

A QUARTERLY PUBLICATION OF THE HORTICULTURE EXPORT DEVELOPMENT FOUNDATION, DHAKA

Editor's Note

Food demand is steadily rising due to increase in population. On the other hand, food habits of people are changing due to urbanization and per capita income growth. Over the last ten years, the government has undertaken a series of steps for the development of agriculture sector.

As a result, Bangladesh now ranks 4th in the world in rice production, 3rd in vegetable production, 8th in potato and 7th in mango production. In fish and mutton Bangladesh ranks 4th and 5th respectively in the world.

However, food losses and postharvest waste in Bangladesh are quite high and are estimated to be 20 to 40% of total production with wide variations from cereals to vegetables and fruits. The postharvest loss for perishable products like fruits and vegetable is higher due to poor postharvest management along the value chain and inadequate facilities of the markets.

Often times seasonal surplus production causes significant financial loss to the farmers. To minimize this huge production loss, we have to improve postharvest management practices and market facilities.

For the safe & healthy food production we may gear up good agricultural practices and good handling practices of agri-products. Washing, drying, sorting, grading will prolong shelf life and improve quality of agri-commodities.

Value Chain development and boosting up agro-processing industries in our country may earn enormous foreign exchange and may create a lot of employment opportunities. Therefore, total value chain development in agriculture sector will hugely enhance the prosperity, progress and development of the country.

Hon'ble Agriculture Minister's Speech in National Fruit Fair 2018



'Adopt propagation through grafting to quickly grow jackfruit'- Hon'ble Agriculture Minister Matia Chowdhury MP

A national seminar titled "Contribution of Nutritious Fruits for Human Resource Development" held on National Fruit Exhibition & Fair 2018 at Krishibid Institution Bangladesh (KIB) Auditorium on 22 June 2018. Mr. AKM Mozammel Haque MP, Hon'ble Minister, Ministry of Liberation War Affairs, Govt. of the People's Republic of Bangladesh attended as the Chief Guest while Matia Chowdhury MP, Hon'ble Minister, Ministry of Agriculture, Govt. of Bangladesh attended as the Special Guest in the seminar. Mr. Mohammad Moinuddin Abdullah, Senior Secretary, Ministry of Agriculture, Govt. of Bangladesh presided over the seminar. Kbd. Mohammad Mohsin, DG, DAE was given welcome address in the seminar. Professor Dr. Kamal Uddin Ahamed, Vice-Chancellor, Sher-e-Bangla Agricultural University presented the keynote paper of the seminar. Mr. M. Enamul Hoque, Former DG, DAE took participate discussion on the keynote paper.

Hon'ble Agriculture Minister Matia Chowdhury MP pointed out that jackfruit was declared as the national fruit of Bangladesh by the Father of the Nation Bangabandhu Sheikh Mujibur Rahman. Nutritional quality of jackfruit is extremely high, she said. In the past when food became scarce, jackfruit provided necessary nutrition for the working people. All parts of the jackfruit tree are utilized as food, fodder, timber. She urged for extension efforts to adopt propagation through grafting to quickly grow jackfruit. She further said that we have to improve performance of our own local fruits and side by side introduce new suitable fruit species or varieties from abroad. Thus we can increase our year-round fruit supply.

She also advised researchers and extensionists to improve and expand cultivation of fruits like Cowa (*Kawphal*), Burmese grape (*Lotkon*), Custard apple (*Sharifa*), Country jujube (*Deshi boroi*), Palmyra palm (*Tal*) and Sapota (*Sofeda*).

Hortex news in brief



115th Governing Body meeting of Hortex Foundation held on 10 June 2018 Chaired by Mr. Mohammad Moinuddin Abdullah, Senior Secretary, MOA & Chairman, Hortex Foundation

During the reporting period January 2016 to June 2018, thirteen Governing Body meetings of Hortex Foundation comprising 103rd was held at Hortex conference room on 10 February 2016 under the Chairmanship of Mr. Shyamal Kanti Ghosh, Secretary, Ministry of Agriculture, Government of the People's Republic of Bangladesh and Chairman, Hortex Foundation. The meeting discussed on various administrative issues and policy directives were given in the meeting.

Besides, 104th, 105th, 106th, 107th, 108th, 109th, 110th, 111th, 112th, 113th, 114th and 115th Governing Body meetings of Hortex Foundation were held at Hortex conference room on 29 May 2016, 31 July 2016, 06 November 2016, 31 December 2016, 04 March 2017, 12 June 2017, 31 July 2017, 07 September 2017, 29 November 2017, 28 December 2017, 19 February 2018 and 10 June 2018 respectively under the Chairmanship of Mr. Mohammad Moinuddin Abdullah, Senior Secretary, Ministry of Agriculture, Government of the People's Republic of Bangladesh and Chairman, Hortex Foundation. Important policy directives and administrative decisions were taken in those meetings.

10th and 11th AGM of Hortex Foundation



10th and 11th AGM of Hortex Foundation held on 21 January 2017 Chaired by Mr. Mohammad Moinuddin Abdullah, Secretary: MOA & Chairman, Hortex Foundation

The 10th and 11th Annual General Meetings (AGMs) of Hortex Foundation were held on 21 January 2017 at Hortex Conference Room, Sech Bhaban, 22 Manik Mia Avenue (3rd Floor), Sher-e-Bangla Nagar, Dhaka-1207 under the Chairmanship of Mr. Mohammad Moinuddin Abdullah, Secretary, Ministry of Agriculture, Government of Bangladesh & Chairman, Hortex Foundation. Out of the 33 existing Members of the General Body of Hortex Foundation, 24 Members attended the AGMs.

Besides, officials of Hortex Foundation and representative from the Hoda Vasi Chowdhury & Co (Audit Firm) also attended the AGMs. With the consent of the Chairman of AGMs, Dr. Md. Abdul Jalil Bhuyan, Managing Director, Hortex Foundation made presentation on the working paper of the AGMs and shared highlights of the Annual Report of the Governing Body of Hortex Foundation during FY2012-13 and FY2013-14. Agribusiness development in general, domestic marketing of high value horticultural crops and export related activities in particular performed by Hortex Foundation including financial statements during FY2011-12 and FY2012-13 were presented and discussed in the 10th & 11th AGMs respectively. However, specific activities undertaken and accomplished by Hortex Foundation through implementation of Supply Chain Development Component (SCDC) of National Agricultural Technology Project (NATP, Phase-I) financed by the World Bank, IFAD and GOB also came up for discussion in the AGMs. There were discussion on overall activities and performance of Hortex Foundation participated by some General Body Members and provided valuable suggestions for further improvement.

The 10th AGM approved four new Members of the General Body of Hortex Foundation and the AGM elected Mr. Mohammad Nurun Nabi FCA, Mr. Masoodur Rahman, Dr. Shah Md. Shaiful Islam and Mr. Jaheed Hasan Jinnah as the new Directors of Governing Body of Hortex Foundation for three years from the Members of General Body.

12th AGM of Hortex Foundation



12th AGM of Hortex Foundation held on 03 March 2018 Chaired by Mr. Mohammad Moinuddin Abdullah Senior Secretary, MOA & Chairman, Hortex Foundation

The 12th Annual General Meeting (AGM) of Hortex Foundation was held on 03 March 2018 at Hortex Conference Room, Sech Bhaban, 22 Manik Mia Avenue (3rd Floor), Sher-e-Bangla Nagar, Dhaka-1207 under the Chairmanship of Mr. Mohammad Moinuddin Abdullah, Senior Secretary, Ministry of Agriculture, Government of Bangladesh & Chairman, Hortex Foundation. Out of the 34 existing Members of the General Body of Hortex Foundation, 17 Members attended the AGM.

Besides, officials of Hortex Foundation and representative from M/S. Atik Khaled Chowdhury, Chartered Accountants (Audit Firm) also attended the AGM. With the consent of the Chairman of the AGM, Md. Manzurul Hannan, Managing Director, Hortex Foundation made presentation on the working paper of the AGM and shared highlights of the Annual Reports of the Governing Body of Hortex Foundation during FY2014-15 and FY2015-16.

However, specific activities undertaken and accomplished by Hortex Foundation through implementation of SCDC of NATP, Phase-I financed by the World Bank, IFAD and GOB and FAO-Food Safety Programme (FAO-FSP) financed by the FAO also came up for discussion. There were discussion on overall activities and performance of Hortex Foundation participated by some General Body Members and provided valuable suggestions for further improvement.

The 12th AGM approved six new Members of the General Body of Hortex Foundation as representatives from the Ministry of Finance, DAE, BARI, KGF, BARC, IFST of BCSIR. The AGM approved proposal of Associate Membership of Hortex Foundation.

Market intelligence support services

In the reporting period January 2016-June 2018, Hortex Foundation provided market intelligence support services to the 173 new entrepreneurs, producers, exporters, processors, business associations and researchers among others for agribusiness development both for domestic and export markets.

Cool chain transportation support services

In the reporting period January 2016 to June 2018, Hortex Foundation provided cool chain transportation (**1260 round trips by its five reefer trucks**) support services to the 81 business organizations like exporters, importers, processors, suppliers for minimizing all forms of deterioration to the perishable produce and high temperature sensitive commodities during transpiration.

Participation in National Food, Vegetables and Fruits Fair in 2016, 2017 & 2018 (up to June)

National Vegetables Fair 2016



Hortex Foundation participated in the three day long “National Vegetables Fair 2016 and Vegetables Exhibition” organized by DAE and Ministry of Agriculture from 17-19 January, 2016 at AKM Giasuddin Milky Auditorium premises, Dhaka. Mr. Anisul Islam Mahmud M.P, Hon’ble Minister, Ministry of Water Resources, Govt. of Bangladesh inaugurated the Fair as the Chief Guest while Matia Chowdhury M.P, Hon’ble Minister, Ministry of Agriculture was present as the Special Guest. Mr. Shyamal Kanti Ghosh, Secretary, Ministry of Agriculture, Govt. of Bangladesh presided over the inaugural session. Before the inaugural programme, the Ministers and other dignitaries and delegates had paid a visit to the Hortex Foundation stall.

Hortex Foundation displayed a good number of exportable fresh and processed vegetables and postharvest technologies which received immense interest from the visitors. From the

Hortex stall, different technical bulletins, booklets, leaflets and export market related information were disseminated to the visitors free of cost.

Hortex Foundation received a special prize from Mr. Md. Mokbul Hossain M.P, Chairman, Parliamentary Standing Committee on Ministry of Agriculture and the Chief Guest of Closing Ceremony for participate the fair successfully.

National Fruit Exhibition & Fair 2016



Hortex Foundation participated in the three day long “National Fruit Exhibition 2016” organized by the Ministry of Agriculture during June 16-18, 2016 at AKM Giasuddin Milky Auditorium premises, Farmgate, Dhaka.

National Food Exhibition & Fair 2016



Hortex Foundation participated in the three day long “Food Exhibition & Fair 2016 during October 16-18, 2016 at BARC premises, Farmgate, Dhaka.

National Vegetables Exhibition & Fair 2017



Hortex Foundation participated in the three day long “National Vegetables Fair & Exhibition 2017 during January 5-7, 2017 at AKM Giasuddin Milky Auditorium premises, DAE, Farmgate, Dhaka.

National Fruit Exhibition & Fair 2017



Hortex Foundation participated in the three day long “National Fruit Exhibition & Fair 2017 during June 16-18, 2017 at AKM Giasuddin Milky Auditorium premises funded by NATP-2 as Hortex is Strategic Partner of DAE.

National Fruit Exhibition & Fair 2017



Hortex Foundation participated in the three day long “National Food Exhibition & Fair 2017 during October 16-18, 2017 at AKM Giasuddin Milky Auditorium premises, DAE funded by NATP-2.

National Vegetables Exhibition & Fair 2018



Hortex Foundation participated in the three day long “National Vegetables Exhibition & Fair 2018 during January 14-16, 2018 at Krishibid Institution Bangladesh (KIB), Farmgate, Dhaka funded by NATP-2. Hortex Foundation stall awarded 3rd prize for participating the fair and raised a good stall promoting vegetables based agro-commodity domestic marketing and export.



National Fruits Exhibition & Fair 2018



Hortex Foundation participated in the three day long “National Fruits Exhibition & Fair 2018 during June 22-24, 2018 at AKM Giasuddin Milky Auditorium Premises, Farmgate, Dhaka funded by NATP-2. Hortex Foundation stall awarded 3rd prize for participating the fair and raised a good stall promoting fruits based agro-commodity domestic marketing and export.

Chairman of Hortex Foundation



Mr. Mohammad Moinuddin Abdullah
Senior Secretary, Ministry of Agriculture and
Chairman, Hortex Foundation

Mr. Mohammad Moinuddin Abdullah joined Ministry of Agriculture as the Secretary on 08 March 2016 and he is the Chairman of Hortex Foundation.

Mr. Mohammad Moinuddin Abdullah completed his Masters in Soil Science from Dhaka University and joined Bangladesh Civil Service (Administration) Cadre in the year 1982 (BCS 82 Special Batch). He worked at different levels of field administration that include Divisional Commissioner of Dhaka Division.

He also worked at different Ministries like Ministry of Environment and Forests, Economic Relations Division (ERD), Ministry of Public Administration, Cabinet Division and Prime Minister’s Office. Before joining Ministry of Agriculture, he worked as the Secretary of Ministry of Industries and Secretary of Ministry of Housing and Public Works.

As a part of Government service, Mr. Mohammad Moinuddin Abdullah traveled different areas of Bangladesh as well as different countries of Asia, Europe, North America, Africa and Australia Continent.

New Managing Director joined at Hortex



Mr. Md. Manzurul Hannan
Managing Director, Hortex Foundation

Mr. Md. Manzurul Hannan joined Hortex Foundation as Managing Director on 11th September 2017.

Mr. Md. Manzurul Hannan has a very brilliant and colorful professional career. He joined the Bangladesh Civil Service (Agriculture) Cadre as a Member of 1982 batch.

He worked in the following capacities like Chief Cotton Development Officer, CDB; Crop Production Specialist (CPS), Tangail; District Training Officer (DTO), Narayanganj; Deputy Director (DD), Dhaka; Additional Director (P&Q); Director (Admin) and Director General, DAE. Mr. Md. Manzurul Hannan completed his B.Sc Ag (Hons.) from BAU, Mymensingh and Masters degree in M.Sc in Environmental Science from SUB, Dhaka.

Mr. Hannan attended different training courses in home and abroad. In home training includes Foundation training, English Language, Cotton production technology, Arsenic mitigation, Farm management, Training on administration & finance, Training on PPR etc. He visited Zimbabwe, England, Malaysia & Indonesia.

Hortex supported export in 2016, 2017 & 2018

A. Hortex supported export in 2016

Export items	Achievements	Remarks
Canned pineapple, baby corn, aloevera and pineapple core export to China, Taiwan, Hong Kong and Vietnam (60 containers, export value 9 lakh US\$)	1077 MT of which canned pineapple 900 MT, canned baby corn 81 MT, canned aloevera 54 MT and Pineapple core 42 MT	Hortex is working with 100% export oriented Taiwan Food Processing & Industries Ltd. promoting export of value added agro-commodities from Bangladesh since 2014
Linked VEGAN Agro Ltd. with UAO, Dhunat upazila (Bogra) and Lead Farmers of Sherpur Sadar upazila procuring fresh tomato for tomato pulp production and supply to processing industries	228 MT fresh tomato marketed of which 64 MT tomato pulp produced for domestic consumption & export	Hortex is working with VEGAN Agro Ltd and developed farmer-market linkages to supply quality tomato from lead farmers. VEGAN supplied tomato pulp to Square Food & Beverage Ltd (SFBL). SFBL produced tomato sauces and ketchups for domestic and export markets
Fresh potato export to Nepal and Dubai	178 MT	Hortex is working with Mr. Abdul Hakim Sheikh, Proprietor, Greentex for promoting potato export
Fresh mango export to UK, Italy, France, Middle East countries supplied from Satkhira Sadar, Bagha, Chapainawabganj Sadar, Bholahat and Ishurdi upazila under FAO-FSP <i>(Hortex-DAE-FAO collaborative approach)</i>	100 MT	Mangoes were exported through M.K. Enterprise, Morison Enterprise, Fardin Int'l, Sheuli Trade Int'l, Khaled Trade Syndicate, Lee Enterprise, M/S. Islam Enterprise, SR. Enterprise, RK. Enterprise, Sonargaon Int'l, Sundry Appetite, R.B. Foods, Bikrampur Traders, Dhaka Vegetable Food, Remon Enterprise, Fresh Fruits Trading, DBF Enterprise, Greentex and Ovijat Food & Beverages
Fresh sweet gourd export to Malaysia	41 MT	Hortex is working with Mr. M. Abid Hossain, CEO, South Bengal Trade Int'l (Exporter) and Practical Action Bangladesh for sweet gourd export promotion
Fresh cabbage export to Singapore	21 MT	Hortex is working with Mr. Abdul Hakim Sheikh, Greentex (Exporter) for promoting cabbage export (Singapore) and frozen Red Chilli to South Korea
Export of fresh cabbage to Malaysia	20 MT	Hortex is working with Mr. Rashed Shamim, Proprietor, Polygon Resource for promoting cabbage, sweet gourd and potato export to Malaysia
Fresh vegetables export to Lebanon	05 MT	Hortex is working with Robi Exim Co. (Exporter) for export of fresh vegetables to Lebanon and banana export to China and Hong Kong

<i>Export items</i>	<i>Achievements</i>	<i>Remarks</i>
Fresh fruits and vegetables export to Al-Abir Fruits and vegetables market, Dubai	3.36 MT (Teasel gourd, Brinjal, Jara lemon, Green chilli, Arum, Cucumber, Snake gourd, Bottle gourd, Stolon of taro)	Hortex is working with Fasal Agro Care Ltd (Exporter) and Manikganj, Narshingdi and Comilla Union Digital Center (UDC) for promoting export of fresh fruits and vegetables through UDC entrepreneurs
Fresh pineapple export from Modhupur to Oman	01 MT	Hortex is working with M/S. Avalon Associates (Exporter) and Eagle Eye International (Buyer of Oman) for fresh pineapple export
Lemon and coconut trial export to Russia	Sample shipment	Hortex is working with Mr. Abdul Hakim Sheikh, Proprietor, Greentex (Exporter) and Retail Chain Magnit, Russia (Importer)
Aromatic rice (Kalojira and Kataribogh) export to USA by sea shipment	164 MT	Hortex is working with B H High Tech Food & Agro Industries Pvt. Ltd., Naogaon for exporting fine aromatic rice from Bangladesh
Sesame export to Japan from Natore	300MT	Hortex is working with ITOCHU Corporation promoting sesame export

B. Hortex supported export in 2017

<i>Export items</i>	<i>Achievements</i>	<i>Remarks</i>
Fresh potato export to Malaysia, Sri Lanka, Indonesia	4908 MT	Hortex is being supported Polygon Resource, Kisan Botanix Ltd, Greentex for promoting potato export
Canned pineapple, baby corn, aloevera, pineapple jam and dried bitter gourd chips export to China, Taiwan, Hong Kong, the Netherlands, France (78 containers)	1440 MT (Canned pineapple 814, baby corn 34, aloevera 518, Pineapple jam 18 and Dried bitter gourd chips 56 MT), export value 11.6 lakh \$	Hortex is being supported 100% export oriented Taiwan Food Processing & Industries Ltd. for promoting export of value added agro-commodities from Bangladesh since 2014
Fresh cabbage export to Malaysia	100 MT	Hortex is being supported M/S. Polygon Resource (exporter) for promoting cabbage export by sea shipment maintaining 9-10 pc/15kg bag, 00C temp & ventilation 9 cbm/hr
Fresh sweet gourd export to Malaysia	22 MT	Polygon Resource linked with Practical Action Bangladesh collecting sweet gourd for export
Green papaya export to Malaysia	06 MT	Hortex supported South Bengal Trade International collecting papaya from Maa-Moni Krishi Khamar, Ishwardi, Pabna for export
Fresh mango export to UK and Kuwait	21.14 MT (UK) & 3.25 MT (Kuwait)	Hortex supported hot water treated mangoes were exported by M/S. MK Enterprise and Parly Int'l

<i>Export items</i>	<i>Achievements</i>	<i>Remarks</i>
Jackfruits among other fruits export to UK and Kuwait	110 MT (UK) & 17 MT (Kuwait)	Fresh fruits were exported by M/S. MK Enterprise and Parly Int'l
Different vegetables export to UK and Kuwait	70MT (UK) & 232MT (Kuwait)	Fresh vegetables were exported by M/S. MK Enterprise and Parly Int'l
Fresh fruits and vegetables export to Al-Abir Fruits and vegetables market, Dubai	2 MT	Hortex is working with Fasal Agro Care Ltd and UDC entrepreneurs promoting export of fresh fruits and vegetables supported by a2i
Linked VEGAN Agro Ltd. with Tomato Lead Farmers of Sherpur Sadar Upazila procuring fresh tomato for tomato pulp production	60 MT fresh tomato supplied of which 17 MT tomato pulp produced	Hortex is working with VEGAN Agro Ltd and developed farmer-market linkages to supply quality tomato from lead farmers
Fresh mango marketing in Dhaka City	17 MT	Hortex Foundation supported Clean Initiative producing quality mango in Bodolgachi and Porsha Upz., Naogaon and marketing in Dhaka City
Trial export of seedless lemon to Dubai and Malaysia	10kg	Hortex supplied lemon to the exporters from CIG farmers of Delduar upazila under NATP-2. 6kg trial exported to Dubai through Agro Asia Impex and 4 kg to Malaysia through Polygon Resource creating markets. In Dubai, 16-20 pcs/kg of lemons are mostly demanded.

C. Hortex supported export in 2018 (up to June)

<i>Export items</i>	<i>Achievements</i>	<i>Remarks</i>
Fresh potato export to Malaysia	580 MT (20 containers)	Exported by M/S. Polygon Resource, Dhaka
Fresh potato export to Sri Lanka	1680 MT (60 containers)	Exported by M/S. Kisan Botanix Ltd., Dhaka
Fresh cabbage export to Malaysia	220 MT (11 containers)	Exported by M/S. Polygon Resource by Sea shipment
Canned pineapple, aloevera, dried bitter gourd & turmeric chips export to Taiwan, China, the Netherlands and Mexico	452 MT of which Canned pineapple 200MT, Aloevera 250MT and Dried bitter gourd & turmeric chips 2MT (20 containers)	Exported by Taiwan Food Processing & Industries Ltd. (Export value 4.5 Lakh US\$)
Fresh mango export to UK and Kuwait	3.88MT (UK) & 6.67MT (Kuwait)	Hot water treated mangoes were exported by M/S. MK Enterprise and Parly Int'l
Jackfruits among other fruits export to UK and Kuwait	80MT (UK) & 22MT (Kuwait)	Fresh fruits were exported by M/S. MK Enterprise and Parly Int'l
Different vegetables export to UK and Kuwait	43MT (UK) & 288MT (Kuwait)	Fresh vegetables were exported by M/S. MK Enterprise and Parly Int'l

Export items	Achievements	Remarks
Sesame export to Jordan and China	200 MT Export price: 680-760 US\$/MT on FOB	Hortex is working with S.Rahman International, Dhanmondi, Dhaka promoting sesame export
Local marketing of safe tomato	440 MT (212 MT from Sherpur Sadar Upz to Vegan), 175 MT (Dhurat Upz to Vegan) and 53MT (Dhurat Upz to PRAN)	Hortex is working with VEGAN Food & Beverage Ltd and developed farmer-market linkages to facilitate supply of safe tomato directly from the lead farmers of Sherpur Sadar Upz, Sherpur and Dhurat Upz, Bogra.

National export status of horticultural crops

About 100 types of fresh fruits and vegetables are being exported from Bangladesh to more than 43 countries in the world. Export of fresh fruits and vegetables were significantly increased from 51 million\$ in FY2008-09 to 210 million\$ in FY2013-14.

However, Table A reveals that export quantity and value of fresh fruits and vegetables are in decreasing trend during FY2014-15 to date due to restriction in EU countries on some fruits and vegetables including self ban by the Government of Bangladesh. The major causes of EU restrictions are (i) not complying with the phytosanitary requirement of importing countries, (ii) presence of quarantine harmful organisms like thrips and fruit fly in Momordica (mainly bitter gourd, teasel gourd); thrips and fruit fly in gourds; white fly, leaf miner & spodoptera in leafy vegetables; thrips & shoot and fruit borer in brinjal; fruit fly and stone weevil in mango; *Salmonella spp.* bacteria in betel leaf; canker, black spot and thrips in citrus; brown rot bacterial agent (*Ralstonia solanacearum* (Smith) Yabuuchi *et al.*) & potato tuber moth in potato, (iii) absence of product integrity, (iv) documentary reasons i.e. modification of Phytosanitary Certificate (PC) and sometimes absence of PC during export from Bangladesh. However, fresh fruits and vegetables export status from FY2008-09 to FY2017-18 is shown below:

A. 10 years export of fresh fruits and vegetables

Fiscal year	Quantity exported (MT)	Export value (in m. US\$)	Export growth on value (in %)
2008-09	24670	50.71	-
2009-10	29370	64.21	(+) 26.62
2010-11	48428	109.41	(+) 70.39
2011-12	59573*	134.59	(+) 23.01
2012-13	80660*	182.23	(+) 35.39
2013-14	92679*	209.38	(+) 14.89
2014-15	62730*	141.72	(-) 32.31
2015-16	59656*	124.57	(-) 12.10
2016-17	42266*	83.72	(-) 32.79
2017-18	40568*	80.22	(-) 4.18

Source: NBR, EPB and data analysis by Hortex Foundation 2018

B. 10 years export of fresh vegetables

Fiscal year	Quantity exported (MT)	Export value (in m. US\$)	Export growth on value (in %)
2008-09	22791	44.67	-
2009-10	23959	46.84	(+) 04.86
2010-11	36672	71.73	(+) 53.14
2011-12	39586	77.43	(+) 07.95
2012-13	56411	110.34	(+) 42.50
2013-14	75435	147.55	(+) 33.72
2014-15	52781	103.24	(-) 30.03
2015-16	53344	104.34	(+) 1.06
2016-17	41426	81.03	(-) 22.34
2017-18	39868	77.98	(-) 3.76

Source: NBR, EPB and data analysis by Hortex Foundation 2018

C. 10 years export of fresh fruits

Fiscal year	Quantity exported (MT)	Export value (in m. US\$)	Export growth on value (in %)
2008-09	5204	16.67	-
2009-10	5411	17.37	(+) 3.83
2010-11	11757	37.68	(+) 116.92
2011-12	17835	57.16	(+) 51.69
2012-13	22431	71.89	(+) 25.77
2013-14	19292	61.83	(-) 13.99
2014-15	12006	38.48	(-) 37.76
2015-16	6312	20.23	(-) 41.32
2016-17	840	2.69	(-) 86.70
2017-18	700	2.24	(-)16.72

Source: NBR, EPB and data analysis by Hortex Foundation 2018

D. 10 years export of fresh potatoes

Fiscal year	Quantity exported (MT)	Export value (in m. US\$)	Export growth on value (in %)
2008-09	407	0.68	-
2009-10	9687	03.45	(+) 407
2010-11	34891	15.98	(+) 363
2011-12	34232	08.50	(-) 47
2012-13	41830	10.93	(+) 29
2013-14	103000	33.82	(+) 210
2014-15	94614	32.22	(-) 4.73
2015-16	40230	10.06	(-) 68.78
2016-17	55652	12.96	(+) 28.83
2017-18	53485	11.27	(-) 13.04

Source: DAE, NBR, EPB and data analysis by Hortex Foundation 2018

Adaptive research support for export promotion

Identification/Detection of Coconut mite, *Aceria guerreronis* Keifer in Dry Coconut for export to Russia (March 08, 2016)

Several pieces of dry coconut (without husk) were supplied to Bangladesh Agricultural Research Institute (BARI) by the exporter M/S Greentex Ltd. through Hortex Foundation. Supplied samples were preserved in the Laboratory of Entomology Division, BARI, Joydebpur, Gazipur about 10 (ten) days in the room temperature of $27 \pm 2^\circ\text{C}$ and 60-70% relative humidity for different examination.

Research Methodology

Observation: Three different types of observation were done.

- i) **Physical observation:** Randomly five dry coconuts were taken from the lot and physical observation was done by three senior scientists of BARI separately. Magnifying hand lens (10X) and camel hair brush (0.5mm) were used and checked thoroughly.
- ii) **Microscopic observation:** After physical observation, same numbers of dry coconuts were used for microscopic observation. A Stereo Zoom Microscope with monitor (Olympus SZ 61 & DP 22 photographic attachment) was used for this observation. All three scientists were observed individually under the microscope. Entire body of the dry coconut was observed under the microscope.
- iii) **Scrap observation:** After physical and microscopic observation, sampled coconuts were used for laboratory test. From each coconut randomly five different areas of the surface were selected for scraping. A total of 25 scrape samples were collected and kept it in the petridishes for ten days. After ten days, all the Petri dishes were checked under the microscope whether the neonate mites were coming out after completing life cycle or not. Normally a coconut mite develops from egg to adult in 10 days.

Results:

From physical & microscopic observation, it was revealed that there was no mite and any other insect pests observed in the supplied dry coconuts. Scrap observation was also checked after ten days. In the scrapped samples no mites and other insect pests were also observed.

Findings:

The coconut mite, *Aceria guerreronis* Keifer, attacks **young fruits** of the coconut palm, *Cocos nucifera* L. Early-stage infestation of a young coconut is often detectable.

Normally peak densities of *A. guerreronis* on 3 to 4 months old fruits and declined thereafter. In the dry un-husked coconut there is no chance of any infestation of coconut mites, which has been reflected in the laboratory report where no mite and other insect pests were observed in the supplied dry coconut. **So, the supplied dry coconuts were totally quarantine insect pest free and suitable for export.**



Lab test of lemon for export to Russia (Feb 25, 2016)



As per request of Hortex Foundation for lab test of lemon, Plant Pathology Division of BARI conducted a lab test and tested the samples of lemon supplied by Hortex Foundation in favor of an export firm Greentex Ltd for exporting to Russia. After lab test, BARI did not find any infection of Citrus Canker (*Xanthomonas axonopodis* pv. *Citri*), black spot (*Guignardia Citricarpa*) and fungal disease (*Cercospora angolensis*) in all the lemon samples.

Brown rot bacteria (*Ralstonia solanacearum*) test of potato for export to Russia (Feb 25, 2016)



As per request of Hortex Foundation for Brown rot bacteria lab test of potato, TCRC of BARI conducted a lab

test and tested the samples of potato supplied by Hortex Foundation randomly collected from Sherpur (Diamant & Cardinal), Bogra (Cardinal), Rangpur (Laura) in favor of an export firm Greentex Ltd for exporting to Russia. After lab test using Kelman's TZC Agar test, TCRC of BARI find presence of *Ralstonia solanacearum* (+++) in all the potato samples.

Sweet potato test cultivation (Dec 22, 2017)

Hortex Foundation supported Maruhisa Pacific Co Ltd to conduct a test cultivation of sweet potato in Sherpur Sadar Upazila on Dec 2017 using Japanese variety for export promotion. Highlights of sweet potato test cultivation are given below:

Producer company: Naruto Japan Co. Ltd. a sister concern of Maruhisa Pacific Co., Ltd., Bangladesh.

Purpose:

- to know the yield of Japanese Sweet potato variety at Sherpur Sadar Upazila
- finally processing of the Sweet potato to export in Japan and selling in the local market

Farming system: Contract farming following DAE

Farmers introduced by: Hortex Foundation and DAE

Cultivation method: Japanese

Fertilizer dose: As per TCRC of BARI recommendation

Sweet potato variety: Anno Beni (purple skin and yellow flesh) and Anno Kogane (golden skin and yellow flesh)

Life cycle: 120 days

Average yield (t/ha): 17.13

Cultivation period: December 2017 to April 2018

The production details are given below in following table:

Farmers	Location	Land area (acre)	Production (ton)	Yield (t/ha)
Afzul Hossain	Betmari, Sherpur Sadar, Sherpur	0.23	2.01	21.54
Shazahan	Betmari, Sherpur Sadar, Sherpur	0.30	2.11	17.34
Mijanur Rahman	Betmari, Sherpur Sadar, Sherpur	0.18	0.81	11.14
	Total	0.71	4.93	17.13 (avg.)



Farmer Afzul transplanting Sweet potato vines in his land



Farmer's Sweet potato field



Farmer Afzul shows no. of Sweet potatoes in a vine



Sweet potato collection after harvesting

Benefits of hot water treated banana

As per meeting with an International Consultant M. Senthil Kumar at Hortex, he expressed his consultancy experience in Ghana on banana hot water treatment using immediate after harvest by 48-50°C for 10 minutes benefiting shelf life increment, control ripening delay, disinfect of insects and diseases to keep the fruit long time storing at 13-15°C and 85-90% RH for 6 weeks. Hot water treatment control enzymes to produce ethylene delaying 4-6 days. Before hot water treatment of banana, 80-85% harvesting index should be followed for export.

Fruits & vegetables storage requirement in reefer container during export

Analysis of produce storage compatibility

When storing different types of produce in the same area/reefer container, it is crucial to consider the optimum storage conditions of each commodity. Mixed produce that is stored together must be compatible in terms of temperature, relative humidity (RH) and production and sensitivity to ethylene.

Use this compatibility guide to determine which fruits and vegetables may be stored together. Since most storage

areas do not have six different compartments, some compromises may be made (*specifically for temperature and humidity levels*). When mixing commodities, let the more valuable ones determine the storage conditions of the rest.

Group-1: Fruits and vegetables, temperature 10°C and 85-90% RH

- a. Beans
- b. Cucumber
- c. Egg Plant
- d. Okra
- e. Potatoes

Group-2: Fruits and vegetables, temperature 13°C to 15°C and 85-90% RH (many products in this group produce ethylene)

- a. Banana
- b. Carambola
- c. Coconuts
- d. Guava
- e. Jackfruit
- f. Lemons
- g. Mangoes
- h. Papaya
- i. Pineapple
- j. Pumpkin

Capacity building program

During the reporting period January 2016-June 2018, Hortex Foundation organized different capacity building program like ToT, training, seminar/workshop and its officials also participated following major events:

1. Bangabandhu National Agricultural Award-1420 program held on 07 Jan 2016 at Osmani Smrity Auditorium organized by MOA, GOB. Hon'ble Prime Minister, Sheikh Hasina was present as the Chief Guest while Matia Chowdhury MP, Hon'ble Minister, MOA, GOB presided over the event.
2. FAO organized technical workshop at Lake Castle Hotel, Gulshan-2 during 17-19 Jan 2016 on Food Safety Risk Assessment: Enhancing Capacity for Science-based Decisions in Regulatory Food Control. The workshop was facilitated by FAO Senior Technical Expert, Prof. Alan Reilly and other Food Safety Experts. It was organized through an USAID-funded project "Institutionalization of Food Safety in Bangladesh for Safer Food.
3. Workshop on "Bangladesh Food Laboratory Conclave" held on 22 Feb 2016 at Mukti Seminar Hall, Power Development Board, Abdul Gani Road, Dhaka organized

by Bangladesh Accreditation Board (BAB), Bangladesh Food Safety Authority (BFSA) and FAO. Advocate Md. Qamrul Islam MP, Hon'ble Minister, Ministry of Food, GOB was present as the Chief Guest, Mr. Mike Robson, FAO Representative in Bangladesh was present as the special guest while Mr. Md. Abu Abdualh, Director General, BAB presided over the event. Mr. Mustak Hassan Md. Iftekhar, Chairman, BFSA chaired the morning session of the event.

4. Meeting on potato export promotion to Thailand, Philippines, Vietnam and Indonesia held on 24 Feb 2016 organized by EPB at their conference room, Karwanbazar, Dhaka-1215. The meeting was chaired by Begum Mafruha Sultana, VC, EPB. AGM (Marketing), Hortex Foundation shared guidelines and strategies in the meeting promoting export of potatoes as per short, mid and long term basis.

5. Certificate Award Ceremony and Review Workshop "Implementing Food Safety in Agricultural Value Chains" held on 27 Feb 2016 organized by FAO-FSP. Mr. Md. Hamidur Rahman, DG, DAE presided over the event. Md. Maksudul Hasan Khan, Secretary, MOFL, GOB attended as the chief guest. Md. Mosharraf Hussain, Addl. Secretary (Extension), MOA, GOB and Mr. Mike Robson, FAOR attended as the special guests.

6. Training on Trade Foundation Course for Commercial Counsellors organized by Bangladesh Foreign Trade Institute (BFTI) held on 28 Feb 2016 at BFTI conference room, Karwanbazar, Dhaka. Mr. Mitul Kumar Saha, AGM (Marketing), Hortex Foundation presented the technical paper highlighting export potential of agro-commodities of Bangladesh exploring niche markets in abroad.

7. Meeting held on 10 March 2016 at FAO-FSP, Mohakhali, Dhaka to discuss progress review of horticultural value chain activities under FAO-FSP, Horticulture sub-sector implemented by Hortex Foundation in collaboration with DAE.

8. FGD on Analysing Export Readiness of Vegetable Sector of Bangladesh held on 28 March 2016 organized by BFTI at their conference room. Mr. Mitul Kumar Saha, AGM was given expert opinion promoting export of vegetables in line with the experiences of Hortex.

9. Progress review meeting of Hortex LOA activities under FAO-FSP held on 29 March 2016 at FAO-FSP, Mohakhali, Dhaka.

10. Training program on Rules and Procedures for Import, Export and Customs held on 31 March 2016 organized by BFTI at its conference room. Mr. Mitul Kumar Saha, AGM presented the technical paper "Prospects of Agro-medicinal Plants and Herbal Products – Major Challenges Faced by the Exporters".

11. Meeting held on 17 April 2016 at MOA on National Fruit Exhibition-2016 chaired by the Secretary, MOA. AGM, Hortex Foundation attended the meeting and requested to the Secretary, MOA providing financial support to Hortex Foundation from the allocated budget of fruit exhibition for raising good stall promoting export of agro-commodities.

12. Workshop to validate “Guidelines on Improving Food Safety in Horticultural Value Chains held on 26 April 2016 at BARC conference room organized by FAO-UN, FSP and BARC. Mr. Md. Mosharraf Hussain, Addl. Secretary (Extension), MOA, GOB attended as the chief guest while Dr. Md. Abul Kalam Azad, EC, BARC presided over the event. Dr. Md. Abdul Jalil Bhuyan, MD, Hortex Foundation presided over the technical session. Mr. Mitul Kumar Saha, AGM, Hortex Foundation attended as the rapporteur. A draft guideline of food safety was presented by Dr. Md. Saleh Ahmed, FAO-FSP.

13. Meeting held on 28 April 2016 at MOA on Annual Development Program (ADP) of FY2015-16 chaired by Matia Chowdhury MP, Hon’ble Minister, MOA. Mr. Mitul Kumar Saha, AGM, Hortex Foundation attended as the representative of MD, Hortex and no issues were discussed about Hortex Foundation and NATP-2.

14. First meeting of Technical Advisory Group (TAG) on CDAIS held on 05 May 2016 at BARC, Farmgate, Dhaka chaired by Dr. Abul Kalam Azad, EC, BARC. Mr. Mitul Kumar Saha, AGM, Hortex Foundation attended the meeting and given expert opinion for implementation mechanism of CDAIS in Bangladesh.

15. Workshop on Total Quality Management (TQM) held on 12 May 2016 at National Academy for Planning and Development (NAPD), Nilkhet, Dhaka chaired by DG, NAPD. The workshop was organized by NAPD, Ministry of Planning, GOB where AGM (Marketing), Hortex Foundation attended.

16. Training workshop on Critical Path Method (CPM) in Development Projects held on 24 May 2016 at training room (2nd floor), training building, BARC organized by Planning and Evaluation Division, BARC. Mr. Mahbul Haque Patowari, Deputy Chief (Planning), MOA attended as the special guest. Dr. Abul Kalam Azad, EC, BARC attended as the chief guest while Dr. Paresh Chandra Golder, Member Director (P&E), BARC presided over the event. Mr. Dipak Kumar Sarker, Deputy Chief, Planning-2, MOA presented the keynote paper.

17. The 2nd National Consultation on Country Investment Plan in the Environment, Forestry and Climate Change Sectors held on 31 May 2016 at Carnival Conference Hall, BICC, Agargaon, Sher-e-Bangla Nagar, Dhaka organized by the Ministry of Environment and Forests in association with the project

“Strengthening the Environment, Forestry and Climate Change Capacities of the Ministry of Environment and Forests & its Agencies” with FAO support and funding from the USAID. Mr. Anwar Hossain Manju, Hon’ble Minister, MOEF attended as the chief guest while Dr. Kamal Uddin Ahmed, Secretary, MOEF, GOB presided over the event.

18. National dialogue on “Enabling Policy Environment for Mango Marketing” held on 06 June 2016 at the Dhaka Chamber of Commerce & Industry (DCCI) auditorium, Motijheel, Dhaka organized by DCCI in cooperation with DAI: USAID’s Agricultural Value Chains project. Mr. Mohammad Nazmul Islam, Addl. Secretary (PPC), MOA, attended as the chief guest while Mr. K. Atique-E-Rabbani, FCA, Vice President, DCCI presided over the event. In the open discussion, Mr. Mitul K. Saha, AGM Hortex emphasized that private sector should come forward to invest agricultural R&D, capacity building of supply chain actors, implementation of GAP, traceability, PHM, vapor heat treatment (VHT) of mangoes, develop farm to market approach and institutional strengthening of Hortex Foundation for the betterment of agricultural marketing development in Bangladesh. DCCI & USAID can support with technical & financial investment for ensuring safe mango among other agro-commodities both for domestic and export markets, Mr. Saha added.

19. Evaluation of National Budget FY2016-17: Bangladesh Agriculture Perspective held on 11 June 2016 at BARC auditorium organized by Bangladesh Agricultural Economists Association (BAEA). Mr. Abul Maal Abdul Muhith MP, Hon’ble Minister, Ministry of Finance, GOB attended as the chief guest while Prof. Dr. Shamsul Alam, Member (GED), Bangladesh Planning Commission (Senior Secretary) presided over the event.

20. Workshop on Explore Bangladesh through Vegetables and Fruits Export held on 12 June 2016 at Grand Prince Hotel, Mirpur-1 organized by Fasal Agro Industries Ltd in cooperation with a2i, Prime Minister’s Office and Hortex Foundation. Mr. Mitul K. Saha, AGM, Hortex presented the technical paper highlighting export potential of fruits, vegetables and potato in Bangladesh.

21. National seminar on “*Falodo Brikha Ropon Pokkha-2016*” held on 16 June 2016 at KIB organized by MOA. Mr. Tofail Ahmed MP, Hon’ble Minister, MOC, GOB attended as the chief guest. Matia Chowdhury MP, Hon’ble Minister, MOA, GOB and Mr. Md. Mokbul Hossain MP, Hon’ble Chairman, Agriculture Ministry related Parliamentary Standing Committee attended as the special guests. Dr. Abul Kalam Azad, EC, BARC was present as the guest of honor. Inaugural speech was given by Kbd. Md. Hamidur Rahman, DG, DAE. Keynote paper was presented by Dr. Md. Mahbubur Rahman, VC, BSMRAU, Salna, Gazipur. Mr. Mohammad Moinuddin Abdullah, Secretary, MOA presided over the seminar.

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22. Closing session of Fruits Fair-2016 held on 18 June 2016 at Gias Uddin Milky Auditorium organized by MOA. Mr. Md. Mosharraf Hussain, Addl. Secretary (Extension), MOA attended as the chief guest while Kbd. Md. Hamidur Rahman, DG, DAE presided over the event. Hortex stall awarded special prize for participating the fair and displaying quality and good numbers of fruits.
23. Farmers training on green chilli export to Dubai held on 19 July 2016 at Mohadebpur Union, Shibalaya upazila, Manikganj organized by Fasal Agro Ind. Ltd in cooperation with Hortex Foundation. Mr. Mitul K. Saha, AGM, Hortex attended the training program as trainer.
24. ADB Accountability Mechanism held on 21 July 2016 at Pan Pacific Sonargaon Hotel, Dhaka organized by the Asian Development Bank.
25. Promotion of food processing industry in Bangladesh: problems, opportunity and necessary steps held on 31 July 2016 organized by Export Promotion Bureau (EPB).
26. Union Digital Center (UDC) entrepreneurs training, Chittagong held on 20 August 2016 organized by Fasal Agro Ind. Ltd in collaboration with a2i Prime Minister's Office and Hortex Foundation for exporting fruits and vegetables to the non-resident Bangladeshi importer through UDC. Mr. Mitul K. Saha, AGM, Hortex Foundation attended the training program as trainer.
27. e-Learning course on value addition to agrifood products held on Aug. 29 to Sept. 01, 2016 at BRAC University, Dhaka jointly organized by National Productivity Organization (NPO), Ministry of Industry, Bangladesh and Asian Productivity Organization (APO), Japan.
28. 04 daylong National Innovation Facilitators' (NIF) training programme held on 17-20 October 2016 at the Bangladesh Academy for Rural Development (BARD), Comilla, Bangladesh organized by the FAO and CDAIS Agrinatura (UK) on Capacity Development for Agricultural Innovation Systems (CDAIS).
29. UNNExT Workshop on "Promoting Cross-border Agricultural Trade for Sustainable Development" held on 28-30 November 2016 at UNCC in Bangkok, Thailand organized by ESCAP in collaboration with the United Nations Economic Commission for Europe (UNECE) and the Agricultural and Food Marketing Association for Asia and the Pacific (AFMA). Mr. Mitul K. Saha, Hortex Foundation attended the workshop from Bangladesh.
30. Review workshop on matured technology developed by NARS Institutes (2013-14 to 2015-16) held on 3-4 Jan 2017 at BARC organized by BARC.
31. 04 daylong training on value chain management of economically important horticultural crops in Bangladesh for the officers of MOA agencies held on 06-09 February 2017 at National Agriculture Training Academy (NATA), Joydebpur, Gazipur organized by NATA and technically assisted by Hortex Foundation. Mr. Mitul K. Saha, AGM, Hortex attended the training program as trainer.
32. Market transformation workshop organized by the Embassy of the Kingdom of the Netherlands in partnership with the World Bank, the Embassy of Sweden, Dhaka and iDE held on 14 Feb 2017 at the Radisson Blu Dhaka Water Garden.
33. Workshop on strengthening market and value chains for safe fruit and vegetables in Bangladesh held on 27 March 2017 at NEC II conference room, ERD organized by ADB.
34. Technical video conference with DG Health and Food Safety of European Commission on mango export held on 26 April 2017 at the conference room of Ministry of Agriculture, Bangladesh Secretariat, Dhaka.
35. Seminar on Potato: A potential agro-product for export held on 15 May 2017 at EPB conference room organized by EPB, Mr. Mitul K. Saha, AGM (Marketing), Hortex Foundation attended as the Keynote Speaker.
36. Two Central Orientation Workshop held on 22 & 23 May 2017 at Gias Uddin Milky Auditorium organized by PIU-NATP2-DAE. Mr. Mitul K. Saha, AGM (Marketing), Hortex Foundation given technical paper on value chain development and market linkage activities in NATP-2 for the UAOs and DD's of DAE as participants of the events.
37. Meeting with Mr. SATO Hitoshi, GM, Food Dept and Mr. Mezbaul Islam Mizu, Maruhisa Co. Ltd held on 30 May 2017 for sweet potato test cultivation using Japanese farming system and HYV at Sherpur Sadar Upazila.
38. Meeting at MOA on action plan implementation for food processing as per road map of EPB held on 13 July 2017 chaired by Mr. Mahbulul Islam, Joint Secretary.
39. 3rd meeting on National Task Force Committee on opportunity of food processing industry held on 19 July 2017 chaired by Mr. Shubhashish Bose, Secretary, MOC.
40. Training program on web portal operation and content management held on 29-30 July 2017 organized by BAEN at SAU for strengthening agricultural advisory services.
41. First TAG Task Force meeting of CDAIS held on 08 August 2017 at SAC organized by BARC and chaired by EC, BARC & Convener, TAG-Task Force of CDAIS.
42. Global GAP and Bangladesh GAP training at Ascott Palace Ltd, Baridhara, Dhaka held on 08-11 Aug. 2017

organized by BFSA in collaboration with FAO and conducted by National Accreditation Board for Certification Bodies (NABCB), India.

43. Meeting with a Katalyst (Swisscontact) team held on 20 August 2017 on export readiness study of potato, mango, pineapple, betel leaf and flowers.

44. Meeting with Dr. Heidi Wernett, MD, Kunming Heidi Horticulture Company Ltd and DAI team held on 23 August 2017 on flowers export promotion.

45. Agricultural Innovation Market Place event under CDAIS held on 13 Sept. 2017 jointly organized by BARC & FAO at BICC. Mr. Fazle Wahid Khondaker, Addl. Secretary, MOA attended as the chief guest.

46. Workshop on Online Shop, e-ticketing and vegetable export held on 20 Sept. 2017 organized by air world & digi world and supported by a2i programme at DC Office, Narsingdi. AGM (Marketing), Hortex presented a presentation on export opportunity of fruits and vegetables in Bangladesh. Mr. Mohammad Mozammel Hoque, DC (in charge), Narsingdi attended as the chief guest.

47. Market Management Committee of Central Market, Gabtali, Dhaka meeting held on 04 Oct. 2017 at DAM chaired by DG, DAM.

48. Workshop on adoption of standards promoting export quality fruits & vegetables in Bangladesh held on 11 Oct. 2017 organized by EPB and chaired by Mr. Bijoy Bhattacharjee, VC EPB. Prof. Dr. *Katarul Hassan*, RAU presented the keynote paper.

49. Second TAG Task Force meeting of CDAIS held on 24 Oct. 2017 at BARC and chaired by Dr. Bhagya Rani Banik, EC, BARC.

50. Meeting at MOA held on 06 Nov. 2017 highlighting potato production quantity and variety selection committee chaired by Addl. Secretary and DG, Seed Wing, MOA. Hortex Foundation submitted written recommendations for promoting export of potatoes.

51. Study findings sharing meeting at MOC held on 28 Nov. 2017 on export readiness of agricultural commodities in Bangladesh: Betel leaf, pineapple, floriculture, mango and potato conducted by ATC-P and chaired by Mr. Shubhashish Bose, Secretary, MOC.

52. Meeting with Md. Ashraf Hossain, MD, Joyeeta Foundation held on 04 Dec. 2017 as joint work initiative between Hortex and Joyeeta Foundation for supporting and promoting women in agribusiness initiatives.

53. Launching ceremony of the project “Feed the Future Biotechnology Potato Partnership” held on 13 Dec. 2017 at BARC organized by BARI. Matia Chowdhury MP, Hon’ble Minister for MOA attended as the Chief Guest.

54. Training workshop on Climate Resilient Value Chain Analysis for Agriculture held on 18 Dec. 2017 at CIRDAP organized by ICCCAD. Md. Manzurul Hannan, Managing Director, Hortex Foundation attended as the Chief Guest.

55. Meeting with Mr. Shubhashish Bose, Secretary, MOC held on 18 Dec. 2017 at Bangladesh Secretariat on export promotion of fruits and vegetables. Mr. Bose suggested creating awareness using potato starch from Bangladesh potato by the RMG manufacturers. He further mentioned that fresh mango, potato, guava, jackfruits, honey should be promoted for export by Hortex Foundation.

56. Seminar on efficient and nutrition sensitive postharvest transformation and value addition to agro-processed products organized by BAPA held on 21 Dec. 2017 at Daffodil Int’l University.

57. Training on improved postharvest handling of fruits and vegetables under AFACI postharvest project held on 27-28 Dec. 2017 organized by BARC.

58. Opening ceremony of 23rd Dhaka Int’l Trade Fair-2018 held on 1st Jan. 2018 inaugurated by Hon’ble Prime Minister Sheikh Hasina as the Chief Guest.

59. ToT for Local Business Facilitator (LBF) on PHM practices, food safety, marketing and quality assurance held on 8-9 Jan. 2018 organized by Hortex Foundation under NATP-2. Mr. Shah Muhammad Nasim, ndc, PD (Addl. Secretary), NATP-2 attended as the Chief Guest.

60. ToT for capacity building of DAE & Hortex staff on production planning, business plan, marketing, contract farming, PHM, value addition and food safety held on 23-24 Jan. 2018 organized by Hortex Foundation under NATP-2. Mr. Md. Abdul Aziz, DG, DAE attended as the Chief Guest.

61. ToT for capacity building of DAE & Hortex staff held on 29-30 Jan. 2018 organized by Hortex Foundation under NATP-2. Mr. Anwar Faruque, Former Secretary, MOA attended as the Chief Guest.

62. ToT for capacity building of DAE & Hortex staff held on 12-13 Feb. 2018 organized by Hortex Foundation under NATP-2. Kbd. Md. Abdul Hannan, Director. FSW, DAE attended as the Chief Guest.

63. Inaugural ceremony of the organic farming, safe food and eco-friendly products fair-2018 held on 16 Feb. 2018 at BARC chaired by Dr. Abul Kalam Azad, DG, BARI.

Mr. Mohammad Nazmul Islam, Addl. Secretary (PPC), MOA attended as the Chief Guest.

64. ToT for capacity building of DAE & Hortex staff held on 18-19 Feb. 2018 organized by Hortex Foundation under NATP-2. Kbd. Md. Manzurul Hannan, Managing Director, Hortex Foundation given inaugural speech to the DAE's BCS Cadre participants.

65. ToT for capacity building of TARANGO's beneficiaries held on 18-20 Feb. 2018 on PHM of high value crops. Mr. SM Abu Zaar and Mr. Keshab Lal Das attended as the resource speakers from Hortex Foundation as newly appointed Expert Pool Members of Hortex.

66. Training on value chain management of economically important horticultural crops in Bangladesh held on 04-07 March 2018 organized by NATA for the participants of MOA agencies. Mr. Mitul K. Saha, AGM, Hortex presented three technical papers highlighting export potential of horticultural crops, potato and comprehensive value chain analysis of brinjal promoting export.

67. Meeting with PKSf held on 05 March 2018 highlighting joint facilitation of agro-commodity processing, storage and marketing development.

68. 28th Agriculture Ministry related Parliamentary Standing Committee meeting on 10th National Assembly held on 15 March 2018 at National Parliament Chaired by Mr. Md. Mokbul Hossain MP.

69. Hortex Foundation organized 10 batches ToT for capacity building of AAEOs/SAAOs held between March to April 2018 under NATP-2 where 300 participants attended.

70. Meeting held on 27 March 2018 at MOA on evaluation of vegetables, fruits, potato, betel leaf, jackfruits export status using central pack house and preparation of new project on agro-commodity processing and marketing as per direction of Hon'ble Prime Minister.

71. Meeting held on 08 April 2018 at WTO Cell, MOC on SPS issues chaired by Mr. Md. Munir Chowdhury, DG, WTO Cell.

72. ToT for LBF on financial products available and proposal preparation & refreshers course held on 24-25 April 2018 organized by Hortex Foundation under NATP-2 where 30 participants attended.

73. Training on Intellectual Property Rights held on 08 May 2018 organized by Crops Division, BARC where AGM (Marketing), Hortex Foundation attended.

74. Training on phytosanitary measures and food safety issues in Bangladesh held on 09 May 2018 organized by Crops Division, BARC.

75. Hortex Foundation organized 64 batches of CIG training for capacity building of male & female farmers held between 21 May – 26 June 2018 under NATP-2 where 1913 CIG farmers' incl. 300 women attended.

76. Seminar on ensuring food safety and increasing nutrition to build healthy nation held on 27 June 2018 organized by BIRTAN.

Highlighted activities of FAO-FSP implemented by Hortex Foundation & DAE

“Development of Food Control Guidelines and Pilot Implementation across the Horticultural Value Chain” a sub-project funded by the Food and Agriculture Organization of the United Nations (FAO-FSP) and implemented by Hortex Foundation during October 2014 March 2016 in collaboration with the Department of Agricultural Extension (DAE) in 27 upazilas with 520 lead farmers.

Activities performed under FAO-FSP

- i. Review of literatures related to food safety in horticultural value chain
- ii. Development of food safety GAP guidelines
- iii. Organized a national workshop for validation of food control guidelines
- iv. Prepared training modules/materials for conducting certified master trainers (MTs)
- v. Prepared training materials for conducting certified lead trainers training program
- vi. Prepared training materials for lead farmers and value chain actors
- vii. Training of value chain actors
- viii. Refresher training of certified master trainers
- ix. Refresher training of certified lead trainers
- x. Refresher training of lead farmers
- xi. Laboratory testing of mango samples
- xii. Training on Good Manufacturing Practices (GMP)
- xiii. Selection of pilot trial participants and pilot implementation
- xiv. National Committee Members of Mango Action Plan visited mango orchards by FAO-FSP
- xv. Organized field days
- xvi. Organized workshop on IT based monitoring system and distribution of IT materials
- xvii. Organized study tour in Thailand
- xviii. Prepared farm record book for safe fruit and vegetables production
- xix. Distribution of intervention materials
- xx. Training on auditing of crop farms
- xxi. Farmers-Market linkage development



Output of FAO-FSP

SL No.	Output indicators	LoA Target	LoA Achievements
1	Number of Hortex staff involved in LoA	06	06
2	Training modules developed	03	03
3	No. of Food Safety Guidelines validation workshops held	01	01
4	Number of EWG meetings held	05	03
5	Number of consultative meetings held (Dhaka)	03	03
6	Number of consultative meetings held (Field)	04	04
7	No. of pilot area (upazila) selected	25	27
8	No. of baseline surveys	01	01
9	No. of end line surveys	00	01
10	No. of master trainers done orientation course	30	00
11	No. of master trainers trained on good practices	30	30
12	No. of master trainers received one day refresher training	30	30
13	No. of lead trainers trained in good practices	100	111
14	No. of lead trainers received one day refresher training	100	111
15	No. of lead farmers trained in good practices	500	520
16	No. of actors in value chains trained	50	100
17	No. of lead farmers received one day refresher training	500	520
18	No. of monitoring visits (3 per month/upazila for 4 months) by supervisors	400	400
19	No. of monitoring visits (2 per month/upazila for 4 months) by supervisors	200	200
20	No. of monitoring visits by Hortex officials	28	30
21	No. of lab tests done	600	256
22	No. of field days organized	10	07
23	No. of National GAP standard workshop	1	0

Lessons learned from FAO-FSP

1. Training on food safety and quality assurance in horticulture value chain created significant impact among the stakeholders.
2. The issue of food safety deals with common interest of the population of the country, more mass campaign and practical demonstrations on 10 control keys are required.
3. Building capacity of the public and private sector officials focusing on improving food safety in horticultural value chain emphasizing GAP, HACCP and GMP are needed.
4. Buyers and producer's linkage should be strengthened.
5. Certification system of GAP should be developed immediately.
6. FAO technical assistance in GAP certification system development is essential. The assistance in capacity building of DAE officials for GAP implementation and small scale infrastructure development for PHM, storage and transportation might be the options.

Financial progress of FAO-FSP sub-project

The total expenditure during the FAO-FSP sub-project period was Tk. 1,32,98,648.01 against the received Tk. 1,46,93,516.00. The financial achievement as against the received amount was 90.50%.

Implementation of NATP-2 funded by the World Bank & IFAD

Project Title: National Agricultural Technology Program- Phase II Project (NATP-2)

Sponsoring Ministry/Division:

- Ministry of Agriculture (MOA), Lead Ministry
- Ministry of Fisheries and Livestock (MOFL)

NATP-2 consists of five components

- C-1: Enhancing Agricultural Technology Generation (PIU-BARC), MOA
- C-2: Supporting Crop Development (PIU-DAE), MOA
- C-3: Supporting Fisheries Development (PIU-DOF), MOFL
- C-4: Supporting Livestock Development (PIU-DLS), MOFL
- C-5: Project Management (PMU), MOA to support the implementation, management and coordination of the NATP-2 project activities.

Out of five Components of NATP-2, Component-2 (Supporting Crop Development) is being implemented by PIU-DAE, MOA where **Hortex Foundation is a Strategic Partner of DAE** as per Financing Agreement signed between the Government of Bangladesh and the International Development Association (IDA).

Objectives of the NATP-2

The overall objective of the longer term program (NATP in three phases over 15 years) is to support the strategy of the Government of Bangladesh (GOB) for improving national agricultural productivity, market linkage and farm income with a particular focus on small, marginal and female farmers.

The Project Development Objective (PDO) of NATP-2 is to increase agricultural productivity of smallholder farms and improve smallholder farmers' access to markets in selected districts.

PDO of NATP-2 is being achieved through:

- a) *strengthening the capacity of research, extension services and farmers to generate, adopt and diffuse agricultural technologies aimed at increasing farm productivity and reducing postharvest losses;*
- b) *promoting the sustainability of existing and newly created farmer groups and Producer Organizations (POs) by facilitating their stronger participation in commodity value chain, market-linkages, improving their knowledge and skill base.*

Thus, the PDO will be achieved through the generation and release of more productive and locally adapted technologies, enhancing availability of quality seeds/breeds/fingerlings/breeding materials at the small farm level and providing relevant production, value addition, food safety and marketing support.

Involvement of Hortex Foundation in NATP-2

NATP-2 is supporting Hortex Foundation as the Strategic Partner to the Department of Agricultural Extension (DAE) under a Strategic Partnership Agreement for providing technical assistance to PIU-NATP2-DAE in carrying out value chain development, marketing and crop development activities in 22 districts, 30 upazilas (15 old and 15 new generation upazilas) with 600 CIGs (300 old and 300 new CIGs) for total of 15000 farmers.

MoU between DAE & Hortex Foundation

A Strategic Partnership Agreement Signed between DAE and Hortex Foundation for Value Chain Development and Market Linkage Activities under NATP-2

This "Agreement" is made on 10 day of January 2017 between the Department of Agricultural Extension (DAE), Khamarbari, Farmgate, Dhaka-1215, represented by the Director General, DAE, Ministry of Agriculture, Government of the People's Republic of Bangladesh, hereinafter called the First Party and the Horticulture Export Development Foundation (HORTEX Foundation), Sech Bhaban (3rd Floor), 22 Manik Mia Avenue, Sher-e-Bangla Nagar, Dhaka-1207, represented by the Managing Director, hereinafter called the Second Party.

WHEREAS in the Financing Agreement (FA) signed on May 24, 2016 between the Government of Bangladesh and the IDA, agreed to enter into a strategic partnership agreement between DAE and HORTEX FOUNDATION, under terms and conditions satisfactory to the Association (IDA), whereby, *inter alia*, HORTEX agrees to provide technical assistance to PIU-NATP2-DAE in carrying out value chain development, marketing and crop development activities of NATP-2 project.

WHEREAS HORTEX has been involved in supply and value chain development of high value crops (HVCs) and more recently in the NATP Phase-1, it is beneficial to apply HORTEX past experiences in the selected 30 upazilas, which form as part of the project area to demonstrate the best practices for horizontal and vertical expansion of high value crop production, postharvest management, value chain management, value addition, enterprises development and marketing.

WHEREAS the parties hereto have agreed to enter into this partnership agreement, which is referred to as Strategic Partnership Agreement in the "Financing Agreement (FA)".

Objective of the agreement between DAE and HORTEX

- To organize farmers (CIG and non-CIG) to develop the value chain network of high value crops for horizontal and vertical expansion in selected 30 upazila clusters i.e. 15000 CIG farmers (300 new CIGs in new 15 upazilas and 300 old CIGs in old 15 upazilas);
- To provide technical support and training for capacity building of DAE officials/staff, CIGs, POs and private entrepreneurs on value chain management and market linkage activities in order to improve farm income.

Services of Hortex in NATP-2 for DAE

As Strategic Partner of DAE, Hortex Foundation is supporting PIU-NATP2-DAE to -

- i. organize and implement value chain best practices of agro-commodities for horizontal expansion in 30 upazilas;
- ii. organize and implement vertical expansion program of six cluster crops (brinjal, bitter gourd, sweet gourd, tomato/summer tomato, banana and aromatic rice) in the value chain cluster upazilas;
- iii. provide training for CIG, non-CIG farmers and POs on PHM, Commodity Collection & Marketing Center (CCMC) management, market linkage development with traders, super-markets, exporters, processors and entrepreneurs and demonstrate appropriate PHM technology;
- iv. provide training to DAE and Hortex officials/staff including CIGs, POs for capacity building on value chain management and marketing of agro-commodities;
- v. organize and assist POs & responsible for the establishment of CCMCs, form and manage Market Management Committee (MMCs), renovation of existing markets with the assistance of DAE for improving PHM and short term storage facilities and registration for business development;
- vi. assist in establishing market linkage between CIGs/POs with traders, supermarkets, processors and exporters in collaboration with DAE;
- vii. organize workshop/seminar on value chain development for project beneficiaries;
- viii. provide technical services to CIGs/POs and entrepreneurs to compete for matching grants from Agricultural Innovation Funds (AIF- 2 and AIF-3);
- ix. organize communication campaign on food safety, SPS;
- x. organize all value chain activities including CCMC establishment and marketing facility improvement with cooperation from field level DAE officials.

Services of DAE in NATP-2 for HORTEX

As Strategic Partner of Hortex, DAE is supporting Hortex to -

- i. provide a counterpart official in each of the 30 cluster upazilas to collaborate with HORTEX officials in value chain development and marketing activities;
- ii. make available of DAE officials/staff to receive ToT and other trainings;
- iii. provide office space in the FIACs/CCMCs for LBF;
- iv. assist HORTEX to organize and mobilize CIG, non-CIG farmers and POs in 30 cluster upazilas for high value crop production and adopt GAP;
- v. provide necessary support to HORTEX in CCMCs/Collection Points establishment, market renovation/construction among other activities.

Functions of HORTEX in NATP-2

The strategic partner Hortex Foundation is being assisted DAE's CIGs and POs and private entrepreneurs to -

- i) organize programs for horizontal expansion of best practices in selected 30 upazilas;
- ii) map and organize the vertical expansion of selected six crops;
- iii) undertake value chain analysis, market studies and surveys;
- iv) facilitate marketing capacity building for CIG, POs and DAE staff/officials on value chain management, organize and assist POs in establishing CCMCs and renovation of existing markets with good PHM and short term storing facilities where producers (CIGs and non-CIG farmers), processors and traders come together and are doing business;
- v) develop market linkages and contractual arrangements between CIGs/POs with traders, supermarkets, processors and exporters;
- vi) provide financial advisory services to CIGs/POs and entrepreneurs to apply for matching grants from AIF-2 (*technology adoption*) and AIF-3 (*market and enterprises development*) and
- vii) organize communication campaign on food safety, SPS.

Mapping of value chain development

Hortex Foundation is supporting horizontal and vertical expansion of HVCs and large scale production of six selected crops covering 30 clusters in NATP-2.

Hortex Foundation in association of DAE is organizing 30 clusters in 30 upazilas 15000 farmers into value chain cluster based production and marketing chains to avoid over supply to markets during the peak production season, organizing production planning, contract farming and renovation and establishment of CCMC & collection points with good PHM, packaging and transportation.

DAE and HORTEX is giving a strong emphasis on bridging the 'know-how' gap in field on cluster based mapping, value chain analysis of selected crops and inclusion of specific crops in a cluster for horizontal or vertical expansion as per local & export market demand, comparative advantage and farmers preference of specific crop (s) in a cluster, availability of technology & inputs for the crop, communication facility to urban markets and large scale production potentiality of a crop in a given cluster.

Mapping of upazila and crops for value chain development

Thirty (30) upazilas have been selected in 22 districts for commercial production of six crops i.e. brinjal, bitter gourd, sweet gourd, tomato/summer tomato, banana and aromatic rice. Major criteria for upazila selection for value chain development are –

- High potential for high value crop production developing agro-processing & agribusiness
- High scope for intensification and diversification through dissemination of available knowledge and technologies
- High scope for vertical integration and commercial production
- Farming population dominated by small and marginal farmers and ample scope for improving livelihoods of vast farming community
- Highly responsive farming community eager to find and adopt better options to improve livelihoods and alleviate poverty and malnutrition
- Ease of communication and accessibility to markets and not duplicating and conflicting with similar other programs
- Above six crops selected on the basis of national production, market potential and export potential; upazilas in each cluster is grouped through value chain mapping for large scale production.

NATP-2 Project area for DAE & HORTEX

Upazila/Cluster wise selected value chain commodities for horizontal expansion under NATP- 2

SL No.	Name of Upazila	Preliminary Selected Commodities	Remarks
1	Savar	Brinjal, Broccoli, Sweet gourd and other vegetables	Old upazila
2	Belabo	Brinjal, Country bean, Bitter gourd, Teasel gourd	Old upazila
3	Shibpur	Brinjal, Country bean, Cauliflower and other vegetables	Old upazila
4	Raipura	Brinjal, Country bean, Bitter gourd, Teasel gourd	New upazila
5	Modhupur	Banana, Lemon, Pineapple, Tomato and other vegetables	New upazila
6	Delduar	Lemon, Tomato, Sweet Gourd	Old upazila
7	Muktagacha	Banana, Tomato, Cabbage, Cauliflower, Lemon	New upazila
8	Islampur	Brinjal, Cucumber and other vegetables	New upazila
9	Nakla	Brinjal, Tomato, Cabbage, Cauliflower, Aromatic Rice	New upazila
10	Kapasia	Banana, Guava, Ber (Kul) and other vegetables	Old upazila
11	Kishoregonj Sadar	Sweet gourd, Ash gourd and other vegetables	New upazila
12	Chandina	Tomato, Bitter gourd, Brinjal, Sponge gourd, Ash gourd	Old upazila
13	Dakhin Surma	Brinjal, Tomato, Country Bean and other vegetables	New upazila
14	Sreemongal	Brinjal, Lemon and other vegetables	Old upazila
15	Mirsharai	Tomato, Bitter gourd, Country Bean, Yard long bean	Old upazila
16	Khagrachari Sadar	Banana, Pineapple, Papaya	New upazila
17	Shibgonj, Bogra	Banana, Cabbage, Cauliflower, Bottle gourd, Sweet gourd and other vegetables	Old upazila
18	Bogra Sadar	Sweet gourd, Banana, Cabbage, Cauliflower, Bottle gourd	Old upazila
19	Mithapukur	Bitter gourd, Pointed gourd, Teasel gourd	New upazila
20	Parbatipur	Brinjal, Pointed gourd, Tomato, Cabbage, Cauliflower	Old upazila
21	Birgonj	Aromatic rice, Early cauliflower and other vegetables	Old upazila
22	Chiribondar	Aromatic Rice, Banana, Brinjal and other vegetables	New upazila
23	Polashbari	Banana, Brinjal, Tomato and other vegetables	New upazila

SL No.	Name of Upazila	Preliminary Selected Commodities	Remarks
24	Baraigram	Sweet gourd, Banana (plantain), Brinjal, Country Bean, Guava, Ber (Kul), Papaya	Old upazila
25	Naogaon Sadar	Bitter gourd, Aromatic Rice, Early cauliflower, Cabbage, Aroid	New upazila
26	Godagari	Tomato, Brinjal and other vegetables	New upazila
27	Jessore Sadar	Banana, Brinjal, Tomato/Summer tomato, Cabbage, Cauliflower, Bitter Gourd, Sweet Gourd	Old upazila
28	Jhikorgacha	Flower, Tomato/Summer tomato, Aromatic Rice, Sweet Gourd, Papaya	Old upazila
29	Bagerpara	Tomato/Summer tomato, Brinjal and other vegetables	New upazila
30	Kaliganj	Bitter gourd, Banana, Tomato, Brinjal, Cabbage, Cauliflower	New upazila

Approach of horizontal expansion in NATP-2

Programs for horizontal expansion in NATP-2 is similar to NATP Phase-1 programs -

- mobilization of farmers (both CIG and Non-CIG) into value chain network,
- identification of potential crops through value chain analysis,
- identification of constraints in the chain management,
- addressing the constraints and market linkage development for marketing of products in cluster upazilas.

For horizontal expansion of value chain activities, 30 upazilas (15 old and 15 new generation upazilas), in 22 districts with potential value chain commodities have been selected. Individual upazila value chain analysis for horizontal expansion is being undertaken by Hortex Foundation.

Value chain cluster upazilas & commodities for vertical expansion under NATP-2

Brinjal - 6 clusters	Bitter Gourd - 5 clusters	Tomato - 6 clusters	
		Winter	Summer
1. Raipura, Norshingdi	1. Kaliganj, Jhenaidah	1. Chandina, Comilla	5. Bagherpara, Jessore
2. Shibpur, Norshingdi	2. Modhupur, Tangail	2. South Surma, Sylhet	6. Jhikorgacha, Jessore
3. Sadar, Jessore	3. Belabo, Norshingdi	3. Mirsharai, Chittagong	
4. Islampur, Jamalpur	4. Sadar, Naogaon	4. Godagari, Rajshahi	
5. Sreemongal, Moulavibazar	5. Mithapukur, Rangpur		
6. Parbatipur, Dinajpur			

Cont.

Sweet Gourd - 5 clusters	Banana -5 clusters	Aromatic Rice - 3 clusters
1. Sadar, Bogra	1. Shibgonj, Bogra	1. Birgonj, Dinajpur
2. Boraigram, Natore	2. Poliashbari, Gaibandha	2. Chiribondar, Dinajpur
3. Delduar, Tangail	3. Kapasia, Gazipur	3. Nakla, Sherpur
4. Sadar, Kishoreganj	4. Sadar, Khagrachari	
5. Savar, Dhaka	5. Muktagacha, Mymensingh	

Total 30 clusters in 30 upazilas of 22 districts.

Approach of horizontal expansion in NATP-2

Programs for vertical expansion, six selected crops (brinjal, bitter gourd, sweet gourd, tomato/summer tomato, banana and aromatic rice) have been mapped covering 30 clusters in 30 upazilas of 22 districts for large scale commercial production on the basis of -

- concentration of production of a crop
- productivity
- technology availability
- involvement of small farmers
- marketing facilities and export potentiality.

The 30 clusters upazilas have been grouped into six commodity cluster. Among them brinjal covered six upazilas, bitter gourd five upazilas, tomato covered six upazilas (four for winter and two for summer production), sweet gourd covered five upazilas, banana covered five upazilas and aromatic rice covered three upazilas. Commercial production and marketing of commodities is being undertaken by organizing both CIG and Non-CIG farmers engaged in production of respective clustered crops.

Marketing capacity building in NATP-2

In NATP-2, DAE and Hortex Foundation is being focused for strengthening of institutional arrangements and 'know-how' of organizations able to support market-oriented production systems, including –

a. support to CIGs, POs and MMCs in commercial farming practices incl. issues related to value chain development, business development, access to appropriate financial services and marketing support to improve access to markets through contract farming and direct marketing and other services (inputs, credit, technical support);

b. improvements in institutional and operational effectiveness of Hortex, the specialized agency established by MOA to promote postharvest value addition and market linkages to

accelerate growth of high supply chain of agricultural commodities;

c. development of effective linkages with the research system and support for validation trials, especially on local supply chain;

d. provide training to CIG, POs, DAE officials and entrepreneurs on business development and management, best practices of PHM, organizing CCMC, transportation and linkage with urban markets;

e. mobilize 15000 CIG farmers into value chain network along with traders, entrepreneurs and processors;

f. organize motivational and awareness building campaign/workshops for CIG and non-CIG farmers to form and operate CCMC for market linkages development;

g. provide training to POs/MMCs members on good governance, production planning, marketing, contract farming, financial management, book keeping, savings management in 30 upazilas;

h. For capacity building of DAE and Hortex personnel, provide training of trainers (ToT) course for DAE officers, AAEO/SAAO, LBF and field trainers on production planning, marketing, contract farming, PHM, value addition, food safety.

Development of market linkages and contractual arrangements for POs in NATP-2

For facilitating production and marketing of cluster based crops and maintained the quality demanded by the markets, DAE and Hortex Foundation is supporting -

- **CIG farmers to organize themselves into value chain networks** and encourage non-CIG farmers to join in the POs for marketing of quality produce maintaining GAP. It helps to vertically integrate small and marginal producers into supply chain covering key commodities of interest.
- **organize meetings/workshops with POs, farmers, traders, supermarket-chains, processing companies, exporters** for developing agreements/contracts, training to the selected traders, transporters, exporters & processors for refurbishing and/or improving the sales points of selected traders, design of CCMC, Collection Point for renovation, works for renovation of existing markets and establishment of new CCMC/Collection Points with proper up/off loading and waste management;
- provide POs improved transport crates, rickshaw van, sorting mat and other processing, transportation and quality testing small equipment and product quality testing for demonstrations and support quality control laboratory analysis.

Highlighted activities of HORTEX under NATP-2 in FY 2016-17

1. Support PCMU, NATP2: PF to organize two workshops (09 & 13 Sept. 2015) namely NATP-2 awareness workshop for public sector projects/programs and private sector entrepreneurs. Mr. Mitul Kumar Saha, AGM (Marketing), Hortex Foundation attended the workshops and presented Hortex presentation on value chain development and market linkage activities.

2. Prepared Annual Work Plan and Budget for Hortex Foundation under NATP-2 and approval from the Governing Body of Hortex Foundation.

3. Drafted, edited and finalized Agricultural Innovation Fund: Operational Guidelines for AIF-2 & AIF-3 Management with DAE & PCMU officials.

4. Drafted, edited and finalized MOU document and signed MOU between DAE and Hortex Foundation on 10th January 2017.

5. Prepared Core Contractual Officer and Staff TOR, recruitment documents, formation of committees and published advertise in the national papers.

6. Prepared Experts TOR, REOI documents, formation of different committees and necessary approval.

7. AGM (Marketing), Hortex attended five facilitation of linkage meetings in Kapasia, Modhupur, Belabo, Raipura, Shibpur upazila for primary discussions with the UAO/AEO, SAAOs and CIG farmers developing value chain of crop/horticulture and market linkage activities by DAE & Hortex under NATP-2.



8. Hortex Foundation participated “National Fruit Exhibition & Fair 2017 during June 16-18, 2017 at AKM Giasuddin Milky Auditorium premises, DAE funded by NATP-2.

9. Prepared procurement plan and completed procurement of 03 packages of goods -

i. *GD/Hortex/NATP-2/04/2016-2017: 5 laptops*

ii. *GD/Hortex/NATP-2/05/2016-2017: 28 Digital Camera*

iii. *GD/Hortex/NATP-2/06(a)/2016-2017: Furniture (File Cabinet-1, Book Shelf-2, Computer Table-2 and Wooden Chair-3)*

10. Financial progress in FY2016-17: Expenditures Tk. 19,69,807.00 as received Tk. 19,71,200.00 (IDA) (99.93%)

Highlighted activities of HORTEX under NATP-2 in FY 2017-18

In FY2017-18, DAE & HORTEX achievements in value chain development and market linkage activities are highlighted here:

Capacity building of DAE and Hortex staff

Hortex Foundation organized four batches of ToT on production planning, business plan, marketing, contract farming, PHM, value addition and food safety held on 23-24Jan2018, 29-30Jan2018, 12-13Feb2018 and 18-19Feb2018 at its conference room, Sech Bhaban, Dhaka where 93 BCS Cadre Officers incl. 12 lady officers of DAE (DD, ADD, DTO, UAO, AAO, AEO) attended.



Hortex Foundation organized ten batches training for capacity building of DAE personnel (AAEOs/SAAOs) on PHM, food safety, quality assurance, marketing, value chain held between 14-15Mar2018 to 09-10Apr2018 at DDAE office Dinajpur, Jessore, Narsingdi, RDA Bogra, Horticulture Centre Natore, Kewatkhali/Mymensingh, Jamalpur, Feni, Sylhet, Mushroom Development Institute Savar where 300 AAEOs & SAAOs incl. 32 women attended.



Hortex Foundation organized two batches training (refreshers & foundation) for capacity building of Local Business Facilitator (LBF) on PHM, food safety, marketing, quality assurance and value chain held on 08-09Jan2018 and 24-25Apr2018 at its conference room, Sech Bhaban, Dhaka where 30 LBF attended.





Hortex Foundation organized sixty four batches training for capacity building of Common Interest Group (CIG) farmers on maturity and harvesting index of fruits & vegetables, food safety, marketing management and hands on training on PHM held between 21May2018 to 26June2018 in 21 upazilas of 15 districts where 1913 CIG farmers' incl. 300 women attended.



Formation of Producer Organization (PO)



During the reporting period, 21 POs and 12 Market Management Committee (MMC) formed and mobilized for value chain development and market linkage activities by DAE and Hortex Foundation.

Market linkage development

For better market linkage development, DAE and Hortex Foundation established 09 Commodity Collection and Marketing Centers (CCMCs) in Belabo, Shibpur, Raipura, Delduar, Modhupur, Savar, Nakla, Palashbari and Jhikargacha upazila as rental basis.



Marketing progress through CCMCs

FY2016-17	FY2017-18	Total
100 MT	965.31MT	1065.31MT
Only the CCMC at Parbotipur functioned during this period under SCDC of NATP Phase-I	CCMC of Belabo, Shibpur, Raipura, Delduar, Savar functioned during this period	Out of 1065 MT, 52 MT of Teasel gourd, Brinjal, Bitter gourd exported from Shibpur & Belabo Upz. CCMC

Facilitation of linkage meetings

During the reporting period, 15 facilitation of linkage meeting were organized with the traders, supermarket chains, processing companies, exporters, DAE officials, UNO in Kapasia, Balebo, Raipura, Shibpur, Modhupur, Nakla, Naogaon Sadar, Parbotipur upazilas for value chain development of HVCs and market linkage.



Participation in fair

During the reporting period, Hortex Foundation was participated three National Fairs namely National Food Fair-2017, National Vegetables Fair-2018 and National Fruits Fair-2018. The Foundation raised stall financed by NATP-2 and displayed a good number of exportable fresh and processed fruits and vegetables and packaging technologies which received immense interest from the visitors. Hortex Foundation awarded **3rd Prize** from the National Vegetables Fair-2018 and National Fruits Fair-2018.

Procurement

During the reporting period, Hortex Foundation completed 17 procurement packages under NATP-2 as under:

Goods Procurement

1. *GD/Hortex-NATP2/05: 2 Digital Camera*
2. *GD/Hortex-NATP2/08: Processing, Transport or Small Equipment for POs*
3. *GD/Hortex-NATP2/15: Office Supply*
4. *GD/Hortex-NATP2/06 (2017-2018): Office Equipment and Furniture*

5. *GD/Hortex-NATP2/17 (2017-2018): Replacement of Crates*
6. *GD/Hortex-NATP2/09 (2017-2018): Printing & Documentation Services Procurement*

1. *SD/Hortex-NATP2/01: Postharvest Management Expert (1)*
2. *SD/Hortex-NATP2/02: Supply Chain Integration and Marketing Expert (1)*
3. *SD/Hortex-NATP2/03: Training Management Expert (1)*
4. *SD/Hortex-NATP2/04: M&E Expert (1)*
5. *SD/Hortex-NATP2/05: Accounts Officer (1)*
6. *SD/Hortex-NATP2/06: Data Analyst / Computer Operator (1)*
7. *SD/Hortex-NATP2/07: Driver (5)*
8. *SD/Hortex-NATP2/08: Support staff – office support (1)*
9. *SD/Hortex-NATP2/08: Support staff – despatcher (1)*
10. *SD/Hortex-NATP2/09: Local Business Facilitator (LBF) (30)*
11. *SD/Hortex-NATP2/13: Conducting Studies & Surveys on Existing Markets of 30 Upazilas (1st Part, 12 Upazilas)*

Financial progress

Financial progress in FY2017-18: Tk. 198.71 lakh as received Tk. 198.71 lakh (IDA & IFAD) (100% expenditure)

Five Reefer Trucks Available on Rent at Hortex Foundation



3MT capacity reefer truck



4MT capacity reefer truck

- To maintain cool chain, while transporting your fresh produce/product
- To ensure proper quality
- To store your produce/product in appropriate temperature (+ 15°C to -25°C)
- Capacity 3 MT (three) and 4 MT (two new)
- Auto humidity control of fresh produce up to 99%.

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