

Horticulture Market Assessment Study: A look at the Export Potential

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List of Abbreviations

1. **ATDP:** Agro-based Industries and Technology Development Project
2. **EC:** European Community
3. **MIS:** Management Information System
4. **ISP:** Internet Service Provider
5. **BDS:** Business Development Services
6. **AIUB:** American International University of Bangladesh
7. **USAID:** U.S. Agency for International Development
8. **BIST:** Bangladesh Institute for standard Testing
9. **INFS:** Institute of Nutrition and Food Sciences
10. **BASC:** Business Advisory Services Center
11. **ADUST:** Atish Dipankar University of Science and Technology
12. **CBDS:** Consortium for Business Development Services
13. **BEI:** Bangladesh Enterprise Institute
14. **EPB:** Export Promotion Bureau

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Management Summary

The Horticulture Sector in Bangladesh, according to a generally accepted definition, includes the range of fruits, and vegetables and spices that are grown locally and sold to the final consumer at various stages of processed conditions.

The stated objective of this study is to identify the opportunities for further development in the Horticulture sub-sector and the constraints that prevent its development. In addition, an outline of possible interventions and results to be expected is provided in the study.

Due to the wide range of fruits, vegetables and spices available and their varying requirements, this study only provides a general look across the total value addition chain to identify the potential opportunity areas for development and the constraints that must be overcome to achieve that potential.

The authors approach was to use a combination of primary and secondary information to gather the information that is presented in this document.

The study clearly shows that the potential for the horticulture sector of Bangladesh to further develop is very attractive; yet, considering the land availability, frequency of natural calamities and international standards, it is not likely that the overall exports for the entire range of horticulture products is likely to prosper in the near future. However, a long term plan with particular focus on selected products for the local market with gradual expansion into the export market is a more feasible approach.

Presently the export market for Bangladeshi fresh fruit and vegetables is limited to the ethnic markets and experts believe that restrictions will be imposed on exports from Bangladesh if increasingly strict international standards are not met. Unsurprisingly however, the exporters strongly

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believe that they are capable of adjusting to the international requirements. With regard to fresh horticulture products, transportation (air transport) is highlighted as the bottleneck, which under the present trade scenario is difficult to address. However that perspective comes from the exporters. The transporters view is that the value, quantity, return trips and to a certain extent quality of packaging of the produce is sub-standard and results in them incurring a cost to carry. Manufacturers of processed products claim they have issues with local sourcing and production.

Based on identified issues, it appears that identifying and solving the issues within the local value-chains of specific fruits and vegetables will go a long way toward spurring the development of the Horticulture sub-sector as a whole. Specific products to consider are tomato, banana, bitter melon, okra, turmeric, coriander and mango. Individual analyses of these items value-chains and targeted solutions applied to them will produce results that can easily be quantified.

Solutions to these items problems will spill over into others and will serve to lift the productivity of those other value- chains as well.

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Introduction

Development of the horticultural sector depends to a large extent on the existence of the level/development of the value-chain of the product and on the efficiency of the marketing system. While little value addition takes place in the form of sorting, grading, quality control and packaging, etc. for fresh produce, the semi processed and processed products have reached the branding stage and are considered growth products.

So far, considerable achievement has been made in the production, exports and technological realm of the sector. However, the broader goal of farmer's sustainability through successful marketing is yet to be achieved. A strategic shift is, therefore, demanded from production and technological orientation to marketing orientation. As such one needs to identify the bottleneck that is impeding growth of the sector.

The cropped area under cultivation for fruits and vegetables is less than 5% and that too is seasonal in nature. The percentage of the total cropped area for vegetables is less than 2% and the overall production and productivity have remained fairly stable (*annex one*). Although the overall production of fruits has also increased marginally, the yield per acre has declined (*annex two*). Export growth of fruits and vegetables was phenomenal during the period 1997-98 (300%) however, the decline during 1999-2003 has also been alarming (145%). This shows both the potential as well as vulnerability of the sector. Key export destinations are UK (28%), Saudi Arabia (23%), UAE (14%), Kuwait (13%), Qatar (6%), Bahrain (6%), and Oman (5%). The target market is primarily ethnic population. Only recently BRAC has initiated entry in the EC market through ensuring EUREP-GAP standards. The major exports of vegetables and fruits for the two major destinations United Kingdom and the Middle East are presented in annex three.

Objectives

The major objectives of the study are as follows:

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1. Identification of constraints and opportunities existing in the sub-sector in general.
2. Outline an intervention guideline for solving the problems at hand.

Study Scope

The scope of the study was initially limited to processed horticulture products, fresh vegetables for exports, and frozen vegetables. However, later the general problems for the domestic market were also reviewed. In addition due to the complex nature of the sector and the number and differences in the products, the study findings were kept general. This perhaps may be considered as the major limitation, since item wise study of major products was considered outside the scope of this study.

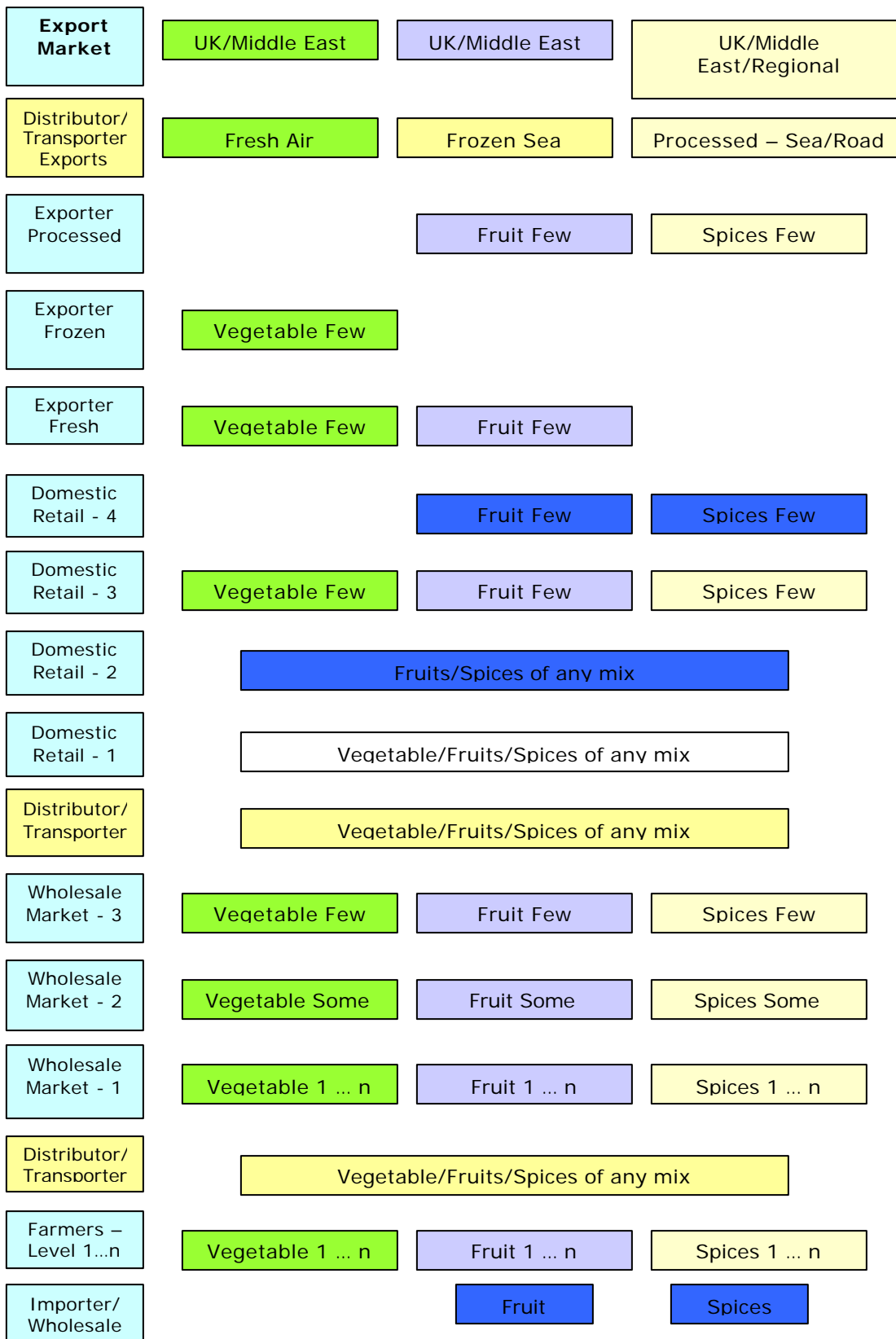
Methodology

The methodology followed primarily a qualitative method using a mix of secondary research followed by depth interview and purposive group discussions.

Horticulture Value Chain Model

The horticulture value chain model has been developed based on a generic concept of the sub-sector. The primary purpose of the model is to depict the complex nature of the sub-sector and to show the variation one may face while developing a single strategy for the entire sub-sector.

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Business Development Support

- Financial
 - Formal
 - Informal
- Fertilizer
 - Organic
 - Inorganic
- Seed
- Irrigation
- Storage
- Information
- Security
- Market place

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Problems

The problems have been addressed based on the basic value added characteristics of the product and the market as described under the scope of the study.

Processed Products

The following problems were identified:

- Technology upgrading is a major problem restricting companies to compete in the international market outside the regional markets and provide limited product offerings.
- Financial restriction is another major issue impeding growth of the sector.
- Purchases are made primarily from the whole sale market thus increasing the cost of production.
- Access to the rural market and making bulk purchase at that level is difficult.
- Human resources require more professional outlook both at the employer as well as employee level.
- Seasonality of products restricts manufacturers to produce all types of products throughout the year. In addition, environmental hazards also results in supply constraints.

Frozen Vegetables

The following problems were identified:

- Demand in the international market is greater than the supply of quality vegetables. Information regarding the export market is either limited or inaccessible.
- Another major problem identified is identification of new products for the export market.
- Technology for processing and proper freezing of the various products is considered an additional issue.
- Regular availability of vegetables and maintaining of quality is considered another major issue.

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Fresh Vegetables for Exports

- Transport for exports is considered the major bottleneck. Only the national flag carrier is presently involved in the transportation since inbound flights do not have sufficient volume to carry.
- No standard policy exists in terms of allocating the available space to the exporters. Thus some specific exporters get undue advantage over the others.
- Support from government agencies for gaining international certification is limited.
- No extensive research has been undertaken to identify prospective products and prospective markets.
- Technological input for decreasing costs by increasing productivity of selected items versus inclusion of new variety is considered by some as an issue.
- An MIS on exports is absent which makes it difficult to understand the demand and develop strategies accordingly.
- Packaging, branding, sorting, etc. are far from satisfactory specially to ensure decline in wastage and identification of quality produce.
- The quality of exportable items is far from satisfactory and lack proper sanitation and other bio-security standards.

Fresh Vegetables – Domestic Market

- Proper understanding of the marketing system is not available. Linkage issues between markets and production centers require clarification. The production centers are isolated from the actual market and operate based on myopic decisions of the government agencies.
- Supply chain management issues directed towards increasing marketing potential is not available.
- Low level of productivity results in higher costs per unit of production. In addition research targeted towards deriving economies of scale based on land size versus type of product being cultivated is far from satisfactory.
- Information sought by the partners associated in the sub-sector is little known.
- Lack of storage facilities severely restricts timely movement of products from producer to the ultimate consumers.
- Inadequate packaging results in huge loss.

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- Inadequate market information regarding prices and demand result in unplanned plantation, wastage and dictation by the middle man.
- The extension workers are more technical oriented and seriously lack management training capabilities.
- Inappropriate and poor land management results in production of unprofitable crops and thus wastage of valuable land.
- Inadequate quality standards result in low quality of fresh produce in the market.

Intervention Program

The study indicates limited scope for intervention in this sector particularly in terms of immediate intervention to enhance exports. However, it is strongly felt that opportunity of intervention to enhance domestic operations with an intention to increase future export potential clearly exists. The following are some of the considerations that may be undertaken to help improve the present status of the industry.

Processed Products

The manufacturers are capable of linking themselves with organizations competent of transferring technology or imparting training. Furthermore, the processors are capable of introducing new products and improving quality of their products if required or considered essential. In addition, this level of the value chain is still at the introductory stage and thus it is considered too early to expand production without taking care of the supply chain. Moreover, since the market is primarily regional, market access is easy due to low entry barriers. Thus intervention in this area is not considered immediate and essential.

However, the manufacturers can be organized to help the present farmers form cooperative to ensure effective and productive subcontracting and thus cutting down substantially on costs and

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ensuring availability. The DOYEL model of ATDP could be used to bring efficiency through subcontracting operations.

Frozen Vegetables

The study indicates that not much is required at this level of value chain apart from linking the exporters with the farmers through the mechanism of sub-contracting to ensure smooth supply of raw materials. Moreover, this sector is also very much in the introductory stage and Bangladesh is still not in a position to fulfill the huge international demand due its low production capability and scarce land mass.

Thus, efficiency building within the available land area may be looked at as future intervention program. This clearly implies that focus be given at the domestic level rather than improving export potential.

Fresh Vegetables for Exports

The bottleneck of arranging transport facility is outside the purview of the intervention design and thus no action can be taken to ensure increase in exports of fresh vegetables from Bangladesh. Moreover, the present production capability clearly indicates limited growth potential in the near future without strengthening the supply status.

However, a policy guideline in line with quota allocation procedure may be designed for the exporters to ensure a level playing ground amongst the exporters and eliminate discrimination. In addition Export Promotion Bureau and the Exporters Association may be helped to measure product potentiality and market potentiality to ensure that the exporters and finally the farmers can derive maximum benefit from exports. For example, it is clear that even after inclusion of transport costs, the UK market has greater potential in terms of profitability but not given due

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importance. In addition, products that fetch greater profits should be identified and promoted to ensure effective utilization of limited cargo space available to the exporters. Finally, the exporters may be helped to join hands to increase their own marketing capability. This can be attained through sharing marketing costs and specializing in products or countries.

Fresh Vegetables – Domestic Market

The study strongly suggests that intervention strategies could be directed at the farmer level to improve the status of the farmers in general and also help them improve relationship with the exporters. The strategies can be developed with private sector partnership approach and may include the following.

- Develop an MIS for the agriculture sector in general and specific for the horticulture sector to serve both the domestic as well as the export market. The MIS can be designed keeping into perspective the internet service providers at the data bank end and the telecommunication network including mobile phones as the distributors of information for the country. A private ISP Access telecom is in the process of developing a system and may be considered as a partner.
- The MIS should contain detailed information on land availability against each product, geographical location, domestic versus export market consumption, productivity, profit status, etc.
- Develop clusters or cooperatives of horticulture farmers to support the exporters and creation of bulk and thus increasing cost efficiency. The clusters should be developed not only based on products but also in terms of annual cycle to ensure maximizing of land utilization, increasing potential for BDS activity, linking with markets (consumer markets, institutional markets, domestic markets, and export markets) and ensuring the right size.
- Before choosing a strategy, cooperatives must understand the economic underpinnings of their existing businesses—a considerable change for organizations that have never really determined what it costs to serve their farmer-owners or, in marketing cooperatives, their buyers. Cooperatives can then work

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out which of their offerings and customers do and do not create value and assess their capabilities and their opportunities to improve performance. Only by presenting a clear strategy and by providing real options for redeeming investments may cooperatives persuade their members to invest more. The strategy could be to concentrate on an offering or customer segment that now creates value, though a cooperative may be able to transform a weak offering so much that it can serve hitherto unprofitable customers and perhaps new ones. A cooperative might even see that it had the ability and the opportunity to develop an entirely new business.

- The plan should include organizations already involved in this sector. Example, HORTEX foundation may help in the production, packaging, and distribution operations; BASC or BEI could help in training facilitation; private universities such as AIUB or ADUST could help in the diploma program; CBDS or EPB could help in the marketing efforts, BRAC or Grameen could help in the formation of cooperatives or clusters, etc. In short an integrated approach is sought.
- Help the farmers in the overall packaging, sorting, distribution, and branding of their products to ensure smooth marketing effort and ensure standards, traceability, cost efficiency, increased product range, etc.
- Emphasis upon increase in productivity rather than increase land area for production of horticulture products should be the goal. It is essential to bear in mind that Bangladesh has limited land for cultivation and its growth has been almost stagnant. In addition, it is essential that any expansion strategy must consider the entire range of agricultural crops before deciding upon or planning diversification. Thus, it is strongly recommended that emphasis be given on productivity of selected crops that can result in enhanced economic and nutritional status of the community in general.
- Develop a management training program for the extension workers to help the farmers in both technology as well as management. This can be undertaken by developing programs through partnership with both public as well as private universities. The courses should be designed to address management functions rather than purely technical issues. In addition the courses must be designed to ensure participation of the present extension workers involved in both public as well as private sector. This calls for international certification programs designed in modular (small time frame) context stretching over a reasonable period resulting in a diploma. The selection of university should be done carefully since too rigid a system or too

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expensive a program, or too theoretical an approach may not interest the target market.

- Help set international standards both at the production as well as the farm gate level to ensure both consumers protection at the domestic level as well as easy access in the international market. The participation of organizations such as BIST, INFS, etc will be essential to develop a standard of quality and institutionalize standard testing laboratories.
- The integrated model must have a financial support component which can be easily integrated in the system once an economically feasible business unit based on the cluster or cooperative concept and the integrated model based on strong MIS is institutionalized. Initial support from USAID may be necessary to promote the concept.
- To have a clearer understanding of the integrated approach and reduce risks of initiating a mammoth undertaking, it is further recommended that initially a couple of products be selected for an extensive value chain analysis and intervention. Some of the products that may be of interest are – tomato, banana, leafy vegetables, bitter gourd, and okra. These products have common characteristics of having a high demand in the market and low shelf life. These studies may be in the form of pilot project that will help in designing the following:
 - Prioritization of intervention points across the value chain.
 - Identification of FAQ for designing the MIS for the horticulture sector as a whole.
 - Designing f the system for the MIS model.
 - Assessment of the participation and selection of private sector partners.
 - Outline requirements for BDS partners, in terms of promotion, distribution, training, etc.
 - Outline requirements for quality standards.
 - Finally, assessment of future export potential and laying the foundation towards smooth entry into the export market.

Conclusion

Bangladesh seems to be a potential source of valuable horticulture products in the future though at present the limited land availability restricts any major move towards such a shift. Moreover, the present exporters are quite

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satisfied and doing well within the limited framework especially in case of processed and frozen commodity level. The technological upgrading can easily be obtained by them. They can easily obtain the technological upgrading through their present networks. The fresh vegetable export is not feasible in large quantities due to current quality and scarcity of cargo space which is presently difficult to resolve. However efforts can be made at the farmer level with a view to improving the overall status of MIS, marketing, distribution, technology, and other management effort of the farmers. This will substantially help quality growth of the domestic market as well as increase the efficiency of the exporters.

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Bibliography

1. Md. Akmal Hossain. National Case Study on Environmental Requirement Market Access/Entry & Export Competitiveness in Horticulture in Bangladesh. UNCTAD Geneva, 2004.
2. Prema-Chandra Athukorala and Kunal Sen. Processed Food Exports from Developing Countries: Patterns and Determinants. 1996.
3. Integrated Horticulture & Nutrition Development Report. Department of Agricultural Extension, UNDP, and FAO. Annual Report, 2003.
4. Sajjad Zahir. Designing a Prototype E-Marketplace for Horticultural Products of Bangladesh: Forget the Hype and Embrace the Reality. Faculty of Management, University of Lethbridge. 2005.
5. Hortex Foundation. Production Increase and market Expansion for Vegetable, fruits and Flower for Exports. 2000.
6. IMF and World Bank. Market Access for Developing Country Exports – Selected Issues. 2002.
7. Craig Matthews, "Proposed dairy mega merger," *Rural Bulletin*, New Zealand Ministry of Agriculture and Forestry, June 2001.
8. Business Development Services in Russia: New Business Development Program: Case Study, International Labor Organization, 2000.

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Annex One

Vegetable Production During 1993-94 to 2002-03

Year	Total cropped area in '000 acres	Vegetable area in '000 acres	% of vegetable area to total cropped area	Production in '000 metric tons	Yield/acre in metric tons
1993-94	-	447	1.34	1165	2.61
1994-95	-	457	1.37	1204	2.63
1995-96	33355	472	1.41	1244	2.64
1996-97	34090	487	1.43	1289	2.65
1997-98	34727	496	1.43	1307	2.64
1998-99	34082	572	1.68	1433	2.59
1999-00	35495	609	1.72	1559	2.56
2000-01	35408	626	1.77	1578	2.52
2001-02	34615	615	1.78	1567	2.55
2002-03	35005	625	1.79	1625	2.60

Source: UNCTAD

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Annex Two

Fruits Production During 1993-94 to 2002-03

Year	Total cropped area in '000 acres	Vegetable area in '000 acres	% of vegetable area to total cropped area	Production in '000 metric tons	Yield/acre in metric tons
1993-94	-	429	1.29	146	3.40
1994-95	-	436	1.31	147	3.36
1995-96	33355	447	1.34	149	3.33
1996-97	34090	451	1.32	149	3.30
1997-98	34727	456	1.31	150	3.28
1998-99	34082	458	1.34	143	3.12
1999-00	35495	451	1.27	140	3.11
2000-01	35408	473	1.34	149	3.14
2001-02	34615	481	1.39	155	3.22
2002-03	35005	499	1.43	163	3.27

Source: UNCTAD

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Annex Three

Top Ten Items of Exports of Vegetables & Fruits to United Kingdom & Middle East During 1996-97

Name of Crop	Volume in ,000 KG	Value in %	Average Price US\$/KG
United Kingdom			
Green Chilly	67	16.5	2.18
Jack Fruit	54	13.4	1.97
Lemmon	36	8.9	2.90
Stolon of Taro	27	6.7	2.10
Taro Tuber	27	6.5	2.10
Egg Plant	25	6.1	2.11
Snake Gourd	22	5.3	2.10
Yard Long Beans	19	4.6	2.21
Bottle Gourd	18	4.4	2.10
Green Papaya	15	3.8	2.11
Others (55 items)	97	23.8	
Middle East			
Bitter Gourd	2086	16.6	1.20
Yard Long Beans	1827	14.5	1.21
Green Chilly	1135	9.0	1.20
Potato	1084	8.6	1.21
Snake Gourd	795	6.3	1.20
Stolon of Taro	658	5.2	1.20
Pointed Gourd/Paleval	600	4.8	1.20
White/Wax Gourd	505	4.0	1.20
Spiny Gourd	438	3.5	1.66
Green Papaya	418	3.3	1.20
Others (77 items)	3048	24.2	

Source: HORTEx Foundation

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Annex Four

List of Industry Stakeholders Interviewed

Fresh and Processed Food Exporters

- **General Amjad Chowdhury** – Managing Director – Agricultural Marketing Company Ltd. (AMCL – PRAN)
- **Md. Akmal Hossain** – Managing Director – HORTEX Foundation
- **Mohammad Monsur** – Senior Vice President – BFVAPEA
- **Syed Salahuddin Mamun** – Vice President – BFVAPEA
- **Mujibul Haque Raju** – Joint General Secretary – BFVAPEA
- **S.M. Jahangir Hossain** – General Secretary – BFVAPEA
- **Md. Zakiul Haque** – Manager (Export Program) – BRAC Vegetable Export Program
- **Md. Moinul Islam Chowdhury** – Managing Director – Eurasia Food Processing (BD) Ltd.

Processed Food Manufacturers

- **Mr. Humayun Kabir** – Managing Director – Mark Foods
- **Mr. Khairul Islam** – Managing Director – Ideal Foods Products
- **Mr. Atikur Rahman** – Marketing Manager – Square Consumer Products Limited
- **Mr. Tauhidul Islam** – Deputy Managing Director – AgroFresh Ltd.