

PHARMACEUTICAL INDUSTRIES: POTENTIAL AND POSSIBILITIES

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Introduction

The pharmaceutical industry of Bangladesh has made significant progress. Some of the industries are equipped with modern infrastructure facilities and producing pharmaceutical items of international standard. 164 enterprises, out of registered 232 have been manufacturing medicine mainly based on imported raw materials. Among the entrepreneurs a highly professional committed group is endeavoring to upscale the production and export of pharmaceutical items.

The inception of the pharmaceutical industry in Bangladesh dates back to the 1950s when a few multinationals and local entrepreneurs started with manufacturing facilities in the erstwhile East Pakistan. By two decades many top ranking Multi-National Companies (MNCs) established their manufacturing facilities in this part of the world. Pfizer, Glaxo, Fisons, Squibb, Hoechst, May and Baker and Organon were prominent among them.

Before liberation the pharmaceutical sector was largely dependent on import and very few local companies were involved in this sector. The local companies were only taking part in the distribution channel of Multi-National Companies (MNCs). Immediately after liberation the war-torn economy, disrupted infrastructure and deficit in foreign currency aggravated the overall healthcare situation of the country. The Bangladesh pharmaceutical sector remained as an 'Import based' sector during early 70s.

In late 70s and in early 80s Bangladesh pharmaceutical industry was dominated by MNCs. The participation of local companies was 15% and the MNCs was 85%. In 1971 Bangladesh earned independence and inherited a poor, undiversified economy, characterized by an underdeveloped infrastructure, stagnant agriculture, and rapidly growing population. In 1972, Bangladesh had an infant mortality rate of 140 per 1,000 live births, a maternal mortality rate of 30 per 1,000 pregnancies, and a death rate of 260 per 1,000 children under five years of age. This dismal state of affairs was mostly due to preventable diseases and malnutrition, largely attributable to food insecurity on the one hand, and on the other hand, inadequate supply of good quality essential drugs and badly distributed health facilities. Today the situation is just reversing in pharmaceutical market as 80% are local companies (LCs) and 20% are MNCs.

Recently, a number of industries equipped with modern infrastructure facilities are maintaining international standard. Packaging of the produced pharmaceutical items is also developing simultaneously. Bangladesh is exporting

pharmaceutical items to 69 countries of the world. Among those, the main countries are The USA, The UK, The Netherlands, Hungary, Greece, Spain, Brazil, Hong Kong, Venezuela, Germany, Finland, Belgium, Pakistan, Iran, Ukraine, Vietnam, Sri Lanka, Myanmar and Yemen. Some of the companies namely, Beximco Pharmaceutical Ltd., Square Pharmaceutical Ltd., Novartis (Bangladesh), Aristo Pharma Ltd., Eskayef Bangladesh Ltd. Renata Ltd., Acme Laboratories, Opsonin Chemical Industries Ltd., Ziska Pharmaceutical Ltd., Jayson Pharmaceutical, Hudson Pharmaceuticals Ltd., Globe Pharmaceuticals Ltd., Beacon Pharmaceuticals Ltd. etc., have established reputation in the global export market.

This article aims at identifying position of Bangladeshi pharmaceutical products in the world market and examining the future prospects of pharmaceuticals of Bangladesh in the world export market

Major Trends

The pharmaceutical industry is dynamic, as evident from its ability to reinvent itself in the face of changing market structures and government regulations. Major trends include:

Aging Population Increases Demand for Drugs. Aging baby boomers and the lengthening of average life span are two key demographic trends that should generate powerful demand for pharmaceuticals over the next few decades. Globally, the over-60 crowd is expected to rise from about 66 million in 2000 to close to two billion by 2050, based on data provided by the World Health Organization (WHO).

Big Pharma Steps up R and D Spending. The Pharmaceutical Research and Manufacturers of America (PhRMA) expected all present drugs are based on about 500 distinct targets. Major R and D expenditures in 2000 were in products acting on cancers, endocrine system, metabolic diseases and cardiovascular system. The discovery of new research techniques in biochemistry, molecular biology, genetics, and information technology has also streamlined the overall R and D process and improved efficiency.¹

Biotech Firms Gain Clout in Partnerships with Big Pharma. Partnerships between pharmaceutical and biotech companies are nothing new; recent discoveries in molecular biology and genomics have triggered a burst in new strategic alliances between major pharmaceutical manufacturers and biotechnology companies.²

1. IMS, Health Survey, 2001

2. Rahman and DaVanzo, 1993

Direct-to-Customer Push Proliferate. In 2000, drug makers spent an estimated US\$2.27 billion on advertising. The concept behind Direct-to-Customer (DTC) advertising for prescription drugs is to encourage patients to ask their doctors to prescribe a specific drug.

Internet Emerges as Key Marketing Tool. Today virtually every major drug maker has a product Information website, and a number have e-business divisions. Through internet a form of indirect marketing is running and drug makers create information content rather than straightforward advertisements. They do so through partnerships with third-party websites such as, DrKoop.com, where consumers can find information on diseases and medical conditions.³

New Role for Drug Makers. In the coming years, the U.S. government will probably invest billions of dollars in the U.S. drug industry, seeking new diagnostic and therapeutic agents to fight a multitude of biological threats. Many drug makers may evolve into new types of government defense contractors, operating on large volumes but with reduced profitability.

Growth of Pharmaceutical Industries

In late 70s Bangladesh, where pharmaceutical market was largely dominated by the MNCs the pharmaceutical industry has grown from strength to strength.¹ 1982 Drug Policy largely encouraged local production in pharmaceutical sector and as a result, lot of companies invested in local manufacturing plants.⁴ The objective of the '1982 Drug Ordinance was to make the essential drugs available to the larger group of population at a reasonable cost. The other objectives were to give priority to the production of essential drugs and to remove all harmful, useless and undesirable products from market. It also protects the interest of the local manufacturers by restricting the multinational companies from producing vitamin B complex and anti-acids. The basic philosophy or concept behind production of medicines was based on efficacy, safety and usefulness.

Present Capacity

In 2005 Bangladesh pharmaceutical market was worth US\$ 504Mn. and it is growing at a steady average rate of 17.18%. The Pharmaceutical Sector is the second highest contributor to the National Ex-Chequer and the largest

3. Pharmaceutical Marketing in the 21st Century

4. Samson H Chowdhury, Advisor, BAPI, 'Progress and Prospects of Pharmaceutical Industry in Bangladesh'.

White Collar Labor intensive employment sector of the country. The finished formulation- manufacturing base of Bangladesh is very strong as most of the pharmaceutical companies have their own manufacturing facilities. Unlike most of the import-based countries of South Asia and Africa, 97% of the total demand of Bangladesh is being met by local manufacturing. The remaining 3% basically constitutes import of very specialized products like vaccines, anticancer products etc. Now, among the top 10 pharmaceutical companies of Bangladesh, 8 are local companies. The top two domestic manufacturers, namely Square and Beximco Pharma are having a combined market share of about 25% of the total pharmaceutical market of the country.⁵

With an annual domestic turnover of above US\$ 500 Mn among the 49 LDCs Bangladesh is the only country that is near self sufficient in pharmaceuticals. A number of 21 local pharmaceuticals companies are now locally producing products. The sector has already become self-sufficient in Penicillin's e.g. Ampicillin, Amoxicillin, Cloxacillin, Flucloxacillin; Cephalosporin's (Cephalexin, Cephadrine); NSAIDs (Diclofenac, Celecoxib), Tramadol and Antipyretic e.g. Paracetamol and thus saving huge foreign currencies. Some enterprises also developed a few exciting APIs like Ciprofloxacin, Ranitidine, Amlodipine, Fluconazole, Cetrizine, and Omeprazole, Anti Retro-Virals etc., which have huge local and international demand.⁶

Export Growth of Pharmaceuticals

At first, only one or two major companies took proactive efforts to initiate export of pharmaceuticals from Bangladesh. They stated exporting bulk drugs as well as finished formulations to some of the less regulated overseas markets like Myanmar, Sri-Lanka and Nepal. In early 90s, few companies took initiative to explore some of moderately regulated markets like Russia, Ukraine, Georgia and Singapore. Bangladesh, now-a-days, successfully exporting its quality pharmaceutical products to many countries of the world. Success in registering and marketing in these countries was a major breakthrough for Bangladesh Pharmaceutical Industries.⁷ Today, Bangladesh Pharmaceutical Industry is successfully exporting its quality products to about 69 countries in Asia, Africa, Latin America and Europe whereas the number of exporting countries was only 17 in 2001. In 2005, we have exported finished formulations worth of Taka 2000 Million and raw materials worth of Taka 138 Million.⁸

5. Nazmul Hassan, Mr., Secretary General, BAPI, February 2005, Post WTO opportunities & Bangladesh Pharma Sector,

6. Samson H Chowdhury, Mr., Chairman, Square Pharmaceuticals, Annual Report, 2004.

7. Nazmul Hasan, Mr., Secretary General, BAPI, Annual Report, February 2005

8. Shafiuzzaman, S. M. Mr., President, BAPI, Annual Report BAPI, 2004-2005

The export market of pharmaceutical is growing day by day. As per world audited market figure, the sales of pharmaceutical items in European Union were US\$ 144 bn and the figure is increasing continuously. Rest of Europe's sales by region was US\$ 9 bn. in 2004. So, European Union and rest of Europe's pharmaceutical sales figure was US\$153 bn in the year 2004. In the year 2004 the Global pharmaceutical sales by region was total US\$ 518bn as per table furnished below:

<i>Global Pharmaceutical Sales of the Region in 2004</i>			Table-1
World Audited Market	2004 Sales (\$bn)	% Global Sales (\$)	% Growth (Const. \$)
North America	248	47.8	+7.8
European Union	144	27.8	+5.7
Rest of Europe	9	1.8	+12.4
Japan	58	11.1	+1.5
Asia, Africa and Australia	40	7.7	+1.3
Latin America	19	3.8	+1.5
Total	\$518 bn	100.0%	+7.1%

Source: Export Promotion Bureau, 2006

Not only the world market the Europe's market is also very vast in size. But Bangladesh achieved only US\$ 9.73 Mn. from exporting pharmaceutical items to EU countries in the FY 2004-2005 as shown below:

<i>Pharmaceutical Export to EU in 2004-05</i>				Table-2
Country	Value (000US\$)	Country	Value (000US\$)	
Netherlands	509	France	235	
U K	754	Hungary	726	
Greece	1234	Spain	1156	
Austria	411	Germany	2073	
Finland	764	Belgium	1261	
Italy	23	Slovenia	464	
Portugal	11	Poland	102	
Denmark	6			
Total-9727=US\$ 9.73 Mn.				

Source: Export Promotion Bureau, 2006

Import Situation of Raw Materials

Local pharmaceutical companies are still largely dependent on imported raw materials and 25% of total revenue of the sector has to spend for import from a wide range of countries like The USA, European countries, Japan, Taiwan, Korea, China and India. This makes Bangladeshi products less competitive in international markets.⁹ Major imported items and the import figures of related raw materials of pharmaceuticals in Bangladesh are furnished below:

<i>Import of Pharmaceutical Sector in Bangladesh (US\$ Mn)</i>				Table-3
Year	Finished products	Raw Materials	Packing Materials	Total
2000	22.18	594.1	115.25	731.53
2001	188.11	661.42	137.33	986.86
2002	260.08	720.7	82.19	1062.97
2003	205	792.77	90.41	1088.18

Source: Export Promotion Bureau, 2006

Potential and Future Possibilities

Pharmaceutical industry of Bangladesh is in a unique position with a favourable situation due to a number of factors in the export market:

WTO/TRIPs Agreement. As per TRIPs agreement signed in 1995, all the member countries of WTO have accepted ‘Pharmaceutical Product Patent’ and implemented the same from 1st January, 2005. Bangladesh is placed in such a unique position that it can bring revolution in its pharmaceutical sector if the country capitalizes on the opportunities optimally.

Access to Medicine at Affordable Price and Doha Declaration. As per TRIPs agreement, members of WTO had to accept and implement ‘Product Patent’ in their countries from 2005. So they cannot reverse-engineer and manufacture drugs, the patent for which has been applied after 1995. Accordingly a debate was going on regarding the issue of ‘Access to Medicine at Affordable Price, especially for the poor countries. The argument was, the effect of TRIPs agreement rises up the prices of essential drugs and access to medicine at affordable price will be at stake. The claim was that a lot of people in the LDCs will be deprived of proper treatment and will die without medicines. As a result, at last, in the year 2002, The ‘Doha Declaration’ of TRIPs came into being.

9. Annual Report 2004-2005, BAPI.

Only LDCs to Capitalized Post-2005 Opportunity. In Paragraph 6 of Doha Declaration, the LDCs were exempted from pharmaceutical patent protection until 2016, which means, all the 50 LDCs can now legally reverse-engineer patented products and sell it in domestic market as well as in all other LDCs, non-WTO member countries and countries where product patent is not in force. It so happened that among all the 50 LDCs, Bangladesh is the only country, which has a strong pharmaceutical manufacturing base. There are as good as 16 LDCs which do not have any pharmaceutical manufacturing capabilities whereas others have very limited or insufficient manufacturing capabilities. This has created an enormous opportunity for the pharmaceutical manufacturers of Bangladesh.¹⁰

Under these circumstances it is anticipated that, in the absence of any competition from India and China, Bangladesh Pharmaceutical Industry is going to have ensured return with high profitability because of following reasons:

Product Quality. The quality and efficacy of the products being exported from Bangladesh have been highly appreciated in all the countries.

Packaging & Presentation. The packaging and presentation of pharmaceutical products being exported from Bangladesh are comparable to international standard and have been highly appreciated by the doctors, chemists & patients of all the countries being exported to.

Huge Investment. During the last couple of years, huge investment has taken place in this sector in the form of facility expansion or up-gradation and new entrants. It is estimated that about US \$ 250Mn has already been invested during last 3 years. Square Pharmaceuticals Ltd., has already started operating their new state-of-the-art facility; Beximco Pharmaceuticals Ltd., is also manufacturing in their world class Metered Dose Inhaler (MDI) plant and is going for certification in the regulated markets.¹¹

Compulsory Licensing. Compulsory Licensing is neither practical nor feasible for new molecule as it may take 2 or 3 years to get the products. In such situation, products may be supplied from any LDC like Bangladesh.

Contract Manufacturing for Developed Markets. Because of cost-advantage, major MNCs of highly regulated markets are now shifting towards LDCs and developing countries for Contract Manufacturing. Bangladesh also has huge opportunity to go for Contract Manufacturing.

10. Annual Report, 2005-2006, BAPI

11. Nazmul Hassan, Mr., Annual Report, 2004-2005, BAPI.

Toll Manufacturing. Considering the ‘cost-benefit’ of their investment, most of the companies use all of their resources and expertise in marketing. Other countries could get their products manufactured in Bangladesh through ‘toll manufacturing’.¹²

Joint-Venture Opportunities. Because of cost advantage, large pharmaceutical companies of highly regulated markets are now going for joint venture projects. Bangladesh also has enormous opportunities to go for joint ventures with different large global companies for manufacturing pharmaceutical finished products.¹³

Export Facilities. As a signatory of WTO/ TRIPs, countries like China and India are no longer allowed to export patented drugs. On the contrary, the situation is just reverse for Bangladesh. As a member of LDCs, Bangladesh has already got the exemption from abiding by the patent laws until January 01, 2016, which has already given ‘Enormous Export Opportunities’ for the pharmaceutical sector of the country.¹⁴

Better Profit Margin in Export of Patented Drugs. Bangladesh can also ensure huge value addition by exporting patented drugs, since the export price is much higher than the local price. Presently, there is no competitor, so the pharmaceutical manufacturers of Bangladesh are able to sell patented products to the LDCs at a price which could be 50% of the originator brand.

Cost-Saving in Employing White Collar Labours. The entire process from raw-material intake to delivery of finished formulation e.g., in-process check, Quality Assurance (QA), Quality Control (QC) etc., this industry requires a number of pharmacists, chemists, bio-chemists, microbiologists and engineers. Bangladesh is enjoying cost advantage over any other country regarding ‘white collar labour’.

Cost-Advantage in Energy or Power. The cost of energy or power in Bangladesh is at least 40% cheaper than that of some countries as it has natural gas. This makes Bangladesh pharmaceuticals more competitive in the international market.

12. Souvenir , Asia Pharma Expo-2005.

13. Souvenir, Asia Pharma Expo-2005

14. Annual Report, 2005, BAPI

Future Prospects and Current Achievements

A survey was conducted by the writer to determine future prospects in the pharmaceutical industry. Most of the respondents were the key persons of the pharmaceutical sector. Some were at managerial level and some at policy level. A few were knowledgeable due to their working experiences. All respondents e.g. 100% agreed unconditionally that pharmaceutical sector has future prospects in the economic growth of Bangladesh. In favour of their positive responses 8 respondents (40%) mentioned that 95% of the huge local markets demand is met by the local manufacturers. Eleven respondents highlighted the present export coverage to 67 countries of the world and increased foreign currency earnings as well as reduction of import duty. Eleven respondents indicated the present opportunity of exemption of patent right until 2016 under the TRIPs. Twelve respondents (60%) referred to a large scale skilled human resource appointment. Nine responded about price competitiveness and ten told about capability and confidence building, such as auxiliary industries, relatively lower cost of energy, lower production cost, huge investment, positive initiative of private entrepreneurs. Most of the respondents mentioned the above examples in favour of future economic growth of this sector. Eight respondents threw light on investment in plants following latest technology. Expansion also happens for growing demand of pharmaceuticals due to rising awareness of people.

Expectation of Respondents about Future Growth

While requested for ranking the common five industrial sectors e.g. readymade garments, knitwear, frozen food, leather and leather goods and pharmaceuticals, eight respondents put pharmaceutical sector in first position and ten put this sector in second position. Eleven respondents kept readymade garments sector in the first position. Knitwear, frozen food, leather and leather goods came chronologically in the list.

Impact of Growth of the Pharmaceutical Sector

Table 4 lists the possible impacts of growth of the pharmaceutical industry in Bangladesh. About 70% of the respondents agreed or strongly agreed with the statements that share in the world market will expand, and that employment of skilled labor, local investment, and foreign currency earnings will increase. About 60% of the respondents agreed or strongly agreed with the statements that direct foreign investment will increase, sufficient backward linkage support would be available, and that product quality would be world class. However, more than 50% disagreed or strongly disagreed with the statement that employment of unskilled labor will increase.

*Future Growth of Pharmaceutical Industries in Bangladesh***Table-4**

Factors	Strongly agree		Agree		Undecided		Disagree		Strongly disagree	
	No	%	No	%	No	%	No	%	No	%
Employment of skilled Labor will be increased	11	55%	3	15%	0	-	0	-	0	-
Employment of unskilled labor will be increased	2	10%	7	35%	1	5%	1	5%	4	20%
Direct foreign Investment will be increased	9	45%	3	15%	3	15%	4	20%	1	5%
Local Investment will be increased	10	50%	3	15%	0	-	0	-	0	-
Income in foreign currency will be increased	11	55%	2	10%	0	-	0	-	0	-
Yearly growth trend is definitely positive	8	40%	2	10%	0	-	0	-	0	-
Share in the world market is expanding	11	55%	4	20%	1	5%	0	-	0	-
Strong opportunity of market expansion in other countries	5	25%	0		2	10%	0	-	0	-
Availability of raw material within the country	3	15%	6	30%	1	5%	2	10	0	-
Sufficient Backward linkage support available	6	30%	6	30%	2	10%	1	5%	1	5%
Product quality is world class	7	35%	5	25%	1	5%	0	-	0	-
Facilities under WTO, DOHA round is favorable for growth	9	45%	4	20%	2	10%	0	-	0	-

Source : Survey conducted by the writer.

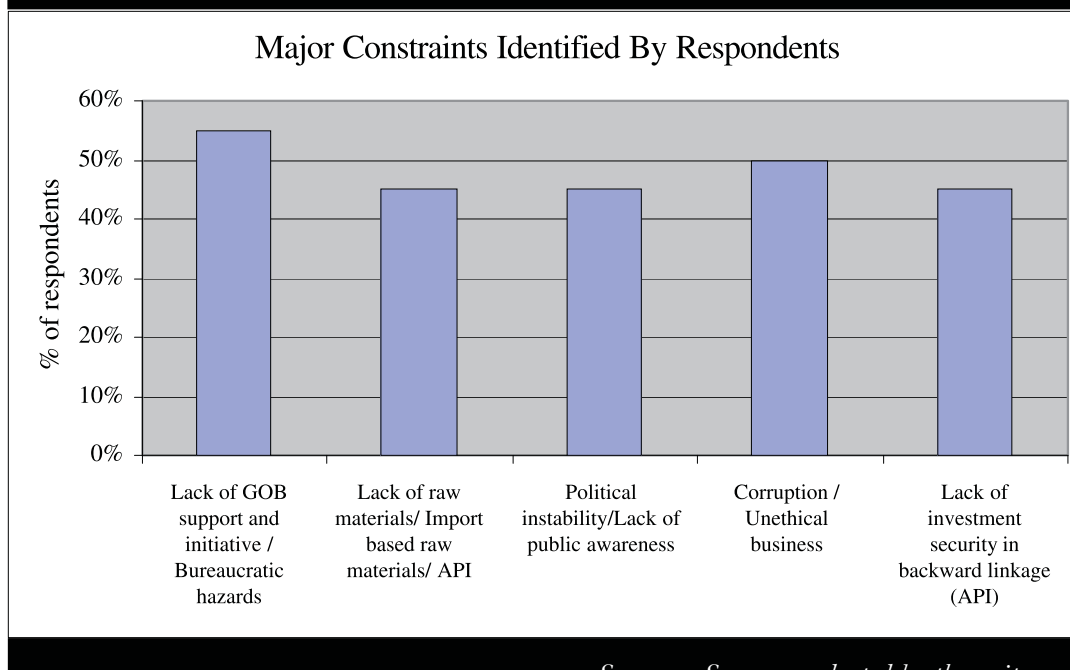
Constraints and Hindrances of Growth

Regarding constraints to growth, a majority of the respondents (11 out of 20) mentioned ‘Lacking in GOB support and initiative and bureaucratic obstructions’ and ‘unrealistic foreign exchange remittance’ (Table 5).

<i>Constraints of Growth of Pharmaceutical Sector</i>		Table-5	
SL.No	Concept	Responses (Total- 20)	
		Number	Percentage
1	Poor country image	5	25%
2	Lack of GOB support and initiative / Bureaucratic hazards	11	55%
3	Absence of study facilities/ academic institutional facility	5	25%
4	Tariff and non-tariff barriers	4	20%
5	Lack of raw materials/ Import based raw materials/ API	9	45%
6	Poor knowledge about WTO, TRIPS. Lack of training	2	10%
7	Introduction of Biotechnology	1	5%
8	Political instability/Lack of public awareness	9	45%
9	High rate of VAT and Taxes	5	25%
10	Corruption / Unethical business	10	50%
11	No local patent law	3	15%
12	Lack of skilled export professional	8	40%
13	Price competition with other countries	2	10%
14	No QA control Lab & basic plant	2	10%
15	No cash incentive for export	7	35%
16	Role of mission	1	5%
17	Low invest in facility and R&D	2	10%
18	Poor role of drug administration	7	35%
19	Complex registration process, USFDA, UKMHA	4	20%
20	High product registration expenses	2	10%
21	High market development expenses	2	10%
22	Unrealistic foreign exchange remittance	11	55%
23	Lack of investment security in backward linkage (API)	9	45%
24	Absence of essential drug list,	6	30%
25	High freight cost	3	15%

Source : Survey conducted by the writer.

Nine to ten out of twenty respondents mentioned ‘lack of raw materials/ import based raw materials; political instability/lack of public awareness; corruption / unethical business; and lack of investment security in backward linkage. The major constraints are highlighted in Figure 1.

Figure 1*Major Constrains of Pharmaceutical Sector*

Source : Survey conducted by the writer.

Recommendation to Overcome the Constraints

To overcome the constraints most of the respondents related their answers with the issues they identified as constraints to growth. The suggested recommendations are listed in Table 6. The principal recommendations are shown in figure 2.

RECOMMENDATIONS

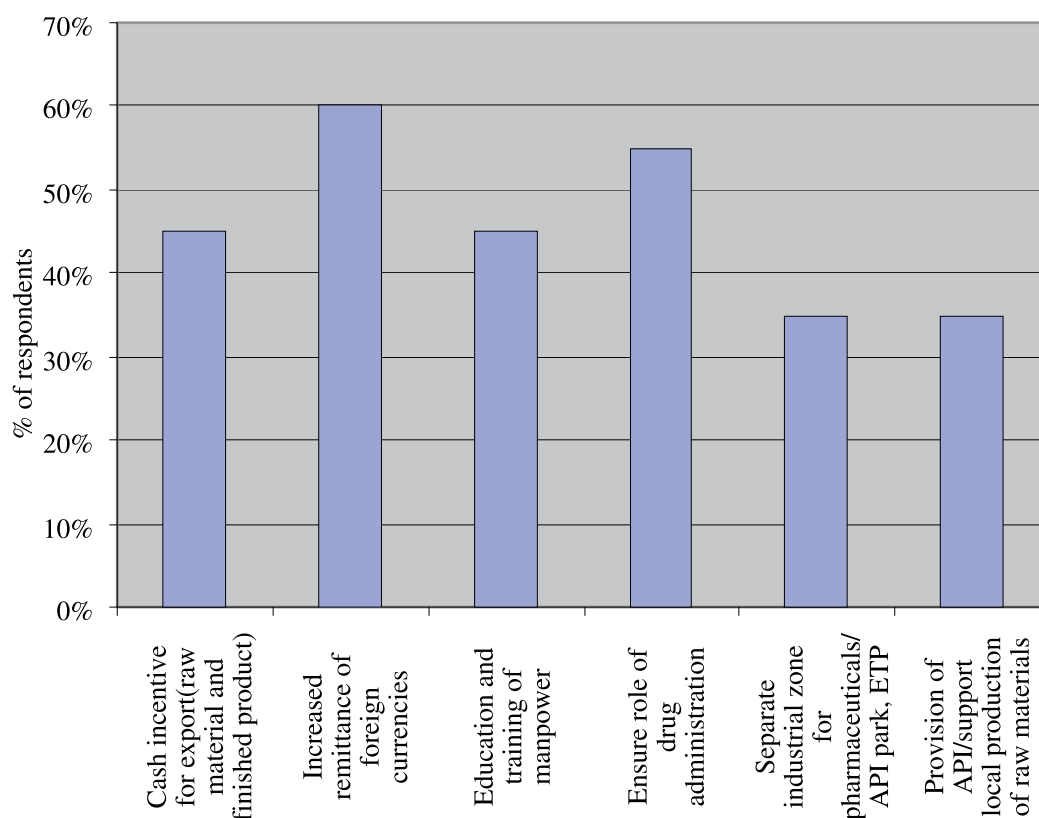
1. Policy should be taken to ensure transformation of all pharmaceutical plants of Bangladesh according to WHO guidelines for producing generic version of patented or molecule through 'Reverse Engineering'. Active support for R and D is needed on molecule and innovative health care items.
2. A probable less strict local policy, like schedule of India could be adopted first and enforce vigorously for upgradation of the low-grade Pharmaceutical Manufacturing Units of the country. Once this is done, then implement regulatory measures in concerned units to meet the stringent rules.

Recommendation to Overcome the Constraints

Table-6

SL.No	Concept	Responses, Total-20	
		Number	Percentage
1	Maximum use of Patent Right exemption up to 2016	2	10%
2	Cash incentive for export (Raw material & Finished product)	9	45%
3	Increased remittance of foreign currencies	12	60%
4	Withdrawal of VAT for export items	3	15%
5	Recruitment of Lobbyist	2	10%
6	Education and training of manpower	9	45%
7	Separate industrial zone for pharmaceuticals/ API park, ETP	7	35%
8	Reduce GOB formalities	5	25%
9	Establish world class research center	3	15%
10	Introduce Bio-Technology in Pharma sector	3	15%
11	Stabilize political situation	3	15%
12	Reduce corruption	2	10%
13	Ensure role of drug administration	11	55%
14	Ensure attractive package for employees and professionals.	1	5%
15	Foreign mission's positive role/ Pharmaceutical Fair	6	30%
16	Reduce tax and duties	2	10%
17	Establish business promotion council	1	5%
18	Prepare essential drug list for ensuring public health.	3	15%
19	Support enlistment of importers in UN list	2	10%
20	Standardize marketing and distribution process, ensure marketing code of practice	5	25%
21	Provision of API-support local production of raw materials	7	35%
22	Independent QA lab.	1	5%

Source : Survey conducted by the writer.

Figure 2*Major Suggestions by the Respondents***Major Suggestions By Respondents To Overcome Constraints**

3. In-depth study on problems and prospects of local pharmaceutical industries must be drawn through public and private sector collaboration to determine a set of solid, realistic, strategic steps.
4. New entrepreneurs should be encouraged to establish plants for producing patented necessary drugs through 'Compulsory Licensing' as per regulations of USFDA and UKMHRA to earn the necessary norms to export in regulatory market under the government support and supervision.
5. The pharmaceutical companies need to ensure compliance of the policies and principles designed for the LDCs to increase export. Formation of alliance and contract for exchanging views, information about as well as technical know-

how with developed countries like India, Pakistan, Brazil and Argentina will enrich this sector.

6. Present range of FC remittance for the importing countries should be reviewed to widen the scope of market expansion and export of the pharmaceutical products.
7. Existing financial limit of sending samples for the purpose of marketing of pharmaceutical products may be eliminated and an arrangement should be done for sending samples on the basis of requirement of buyer's country, where the drug will intend to export.
8. To overcome the existing scarcity of professionals in pharmaceutical production, export and marketing field, immediate steps should be taken to incorporate related subjects in the educational syllabus and also to provide training to concerned personnel about rules and regulations of developed and developing countries.
9. There should be a policy for establishing joint venture with foreign investors or Foreign Direct Investment (FDI).
10. Necessary budget should be allotted for R and D. Research should be carried out on Noble Drug Delivery System (NDDR) and New Drug Discovery and Research (NDDR). Before entering patent regime, power should be earned for making generic molecule through advance generic registration.

CONCLUSION

Pharmaceutical market is a steadily growing market throughout the world. The size of the world market was around US\$ 602 billion in 2005 and growth of sales was 7% that year. The USA, European countries, Japan, China and India are the major contributors to the market. In 2004, the total size of the pharmaceutical market of Bangladesh was estimated to be Tk.5000 crore with an annual growth rate of about 10%. Bangladesh has a unique opportunity to capitalize on the exemption of patent regulations under WTO/TRIPs until January 1, 2016.

A number of issues emerged during the research, which demands attention from the appropriate authority to facilitate the expansion of pharmaceutical market. Solutions of some problems need deskwork only and some problems are related with policy decisions. Like RMG, pharmaceutical sector also needs backward linkage support through huge investment in raw materials. This will ensure long-term sustainability in the market and optimum profit for the rapid growth. A continuous support to R and D is the key to face the challenges of competition and

quality of product. But some renowned pharmaceutical personalities expressed disappointment that there is a queue for establishing small plant for producing formulation. Consideration also should be taken of the claim of pharmaceutical sector for cash incentives where companies can be given facilities to produce their products at reasonable cost. Wholehearted support from all stakeholders for growth of a potential sector like pharmaceuticals can bring great benefits for the country's economy.

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