 0.790           | 20.0              |
| 10 | 621210  | Brassieres and parts thereof, of textile materials                     | 0.879              | 0.294           | 15.0              |
| 11 | 630533  | Sacks, bags, packing, of strip plastic material                        | 0.358              | 0.392           | 15.0              |
| 12 | 640399  | Footwear, outer soles of rubber/plastics uppers of leather, nes        | 0.625              | 0.697           | 7.5               |
| 13 | 670300  | Human hair,worked;wool/animal hair&other tex mat,prepared for wigs,etc | 0.303              | 0.561           | 5.0               |

Note: NRCA of both countries are calculated for 2013 using ITC Trade Map data and tariff of Myanmar shows simple average tariff using WTO TAO database

29. Since geographically Myanmar is adjacent to Bangladesh bilateral trade will be cost effective compared to the remote countries. Besides, Myanmar has historical relationship with Bangladesh in terms

of cultural, economic and commercial activities which may play a positive role in increasing trade. Though the existing level of trade between these countries is low, the volume of trade is retaining upward trend.

30. Though Myanmar's average MFN tariff is moderate, tariffs on the agricultural products like fruit, vegetables, coffee, tea and few industrial products such as woven garments, knitwear, home textiles, footwear are high. So Bangladesh may have opportunity to exploit benefit from Myanmar through obtaining tariff concession.

## **End Notes**

31. Though the economy of Myanmar is significantly smaller than Bangladesh it is a growing economy with strong growth rate. In the recent years it is being integrated in the global economy by means of several political and economic reforms which explored their potential as a resource based economy which is strengthening their economic and trade capacity. From the export perspective there is potential for plastic products, leather products, knitwear, woven garments, pharmaceuticals, home textiles and footwear. Bangladesh may proceed to negotiate with Myanmar aimed at forming a bilateral PTA which initially may cover only trade in goods and such partial scope Agreement may lead to exchange of positive list of products. It is noteworthy to mention that as Bangladesh and Myanmar both countries are member of BIMSTEC FTA, the positive lists of products have to be BIMSTEC+ (plus). Otherwise there will be no effectiveness of such PTA. Further graduation and expansion of coverage may be undertaken upon the outcome of the proposed PTA.

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