NATIONAL CASE STUDY ON ENVIRONMENTAL REQUIREMENT MARKET ACCESS/ENTRY & EXPORT COMPETITIVENESS IN HORTICULTURE IN BANGLADESH

A STUDY UNDERTAKEN
FOR UNCTAD, GENEVA

BY

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TABLE OF CONTENTS

Page #

Page #

Page #

LIST OF TABLES

LIST OF ANNEXES

ACRONYMS AND ABBREVIATIONS

ATC	Agreement on Textiles and Clothing
BADC	Bangladesh Agricultural Development Corporation
BARI	Bangladesh Agricultural Research Institute
BFTI	Bangladesh Foreign Trade Institute
BRAC	Bangladesh Rural Advancement Committee
BFVAPEA	Bangladesh Fruits, Vegetables & Allied Products Exporters' Association
BSTI	Bangladesh Standards and Testing Institution
BTC	Bangladesh Tariff Commission
DAE	Department of Agricultural Extension
DANIDA	Danish International Development Assistance
DCCI	Dhaka Chamber of Commerce & Industry
Defra/defra	Department of Environment, Food and Rural Affairs, UK
EC	European Commission
EU	European Union
EPB	Export Promotion Bureau
EUREP-GAP	European Union Retailers Practice - Good Agricultural Practice
FAO	Food and Agricultural Organization
FBCCI	Federation of Bangladesh Chambers of Commerce & Industry
FSA	Food Standard Agency
g	gram
GBP	Great Britain Pound Sterling
GDP	Gross Domestic Product
GOB	Government of Bangladesh
ha	hectare
HACCP	Hazards Analysis & Critical Control Points
HMI	Horticulture Marketing Inspectorate, UK
IDA	International Development Association
IPM	Integrated Pest Management
IPPC	International Plant Protection Convention
IPRSP	Interim Poverty Reduction Strategy Paper
ISO	International Standards Organization
ITC	International Trade Centre
Kg	Kilogram
KSA	Kingdom of Saudi Arabia
LDCs	Least Developed Countries
MRL	Maximum Residue Level
MT/mt	Metric Ton
NAP	National Agricultural Policy
NGO	Non-Government Organization
POA	Plan of Action
PSI	Pre-shipment Inspection
SMEs	Small & Medium Enterprises
SPS	Sanitary and Phytosanitary
TBT	Technical Barrier to Trade
TRIMs	Trade Related Investment Measures
TRIPS	Trade Related Aspects of Intellectual Property Rights
UAE	United Arab Emirates
USD	United States Dollar
UK	United Kingdom
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programmes
WTO	World Trade Organization

EXECUTIVE SUMMARY

1. Although the shares of industrial and service sector to GDP have been increasing gradually, agriculture still remains the predominant sector of Bangladesh economy, accounting for 22% of GDP and creating more than 60% of national employment. Agriculture sector is also performing well with increased productivity, incipient crop diversification (fruits and vegetables) and almost self-sufficiency in rice production, the main cereal crop of the people.

2. The government has embarked upon a set of reforms for moving the country towards a more market-oriented system and this has increased the process of transformation from subsistence farming to commercial farming in agriculture, yet the country's preparedness for integration into the world economy has been quite modest till to-date.

3. Fruits and vegetables are usually considered as protective food and high value crops and there is, therefore, a natural trend to go for increased cultivation under the commercialization process, although the total cropped area under cultivation of fruits and vegetables is still very insignificant, 3.22% only. Most of the crops are seasonal in nature, only a few are produced round the year. Marketing channel is predominantly controlled by the middlemen and post-harvest management is extremely poor.

4. Export growth of fruits and vegetables was phenomenal during 1997-98 (300%), the same way, its export decline was also alarming during 1999-2003 (145%). This shows potentials of the sector as well as its vulnerability to natural calamities, like periodical floods, and subsequent loss market.

5. Key export destinations are the UK(28%), followed by Saudi Arabia (23%), UAE (14%), Kuwait (13%), Qatar (6%), Bahrain (6%) and Oman (5%) and target buyers are mostly the ethnic population. The marketing approach being followed is *market to market* rather than *production to market.* As such *exporter-producer linkage* is indirect and *supply chain management* is inefficient. Export of cut-flower is still at its nascent stage of development.

6. Out of seven key export markets, the UK is the most important one, presently contributing more than 28% of the total export of the sector and at the same time, more quality conscious as well. Buyers in the mainstream markets are increasingly enforcing stringent conditions on the suppliers, like complying with EUREP-GAP standard. The ethnic market buyers, however, still follow the liberal policy for import, as there is no mandatory marketing barrier for entry of most of the Asian fruits and vegetables to the UK at the moment. Middle East markets are also behaving more or less the same way, although phytosanitary certificate is a requirement there.

7. The situation has, however, started changing and even the ethnic market buyers are asking for better packaging and better quality in the context of the globalized economy. SPS and various other environmental and food safety measures are also increasingly being put in market places. This calls for creating awareness among the exporters in the matter and getting them prepared to adhere to the buyers' requirements, otherwise, risk is there to lose market access and export competitiveness.

8. The government machinery working in this area is somewhat organized to respond to WTO matters, but they are not still geared to the implementation of the SPS and other environmental/health related matters. The existing mechanism for information gathering, processing and dissemination is not properly working, nor is working any system of coordination, follow-up and monitoring, As such, the core group of stakeholders still remain mostly unaware, uninformed and unconcerned.

9. Private sector at the level of leading chambers and product association is also not adequately tuned up, firstly, because they consider it the responsibility of the government and secondly, possibly, they neither have adequate resources, nor do they seriously feel the punch yet. Only one private sector Foundation and one NGO are apparently working in this area all throughout the chain.

10. No sign of proactive adjustment policy is, thus, visible. Foreign standard implementation and compliance assessment performance are also very poor, although there is some sort of a system working in the area of national standard setting, pre-standard setting and international standard setting consultations and participation in export markets.

11. A broad-based capacity building is, therefore, the most urgent need of the country at the moment. The means of capacity building could be *awareness and recognition* at the level of users, implementers and policy-makers, *physical infrastructure, human resources/training* and *institutional build-up*. The institutional capacity building should again encompass government sector, private sector, including NGO and even civil society.

12. This huge task of capacity building ahead cannot be taken care of by the GOB alone out of its own resources, for obvious reasons. Donor support in the form of financial and technical assistance could, therefore, be the only way out. This support also needs to be given not in a piecemeal way, but in a well-coordinated manner. Again, it should be a total approach and not a partial approach.

INTRODUCTION

1.1 Study Objective & Terms of Reference

UNCTAD, Geneva, awarded a contract to Md. Akmal Hossain to undertake a study on Environmental Requirement, Market Access/Entry and Export Competitiveness in the Horticulture Sector (Fruits, Vegetables and Flowers) in Bangladesh for their Project on Bangladesh Capacity for Improved Policy Making and Negotiation on Key Trade and Environment Issues. The study is intended to be presented at the sub-regional workshop on horticulture and also to be used as background material for national level training workshops foreseen under the above project.

The Terms of Reference require the consultant to analyse the interface between environmental requirement in key export markets, market access/entry and export competitiveness in the horticulture sector of Bangladesh based on the following generic outline:

- Identification of environmental/health requirement in key export market;
- Awareness on the issues and effectiveness of information management;
- Current adjustment approach; and
- Element of a pro-active approach and the need for institutional capacity building.

Details of the Generic Outline may be seen at Annex-A.

1.2 Environmental Requirements and How It Influences

Environmental requirements with potential effects on market access include standards (which are voluntary) and technical requirements (which are mandatory), labelling requirements (either mandatory or voluntary, such as eco-labelling), packaging regulations and certain sanitary and phyto-sanitary (SPS) measures. Most of these rules and regulations require a proof of compliance, i.e., through conformity assessment, including certification. In the context of the environmental data base, the WTO views are that part of the SPS measures are directly related to the environment, while most of the environmental protection measures are addressed by the TBT Agreement.

To be able to compete successfully in the international markets, the developing country producers must, therefore, examine and, to the extent possible, anticipate developments in these areas for products of their export interest. They must be able to meet health and environment related regulations to gain market access where voluntary environment and sanitary requirements have become an integral part of product quality. Developing country producers need to be able to meet such requirements to sustain in the export market. Thus, environmental/health requirements (sanitary) are increasingly becoming important as one of the key tools in international competitiveness race for sustained market access.

Although mandatory environmental requirements are important, informal (non-government) requirements are far more numerous and in many sectors, particularly in horticulture, play a key role. Voluntary requirements include, for example, buyer's requirements like EURAP-GAP, traceability, MRL, etc. for horticultural crops. Such requirements, at times, may be difficult to meet for developing countries like Bangladesh, as these countries face major difficulties in implementing sophisticated traceability and crop quality systems. Yet, the position is that these countries are not the *standard-setters*, rather they are *standard-takers* only and if they want to survive in the international competitive market, standards given by the developed countries have to be complied with. To be practical, it is, therefore, necessary to try to comply with the international SPS and TBT related rules and regulations, both mandatory and voluntary. These rules and regulations are mostly related to

human health, animal health and plant health and as such what is viewed as *quality standard* at the end of the consumers, are usually regarded as *environment standard* as the end of the producers. That is why, such measures, particularly as applied to the key export markets of Bangladesh in the horticulture sector, will be dealt with in greater details in the following Sections.

1.3 **Methodology**

Different sets of questionnaires were developed on the basis of the case study outline, following which a series of interviews and telephonic discussions were held with the stakeholders at various levels. Besides, Bangladesh High Commission/Embassies in key horticultural export markets were contacted with a request to furnish information regarding the existing as well as newly emerging quality standards, if any, that may affect Bangladesh export in future. Secondary information sources in the form of surveys, reports, publications, notifications, etc. having relevance with this study were also consulted. A regional video conference recently held under the auspices of the World Bank on SPS and other related matters, simultaneously in all the countries of South Asia and the interactions thereto also provided useful inputs in the study. The results from all these interviews, discussions, communications, consultations and interactions were analyzed and used as the basis of the report. Questionnaire outlines are given at Annex-B.

The key organizations/agencies consulted were:

- Concerned Ministries of the Government of Bangladesh;
- Bangladesh High Commissions/Embassies in key export market;
- Various support organizations;
- Private sector bodies, like chambers and product association;
- Export firms;
- Farmers;
- NGOs.

2. **OVERVIEW OF BANGLADESH AGRICULTURE**

2.1 **Main Features**

Despite the evolution of Bangladesh economy during the last three decades after independence as witnessing a gradual increase in the shares of the industrial and service sectors to GDP, agriculture still remains a fundamental sector of the economy, accounting for 22% of the GDP in 2002 and absorbing more than 60% of the national workforce. The agriculture sector had also performed relatively well in the last decade due to increased productivity, incipient diversification into value-added products, such as fruits, vegetables, poultry, dairy and fish and almost self-sufficiency in rice production, the main cereal crop for the people. This performance was achieved in spite of a large population (currently more than 130 million), scarce cultivable land (an average of 0.6 ha per household), a very high population density and the regular occurrence of natural calamity. However, still a large segment of population is under poverty line (34%), with most of the poor concentrating in the rural areas.

At present, despite some diversification, most of the agricultural production is still concentrated on the limited number of crops, with food crop, rice continuing to be the most important crop. While cash crops, like sugarcane and jute have seen their production stagnating or declining over the past decades, there has been increased production of spices and tea. Production of fruits and vegetables has also improved. In the non-crop sector, poultry, dairy and seafood have seen considerable growth.

2.2 **Policy Framework**

Bangladesh agriculture sector is in a process of transformation from subsistence farming into commercial farming. This transformation has been helped by considerable improvement over the last two decades in the road, communication and electricity infrastructure. Since the later part of 1980s, the Government has embarked upon a set of reforms for moving the economy towards a more market-oriented system. The National Agricultural Policy (NAP) of 1999 supports an enhanced private sector participation in different sectors, such as seeds, fertilizer, agro-machinery and agri-business.

The Interim Poverty Reduction Strategy Paper (I-PRSP) of 2002 also recognizes the private sector as the engine of economic growth and views the Government as responsible for creating an investment-friendly environment and acting as a facilitator only. The I-PRSP considers the rapid growth of agriculture as critical to poverty reduction and dependent upon agro-processing and agri-business development to facilitate access of the farmers to modern inputs and ensure increased demand for agri-products.

The Plan of Action (POA) of the NAP views exports in the context of globalization and recognizes that the country's preparedness for integration into the world economy has been modest till to date. The Export Policy of the country equally considers the global integration process a big challenge for Bangladesh in the days ahead.

2.3 Relevance of the Study

It is in this background, this study carries importance, as it is going to be a stock-taking document of the present level of country's awareness and preparedness to meet the growing quality and environmental issues of the importing countries in the horticulture sector.

3. PRESENT PRODUCTION STATUS OF HORTICULTURAL CROPS (VEGETABLES, FRUITS & FLOWERS)

3.1 Vegetables

3.1.1 General characteristics

Vegetables are usually considered as protective food and high-value crops, so are fruits and spices. The potentiality of this sector, generally known as horticultural sector, is immense, although it has never been exploited fully. Of the total 13.3 million hectares of arable land in the country, only 6.73% is under horticultural crops. If potato and spices are excluded, the area comes down to 3.22% only (**Annex-C**).

Horticultural crops are grown for 3 specific purposes as follows:

- Subsistence production in the homestead;
- Commercial production; and
- Seed production.

The most important horticultural production unit in Bangladesh is the homestead and almost without exception, women play the major role in managing homestead production. Commercial production so long was the domain of big landlords and mostly fruit crops were produced commercially. Recently, however, commercial production of vegetables are also getting momentum and farmers with proper knowledge and skill are coming forward increasingly to undertake this venture. Vegetable seed production and production of other planting materials were exclusively the job of the public sector agencies in the past. Recently, private entrepreneurs have also started taking initiative in this area.

3.1.2 **Acreage and production**

In Bangladesh, more than 60 different types of vegetables of indigenous and exotic origin are grown. At present, total vegetable growing area in the country is about 253,036 hectares (2.47 acre is equal to a hectare), of which 60% are cultivated during winter. These crops were neglected and relegated in the past, as research and extension work mostly concentrated on cereals. It is, therefore, not surprising that vegetables contribute only 3.68% to the GDP with a production area of less than 2% of the total cropped area. This may be seen from Table-1

Table-1: Vegetables production during 1993-94 to 2002-03

Year	Total cropped area in acre	Vegetable area in acres	% of veg. area to total cropped area	Production in MT	Yield/ acre (MT)
1993-94	-	447000	1.34	1165000	2.61
1994-95	-	457000	1.37	1204000	2.63
1995-96	33355000	471870	1.41	1243919	2.64
1996-97	34090000	486760	1.43	1288730	2.65
1997-98	34727000	496000	1.43	1307000	2.64
1998-99	34082000	572000	1.68	1433000	2.59
1999-00	35495000	609000	1.72	1559000	2.56
2000-01	35408000	626000	1.77	1578000	2.52
2001-02	34615000	615000	1.78	1567000	2.55
2002-03	35005000	625000	1.79	1625000	2.60

It is observed from the table that there has been some increase in the acreage under vegetable production during the last 5 years over the preceding 5 years (30%), indicating a gradual transformation of agriculture to more value-added horticulture. One redeeming feature is that whatever increase in the production area of vegetables has taken place so far, that has contributed to the increase in the percentage of the total cropped area from 1.34 in 1993-94 to 1.79 in 2002-2003, meaning that some other crops are losing their share in the total cropped area in favour of vegetables. Yield per acre, however, did not increase, rather remained, more or less, stagnant during this period. This shows that the productivity of the vegetables in 2002-2003 was still at the same level of 10 years ago, i.e. 1993-94.

3.1.3 **Seasonality of crop**

Based on the growing seasons, vegetables are categorised as summer/rainy season vegetables, winter season vegetables and all-season vegetables. Of the summer vegetables, various cucurbits, vegetable cowpa, hyacinth bean, stem amaranth, several aroids and Indian spinach are predominant. Winter vegetables include tomato, cabbage, Chinese cabbage, cauliflower, brinjal, carrot, spinach, bottle gourd, bush bean and radish among many others. Crops like okra, heat tolerant tomato, brinjal, carrot, spinach, many leafy vegetables, small onion, etc. can be grown any time of the year. Summer vegetables are cultivated during the monsoon season from May to October. On the other hand, winter vegetables are grown during cold season from November to April. There is more consumption of vegetables in this season and most districts produce marketable surplus.

3.1.4 **Domestic requirement**

Current production of vegetables is considerably below the domestic requirement. There is, therefore, a big gap between the vegetable production estimated at 2.6 million MT and the national vegetable requirement estimated at 10 million MT. This gap is likely to expand further with increase of population and per capita income, unless more land is brought under vegetable production and

productivity increases. Presently, only about 33% of the estimated vegetable area are under vegetable production.

Nationally, the consumption of vegetable is reckoned to be 50-70 g/head/day or 18.25-25.5 kg/head/year, as against the requirement of 200 g/head/day from nutritional point of view.

3.1.5 **Marketing system**

Vegetables are generally sold by farmers immediately after harvest because of their need for cash and lack of storage facilities. According to the FAO survey, about 82% of farmers in all the regions sell horticultural crops immediately after harvest. They use head load and rickshaw vans to carry the produce to markets. Traders, wholesalers and buyers mainly use richshaw vans and trucks. About 66% of the farmers sell their produce in weekly markets and 22%, in the daily markets. Farmers usually get price information from other farmers, traders, radio, television and newspapers.

Marketing channels and involvement of intermediaries vary among regions. The FAO survey indicates that about 19% of retailers, 41% of traders and 21% of consumers buy vegetables directly from farmers. The two major marketing channels are producer-trader-retailer-consumer and producer-trader-wholesaler/commercial agent-small holder/retailer-consumer. The commission of intermediaries varies by region and from crop to crop. The margin between the trader's price and the retailer's price could be as high as 150% during peak season and 200% during off season.

3.1.6 **Prices**

Retail and wholesale prices of vegetables fluctuate substantially from year to year and also from month to month, depending on the supply situation. Seasonality, under developed marketing and transportation system, poor infrastructure and insufficient storage facilities intensify price volatility.

3.2 **Fruits**

3.2.1 **General characteristics**

The general characteristics of fruit production is more or less similar to that of vegetable production. In this case also, homestead gardens predominate and most of the production is based on subsistence farming. However, commercial production is also gradually taking shape and getting momentum with the passage of time.

Fruit crops mainly grown in the country are mango, pineapple, papaya, jack fruit, coconut, betel nut, carambola, berfruit, blackberry, guava, litchi, cashew nut and woodapple, covering an area of about 202,024 ha, nearly 80% of which are in home gardens. Several regions specialize in certain crops, such as banana in Jessore, mango in Rajshahi, pineapple in Chittagong and Sylhet and betel nut and coconut in the delta regions.

3.2.2 **Acreage and production**

Although acreage and production of fruits had increased marginally over the last 10 years from 1993/94-2002/2003, yield per acre had declined from 3.40 MT in 1993/94 to 3.27 MT in 2002/2003. This may be seen at Table 2.

Table-2: Fruits production during 1993-94 to 2002-03

Year	Total cropped area in acre	Fruit area in acres	% of fruit area to total cropped area	Production in MT	Yield/acre (MT)

1993-94		429000	1.29	1460000	3.40
1994-95		436000	1.31	1467000	3.36
1995-96	33355000	446970	1.34	1486665	3.33
1996-97	34090000	451000	1.32	1490000	3.30
1997-98	34727000	456000	1.31	1495000	3.28
1998-99	34082000	458000	1.34	1430000	3.12
1999-00	35495000	451000	1.27	1404000	3.11
2000-01	35408000	473000	1.34	1486000	3.14
2001-02	34615000	481000	1.39	1547000	3.22
2002-03	35005000	499000	1.43	1631000	3.27

This situation probably reflects low input levels and lack of good germplasm and technology applied in the production of fruits. Yield increases by intensification process could easily be as high as 8 fold for litchi, mango and pineapple and 3 fold for banana, based on the experiences of similar climates in other countries.

3.2.3 **Seasonality**

Like vegetables, fruits are also seasonal crops, the most important season being the summer/rainy season. In this season, most of the fruits are grown in Bangladesh. This includes mango, pineapple, jack fruit, carambola, blackberry, guava, woodapple, litchi, water melon, etc. Compared to this, winter fruits are very few and far between. Some types of palms and some quantity of oranges and different varieties of citrus fruits are the main crops of this season. Among all season fruit crops, mention may be made of coconut, betel nut, papaya, and some types of citrus fruits. Although most of the fruits are grown in the summer/rainy reason, many of them can be made all season crops through proper research and development activities.

3.2.4 **Domestic requirement**

Most of the fruits produced in the country are consumed at domestic level. About 30% of them are generally marketed, especially pineapple from Chittagong area (29% of total production), mango from Rajshahi area (about 15%) and banana from Barisal area (about 15%). For a population of 130 million, the consumption of fruits per head per year is staggeringly low, only 11.5 Kg/head/ year. This is about one quarter of the fruit consumption in Europe and one-ninth of the fruit consumption in Australia, Hong Kong and Taiwan. This explains why a large number of fruits, particularly in the winter season, are imported to Bangladesh every year.

3.2.5 **Marketing system**

Marketing system of fruits is similar to that of vegetables. FAO survey indicates that about 36% of retailers, 27% of traders and 22% of consumers buy fruits directly from the farmers who usually sell their crops mostly in the weekly markets and partly in the roadside and daily markets.

In general, production of fruits is an attractive alternative for farmers, as gross margins may go up to 10-12 times compared to paddy. But the risk involved is much higher for many fruits, because of price volatility and market gluts during peak season.

3.2.6 **Prices**

Like vegetable crops, retail and wholesale price of fruit crops also fluctuates substantially from year to year and also from month to month, depending on the supply situation. The reasons of this price volatility are also similar to those of vegetables.

3.3 Flowers and ornamentals

Flowers and ornamentals are still an under-developed segment of horticultural crops. The types of flowers presently grown mainly include tuberose, marigold, rose, gladiolus and gerbera. The total area under cultivation of flowers is estimated to be above 3000 acres all over the country. Production of tuberose flowers is, however, concentrated in Jessore and Chuadanga regions. Flowers are also mainly grown in home gardens, except tuberose and a portion of rose, marigold, gladiolus and gerbera which have been started growing commercially.

In Bangladesh, there are about 10,000 nurseries. Apart from commercial flower production, these nurseries are also producing different types of ornamental plants and foliage. These plants and foliages are also being commercially transacted, the main markets being Dhaka and Chittagong. Like other horticultural crops, these flowers and ornamentals are also subject to seasonality, poor marketing system, infrastructural shortcomings, transportation difficulties and price volatility.

4. EXISTING EXPORT PATTERN

4.1 Vegetables

4.1.1 Export performance

Bangladesh primarily exports fresh vegetables and fruits in the horticultural sector. If the last 10 years of export performance of vegetables is analyzed, it is observed that there had been a tremendous growth in vegetable export during the first 5- year period from 1992-93 to 1997-98 and more or less in the same way, a sharp decline of vegetable export over the last 5-year period from 1998-99 to 2002-2003. This may be seen at Table-3 overleaf:

Table-3: Year-wise Export of Vegetables Since 1992-93

FY	Value ('000' US$	Growth (%)	Quantity(MT)	Growth (%)
1992-93	8060	47.62	8142	56.46
1993-94	8120	0.74	7415	-8.93
1994-95	8690	7.02	8270	11.53
1995-96	14510	66.97	12931	56.36
1996-97	24910	71.67	20449	58.14
1997-98	32470	38.38	23597	15.39
1998-99	17680	(-)45.55	13106	(-)44.46
1999-2000	14000	(-)20.82	10270	(-)21.64
2000-2001	12787	(-)8.66	9509	(-)7.41
2001-2002	15320	(+)19.81	12761	(+)34.20
2002-2003	13240	(-)13.58	9792	(-)23.27

Source: EPB

The head-on decline of vegetable export in the year 1998-99 may be ascribed to the long-duration devastating flood of October, 1998, but its recurrence in the subsequent years is a clear indication of loss of export markets and here lies the concern for the country. It now appears that export of vegetables is getting settled down around US$14 – US$20 million, a level which is much low compared to the potentials of this sector.

4.1.2 **Market destination**

Although Bangladeshi vegetables are being exported to about 30 market destinations, the major buyers are, in fact, located in two regions: the UK and the Middle East. In the Middle East region again, the major market outlets are Saudi Arabia, UAE, Kuwait, Qatar, Bahrain and Oman. Table-4 will show the contribution of each of these market places to vegetable export from Bangladesh in the year 2002-2003.

Table 4: Major Market Destinations of Vegetables in the Year 2002-2003

Sl. No.	Countries	Earning in '000' US$	% of Total
1.	UK	3758	28.38
2.	Saudi Arabia	3030	22.89
3.	UAE	1846	13.94
4.	Kuwait	1681	12.70
5.	Qatar	650	6.42
6.	Bahrain	763	5.76
7.	Oman	675	5.10
8.	Others	637	4.81
Total		13240	100

Source: EPB

It appears from Table-4 that the UK is by far the most important market outlet for Bangladeshi fresh produces, lifting more than 28% of the total export of vegetable from Bangladesh. In the Middle East, the biggest market is Saudi Arabia (23%), followed by UAE (14%), Kuwait (13%),Qatar (6%), Bahrain (6%) and Oman(5%). These 7 individual markets together contribute more than 95% to the total export earning from vegetables and as such, are considered as the most important market outlets for this sector. A comprehensive table of fruits and vegetables export to various market destinations in 2001-2002 and 2002-2003 is given at **Annex-D**.

Over the years, there has not been any structural change in the export direction of vegetables. These seven markets used to play the same important role as of today, always lifting more than 90% of the total vegetable export from Bangladesh. In terms of ranking, however, there had been some occasional changes among the 4 Middle Eastern countries, with Saudi Arabia and Kuwait always holding the second and fourth positions respectively and UK, the topmost position. Details may be seen at **Annex-E**.

4.1.3 **Item-wise export**

The above data do not, however, reflect the item-wise export position of Bangladesh, nor do it indicate the number of items exported. Hortex Foundation attempted to fill up the gap and a Sample Base-line Survey was conducted among 11major exporters for this purpose in 1996-97. Although this survey is a little outdated, it reveals important crop information which still plays predominant role in vegetable export from Bangladesh.

Market-wise first 10 export items and their percentage contributions may be seen in Tables 5 and 6.

Table 5: 10 Major Items of Vegetables/ Fruits Exported to the United Kingdom in 1996-97

Rank-Ing	Name of Crop	Volume Kg	Value %	Value GBP	Avg. Price GBP/Kg
1.	Green Chilly	67,150	16.5%	91,473	1.36
2.	Jack Fruit	54,340	13.4%	66,808	1.23
3.	Lemon	36,020	8.9%	64,470	1.79
4.	Stolon of Taro	27,020	6.7%	35,448	1.31
5.	Taro tuber	26,540	6.5%	34,825	1.31
6.	Egg plant	24,800	6.1%	32,740	1.32
7.	Snake Gourd	21,700	5.3%	28,340	1.31
8.	Yard Long Beans	18,550	4.6%	25,660	1.38
9.	Bottle Gourd	18,000	4.4%	23,615	1.31
10.	Green Papaya	15,280	3.8%	20,097	1.32
11.	Others	96,770	23.8%	141,922	
	Total of Survey	406,170		565,398	1.39

Source: Hortex Foundation

Table 6: 10 Major Items of Vegetables/Fruits Exported to the Middle East in 1996-97

Rank-Ing	Name of Crop	Volume '000' Kg	Volume %	Value US$	Avg. Price US$/Kg
1.	Bitter Gourd	2,086	16.6%	2,514	1.20
2.	Yard Long Beans	1,827	14.5%	2,205	1.21
3.	Green Chilly	1,135	9.0%	1,357	1.20
4.	Potato	1,084	8.6%	1,306	1.21
5.	Snake Gourd	795	6.3%	956	1.20
6.	Stolon of Taro	658	5.2%	793	1.20
7.	Pointed Gourd/Paleval	600	4.8%	721	1.20
8.	White/Wax Gourd	505	4.0%	607	1.20
9.	Spiny Gourd	438	3.5%	726	1.66
10.	Green Papaya	418	3.3%	503	1.20
		3,048	24.2%	3,931	
	Total of Survey	12,597		15,620	1.24

Source: Hortex Foundation.

It appears from the above tables that green chilly is the number one export item to the UK, followed by stolon of taro, taro tuber, egg plant, snake gourd, yard long beans, bottle gourd and green papaya, while for the Middle East market, the main export items are bitter gourd, yard long beans, green chilly, potato, snake gourd, stolon of taro, pointed gourd, white gourd, spiny gourd and green

papaya. A comprehensive list of vegetables which are reported to be exported from Bangladesh may be seen at **Annex-F.**

Although many of the vegetables and fruits are seasonal in nature in Bangladesh and regular supply round the year is a problem (which is normally a requirement of the buyers), the climatic variations in major market places gives an advantage as well. As such, more exports are channelized to the UK during the winter when it is too cold to produce anything there and in the same way, more exports are routed to the Middle Eastern countries during the summer when it is too hot to produce anything there. These may be considered as market *niches* for Bangladeshi seasonal fresh produces.

4.1.4 Market characteristics

Bangladesh is mostly operating in the overseas ethnic markets and customers in the importing countries are by and large of Bangladesh origin. The Bangladesh Fruits, Vegetables and Allied Products Exporters' Association represent exporters of this sector. The Association so far successfully played their role as the lobbying agency towards the national airline for air space allocation, but they have hardly undertaken any organized effort to improve the quality level of the fresh produce. Therefore, a little evidence of quality differentiation, specialisation or improvement is noticeable in this trade.

4.1.5 Production and packaging system

Main feature of the production system is almost the absence of any direct linkage between the exporters and the primary producers. Most of the produces are procured through the middlemen. In general, orders from foreign buyers are received before a few days of shipment and passed on to the middlemen. They procure the produces from farmers and arrange transportation of the same to Dhaka on the day of export shipment. The transportation is usually arranged either on the bus top or by heavily loaded truck. Produces, thus brought to Dhaka, are regraded and repacked in the shed of the exporters. The packaging materials used by exporters generally consist of bamboo baskets or second-hand cartons. There is, however, one or two exceptions, where crops are produced through contract farmers, delivered at the exporter's packhouse nearby and then precooled, sorted, graded, packaged, stored and transported to the airport for export, maintaining proper quality and standard throughout the whole chain.

4.1.6 Air transportation

Air transportation is considered as the biggest obstacle on the way to expansion of fresh produce export because of acute shortage of air cargo space capacity. No regular cargo flight is operating from Bangladesh, not to speak of any dedicated flight for horticultural crops. It is only the passenger flights which carry fresh produces and other perishable cargo. Moreover, readymade garment has appeared to be a serious competitor of vegetables in the matter of allotment of air space in the passenger flights. Along with British Airways, the national carrier, Bangladesh Biman is the only airline operating direct flights to Europe. Other airlines i.e. Gulf Air and Emirates also carry perishables to Europe through transhipment in the Middle East. Their rates of airfreight are quite competitive, still the exporters have natural preferences to use the direct Biman flights. To various destinations of the Middle East, the transportation situation seems to be better, as a large number of airlines including Biman, Gulf Air, Emirates, Qatar Airlines and Iranian Airlines carry perishables.

4.2 Fruits

4.2.1 Export performance

Export earning from fruits, as reflected in the official statistics of EPB, shows a dismal picture. This can be seen from Table-7.

Table-7: Year-wise Export Earning from Fruits since 1992-93

FY	Value ('000' US$	Growth (%)	Quantity(MT)	Growth (%)
1992-93	1310	77.03	1249	93.64
1993-94	1320	0.76	1007	-19.38
1994-95	1960	48.48	1365	35.55
1995-96	3410	73.98	2278	66.89
1996-97	570	-83.28	385	-83.90
1997-98	010	(-)98.25	07	(-)98.20
1998-99	020	100	13	85.71
1999-2000*	5	-	-	-
2000-2001*	-	-	-	-
2001-2002*	-	-	-	-
2002-2003*	3	-	-	-

Source: EPB, * Not shown separately

The above export trend does not conform to the data compiled by Hortex and as reflected in Table-5, where it can be seen that jack fruit was the second biggest export item to the UK followed by lemon which is also a fruit, in the year 1996-97. In the Middle East market also, jack fruit and lemon, although not included in the first 10 items, continue to be the major export items. It, therefore, seems that mistakes might have crept in somewhere in the compilation of statistics by EPB. It is quite likely that fruits are generally shown as vegetables in the customs document which constitutes their data source. It will, therefore, be better and safer to treat fruits and vegetables together and not separately.

4.2.2 **Market destination**

The market destination of fruits, as shown in the EPB statistics, does also give a partial picture, because in the absence of proper classification of fruits and vegetables, the information that enamate are bound to be distorted. This is evident from Table-8.

Table-8: Major Market Destinations of Fruits in the Year 1996/97-2002/2003

(Value in thousand)

	2002-2003		1996-97	
Countries	Dollar	% of Total	Dollar	% of Total
Pakistan	3	93.45	-	-
Germany	0.21	6.55	-	-
UK	-	-	53	9.36
Saudi Arabia	-	6.22	233	41.17
Kuwait	-	-	167	29.50
UAE	-	-	103	18.20
Qatar	-	-	6	1.06
Japan	-	-	4	0.78
Pakistan	-	-	Neg.	Neg
Singapore	-	-	Neg	Neg
Total	3.21	100.00	566	100.00

Source: EPB

The distortion is clearly visible in the export figures of 1996-97. During this year, export of fruits to the UK was reported to be in the vicinity of US$53,000.00, although in the Baseline Sample Survey conducted by Hortex, it appears that earning from only jack fruit and lemon and that too by only a few exporters under survey was a high as Pound Sterling 131,278.00 (**Table-5**).

4.2.3 **Item-wise export**

From Sample Baseline Survey of Hortex Foundation it appears that the two most important items of fruits under export are jack fruits and lemons. Among other fruits, mention may be made of satkora, jalpai, mango, litchi, banana and papaya.

Market characteristics, production and packaging system as well as air transportation practices are similar to those of vegetables.

4.3 Flowers and ornamentals

Export of cut-flower is still at its nascent stage of development. As such, no export figure of cut-flower is reflected in the official statistics of EPB, except in the year 1994-95, when tuberose worth Tk.16,000 was exported to the UAE as a sample shipment. On the initiation of Hortex Foundation, this item has again appeared in the export list and about 1,000 Kg of tube-rose flower were sent to the Netherlands and the UK markets under their promotional pilot programme in the calendar year 1999.

The buyers' evaluation of the tube-rose exported from Bangladesh seems to be a mixed one. On the one hand, they are of the opinion that Bangladeshi flowers are usually light and have short spike compared to stem length. On the other hand, they tend to believe that despite this problem, Bangladeshi flowers have good potentiality in the European market because of its unique feature and structure. It could be marketed year round, although during summer months, price level is likely to be lower.

In the light of the above observation, Hortex Foundation has taken up the following steps for export development of tube-rose flower:

- Encourage production of tube-rose in the proximity of Dhaka city of the type and variety that are in demand in the European market;
- Continue with export of smaller consignments and gradually increase the volume without compromising with quality;
- Maintain very strict grading standard;
- Use direct flights to the extent possible;
- Use packaging cartons developed by Hortex;

As regards ornamentals, a few sample shipments had been effected to the Netherlands as well as some of the Middle Eastern countries. It is yet to undergo further development process. Efforts are underway. Efforts are also underway to develop orchids and foliages for export markets.

5. ENVIRONMENT AND HEALTH REQUIREMENTS IN KEY EXPORT MARKETS

5.1 U.K.

It has already been seen in Section 4.1.2 that the UK is the number one export market of Bangladeshi fruits and vegetables with an intake of more than one-fourth of the total export in the sector. This market is, therefore, very important for Bangladesh from the point of view of both expansion and sustenance of horticultural export.

To survive and sustain in this market, following rules and regulations have to be met.

5.1.1 Plant health requirements: phytosanitary certificate

Some plants and plant produces are prohibited from entering into the UK, while some others are restricted and must have to be accompanied by phytosanitary/plant health certificate, which is issued by Plant Health Authority in the exporting country. This certificate is essentially a statement that the plants or plant produces (fruits, vegetables and flowers) to which it relates have been officially inspected in the country of origin (or country of dispatch), comply with statutory requirements for entering into the EC, are free from quarantine pests and diseases and are substantially free from other

organisms. Plant and plant materials imported from non-EC countries under Phytosanitary Certificates are inspected by the Plant Health and Seeds Inspectorate on or shortly after arrival in the UK, in order to confirm that they satisfy plant health requirement. For all other plant and plant produces including most of the Asian fruits, vegetables and flowers, phytosanitary certificate is not legally mandated and is seemingly unnecessary for commercial purposes (**Annex-G**) . In Bangladesh, however, phytosanitary certificates are issued by the Plant Protection Wing of the Department of Agricultural Extension under the Ministry of Agriculture for all horticultural crops going out of the country.

5.1.2. **Standards and regulations: certificate of conformity**

A number of fruits and vegetables are subject to EU marketing standards. Currently, 42 produces are required to meet such standards and will require a recognized *certificate of conformity* before release into free circulation within the European Union, including the UK. The Horticultural Marketing Inspectorate (HMI), a part of the Department of Environment, Food and Rural Affairs (Defra) of the UK normally issues this certificate, following the notification of the importer or importer's agent. Where exporting country has met conditions laid down by the EU and is granted 'Approved Status', the certificate can be issued by the exporting country as well. At present, 9 exporting countries are approved to issue such certificates. Bangladesh is not in this list. Most of the fresh produces exported from Bangladesh to the UK are not legally mandated for conformity certificate yet, although such certificates seem somewhat beneficial for commercial purposes (**Annex-H)**

5.1.3 **Food Safety**

In UK, imported food is subject to general safety legislation which is the responsibility of the Food Standard Agency (FSA). FSA is also responsible for Food Labelling Regulations which apply to processed fruit and vegetables and other directives on additives which apply to Jack Fruit Juice and Honey. So this is not also required for fresh produce.

5.1.4 **Environmental and social issues: EUREP-GAP**

Apart from statutory requirements and standards, voluntary standards have started playing a major role in market access and competitiveness in horticultural produces now a days. Concerns about social and environmental impact of farming have provoked a number of schemes from trade organizations and retailers to instigate such codes of practice. The major European retailers have initiated a protocol for good agricultural practice (known as EUREP-GAP) and, with powerful membership, this is set to become important for exporters of horticultural produces to the UK. Although, this is not yet a big problem for Bangladesh and seemingly unnecessary for commercial purposes at the moment, this may pose a big challenge for Bangladesh in the days ahead. Bangladesh's preparedness to comply with this voluntary standard is, therefore, becoming growingly important and hence has been discussed at length in the subsequent Sections.

5.2. **Saudi Arabia**

Saudi Arabia is the second biggest export market of Bangladeshi horticultural produces, presently contributing more than 20% of the total export earning in the sector. For export of fruits and vegetables to the Kingdom of Saudi Arabia (KSA), *plant health certificate* (phytosanitary certificate) is a mandatory requirement. This certificate must accompany all shipments of vegetables and fruits to the KSA, certifying that such exports are free from pests, insects, and other horticultural diseases, and that they have not been exposed to ionizing radiation. This certificate can be issued by Government Department of the exporting country.

The ground requirement also calls for maintaining the allowable tolerance level and using good packaging material. But these are not yet strictly enforced, nor is there any immediate threat for initiating any stringent regulation/standard for such export like that of the UK.

5.3 UAE, Kuwait, Bahrain, Qatar and Oman

These are also key export markets for Bangladeshi horticultural produces holding third, fourth, fifth, six, & seventh positions in order of ranking, with an intake of 14%, 13%, 6%, 6%, and 5% of the total export. Export requirement to these countries are also similar to that of Saudi Arabia and hence all shipments of fruits, vegetables and flowers to these market outlets must also accompany phytosanitary certificates issued by the Government agency.

No additional serious requirements and standards as that of EUREP-GAP are yet in place to comply with. Although different market segments use different quality standards including packaging and want suppliers to deliver fresh produces accordingly.

6 AWARNESS OF THE QUALITY & ENVIRONMENTAL ISSUES

6.1 Fruits and Vegetables Industry

It has been observed in Sections 3.1 and 3.2 that the share of horticulture in the Bangladesh agriculture as a whole is not much, only 3.22% of the total cropped area are presently under cultivation of fruits and vegetables. The movement from subsistence farming to commercial farming is only of recent time and it could not yet create any noticeable change in the structure of horticultural production. Again, out of 3,256,000 tons of horticultural production (fruits and vegetables), only 9792 tons are presently exported, which constitute barely 0.3% of the total production. Yet great potentials exist for expansion of both production and export, because vegetable and fruit crops have already started to be recognized as high-value crops compared to cereal crops which occupy about 82%(rice alone 76%) of the total cropped area and a gradual shift, although slow, has started to take place. This shift is likely to speed up, if marketing is properly organized, both within and outside the country. That will, however, need increased market access facility side by side with adequate infrastructural facility, particularly air cargo space, since the only means for external transportation of fresh produces is still by air.

6.2 Organization of Export: Bangladesh Fruits, Vegetables and Allied Products Exporters' Association (BFVAPEA)

Fresh fruits and vegetables are mostly exported from Bangladesh by members of the Bangladesh Fruits, Vegetables and Allied Products Exporters' Association. The Association has a total of 252 members (2001), around 25 of whom are reportedly active in export. These exporters are responsible for more than 90% of the total export of fruits and vegetables from Bangladesh. Some of the exporters are understood to be operating under two or more names for various business reasons, mainly for getting more space in the air craft, as the limited space available is allotted to the active exporters by lottery.

Most of the exporters belong to the SME group and they normally export to their friends and relations in various market places. This represents the lowest segment of the market, usually known as ethnic markets, which are more or less protective in nature, where buyers/customers are mostly either Bangladeshies or from any nearby Asian country. They are generally less quality conscious, as they are eager to get a *feel* for their country/region through the fruits and vegetables they are buying.

Since quality consciousness is not that high at the export level, the exporters mostly remain satisfied with the traditional way of collecting the produces for export. As has already been explained

at Section 4.1.5, they normally procure produces through middlemen who collect orders from various exporters, go to the producing areas, collect crops from farmers/local markets and arrange to deliver the same to the exporters on the day of shipment. The exporters then arrange sorting, grading and packaging in their own traditional way and go for shipment. Neither cool chain is properly used, nor is followed any standard post harvest handling practices and packaging. As a result, the post-harvest handling loss is enormous, sometime more than 30%.Their awareness about health and safety standards of the mainstream market places is moderate and they normally do not bother for their implementation, as they are not in a position to even fulfill the export orders of their ethnic market buyers in the present way of delivery, because of acute shortage of air space. Recently, however, some of the ethnic market buyers even, particularly operating in countries outside the top 7 ones, have started insisting on quality improvement and packaging development and that has led to limited changes in packaging and quality management. At least one exporter belonging to the Association and sending crops to Canada and the UK is understood to have used cool chain partially and 3-4 exporters have started using improved packaging cartons of international standard made out of virgin pulp to contain their buyers in such market with support from Hortex Foundation.

6.3 **Organization of Production: Farmers Level**

Horticultural export crops are generally produced by out-growers having little or no direct linkage with the exporters. Most of the out-growers are small and marginal farmers. It is observed from the 1996 Agricultural Census that out of more than 11.8 million farms, about 50% of the farms were less than of 1 acre and 80% of less than 2.5 acres (2.47 acre = 1 ha) and the farmers are also mostly illiterate. Given the trends towards the land fragmentation due to the pressure of population and law of inheritance, the situation has been definitely more skewed today and will be further skewed in future towards smaller farms.

As the linkage between the exporters and out-growers is extremely loose and as the exporters are not usually supplying fresh produces to the mainstream importers/buyers, there is no pressure on them as such, for growing horticultural crops following the quality standards of European countries, nor is there any organizational arrangement in place to bring them together for doing so. Hence, the awareness of the small out-growers/producers about the sophisticated quality requirement of the export market is practically non-existent.

6.4 **Initiating the Change: Hortex Foundation**

It is in this background Horticulture Export Development Foundation, in short, Hortex Foundation, was established under the Companies Act, as a non-profit horticulture development and promotional agency in the private sector. The Foundation started functioning from June, 1996 and since then, implemented two IDA-funded projects towards the production and management development of high-value quality horticultural produces for export to high-price sophisticated mainstream markets of Europe and elsewhere.

The Foundation organized export production through contract farming system involving BRAC, an NGO, and providing them extensive support and assistance, which included, among others, training of farmers and their field staff, supplying of seeds and other production inputs, making them aware of the market requirements, assisting them to introduce EUREP-GAP and other quality measures, providing them training on post harvest crop management, helping them set up a packhouse in the production area with pre-cooling and cooling facility, developing quality packaging materials of international standard for them, arranging reefer trucks for transportation of their export crop to airport and so on and so forth. All these were done after the mainstream market outlets in the UK, the Netherlands, Belgium and France were identified and contacted and their technical requirements were assessed.

Initially, BRAC was conceived of as a producer organization only and a few private sector farms were introduced to the market for export of their produces under an contractual agreement, but ultimately that didn't work. Finally BRAC (when the private exporters declined) had to be introduced to those market contacts and eventually export started in 1997-98 (July-June) for the first time to the non-conventional West-European markets, beyond the horizon of traditional ethnic markets. Export started with french bean, which was absolutely a new crop for Bangladesh and then expanded to other high-value Asian crops like green chilli, bitter gourd, yard long bean, okra, etc. Fruits, especially baby pineapple (honey queen variety) was also exported to the UK market and cut-flowers (tube-rose) to the Netherlands. Thus, with the support and technical assistance of Hortex Foundation, BRAC succeeded in exporting more than 1300 tons of quality horticultural produces (fruits and vegetables) from July, 1997 through March, 2003. Besides, 1 MT of tube-rose flowers and 1,000 number of ornamental plants were also exported by 3 private sector firms to the Netherlands during the period.

Hortex also organized and is still organizing a series of seminars and workshops to make the stakeholders, including exporters and producers, aware of various quality requirements and regulations that are increasingly being put in place under SPS and TBT as well as various voluntary standards that are taking place like EUREP-GAP.

6.5 Exporting Quality Produces: Bangladesh Rural Advancement Committee (BRAC)

BRAC is the largest NGO in the country. In recent time, they are also getting involved in business. Their business activities have already spread to multifarious areas such as handicrafts, handlooms, dairy products, agricultural produces including horticulture, tea production, university education, banking, etc. Almost all of these activities have got direct backward and forward linkage with social and rural development of the country. In horticulture, Hortex involved BRAC for the first time in 1997 to organize contract farming for production of quality french bean for export to mainstream international markets. Since BRAC has a wide rural network as well as a big clientele group of small and marginal farmers, it was easy for them to get the farmers organized and go for quality production. Hortex supported them in developing packhouse with appropriate cool storage facility and trained their field staff as well as contract farmers on production technology, harvesting, post harvest management, packaging and transportation. Necessary organizational structure for this new activity was also suggested by Hortex and accordingly adequate technical manpower and logistics were put in place in the production centre and for marketing by BRAC.

Thus, like other sectors, the successful journey of BRAC started in horticultural export sector as well, initially as a producer organization and subsequently as a producer-cum-marketing organization. Today, BRAC is the only organization in Bangladesh which is organizing quality horticultural production through the out-growers. Their contract farmers have already been trained under EUREP-GAP and they are awaiting the formal audit and inspection for EUREPGAP certification within a month and exporting the same in the mainstream horticultural markets in Europe, Middle East and South-East Asia. With one crop and four markets they started and now they have diversified into more than 20 crops and 15 markets in various directions. Presently, their export is around US$1 million a year, which is about 10% of the annual national horticulture export of Bangladesh.

6.6 EUREP-GAP

It, thus, appears that in spite of the extensive awareness campaigns undertaken by Hortex and some other organizations, the realization in respect the Good Agricultural Practice is, so far, very poor. Only one production and export organization (BRAC) is producing the EUREP-GAP compliant produce at the market, which is going to be certified as such soon. BRAC's farmers are, in general, literate and properly trained under their social and education development programme and every

contract farmer of BRAC is capable of maintaining proper EUREP-GAP documentation under their guidance. All production inputs are also normally supplied to the farmers by BRAC, the price of which is subsequently adjusted with the payment on delivery of crops. This facilitates easy monitoring of MRL and traceability. No other companies/producers are presently following this practice, nor are they fully aware of the necessity of the introduction of EUREP-GAP for export purpose.

6.7 **Development of Super Market**

Development of supermarket is a recent addition in domestic retail section of Bangladesh. This has started appearing less than 5 years ago. With the success of pioneers in this area, new investors are getting attracted and new outlets are coming up in quick succession. To-date, there are about 30 supermarket stores operating in the country as a whole, of which 22 are located in Dhaka, the capital city. Although the coverage of supermarket chains is still very low, not even one percent of the retail sector, they have started creating an impact on quality production of horticultural crops and consequently, the farmers are getting increasingly exposed to such requirement. IPM farming, organic farming, etc, although still very limited, are getting increasingly popular. But due to lack of proper monitoring in product differentiation and post-harvest handling practices, the farmers could not yet get the benefit as expected.

7. EXISTING MECHANISM FOR INFORMATION GATHERING, PROCESSING AND DISSEMINATION

A number of agencies and organizations, all in the public sector, are officially working in this area. The agencies and organizations involved in the existing mechanism to implement the quality and standardization requirement do not at all seem to be interwoven and closely knitted and as such, information gathering, dissemination and follow up is not coordinated and often do not reach the core target groups/stakeholders. This is, however, no peculiar for Bangladesh, many other countries in this region also suffer from the same problem.

7.1 **National Enquiry Point**

At the top of the mechanism is WTO Cell in the Ministry of Commerce, which is the National Enquiry Point. This Cell is officially responsible for, among others, gathering, processing and dissemination of information regarding new and forthcoming environment and health related measures and standards under SPS, TBT and other similar matters. There has been a National Advisory Committee at the top to advise on all WTO related matters and assist the government in formulating appropriate strategy and policy. The Committee consists of representatives from all concerned Ministries, agencies, private sector entities and research as well as law firms. Minister for Commerce is the Chairman of the Committee, while Director General of WTO Cell is the Member Secretary. The National Advisory Committee is assisted by five working groups as follows:

(a) **Working Group on Agriculture, SPS and other related matters**. This working group is located in the Ministry of Agriculture and headed by a Joint Secretary.

(b) **Working Group on Trade and Services**. This working group is located in the Ministry of Commerce and headed by a Joint Secretary.

(c) **Working Group on TRIPS, TRIMs and TBT**. This working group is located in the Ministry of Industry and headed by a Joint Secretary.

(d) **Working Group on Market Access, ATC, etc**. This working group is located in Bangladesh Tariff Commission and headed by its Chairman. The line Ministry of the organization is the Ministry of Commerce.

(e) **Working Group on Customs Valuation, PSI and Others**. This working group is located in the National Board of Revenue under the Ministry of Finance and headed by its Member, Customs.

The above working groups meet periodically and review the related matters and disseminate relevant information to the stakeholders through Departments/ Directorates/ Institutes/ Corporations working under the concerned Ministries. In the same way, the working groups also collect feed back/comments on various policy issues relating to the implementation of rules and regulations and standardization being imposed by the foreign countries and pass on the same to the National Enquiry Point either directly or through the National Advisory Committee.

7.2 Working Group on Agriculture, SPS, and Other Related Matters

Out of the five working groups, the one on Agriculture, SPS and other related matters virtually covers other Ministries as well and each of the line Ministries again has got various field level organizations through which it works. For purposes of this study, however, it is important to note what are the relevant agencies through which the Ministry of Agriculture works. These are as follows:

7.3 Department of Agricultural Extension (DAE)

The DAE is the largest extension service provider under the Ministry of Agriculture having a wide network of field offices across the country. Its mission is to "provide efficient and effective need-based extension services to all categories of farmers to enable them to optimize the use of their resources in order to promote sustainable agriculture and socio-economic development". To implement its mission effectively, DAE has adopted a new extension policy that emphasizes food security, crop diversification, soil fertility, environment protection and gender dimension in the context of pro-poor service environment.

DAE's Block Supervisors cover each and every nook and corner of the country, however remote it is, to provide extension services at the farm level. They are also responsible for field application of the research output for better cultivation and better diffusion of produces. DAE is presently implementing a number of donor and GOB-funded projects for horticultural development in Bangladesh, which include, among others, projects on IPM, Crop Diversification, Irrigation Improvement, Integrated Area Development, Seed Production, Storage and Distribution, Small-holder Support, Integrated Agriculture Nutrition, Command Area Development, Food Security, etc.

Although DAE is not specifically working for export-oriented production programmes, yet its work directly or indirectly benefits export production of horticultural crops, as it has a unique network to reach each and every farmer to make them aware of the developments that are taking place in the markets, both local and international. So the field offices of DAE could constitute a good instrument to disseminate information to the field level stakeholders on various environmental and health issues, required to be implemented for export production, if they are properly organized, trained and motivated. Unfortunately, such orientation is yet very much limited and not up to the desired level.

7.4 Plant Protection Wing of DAE

Plant Protection Wing of DAE is, however, directly involved in implementation of plant health regulations through issuance of phytosanitary certificates and providing quarantine certificates. It is, therefore, working more as a regulatory body than as an extension body. As such, information

dissemination and follow up is not generally considered as its main function, although it belongs to the national extension agency and training is also one of its areas of activities. The Wing consists of five sections, i.e., Plant Quarantine Section, Pesticide Administration and Quality Control Section, Operation (Aerial & Forecasting) Section, Surveillance and Forecasting Section and Integrated Pest Management Section. Bangladesh, though a agricultural country, has to import bulk quantity of seeds and other plants and plant products. Annually, on an average 150,000 tons of plants and plant products are imported into Bangladesh, for which plant quarantine inspection is needed and this is provided through 15 quarantine check posts of this Wing set up at 15 different entry/exit points to and from the country.

Similarly, different commodities of plants and plant products are also exported to other countries annually. Presently, about 350,000 tons of various agricultural commodities mainly consisting of raw jute and jute products, handicrafts, as well as fruits and vegetables are being exported. These products are inspected before export and phytosanitary certificates issued. The practice followed for issuing phytosanitary certificates for fruits and vegetables is like this. The exporters notify the Plant Protection Wing in writing in prescribed form accompanied by the evidence of payment of required fee in a bank, at least 24 hours before the shipment time. The inspection team/inspector then visit the packhouse of the exporter, inspects the export consignment and issues the certificate. This inspection is, more or less, a visual observation and does not usually involve laboratory/ chemical test. It also seriously lacks modern laboratory and testing facilities. It may be mentioned that Bangladesh is a signatory to International Plant Protection Convention (IPPC). It is also a member of Asia & Pacific Plant Protection Commission with express commitment to formulate rules and regulations appropriate for plant protection and quarantine measures. Accordingly, Plant Quarantine Legislation was formulated for the country and this Wing of DAE is the custodian and implementation agency of this Law. Updating of the Law through reenactment is also the responsibility of this Wing.

7.5 **Bangladesh Agricultural Research Institute (BARI)**

BARI is a research organization under the Ministry of Agriculture. There are a number of research organizations, the most relevant one in context of fruits, vegetables and flowers is BARI. It is also quite a big organization with various research outstations apart from its main office in Dhaka. The organization has got 3 divisions, each looking after research, support services, and training and communication. The main mandate of BARI is to undertake extensive and intensive research work to develop new variety of seeds and protocol for improved production and cultivation of various agricultural crops, other than rice, jute, sugarcane and tea for which there are separate research institutes. BARI has a Horticulture Research Centre as well, which is specifically responsible for development of improved varieties of various types of fruits, vegetables and flowers for better production and marketing.

Although BARI does not have any direct role in implementation of environmental and quality standards imposed by various export markets, it is also directly or indirectly contributing towards the better quality management of horticultural produces through organizing seminars and training programmes at various levels on production technology, post harvest handling, quality control, etc.

7.6 **Bangladesh Agricultural Development Corporation (BADC)**

Bangladesh Agricultural Development Corporation happened to be one of the largest sector corporations under the Ministry of Agriculture in the past, looking after irrigation, feretilizer and seed. Its structure has, however, been down-sized now in the context of the privatization process of the government policy. Most of its activities have also been greatly reduced. Presently , its main activity centres around the supply of foundation seeds to the farmers, although it is also doing limited activities in other areas as well.

In the field of horticulture, it is, however, doing some good work through Horticulture Development Project. Under this project, it has set up 9 horticulture centres across the country and has been trying to develop quality horticultural produces, particularly fruits and vegetables for increased supply, both in the internal and external markets. It is also organizing various types of training programmes from time to time including farmers' training to give them orientation for improved production and marketing practices. BADC has created cold storage and packhouse facilities at the main international airport of the country in Dhaka to assist the exporters in preshipment packaging and storage of export produces.

7.7 **Bangladesh Standards and Testing Institution (BSTI)**

The organization directly responsible for setting up of national standards and harmonizing national standards with international standards is the Bangladesh Standards and Testing Institution. It is under the Ministry of Industry and works as the National Focal Point in standard setting and harmonizing. As a member country, Bangladesh follows/adapts Codex Food Standards and BSTI is the contact point in this matter. As the contact point, it regularly receives Codex standards, documents, technical laboratory tests, etc. and these are consulted by the experts engaged in preparation of food standards and implementing food control programme. BSTI is also a member-organization of ISO and represents in two of its Technical Committees. It has so far formulated 17,000 national standards including over 300 for food and horticultural products and services and also adapted ISO 9,000, ISO14,000 and HACCP as Bangladesh standards.

BSTI standards are not, however, at par with international standards and harmonization process with the international standards is also very slow, nor is there enough laboratory facilities and implementation mechanism within BSTI to enforce quality standard, particularly in the horticulture sector. Moreover, BSTI's work in fresh produce is virtually negligible.

7.8 **Export Promotion Bureau (EPB)**

Export Promotion Bureau, Bangladesh is the National Focal Point for promotion of export of all export-worthy commodities and products including horticultural produces. It is also represented in the WTO related National Advisory Committee and two of its five Working Groups. relating to Market Access and Customs Valuation. EPB works as the main executive arm of the Ministry of Commerce in export promotion and development. But in the matter of gathering, processing and disseminating information of international standards and environmental and health measures, it could not also do much either, excepting arranging some sporadic seminars here and there, mostly in the urban areas. It neither has any technical expertise, nor does it has enough trained manpower to go to the field level stakeholders and give them export market orientation. Although they have some linkage with private sector chambers and associations and some of them are also represented in their Governing Body headed by the Minister for Commerce, the information gathering and dissemination mechanism, particularly in SPS and other related matters proved to be week and inadequate.

7.9 **Bangladesh Tariff Commission (BTC)**

Bangladesh Tariff Commission which holds the office of the Chairman of the Working Group on Market Access is more a research based advisory body to the Government of Bangladesh in the Ministry of Commerce and has little responsibility for dissemination of information to the bottom level stakeholders. Whatever information it could gather and process, are normally used for policy analysis to advise the government and organize national level seminars and workshops to initiate the dissemination process. This sort of seminars and workshops for purposes of policy dissemination among the stakeholders are organized under the newly set up International Cooperation Wing of the Bangladesh Tariff Commission.

7.10 **Bangladesh Foreign Trade Institute (BFTI)**

BFTI is a non-profit public-private partnership and independent institution. The line Ministry is the Ministry of Commerce. Its main mandate is to act as a think-tank for the government and private sector on foreign and international trade, including negotiation on bilateral, regional and multi-lateral trade. Its activities also include providing training to government as well as private sector representatives, particularly trainers' training, on various international trade related issue, including SPS and other related matters.

This Institute was established only last year (2003) under Societies Act, and and could not yet create any impact. Its role is also limited to the Trainers' Training on SPS and other related matters and as such awareness creation and market-orientation down the stream does not fall within its range of activity.

7.11 **Private Sector Involvement**

In implementation of SPS activity and other WTO related matters, private sector at the level of leading Chambers of Commerce and Industries and product specific Associations are also involved and they are represented in both the National Advisory Committee and the various Working Groups. But their participation is more or less limited at the policy level only and not involved in the process of downstream implementation. Like many government agencies, they also organize seminars/workshops from time to time, either in collaboration with international agency like ITC (DCCI) or with their own capabilities (FBCCI), but that too seldom trickle down to horticultural farmers and exporters who mostly remain unaware, uninformed and unconcerned as before.

7.12 **Efficiency and Effectiveness of the Mechanism**

It does, therefore, appear that at policy level, some sort of a system has been put in place and it is working fairly well (although regular meetings of the various working groups as well as National Advisory Committee are still a problem area), but along the down stream at the operational level, implementation mechanism of gathering, processing, and disseminating information regarding environment and health related matters and standards is practically non-functional. Whatever mechanism exists, it is so loose that there is virtually no coordination between and among the agencies involved. As a result, proper follow up and monitoring system is neither in place, nor is it properly working. Although some work has been done and is still being pursued for overall quality improvement and upgradation of fruits and vegetables, this has little linkage with export market. Indirectly, however, various projects relating to IPM/organic farming (uncertified) here and there are contributing to the quality production and enhancement of the produce marketability, but this is yet at the pilot stage and not properly organized to establish linkage with the export market. The post-harvest handling problem also remains.

8. **CURRENT ADJUSTMENT APPROACH**

8.1 **At Policy Level**

At policy level, it is the responsibility of the concerned ministries to view WTO web site regularly and analyze the changes that are taking place in the export market from time to time due to enactment of various rules and regulations under SPS and other issues and initiate adjustment policies accordingly to win over the circumstances. Their responsibility also includes sending notifications to the WTO with regard to any policy changes that are taking place within the country, whether domestic support measures or any trade related support measures. For SPS and other related matters, Ministry of Agriculture is acting as the National Notification Point. So far as sending such notifications by the SPS National Notification Point is concerned, this has more or less become systematized, although

there were some inordinate delays in the past. But so far as the impact analysis of external rules and regulations of export markets is concerned, the system does not seem to be working at all and as such, little adjustment, if any, is taking place on the ground. For obvious reason, no national early warning system also works, nor is there any sub-regional and regional warning system found in operation.

8.2 At Field Level

As has already been stated under Section 6.2 that the members of the Bangladesh Fruits, Vegetables and Allied Products Exporters Association are responsible for over 90% of the export of fresh produces from Bangladesh. The members of the Association are little concerned with the changes that are taking place in the mainstream market area in the UK, as their exports are mainly directed to the lowest end ethnic market outlet and they do not find any problem in accessing to that market segment with the present nature of their exportables yet. Same is the case with the Middle Eastern countries as well. As a result, they are still following the traditional practice of *market-to-market approach*, rather than *production to market approach*, which is the need of the day. Moreover, they are neither properly oriented to the adjustment requirement, nor do they feel to bring about such adjustment, as their export is not presently suffering. As a consequence, no production level adjustment is also taking place in a way expected, because the farmers are neither aware of the adjustment need, nor are they concerned about it.

As stated before, there are, however, some work going on in the area of IPM for introducing an effective, safe, sustainable and economical crop production system, so as to discourage the application of harmful pesticides to the crops. Various donor agencies, particularly UNDP, FAO and DANIDA are supporting this programme through DAE, BARI and NGO and a general awareness is being created among the farmers, but the coverage of the programme is still very limited and as such, it cannot leave a perceptible impact on export.

9. ELEMENTS OF PROACTIVE APPROACH TO NATIONAL ADJUSTMENT POLICY

9.1. Proactive Approach Versus Reactive Approach

Proactive Approach as against Reactive Approach to respond to standardization need in the international market may, possibly, be identified as follows:

Strategic Response to Standards in Trade		
Approach	**Reactive**	**Proactive**
Exit	Wait for standards and give up	Anticipate standards and leave market
Loyalty	Wait for standards then comply	Anticipate standards and comply ahead
Voice	Complain when standards are applied	Negotiate before standards are applied

9.2 Policy Level

At policy level, the government machinery responsible for streamlining the adjustment process to effectively respond to the international standardization need in various sectors including horticulture claims that its approach is always proactive and never reactive. It tries to anticipate the impacts of the various standards being imposed by the developed countries and get prepared accordingly to comply with such standards, so that the country is not caught completely unaware. It also claims that it cannot afford to adopt any reactive approach, as the country is to survive and sustain

in export business and horticulture is considered as one of the few sectors having potentials for export from Bangladesh.

But the claim cannot be substantiated in the absence of any appropriate coordination and monitoring system throughout the supply chain, as has already been seen in the preceding sections, nor is there any adequate proof of responding to standard in time. Even in shrimp industry, which is one of the most successful export sectors, the country could not get adjusted to HCCAP standard well ahead of time and had to face import ban at a particular point of time. When this ban was imposed, the whole machinery got reactivated and situation gradually started improving. This is *loyalty*, no doubt, but can not possibly, be considered as *proactive* approach. Similarly, although in multilateral forum, Bangladesh plays its role as a mouthpiece of LDCs, *proactive* voice is hardly heard in any important bilateral negotiation within the framework of multilateral system, particularly in respect of standard setting by the import countries in areas, like horticulture.

9.3 **Operational Level**

This is, however, nothing peculiar for Bangladesh. All developing countries, particularly LDCs, are more or less in the same boat. As compared to developed countries, these countries are more vulnerable to the adverse effects of the environmental (health) measures in market access and competitiveness. There are various reasons for this, some of which are as follows:

- Lack of infrastructural facility;
- Lack of access to information;
- Lack of coordination and monitoring system;
- Limited technology choice;
- Inadequate access to environment-friendly raw materials;
- High compliance cost, particularly for SMEs;
- Lack of knowledge and skill;
- Vulnerability to market access barriers;
- Diseconomics of scale of operation;
- Difficulties in harmonizing;
- Organizational problems of SMEs.

In view of these problems and difficulties, neither exporters, nor growers can afford to adopt *proactive policy* and as such, prefer to remain satisfied with the existing pattern of business. No impact assessment study has also been done that way which can reveal the problems and as such, the business entities will suffer in the absence of *proactive approach*.

9.4 **Supply Chain Management**

The situation has further been aggravated by the private sector operators in the export markets. They are increasingly demanding stringent environmental/health related measures to comply with by the suppliers. Thus voluntary standards/codes and benchmarks are proliferating. The EUREP-GAP is a case in example. It seeks to provide a framework for independent verification of minimum social, environmental and food safety standards throughout the supply chain for compatible production of fruits, vegetables and flowers. Such measures are creating complications, as the farmers in Bangladesh are small and mostly illiterate. They can neither respond to questionnaires, traceability and audit requirements, nor can they afford to bear the additional cost involved in the implementation of the EUREP-GAP. This standard is also creating a bias towards the operation of large farms to the disadvantage of the small farms which are likely to be crowded out in course of time. The supply chain management can, however, offer opportunities or private sector cooperation, if properly organized and found cost effective.

9.5 Market Assessment and Cost of Compliance Analysis

For setting up an adjustment strategy to environmental and health requirements in international markets, it is important to analyze what impact it is going to have on the horticulture sector as an export industry; and the country as a whole, both in the short run and in the long run.

If the benefit of the adjustment is more than the cost involved, it will be justified, otherwise not. It, therefore, requires serious study on *impact assessment* and *cost of compliance*. Win-win situation could only arise, if such study shows increased resource efficiency or premium export price. In the absence of any such serious study in Bangladesh, no conclusion can be arrived at as to whether *proactive adjustment* policy in horticulture export sector will strengthen Bangladesh position in the market places in the face of severe competition with other horticultural produce exporting countries. It is not enough to know that Bangladesh is traditionally an agricultural country with suitable soil and climatic condition and having abundant supply of inexpensive labour; it is also important to know what benefit the country is going to derive through the adjustment process vis-a-vis the competing countries.

9.6 National Standard Setting, Implementation of Foreign Standards and Compliance Assessment Procedures

These issues have already been discussed before. BSTI is the national institution responsible for national standards setting and monitoring. Its role also includes harmonization of the national standards with the international standards and exploring the possibility of regional cooperation in this matter. It has, however, been seen in Section 7.7 that it has established quite a good number of national standards, but harmonizing with international standards, particularly in view of the changes that are taking places from time to time, is relatively slow and its monitoring system is also weak. So far as the compliance procedures are concerned, particularly in horticulture sector, it is the responsibility of the Plant Protection Wing of the DAE, as the issuing authority of the phytosanitary certificates. While issuing the certificates, it is supposed to examine whether the produces meet the specific requirement of the market where they are going and even undertake testing, if necessary, but in actual practice, it neither has adequate laboratory facilities for residue testing as per market need, nor does it go in such depth. As a result, it normally issues certificates on the basis visual inspection in the same way for all crops for all the countries. In that respect, the compliance and conformity assessment procedures being followed is not up to the desired level.

9.7 Pre-standard Setting Consultation in Export Markets and Participation in International Standard Setting Meetings

This is normally done and the concerned government organizations are usually represented in pre-standard setting consultation and also in sectoral standard setting discussions. This is more or less carried out as a routine work without putting in serious home work. As such, it needs more professional approach and calls for need-based capacity build up. It is also important to see that consultation meetings are represented by the technical people who are experienced and knowledgeable in the matter. At policy level consultation also, policy makers of concerned areas should represent for better participation and greater benefit.

10. CAPACITY BUILDING

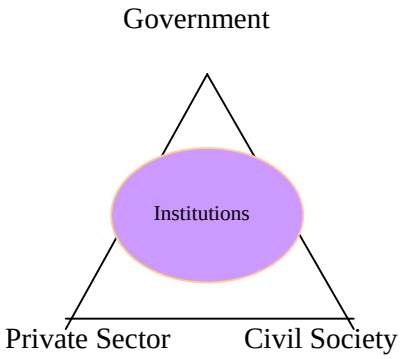
10.1. A Total Approach Needed

It appears from the preceding Sections that like many other developing countries, particularly LDCs, Bangladesh needs capacity building in almost all areas to cope up with the emerging situation

in the export markets of horticultural produces. This means that there is a lack of awareness, infrastructure, coordination and cooperation as well as institutionalization of such activities. In addition, the adjustment policies are mostly *reactive* rather than *proactive* in nature, which also has to be taken care of. Considering all these aspects, the means of capacity building may be identified as follows:

- Awareness and recognition:
  - Users
  - Implementers
  - Policymakers
- Physical infrastructure
- Human resources/training
- Institutional build up

The capacity building should not also get confined to government institutions only, rather it should also cover private sector organizations, like Hortex Foundation, Chambers of Commerce, product associations, as well as civil society. This should be done in such a way that the system works in a coordinated way, creating awareness up to the ground level and organizing farmers for quality production and channelizing market-oriented export through market mechanism. Institutional support for all concerned agencies and policy support for the government should also be forthcoming. NGOs could also be synchronized in the process. The capacity building structure should, therefore, look like this:



10.2 Capacity Building to be Sustainable

It is quite clear that Bangladesh, like many other developing countries, has inefficient technical capacity to efficiently manage the highly complicated matter of environmental and health issues. Typically, essential facilities like modern laboratories are not there, whatever laboratories are there, they are not adequately staffed with trained manpower, scientific equipment are mostly obsolete and there is no systematic collection and recording system of information. Infrastructual facilities like packhouse in the production area are practically non-existent. High cost of conformity assessment, including testing in threshholds of residues is also a serious problem. This situation is unlikely to improve in the short run and as such, the *capacity building* support should also take the form of *capacity development* support over a period of time in a sustainable manner.

10.3 Technical Assistance

As a developing country with the status of an LDC, it is neither possible, nor feasible for Bangladesh to undertake such a huge capacity building task ahead. As such, technical assistance and financial support could be the only way out and this has also been adequately provided for under Articles 10 and 11 of the final Uruguay Round Agreement. Although some form of technical assistance initiative is visible here and there, nothing is understood to have yet been concretized to

facilitate the fulfillment of environmental and health requirements of external markets and thus ease market access. Even if, one or two such piecemeal initiative materializes, it will not solve the problem, as the problem is multi-facet and varied in nature. This, therefore, calls for a holistic and systematic approach in technical and financial assistance programme of various donor agencies, so that the capacity building need, in its totality, is properly assessed and addressed. International organization like UNCTAD may possibly undertake this coordinating role of *capacity building* as well as *capacity development* in the area of environmental/health requirements, market access and export competitiveness of horticultural produces from Bangladesh.

11. CONCLUSIONS AND RECOMMENDATIONS

11.1 Conclusions

Although not yet a major supply source, Bangladesh seems to have a high potential for export development of horticultural crops, particularly in fruits and vegetables. She has got the natural advantage of favourable soil and climatic condition and abundant supply of inexpensive labour force. This, coupled with the market *niches* in Europe in winter and in Middle East in summer, holds a good prospect for export growth in future and these are present market directions as well. More than 95% of the Bangladeshi fruits and vegetables are now finding their way to the UK and 6 other Middle Eastern countries (Saudi Arabia, UAE, Kuwait, Qatar, Bahrain and Oman) , but this 95% is nowhere near the total market requirement, not even 1% of the demand of the UK market alone. It is, thus, the supply problem and not the demand problem that appears to be a disturbing factor till today.

But things have started changing now. Although the main market outlets are still following liberal policies for import of Asian fruits and vegetables for ethnic market segment, the operators in the upstream and wholesale market outlets have started asking for more restrictive standards to comply with by the supply sources for health and environmental reasons, the compliance of which is extremely difficult for a developing country like Bangladesh which is highly dominated by small holders in the production as well as distribution and marketing process. The government machinery is not also properly geared up to take up the challenge, nor is the private sector yet ready to bring in the desired transformation. There is a serious lack of orientation, follow-up, monitoring and coordination at all levels and no efforts are visible for proactive adjustment approach in respect of impact assessment, compliance requirement and supply management.

To survive and sustain in the export market in this context and to ensure and enhance market access and export competitiveness, capacity building is an important requirement. This capacity building has to be multi-facet and comprehensive, so that all the areas and sectors needing such support are taken care of and a total approach is followed. Broad based financial and technical assistance and that too in a coordinated manner is, therefore, the need of the country at the moment.

11.2 Recommendations

To meet the challenges of the stringent sanitary and health requirements of the market places and ensure to supply *clean and safe* food from *farm to table* for enhancing market access and export competitiveness, following recommendations are, therefore, put forward:

- ***Impact assessment study***: A serious study of the possible impact of the noncompliance to the stringent environmental and health standards, both mandatory and voluntary, being put in market places, is an immediate necessity.

- ***Study of cost of compliance***: Cost of compliance to EUREP-GAP and other food safety standards also needs to be studied, taking Bangladesh's peculiar agri-production structure in view, with an objective cost-benefit analysis, justifying such transformation.
- ***Awareness and recognition***: That the traditional way of exporting fresh fruits and vegetables is a problem has to be properly understood and recognized by all concerned agencies, policy makers, implementers and users, so as to promote widespread implementation of food safety standards, including orientation and organization of the small farmers.
- ***Physical infrastructure***: Physical infrastructure, particularly in the area of packhouse, cool chain, laboratory services and quality management need to be put in place to respond effectively to the buyers' requirements regarding health and environmental issues.
- ***Human resources/training***: To ensure that regulatory measures are carried out, as intended, and coordinating role is played, as desired, trained and motivated staff is necessary. Besides, hand-on training with practical exercises is relevant to quality production and supply management, Research and Development should also go hand in hand.
- ***Institutional capacity build up***: For taking care of all these issues and measures effectively and efficiently and ensuring proper monitoring and follow up system, institutional capacity building is a *sine quo non*. This institutional capacity building should take place in government machinery, private sector including NGO and even civil society, so that the approach taken is a total approach with widespread and well-coordinated involvement of all the stakeholders.
- ***Donor assistance***: As a developing country with the status of an LDC, it is neither possible, nor feasible for Bangladesh to undertake such a huge capacity building task. This, therefore, calls for donor support in the form of both financial and technical assistance and that too in a coordinated and comprehensive way to maximize the benefit.

ANNEX-A

GENERIC OUTLINE FOR THE NATIONAL CASE STUDY ON ENVIRONMENTAL REQUIREMENTS, MARKET ACCESS/ENTRY AND EXPORT OMPETITIVENESS IN THE HORTICULTURE SECTOR

The national case study on environmental requirements, market access/entry and export competitiveness in the horticulture sector (fruits, vegetables and flowers) shall be structured as follows:

1. **Identification of environmental/health requirements in key export markets**:

   Firstly, the study shall identify the environmental and health requirements in key export markets. The study shall identify approximately 3 to 5 key export markets, of which one at least in the developing world if relevant, and for each market identify the environmental and health requirements for the sector in analysis.

2. **Awareness on the issue and effectiveness of information management:**

   The study shall report on the level of awareness of national producers, in particular of Small and Medium-sized Enterprises, on environmental and health requirements in key export markets.

   Moreover, the study shall identify which are the existing mechanisms(such as national enquiry points) for the gathering, processing and dissemination of information on new and forthcoming environmental and health requirements in key export markets and analyze the level of efficiency and effectiveness of such mechanisms. In particular, report if there are any national or sub-regional early warning systems.

3. **Current adjustment approach:**

   The study shall analyze the current adjustment approach, describing what action is taken to respond to environmental and health requirements in export markets.

4. **Elements of a pro-active approach and the need for institutional capacity building:**

   The study shall underline which are elements of a pro-active approach in the national adjustment strategies to environmental and health requirements in international markets. In particular analyze the experience with regard to national standard setting, implementation of foreign standards and compliance assessment procedures (including opportunities for harmonization of national standards with standards in export markets) and the possibilities of regional cooperation in this regard.

   The analysis shall also review active participation in (i) pre-standard-setting consultations in export markets and in (ii) international standard setting for the sector in exam.

   Furthermore, the study shall report on (i) whether the potential effect of environmental measures taken by developed countries is assessed and how; and on (ii) adjustment strategies aimed at reducing adjustment costs and harnessing developmental benefits of higher environmental requirements (e.g. improved economic efficiency and export competitiveness).

The study shall also identify which are the areas where institutional capacity building is needed in order to design and implement pro-active adjustment policies to environmental requirements in key export markets.

ANNEX-B

INDICATIVE QUESTIONNAIRES USED FOR:

A. National Enquiry Point

1. As the National Enquiry Point, what role is the WTO Cell playing? Is there any separate Enquiry Point on SPS and other related matters?

2. How is the Enquiry Point working, particularly in SPS and TBT matters?

3. Apart from National Enquiry Point, is there any separate National Notification Point? Are the national notifications regularly sent to the WTO, if so, under which mechanism?

4. What is the mechanism of informing the stakeholders, particularly in the horticulture sector, of any environment and health related changes (measures/standards) in the export market places? How is the private sector involved?

5. Is there any national early warning system in this respect?

6. How does coordination take place between and among the various quality enforcement and standardization bodies? Is there any monitoring system for implementation of quality and standardization at the field level?

7. What is the current adjustment policy and responding mechanism to environment, health and safety regulations in horticultural export?

8. Is there any proactive approach in the national adjustment strategies on national standard setting, implementation of foreign standard and compliance procedures (including harmonization of national standards) of foreign standard related to horticulture?

9. Has there been any assessment of cost implications in respect of compliance of international food and safety standards, like EUREP-GAP? If so, what is the level of compliance cost?

10. Whether there has been active participation in: (i) pre-standard setting and (ii) international standard setting consultations for horticulture crops ?

11. Whether (i) the impact of environmental/health measures taken by the developed countries, particularly in food and horticulture sector has ever been assessed and if so, how and (ii) any adjustment strategies aimed at reducing adjustment cost and harnessing development benefit are there in place and if so, what are the strategies and how do they work?

12. Which are the areas where institutional capacity building is needed in the implementation process of various measures/standards in horticulture export sector?

B. **SPS Related Working Group**

1. How frequently does the Working Group meet and discuss about various related matters?

2. Do you regularly visit the WTO web site to see whether there is any new notifications and analyze what could be their implications on the agribusiness sector for export?

3. How are the downstream stakeholders made aware of the environmental/health related changes that are taking place in export countries, particularly for fruits and vegetables?

4. What is the coordination mechanism between the Working Group and the various implementation agencies under the Ministry responsible for bringing in changes in quality matters through training, extension and advisory services? Is it properly working?

5. Do you involve private sector in such coordination mechanism? If so, how.

6. What is the current adjustment policy approach for adaptation and harmonization of international standards under SPS and environmental measures?

7. Whether any assessment has been made of the possible effect to environmental/health standards of the developed countries on the agriculture sector in Bangladesh?

8. Have you ever assessed adjustment cost compliance to international standards/measures being increasingly imposed by developed countries?

9. Do you feel the need for donor agency support for capacity building to face the challenges ahead under SPS/health related measures. If so, what are the areas where you feel the capacity building assistance will be useful?

C. **BSTI**

1. What is the role of BSTI in respect of SPS and other related measures? How many standards have BSTI set so far in the area of vegetable sector? Are they in conformity with international standards?

2. What is your present mechanism for monitoring of the implementation of the standards that you set? Is it sufficient and properly equipped?

3. Do you have enough laboratory facility for setting and implementation of standards?

4. Do you regularly participate in pre-standard/standard setting consultations in export markets? Is it properly represented?

5. Do you have any future plan to expand the coverage of standardization and implementation? If so, how?

6. What do you think could be the proactive approach in national adjustment strategy to environmental and health requirements in the external markets?

7. What is the capacity building need that you feel for BSTI?

D. **DAE**

1. What are the extension services that you are providing to the horticulture sector?

2. Are your field staff adequately informed and trained of the changes that are taking place in the export markets on quality matters?

3. Are your staff passing on the information at the farmers level and providing them adequate training to adhere to the changing world requirements?

4. How many projects do you presently have and how many of these projects are directly related to quality and pesticides management? What are the names of the projects?

5. Do you have any systematic approach to transform to quality horticultural production with adherence to international standards, like EUREPGAP, traceability, MRL, etc.?

6. Do you face any problem in introducing this requirement to horticulture? If so, what are they and how do you propose to solve them?

7. Can you take the role of organizing the small farmers to produce market-oriented horticultural crops for supply to exporters? If yes, how do you propose to do that? If not, why?

E. **Plant Protection Wing of DAE**

1. What standards do you follow for implementation of Plant Protection Law and how?

2. Do you participate in standard setting process? If so, how?

3. How do you inspect fresh produce exportables for issuing phytosanitary certificates for export?

4. Are you aware of the country-wise market requirements? If so, do the phytosanitary cerficates issued by you satisfy these requirements?

5. Do you have adequate testing and laboratory facilities to meet the quality requirements of import markets upto their expected level? If no, what are the areas lacking?

6. What are you doing to improve the quality production of horticultural crops in the country? Do you have any project in this regard? If so, which are they?

7. How do you think that the harmonization process of Bangladesh standards with international standards can be taken care of? Do you have any role in that?

8. Do you find any distortion in the present organizational structure in the country in respect of quality management and monitoring?

9. Do you have any capacity building need? If so, which are the areas?

F. **Exporters**

1. What is the present practice that you follow in collecting fresh produces for export? Do you find any difficulties in the process?

2. What sort of packaging materials do you use for export of your produces? Are these acceptable in the market?

3. Where are you exporting now? Do you have any quality problem in the market?

4. Are you aware of the growing environmental/health requirements in the export markets? If so, what are the measures that you have taken to adjust with such changes?

5. Do you have any direct linkage with the producers/farmers for supply of export crops? If not, do you intend to have it in future?

6. Have you ever heard about the EUREP-GAP, MRL, traceability, etc.?

7. Do your existing buyers want you to send better quality products in better packaging or have they given you any indication of fulfilling stiffer market requirements in the days ahead?

8. What is the most serious problem that you face at the moment and how you propose to solve it?

9. What is your opinion regarding the activities of your Association? Do think that it should be more proactive and development-oriented?

G. **Producers/farmers**

1. How are you producing vegetables/fruits? Do you think vegetables/fruits are more profitable?

2. How do you market your produce? Do you find any problem in the present way of marketing?

3. Do you think that you are getting fair price for your crop? If not, why? What are your suggestions for improvement in the system?

4. Do you know that indiscriminate use of chemicals and pesticides in the production of fruits and vegetables is harmful for human beings? Do you want to avoid/reduce its uses?

5. Do you know that your product is also exported and the buyers in the export markets are very conscious about quality?

6. Do you have any linkage with the exporters of fruits and vegetables?

7. What sort of services do you receive from the extension people? Do they regularly visit you and give you advice and training on improved methods of cultivation, harvesting and post-harvest management?

ANNEX-C

Area and Production of Horticultural Crops from 1997-98 to 2002-2003

1. Total Cropped Area in acres (1997-98): 34727000

Crops	Area (Acres)	% of Total Cropped Area	Production (MT)	Yield/acre (MT)
Winter vegetables	296000	0.85	888000	3.00
Summer vegetables	200000	0.58	419000	2.10
Total vegetables	**496000**	**1.43**	**1307000**	**2.64**
Fruits	456000	1.31	1495000	3.28
Spices and condiments	355000	1.02	317000	0.89
Total Potato	337000	0.97	1553000	4.61
Total horticultural crops	**1644000**	**4.73**	**4672000**	**2.84**

2. Total Cropped Area in Acres (1998-99): 34082000

Crops	Area (Acres)	% of Total Cropped Area	Production (MT)	Yield/acre (MT)
Winter vegetables	364000	1.07	1059000	2.91
Summer vegetables	208000	0.61	424000	2.04
Total vegetables	**572000**	**1.68**	**1483000**	**2.59**
Fruits	458000	1.34	1430000	3.12
Spices and condiments	620000	1.82	396000	0.64
Total Potato	605000	1.78	2762000	4.57
Total horticultural crops	**2255000**	**6.62**	**6071000**	**2.69**

3. Total Cropped Area in Acres (1999-2000): 35495000

Crops	Area (Acres)	% of Total Cropped Area	Production (MT)	Yield/acre (MT)
Winter vegetables	366000	1.03	1057000	2.98
Summer vegetables	243000	0.68	502000	1.41
Total vegetables	**609000**	**1.72**	**1559000**	**2.56**
Fruits	451000	1.27	1404000	3.11
Spices and condiments	623000	1.76	401000	0.64
Total Potato	601000	1.69	2933000	4.88
Total horticultural crops	**2284000**	**6.43**	**6297000**	**2.76**

4. Total Cropped Area in Acres (2000-01):35408000

Crops	Area (Acres)	% of Total Cropped Area	Production (MT)	Yield/acre (MT)
Winter vegetables	379000	1.07	1065000	2.81
Summer vegetables	247000	0.70	513000	2.08
Total vegetables	**626000**	**1.77**	**1578000**	**2.52**
Fruits	473000	1.34	1486000	3.14
Spices and condiments	624000	1.76	397000	0.64
Total Potato	616000	1.74	3216000	5.22
Total horticultural crops	**2339000**	**6.61**	**6677000**	**2.85**

5. Total Cropped Area in Acres (2001-2002): 34615000

Crops	Area (Acres)	% of Total Cropped Area	Production (MT)	Yield/acre (MT)
Winter vegetables	*362000*	*1.05*	*1043000*	*2.88*
Summer vegetables	*253000*	*0.73*	*524000*	*2.07*
Total vegetables	***615000***	***1.78***	***1567000***	***2.55***
Fruits	*481000*	*1.39*	*1547000*	*3.22*
Spices and condiments	*623000*	*1.80*	*418000*	*0.67*
Total Potato	*587000*	*1.70*	*2994000*	*5.10*
Total horticultural crops	***2306000***	***6.66***	***6526000***	***2.83***

6. Total Cropped Area in Acres (2002-03): 35005000

Crops	Area (Acres)	% of Total Cropped Area	Production (MT)	Yield/acre (MT)
Winter vegetables	*366000*	***1.05***	*1034000*	*2.83*
Summer vegetables	*259000*	***0.74***	*591000*	*2.28*
Total vegetables	***625000***	***1.79***	***1625000***	***2.60***
Fruits	*499000*	***1.43***	*1631000*	*3.27*
Spices and condiments	*626000*	*1.79*	*425000*	*0.68*
Total Potato	*606000*	*1.73*	*3386000*	*5.59*
Total horticultural crops	***2356000***	***6.73***	***7067000***	***3.00***

Source: Yearbook of Agricultural Statistics of Bangladesh 2000 & 2001 and Statistical Bulletin of Bangladesh, January, 04

ANNEX-D

EXPORT DIRECTIONS OF FRUITS AND VEGETABLES IN 2001-2002 & 2002-2003

(Value in thousand**)**

Countries	2002-2003			2001-2002		
	Taka	Dollar	% of total	Taka	Dollar	% of total
U.K.	217578	3758	28.38	214284	3733	24.37
Saudi Arabia	175417	3030	22.88	184018	3205	20.93
U.A.E.	106876	1846	13.94	155365	2706	17.67
Kuwait	97316	1681	12.69	94260	1642	10.72
Qatar	49232	850	6.42	59479	1036	6.77
Bahrain	44154	763	5.76	47739	832	5.43
Oman	39094	675	5.10	53021	924	6.03
Singapore	12102	209	1.58	13931	243	1.58
Italy	6538	113	0.85	7774	135	0.88
Germany	5702	98	0.74	13329	232	1.52
France	3082	53	0.40	4684	82	0.53
Malaysia	2484	43	0.32	1570	27	0.18
Uganda	1180	20	0.15	-	-	-
Greece	975	17	0.13	957	17	0.11
U.S.A	962	17	0.13	2536	44	0.29
Kenya	750	13	0.10	-	-	-
Ukraine	559	10	0.07	-	-	-
Netherlands	439	8	0.06	2393	42	0.27
Pakistan	395	7	0.03	66	1	0.01
Sweden	385	7	0.05	143	2	0.02
Bhutan	306	5	0.04	-	-	-
Bulgaria	263	5	0.03	-	-	-
Spain	198	3	0.03	-	-	-
Japan	197	3	0.03	83	1	0.01
Thailand	155	3	0.02	-	-	-
Australia	132	2	0.02	-	-	-
Andora	129	2	0.02	176	3	0.02
Taiwan	94	2	0.01	-	-	-
Belgium	59	1	0.01	2916	51	0.33
Canada	-	-	-	3772	66	0.43
China	-	-	-	2013	35	0.23
Costa Rica	-	-	-	843	15	0.10
Hongkong	-	-	-	3703	65	0.40
Korea Rep.	-	-	-	228	4	0.03
Local Sale	-	-	-	8445	147	0.96
P.N.G.	-	-	-	548	10	0.06
Panama	-	-	-	848	15	0.10
Total:	**766749**	**13243**	**100.00**	**879124**	**15313**	**100.00**

Source: EPB

ANNEX-E

Ranking of 7 Top Market Outlets of Fruits and Vegetables (1999-2003)

Rank	1998-99(July-June)		1999-2000 (July-June)		2000-2001(July-June)		2001-2002(July-June)		2002-2003(July-June)	
	Country	Export (US$ M)	Country	Export (US$ M)	Country	Export (US$ M)	Country	Export (US$ M)	Country	Export (US$ M)
1.	UK	6.04(34%)	UK	3.66(26%)	UK	3.23(25%)	UK	3.73(24%)	UK	3.76(28%)
2.	Saudi Arabia	3.14(18%)	Saudi Arabia	2.73(19%)	Saudi Arabia	2.43(19%)	Saudi Arabia	3.21(21%)	Saudi Arabia	3.03(23%)
3.	Bahrain	2.72(15%)	UAE	1.79(13%)	UAE	2.07(16%)	UAE	2.71(18%)	UAE	1.85(14%)
4.	Kuwait	1.86(11%)	Kuwait	1.75(12%)	Kuwait	1.86(15%)	Kuwait	1.64(11%)	Kuwait	1.68(13%)
5.	UAE	1.38(8%)	Qatar	1.40(10%)	Qatar	0.79(6%)	Qatar	1.04(7%)	Qatar	0.85(6%)
6.	Qatar	0.97(5%)	Bahrain	1.12(8%)	Oman	0.73(6%)	Oman	0.92(6%)	Bahrain	0.76(6%)
7.	Oman	0.51(4%)	Oman	0.51(4%)	Bahrain	0.60(5%)	Bahrain	0.83(5%)	Oman	0.68(5%)
	Sub-Total	16.62(94%)	Sub-Total	12.96(93%)	Sub-Total	11.71(92%)	Sub-Total	14.08(92%)	Sub-Total	12.64(95%)
8.	Others(18)	1.06(6%)	Others(25)	1.04(7%)	Others(17)	1.08(8%)	Others(21)	1.23(8%)	Others(22)	0.60(5%)
	Total	17.68(100%)	Total	14.00(100%)	Total	12.79(100%)	Total	15.31(100%)	Total	13.24(100%)

Source: Bangladesh Export Statistics: 1999-2000, 2000-2001, 2001-2002 and 2002-23003

ANNEX-F

LIST OF THE EXPORTABLE FRUITS AND VEGETABLES FROM BANGLADESH

Sl.No.	English name	Local name
Exportable Vegetables		
1.	Bitter gourd	Karala
2.	Yard long bean	Barbati
3.	Okra	Dherosh
4.	Bottle gourd/Dudhi	Bottle gourd
5.	Ash/wax gourd	Jali kumra
6.	Snake gourd	Chichinga/Kohi
7.	Sponge gourd	Dundul
8.	Green Chilli	Kacha Marich
9.	Ridge gourd	Jhinga/Tury
10.	Pumpkin/Sweet gourd	Misti Kumra
11.	Pointed gourd	Patal/Palwal
12.	Teasle gourd	Kakrol/Kantola
13.	Cucumber	Shasa
14.	Broccoli	Sabuj Phulkopi
15.	Hyacinth bean/Lablab bean	Deshi seem
16.	French bean	French bean
17.	Small cucumber	Khira
18.	Potato	Gool Alu
19.	Egg Plant/Brinjal	Kalo Begun
20.	Taro	Pani Kachu
21.	Eddoe	Mukhi Kachu
22.	Coco Yam	Dood kachu
23.	Yautia	Moulavi Kachu
24.	Giant Taro	Mankachu
25.	Aroid	Kachu
26.	Stolon of Taro	Kachur Lati
27.	White Yam	Mattay Alu
28.	Air potato	Pesta Alu
29.	Elephant foot yam	Olkachu
30.	Green Papaya	Kacha papay
31.	Drumstick	Shajna
32.	Plantain	Kacha Kola
33.	Banaba Flower	Kolar Thor/Mocha
34.	Water Lily	Shapla
35.	Pea seed	Motor shuti
36.	Stem Amaranth	Danta
37.	Red Amaranth	Lalshak
38.	Indian Spinach	Puishak
39.	Spinach	Palong shak
40.	Kangkong	Gimakalmi shak
41.	Sweet potato	Mistikumra
42.	Jute leaf	Patshak
43.	Rajatpata	Rajatpata
44.	Betel leaf	Pan
45.	Stem Amaranth leaf	Danta Shak
46.	Leaves of Aroid	Kachur pata
47.	Stem of Aroid	Kachur Doga
48.	Naga hot chilli	Naga Marich
49.	Onion leaf	Piaj pata
50.	Matured Wax gourd	Chuna Jali Kumra
51.	Stem of Banana	Kolar Anaj
52.	Hyacinth bean seed	Seemeer Bichi
53.	Bottle gourd leaf	Lau shak
54.	Cabbage	Badha Kopi
55.	Coriander leaf	Dhaney Pata

Annex-F

(Continued)

Sl.No.	English name	Local name
Exportable Fruits:		
56.	Jackfruit	Kathal
57.	Jackfruit seed	Kathaler Bichi
58.	Ada Lebu	Ada Lebu
59.	Mango	Aam
60.	Green Tender Mango	Kacha Aam
61.	Jara Lebu	Jara Lebu
62.	Green Betel Nut	Kacha Supari
63.	Satkora	Satkora
64.	Hog Plum	Amra
65.	Pummelo	Batabi Lebu
66.	Lemon	Elachi Lebu
67.	Guava	Peara
68.	Jamon	Kalojam
69.	Wax apple	Zamrul
70.	Wood apple	Bel
71.	Toikor	Toikor
72.	Elephant Foot Apple	Kodthbel
73.	Lotkon	Lotka
74.	Litchi	Litchu
75.	Sapota	Sapodita
76.	Carambola/Star fruit	Kamranga
77.	Baby Pineapple	Anarosh
78.	Jujubi/Ber	Kull/Boroi
79.	Indian Olive	Jalpai
80.	Tamarind	Tetul
81.	Water Chestnut	Pani Fall
82.	Karonda	Karamcha
83.	Elephant Apple	Chalta
84.	Custard Apple	Sharifa
85.	Kauphal	Kauphal
86.	Dayphal	Dayphal
87.	Bullock’s Heart	Ata phal
88.	Others	

ANNEX-G

FRUITS REQUIRING PHYTOSANITARY CERTIFICATES FOR ENTRY INTO THE UK

Botanical Name	Common Name	Origin	Requirement
Annona	Custard apple	Non-European countries Non-EC European countries	Phytosanitary certificate None
Citrus and hybrids	Orange, lemon, lime, etc.	All non-EC countries	Phytosanitary certificate
Cydonia	Quince	Non-European countries Non-EC European countries	Phytosanitary certificate None
Diospyros	Persimmon, date plum	Non-European countries Non-EC European countries	Phytosanitary certificate None
Portunella and hybrids	Kumquat	All non-EC countries	Phytosanitary certificate
Malus	Apple	Non-European countries Non-EC European countries	Phytosanitary certificate None
Mangifera	Mango	Non-European countries Non-EC European countries	Phytosanitary certificate None
Passiflora	Passion fruit	Non-European countries Non-EC European countries	Phytosanitary certificate None
Poncirus and hybrids	Ornamental citrus	All non-EC countries	Phytosanitary certificate
Prunus	Includes cherry, plum, peach, apricot	Non-European countries Non-EC European countries	Phytosanitary certificate None
Psidium	Guava	Non-European countries Non-EC European countries	Phytosanitary certificate None
Pyrus	Pear	Non-European countries Non-EC European countries	Phytosanitary certificate None
Ribes	Gooseberry, blackcurrant, redcurrant	Non-European countries Non-EC European countries	Phytosanitary certificate None
Syzygium	Jambolan and rose apple	Non-European countries Non-EC European countries	Phytosanitary certificate Non
Vaccinium	Cranberry, blueberry	Non-European countries Non-EC European countries	Phytosanitary certificate None
All other fruit		All non-EC countries	None

Note: Fruit must be free from leaves and peduncles
Source: Defra, UK

CUT FLOWERS, FOLIAGES AND VEGETABLES REQUIRING PHYTOSANITARY CERTIFICATES FOR ENTRY INTO THE UK

(ANNEX-G Continued)

Botanical Name	Common Name	Origin	Requirement
Coniferae (note tighter restrictions on certain genera; see below)	Conifers	All non-EC countries	Phytosanitary Certificate
Orchidaceae	Orchids	Thailand Other non-EC countries All non-EC countries	Phytosanitary Certificate None Phytosanitary Certificate
Abies	Fir	Non-European countries Non-EC European countries	Prohibited Phytosanitary Certificate
Acer macrophyllum	Big leaf maple, Oregon maple	USA	Phytosanitary Certificate
Acer saccharum	Sugar hard or rock maple	North America	Phytosanitary Certificate
Aesculus californica	California buckeye	USA	Phytosanitary Certificate
Apium graveolens	Celery, celeriac	All non-EC countries	Phytosanitary Certificate
Arbutus menziesii	Madrone	USA	Phytosanitary Certificate
Arctostaphylos spp	Bearberry, Mazanita	USA	Phytosanitary Certificate
Aster	Aster	Non-European countries	Phytosanitary Certificate
Castanea (with leaves)	Sweet chestnut	Non-European countries Non-EC European countries	Prohibited Phytosanitary Certificate
Castanea (without leaves)	Sweet chestnut	All non-EC countries	Phytosanitary Certificate
Cedrus	Cedar	Non-European countries Non-EC European countries	Prohibited Phytosanitary Certificate
Chamaecyparis	False cypress	Non-European countries Non-EC European countries	Prohibited Phytosanitary Certificate
Citrus and hybrids	Orange, lemon, lime etc.	All non-EC countries	Prohibited
Dendranthema	Chrysanthemum	All non-EC countries	Phytosanitary Certificate
Dianthus	Pink, carnation	All non-EC countries	Phytosanitary Certificate
Eryngium	Sea holly, Eryngo	All non-EC countries	Phytosanitary Certificate
Fortunella and hybrids	Kumquat	All non-EC countries	Prohibited
Gypsophila	Gypsophila	All non-EC countries	Phytosanitary Certificate
Heteromeles arbutifolia	Toyon	USA	Phytosanitary Certificate
Hypericum	St John's wort	Non-EC countries	Phytosanitary Certificate
Juniperus	Juniper	Non-European countries Non-EC European countries	Prohibited Phytosanitary Certificate
Larix	Larch	Non-European countries Non-EC European countries	Prohibited Phytosanitary Certificate
Lisianthus	Lisianthus	Non-European countries	Phytosanitary Certificate
Lithocarpus densiflorus	Tanbark oak	USA	Phytosanitary Certificate
Lonicera hispidula	Honeysuckle	USA	Phytosanitary Certificate
Momordica	Balsam apple, bitter apple, balsam pear, bitter gourd, bitter cucumber etc.	All non-EC countries	Phytosanitary Certificate
Ocimum	Sweet basil etc	All non-EC countries	Phytosanitary Certificate
Pelargonium	Geranium, pelargonium	All non-EC countries	Phytosanitary Certificate

(ANNEX-G Continued)

Botanical Name	Common Name	Origin	Requirement
Phoenix	Date Palm	Algeria and Morocco Other non-EC European countries	ProhibitedPhytosanitary Certificate
Picea	Spruce	Non-European countries Non-EC European countries	Prohibited Phytosanitary Certificate
Pinus	Pine	Non-European countries Non-EC European countries	Prohibited Phytosanitary Certificate
Poncirus and hybrids	Ornamental citrus	All non-EC countries	Prohibited
Populus (with leaves)	Poplar and aspen	North America Other non-EC countries	Prohibited Phytosanitary certificate
Populus (without leaves)	Poplar and aspen	All non-EC countries	Phytosanitary certificate
Prunus	Includes cherry, plum, peach, apricot and flowering almond	Non-European countries	Phytosanitary Certificate
Pseudotsuga	Douglas fir	Non-European countries Non-EC European countries	Prohibited Phytosanitary Certificate
Quercus (with leaves)	Oak	Non-European countries Non-EC European countries	Prohibited Phytosanitary Certificate
Quercus (without leaves)	Oak	All non-EC countries	Phytosanitary Certificate
Rhamnus californica	Coffeeberry	USA	Phytosanitary Certificate
Rhododendron spp. (other than Phododendron simsii)	Rhododendron	USA	Phytosanitary Certificate
Rosa	Rose	Non-European countries	Phytosanitary Certificate
Solanum melongena	Aubergine, Egg plan	All non-EC countries	Phytosanitary Certificate
Solidago	Aaron’s rod, Golden rod	All non-EC countries	Phytosanitary Certificate
Trachelium		Non-European countries	Phytosanitary Certificate
Tsuga	Hemlock	Non-European countries Non-EC European countries	Prohibited Phytosanitary Certificate
Umbellularia californica	California laurel, Headache tree	USA	Phytosanitary Certificate
Vaccinium ovatum	Box blueberry	USA	Phytosanitary Certificate
Viburnum spp.	Viburnum	USA	Phytosanitary Certificate
Vitis	Grape vine	All non-EC countries	Phytosanitary Certificate
All other cut flowers, foliage and vegetables		All non-EC countries	None

Note: Effective from April 01, 2003.
Source: Defra, UK

ANNEX-H

HORTICULTURAL PRODUCES REQUIRING CONFORMITY CEERTIFICATES

Fruit	Vegetables	Salad Crops	Nuts in Shell
Apples	Artichokes	Celery	Hazelnuts in shell
Apricots	Asparagus	Cucumbers	Walnuts in shell
Avocado Pears	Aubergines	Iceberg lettuce	
Cherries	Beans	Lettuce and endives	
Clementines	Brussels Sprouts	Mushrooms (cultivated)	
Grapes	Cabbage	Sweet Peppers	
Kiwi Fruit	Carrots	Tomatoes	
Lemons	Cauliflower	Witloof Chicory	
Mandarins	Courgettes		
Melons	Carlic		
Nectarines	Leeks		
Oranges	Onions		
Peaches	Peas		
Pears	Spinach		
Plums			
Satsumas			
Strawberries			
Water Melons			

Source: Defra, UK

ANNEX-I

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