

An Analysis of the Bangladeshi Pharmaceutical Industry after LDC Graduation: Prospects and Challenges

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Abstract

Unusually as a least developed country (LDC), Bangladesh has a strong pharmaceutical industry. The country successfully developed its pharmaceutical industry due to two national drug policies (NDPs), NDP 1982 and NDP 2005, and the intellectual property waiver offered by TRIPS for LDCs. This study first analyzed the roles of the NDPs and TRIPS in the Bangladeshi pharmaceutical industry and then examined the prospects and challenges of the Bangladeshi pharmaceutical industry after graduation from LDC status.

Keywords: IPRs, LDC, Pharmaceutical Industry, Bangladesh, WTO/TRIPS

1 Introduction

Many developing countries have found it extremely difficult to promote local pharmaceutical production. However, Bangladesh, a least developed country (LDC), has succeeded in developing a pharmaceutical industry.

Several factors helped the country develop a pharmaceutical industry. However, two national drug policies (NDPs; NDP 1982 and NDP 2005) and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) are the main factors that made it possible for the country to have a strong pharmaceutical industry.

Partly due to the healthy development of the pharmaceutical industry, Bangladesh's economy has developed rapidly, and the country will graduate from LDC status in 2026. Graduation from LDC status is good news for Bangladesh and Bangladeshis. However, once Bangladesh graduates, the country will lose all special treatments the country receives because of its LDC status.

This study first examined the impacts that Bangladesh may sustain after graduation from LDC status and then provided several recommendations for the Bangladeshi government and industry to cope with these challenges.

This paper comprises nine chapters. Chapter 1 is the introduction. Chapter 2 examines the previous studies. Chapter 3 outlines Bangladesh's history, culture, and society. Chapter 4 analyzes the current economic status of Bangladesh. Chapter 5 provides an overview of the pharmaceutical industry in Bangladesh. Chapter 6 outlines the Bangladesh intellectual property rights (IPR) structure, enforcement, and implementation. Chapter 7 explains what it means to graduate from LDC status. Chapter 8 is a discussion. Chapter 9 concludes the paper.

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2 Previous Studies

M. Monirul Azam analyzed the global standards for patent protection adopted under the TRIPS Agreement and possible solutions for LDCs, including Bangladesh, by comparing the experiences of Brazil, India, and South Africa. During the TRIPS negotiations, it was argued that the principle of a balance of rights and obligations was necessary because IP owners should be required to undertake certain obligations in return for the exclusive rights conferred to them. Brazil, India, and South Africa used the TRIPS flexibilities in different ways to change their national patent regimes to become TRIPS compliant. This article explores possible legislative and governmental intervention options for Bangladesh, utilizing the experiences of Brazil, India, and South Africa [1].

Reed Beall and Randall Kuhn assembled a database of all episodes in which a Compulsory License (CL) was publicly announced by a WTO member state since 1995. They collected 24 unique international CL episodes between January 1995 and June 2011, which collectively involved 40 drug patents for 22 unique pharmaceutical products. Most of these CLs were announced between 2003 and 2005, involved drugs for HIV/AIDS, and occurred in upper-middle-income countries (UMICs). The authors concluded that there is a great need for a systematic evaluation of existing global health agreements, treaties, and conventions [2].

Mohammad M. Azam and Kristy Richardson examined the capacity of Bangladesh's regulatory agencies, particularly the Department of Patent Design and Trademarks (DPDT) and the Directorate of Drug Administration (DDA), from the perspective of compliance with the TRIPS Agreement. The TRIPS Agreement aims to establish strong minimum standards for IPRs, including patent protection for pharmaceuticals in all of the WTO member states. After careful examination, the authors concluded that both the DPDT and the DDA lack the capacity to deal with post-TRIPS challenges [3].

Md Shahiduzzaman Sarkar and Jagjit Kaur Plahe examined policy options open to the Bangladeshi government for ensuring the availability of affordable drugs in the country, in particular by safeguarding the production of domestic generics, in the post-TRIPS environment. To cope with this new situation, the authors recommend, first, the procurement of essential drugs by Bangladeshi firms, and secondly, collaboration between Bangladeshi firms and Indian companies through contract manufacturing agreements, technical training and assistance, and the use of India's FDA-certified manufacturing facilities [4].

Mohammad Aktarul Alam Chowdhury argues that the protection and enforcement mechanisms of IPRs may become tools for developing and least developed countries to enhance economic and technological growth, provided these countries have the ability to grasp and utilize modern technology. Bangladesh should continue to strengthen its capacity building and coordination among different governmental institutions and bodies related to IPR issues, at all of the levels. He also argued, Bangladesh should make an effort to attain the highest possible levels of skill and knowledge to exploit TRIPS flexibilities [5].

Mamun Ul Ala measured the different types of vulnerability facing Bangladeshi pharmaceutical firms since 2005 due to the TRIPS Agreement. The author found that the R&D-related vulnerability was the greatest, followed by the international competitiveness-related vulnerability. The author concluded that the TRIPS transition period has not been used effectively

by the Bangladeshi pharmaceutical sector to create a strong technological platform for the industry [6].

Ravinder Rena examined whether WTO policies have a positive or negative effect on trade in developing countries. Regarding issues of access to medicine, the author pointed out that poor people in developing countries are unable to access affordable medicine because WTO member states have failed to clarify ambiguities between the need for governments to protect public health on the one hand, and to protect the intellectual property rights of pharmaceutical companies on the other hand. The author concluded that true and lasting solutions to global economic problems can only come when the model of global competitiveness between countries becomes one of genuine cooperations [7].

Mazharul Islam discusses the challenges that the Bangladeshi pharmaceutical industry will face after its special exemption disappears. After Bangladesh's status as an LDC ends, it will enter a stipulated transition period. The ability of its pharmaceutical industry to use the patent waiver will end seven years before the end of the transition period. Bangladesh needs to update its patent law (the Patent Act 1911), for instance, the period of patent protection should be increased from the current 16 years to 20 years, and the protection of animal and plant varieties needs to be introduced [8].

3 Demographics and Geography of Bangladesh

Bangladesh has one of the highest population densities and is the seventh-most populous country in the world. Bangladesh averages more than 1,000 people per km² throughout the country [9].

The Bengal Delta is situated where the Ganges and Brahmaputra rivers discharge into the Bay of Bengal and has a surface area of some 100,000 km². It is the world's largest delta. The Ganges Delta is also among the most fertile regions in the world [10], and approximately two-thirds of it is in Bangladesh. The monsoonal rains from May to October produce extreme flooding over much of Bangladesh, often causing severe crop damage and great loss of life [11]. Table 1 shows general information about Bangladesh [12].

Table 1: General Information about Bangladesh

Total Area	147,570 km ²
Population	170 mil.
Capital	Dhaka
Race	Bangali
Official Language	Bengali (Bangla)
Official Religion	Islam
Literacy Rate	72.9%

Source: [12]

4 The Current Status of the Bangladeshi Economy

4.1 Healthy Development Since Independence

Since its independence in 1971, Bangladesh has achieved impressive economic growth and social development, steadily reducing poverty and significantly improving living standards [13]. The country has one of the fastest-growing economies in the world over the past decade, supported by a demographic dividend and strong ready-made garment (RMG) exports [14]. There are two major industries in Bangladesh: RMG and remittance. About 83% of Bangladesh's total export earnings come from the garment industry, which generates about USD 32 billion every year. The RMG and remittance sectors contribute 11% and 8% to the GDP, respectively [15], [16].

Table 2: Bangladesh Basic Economic Indicators

Year	2018	2019	2020
Real GDP Growth Ratio	7.9 (%)	8.2 (%)	5.2 (%)
Nominal GDP	274.1 (1 bil \$)	302.6 (1 bil \$)	330.1 (1 bil \$)
Per Capita Nominal GDP	1,675 (\$)	1,828 (\$)	1,970 (\$)
CPI Growth Ratio	5.8 (%)	5.5 (%)	5.7 (%)
Trade Balance	▲18,178 (1 mil \$)	▲15,835 (1 mil \$)	▲17,861 (1 mil \$)
Foreign Researve	32,944 (1 mil \$)	32,717 (1 mil \$)	35,853 (1 mil \$)

Source: [16]

4.2 Impact of COVID-19 on the Bangladeshi Economy

At the onset of the COVID-19 pandemic, Bangladeshi exports, imports, and remittances contracted sharply. The nationwide lockdown led to a decline in domestic economic activity. However, the Bangladeshi economy remained positive in FY2020, despite falling to a historically low level. In FY2021, exports and imports rebounded strongly, reaching almost a pre-pandemic level [16].

4.3 Future Prospect of the Bangladeshi Economy

The International Monetary Fund expects Bangladesh's economic growth to increase to 6.6% in FY2022 (the fiscal year ending in June 2022) and 7.1% in FY2023 [17]. The World Bank forecasted 6.4% GDP growth for Bangladesh in FY2022 and 6.9% in FY2023 due to increasing services activity and firming exports of RMG [18].

Meanwhile, on December 14, 2021, the Asian Development Bank raised the FY2022 forecast for Bangladesh's GDP to 6.8%. The bank explained that faster import growth widens the trade deficit, but private investment will support growth with imports of capital machinery and raw materials for garments [19].

5 Pharmaceutical Industry of Bangladesh

5.1 Bangladesh's Strong Pharmaceutical Industry

Most developing countries depend on imports for the supply of essential medicines. The United Nations Conference on Trade and Development (UNCTAD) study in 2011 found most low-and-middle-income countries (LMICs) still either have no pharmaceutical industry or are involved in relatively late stage manufacturing and packaging of finished products. However, Bangladesh is an exception in this regard [20]. Although categorized as an LDC, Bangladesh has succeeded in developing a pharmaceutical industry [20].

5.2 Two National Drug Policies in Bangladesh

The NDPs in 1982 and 2005 had a major impact on the development and growth of the Bangladesh pharmaceutical industry [21].

5.2.1 NDP 1982

In the early 1980s, multinational enterprises (MNEs) dominated the Bangladesh pharmaceutical market. Only eight MNEs – Glaxo, Pfizer, Hoechst, and others – accounted for 70% of the drug market in Bangladesh at that time. These MNEs were manufacturing only simple drug formulations of primarily nonessential drugs [22]. An expert panel set up by General Hussain Muhammad Ershad in March 1982 found these MNEs were producing unnecessary and useless medicines, such as vitamin mixtures, tonics, alkalizers, cough mixtures, digestive enzymes, palliatives, gripe water, and hundreds of other similar products [23], [24]. Based on their observation, the expert panel compiled NDP 1982. The objectives of NDP 1982 were as follows:

- To provide administrative and legislative support for ensuring the quality of essential drugs relevant to the national health need.
- To reduce the price of medicines by ensuring the lowest competitive prices.
- To eliminate non-essential medicines from the market.
- To promote the production of local drugs and raw materials.
- To develop proper drug monitoring and information system to prevent wasteful misuse and ensure the proper utilization of the drug.
- To ensure Good Manufacturing Practice (GMP) and qualified pharmacists in manufacturing companies [25].

NDP 1982 had a large impact on the Bangladeshi pharmaceutical industry as follows:

- Formulation production increased from BDT 1,730 in 1981 to BDT 41,000 in 2002.
- Widely used essential drugs became more affordable.
- Dependence on the import of drug formulations reduced dramatically.
- Transformation from a drug importing country to a drug exporting country.
- MNEs were dislodged from the position of dominance [26].

5.2.2 NDP 2005

In 2005, the Bangladeshi government compiled another drug policy called NDP 2005 because circumstances had changed during the 23 years since NDP 1982 [27]. Unlike NDP 1982, NDP 2005 encouraged more foreign investments in the Bangladeshi market, although under limited conditions. Some key points of NDP 2005 follow:

- Foreign and multinational companies are allowed to invest and manufacture drugs in Bangladesh if they have at least three of their original research product drugs registered in at least two of the following countries: the USA, the UK, Switzerland, Germany, France, Japan, and Australia.

- To encourage the transfer of technology and availability of newly developed drugs, foreign companies with or without manufacturing plants in Bangladesh are allowed to manufacture drugs in Bangladesh under licensing agreement with any partners of their choice if the drug in the same brand name is registered and marketed in at least two of the following developed countries: USA, UK, Switzerland, Germany, France, Japan, and Australia.

- Only for marketing outside Bangladesh, foreign companies without manufacturing units in Bangladesh are allowed to manufacture drugs in the country under licensing agreement with any partner of their choice.

- Both local and foreign companies with manufacturing plants in Bangladesh are allowed to manufacture drugs under contract manufacturing arrangements at any other manufacturing plants of their choice [28].

NDP 2005 was compiled and issued by the Bangladeshi government in 2005. It partially relaxed foreign capital restrictions. In other words, NDP 2005 protected the Bangladeshi pharmaceutical industry from competitors in China and India while letting Bangladeshis access high-quality medicines [29].

5.3 The Current Status of the Bangladeshi Pharmaceutical Industry

5.3.1 Overview

Partly due to NDP 1982 and NDP 2005, the Bangladeshi pharmaceutical industry has been achieving a healthy development since the 1980s. According to the Ministry of Economy, Trade, and Industry, the pharmaceutical market in Bangladesh was USD 2.8 billion in 2018. It is expected to grow to USD 3.0 billion in 2019 and USD 3.2 billion in 2020 [30].

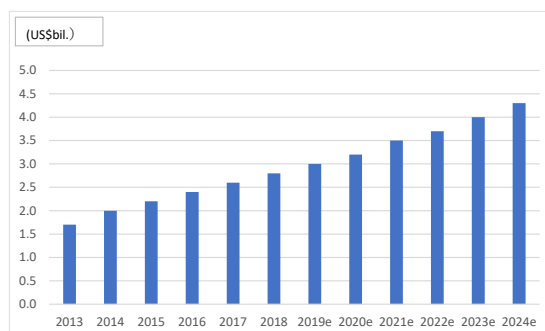


Figure 1: Bangladesh Pharmaceutical Market (2013–2022)

5.3.2 Segment Analysis

The Bangladeshi pharmaceutical companies primarily produce generic off-patent drugs. The market is split into three categories: Generic Medicines (market size USD 2 billion, market share: 71.5%), Patented Drugs (USD 0.2 billion., 7.1%) and over-the-counter (OTC; USD 0.6 billion, 21.4%) [31]. Fig. 2 shows Pharmaceutical Market in Bangladesh by Segment.

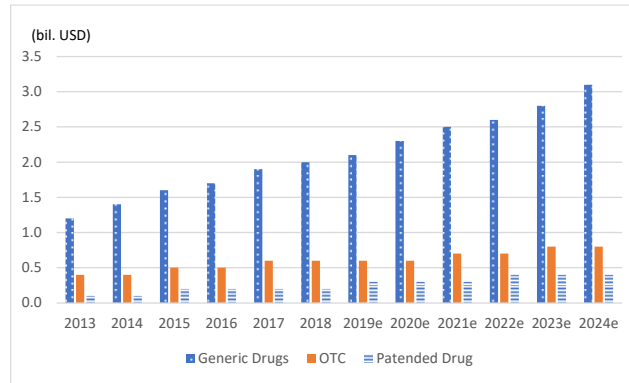


Figure 2: Pharmaceutical Market in Bangladesh by Segment

5.3.3 Disease Profile

The major causes of death in Bangladesh were communicable or transmissible diseases until around 1990 [32]. The country’s disease profile has undergone a major shift due to a demographic shift, lifestyle change, and rapid urbanization. As a result, noncommunicable diseases (NCDs) are rising, and acute diseases have been replaced by chronic diseases [33]. Fig. 3 shows the disease profile in Bangladesh [34].

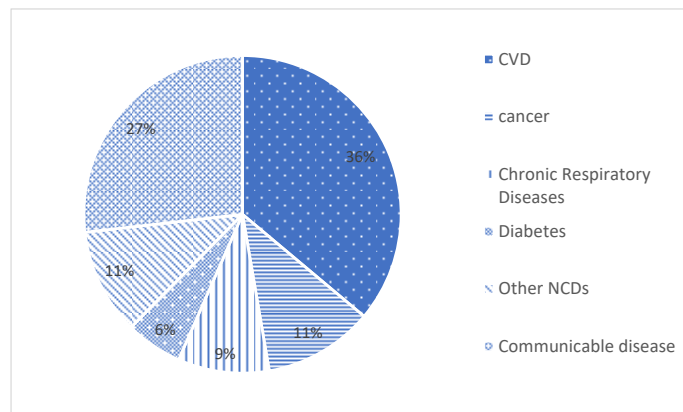


Figure 3: Disease Profile in Bangladesh [34]

5.3.4 Imports

Bangladesh is almost self-sufficient in manufacturing pharmaceutical products. Domestic pharmaceutical companies provide up to 97% of the medicines on the market, and the rest are imported [35]. The imported drug products are mostly specialized pharmaceutical products like vaccines, anti-cancer drugs, and essential lifesaving drugs [35]. On the other hand,

the pharmaceutical industry in Bangladesh is “import intensive,” as raw materials such as APIs, packaging, and materials are imported [35].

5.3.5 Exports

Recently, several large pharmaceutical companies in Bangladesh started exporting their products. According to the Directorate General of Drug Administration (DGDA), 54 pharmaceutical companies in Bangladesh exported their products to 146 destinations as of 2018. The exported countries include developing countries and regulated markets, such as the USA, UK, and EU. The sector's total exports were USD 103.46 million in 2018 [36].

5.3.6 Top-10 Pharmaceutical Companies in Bangladesh

Table 3: Top-10 Bangladesh Pharmaceutical Firms

	Company Name	type	found ation	founder/CEO	market share(%)
1	Square	public	1958	Samson H Chowdhury	17.0
2	Incepta Pharma	private	1999	Abdul Muktedir	11.1
3	Beximco	public	1980	ASF Rahman & Salman F Rahman	8.3
4	Renata	public	1993	Sayed S Kaiser Kabir	5.2
5	Healthcare Pharma	private	1989	Suraya Bilkis	5.2
6	Opsonin Pharma	public	1956	Abdul Khaleque Khan	5.1
7	ACI	public	1968	M. Anis Ud Dowla	4.4
8	Eskayef	private	1990	Latifur Rahman	4.4
9	Aristopharma	private	1986	M.A. Hassan	4.1
10	Acme	public	1954	Hamidur Rahman Sinha	3.5

Source [37], [38]

The pharmaceutical sector of Bangladesh is highly concentrated, with the top-10 firms capturing 70% of the market. The top-20 firms capture 80% of the market, and the top-3 firms (Square, Incepta, and Beximco) account for 36.3%. Table 3 shows the top-10 Bangladeshi pharmaceutical companies [37], [38]

6 Bangladeshi IPR System and Enforcement

6.1 History of IPR System in Bangladesh

Bangladesh inherited its patent law from the British government during British rule in India, which was subsequently divided into India, Pakistan, and Bangladesh [39]. All three countries inherited the British Patents and Designs Act 1911. India replaced the British Patents and Designs Act 1911 with the Patents Act of 1970, and product patents in pharmaceuticals were abolished in India [40].

Bangladesh, an LDC, had an option not to grant product patents in pharmaceuticals under the TRIPS scheme until first 2005, and then 2016, and 2033. However, Bangladesh did not exercise this option before 2008. On January 7, 2008, the Department of Patents, Designs, and Trademarks (DPDT) of Bangladesh issued an executive order (DPDT/P&D Act/2007/74/129) that stopped the patenting of pharmaceuticals.

Then DPDT set up a mailbox, according to TRIPS scheme, and started storing pharmaceutical patent applications in the mailbox. The Bangladeshi government is supposed to process the applications upon their graduation to developing country status [41].

6.2 The Current IPR System and Implementation

In Bangladesh, the DPDT under the Commercial Ministry accepts and grants patents after careful examination [42]. Fig. 4 shows the number of patents applied and granted in Bangladesh between 2000 and 2021 [43].

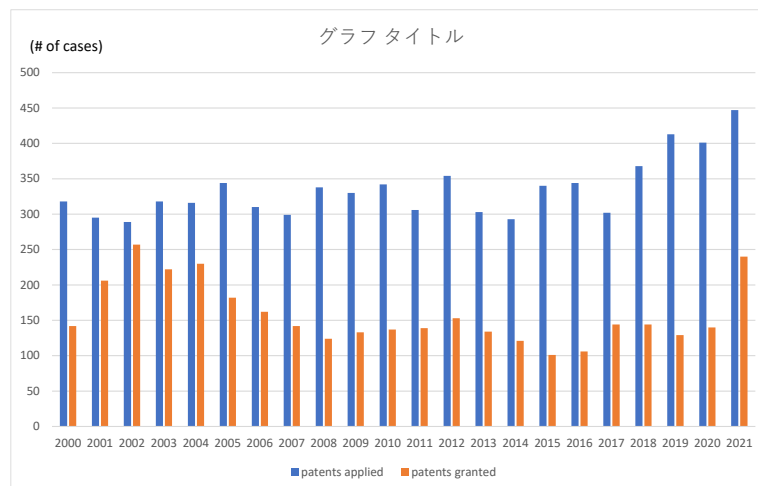


Figure 4: Patent Applied and Granted in Bangladesh 2000–2021
Source [43]

Both the numbers of applied and granted figures have been fluctuating. When application figures are divided into ones submitted by local people and foreigners, a majority (81%) of the patent applications were submitted by foreigners (total number of applications: 11,887; number of applications by local people: 2,312; number of applications by foreigners: 9,575) [43]. When patent granted figures were divided into ones given to local people and foreigners, a majority (88%) of the patents were given to foreigners (total number of patents granted: 6,258; number of patents granted to the local people: 739; number of patents granted to foreigners: 5,509) [43].

6.3 TRIPS' Special Exemption for LDCs

TRIPS gives a special exemption for all LDC pharmaceutical patents until 2033 [44]. Bangladesh is currently an LDC, so the country is not obliged to recognize patents on pharmaceutical products. This allows the Bangladeshi pharmaceutical sector to produce generic versions of drugs patented elsewhere for domestic consumption. The Bangladeshi pharmaceutical sector can also export such medicines to other LDCs exempt from such patent requirements or the countries under compulsory license [45]. Bangladeshi pharmaceutical companies have an opportunity to become global players.

Bangladesh also enjoys significant manufacturing cost advantages due to the lower labor cost. Both India and China—major generic medicine hubs in the world—have been losing cost advantages because the cost of labor in Bangladesh is 3–4 times lower than that of China and India. Medicine prices in Bangladesh are among the lowest in the world today [46].

7 Graduation from LDC

As mentioned previously, Bangladesh has been achieving rapid economic development over a couple of decades. Partly due to the healthy development of its pharmaceutical industry, the country was deemed to graduate from LDC status. To graduate from LDC status, an LDC country is required to clear two of the three criteria determined by the United Nations Committee for Development Policy (CDP)—that is, GNI per capita, Human Assets Index (HAI), and Economic and Environmental Vulnerability Index (EVI)—in two consecutive triennial reviews [47], [48], [49]. Bangladesh has already cleared all three indices twice. Table 4 shows threshold figures determined by UN-CDP and Bangladesh's score at the time of evaluation [50].

Table 4: Threshold and Bangladesh's Scores for Three Criteria for Graduating from LDC

	Bangladesh's score 2018	Threshold 2018	Bangladesh's score 2021	Threshold 2021
GNI Per Capita	\$1,274	>\$1230	\$1,827	>\$1222
Human Assets Index	73.2	>66	75.4	>66
Economic and Environmental Vulnerability Index	25.2	<32	27	<32

Source [42]

On November 24, 2021, the UN General Assembly adopted a resolution allowing Bangladesh (and two other countries) to graduate from the LDC category into the developing country level. Bangladesh (and two other countries) is set to leave LDC status in 2026 [51], [52]. The transition from an LDC to a developing country does come with a mix of challenges and opportunities. As mentioned above, Bangladesh has approximately USD 3 billion pharmaceutical market, and the country exports pharmaceutical products to nearly 150 countries these days. However, once graduating from an LDC status, TRIPS' waiver for pharmaceutical products will be extinguished, which may slow down the country's pharmaceutical industry growth [53].

8 Discussion

8.1 Graduation from LDC Status

Bangladesh has achieved significant economic growth over the past decade. The country's GDP expanded by 6.2–8.2 % per year from 2015 to 2019. In 2020, although the COVID-19 pandemic hit the country, the nation still achieved GDP growth of 3.5%. RMG export and remittances, which account for most of the income flows to Bangladesh, are heavily affected by COVID-19. However, Bangladesh's real GDP is expected to expand by 5.75% in FY2022 [50]. During its 76th session, the UN General Assembly adopted a resolution regarding Bangladesh's graduation from the LDC category. The transition from LDC does come with a mix of challenges and opportunities.

8.2 Impact of Graduation

Graduation will bring some opportunities to Bangladesh, such as:

- (a) Graduation will brighten Bangladesh's image in the world court.
- (b) Graduation will increase foreign direct investment inflow by transmitting positive signals to foreign investors.

(c) Graduation will upgrade sovereign credit rating, which will, in turn, help Bangladesh to issue sovereign bonds and boost the confidence of global lenders and investors.

On the other hand, graduation will impose some challenges on Bangladesh. After graduation, Bangladesh will lose the TRIPS waiver for pharmaceuticals which contributed greatly to the advancement of Bangladesh's pharmaceutical industry. Bangladesh will be required to introduce patents in the pharmaceutical field [54].

*Challenges for the Government

To cope with several challenges in the post-graduation era, the Bangladeshi government must revise its structure and governance:

->Incompatibility with TRIPS: The government needs to revise its patent law to comply with TRIPS. (a) It needs to introduce product patents for pharmaceuticals; (b) the duration of patent protection should be extended from 16 years to 20 years.

->Absence of bioequivalent test facility: Bangladesh lacks standard facilities for bioequivalent study. Currently, pharmaceutical companies must conduct bioequivalent tests in a foreign county by spending much foreign currency.

-> Lack of modern drug testing laboratory: Due to the lack of a well-equipped drug-testing laboratory, the DGDA cannot monitor the quality of drugs manufactured by different pharmaceutical companies in Bangladesh [55], [56].

*Challenges for the pharmaceutical Industry

The industry should change its strategies and tactics to meet the challenges of the post-graduation era.

->Insufficient raw material production facilities: The Bangladeshi pharmaceutical industry is mostly involved in producing a finished product, and approximately 80% of raw materials are being imported.

->Lack of high spec HRs in the pharmaceutical industry:

Today's pharmaceutical industry is a high-end development industry in Bangladesh, which is carried out by a limited number of leading companies. The success of pharmaceutical companies depends on the efficiency and effectiveness of highly trained and qualified medical representatives [55], [56].

9 Conclusion

Many developing countries have been finding it difficult to promote local pharmaceutical production. However, Bangladesh, an LDC, has succeeded in developing a pharmaceutical industry [57]. The rapid growth of the pharmaceutical industry in Bangladesh can be attributed to (a) two NDPs—NDP 1982 and NDP 2005—and (b) TRIPS' special exemption for LDCs [58].

NDP 1982 is a protectionist policy. The government successfully helped the local pharmaceutical industry achieve rapid development by excluding foreign capital pharmaceutical

companies from the Bangladeshi market. Before NDP 1982, MNEs occupied the Bangladeshi pharmaceutical market. However, today the local pharmaceutical companies occupy 97% of the Bangladeshi market. NDP 2005, on the other hand, was quite different from NDP 1982. NDP 2005 encouraged multinational foreign capital pharmaceutical companies with advanced technology and strong brands to produce their products and sell them in Bangladesh while restricting foreign capital pharmaceutical companies with low-level technology and weak brands from doing business in the country. As a result of NDP 2005, Bangladeshi citizens were able to access technologically advanced pharmaceutical products while pushing their direct competitors—mostly Chinese and Indian pharmaceutical companies—out of the Bangladeshi market.

TRIPS' special exemption for LDCs allows them not to introduce patents in pharmaceutical products until 2033 or the time of graduation from LDC status. To do so, the international treaty allows LDCs, including Bangladesh, to copy patented brand-name medicines, produce, and sell them as "generic medicines" in Bangladesh, other LDCs, and/or other countries without having patents for that medicine.

Thanks to these national policies and the international treaty, the Bangladeshi pharmaceutical industry has been achieving rapid development. Partly due to the healthy development of the industry, Bangladesh is scheduled to graduate from LDC status in 2026. Once Bangladesh graduates from LDC status, the country will lose all the advantages it enjoys because of its LDC status.

Bangladesh has already launched several measures in preparation for a post-TRIPS era. The Bangladeshi government kicked off some steps to revise its patent law, strengthen governmental structure (DPDT and Drug Administration Office), and launch construction work for the API park (for producing APIs). The pharmaceutical industry started exporting products to regulated markets such as the USA and EU, developing new types of medicines (such as biologics), and launching valued-added generic medicines.

LDC graduating countries are normally given a 3-year transit period. This time Bangladesh (and two other graduating countries) was given a 5-year transit period due to the impact of the COVID-19 pandemic. Still, a five-year transit period is a short period for a country like Bangladesh to prepare for coping with these challenges. Bangladesh needs to do its best to shift from an LDC to a developing country. At the same time, international organizations, including the United Nations and other countries, need to support Bangladesh's transition, including supporting analytical works and capacity building.

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