



A Study on Sector-based Need Assessment of Business Promotion Council- Light Engineering Sector

Research Conducted by:

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1. Background:

1.1 Background of Business Promotion Council (BPC):

Business Promotion Council (BPC) was developed by the Ministry of Commerce, Government of Bangladesh, to encourage export diversification in Bangladesh. BPC has chosen six specific sectors which include agro products, fisheries, leather, pharmaceutical, ICT, and light engineering, for an in-depth study. These sectors are listed either in the highest priority sector or in the special development sector by the Government of Bangladesh in its Export Policy 2015-2018. The aim of BPC is to increase competitiveness of the different products of these sectors so that they can compete in the global market.

1.2 Background of the Study:

Light engineering sector, an important sub-sector of the overall manufacturing sector of Bangladesh, is fueling the growth of many other industries of the country. It is providing support to industrial, agricultural and other sectors of the economy by manufacturing a wide range of spare parts, casting, moulds and dices, oil & gas pipeline fittings, light machinery, etc., as well as by providing extensive repair services to those. The sector has importance in the context of employment generation and poverty reduction in the country. Light engineering enterprises are scattered throughout the country and therefore are able to generate employment in a wider span of areas.

This sector has received the highest attention in the government policies. The Government of Bangladesh has declared light engineering sector as one of the special development sectors in the export policy 2015 – 2018, with a vision to encourage the growth of the light engineering sector of the country.

Business Promotion Council has undertaken the Sector- based Need Assessment Study- Light Engineering sector to evaluate, first-hand, the needs and requirements of the sector to mitigate the existing problems and to make it more export worthy. Findings of the study would be implemented in order to make the sector grow and sustain.

2. Objectives of the Study:

The specific objective of the study is to assess the needs and requirements of the Light Engineering Sector. Other objectives are:

- Assessment of the needs of several sub-sector of Light Engineering sector of Bangladesh under Business Promotion Council;
- Identification of challenges faced by different sub-sectors of the Light Engineering sector;
- Identification of need-based training and other capacity-building programmes to enhance the efficiency as well as the export potential of these Sub-sectors;
- Identification of the scope for technology transfer in related sectors of BPC to enhance the productivity; and
- Exploring the possible strategies that could be undertaken by BPC to develop the Light Engineering Sector of Bangladesh.

3. Methodology and Data:

The methodology of this study would be mixed in nature. Both Qualitative and Quantitative analysis are applied to analyse the data. The study applied a mix of the secondary literature review and interviews with presidents, secretary generals and other officials of the member associations of BPC and some leading entrepreneurs from the industry. A standard Questionnaire has been developed with a set of questions, including both open-ended and close-ended ones, to complete the interviews. Different literatures were collected and reviewed to develop a general idea on various aspects of the light engineering sector. Different Industry related policies, such as Industrial policy 2016, Export policy 2015-18, the 7th-Five-Year plan, DTIS, published research papers, and newspapers (soft copies) of various formats from internet were used as study tools.

4. Sector Overview:

Meeting 48% to 50% of the total domestic demand and providing backup support to the cement, paper, jute, textile, sugar, food processing, railway, shipping, garments capital machinery, the light engineering sector of Bangladesh is considered to be the ‘mother of all sectors’, according to Bangladesh Business Promotion Council¹. This sector has the potential to play a significant role in the economy and can become one of the major export items for Bangladesh.

Light Engineering Sector is classified as a sub-sector of Small & Medium Enterprises (SMEs). An estimate shows that there are about 40,000 light engineering industries in the country where around 0.6 million semi-skilled, skilled and technically educated people and innovative entrepreneurs are actively engaged.² The sector is currently contributing 2% to the GDP. The light engineering industries of Bangladesh are currently producing more than 10000 types of quality machinery, spares and accessories.

This sector has consistently grown over the years, and one of the major contributing factors to this is the growing large domestic market demand. Despite various challenges and difficulties, domestic demand has helped it grow and sustain. The price and quality of the products are reasonable, although, there is much to improve. There are challenges in terms of competition with foreign products with the limited variety and quality that Bangladesh produces.

The product types of the light engineering sector are: Automobile spare parts, Railway engine & rail line spare parts, Bicycle & cycle rickshaw, Machine tools, Jute & Textiles machines and spare parts, Chemical industries machines and spare parts, Sugar and food industries machines & spare parts, Engineering & metal industries spare parts, Ship industries spare parts, Agricultural machines accessories and spare parts etc.

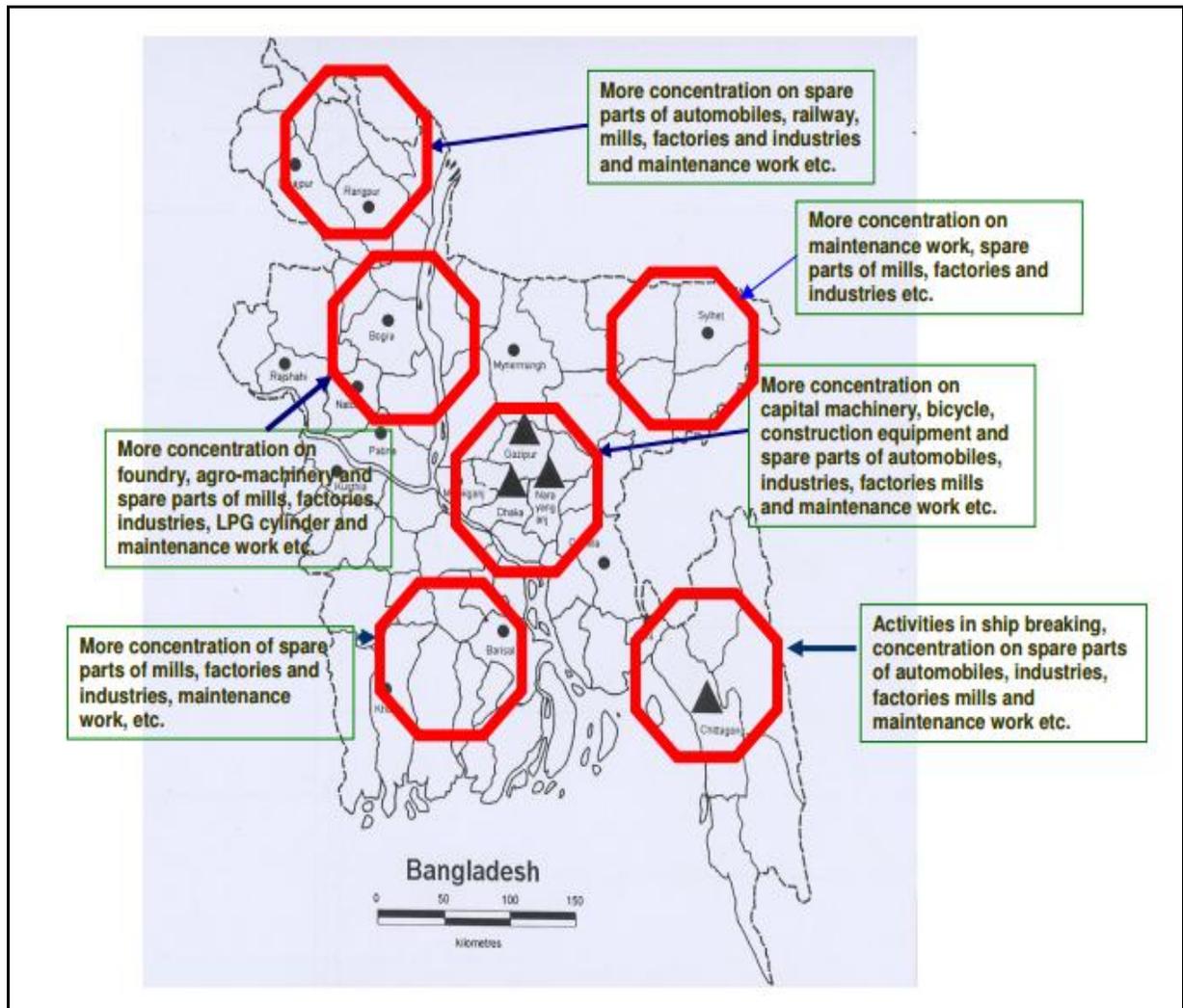
4.1 Location of the Light Engineering Industry of Bangladesh:

The SME Foundation has identified 31 light engineering clusters located in 18 districts of Bangladesh with about 7,500 enterprises. LE enterprises are scattered throughout Bangladesh, which implies employment generation in a wider span of areas. Most of the industrial units are located in Dhaka, Chittagong, Narayanganj, Bogra, Gazipur and Kishoreganj.

¹ http://www.bpc.org.bd/lepbbc_current_sector_profile.php

² http://euinspired.org.bd/docs/grant_scheme/INSPIRED%20-%20Light%20Engineering%20Sector%20Report%20-%20Jan%20'13.pdf

Figure 1: Product Map of Light Engineering Enterprises in Different Parts of the Country.



Source: SME Foundation (2008)

4.2 Export Profile:

A number of potential export-quality light engineering products are exported directly or through subcontracting. These are; spare parts of Paper & Cement mills, Bicycle, Fancy light fitting, Construction equipment, Battery, Voltage stabiliser, Iron chain, Cast iron articles, Carbon rod, Automobile spares, Electronics items, Stainless steel wares etc.

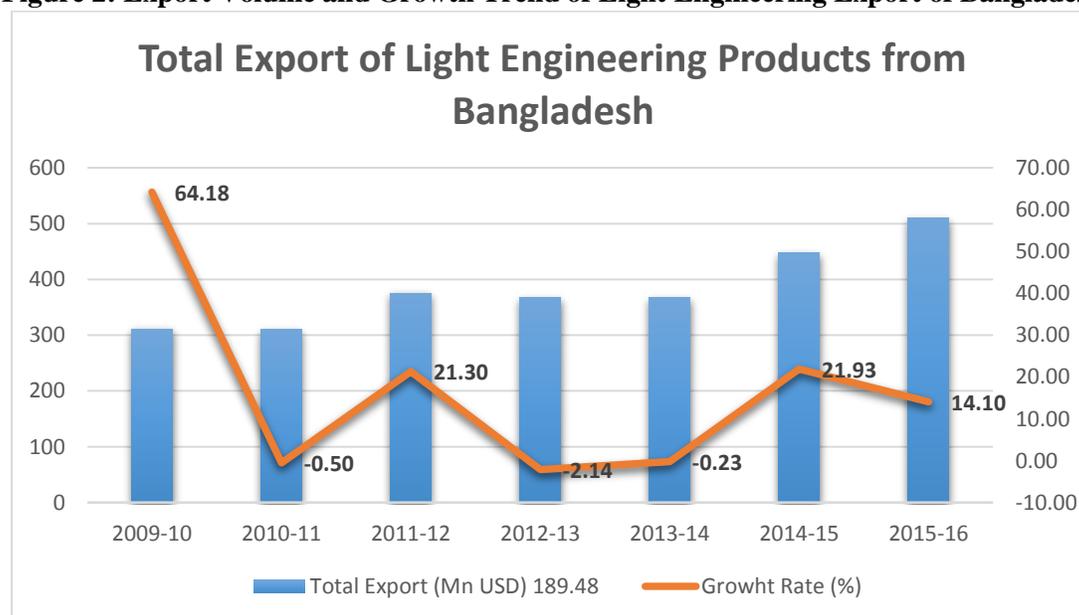
Table 1: Export of Light Engineering Products from Bangladesh

Value in USD Million

Products	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Total Export	311.09	309.55	375.49	367.47	366.63	447.04	510.08
Growth Rate (%)		-0.50	21.30	-2.14	-0.23	21.93	14.10
a) Iron Steel (72,73)	60.42	69.79	59.73	56.81	54.33	57.9	48.56
Growth Rate (%)		15.51	-14.41	-4.89	-4.37	6.57	-16.13
b) Bicycle (8712)	110.86	99.83	50.93	66.38	49.17	27.88	24.47
Growth Rate (%)		-9.95	-48.98	30.34	-25.93	-43.30	-12.23
c) Electric Products (84)	26.11	36.03	3.2	1.58	5.36	3.89	9.22
Growth Rate (%)		37.99	-91.12	-50.63	239.24	-27.43	137.02
d) Engineering Equipment (85)	23.2	26.07	49.54	48.73	63.06	83.03	174.8
Growth Rate (%)		12.37	90.03	-1.64	29.41	31.67	110.53
e) Copper Wire (74)	49.23	65.04	88.53	63.09	54.63	90.11	65
Growth Rate (%)		32.11	36.12	-28.74	-13.41	64.95	-27.87
f) Stainless Steel ware (82)	2.67	2.43	105.59	105.08	112.89	126.06	99.15
Growth Rate (%)		-8.99	4245.27	-0.48	7.43	11.67	-21.35
g) Others	38.6	10.36	17.97	25.8	27.19	58.17	88.88
Growth Rate (%)		-73.16	73.46	43.57	5.39	113.94	52.79

Source: Export Promotion Bureau

Figure 2: Export Volume and Growth Trend of Light Engineering Export of Bangladesh



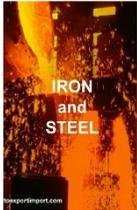
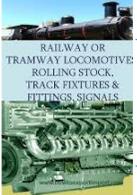
Source: BFTI's calculation using EPB data

It is seen that export of this sector has been growing over the years. However, the growth rate is found to be fluctuating. Iron, steel, Bi-Cycle, engineering equipment, stainless steel ware are the major exportable

light engineering items. It is also seen that the export of Bi-Cycle products went down significantly in the year 2014-15. According to the representative of the Bi-Cycle Association, the major reason behind this falling export was because of a fire at the Transworld Bi-cycle Co. Ltd. and the company could not operate. It was one of the largest By-Cycle producing factories of Bangladesh.

4.2.1 Export Destinations of Light Engineering Products:

Major export destinations of the light engineering products include European Union, Japan, China, India, Australia, Africa etc.

	<p>Saint Barthélemy, Singapore, Indonesia, India, Myanmar, Thailand, Japan, Sri Lanka, Turkey, USA, Italy, Taiwan, UAE, Australia.</p>
	<p>Germany, UK, India, Belgium, Ireland, Spain, Denmark, Sweden, Italy, Australia, Finland, Russian Federation, Austria, Brazil, France</p>
	<p>Canada, Germany, Spain, France, India, Italy, Japan, South Korea, Latvia, Malaysia, Portugal, Singapore, Thailand, Taiwan</p>
	<p>Germany, United Kingdom, India, Belgium, Ireland, Spain, Denmark, Sweden, Italy, Australia, Netherland, Austria, Brazil, France</p>

Source: BFTI's segregation based on the data from EPB.

For Bi-cycle exports, the main market is the European Union. This also has a specific reason that China has a very heavy anti-dumping duty on bi-cycle export to EU countries. Bangladesh is enjoying a duty-free benefit and capturing the big EU bi-cycle market. With the Brexit, UK might be off the list of export destination of Bangladeshi Bi-cycles in a couple of years' time unless a special trading arrangement is reached with that country by that time.

4.3 Backward Linkage of the Light Engineering Sector:

Light engineering sector has a strong backward linkage. For most of the items, raw materials come from ship scrap, which comes from domestic ship breaking industry in 90% of the cases, according to BEIOA,

a leading association of the light engineering sector. The rest is sourced from Singapore, where ship scraps from all over the world come for Auction.

For export quality bicycles, parts are imported from various sources like china, turkey, Europe. There are high standard and safety requirements and producers have to comply with buyers' requirements of spare parts, according to the representatives of By-Cycle Association.

5. Government Policies for the Light Engineering Sector:

- In the export policy 2015 – 2018, Light Engineering products, including bicycle and auto parts, have been considered as one of the special development sectors. Several points are mentioned in the policy including:
 - Supply of investment credit at reduced rate of interest on a high priority basis;
 - Moratorium on income tax;
 - Various cash assistances;
 - Export credit on easy terms and reduced rate of interest; and
 - Subsidized rate for Air Transportation, Duty drawback and bond facilities.
- A plan has been undertaken to establish 'Light Engineering Cluster Village' near Dhaka in order to develop the Light Engineering industry.
- In the 7th- Five-Year Plan, emphasis has been given to attract FDI in the Light Engineering sector to increase investment, for greater and easier market access, and for easier transfer of technology. To facilitate FDI in the Light Engineering sector, the Govt. is planning to set up Special Economic Zones and hand over these SEZs to investors from Japan, China, India and other countries.
- In the Industrial Policy 2016, Light Engineering sector has been considered as one of the Highest Priority Sectors. Several facilities, including cash and investment incentives, would be provided to facilitate the Light Engineering sector of Bangladesh.

6. Findings and Analysis of the Interview Results:

6.1 Bangladesh Engineering Industry Owner's Association (BEIOA):

Bangladesh Engineering Industry Owners' Association (BEIOA), an apex body of Engineering Industry and Entrepreneurs of Bangladesh, established in 1983-84, is an "A" Grade Trade Association of Bangladesh.

The Bangladesh Engineering Industry Owners' Association (BEIOA) has 5000 SME members, who are engaged in the production and marketing of light engineering products. It conducts, inter-alia, promotional activities, provides other services to its members and acts as a platform for the members.

The main association of the light engineering sector is Bangladesh Engineering Industry Owner's Association (BEIOA). Many of the challenges, obstacles, opportunities and necessities came out from the interview with the representatives from BEIOA.

Findings:

- **Trainings:** Members of the BEIOA are receiving trainings for the workers under the SEIP project. The trainings are being conducted all over the country and contributing towards improved

productivity and overall betterment of the overall sector. The association does not want trainings from the BPC; rather they require different kinds of support, which, according to them, should be the main mandate of the Business Promotion Council (BPC);

- **Separate Industrial Plots for Light Engineering Industries:** Most of the Light Engineering Industries are Small or Medium level enterprises. The rules and regulations of the Special Economic Zones, assured by the government is not easy to comply with by those small and medium businesses;
BEIOA thinks that this sector requires separate plots with separate regulations and lower fees. Those zones should be developed in such a manner that the whole industry can operate in a systematic approach with better technologies, logistics and other necessary facilities. The area must have Common Facility Centre, which is at present most necessary for the sector;
- **Easy Access to Finance:** Financing turns out to be a major challenge for the domestic investors. According to the president of BEIOA, the conditions for accessing finance are stringent, making it inaccessible for the small businessmen. In order to encourage investment in this sector, financing issues must be addressed.
- **Advanced Technology:** Bangladesh is far behind in terms of global competitiveness of this sector. A major reason for this is technology. Bangladeshi industries are still using manual technologies which results in low quality of products in many cases. Moreover, production capacity is not high when manual technologies are used. Therefore, the industries are not being able to meet production requirements of the buyers and are being out of export competition in the world market. In many cases, due to manual production, products are not homogeneous. This also lowers the standard of the products. Advanced machines and technologies are necessary to address this challenge. Support from the government is necessary in this regard;
- **Promotional Activities:** Both domestic and international level promotional activities are necessary and BPC must come forward to arrange those. Fairs and other promotional activities at the district level is required for a better domestic market. International level activities would provide the opportunities to understand the conditions and situations in those markets. Also, there would be a sharing of technology, knowledge and other resources, which would ultimately benefit the sector. BEIOA is already arranging these fairs in different districts, but if organised by the BPC, the outcomes would be more beneficial.
- **Awareness Programmes:** Various awareness programmes were suggested by the BEIOA President. These are-
 - Awareness regarding norms of doing business;
 - VAT Calculation Procedures;
 - How to get involved in export;
 - Rules and procedures of doing business; and
- **Policy Support:** Government policies should be consistent and framed in a way that encourages the thrust sectors, according to the BEIOA. This sector is enjoying 10% cash incentive by the government, but it needs support in terms of taxes and increased tariff for imported light engineering products for protecting the domestic industries.

6.2 Bangladesh Bi-Cycle & Parts Manufacturers and Exporters' Association (BBPMEA)

Among all the Light Engineering Products, Bi-cycle has the major share in export. At present, there are five bi-cycle exporting companies operating in Bangladesh. BBPMEA, the association for bi-cycle manufacturers, works in fostering the sector.

Transworld Bicycle Co. Ltd, Uniglory Cycle Industries Ltd, Mahin Cycles Ltd, RFL are the bi-cycle exporting companies of Bangladesh.

The needs and requirements of this area of the light engineering sector are different from the rest, and therefore should be addressed separately, according to the association.

Findings:

❖ Challenges:

- **Poor Infrastructure:** This sector is mostly export-oriented. The major challenge in export of the Bi-cycle industry is infrastructure. The lead time and the cost of production increase due to lack of quality roads, highways and other infrastructural obstacles. Port facilities are also inadequate, which also hampers the business;
- **Documentation:** The documentation process for export is quite complicated and requires lots of time and workforce. This works as a barrier to the development of the sector;
- **Customs Procedures** also create additional muddles in the process of export; and
- **Competition in the Domestic Market:** Low priced Chinese bi-cycles are entering the market freely and creating problems for the local industries. Under-invoicing by importers is creating hassle for the domestic producers.

❖ Requirements:

- **Trainings:** Currently, the factories are providing in-house trainings to the workers and mid-level management people. They are also organising technical trainings with the support of Bangladesh University of Engineering and Technology. Their requirements from BPC include more advanced- level trainings.
 - **Training for Workers:**
 - a) **Expert training for operating advanced technology:** Technologies in the world are changing fast. The sector requires assistance from international experts in order to train the workers to operate the latest technologies. **The association suggests that they can bear all sort of costs if Business Promotion Council arranges trainings with international specialists from different countries in different sectors of bi-cycle production;**
 - b) **Trainings on Safety Measures;**
 - c) **Trainings on welding, testing and heat treatment at factory premises; and**
 - d) **Arrangement of Vocational trainings.**
 - **Training for Mid-level management:**
 - a) Trainings to enhance managerial efficiency;
 - b) Trainings on efficient costing and pricing strategies to increase competitiveness in the global market;

- c) Trainings on Research and Development of Products;
- d) Capacity building of the workforce; and
- e) Technical trainings on Export issues.

6.3 National Association of Small and Cottage Industries of Bangladesh (NASCIB)

National Association of Small & Cottage Industries of Bangladesh (NASCIB) is a trade organization, which started its activities in the year of 1984 to cater to the needs of the member-entrepreneurs in the micro, small, cottage, including medium, sector in Bangladesh. NASCIB is the foremost private sector trade association involved with the development and promotion of Micro-Small-Medium-Enterprises in the country. The association promotes the development of the Micro and Small sectors along with the recent growth of the Medium enterprises in all the 64 districts of Bangladesh. Today NASCIB boasts of more than 10,000 members where 25% are women entrepreneurs working hand to hand for the development of MSME in the country.

NASCIB has activities, affiliation with International Organisations, such as ZDH TA, APO, WASME, FACSI, FNCISI. NASCIB's membership in different Government Committees helps implementation of Industrial Policy of Government and also works jointly with various Government, Semi-Government and Private Sector organisations.

Findings:

❖ Challenges:

Being an association for small and cottage industries, NASCIB faces many difficulties in doing business, especially in export. The President of NASCIB cited some of the major challenges faced by the members of NASCIB.

- **Market Information Linkage:** There is a huge gap in the linkage of market information. The firms are doing business without having proper knowledge of requirements of the market and therefor are not prospering as they could have been;
- **Lack of Laboratory Facilities:** It is a common problem for all the members of this sector. Absence of International level laboratories is one of the major challenges of this sector;
- **Poor Capacity of Export Promotion Bureau:** EPB is not in its full function according to NASCIB. Activities of EPB must be focused and aimed towards encouraging exports;
- **Branding Problem:** Bangladeshi products do not have branding in the international market. The low brand image leads to lack of confidence of the buyers; and
- **Poor Infrastructure:** Lack of roads and highways, quality electricity and gas etc. are creating obstacles for this sector.

❖ Requirements:

- **Trainings:** NASCIB recommended many training programmes, workshops and seminars that would improve the quality and condition of their member factories and the overall light engineering sector. Members of NASCIB are mostly selling their products domestically, and requires initiatives from BPC and the government if they are to export. Their recommended programmes have an immense vast variety, involving workers, management and policy makers: They are

- Trainings on New market orientation;
 - Trainings on Market research;
 - Trainings on Branding and Marketing Strategies of Light Engineering Products;
 - Trainings on Productivity Management;
 - Trainings for Trainers;
 - Technical trainings; and
 - Trainings for mid-level management.
- **Workshops:**
 - Workshops for Mid-level Management;
 - Workshops for motivation to engage in export; and
 - Workshops for mapping the market potential of the products.
 - **Seminar:**
 - Seminar for awareness building of Entrepreneurs to get involved in export; and
 - Seminar on Access to Finance for SMEs in Bangladesh of Light Engineering Sector.
 - Policy Support for Light Engineering Sector;
 - Forming a Knowledge and Research Centre; and
 - Building partnership with different associations for market information.

6.4 Bangladesh Electrical Merchandise Manufacturers' Association (BEMMA)

Bangladesh Electrical Merchandise Manufacturers Association (BEMMA) is an association of all electrical merchandise manufacturers of Bangladesh. BEMMA, established in 1985, is registered with the Director of Trade organisations (DTO), Ministry of Commerce, and the Registrar of Joint Stock Companies, Government of the People's Republic of Bangladesh. It obtained membership from Light Engineering Product-Business Promotion Council (LEP-BPC), Ministry of Commerce and Small & Medium Enterprise (SME) Foundation, Ministry of Industries of the People's Republic of Bangladesh. BEMMA is an 'A' class Member of the Federation of The Chambers of Commerce and Industry (FBCCI), Dhaka.

Findings:

- **Making Electrical and Electronics a Separate Sector:** The Electrical sector is not getting the proper nurturing as it is being considered with other categories of light engineering products, whereas this is a completely different area. The needs and necessities of this sector and the required trainings and others are not also similar to the traditional light engineering products. This sector is facing various challenges on its way of prospering;
- **Internationally Accredited Testing Lab:** The first and foremost requirement of the sector is an International-level testing lab, able to comply with C Standard, which is the required standard for the light engineering sector. The proposal for the lab is approved and, at present, is lying with SME foundation. BPC can work with SME foundation to implement the project.
- **Industrial Zone for Electrical and Electronic Sector:** Separate industrial area is required for the sector. The Testing lab can be located in an area where different small, medium and large industries would work as backward and forward linkages to each other.

❖ **Challenges:**

- **Underinvoicing:** Underinvoicing poses a major challenge in competing with foreign products. Chinese products are underinvoiced and brought with lower prices, creating unfair competition for the local products.
- **High cost of Finance:** This sector is capital intensive, and requires huge investment. But the cost of finance is quite high, which discourages the investors.

❖ **Requirements:**

➤ **Trainings:**

➤ **Training for Workers:**

- **Trainings to Encourage Receiving Training:** First of all, it is necessary to spread the awareness among workers and owners on the issue why training is important. Both employers and workers would have to understand that trainings are important in order to enhance productivity;
- Trainings on Enhancing Productivity;
- Programmes linking theoretical knowledge and practical experiences; and
- Basic Entry level trainings

➤ **Trainings for Mid-level Management:**

- Trainings on Customs procedures;
- Trainings on VAT procedures; and
- Trainings on Costing and Pricing

➤ **Trainings for Marketing and Sales:**

- Trainings on exploring new market opportunities;
- Trainings on analysing local market potential; and
- Trainings on creating export base.

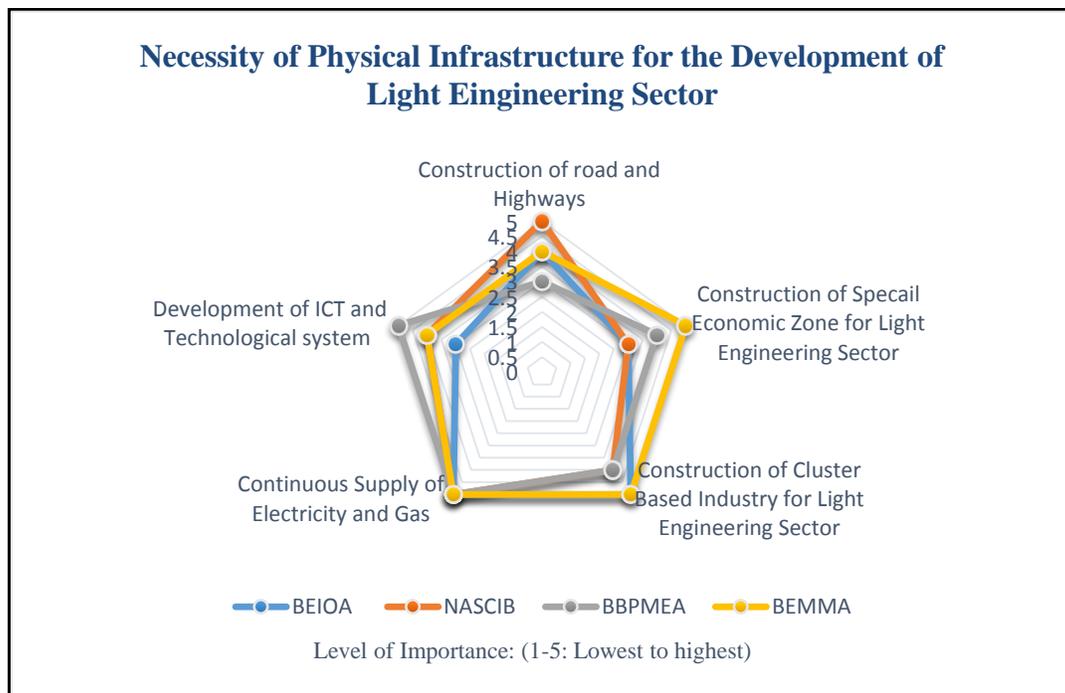
❖ **Remarks:**

It is seen that businesses with huge investments are making products that are also produced by small firms. This create challenges for the small businesses. Government can take the initiatives to encourage the large firms to invest and produce items that small firms cannot. It was suggested by the association that those large firms should engage in producing raw materials and intermediate products so that those can be used by the small firms for producing finished items.

7. Analysis and Discussion about Findings

Respondents were asked about the needs regarding the physical infrastructure. They ranked the urgency of needs and it was seen that the observations of the associations match in most of the cases.

Uninterrupted supply of electricity and gas has been given the highest priority by the associations. Construction of cluster-based industry for light engineering sector is second in this regard as two of the associations ranked it the highest and the rest ranked it second highest. Development of ICT and Technological System and Construction of roads and highways came as other necessities.



Source: BFTI's own diagrammatic construct based on interview result

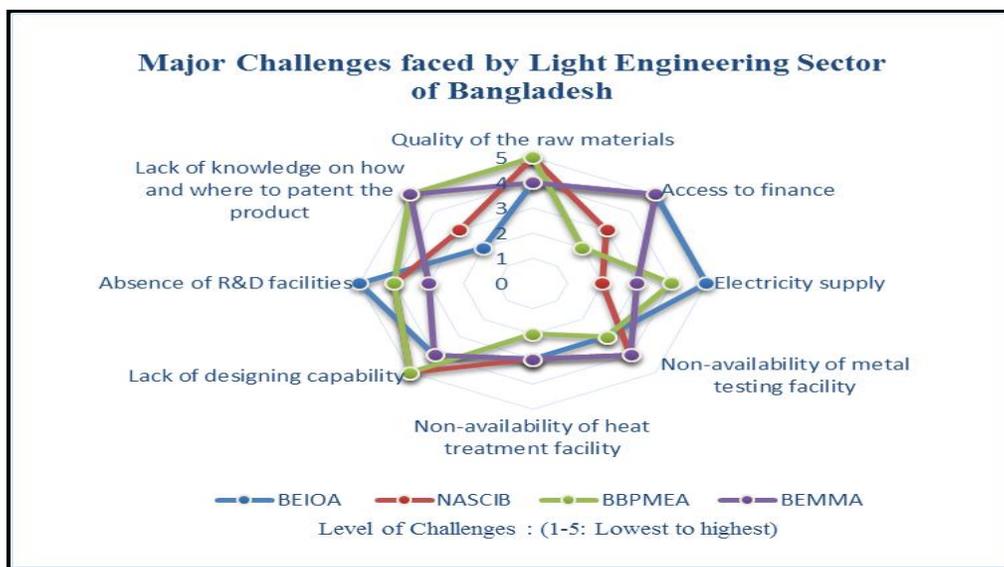
Along with that, respondents emphasised on many other points, which have great importance for further development of different subsectors of the Light Engineering sector. The observations are as follows:

- The Light engineering sector of Bangladesh is capital-intensive and is dominated by small and medium factories. Due to lack of capital and cumbersome process of access to finance, they are facing difficulties to enter not only the export market but also domestic market.
- Light engineering enterprises proliferated through skilled workers coming out of pioneering enterprises, which created some well-known clusters in several geographical regions (Dhaka and Bogra).
- A major share of raw materials for Light Engineering sector are imported. Not only the Ship Scarps, the main raw material, but also the finished goods are imported regularly, creating challenges for the domestic producers. Therefore, Govt. should adopt proper policies to balance the import duties to protect the domestic entrepreneurs.
- The Light Engineering sector of Bangladesh is dominated by SME entrepreneurs and in most of the cases, they are using conventional technology in their production process. As a result, the cost of production is increasing, but the quality of the finished items are not meeting the international standards. So they are lagging behind their foreign competitors.

- e) Most of the cases, the workers of Light Engineering sector enter the production process without having any proper training. Lack of practical knowledge and prior training hampers production. So the productivity of these workers are very poor. If these unskilled or semi-skilled workers are developed as skilled workers through prior trainings, the productivity as well as the export of Light Engineering product would increase.
- f) At present, the Light Engineering firms are operating in a scattered way in different districts of Bangladesh. Therefore, they are facing several problems for getting utilities e.g. Gas and Electricity and other facilities for production. The development of Cluster-based industrial zones for different sub-sectors of Light Engineering might have positive impact in this regard.
- g) Currently, the firms of Light Engineering sector are suffering due to lack of Common Facility Centre (CFC)- with high-tech machinery. Establishment of CFC is vital to upgrade technological edge of light engineering sector. The implementation of CFC will upgrade quality of existing light engineering products and would also help introduction of new products.
- h) Under CFC, one heat treatment facility is to be established so that engineering firms can treat metal to produce desired characteristics, such as increased hardness; temper. Availability of this service will ensure more longevity of light engineering products.
- i) Due to lack of Research and Development facilities, the entrepreneurs of Light Engineering sector cannot have prior knowledge about the global market potential for their products. More engagement with foreign companies or buyers and participation in different international trade fairs might have positive impact in enhancing the export of this sector.

8. Major Challenges of Light Engineering Sector:

The respondents from different associations were asked to rank some of the existing challenges faced by the sector. Though the nature of these associations are different, there are some challenges, which are mostly identical to all of the sectors. According to their responses, lack of designing capabilities, lack of metal testing facilities and quality of raw materials come as the major challenges. Other challenges include knowledge on patenting, access to finance etc.



Source: BFTI's own construct based on interview result

Along with these challenges, respondents cited many other challenges they are facing to do their business. These challenges are associated with different stages of their business. Some of them are faced in the production process, some in importation of Raw Materials, some are in the domestic market, and others related to exportation of the Light Engineering products. The major challenges faced by the entrepreneurs of the Light Engineering sector are as follows:

➤ **Non-existence of Common Facility Centre (CFC):**

Light engineering firms are mainly operating at different clusters all over the country. Despite cluster based operation and repeated appeals by Bangladesh Engineering Industry Owners' Association (BEIOA), no Common Facility Centre (CFC) has been established in any cluster. For the small and medium enterprises, it is not possible to invest in those services as they require huge investment and are not cost-effective for a single firm. Using those facilities from other sources makes it costly and the cost of production rises. Establishment of CFC is very important for the businesses to grow and for the betterment of the sector as a whole. CFC will upgrade quality of existing light engineering products and introduction of new products.

➤ **Lack of Metal and Heat Treatment Facilities:**

Metal and heat treatment facilities are necessary in order to produce quality products and for production in a larger scale. With these services, firms will be able to treat metal to produce desired characteristics, such as increased hardness or temper. By availing these services, longevity of the light engineering products would be ensured. Metal testing facility will help entrepreneurs to identify materials of foreign-made goods and proper substitutes would be selected if the original are unavailable domestically.

➤ **Constraints Related to Finance:**

Financing is found to be one of the major challenges for the light engineering sector. Easy access to finance must be ensured to attract investors. Local investment must be given preference over foreign investments. A report shows that if investment in this sector increases by just taka. 60 billion every year, productions from this sector can replace imports worth taka. 650 billion. At present, lengthy and complicated lending procedure to receive bank loans, high interest rates on bank loans, non-availability of sufficient working capital, non-availability of venture capital are financing-related constraints.

➤ **Competition in Domestic Market:**

Besides the foreign markets, Bi-Cycle producers are trying to expand their share in the domestic market. But they are facing severe competition from imported Bi-Cycles of different countries, especially from China. The low-priced Chinese Bi- Cycles are capturing the domestic market of Bangladesh. Domestically produced Bi-Cycles of Bangladesh cannot compete with them due to higher cost of production.

➤ **Old and Manual Technology:**

The world is moving fast in terms of technology. But, the light engineering sector of Bangladesh is still using old and manual technology in most cases. This not only hampers the quality of the products, but also impedes the yield of the sector. Manually made light engineering products are not homogeneous and bulk production is not possible in many cases. Therefore, it is not possible to meet the standard and demand of the international market.

➤ **Accreditation of Standard Certification:**

Bangladesh does not have any dedicated standard certification body or institution to undertake standardisation and testing of machinery and spare parts of the light engineering sector. BSTI provides standards of different products produced in Bangladesh, but they are mostly not capable

of making standards on light engineering products. Due to lack of quality certification, this sector is facing branding problem in the international market.

➤ **Others Challenges:**

Other challenges faced by the Light Engineering sector may include; limited design of products, absence of research and development centre, underinvoicing of imported goods, scarcity of skilled / trained workforce, absence of modern laboratory, inadequate information of current market trends and an absence of marketing facilities

9. Specific Recommendations:

- Establishment of CFC at Dholaikhal Dhaka light engineering cluster with facilities of metal testing, CNC training and heat treatment, may be jointly used by cluster engineering firms.
- Setting up of raw material warehouses and testing facility at different clusters of light engineering across the country may ease the material-related constraints.
- In most of the cases, cluster-based light engineering firms outside of Dhaka are relying on informal sector financing to meet their needs. For ensuring good credit environment, Bangladesh Bank should introduce special credit facility for commercial banks so that commercial banks can offer loans to light engineering firms at single digit interest rates.
- For testing and certification for meeting the international quality standards of locally manufactured Light Engineering products, there is a need to strengthen BSTI with new technology and skilled manpower to prepare quality standards and conduct quality testing.
- There are scopes to conduct an extensive study on the implementation of the CFC project.
- Domestic producers are facing severe competition in the domestic market due to low-priced imported products. There are scopes for conducting some study to find out the possibilities of ‘Dumping’, done by different countries, which would help take necessary steps to overcome this challenges, if any.

To develop adequate skilled manpower for the different sub sectors of the Light Engineering sector of Bangladesh, arrangements to hold the following training programmes, workshops, seminars and roundtable discussions by Business Promotion Council might have a great impact:

Head of the Activity	Description of Activity	Expected Outcome	Implementing Agency	Priority
1.1.Trainings for Workers	1.1.1. Training for operating advanced technology through international expert in By-Cycle sector	The worker would be more skilled to operate the modern technology for production	BPC and BBPMEA	High
	1.1.2. Training on welding, testing and heat treatment at factory premises	Skill of the worker would be increased	BPC and Relevant Associations	Medium
	1.1.3. Entry Level training for probable workforce	Number of Skilled worker increased	BPC, Relevant training center and Associations	High

	1.1.4. Training on Productivity Improvement	Increased Productivity of the workers	BPC and Relevant Associations	High
1.2. Trainings for Trainers (ToT)	1.2. Capacity Building Training Programme for Trainers	Expert and Skilled Trainers	BPC, Development Partners and Relevant Associations	High
1.3. Trainings for Mid-Level Management	1.3.1. Training on Rules, Regulation and Customs Duty of Export-Import	Increased Knowledge level regarding customs procedure	BPC, NBR and Relevant Associations	High
	1.3.2. Training on New VAT Act	Better Understanding of New VAT Act	BPC, NBR and Relevant Associations	Medium
	1.3.3. Trainings to Enhance Managerial Efficiency	Capacity Building for Mid-Level Management	BPC and Relevant Associations	High
	1.3.4. Training on Compliance Issues	Increased awareness regarding the compliance requirements in export markets	BPC and Relevant Associations	High
	1.3.5. Training on Ensuring Fire Safety and Building Integrity	Increased awareness regarding the safety issues in Light Engineering sector	BPC and Relevant Associations	Medium
1.4. Trainings for Sales and Marketing Department	1.4.1. Training on New Market Orientation Technique	Market Diversification	BPC and Relevant Association	High
	1.4.2. Training on Branding and Marketing Strategies of Light Engineering Products	Brand Development and Export Promotion	BPC, DPDT and Relevant Associations	High
	1.4.3. Training on analysing local market potential	Widen the potential of Domestic Demand	BPC and Relevant Association	High
	1.4.4. Training on efficient costing and pricing strategies	Increased competitiveness in the global market.	BPC and Relevant Associations	High
2. Workshops	2.1. Awareness Building Workshop on "Necessity of Training for Business Development"	Increased number of participants, provide better understanding about the need of Training	BPC and Relevant Associations	High
	2.2. Workshop for mapping the market potential of the product	Opportunities to find out the product-wise potential market	BPC and Relevant Associations	High

	2.3. Workshop on Motivation Raising for Engagement in Export	Creation of new entrepreneurs for export	BPC and Relevant Association	High
	2.4. Capacity Building Workshop for Mid-Level Management	Increased skill of Mid-level management	BPC and Relevant Association	High
	2.5. Workshop on Introduction of Labour Law	Better understanding about the rules and regulations of New Labour Law	BPC, and Relevant Associations	Medium
3. Seminars/ Roundtables	3.1. Seminar/ Roundtable on Rules, Regulation and Procedure of Export-Import of the LE products	Entrepreneurs would be more aware regarding international involvement of their products	BPC, NBR and Relevant Associations	High
	3.2. Seminar/Roundtable on "Impact of Productivity Improvement on Business"	Increased awareness among the entrepreneurs about the productivity improvement	BPC and Relevant Associations	High
	3.3. Seminar on "How to Export your Product to Potential Market"	Increased knowledge about involvement on export	BPC and Relevant Associations	High
	3.4. Seminar on Access to Finance for Light Engineering sector of Bangladesh	More investment resulted in more production and export	BPC, Bangladesh Bank and Relevant Associations	High
	3.5. Seminar on "Role of New Technologies Implementation in Light Engineering Sector"	Raised the awareness about the entrepreneurs to implementation of new technology into their production	BPC, and Relevant Associations	Medium
4. Common Facilities Centre (CFC)	4.1 Establishment of CFC at the light engineering cluster with facilities and advanced technologies.	Improved technological edge of light engineering sector	BPC and Ministry of Commerce	High

10. Concluding Remarks:

The local market of the Light Engineering Sector in Bangladesh is large and has strong forward and backward linkages. It has a huge potential to grow, if monitored properly. There are sufficient demands in the various manufacturing concerns, such as textile mills, railways, jute mills, shoe manufacturers, sugar mills, RMG, washing plants etc. If nurtured properly, this sector not only can produce import substituting goods, but also can contribute to the overall export of the country.

This study tried to identify the necessary initiatives to mitigate the challenges faced by the different sub sectors of Light Engineering sector of Bangladesh. Further development might require several support programmes from the Government. The initiatives of Business Promotion Council may provide the great impetus to enhance the efficiency and overall productivity of this sector. This may lead to the ultimate goal of export diversification of the country through increased volume of export of Light Engineering products.

The identified capacity-building programmes, suggested (e.g. training programmes, workshops and seminars) after consulting respective associations, might be used as important tools and can play a vital role in this regard.

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