



A Study on Sector-based Need Assessment of Business Promotion Council- Herbal Products and Medicinal Plants

Research Conducted by:

Bangladesh Foreign Trade Institute

**Bangladesh Foreign Trade Institute
TCB Bhaban (5th Floor), 1 Kawran Bazar, Dhaka -1215
Phone : 02-55013424-26
E-mail : info@bfti.org.bd**

June, 2016

A Study on Sector-Based Need Assessment: Herbal Products and Medicinal Plants

Contents

1. Background of the Study.....	2
2. Objectives of the Study	4
3. Methodology of the Study	4
4. Current Status of the Sector and its Performance.....	4
4.1. Cultivation Status.....	5
4.2. Supply Chain of Herbal Products and Medicinal Plants.....	6
4.3. Global Export Scenario.....	7
4.4. Export Scenario of Bangladesh	8
4.5. Opportunities for Medicinal Plant Cultivation.....	12
4.6. Some Possibilities for Import-Substitution of Medicinal Plants	12
4.7. Medicinal Plant-Based Healthcare System in Bangladesh: HRD Component.....	14
4.8. Government Initiatives	14
4.9. Current Institutional Arrangements for the Promotion of Herbal Products and Medicinal Plants.....	15
5. Findings of the Study.....	15
5.1. Constraints Identified by the Associations – Herbal Products and Medicinal Plants:	15
6. Overall Challenges in this Sector.....	17
6.1. Extinct Medicinal Plants.....	17
6.2. Major Problems in Hilly Areas at Benchmark Survey by BFRI.....	17
6.3. Major Problems/Constraints in MPs (Medicinal Plants) Cultivation	17
6.4. Marketing Problem for the Farmers	18
6.5. Weaknesses behind Quality Product	18
6.6. Major Challenges Faced by the Exporters	18
7. Recommendations	19
7.1. Suggestions Provided by the Associations of Herbal Products and Medicinal Plants:	19
7.2. Suggestions Provided by the Associations of Herbal Products and Medicinal Plants: Concerning Policy.....	20
7.3. General Recommendations for Augmenting Herbal Products and Medicinal Plants.....	21
8. Concluding Remarks.....	21
References	23

A Study on Sector-Based Need Assessment: Herbal Products and Medicinal Plants

1. Background of the Study

‘Business Promotion Council (BPC)’ was formed under the Ministry of Commerce to accelerate the product and market diversifications in Bangladesh as product diversification has received the uttermost attention in order to reduce the dependency on limited export items. BPC has identified six specific potential sectors which include agro-products, fisheries, leather, medicinal and herbal plants, ICT, and light engineering. Export Policy 2015-2018 has identified the pharmaceutical sector as the highest priority sector. As a part of that, Medicinal plants and herbal products have been recognised as a sector having enormous potentials for export. Bangladesh is the home of medicinal plants. It is occupying an area of 147,570 sq. km, which has highly favourable climate and soil conditions for the production of medicinal plants. It is a land of about 17,000 species of plants, out of which 7500 are known for their therapeutic uses (DU, 2012). In our country, 75% of our population use herbal medicine for primary healthcare. Over 4 billion of world’s population use the herbal medicine. Both in home and abroad, herbal medicines are now the most popular form of traditional medicines, free of side effects and is acclaimed highly.

‘Medicinal plants’ is defined as a group of plants that bears some unique properties or virtues that qualify them as ingredients of drugs and therapeutic agents and are used for medicinal purposes. WHO has compiled a list of 21,000 medicinal plants which are used in different parts of the world and it is forecast that by 2020, it is likely to hit the US\$ 3.0 trillion mark and US\$ 5 trillion by 2050, as the global market of herbal medicine is growing at a fast pace. Bangladesh has near about 550 medicinal plants, of which 300 medicinal plants are now in common use in the preparation of traditional medicines in Bangladesh¹. Most of the medicinal plants of Bangladesh are used in the preparation of Unani, Ayurvedic, Herbal and

¹ Ishrak Jahan, Herbal medicines: an overview, The Financial Express, 08-04-2016.
<http://www.thefinancialexpress-bd.com/2016/04/08/25265>

Homeopathic medicines. According to the definition of WHO for herbal medicines, herbs include crude plant materials such as leaves, flowers, fruits, seeds, stems, wood, bark, roots, rhizomes and other parts of plant, which may be entire, fragmented or powdered. Herbal materials include, in addition to herbs, fresh juices, gums, resins, essential oils and dry powder of herbs.

In Bangladesh, commercial cultivation of medicinal plants started in the early 1990s in Natore district. In the early 1980s, Ayurvedic and Unani companies procured 80% of the medicinal plants from natural forests and the rest 20% was imported. Now the scenario has changed; 80% is imported & the rest 20% is collected from local production (Bangladesh Forest Research Institute, BFRI, Chittagong, 2016). Both India and China earn a handsome amount of foreign exchange by exporting medicinal plants and their semi-processed products to other countries, including Bangladesh. Africa, Asia, Latin America, Australia, Bangladesh, Canada, Malaysia, China, Brazil, United Kingdom, Thailand, South Korea, France, Spain, Japan, India, Pakistan etc. are some of the large users of herbal medicines today. Being a valuable item of trade, Bangladesh can earn a handsome amount of foreign exchange by exporting this natural wealth to other countries. However, considering the huge export market globally, we are still in a rudimentary stage. Moreover, the industry insiders say that Bangladesh has good prospect of making its niche in the global market for medicinal plants. Bangladesh also looks forward to developing the herbal medicine sector.

This study tries to identify the major challenges in this sector, examines the prospects of the herbal items, and discusses the possibilities in new export arenas in order to diversify our products. Appropriate recommendations have been included in the report on how to develop this sector. This study also focuses on the constraints faced by the producers, stakeholders, as well as exporters and suggests which types of trainings and workshops are necessary to develop skills of the work force related to this sector. From those trainings and workshops, the producers, intermediaries and stakeholders in this sector will have a better idea about production process in a hygienic way, and learn about packaging as well as export procedures.

2. Objectives of the Study

- To represent the overall scenario of the herbal products and medicinal plants in Bangladesh;
- To examine the major challenges for domestic supply and export of medicinal plants and herbal products; and
- To identify the need-based trainings and workshops to enhance the productivity as well as export potential of this sector.

3. Methodology of the Study

Both primary and secondary data have been collected to complete the research task. The researchers have conducted field survey and gathered information through direct interview, telephonic discussions and through e-mails.

The study has basically focused on collecting primary data. To that end, it conducted interviews with key stakeholders using a Structured Questionnaire designed for the purpose. The stakeholders in this case were producers, processors, exporters, market authorities etc. The study has also focused on collecting secondary data from different statistical yearbooks, journals, magazines etc. Primarily project documents such as project proposals, quarterly progress reports, books, journals and other available documents as well as website of several organisations were used in order to explore pertinent variables for the study.

4. Current Status of the Sector and its Performance

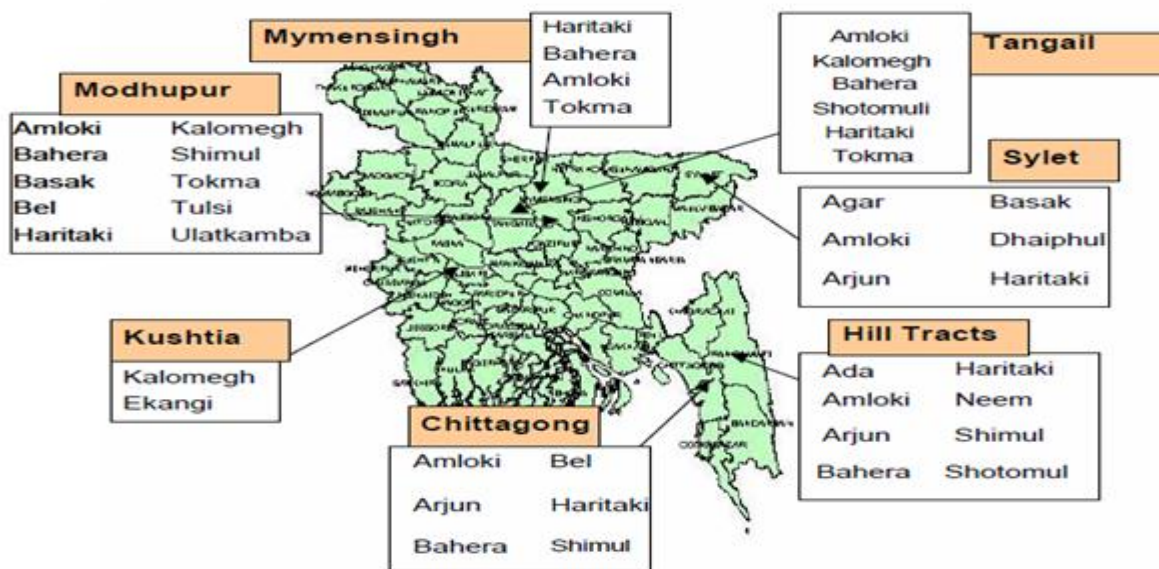
A large number of herbal and medicinal factories have sprung up with annual consumption of roughly 20,000 tons of medicinal plants. Still now one-fourth of pharmaceutical drugs are made from medicinal plants. Currently, Bangladesh has a market of about taka 300 crore worth of herbal or traditional products annually².

² Ishrak Jahan, Herbal medicines: an overview, The Financial Express, 08-04-2016.
<http://www.thefinancialexpress-bd.com/2016/04/08/25265>

4.1. Cultivation Status

About 60000 marginal farmers, including female (about 48,000) ones, are involved in the cultivation of this plant in the northern part of Bangladesh. A Farmers' Association (Laxmipur Khulabaria Oushadhi Krishak Samity) and several medicinal plant-based micro enterprises were established in Natore district. Around 30 types of medicinal plants are reported to be grown in Natore region, out of which Aloe Vera (Ghritakumari) is the most popular. Others, namely, Shotomul (*Asparagus racemosus*), Misridana, Shimul mul, Bhuikumari, Kalomegh (Chiretta), Ashwagandha (Winter Cherry), Nilkantha and Rajkantha have been established as lucrative cash crops. About 65 acres are covered by 10 species³. Besides, farmers produce Tulshi (Sacred Basil), Basak (Malabarnut or Vasak) etc., and use them as raw materials in preparing medicines and they also export a part of their products in the global market. In addition, farmers are cultivating different types of medicinal plants in Mymensingh, Tangail, Sylhet, Modhupur, Kushtia and Chittagong Hill Tracts.

Figure 1: The major medicinal plants production zones in Bangladesh (BFRI 2014)



Associations for Development of Herbal Sectors in Bangladesh are Bangladesh Unani Aushadh Shilpa Samity (BUASS); Bangladesh Ayurvedic Medicine Manufacturers Association (BAMMA); Bangladesh Homeopathic Medicine Manufacturers Association (BHMMA); Bangladesh Herbal Products Manufacturing Association (BHPMA); Herbal Product, Cosmetic

³ A.K.M. Shahidullah and C.E. Haque, 2010, "Linking medicinal plant production with livelihood enhancement in Bangladesh: Implications of a vertically integrated value chain". Jour. Of TEC. 9(2), 2010.

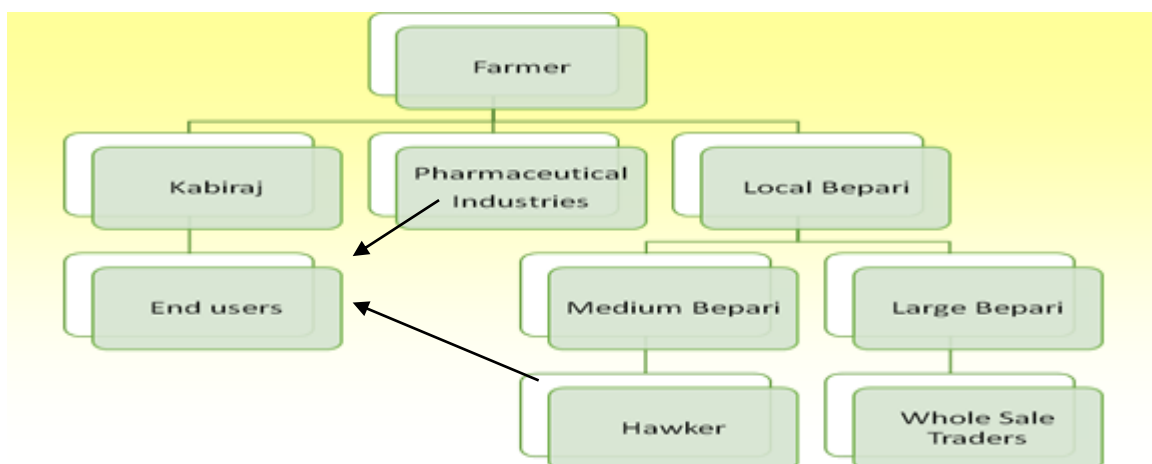
and Dietary Supplement Manufacturers Association of Bangladesh (HPCDSMAB) and Bangladesh Neem Foundation (BNF). There are 17 licensed drug manufacturers in the country for producing herbal medicines. Square Herbal and Nutraceuticals, an endeavour of Square Group, is a pioneer in this sector. Other licensed companies are Acme Laboratories, Modern Herbal Pharmaceuticals, Drug International and Hamdard Laboratories (Waqf) Bangladesh, Neptune Laboratories Ltd., Holy Food and Beverage Ltd., Sadhana Ayurvedic, Shakti Ayurvedic and AP Ayurvedic.

“The herbal medicine market is huge -- both locally and internationally. The global herbal medicine market is growing at 15-20 percent every year -- the highest growth is in the US and Germany,” said MM Asad Ullah, group product manager of Square. He also mentioned that, “Earlier, the least developed countries were our main focus for export. But now we want to enter the US and EU markets, as herbal medicines are growing to be quite popular there and we are focusing on manufacturing modified herbal medicines, including modern and imported herbal ones,”. The industry people said the allopathic pharma market in Bangladesh is worth around Tk 4,000 crore, while the market size for herbal medicines, including ayurvedic and unani, may stand somewhere between Tk 1,000 crore and Tk 1,500 crore.

4.2. Supply Chain of Herbal Products and Medicinal Plants

According to the opinion of the shop owners of herbal products, the local raw materials of their products are mostly collected from 5 different areas of the country like Chittagong, Tangail, Gazipur, Khulna and North Bengal (BFRI, Bangladesh Forest Research Institute, 2014).

Figure 2: Supply chain of herbal products and medicinal plants



The figure drawn above shows the supply chain of herbal products and medicinal plants. We can observe from the figure that local processors like Bepari and Kabiraj collect medicinal plants from the farmers. Pharmaceutical companies also collect medicinal plants from the farmers to produce herbal products. Kabiraj and pharmaceutical companies process the medicinal plants & produce herbal products and they directly sell those to the consumers. Local traders sell the medicinal plants to the whole sale traders, hawkers and consumers, both in raw and processed form.

4.3. Global Export Scenario

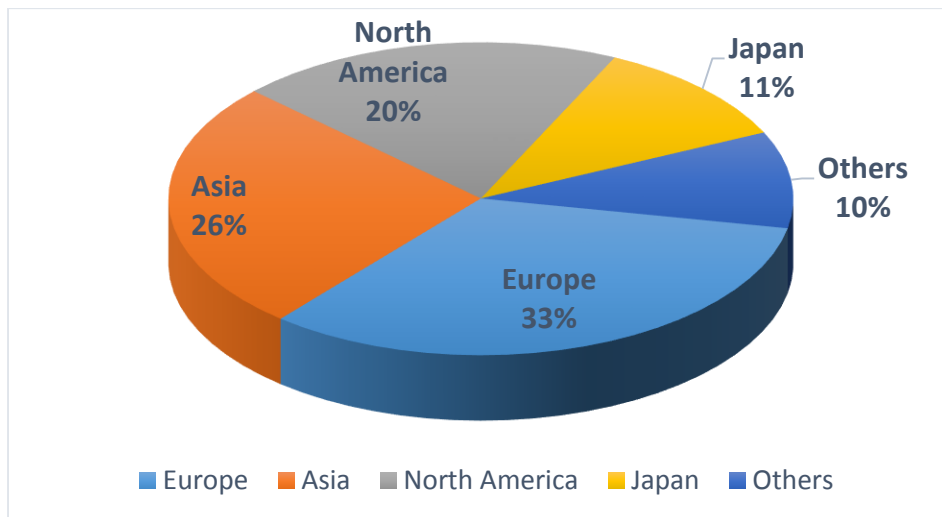
At present, about 70% of the world population rely on traditional medicine for their Primary Healthcare needs, according to WHO estimation⁴. Even in the developed countries, complementary or alternative medicine (CAM) is gaining more popularity and is being developed.

On an average, 48% of the Americans prefer herbal medicine. The United States spends about 5 million US Dollars per year for herbal products and normally 20% of the people use herbal commodities and medication. In addition, in China, herbal medicine accounts for 40% of all healthcare delivered and about 200 million patients are covered by it per annum. 70% of the population in Chile and 40% in Colombia use herbal drugs. 48% of the population in Australia, 70% in Canada, 38% in Belgium and 75% in France prefer herbal products. The United Kingdom imports about 90% of its medicinal herb and the requirement involves about 139 million euro market⁵.

⁴ Ishrak Jahan, Herbal medicines: an overview, The Financial Express, 08-04-2016. <http://www.thefinancialexpress-bd.com/2016/04/08/25265>

⁵ Ishrak Jahan, Herbal medicine: current status and the future, The Daily Sun, 19-04-2016. <http://www.daily-sun.com/post/129818/Herbal-medicine:-current-status-and-the-future>

Figure 3: World Market of Herbal Medicines



Source: Calculations based on data from the WHO Report

Figure 4: Global market value of herbal industry



Source: World Bank Report

4.4. Export Scenario of Bangladesh

Total export value of medicinal plants from Bangladesh amounted to US\$ 0.39 million in FY 2014-15, while the value was US\$ 0.59 million in FY 2013-14. The export value of seeds, fruit and spores, for sowing stood at US\$ 0.25 million during FY 2014-15⁶. Bangladesh is enjoying duty-free market access to Vietnam, Uganda, Kenya, Somalia, Fiji, Georgia and other countries for herbal products. There are plenty of opportunities to expand the country's export share of herbal products in these markets.

⁶ Export Promotion Bureau

4.4.1. Major Exportable Items

According to a field survey conducted by the BFTI, export items of this sector are Adovas Syrup, Pepnor Syrup, Probio Capsule, Arubin Capsule, Eyeball Capsule, Giloba Capsule, Livolite Capsule, Silybin Capsule, Inacea Capsule, Jort Capsule, Gintex Capsule. New emerging export items of this sector are Rooh Afza, Cinkara, Safi, Sualin, Chyabanprash, Naunehal, Endurex, Libidex, Frudex etc.

4.4.2. Major Export Destinations

Major export destinations are Vietnam, Hong Kong, Uganda, Kenya, Somalia, Cambodia, Fiji, Georgia, United Arab Emirates, Myanmar, Thailand, Oman, Romania, Malaysia, United Kingdom, Austria, India, Singapore and Yemen. Moreover, we are exploring many other countries in Asia Pacific, Africa, Europe and Latin America for exporting herbal products.

Table 1: Country-Wise Export Earnings of Bangladesh's Medicinal plants (HS code: 1211) during 2013-14 to 2014-15

(In US dollar)

Countries	Export value in 2013-14	Export value in 2014-15	Growth Rates (%) During 2014-15
VIETNAM	413,975.05	317,578.89	-23.29
UNITED ARAB EMIRATES	155,767.61	30,894.49	-80.17
MYANMAR	598,8.91	22,409.94	274
THAILAND	....	6,552.72	....
OMAN	....	6,068.20	....
ROMANIA		2,019.83	....
MALAYSIA	510.62	1,990.06	289
UNITED KINGDOM	....	57.61	....
AUSTRIA	....	2,610.77	....
INDIA	811,6.39	....	....
SINGAPORE	138,57.44	....	....
YEMEN	163,4.55	....	....
TOTAL	599,850.57	390,182.52	34.95

Source: Based on data from Export Promotion Bureau

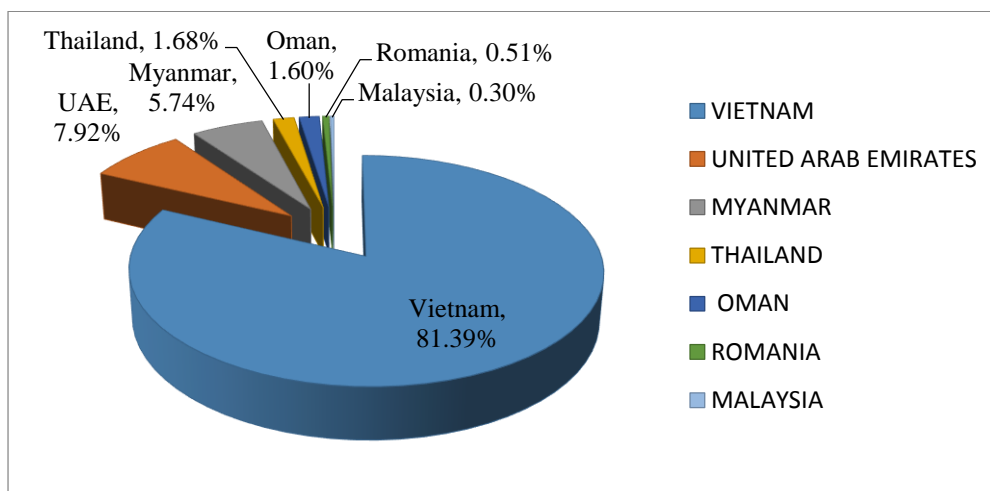
Table 1 represents the country-wise export earnings of Bangladesh's medicinal plants. During FY 2014-15, total export value of medicinal plants was estimated at US\$ 390,182.52 as compared to US\$ 599,850.57 in the previous fiscal year, showing a decrease of 34.95%. It is observed that the export growth rates of Bangladesh's medicinal plants to the following countries during FY 2014-15 were positive: (Myanmar 274% and Malaysia 289%). On the contrary, Bangladesh's exports in terms of medicinal plants experienced negative growth (-

23.29%) for Vietnam and (-80.17%) for United Arab Emirates during the FY 2014-15. According to the field survey conducted by the BFTI, major challenges behind the decreasing trend in the export value of our products are found as the followings:

- ✓ Lack of Good Cultivation Practices of Medicinal Plants;
- ✓ Lack of Good Harvesting Practices;
- ✓ Absence of Good Storage Practices;
- ✓ Insufficient contacts with foreign buyers;
- ✓ Inadequate information of current market trends, international demand and supply and an absence of marketing facilities;
- ✓ Lack of Good Manufacturing Practices;
- ✓ Lack of Good Quality Control Practices;
- ✓ Lack of Quality Assurance Practices;
- ✓ Lack of Quality Distribution Practices;
- ✓ Non-existence of Quality Marketing Practices; and
- ✓ Lack of Good Sales Promotion Practices.

Besides, some of the major challenges of the growth of medicinal plants are illegal dissections of plants, wasteful and uncontrolled consumption of plants, agricultural use of forestry and water resources, etc. In this context, good practices in terms of cultivation, harvesting, and storage for medicinal plants have to be ensured. The quality of products should be given highest priority in order to meet foreign demand and increase our exports.

Figure 5: Major Country-wise Percentage Shares in Total Export Value of Medicinal Plants in 2014-15



Source: Own calculations based on data from Export Promotion Bureau

The destination-wise export figures reveal that Vietnam was the main export destination of our products during 2013-14 to 2014-15. During 2014-15, goods valued at US\$ 317,578.89 were exported to Vietnam (Table 1) which was 81.39 percent of the total export earnings of this sector. United Arab Emirates occupied the second position (7.92 percent of total exports of this sector) while Myanmar held third position (5.74 %). In addition, Thailand and Oman's shares for medicinal plants' exports were 1.68% and 1.6% respectively, during this period (Figure 5).

Table 2: Demand of medicinal plants (Square and ACME pharmaceuticals)

Name of Medicinal Plants	Usable portion	Name of the Company	Place of Collection	Demand/Year
Bashak	Leaves	Square	Kustia	40 ton (Dry)
		ACME	Natore, Gaibandha	3 ton (Dry)
Satamuli	Root	Square	Dhaka	1 ton (Dry)
			Natore, Gaibandha	80-90 kg (Dry)
Aswagandha	Root	Square	Natore and India	2-3 ton (Dry)
		ACME	Natore, Gaibandha	300 kg (Dry)
Kalomegh	Leaves	Square	Hyderabad, India	200-500 kg Dry Extract of active ingredient
		ACME	Natore, Gaibandha	250 kg (Dry)
Tulsi	Leaves	Square	Dinajpur	2.5-3 ton (Dry)
		ACME	Natore, Gaibandha	250 kg (Dry)

Table 2 shows Square and ACME's demand of Bangladeshi medicinal plants and herbal products. Total export value of Square Herbal & Nutraceuticals Ltd. Products in 2016 (since 2013 to till date) stood at \$25000. In our country, 86.7% of drug manufacturing factories are importing Indian raw materials. And around, 53.3% of factories are importing from Pakistan & very few of them are importing the raw materials from Nepal, Iran, and Korea. We observe that, we are highly dependent on the import of raw materials. Climate and soil conditions in Bangladesh are highly friendly for the production of medicinal plants. Going forward, we have

to utilise this opportunities and possibilities for import-substitution of medicinal plants in order to have tremendous production capacity.

4.5. Opportunities for Medicinal Plant Cultivation

- Over 500 medicinal plants are listed in Bangladesh. Dhaka, Rajshahi, Sylhet and Chittagong divisions are rich in medicinal plants.
- Micro propagation protocols are available for many herbs. Square Herbal and Nutraceuticals Ltd., The ACME Laboratories and others are engaged in raw material production through contract farming.
- Adjacent area of Salna National Park, Gazipur, covers 35 acres with 57 different MPs (Medicinal Plants Species), through Forest Department initiatives.
- 400 Government Nurseries, including BFRI, BRAC and other NGO nurseries, are engaged in quality planting for better production. Private companies, namely Neem Foundation, Kazi & Kazi Tea Estate Ltd. and others have farms for medicinal plants.
- Linkage development between growers and potential buyers, who have experience in Inter Co-operation (IC) initiatives is possible.

4.6. Some Possibilities for Import-Substitution of Medicinal Plants

Herbal medicines are now becoming more popular and acclaimed globally, as they are free from side effects. Every year, Bangladesh imports huge amount of medicinal plants, whereas it is possible to meet most of the local demand through domestic produces. Table 3 shows that there are some possibilities for import-substitution of medicinal plants and points to the required activities in order to enhance its production of herbal products.

Table 3: Import-Substitution of Medicinal Plants

SL. No.	Crop	Present position	Required activities
1.	Amloki	<ul style="list-style-type: none"> Local production is 30% of total market Imported Indian production gets more than double price. Market is likely to increase by \$ 1.35 million over the next 5 years. 	Larger sized varieties developed in India (NA 1 – 7, Francis, Chakaiya) could be introduced at CHT also.
2.	Haritaki	<ul style="list-style-type: none"> Supply through local production is 40%. Projected growth in demand \$ 1.0 million. 	Improve drying and color of dried production.
3.	Dhaifol	<ul style="list-style-type: none"> 80% of products are imported whereas, local products are of good quality. Projected growth in demand would be \$ 0.14 million over next 5 years. 	Expansion of areas with local varieties in Sylhet and CHT.
4.	Ashwagandha	<ul style="list-style-type: none"> 95% are being imported There are possibilities to produce good quality products. 	<ul style="list-style-type: none"> High yielding improved varieties (Jawahar Asgand 20 and 134) might be introduced. Commercial cultivation in non-agriculture land in Rajshahi is possible.
5.	Peepul	<ul style="list-style-type: none"> 90% are being imported Imported products are double priced. Projected market opportunity is over \$ 0.34 million within the next 5 years. 	Improved high yielding Indian varieties (Trisna, Viswam) for larger sized fruits might be introduced in Bangladesh.

Source: SEDF/IC [South Asia Enterprise Development Facility (SEDF) & Intercooperation (IC)],

4.7. Medicinal Plant-Based Healthcare System in Bangladesh: HRD

Component

- 7 diploma colleges for Ayurvedic system, 13 diploma colleges for Unani system of medicine and one degree college for both systems have been established.
- Number of graduate doctors are 400 in Ayurvedic system and 325 in Unani system and No. of Diploma Doctors are 1200 for both systems.
- 15 Ayurvedic doctors and 15 Unani doctors are employed in Government hospital and 230 posts for Unani and Ayurvedic have been created in the revenue sector.
- 310 posts have been created in the project but employment is delayed due to age bar.
- There are 268 Unani, 204 Ayurvedic, 25 Herbal manufacturing, 79 Homeopathic and Biochemic unit in Bangladesh.

Note: 1 (one) TM (Traditional Medicine) doctor per 78,000 people. [Source: Kbd. Mitul Kumar Saha, 2016, Presentation paper on prospects of agro-medicinal plants and herbal products in Bangladesh-major challenges faced by the exporters].

4.8. Government Initiatives

The Ministry of Commerce, Government of Bangladesh, has taken a range of steps in order to create a conducive business-friendly environment and to promote export of the medicinal plants and herbal products Sector.

- ✚ Export policy, 2015 – 2018, encourages stakeholders to produce and export herbal products and medicinal plants. Necessary steps will be taken by the Herbal Product Development Council in order to develop this sector.

“Medicinal Plant & Herbal Product Sector of Business Promotion Council” has been formed under the Ministry of Commerce. The council works as a public- private partnership concern for the boost up of export and business promotion. In addition, a board called ‘Bangladesh Board of Unani & Ayurvedic System’ was sponsored by the Ministry of Health and FP welfare. The Government has declared herbs & herbal medicine as one of the five priority sectors to diversify and enrich the country’s export volume. The government has also exempted VAT on Herbal products.

4.9. Current Institutional Arrangements for the Promotion of Herbal Products and Medicinal Plants

- Cultivation of Medicinal Plants is almost a virgin area. Raw materials are mostly collected from wild sources or imported from other countries;
- Drug Administration of GoB is responsible for certification and supervision of herbal medicine;
- BCSIR (Bangladesh Council of Scientific and Industrial Research) has been mandated for product and technology development, while BFRI (Bangladesh Forest Research Institute) undertakes research;
- The National Ayurvedic and Unani Boards are responsible for issues related to herbal education; and
- Business Promotion Council (MPHP-BPC) promotes business of herbal products and medicinal plants.

5. Findings of the Study

5.1. Constraints Identified by the Associations – Herbal Products and

Medicinal Plants:

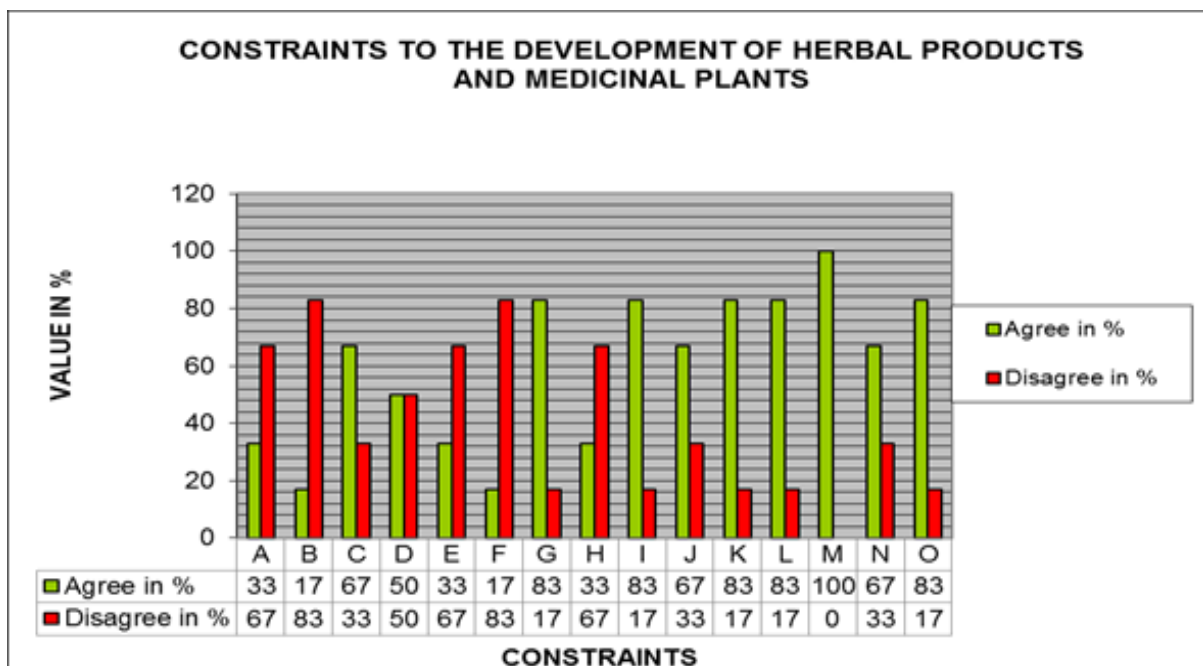
Constraints to the Development of Herbal Products and Medicinal Plants

Code	Constraints
A	Unavailability of land for cultivation
B	Lower supply of quality inputs (quality seed, medicine)
C	Ignorance of the farmers/entrepreneurs about the sector
D	Lower access to finance
E	Lack of proper care in cultivation of medicinal plants
F	Lack of knowledge for proper control measures against diseases and pests
G	Absence of modern technology
H	Low Post-harvest management facilities (e.g. collection, drying, storage, processing)
I	Low level of knowledge on SPS & TBT measures

Code	Constraints
J	Damage of medicinal plants by natural calamities
K	Lack of knowledge gap for market access
L	Lack of training and research concerning the herbal products
M	Lack of awareness
N	Constraints in storage, processing, packaging and market access strategies
O	Lack of knowledge on export procedures

[Source – Primary Field Survey]

Figure 6: Constraints faced by the members of the associations



The figure drawn above shows the opinion of the associations concerning the constraints that they face during the production and export of the herbal products. For example, 83% of the respondents have agreed that there are absence of modern technology as well as training and research in this sector of Bangladesh. 100% of the respondents have agreed that there are lack of knowledge and awareness regarding cultivation, uses and export of medicinal plants & herbal products.

6. Overall Challenges in this Sector

6.1. Extinct Medicinal Plants

Bangladesh National Herbarium has identified about 106 threatened plants species of Bangladesh. Causes of extinction of medicinal plants are-

- ✓ Transferable cultivation & human influence;
- ✓ Illegal dissections of plants;
- ✓ Excessive use in the brick field as fuel;
- ✓ Wasteful & uncontrolled consumption of plants;
- ✓ Agricultural use of forestry and water resources;
- ✓ Lack of forest conservation act and their proper application;
- ✓ Pressure of high number of population on the forests; and
- ✓ Destruction of herbal plant in some cases due to invisible reasons.

6.2. Major Problems in Hilly Areas at Benchmark Survey by BFRI

Major problems	Rank
Lack of irrigation facilities	1
Lack of quality planting materials	2
Lack of improved management practices	3
High incidence of pests and diseases	4
Lack of technical information/training	5

6.3. Major Problems/Constraints in MPs (Medicinal Plants) Cultivation

- Farmers' selection is difficult because they want immediate return;
- Motivating farmers to adopt new practice;
- Uncontrolled use of pesticides during cultivation and herbs are cultivated on soils without considering presence of heavy metals in the soil;
- Inadequate knowledge of harvest technology;
- Lack of training on soil and plants;
- Lack of long term plan of the banks & financial institutions regarding promotion of herbal products and medicinal plants;

- Traditional cultivation techniques resulting in poor yield and quality of the materials;
- Scarcity of pre-harvesting and post-harvesting training for producers;
- Lack of post-harvest management facilities;
- Damage of medicinal plants due to natural calamities; and
- Direct farmer-market linkage development is difficult due to low production.

6.4. Marketing Problem for the Farmers

- Unreliable market; and
- Exploitation by middle man/suppliers/agent/wholesaler.

6.5. Weaknesses behind Quality Product

- Most of our traditional manufacturers cannot afford to maintain proper quality of the traditional products due to
 - ✓ Lack of quality control facilities;
 - ✓ Phytomarkers to assure the quality requirement; and
 - ✓ High cost of phytomarkers.
- Over-exploitation of natural resources from their wild habitats;
- Inadequate information on international demand and supply;
- Insufficient research works on sustainable harvesting, collection, processing and value addition; and
- Lack of infrastructural facilities for collection, drying, storing and processing.

6.6. Major Challenges Faced by the Exporters

- Sluggish operation of regulatory bodies for export promotion;
- Difference in drug laws around the world;
- Absence of cash incentive support of govt.;
- Absence of own herbal pharmacopeia in Bangladesh;
- Absence of international standard certification institute-
 - ✓ Absence of Toxicity tests of herbal medicines;
 - ✓ Absence of cGMP (Current Good Manufacturing Practise) Certificate for quality assurance.
- Poor manufacturing facility and lack of quality monitoring;
- Widely scattered cultivating areas are creating difficulties in terms of collection;

- Limited number of herbal graduates both in manufacturing and treatment sector;
- Dependency on import for quality herbal extract; and
- High transportation cost.

7. Recommendations

7.1. Suggestions Provided by the Associations of Herbal Products and Medicinal Plants:

According to the field survey conducted by the BFTI, the following recommendations concerning trainings, workshops and seminars as well as policies have been received from the herbal products' associations.

Name of the Activity	Description of the Activity	Expected Outcome
	Trainings	
Production Process	Trainings on the cultivation process of medicinal plants in different areas of Bangladesh	Productivity will increase
	Awareness building training programme for the producers to maintain the quality of the plants	Development of the product quality as well as the sector
	Training programme on production process in a hygienic way, maintenance of the storage and standards of packaging	Probable wastage will be lower and export will increase
	Quality enhancement trainings for medicinal plants and herbal products and productivity improvement	Total export will increase
Supply Chain	Training on effective management of domestic and international supply chain	Marketing channels will be more effective
	Training on analysing local market potential	Total production will increase
Export-Import Procedure	Training on Rules, Regulations and Customs Duty of Export-Import	Customs procedural knowledge will increase
Compliance	Training on health and skill development of the labour force related to the sector	Higher productivity
	Training programme on SPS (Sanitary Phyto-Sanitary) and TBT (Technical Barriers to Trade)	Non-Tariff Barriers will be lower

Name of the Activity	Description of the Activity	Expected Outcome
Workshops	Workshops	
	Workshop for assessing the market potential of the product	Export Diversification
	Workshop on exploring new market destinations and enhancing managerial efficiency and international marketing strategies	Export earnings will increase
	Workshop on access to finance and loan/credit facility as well as Govt. policies	Investment will increase in this sector that would result in further production and export
	Seminar/ Roundtable Discussion	
Seminar/ Roundtable Discussion	Seminar on exploring new regions for cultivation and new cultivation procedures	Export earnings will increase
	Seminar on the contribution of herbal products in the public health sector of Bangladesh	Total production will increase
	Seminar on research and development of the herbal products and medicinal plants	Development of this sector
	Roundtable discussion on international standard certification issues related to cGMP (Current Good Manufacturing Practise) certificate and Toxicity tests of herbal medicines	Export volume will increase
	Roundtable discussion on challenges and prospects of the herbal products in Bangladesh	Improvement of the sector

7.2. Suggestions Provided by the Associations of Herbal Products and Medicinal Plants: Concerning Policy

- ✓ Establishment of national medicinal plant board in Bangladesh;
- ✓ Modern technology support for international quality management;
- ✓ More research and development activities with proper co-ordination among the stakeholders and concerned agencies/authorities;

- ✓ G2G initiatives to enhance the market of Herbal products; and
- ✓ Implementing easy and quick export procedures.

7.3. General Recommendations for Augmenting Herbal Products and Medicinal Plants

- Establishment of National Medicinal Plant Board like AYUSH, India;
- Separate policy and legislation for scientific collection, cultivation, harvesting, postharvest processing, preservation, marketing and utilisation;
- Development of training and educational curriculum;
- To educate the farmers on harvesting time and procedure and contents of soil;
- Updating the list of medicinal plants of Bangladesh;
- Establishment of a Conservation Centre where taxonomical classification of herb, shrub and trees that represents MP(Medicinal Plants) should be clearly defined;
- Production procedure of materials that are being used for Ayurvedic, Homeopathic and Unani treatment, should be depicted in detail;
- Establishment of a central advanced analytical laboratory;
- Standardisation of cultural and management practices or Good Agricultural Practices (GAP) of potential medicinal plants; and
- Supply and value chain development for promoting export.

8. Concluding Remarks

Despite having many limitations and challenges, including inadequate infrastructure, lack of knowledge and technological support, lack of incentives and absence of marketing facilities, some companies, including Square Herbal and Nutraceuticals, pioneer in this sector, are exporting their products. Acme Laboratories, Modern Herbal Pharmaceuticals, Drug International and Hamdard Laboratories (Waqf) Bangladesh, Neptune Laboratories Ltd. and AP Ayurvedic are also doing well. Discouraging factor is that the number of companies and exportable products in this sector are limited.

According to the field survey conducted by the BFTI, absence of regulatory body, cash incentives and institute to ensure quality and maintain international standard, are now matters of great concern. Every year Bangladesh imports huge amount of pharmaceutical raw materials, including medicinal plants and their semi-processed products, to utilise them in different drug manufacturing factories. From the overall analysis, it is also observed that till now medicinal plant cultivation is in a primitive stage in Bangladesh and it is still being ignored. For example, there is absence of quality control in the manufacturing process of herbal medicine while Bangladesh has enormous prospects for producing and exporting medicinal plants.

To successfully meet the challenges we have to address all the following-

- Importance should be given in cultivating and popularising cultivation of medicinal plants, in order to diversify the country's export basket. We have to ensure the production capacity of our local export-oriented factories so that our market can expand.
- Product upgrading should be given highest priority. Major efforts must be placed to explore its potential in the global market, to have excellent herbal products available both for domestic and international consumption.
- To promote this sector and to achieve competency in the local and global context, building capacity in the fields of human resources, product diversification, quality, standards and acquiring suitable technology is necessary.
- Government has to provide financial assistance, extend its support, take effective measures, and increase the implementation capacity, so that this potential sector can flourish in its full swing.
- To achieve the goals, a long-term vision and action plan have to be developed through a series of trainings, workshops and discussions with both stakeholders and trade bodies.

References

- Business Promotion Council, Government of the People's Republic of Bangladesh. <http://www.bpc.org.bd>
- Hamdard Laboratories (WAQF) Bangladesh. <http://www.hamdard.com.bd/>
- Khan, N.A. and Rashid, A.Z.M.M., "A study on the indigenous medicinal plants and healing practices in the Chittagong Hill Tracts (Bangladesh)", *African Journal of Traditional, Complementary and Alternative Medicine*, 2006.
- Modern Herbal Group of Companies, Bangladesh. <http://www.modernherbal.org/>
- Rashid, A. Z. M. M.; Tunon, H.; Khan, N.A. and Mukul, S.A., "Commercial cultivation by farmers of medicinal plants in northern Bangladesh", *European Journal of Environmental Sciences*, April 2014.
- Shahidullah A.K.M. and Haque C.E., "Linking medicinal plant production with livelihood enhancement in Bangladesh: Implications of a vertically integrated value chain", *Jour. Of TEC*. 9(2), 2010.
- Saha, M.K., "Prospects of agro-medicinal plants and herbal products in Bangladesh-major challenges faced by the exporters", Paper presented at the Training programme on "Rules and Procedures for Import, Export and Customs", Bangladesh Foreign Trade Institute (BFTI), Dhaka, March 31, 2016.
- SQUARE Pharmaceuticals Ltd. Bangladesh. <http://www.squarepharma.com.bd/>
- The Daily Sun, "Herbal medicine: current status and the future", April 19, 2016. <http://www.daily-sun.com/post/129818/Herbal-medicine:-current-status-and-the-future>
- The Financial Express, "Herbal medicines: an overview", April 4, 2016. <http://www.thefinancialexpress-bd.com/2016/04/08/25265>