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The Success experience of Bangladesh Pharmaceutical Industry: Strategies & Development

تجربة نجاح صناعة الأدوية في بنغلاديش: الاستراتيجيات والتطور

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Abstract: *This paper reports a case study of the successful development of the pharmaceutical industry in Bangladesh and the critical roles played by the country's National Drug Policy established in 1982 in boosting this development. The success story of the Bangladesh pharmaceutical sector is very pleasant. It had to travel a long way to achieve the present prestigious position in domestic and international markets. By now (2018), 97% of country's demand of medicines is produced locally mainly by national pharmaceutical companies, and exporting around US$ 97 million. The pharmaceutical sector of Bangladesh is expanding rapidly and some companies have already certified by different international regulatory authorities like UK-MHRA, Australia-TGA, EU, etc. for quality management and quality products manufacturing. One might wonder why the pharmaceutical industry, which seems to be a capital-intensive, high-tech industry, can be developed in a low-income country like Bangladesh. This paper attempts to explain what characterize the National Drug Policy as an industrial policy, how successful the development of this industry has been since 1982, and to what extent did the pharmaceutical industry contribute to the economic development, then compare it to what was done in Algeria.*

Key words: *pharmaceutical industry, Pharmaceutical Export, Pharmaceutical market.*

الملخّـــص: تقدم هذه الورقة دراسة حالة عن التطور الناجح لصناعة الأدوية في بنغلاديش والدور الحاسم الذي لعبته السياسة الوطنية للأدوية في البلاد والتي تأسست عام 1982 في تعزيز هذا التطور. قصة نجاح القطاع الصيدلاني في بنغلاديش جديرة بالاهتمام، حيث كان

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عليها أن تقطع شوطا طويلا لتحقيق المكانة المرموقة الحالية في الأسواق المحلية والدولية. حاليا (2018) يتم تلبية 97 ٪ من الطلب على الأدوية محليا بشكل رئيسي من قبل شركات الأدوية الوطنية، وتصدير ما قيمته 97 مليون دولار. يتوسع قطاع المستحضرات الصيدلانية في بنغلادش سريعًا وقد حصلت بعض الشركات على شهادات من هيئات تنظيمية دولية مختلفة مثل UK-MHRA و Australia-TGA و EU وغيرها لإدارة الجودة وتصنيع المنتجات عالية الجودة. قد يتساءل المرء عن السبب في إمكانية تطوير صناعة الأدوية، التي يبدو أنها صناعة كثيفة الاستخدام لرأس المال وعالية التقنية، في بلد منخفض الدخل مثل بنغلاديش. تحاول هذه الورقة شرح ما يميز السياسة الوطنية للأدوية باعتبارها سياسة صناعية، ومدى نجاح تطوير هذه الصناعة منذ عام 1982، وإلى أي مدى ساهمت صناعة المستحضرات الصيدلانية في التنمية الاقتصادية، ثم مقارنتها بما تم إنجازه في الجزائر.

الكلمات المفتاحية: الصناعة الدوائية، تصدير الأدوية، سوق الأدوية.

I INTRODUCTION

Bangladesh became an independent country on 16 December 1971. Bangladesh inherited a poor, undiversified economy, characterized by an underdeveloped infrastructure, stagnant agriculture, and rapidly growing population. It had suffered from years of colonial exploitation and missed opportunities, with debilitating effects on initiative and enterprise. Those debilitating effects included an infant mortality rate estimated in 1972 at 14% live births; a maternal mortality rate of 3% pregnancies; and a death rate of 26% children under five years of age, which was mostly due to preventable disease and malnutrition.

This dismal state of affairs was largely attributable to inadequate and badly distributed health facilities. Essential drugs were highly priced and not easily available. According to the First Five Year Plan: ‘Many so-called manufacturers are engaged in bottling drugs imported in bulk, acting indirectly as the sales agents of foreign firms. Quality control of drugs is insufficient and spurious drugs are quite common’.

To remedy this, a series of steps was taken in Bangladesh throughout the 1970s, leading up to the enactment of a radical and far-reaching National Drug Policy (NDP) in 1982. Initial efforts included the centralized procurement of cheaper generic drugs, often through barter arrangements with European socialist countries. Predictably, transnational corporations were hostile to this approach. They embarked on a campaign of misinformation among the medical profession and elite consumers. The transnational corporations spread rumors about the dubious quality of drugs from Eastern Europe. A new government that took charge in 1975 began to amend drug legislation. The Drugs Act of 1940 was grossly inadequate for the control of prices of pharmaceutical raw materials and processed drugs. It also largely failed to prevent the appearance of substandard and spurious drugs on the market, unethical promotion, and the proliferation of harmful and useless drugs.

In 1979, the Bangladesh Association of Pharmaceutical Industries (BASS), comprised mainly of transnational and few large national pharmaceutical companies and trading houses, discovered that the then Minister of Health, Dr M. M. Huq, a retired colonel and a trustee of Gonoshasthaya Kendra (GK), had finalized the drafting of rational and tougher drug legislation. BASS not only blocked the introduction of the bill, but also successfully encouraged the removal of Dr Huq from his ministerial post.

The next major move came after a bloodless military coup, led by General Hussain Muhammad Ershad in March 1982. Thirteen years later it can be observed that despite opposition from many actors, such as the national and international pharmaceutical industry, with support from some governments in the North, the Bangladesh Medical Association, parts of the Press, and at a later stage, the Bangladesh Government itself, the output of essential drugs has increased from about 30% to about 80%, prices have in almost all cases gone down considerably, the domestic industry has grown rapidly, the quality of its production has increased dramatically, and people's awareness about medicinal drugs has been steadily growing. By now, 97% of country’s demand of medicines is produced locally mainly by national pharmaceutical companies. The pharmaceutical sector of Bangladesh is expanding rapidly and some companies have already certified by different international regulatory authorities like UK-MHRA, Australia-TGA, EU, etc. for quality management and quality products manufacturing.

This paper deals with the successful development of the pharmaceutical industry in Bangladesh and the critical roles played by the country’s National Drug Policy established in 1982 in boosting this development, furthermore, the contribution of the pharmaceutical industry in the economic development, then compare it to what was done in Algeria.

II BANGLADESH NATIONAL DRUG POLICY (HISTORY)

After gaining independence in 1971, Bangladesh experienced famine, acute poverty, and political turmoil in the 1970s. When Lieutenant General Ershad gained power in a bloodless coup in March 1982, the country was still in the middle of the process of state building. It was this new government that declared the new law called "the Drug (Control) Ordinance, 1982" and the National Drug Policy (NDP), a set of policy measures to secure access to essential drugs for all. This benevolent policy could not immediately win the approval of the people of Bangladesh, even though they had suffered from the high prices of important life-saving drugs. Instead, the major newspapers regarded the policy as a harebrained populist policy improvised by the military government and as doomed to be crushed by pressure from abroad. Indeed, the US ambassador came to Ershad immediately and began bringing relentless pressure on the Bangladesh government to reverse the decision. The ambassadors from the UK and Germany soon followed her lead. Their pressure included the threat of stopping assistance from their countries to Bangladesh. Similarly, the multinationals threatened explicitly to stop the supply of medicines to the country completely.[1]

1- The formation of the Expert committee

The National Drug Policy was well thought out, however. It was carefully crafted by an expert committee consisting of Professor Nurul Islam of Dhaka University, Zafrullah Chowduhry, and other six professionals, such as military surgeons, with considerable experience and expertise. After being appointed by the government to be committee members, they reviewed the drug situation and the healthcare needs in the country and also the reform experiences of other countries, such as Pakistan, Sri Lanka, and India. Their proposal of the National Drug Policy was swiftly accepted by the government on May 29, 1982.

The committee had three significant characteristics. First, no representative of the transnational drug industry was included, for obvious reasons. This principle led to the exclusion of the chief executives of the Bangladesh Medical Association (BMA) because of their formal associations with transnationals. However, all eight members of the Expert Committee were general members of the BMA. Moreover, Dr Humayun Hye was one of the two members of the BMA's Drug Evaluation Sub-committee.

Second, it was a well-informed committee. Many of its members had been profoundly influenced by a number of books published in the 1970s which exposed the misdeeds of drug companies and promoted new policies on drugs. Some members were also well acquainted with the problems experienced by India, Pakistan and Sri Lanka in their attempts to regulate drugs and were aware of the efforts under way in Europe and the USA to bring about changes in the pharmaceutical industry through the democratic process.

Third, this was probably the first and last drug committee in Bangladesh which did not include a civil servant. Third World countries, whether under democratic or military rule, are usually governed by the civil bureaucrats alone, or by a combination of the civil service and the military bureaucracy. Ministers, appointed politically or otherwise, are usually figureheads.[2]

2- The work of the committee

The expert committee designed the new policy, taking into account the reactions of the multinationals and the public. Their policy attempted to extract part of the monopolistic profits that the multinationals had taken away from Bangladesh, but the expert committee was fully aware that the Bangladesh market had to remain attractive for the multinationals. Further, the committee anticipated the propaganda campaign run by the multinationals, the reactions of the donor countries, and the attitude of the public.

Under this policy, the government designated the set of essential drugs, mandated the use of generic names, enhanced the public awareness of generic drugs, and had a price-cap regulation. The committee, however, was aware that a more drastic measure was needed to achieve the policy goal of ensuring favorable access to essential drugs. Instead, the expert committee intended to promote the local production of drugs by local firms owned by Bangladesh capital and operated by Bangladesh managers. Although there were many such firms, they ran tiny businesses. The new policy was intended to promote them and new entrants by using three aggressive measures.[3]

The first measure was to prohibit the multinational firms from selling antacids (which prevent acidity in the stomach) and vitamins and asked them to instead concentrate on the development and production of innovative, sophisticated and high-tech products, such as antibiotics. Antacids and vitamins were relatively easy for local firms to produce. The markets for these drugs were fairly large, probably accounting for 16% of the whole domestic market for drugs in terms of sales value in those days.

The second measure was to restrict the import of substitutes for the finished drugs and intermediate inputs that were produced by two or more local firms. This measure would be as powerful as the first measure. Take the Ventolin Inhaler as an example. This is a drug for respiratory diseases, whose generic name is salbutamol. Before the National Drug Policy, this product was imported by its inventor GlaxoSmithKline (GSK) from outside Bangladesh, even though GSK had a production facility for other products in Bangladesh. Ventolin Inhaler was one of the top selling drugs in Bangladesh, accounting for 15% of GSK's sales revenue in Bangladesh. After the NDP was implemented, four local firms began producing and marketing copies of this drug. Because of this second measure, their entry resulted in the restriction on GSK's import of the original drug and induced GSK to enter into a toll manufacturing arrangement with one of the four imitators (i.e., GSK asked one of the imitators to produce the drug as a subcontractor for GSK). Once the market knew that the drug was produced by the domestic imitator, the advantage of GSK as the inventor, such as the consumers' perception of superior quality, over local firms disappeared, and the local firms captured large shares of the market for this drug easily.

The third measure for the promotion of the local drug industry was to prohibit those multinational firms without any production facilities in Bangladesh from marketing their products produced by other firms on a toll manufacturing basis. As a result, such multinational firms were forced to establish their own factories in Bangladesh, and local firms working for these multinational firms as subcontractors lost customers. Thus, immediately after the policy was proclaimed, these subcontractors, who were central players in the association of local drug producers, were strongly opposed to the policy. Not long after, however, they learned that a window of lucrative profit opportunity would be opened only if they produced antacids and vitamins and imitated the multinationals' products. Thus, they became staunch supporters of the NDP even though they would not really welcome the price cap regulation.[4]

Noticeably, an interesting phenomenon began immediately after the proclamation of the National Drug Policy. It was the massive shift of managers, engineers, and skilled workers from the multinational firms to local firms. There were a number of top managers who used to work at the local subsidiaries of the multinational firms. Thus, as soon as they moved to local firms, they could produce the same product as the multinationals produced if the local firms had machinery of the same quality, and they could sell the product at least in the same way as and possibly in a better way than they did at the multinationals. It is easy to imagine that if there had not been these human resources, the National Drug Policy would have been just one of the numerous failed attempts of import-substitution industrialization.

Of course, human resources were not the only factor needed for the development of the local drug industry. Investment in machinery was definitely needed. Investment in machinery was in many cases financed by banks. Once it became clear to bankers that the National Drug Policy provided enormous profitable opportunities for local drug firms and that human resources with advanced expertise were available, banks were willing to finance fixed capital investments undertaken by local drug firms.

III ACHIEVEMENTS & OPPORTUNITIES

In Bangladesh Pharmaceutical sector is one of the most developed hi tech sector which is contributing in the country's economy. Actual growth of pharmaceutical industry in the country started in 1982, when the Drug Control Ordinance was promulgated. The restriction of disproportionate import of drugs encouraged local companies to increase production of their own products. Although this displeased the multinational companies those were importing medicines to Bangladesh, the regulation accelerated growth of local companies.

Skillful attitudes, knowledge and innovative ideas from the professionals were the key reasons why this industry grew in the way it did. After 1990s, some of the companies started producing insulin, hormones and cancer combating drugs those were not previously produced in the country. Many smaller companies are on the verge of entering highly regulated overseas markets.

Although Bangladesh’s pharmaceutical sector is developing at a persistent rate, they have to strive to endure this speed. The future of the industry surely is very bright. However, in order to enhance their global and local image, the industry must overcome every future obstacle and preserve their position in the top list.

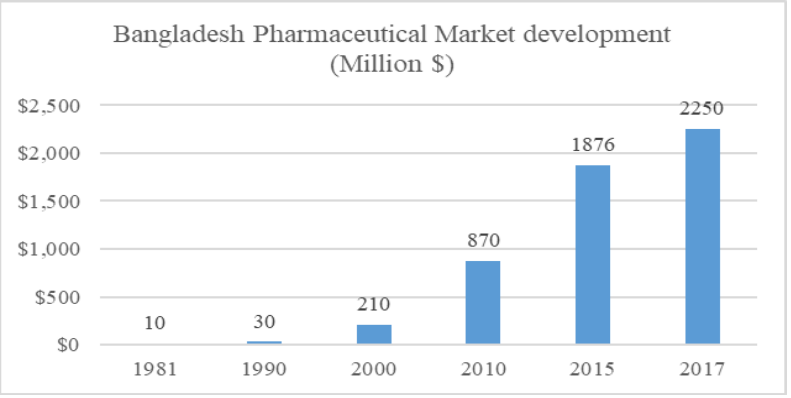
1- Local market size

After the promulgation of Drug Control Ordinance - 1982, the development of this sector was accelerated. The professional knowledge, thoughts and innovative ideas of the pharmacists working in this sector are the key factors for this development. Due to recent development of this sector Bangladesh is exporting medicines to global market including European market. This sector is also providing 97% of the total medicine requirement of the local market (2017). Leading Pharmaceutical Companies are expanding their business with the aim to expand export market. Recently few new industries have been established with hi tech equipments and professionals which will enhance the strength of this sector.

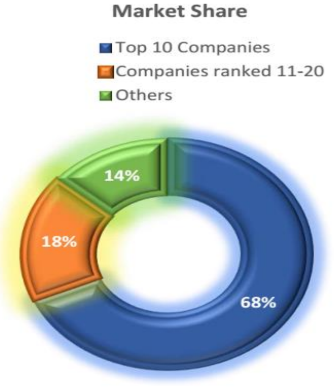
pharmaceutical sector is the second-largest contributor to the government exchequer. There are about 257 companies in this sector and the approximate total market size is about US$ 2.227 billion per year (2017) of which about 97% of the total requirement of medicines is created by the local companies and the rest 3% is imported. The imported drugs mainly comprise of the cancer drugs, vaccines for viral diseases, hormones etc.

The size of the retail market reached US$ 1.136 billion as on 2011 based on IMS health Bangladesh. The report additionally stated that, retail sales in domestic market achieved 23.59% growth in 2011 which is following 23.8% and 16.8% growth in 2010 and 2009 respectively. This industry has an annual growth rate of 10.2% during the fiscal year 2002. The values fell by 4.3% in 2003. The lower growth rate showed in 2003 and 2004 is largely because of country's economic recession. Again the growth rate increased by 9% in 2005. The growth rate of 2005 was 17.5%. In recent times the growth rate has been literally doubled which is 23.59% in 2011.[[5]]

Domestic market of Pharmaceutical products in Bangladesh has shown an increasing trend over the past few years and the market size is US$ 2.25 billion as on 2017. However, this number does not reflect total market size because IMS report does not include homeopathic, unani, ayurvedic or herbal medicine information.



Pharmaceuticals industry of Bangladesh has grown significantly over the last five years. From 2012 to 2017, historical five years CAGR (compound annual growth rate) was 15% and from 2014 to 2017, historical three years CAGR was 21%. According to industry experts, market size of pharmaceuticals may reach about US$ 3.93 billion by 2020. The table in the below shows year on year size and growth of GDP and size and growth of Pharmaceuticals Industry of Bangladesh. This shows that from 2013-14 to 2016-17. The growth of Pharmaceuticals industry of Bangladesh exceeds the GDP growth of Bangladesh.[6]



Source: IMS Health Report 2017 Q2

Bangladesh Pharmaceutical Industry is now heading towards self-sufficiency in meeting the local demand. The industry is the second highest contributor to the national exchequer after garments, and it is the largest white-collar intensive employment sector of the country. There are about 460 generics registered in Bangladesh. Out of these 460 generics, 120 are in the controlled category i.e. in the essential drug list. The remaining 340 generics are in the decontrolled category, the total number of brands /items that are registered in Bangladesh is currently estimated to be 5,300, while the total number of dosage forms and strengths are 8,300.

Bangladesh pharmaceutical industry is mainly dominated by domestic manufacturers. Of the total pharmaceutical market of

Bangladesh, the local companies are enjoying a market share reaching around 80%, while the Multi National Corporations are having a market share of 20%.

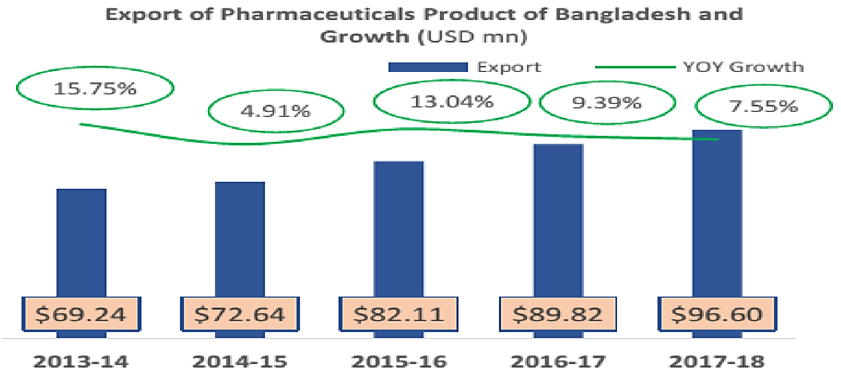
Pharmaceutical companies in Bangladesh usually provide branded generic products as a result of which established brands are able to charge premium price for its products. According to *IMS Health Care Report, 2017* top 10 companies hold 68.49% of Pharma market share.

Companies that secured position ranging from 11th to 20th on the basis of their relative market shares hold only 17.84% market share. Summing up, top 20 companies hold 86.33% market share, leaving 13.67% market share to other existing companies. It is to be noted that top 20 companies held 85.97% market share in 2016. Aggregate market share of top 20 companies has increased. The Pharmaceuticals market is concentrated among few local companies only and entry barrier is higher due to large capital investment and legislative bindings. Square Pharmaceutical is the market leader having 17.73% market share followed by Incepta, Beximco, Opsonin and Renata. Multinational companies hold only 9.39% of market shares. The table below shows the current market share hold by leading pharmaceutical companies as per IMS health report, 2017 and comparison against 2016.[7]

2- Exports

Bangladesh Pharmaceutical Industry exports active pharmaceutical ingredients (APIs) and a wide range of pharmaceutical products covering all major therapeutic classes and dosage forms to many countries. Beside regular forms like; Tablets, Capsules & Syrups, Bangladesh is also exporting high-tech specialized products like HFA Inhalers, CFC Inhalers, Suppositories, Nasal Sprays, Injectable, IV Infusions, etc. are also being exported from Bangladesh, and have been well accepted by the Medical Practitioners, Chemists, Patients and the Regulatory Bodies of all the importing nations. The packaging and the presentation of the products of Bangladesh are comparable to any international standard and have been accepted by them.

Exports of pharmaceuticals from Bangladesh were small in scale. However, they were increasing rapidly – at a compound annual growth rate of 26.1% between 2002 and 2010. Most of the growth is coming from exports to middle-income countries and to nearby low-income countries (Myanmar, Afghanistan, Nepal). While exports to the EU reached almost USD 15 million in 2007, they have fallen off since. In addition, a significant amount of Bangladesh's reported exports to the EU is for anti-Malaria drugs, the import of which is not confirmed by EU reported data. Most likely, this reflects purchases of European aid agencies destined for third countries. Most exports are to markets where pharmaceuticals are unregulated to medium regulated. Even relatively lightly regulated markets can be challenging to access, with significant delays to obtaining approval. For instance, industry stakeholders highlighted that getting market approval in Myanmar can take up to five years.[8]



According to Bangladesh Association of Pharmaceutical Industries (BAPI), approximately 1,200 pharmaceutical products received registration for export over the last two years. According to Bangladesh Export Promotion Bureau, Bangladesh exported pharmaceuticals product to 107 countries in the fiscal year 2016-17. Among 107 exporting countries, top 7 countries (Myanmar, Sri Lanka, Philippines, Vietnam, Afghanistan, Kenya and Slovenia) constitute 60.32% of total pharma export. Rest 39.68% comes from other countries. During this period, Bangladesh has exported pharmaceutical products worth USD 89.17 million as against USD 82.11 million in 2015-16. From July to October 2017-18, Bangladesh exported USD 32.1 million worth of Pharmaceuticals products. From 2011-12 to 2016-17, export revenue CAGR was 13.23%.[9]

However, export sales only contributed 4.59% of pharmaceuticals market in 2015-16. Hence, the contribution of export sales in pharmaceuticals industry is low. Pharmaceuticals Company of Bangladesh can only sell different medicine to other country when they get approval of the particular medicine from the drug authority of that particular country. Approval from developed countries signifies that the local medicine has international standard which helps them to build a strong position in local market.

In recent time, the Government of Bangladesh has given huge emphasis on the export of Pharmaceutical products from Bangladesh. It is targeted that Pharmaceutical will be the second exporting product after readymade garments. The Government of Bangladesh has set up an export target of USD100 million of Pharmaceuticals products for 2017-2018.

3- Imports

The risk for the sector is, basic chemicals that are used as raw materials, need to import for most of the cases. Central Pharmaceuticals Ltd has taken up ventures to produce basic chemicals, though they yield lower margin in spite of high demand. In order to remain healthy in the long run, the sector needs support from the government in production of basic chemicals. Highly regulated drug policy & price control mechanisms imposed by the government require that raw material components produced locally may not be imported. 90% of the raw materials are imported from different international suppliers.

Bangladesh relies largely on imports for raw materials in the absence of local source of Active Pharmaceutical Ingredients. Bangladesh pharmaceutical companies such as Novo and Medintis are importing maximum, Others engaged in import are Sanofi, Aventis, Sandoz, Novartis, Roche, Unimed, Servier etc. However, to prevent this excessive reliance on import the government will give unconditional tax-holiday to all API and laboratory reagents producers, both local and joint ventures, for five years from fiscal 2016-17 to fiscal 2021-22. If a producer can manufacture at least five molecules every year it would get 100% tax holiday from fiscal 2021-22 through to December 31, 2032.[10]

4- Job Opportunities

Pharmaceutical industry has created huge job opportunities in Bangladesh. Data from the Labor Force Survey of 2005/2006 showed employment of 64,000 in the pharmaceutical sector of Bangladesh, of whom 3,000 were female. There has been strong growth in employment, driven mainly by growing domestic market sales, but also by significant growth in exports.[11]

5- Opportunities in Global Generic Drugs Market

Pharmaceuticals industry of Bangladesh has tremendous opportunity to grow in the future. According to Zion Market Research, Global generic drug market is expected to grow at a CAGR of 10.8% from 2016 to 2021 and reach at USD 380.60 billion by 2021[[12]]. In 2016 alone, patented drugs worth $60 billion are going off patent which opens up opportunities for generic manufacturers around the world. Pharma companies of Bangladesh can become a global player utilizing this opportunity. Bangladesh offers significant manufacturing cost advantages due to the lower cost of labor. Major generic hubs- India and China are losing cost advantages. Cost of labor in Bangladesh is 3 to 4 times lower than that of China and India. Medicine price in Bangladesh is currently among the lowest in the world. As a result, Bangladesh has opportunity to export pharmaceuticals products more than India and China. At the same time, major producer of pharmaceuticals raw materials India and China won't be able to produce the patented raw material due to the restrictions from World Trade Organization (WTO). Thus, Bangladesh can export to foreign countries easily.[[13]]

According to WTO's Trade Related Aspects of Intellectual Property (TRIPS) agreement signed in 2002 in Doha, 49 Least Developed Countries (LDCs) have been allowed to export patent free drugs to any country between 2006 to 2016. This allowed Bangladesh to reverse engineer the original patented medicine to produce generic version of that particular drugs without taking prior permission from innovator. Also, Bangladesh has the opportunity to export to any country if the medicine is not under patent in that particular country. Among all the 49 LDC, Bangladesh has the strongest base to manufacture pharmaceuticals drugs due to cheap labor. The privilege has been further extended in 6th November, 2015 considering the current Least Developed Countries (LDC) status of the country. Being a least developed country, Bangladesh has been exempted from the obligations to implement patents and data protection for pharmaceutical products until January 2033 by the World Trade Organization.

IV ECONOMIC FOOTPRINT OF THE PHARMACEUTICAL INDUSTRY (BANGLADESH VS ALGERIA)

The research-based pharmaceutical industry makes a major contribution to the prosperity of the world economy. It is a robust sector that has been one of the pillars of industrialized economies and is increasingly recognized as an important sector in the developing world as well. It contributes to employment (direct, indirect, or induced), trade (through imports and exports), expenditure on research and development (R&D), and technological capacity building. It is also a necessary foundation for the existence of the generic industry.

The pharmaceutical industry's activities have a strong and positive influence on the economy. This economic footprint is most visible in the form of investments in manufacturing and R&D, but it often has other positive socioeconomic impacts, such as constant improvements in academic research. It also stimulates the creation of companies that support parts of the research and production process.

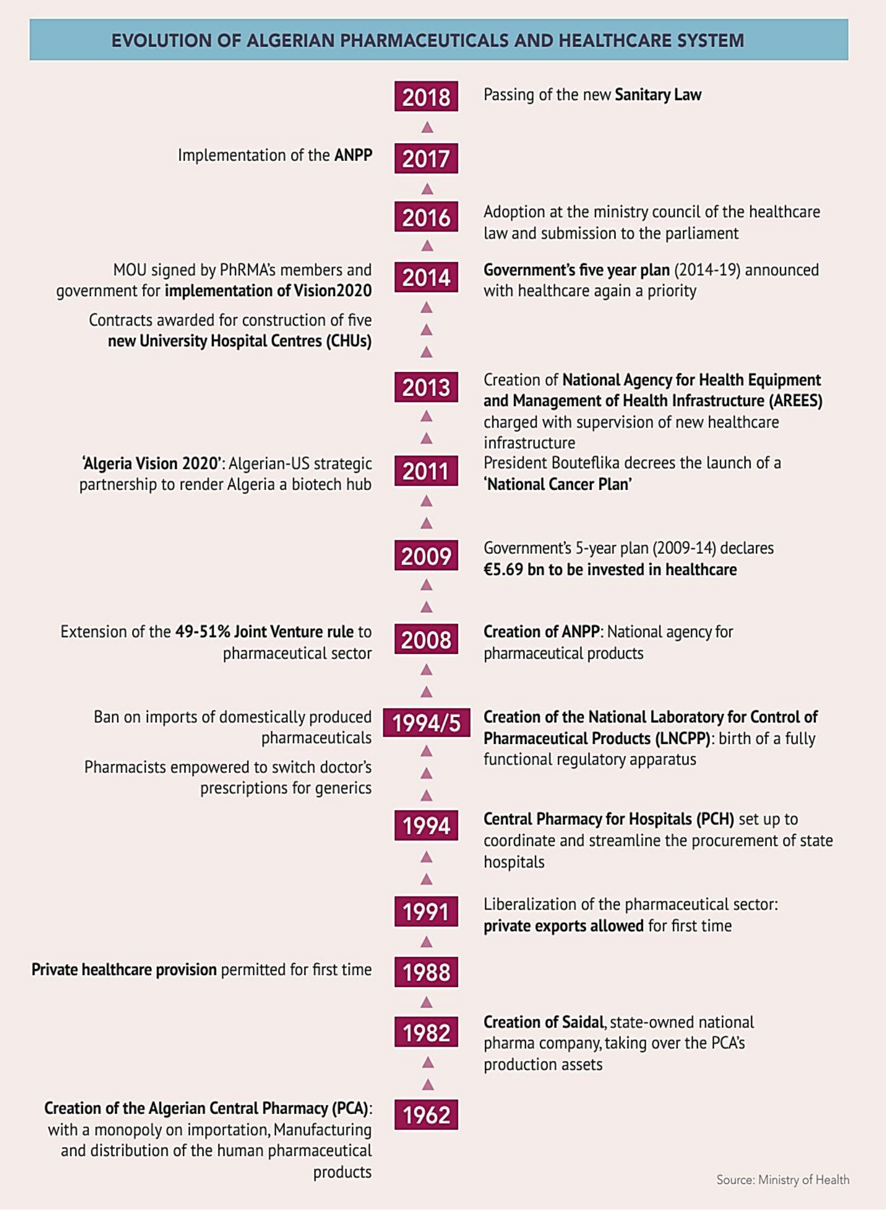
The research-based pharmaceutical industry is particularly economically active in production and R&D in certain countries. Globally, the production value of the pharmaceutical industry amounted to USD 997 billion (2014), more than USD 345 billion higher than in 2006. In 2014, the pharmaceutical industry accounted for 3.8% of the gross value added in manufacturing worldwide. Gross value added is the value of the products manufactured by a company less the value of its purchased materials and services. It thus reflects the additional value generated by the production process.[[14]]

1- Background of Algerian pharmaceutical industry

ALGERIA is the largest pharmaceutical market in Africa with a pharmaceutical market worth in 2017 a US$ 3.7 billion and a full coverage from health insurance, the Algerian pharmaceutical market is probably the most dynamic in the whole Mediterranean region because of the strong government incentives to push for local manufacturing. Today in 2018, 47 % of pharma products are locally manufactured for a value of 1.7 billion US$. The government wants to reach 70 % by 2021. The result is a boom of investments in new manufacturing plants and equipment. Official figures show +110 projects of new pharma plants and extensions that have been validated by the Ministry of Health and/or under construction.[[15]] The following chart illustrates evolution of Algerian pharmaceutical industry and healthcare system:[[16]]

Algeria is the first pharmaceutical market in the South of the Mediterranean Basin, with 1.97 billion dollars of imports in 2011.

The pharmaceutical industry in Algeria has set itself the goal of improving the mechanisms to ensure the attractiveness of the local and foreign investment, with the objective of ensuring market coverage by local production up to 70% in 2014. The sector in Algeria has experienced very strong growth rates.



In addition, the Ministry of Health has implemented a new system of pharmaceutical supply of public institutions intended to ensure "comprehensive and sustainable" availability of drugs. This mechanism is added to the measures already taken by the government to clean up the area of distribution of the medicine, and to develop and modernize the management of "sensitive" products. The activities of the pharmaceutical sector industries include: Manufacturing; Packaging, Wholesalers importers; Wholesale distributors; Distributors in detail (Dispensaries and others).[17]

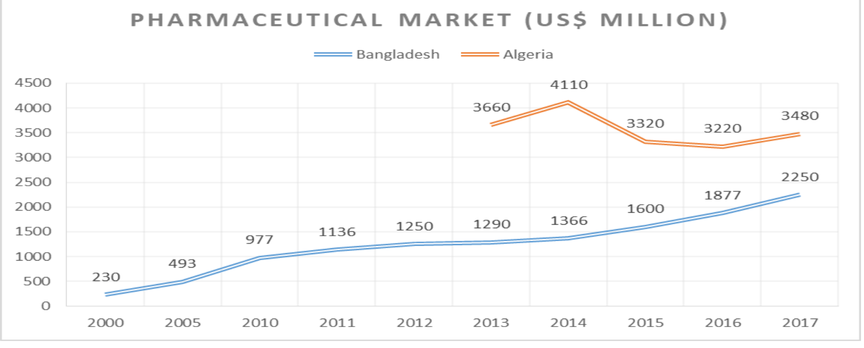
Algeria's ineffective licensing of generic pharmaceuticals and lack of clear coordination between the Ministry of Health and the Patent and Trademark Office creates an uncertain environment regarding the registration and sale of brand name health products. Exacerbating this uncertainty is the recent ban on the importation of hundreds of foreign-produced pharmaceuticals. Companies should be aware that it is common to face delays of weeks or months for goods to be cleared by Algerian customs. In 2017, this problem has increased dramatically.[18]

2- Comparative study between Bangladesh and Algeria

Bangladesh and Algeria both of them are now developing countries. In order to compare between the Bangladeshi and Algerian pharmaceutical sectors, we depended on a variety of indicators mainly are the key Indicators of the Pharmaceutical Industry's Economic Footprint (Production, Exports, Imports, Trade Balance, R&D Expenditure, Employment) and other indicators.

2-1- Pharmaceutical market

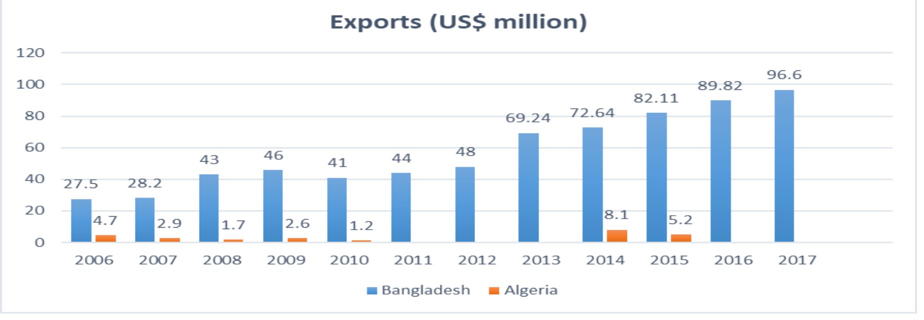
The chart below shows the evolution of Pharmaceutical market of Bangladesh and Algeria:

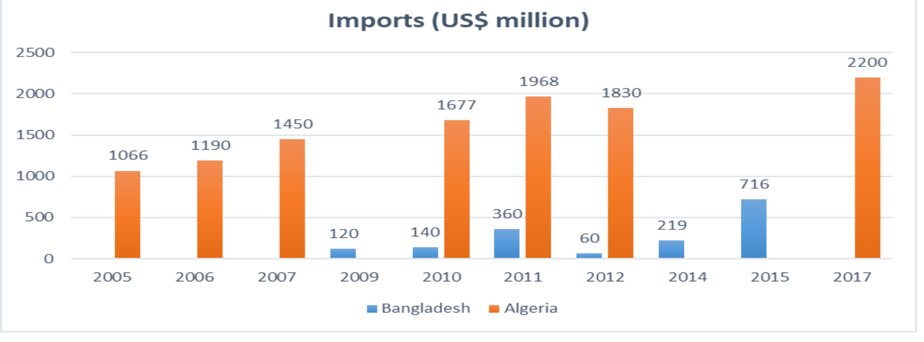


We can see from the previous chart that the Algerian pharmaceutical market is larger than the Bangladeshi in the last five years. Where the Algerian market was valued at US$ 4.1 billion in 2014 and then dropped to US$ 3.4 billion in 2017. While the Bangladeshi market has witnessed a continuous development estimated at 15% over the last years, valued at US$ 1.36 billion in 2014 and then increased to 2.25 in 2017.

2-2- Exports and Imports

The chart below shows the evolution of Pharmaceutical Exports and Imports of Bangladesh and Algeria:





According to the chart we can see that Bangladesh's exports outnumber those of Algeria, which is almost nonexistent. While Algeria's imports outnumber Bangladesh. So, it can be said that Algeria is a completely consumption market.

2-3- top 10 companies' market share

The table below shows the top 10 companies' market share of Bangladesh and Algeria in:

	Bangladesh (2017)			Algeria (2017)		
N°	Company	Share	Nationality	Company	Share	Nationality
01	Square	17.73 %	local	SANOFI *(N°14 in Bangladesh)*	26.42%	Foreign
02	Incepta pharma	10.21 %	local	EL KENDI	14.68%	local
03	Beximco	8.39%	local	NOVO NORDISK *(N°17 in Bangladesh)*	13.76%	Foreign
04	Opsonin pharma	5.54%	local	HIKMA PHARMA	9.61%	Foreign
05	Renata	4.97%	local	GLAXOSMITHKLINE	8.69%	Foreign
06	Healthcare pharma	4.57%	local	PFIZER	6.45%	Foreign
07	A.C.I.	4.43%	local	MERINAL	5.99%	local
08	Aristopharma	4.38%	local	SAIDAL	4.95%	local
09	Eskayef	4.36%	local	PHARMALLIANCE	4.89%	local
10	Acme	3.91%	local	BEKER	4.55%	local

According to the table We conclude that the Bangladeshi drug market is totally dominated by local companies. While in Algeria foreign companies control 65% of the market share, while local companies control the rest (35%). Noting that the companies number 01 and number 03 in the Algerian market are ranked No. 14 and 17 in the Bangladeshi market.

V CONCLUSION:

The pharmaceutical sector has already been declared as the thrust sector by the government of Bangladesh. Bangladesh has built a strong baseline and going towards the self-sufficiency for the production of medicine. Pharmaceutical industries are successful in domestic market. Now, it’s the time to grow our international market. In Bangladesh the per capita consumption rate of medicine is one of the lowest in this earth. However, since independence this industry has been a key contributor to the Bangladeshi economy. The industry has been equipped to realize them is a million-dollar question. Pharmaceutical Industry is rising at a likely rate with the expansion of healthcare infrastructure and so increasing the health consciousness and the purchasing competence of natives. Healthy growth is to be expected to encourage the Pharmaceutical companies to introduce newer drugs and newer research products, while at the similar time maintaining a vigorous competitiveness in respect of most compulsory drugs.

And as for Algeria, the following recommendations may be taken into account:

- The local pharmaceutical companies should manufacture quality product that may help them to acquire larger market share.

- It may produce world class medicine that can attract demand of the global market.
- The pharmaceutical companies should not violate the law specially in the case of selling to the consumers, which may damage the trust of people of the country.
- All pharmaceutical companies should have been more professional in manner to reach the market.
- The proper channel to reach client should be built to a specific market and assist institutions to manage the market.
- There should be more establishments of joint venture projects as it may ensure technology sharing.

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