Development of Value chains in High Value Crops

National Agricultural Technology Program – Phase II Project

(NATP - 2)

Annual Progress Report
2019 - 2020

THE WORLD BANK
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IFAD
INTERNATIONAL FUND FOR AGRICULTURAL DEVELOPMENT

Hortex

Hortex Foundation

As Strategic Partner of the

Department of Agricultural Extension (DAE)

Sech Bhaban, (3rd Floor), 22 Manik Mia Avenue, Dhaka- 1207

December 2020

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Cover Photo
Capacity building of the CCMCs has been a major thrust during 2019-20

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Executive Summary

Hortex Foundation is working as a 'Strategic Partner' of the DAE for the NATP-2 project, providing technical services in value chain development for selected high value crops (HVCs) with emphasis on improved post harvest management (PHM) practices to work for a better marketing system. NATP-2 project activities at Hortex could only be started from January 2018 whence all staff could be mobilized. This annual report covers activities for the fiscal year 2019-20 and includes data, in applicable cases, from project inception, i.e., from 2016-17.

In this year, four Collection Points started functioning, while the capacities of the CCMCs were greatly enhanced as each was supplied with more sorting mats, plastic crates and the remaining facilities in washing were installed. The CCMCs are being popularised through regular meetings with farmers at CIG (yard meetings) and PO levels, posters (on PHM practices & on Banana Value-chain), PHM manual for POs and extension workers, booklets for farmers, PHM practices demonstrations, organizing linkage meetings between traders and farmers, etc.

During the year 2019-20, a total of 7822.88 tons of agricultural commodities were sold through the CCMCs and CPs. Thereby, since project inception to June 2020, a total of nearly 14,014 metric tons of agricultural commodities were sold through the 30 CCMCs and four CPs. A total of 55 different agricultural commodities were traded which included the six selected HVCs (brinjal, bitter gourd, sweet gourd, tomato, banana and aromatic rice). The sale volumes are elaborated through Annex Tables 3.1 and 3.4 by months, agri-commodities, upazilas and by years respectively. A good achievement during this period had been to countries like, Malaysia, Dubai, Qatar and Saudi Arabia. Mostly brinjal, teasel gourd, bitter gourd, bottle gourd, lemon, etc. amounting to 1,338 metric tons from 2017-18 up to 2019-20 to these countries during this period.

Training of CIG farmers, POs and traders was carried out this year for a total of 2,130 persons. This amounts to 13,605 persons ranging from DAE officers to farmers and traders taking a total of 14,172 client days of training from project initiation to June 2020. Topics included PHM practices, marketing, production and business planning, contract farming, food safety and quality, etc.

A 2nd national workshop was held on 31st October 2019 with leading banana traders in Dhaka and with experts and related officials. Proper PHM for banana was the keynote address along with video clips showcasing the technology. The banana traders expressed willingness to adopt the recommended practices. Publications included manual for the POs and a PHM practices guide of selected HVCs for the CIG farmers, bothwere in Bengali.

Covid-19 pandemic was an overwhelming challenge when operation of the CCMCs was sometimes disrupted, but Hortex managed to keep those functional. Earlier challenges faced were in establishing CCMCs due to scattered CIG clusters in the upazilas. The few CIGs connected with the CCMCs bringing in safe and quality produces can hardly be of significance in the wider supply chains of the upazila and beyond because of the overwhelming unprocessed amounts of the similar vegetables/fruits. Getting traders and market actors to adopt new and improved PHM practices poses the next most formidable challenge. The good learning was that the institutional capacity building process at the CCMCs with PO-MMCs was adopting changes in the leadership for undertaking the required work in marketing and management. Business planning for the CCMCs by the PO-MMCs can be organized through workshops with their own ideas for better effectiveness.

While the monitoring work internally went on without fail, World Bank Mission, senior officers and dignitaries visited and appreciated the value chain development activities of NATP-2 at Hortex Foundation. As a way forward, the anticipated sustainability of the CCMCs and PO-MMCs seemed on track as institutional process and capacities were observed developing, withdrawal of project assistance gradually could therefore become an effective exit strategy.

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Abbreviations

AAO	Additional Agriculture Officer
AAEO	Assistant Agriculture Extension Officer
AEO	Agriculture Extension Officer
AIF	Agricultural Innovation Fund
BARI	Bangladesh Agricultural Research Institute
CCMC	Commodity Collection & Marketing Centre
CIG	Common Interest Groups
CP	Collection point
DAE	Department of Agricultural Extension
DPP	Development Project Proposal
GAP	Good Agricultural Practices
Hortex	Hortex Foundation
HVC	high value crop
HRC	Horticulture Research Centre (of BARI)
IFAD	International Fund for Agricultural Development
ISM	Implementation Support Mission (of the WB and IFAD)
LBF	Local Business Facilitator
MMC	Market Management Committee (of the PO to run CCMC affairs)
NATP-2	National Agricultural Technology Program- Phase II Project
PHI	Pre-harvest Interval
PHM	post harvest management
PMU	Project Management Unit, NATP-2
PO	Producer Organization
SAAO	Sub-Assistant Agriculture Officer
TFTC	too few to count
ToT	Training of Trainers
UAO	Upazila Agriculture Officer
WB	The World Bank

1.0 Introduction

Hortex Foundation is working as a 'Strategic Partner' of the DAE for the NATP-2 project, providing technical services in value chain development for selected high value crops (HVCs) with emphasis on improved post harvest management (PHM) practices and to work for a better marketing system. NATP-2 project activities at Hortex could only be started from January 2018 whence all staff could be mobilized. This Annual Progress Report covers activities for the year 2019 - 20 and includes data from 2016-17 up to June 2020.

The activities are piloted in 30 upazilas of 22 districts for vertical expansion of six selected HVCs, namely, brinjal, bitter gourd, sweet gourd, tomato, banana and aromatic rice (Table 1.1). Figure 1 shows the 30 upazila locations on the map of Bangladesh. Also there are other identified vegetables and fruits for horizontal expansion of the practices.

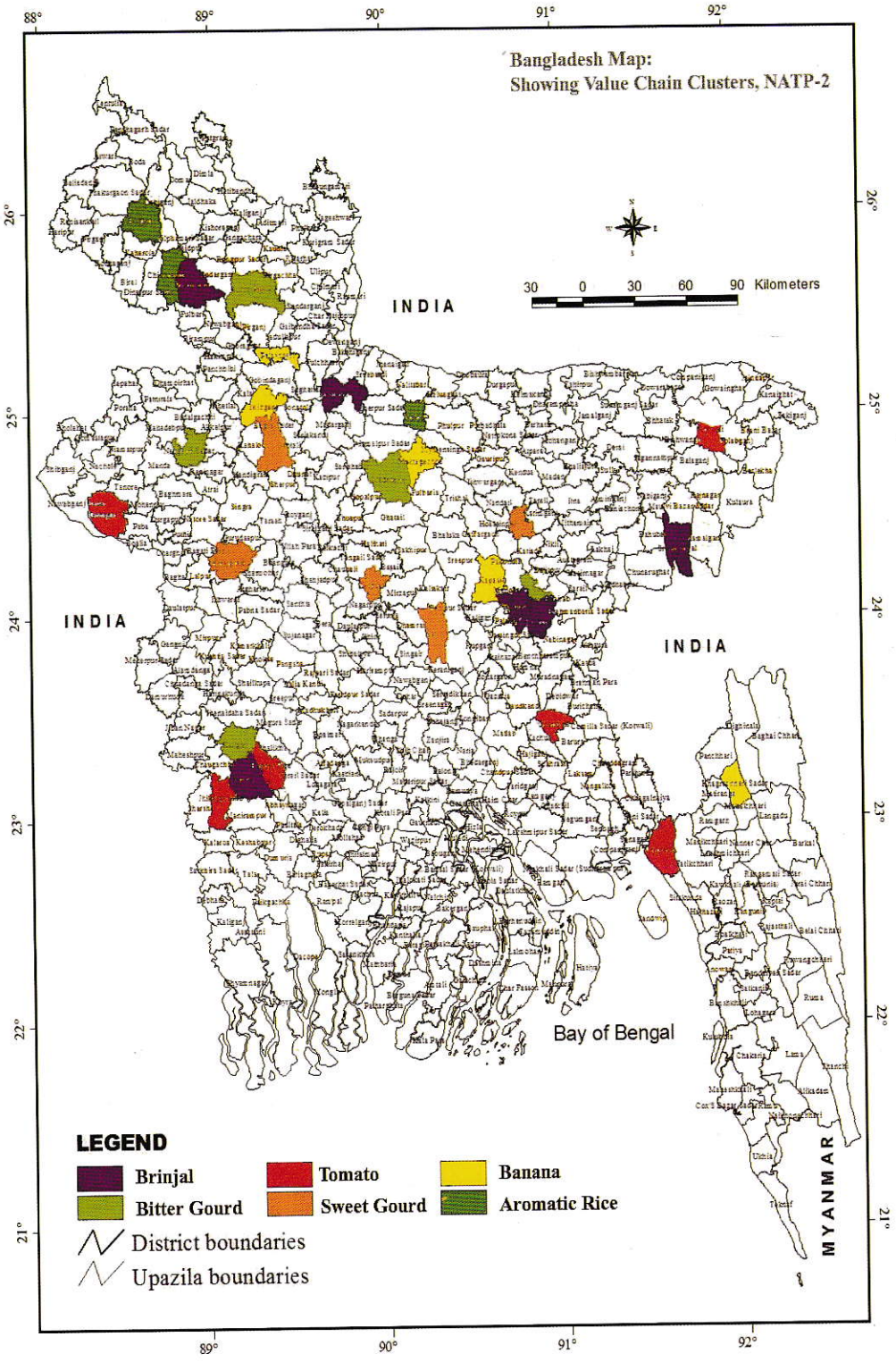
1.1 Objective

The **objective** of this strategic partnership **is** to provide technical support to DAE in value chain development in the selected upazilas having small farmers organized in production clusters as common interest groups (CIGs) and producer organizations (POs) through improved PHM practices and better market linkages involving the selected HVCs.

Table 1.1: Selected HVCs for vertical expansion shown against Value Chain Cluster upazilas in NATP-2.

Brinjal- 6 clusters	Bitter Gourd – 5 clusters	Tomato - 6 clusters		Sweet Gourd - 5 clusters	Banana – 5 clusters	Aromatic Rice - 3 clusters
		Winter	Summer			
1.Raipura, Narshingdi	1.Kaliganj, Jhenaidah	1.Chandina, Comilla	5.Bagharpara, Jessore	1.Sadar, Bogra	1.Shibganj, Bogra	1.Birganj, Dinajpur
2.Shibpur, Narshingdi	2.Madhupur, Tangail	2.Dakkhin Surma, Sylhet	6.Jhikorgachha, Jessore	2.Baraigram, Natore	2.Palashbari, Gaibandha	2.Chirirbandar, Dinajpur
3.Sadar, Jessore	3.Belabo, Narshingdi	3.Mirsarai, Chittagong		3.Delduar, Tangail	3.Kapasia, Gazipur	3.Nakla, Sherpur
4. Islampur, Jamalpur	4.Sadar, Naogaon	4.Godagari, Rajshahi		4.Sadar, Kishoreganj	4.Sadar, Khagrachhari	
5.Sreemangal, Moulvibazar	5.Mithapukur, Rangpur			5.Savar, Dhaka	5. Muktagachha, Mymensingh	
6.Parbatipur, Dinajpur						

Fig 1: Locations of the 30 pilot upazilas having the value chain clusters.



1.2 Implementation Strategy, activities and work modalities

Hortex Foundation is providing "technical services on value chain development" by carrying out various capacity building and market linkage activities. These activities are highlighted below.

(a) customized training courses for DAE officials, target farmers in the CIGs, POs, the identified traders and related professionals in the value chains;

(b) organizing the CIGs and POs and acquainting them with better governance mechanisms including financial management;

(c) establishing Commodity Collection & Marketing Centres (CCMCs) and Collection Points (CPs) through minor repairs or lease, refurbishing with basic furnitures and operationalizing with support of simple items like sorting mats, grading table, plastic crates, rickshaw-vans, washing bay, etc.;

(d) providing hands-on training to the CIG/PO farmers and other value-chain actors on post harvest practices of their produces in handling, sorting, grading, washing, packaging, carrying, etc. for value addition;

(e) linking the CIGs /POs with markets and traders in order to gain better prices; and

(f) mentoring the CIGs/ POs to apply for the Agricultural Innovation Fund (AIF) support in improving their investment ability and sustainability.

These activities are further strengthened by

(g) undertaking surveys and studies to characterize value chain performances for feedback and validation of the project activities;

(h) organizing communication campaigns, and popularising appropriate post harvest management (PHM) practices through demonstrations, posters, leaflets, fairs, etc.;

(i) carrying out public relations through workshops and seminars on contemporary issues for food safety, sensitizing the facts about the huge post-harvest losses to emphasize the need for proper PHM.

In order to share experiences from similar efforts in other countries, related project persons will join such international seminars or workshops to share and exchange results &/or ideas.

The execution of the project activities in value chain development at the upazila and block levels is MOSTLY contingent upon implementation by the DAE personnel. They are: Upazila Agriculture Officer (UAO), Additional Agriculture Officer (AAO), Agriculture Extension Officer (AEO), Assistant Agriculture Extension Officer (AAEO), from the office of the UAO, and the Sub-Assistant Agriculture Officers (SAAOs) at block level.

Technical support from Hortex for imparting relevant knowledge, skills, roles and activities in value chain development has been provided through six 'Training of Trainers' (ToT) courses for the upazila level and selected district level officers of DAE. They in turn have been training the CIG farmers, traders and others in addition to training the AAEO/SAAOs. Hortex is arranging the whole work through expertise support in (i) Post Harvest Management, (ii) Supply Chain Integration and Marketing Development, (iii) Training Management, and (iv) Monitoring and Evaluation, including backstopping from time to time to the DAE personnel in the field. In each of these 30 upazilas, Hortex has deployed LBFs (Local Business Facilitators), mainly to help operationalize the CCMCs, assist the POs and Market Management Committees (MMCs) to gradually take command of the CCMC functions, monitor the local markets for HVC landing and export, keep contacts with CIGs, organize CPs, maintain linkages with traders and other market actors while remaining in constant contact with the SAAOs and UAO.

Hortex is keeping regular liaison with other project counterparts and participants, carrying out concurrent monitoring for activities and outputs, and reviewing progress of the Project periodically using appropriate tools and data gathering system, in order to maintain project activities on course to ensure that the designed outcomes are achieved.

2.0 Supply Chain Development and Market Linkage Activities

The activities in supply chain development for the NATP-2 project at Hortex Foundation started much later than that of its partner DAE due to changes at its management level in 2017 which affected the recruitment process for quite a while (Annual Reports 2016-17 & 2017-18). As a result, activities had a delayed start from December 2017 when the Consultants joined and prepared the manuals for training and implementation. During the second half of 2017-18 field activities began with placement of LBFs, organization of the POs and establishing of CCMCs. By June 2018, nine CCMCs were established, but five became functional. During 2018-19 all the CCMCs were established and became functional. The dominant activity remained on training the CIG farmers and POs. A major thrust was to make the PO-MMCs better organized and for taking the lead in the functions of the CCMCs (Annual Report 2018-19). By June 2019, a total of 6161 tons of HVCs were marketed through the CCMCs. It is important to note here that the last Annual Report of 2018-19 recorded slightly lower figure for the total marketed volume at 6137.11 tons. The difference in the latest calculations is due to the fact that in some cases banana and bottle gourd were reported in pieces and not by weight. These figures were recalculated using proper procedure at the relevant CCMCs, and the corrections were adopted.

2.1 Improvement of the CCMCs and opening of Collection Points (CPs)

The Commodity Collection and Marketing Centres (CCMCs) exist at the heart of the supply chain development activities providing for the essential postharvest management practices of sorting, grading, washing, drying and packing facilities for the vegetables/fruits of the CIG and non-CIG farmers in the project areas. In accordance with the project design, further marketing solutions as Collection Point (CPs) were initiated and four CPs were established in Mithapukur, Nakla, Madhupur and Chandina upazilas. These are detailed below in Table 2.1

Table 2.1 : Collection Points (CPs) made operational during 2019-20.

Sl. No.	Upazila	District	Location of CCMC	Rent-contract signing date	Status of CP	Status of MMC
1.	Mithapukur	Rangpur	Abhirampur	Feb 2020	Functioning	Formed
2.	Nakla	Sherpur	Notun bazaar	Feb 2019	Functioning	Formed
3.	Madhupur	Tangail	Shalikha	Dec 2019	Functioning	Formed
4.	Chandina	Cumilla	Purbo Ramchndrapur	Feb 2020	Functioning	Formed

All the CCMCs continued to function during the reported year and the details of the CCMCs on their location, renting date, and status of PO-MMCs are provided in Annex Table 1. The CCMCs were continuously supported with needed logistics wherever necessary (Annex Table 2).

The CPs are provided with a weighing scale, some plastic crates, few chairs to initiate the marketing activities. Gradually further support in logistics will be provided. At the outset, a CP is established in a crop growing area where the farmers have problems of aggregation, finding a market close to their fields or to get to a trader for selling. As may be seen in the case of the CP in Abhirampur, Mithapukur (Photo-1), aggregation and bulking of farmers' produce remains the first priority for a CP to attract buyer and to fetch a good price. Therefore, a CP is just a shade initially and a clean environment for primary PHM practices. With further improvement of the structures (like in Chandina Photo-2), more logistic items can be arranged as secured keeping of the items is ensured.

Photo 1 - 2: Collection Points (CPs): Mithapukur (at left – when barely the structure was erected) and Chandina.

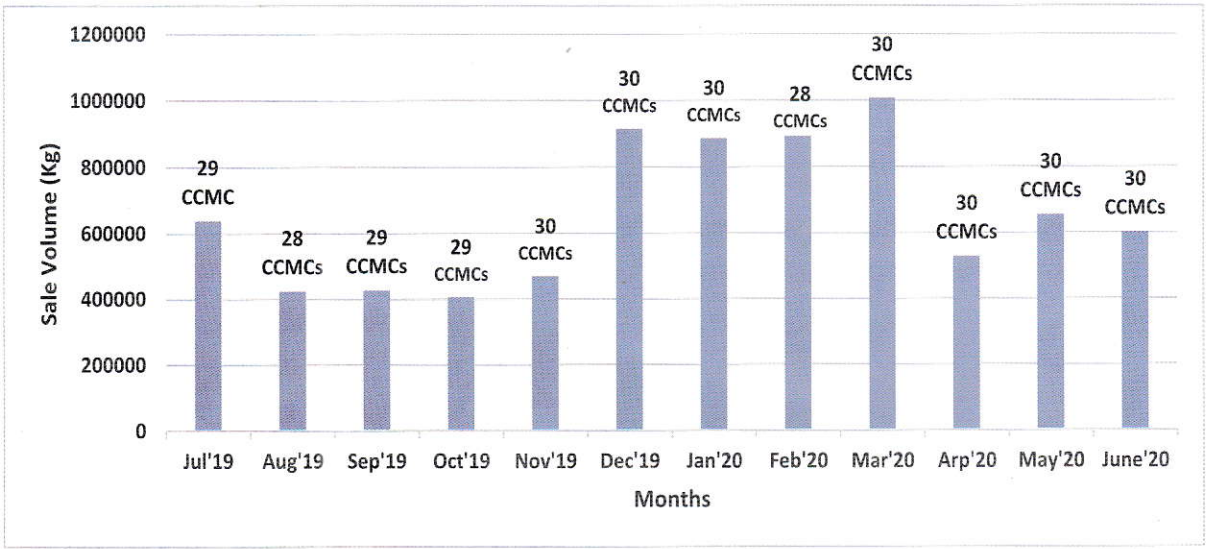
As already mentioned, Annex Table 2 lists all the support equipment and items provided to the CCMCs. Basic furniture like office tables and chairs were supplied. The operational items for PHM activities, such as, weighing machine, sorting mat, grading table, washing facility, ceiling fans for drying were provided and are being used. However, Khagrachhari sadar still has issue with running water as tubewell installation is hampered due to too deep boring requirement.

2.2 Agri-commodity marketing

During the year 2019-20, a total of 7822.883 tons of agricultural commodities were sold through the CCMCs and CPs as depicted below in Fig 2 in a month-wise manner. This brings the total marketing volume to 14,014 metric tons of HVCs from inception of the project activities in 2016-17 to June 2020 (Table 2.1).

For the better part of the year, the volumes of marketed HVCs gradually increased over the months as Fig 2 shows, but change in crop growing seasons caused a lean period in between, otherwise the market assembly by the CIG and non-CIG farmers had been growing. However, effect of Covid-19 pandemic was felt quite significantly on vegetable marketing as can be seen in the figures after March 2020. The Covid-19 effects and the measures taken by Hortex to offset those are described under sub-section 6.1.

Fig 2: Volumes of agricultural commodities sold through CCMCs and CPs during Jul 2019 – Jun 2020.



Note: Number of CCMCs at bar tops indicates the number of those reporting. Often one or the other CCMC experienced off-season, as participating farmers planted the next crop.)

Annex Table 3.1 provides the details of different agri-commodity marketed during the reporting year 2019-20 in a month-wise manner, followed by volumes of crop items for the current year in Annex Table 3.2. During the reporting year, banana was the highest marketed HVC at 911 tons, while the second-most marketed crop was country bean at 896 tons, followed by aromatic rice at 805 tons, then brinjal was the fourth highest produce at 678 tons and at fifth highest volume was tomato, marketing 528 tons (Annex Table 3.2). A total of 55 different HVCs were marketed through the CCMCs and CPs during this period.

Annex Table 3.3 is added also for the benefit of looking at performance of the CCMCs in a upazila-wise scenario. Among the CCMCs, Dakkhin Surma marketed the highest volume of HVCs at 807 tons followed by Godagari with 738 tons, Shibganj 476 tons, Jhikorgachha 437 tons and Birganj 436 tons.

Photo 3: *Mechuri*, seeds of Indian spinach, is traded as a delicacy in Kaliganj CCMC.

Photo 4: Kaliganj upazila grows lots *mechuri* as seen in the vines of Indian spinach here.

An interesting find has been the trading of seeds of Indian spinach (Bengali: *pnui shak*) in Kaliganj CCMC, called locally as *mechuri* (photo 3 & 4.) It is considered a delicacy by the local people.

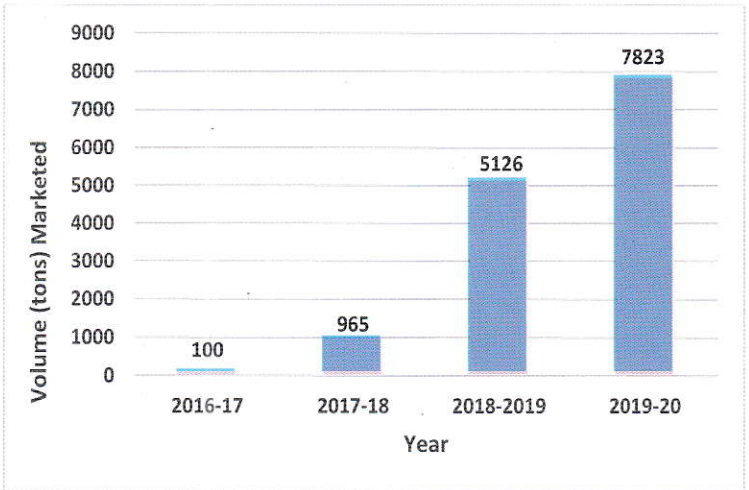
In total over 14,014 metric tons of agricultural commodities have been sold through the CCMCs and CPs from inception of the project activities in 2016-17 to June 2020, which is shown below by the years in Table 2.2. Along the years, the most marketed HVCs are also mentioned. It may be observed that the rankings for most traded HVCs vary over the years. This is due to the gradual establishment of CCMCs over the years in different parts of the country and also because more items and volumes came for aggregation and for PHM at the CCMCs.

Table 2.2 Volumes of agri-commodities marketed over the years thru the CCMCs and CPs between 2016-17 and 2019-20.

Sl No.	Year	Volume of agri-commodities marketed (ton)	Number of CCMCs + CPs functioning	Major HVCs marketed (in order of most volumes)
1.	2016 – 17	100.00	01	Brinjal, Radish, Bitter gourd, Sweet gourd, Ash gourd, etc.
2.	2017 – 18	965.31	05	Lemon, Brinjal, Bitter gourd, Teasel gourd, chili, etc.
3.	2018 – 19	5,125.706	28	Brinjal, Lemon, Aromatic rice, Potato, Country bean, etc.
4.	2019 – 20	7,822.883	30+04	Banana, Country bean, A. Rice, Brinjal, Tomato, etc.
Total 14,013.899 tons			34	

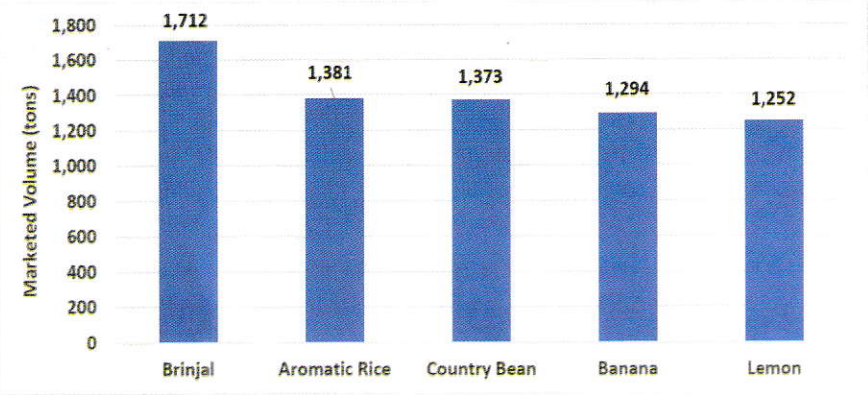
The rise in marketing volume therefore appears much more remarkable as shown in Fig 3 for the years.

Fig 3: Progress in agri-commodity marketing thru CCMCs and CPs over the years 2016-17 to 2019-20.



As may also be seen from Annex Table 3.4 a total of 59 different HVCs were traded during the whole project period so far. Among the agri-commodities, the top five traded HVCs were brinjal (1712 tons), followed by aromatic rice (1381 tons), then country bean (1373 tons), banana (1294 tons), and lemons (1252 tons) during the period between 2016-17 and 2019-20 (Fig 4).

Fig 4: The five most-sold agri-commodities thru the CCMCs & CPs during the years 2016-17 to 2019-20.



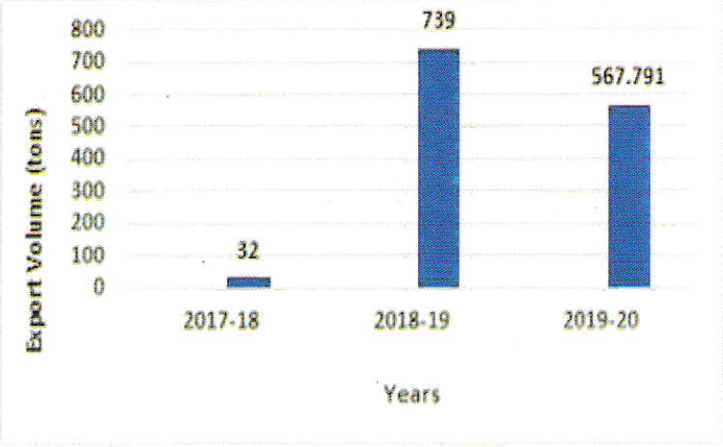
2.3 Extent of farmers and traders accessing the CCMCs and CPs

Number of farmers accessing the CCMCs has been fluctuating over the years for various reasons, eg., seasonal changes, transport availability, etc. It is estimated that over 3300 farmers, both CIG and non-CIG, access the 30 CCMCs and four CPs every month (Annex Table 4). The records show that in a month a CCMC has been accessed by 110 farmers on an average. So far between 200 and 450 traders are engaged with the CCMCs and on an average between three to 25 traders procure from one CCMC.

2.4 Export of vegetables through CCMCs

A significant volume of vegetables has been exported over the years to countries like, Malaysia, Dubai, Qatar and Saudi Arabia using the facilities of some of the CCMCs (Fig 5).

Fig 5: Progress in agri-commodity export thru the CCMCs over the years 2017-18 to 2019-20.

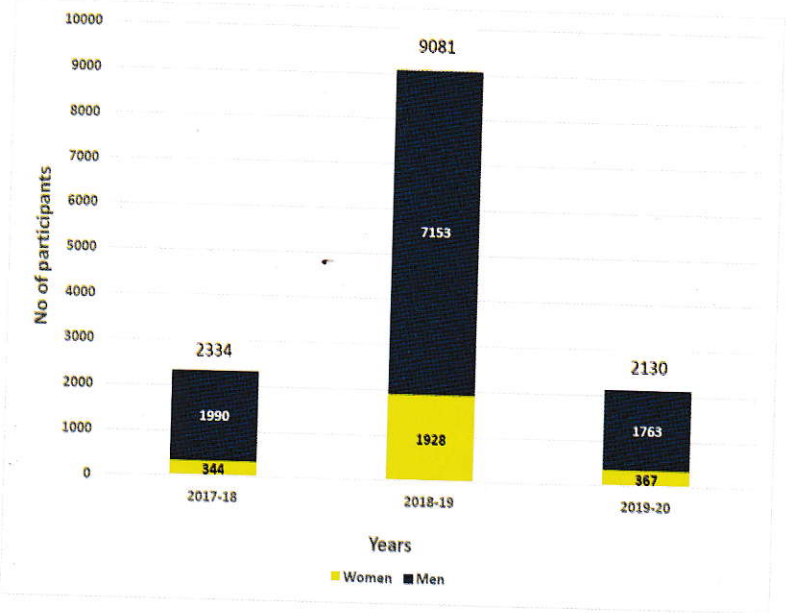


Over 1338 metric tons of vegetables have been exported so far (Annex Table 5). Mostly brinjal, teasel gourd, bottle gourd, bitter gourd, lemon and potato have been exported to these countries. These have been exported using the CCMCs at Shibpur & Belabo of Narshingdi, Mithapukur of Rangpur, Madhupur of Tangail and Chandina of Cumilla districts during July 2018 to June 2020 .

2.5 Training programme implementation

During 2019-20 a total of 2130 persons received training on PHM, marketing, good governance, etc. They included 1020 CIG farmers, 660 PO members and 450 traders that totalled 2130 client-days of training. From 2017-18 to 2019-20, a total of 13,605 persons have received training over 462 events (batches) for a total of 14,172 client-days of training. Fig 6 below depicts the year-wise attendance of the participants in a gender disaggregated way. A total of 2639 women attended different value chain development training programme events that constituted close to 20% of the total participants. Annex Table 6 summarises all the training events completed so far between 2017-18 and 2019-20.

Fig 6: Number of participants attending different training events on value chain development topics between 2017-18 and 2019-20.



The CIG farmers have received training on maturity and harvest indices, contract farming, PHM practices, marketing, CCMC functionalities, food safety and quality, and especially, hands-on training on sorting, grading, washing, drying and packaging. The PO members received also similar training, but with more emphasis on good governance, market management, business planning, etc. for especially running the CCMCs (Photos 5 & 6). A total of 900 (including 450 from last year) traders were provided training on the topics relevant for them with emphasis on fresh produce handling, transportation, packing, food safety requirements, etc. The participating traders were those who were identified around the CCMCs and had been cooperating with the PO-MMCs and trading or were expecting to conduct business at the CCMCs.

Photo 5: A training session of the PO in Kishoreganj sadar upazila, 03 December 2019. The DTO Kishoreganj Dr Mohit K Dey taking the session.

Photo 6: The participant PO members attending the training session in Kishoreganj sadar upazila, 03 December 2019.

It has to be noted that a range of clients received training under the value chain development component from the inception of the project. The trainees included the DAE officials in the upazilas, districts, and in block levels who are engaged in providing extension services to the CIG farmers. A total of 147 DAE officials (UAO, AAO, AEO, ADD, DTO, DD) received the ToTs, who in turn are now acting as trainers to train the CIG farmers, POs, traders, etc. ToT courses included production planning, maturity and harvest indices, PHM practices, marketing, CCMC function, food safety and quality, etc. Similar course were provided the block level DAE officers who are SAAOs, and all 300 of them were trained. A total of 9530 CIG farmers have received the PHM-related training so far. Training of CIG farmers was given special emphasis during 2018-19 and as a result during the period a very high number of CIG farmers (6600) were trained. The LBFs received one foundation and three refreshers training, also with some additional topics, even an additional day of training.

Further training are being planned for processors and other market actors to orient them with food safety requirements, PHM practices relevant for packaging, loading, transporting, storing, etc., so that they are aware of post-harvest loss and its control.

It is however a matter of grave concern as training events has been hampered since the Training Management Expert (TME) left after his two year input that ended in November 2019. The DPP clearly shows training events for 3rd and 4th years of the project time-line, but TME's input was erroneously set for shorter duration. It may also be noted here that due to his departure the total number of training batches/participants reduced drastically compared to the previous year. In this regard it is essential that his input should continue further so that all training events, workshops and exposure visits can be implemented.

2.6 Mobilization of CIG farmers from production clusters to the CCMCs

The first act of an LBF after arriving in the upazila to start his job was to contact with the 20 CIGs designated to participate with market linkage activities. The related SAAOs also assisted and the first round of training for the CIG farmers started rolling. In all the 30 pilot upazilas, first few CIG training programmes were directly supervised by the consultants. Initiation of the CCMCs and connection with the traders enhanced the process further. Gradually the POs were formed and meetings of the MMCs were organized. These regular meetings with farmers at CIG (yard meetings) and PO levels have further cemented their mobilization.

The farmers in the production clusters were originally organized by the SAAOs from the DAE. They receive production technology training from DAE and related extension support. As already mentioned above, Hortex has provided the CIG farmers training on PHM and relevant maturity & harvest index. Through a series of meetings and with the help of the training courses the operations in the CCMCs were initiated.

Both the CIG and non-CIG farmers have access to the CCMC and can use the sorting, grading, washing and packaging facilities there. Local traders mostly procure the assembled commodities in the CCMCs, as also traders from outside the area purchase. Opening of the CCMCs has helped mobilize the CIG farmers and it has become easier for them to come to the CCMCs and sell their produces. The practice of selling from farmgate to the *farias* (collectors) by the CIG farmers is thus decreasing in the areas where the CCMCs operate. Neighbouring non-CIG farmers also have access, which has a positive impact in society, reflecting the way CCMCs are viewed.

The LBF along with the PO members and especially its executive body - the MMC, organize and manage the activities in the CCMC. The MMC is meeting regularly each month. Gradually these meetings are also being participated by local traders, who are buying from the CCMCs.

2.7 Efforts taken to popularize the CCMCs

The **CCMCs are** becoming popular **as marketplaces showcasing the validated technologies of PHM practices** (sorting, grading, washing, drying and packaging) **to the participating farmers, traders, and entrepreneurs.** To start with, for some CCMCs, public announcements over loudspeakers were carried out. In most cases, from the very beginning the traders were contacted vigorously to bring them to the CCMC as a source of bulk vegetable purchasing point.

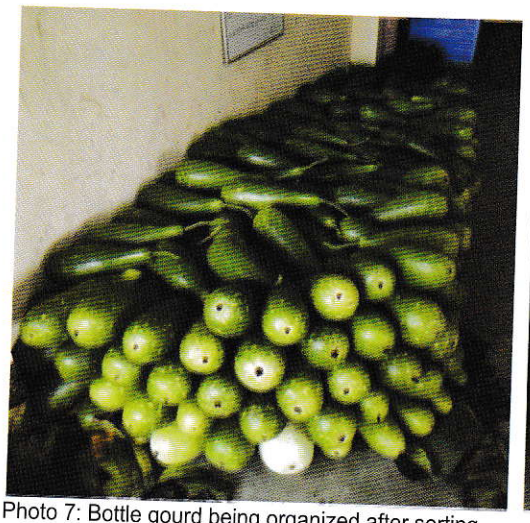


Photo 7: Bottle gourd being organized after sorting and grading.

Photo 8: Bottle gourds are usually wrapped in paper for proper packaging in crates as being done here in the CCMC.

The facilities of assembly, sorting mats, washing facility, plastic crates, etc attracted the traders. The mobilization of the CIGs by the constant efforts of the LBF and SAAOs laid the

groundwork that convinced the farmers to come to the CCMCs. Also the establishment of a CCMC in a marketplace allowed the exposure to both farmers and traders. In some of the places (eg., in Chirirbandar), the MMC-PO took initiative to participate in local agricultural fair in the upazila to make publicity for the CCMC. The practices of improved PHM and the organized way of marketing, e.g., the attraction created because of grading to make the produce look uniform and fresh (Photo -7) as well as the disciplines of packaging (Photo-8) that convinces about fetching higher prices are on display all the time in the CCMCs. Such efforts are gradually convincing the farmers to use the ways of the CCMC.

2.8 Postharvest loss and price gap minimisation

It is already an established fact that postharvest loss occurs mostly during transportation due to improper packaging, rough handling during loading/unloading as well as crude way of piling or bundling on vehicles. BARI assessed the postharvest losses of major fruits and vegetables at different marketing channels. The estimated losses were 25.3% for jackfruit, 28.7% for Fazli mango, 37% for Khirsapati mango, 36.6% for litchi, 26.65% for banana, 41.4% for papaya, 42% for tomato, 29.6% for country bean, 22% for cauliflower, 25% for cabbage, 32% for brinjal and 24.3% for cucumber (Annual Reports: 2008 to 2016, HRC, BARI). In terms of volume, postharvest losses of different fruits and vegetables including tuber crops were estimated at 7.45 million tons and in monetary term at Taka 1,58,500 million (K. C. Roy. 2009. Keynote Paper, 12 April 2009, IEB HQ, Ramna, Dhaka).

In order to appropriately assess the effect of introducing proper PHM practices at the CCMCs, a study was undertaken to assess PH loss of fruits and vegetables of the existing traditional value chain. The study was carried out over several months during 2018 and 2019. Results of the study are presented below in Table 2.3.

Table 2.3: Effect of traditional postharvest handling on physical damage and postharvest losses of fruits and vegetables.

Vegetable/ Fruit	Name of districts from where transported	Good quality (%)	Abrasion & compression damage (%)	Postharvest Loss (%)
Tomato	Dinajpur, Jashore, Jamalpur, Cumilla	31 – 60	27 – 52	13 – 18
Brinjal	Rangpur, Jashore, Gazipur, Narshingdi, Cumilla	23 – 60	34 – 49	6 – 32
Bitter gourd	Jashore, Jamalpur, Tangail, Narshingdi	50 – 58	Yellow: 11 – 20 Abrsn: 10 – 26	11 – 13
Banana	Bogura, Tangail, Gazipur, Narshingdi	28 – 60	Black spot fin: 31 – 61	9 – 12 Cracked+ stem broken

Samples of tomato, brinjal, bitter gourd and banana were collected from main wholesale market of Dhaka at Kawran bazaar, when these were coming from different districts and accordingly, the source districts of shipment were identified. The visual examination of the

samples for good quality, physical damage through abrasion and compression and postharvest loss was assessed. When the sample lots were weighed in, a maximum of 60% in some of the lots could be judged as of a good quality. For some lots of tomato, brinjal and banana only just 31%, 23% and 28% respectively could merit as of good quality. Vegetable loads suffered high abrasion and compression damage ranging between 27 and 49%. Since many of the bruised or compressed pieces of vegetables still would find a way to the retailers, only the non-saleable pieces of vegetables and fruits were adjudged in the postharvest loss category. It was found that for tomato the PH losses were between 13-18%, for brinjal 6-32%, bitter gourd had 11-13% and banana samples afflicted 9-12% PH loss. By any standards, this sample study pointed to a very high level of PH loss. It is important to note here that the samples were packed in traditional sacks and were bundled and heaped on the trucks for transporting to Dhaka from their source districts.

It is expected that introducing plastic crates by the NATP-2 project for transport of fruits and vegetables through the CCMCs will prevent such losses. At a later date, further data will be collected again from value chains that use such crates to compare with the above reported losses and find out how much improvements are made in reducing the PH losses during transport.

The price incentive due to sorting, grading is also still to materialise, but marginal gains are noticed thus far in few CCMCs. A study of the data on price differences was calculated for brinjal, bitter gourd, tomato, sweet gourd and banana from various upazilas (Table 2.4). The period of observation ranged differently for the crops between November 2018 to December 2019. Number of observations also varied between crops. Maximum price gain was observed for tomato at almost 23%, while only around 3% higher price was recorded for bananas. In another way, for a number of cases, the farmers can save transport costs for their produces coming to the CCMC instead of going to the distant market.

Table 2.4: Percent price gain to farmers due to adoption of improved PHM practices at the CCMCs.

Sl No.	Crop	No. of upazilas selected	Period observed	No. of observations	Price gain (%)
1	Brinjal	15	Nov-18 to Dec-19	101	10.66
2	Bitter gourd	13	Nov-18 to Dec-19	49	15.67
3	Tomato	9	Nov-18 to Dec-19	28	22.67
4	Sweet gourd	10	Mar-19 to Dec-19	47	8.82
5	Banana	6	Dec-18 to Dec-19	42	2.87

2.9 Produce Quality in terms of Microbiological Food safety

Samples of fresh produces (brinjal, bitter gourd, tomato and banana) were tested for microorganism contamination to find out the safety levels. The findings are pointed out below.

- Samples were collected at Dhaka wholesale market, Kawran bazaar – from the traditional value chain arriving from Dinajpur, Rangpur, Bogura, Jashore, Jamalpur, Tangail, Gazipur, Narshingdi, Dhaka (Savar) and Cumilla
- The samples of bitter gourd, banana and tomato from Dinajpur, Bogura, Jashore, Jamalpur, Tangail, Gazipur, Narshingdi were **severely** contaminated with

Salmonella spp. and *Escherichia coli* (>10^3 CFU/g), regarded as unsatisfactory level of hygiene indicator

- Presence of such amount of inoculums in the fresh vegetables may cause serious illnesses, such as, diarrhea and vomiting.
- In brinjal, *Salmonella spp.* was present in the samples from Narshingdi and Savar, Dhaka districts, however, in small amounts (too few to count -TFTC, <10 CFU/g)
- Small amounts of *Escherichia coli* colony was detected in brinjal samples from Cumilla (TFTC, <20 CFU/g)
- Low level of contamination in brinjal may be attributed to sample collection during dry season, as samples having high contamination were collected during high humid season
- It is ESSENTIAL to immediately find out the causes of food contamination in the value chain and take appropriate sanitary and phytosanitary (SPS) measures to improve and ensure food safety.

2.10 Performance of the POs

All of the 30 POs have been formed and their executive committees, known as the MMC, were also formed. The MMCs were regularly meeting in the CCMCs, and getting engaged in discussions regarding market linkage, savings, plans for AIF-3 project, etc. All the POs have bank accounts, obtained trade licenses, and have regular savings. Four (04) POs have saved Tk 6 lakhs or more while another 11 POs have between Tk.3.5 lakh and Tk 1 lakh.

The POs were also taking business initiatives to have more income and to develop their capacity for improving the CCMC functions. In Delduar, the PO-MMC obtained the registration from the Department of Cooperatives as a cooperative association. The PO-MMC of Chirirbandar in Dinajpur secured registration as seed dealer from the BADC.

2.11 Participation in Fair

Hortex Foundation participated in the Food Fair to observe the World Food Day during 16 to 18 October 2019. In the fair, Hortex displayed the various processed food items, especially of fresh produces as well as in packages of MAP (modified atmosphere packaging). In addition it displayed a number of messages related to proper marketing with food safety.

The Food Minister Mr. Sadhan Chandra Mazumder inaugurated the Food Fair 2019 and also visited the Hortex stall (Photo-9). He took interest in the display and activities of Hortex Foundation and the role of NATP-2. The Managing Director of Hortex Foundation Mr Md. Manzurul Hannan answered his queries and explained about the activities. Mr. Md. Motiur Rahman, PD, NATP-2 also visited the Hortex stall at the Food Fair (Photo-10), and expressed his pleasure for the effort. He also inquired about the various food processing activities of entrepreneurs who have succeeded with technical and advisory support from Hortex Foundation. MD, Hortex also indicated at the display answering to this query

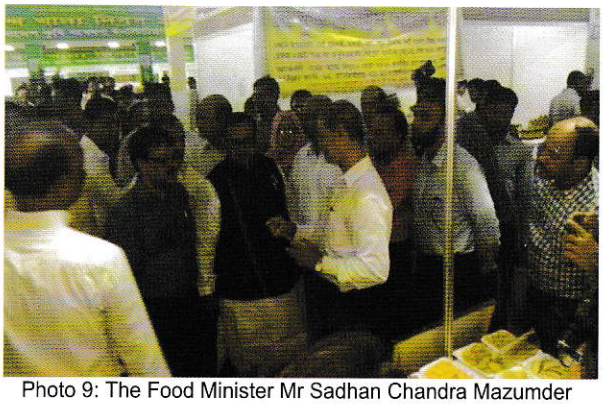


Photo 9: The Food Minister Mr Sadhan Chandra Mazumder visited the Hortex stall at the food Fair on 16 October 2019.

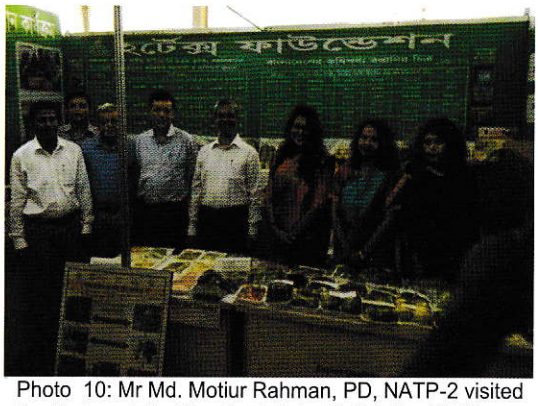


Photo 10: Mr Md. Motiur Rahman, PD, NATP-2 visited the Hortex stall at the Food Fair, 16 October 2019.

2.12 National workshop

Hortex Foundation organized a **second national workshop** on the 31st October 2019 at its Conference Room with leaders of the Tejgaon Banana Traders Association of Dhaka, along with other value chain experts to orient and motivate banana traders for adoption of proper PHM practices. The workshop was presided by the Managing Director of Hortex Mr. Md. Manzurul Hannan, while the Project Director of NATP-2 Mr. Md. Motiur Rahman attended as Chief Guest and the Director, PIU-DAE Mr. Ratan Chandra Dey attended as Special Guest (Photo 11). The PHM Expert of Hortex-NATP-2 Dr. Md. Atiqur Rahman presented the keynote and through a video showcased the proper practices vis-à-vis the prevailing traditional practices. A video clip on modern banana harvesting, processing and marketing was also shown. The cost-benefit aspects of modern methods were clarified and at the end the banana traders felt they may try the recommended methods.

Photo11: The 2nd National workshop on need for 'Improved PHM in bananas for preventing loss, quality assurance and safety' was held on 31st October 2019. The Banana traders of Tejgaon, Dhaka are seen in the foreground.

A highly encouraging feedback from the traders association was that they now want to actually adopt the recommended practices for banana harvesting to marketing, as they are convinced about possibilities of drastically reducing the postharvest losses, improving quality and of obtaining higher profits. They also informed that they will connect with

CCMCs in Madhupur and Muktagachha to buy bananas that are properly processed for quality and safety.

2.13 Documentation and Publication

Like previous years Hortex Foundation continued publishing its manuals and documents.

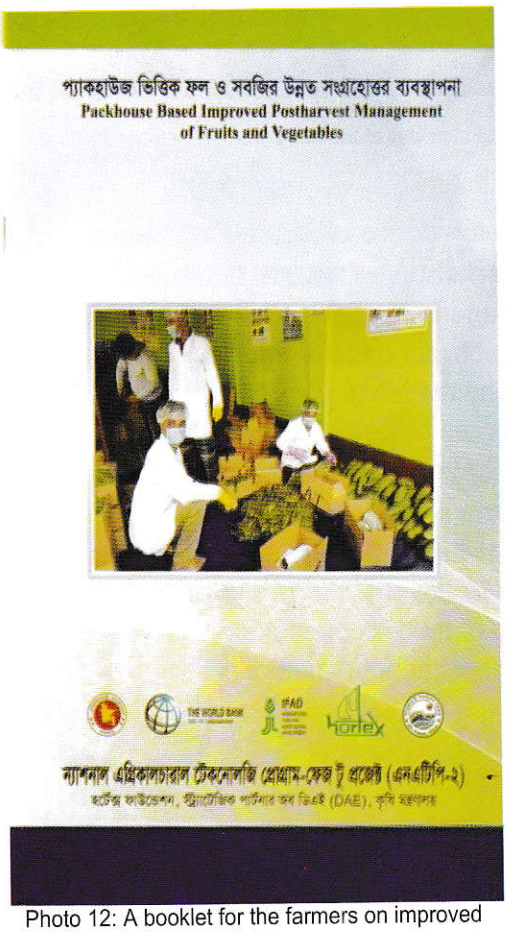


Photo 12: A booklet for the farmers on improved PHM practices was published during the reporting year.

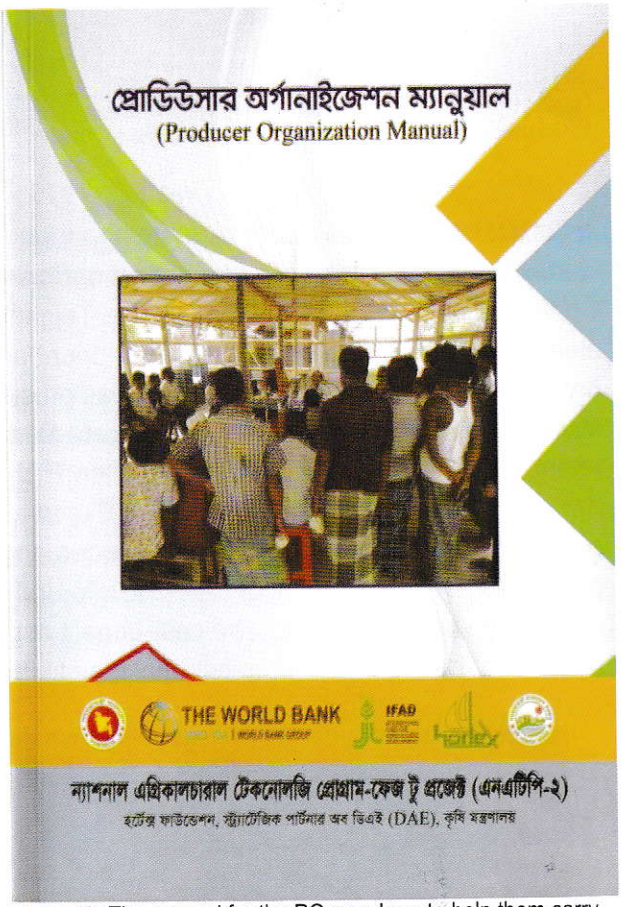


Photo 13: The manual for the PO members to help them carry out their roles in value chain development.

A booklet for the farmers on improved PHM practices at a packhouse (CCMC) was prepared in Bengali and published (Photo 12). Gradually all the farmers are given this booklet. A manual for the PO members was also prepared and published and were distributed to the POs. This manual includes topics that they learnt in the training programmes and will help them carry out their roles in value chain development activities, especially in marketing and in running the affiairs of the CCMC. In order to support and hasten the savings activity of the POs, a savings passbook for them was printed and distributed to them (Photo 13). As usual, Hortex also published the Annual Reports for documenting its activities and records after completing each financial year (Photos A10.16-17).

3. Monitoring & Evaluation for Value Chain Development

The M&E process adopted for the value chain development activities carried out by Hortex Foundation for the NATP-2 project is well planned and a continuing phenomenon. Both the DPP and PAD of the World Bank listed the monitoring tasks mainly to be on (i) data on agri-commodities marketed through the marketing structures, such as CCMC and CPs, (ii) the marketing solutions provided (CCMCs, CPs, renovated markets, etc.), and (iii) client-days of training provided by Hortex Foundation for value chain development work and better marketing. To this end monitoring data were regularly collected in well-designed formats.

The three principal items for complying with the Results Framework and Monitoring as enumerated below in Table 3.1 follows the format from the PAD for NATP-2 and the figures are adjusted for the value chain development part implemented by Hortex Foundation.

Table 3.1: Progress achieved against the results framework in value chain development, NATP-2, Hortex Foundation.

Baseline value		Cumulative or Annual values (targets and actuals)						Achieved up to Jun 2020	Comments
		Year 1 (2016-17)	Year 2 (2017-18)	Year 3 Mid term (2018-19)	Year 4 (2019-20)	Year 5 (2020-21)	Project end		
1. Market Access: Volume (in tons) of agricultural commodities sold annually through new marketing structures/arrangements promoted by Hortex Foundation									
Total volume: 0 t	Target	100	1,000	3,000	5,000	5,835	15,000		
	Actual	100	965.31	5135.70	7822.88	--		14013.89	93% achieved
2. Market access: Marketing solutions implemented by the project (cumulative)									
Marketing solutions: 0	Target	02	10	31	55	60	60		'Actual'- figures are only from Hortex Foundation
	Actual	02	09	31	34	--	--	34	
3. Client-days of training provided [CORE INDICATOR] (percentage female)									
0 (0%)	Target	00 (0%)	3,000 (35%)	14,027 (35%)	3,614 (35%)	Nil	Nil		
	Actual	----	2,818 (14%)	9,224 (65%)	2,130 (59%)			14,172 (69%)	

Accordingly, Table 3.1 depicts the progress made in agri-commodity marketing, the structures (CCMCs and CPs) for marketing solutions and client-days of training for the implementing years covering the period until June 2020. Agri-commodity marketing has already been described under section 2.2 as 14,014 tons of agri-commodities were marketed achieving 93% of the project target using the mentioned market structures as marketing solutions. The Annex Tables 3.1 to 3.4 provide the details the progress made in agri-commodity marketing during this period in terms of months, crop items, upazilas and by years. More than 55 different agricultural commodities were traded which included the six selected HVCs mentioned earlier.

Needless to mention again that all the 30 CCMCs have become functional (detailed in Annex Table 1), while FOUR CPs have started working (Table 2.1). A total of 14,172 client days of training have been completed which included topics on PHM practices, marketing, production and business planning, contract farming, food safety and quality, among others.

However, the more significant aspect of M&E lies with proper build-up of information in a regular interval that leads to the assessment of income margins gained due to improved PHM practices by the farmers. Therefore, a baseline survey in this regard was carried out and subsequent data collection to assess the said margins will continue. But such gains by actors away from the CCMC in the value chain who adopt better practices in packaging, transport, storage and sale may not be possible to determine as scope and capacity at NATP-2 in Hortex in terms of fund and personnel is not provided.

3.1 World Bank Mission and Monitoring by Senior Officers

Hortex Foundation welcomed monitoring visits by the Implementation Support Missions (ISMs) fielded jointly by the World Bank and IFAD to see the work in the fields. The 3rd ISM visited the CCMC at Jhikorgachha, Jashore on 26 November 2019 (Photos 14 & 15). Mission members took interest in asking about the process how the CCMC functions, how the prices are fixed and how the farmers found it beneficial. The MD-Hortex and the M&E Expert responded to their questions.

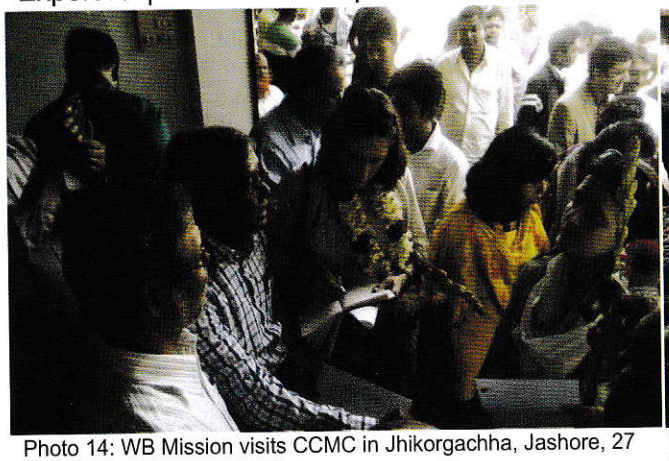


Photo 14: WB Mission visits CCMC in Jhikorgachha, Jashore, 27 Nov 2019.

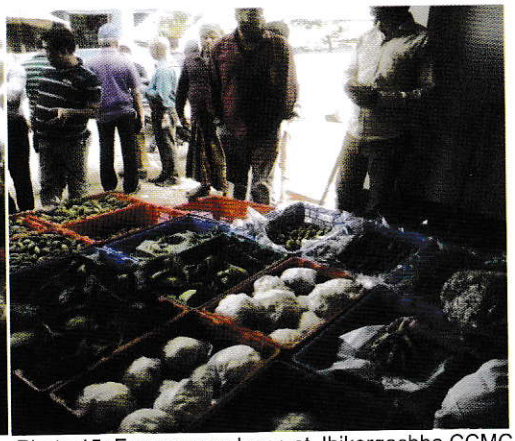


Photo 15: Farmers produces at Jhikorgachha CCMC during the ISM visit, 27 Nov 2019.

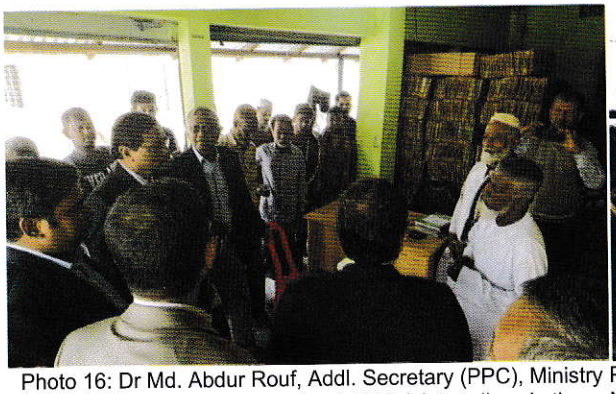


Photo 16: Dr Md. Abdur Rouf, Addl. Secretary (PPC), Ministry of Agriculture, visited the Belabo CCMC (pictured) and others in Narshingdi district on 7 Feb 2020.

Photo 17: Dr. Ratan Chandra Dey, Director, PIU-DAE, NATP-2 visited the CP at Shalikha, Madhupur, 11 Dec 2019.

The Addl. Secretary (PPC), Ministry of Agriculture, GoB, Dr Md. Abdur Rouf, visited all the CCMCs of Narshingdi district on 7 Feb 2020 (Photo 16) to apprise himself of the ways the CCMCs are functioning. He spent time with farmers at all the places and inquired with them how the CCMCs are useful to them. In addition, officers from PIU-DAE including the Director PIU, Dr Ratan Chadra Dey also visited the CCMCs in several upazilas. He

particularly liked the functioning of the CP at Shalikha bazaar, Madhupur, Tangail (Photo 17). Mr Md. Motiur Rahman after taking up the responsibility of the Project Director of NATP-2, came to visit Hortex Foundation to apprise himself about the work of NATP-2 here (Photo A 10.20).

There were also other visitors to the CCMCs at different times from the PMU-NATP-2 to see the activities related to PHM and marketing.

4. Financial progress

Hortex Foundation could only mobilze project activities, as already mentioned, between December 2017 and January 2018 when the recruitment of consultants and staff were gradually completed. Therefore, financial progress was initially slow. As activities started rolling, training programmes were conducted and more CCMCs were hired, expenses increased over the years. These are summarised below in Table 4.1.

Table 4.1: Summary of the financial progress of Value Chain Development, NATP-2, Hortex Foundation during 2016-17 to 2019-20.

(in lakh taka)

Financial year	RADP Budget	Expenditure	Achievement
2016-17	22.40	19.70	88%
2017-18	233.00	198.71	86%
2018-19	450.00	430.99	96%
2019-20	370.00	287.14	78%
Total	**1075.40**	**936.55**	87%

The table shows that over time expenditure has grown with increasing activities. So far Taka **936.55** lakh has been spent. The details are provided in Annex Table 7.

5. Procurement progress

The procurement of goods and services were adjusted from the outset and original DPP packages were re-organized with approval of project authorities in order to correspond to actual codes and proper classification to avoid mix-up. Therefore, the packages were mostly completed albeit in a different step-by-step way. This different ways have been explained through Annex Tables 8.1 and 8.2 and explanatory notes accompanying each table.

Table 5.1: Summary of procurement packages completed for Value Chain Development, NATP-2, Hortex Foundation during 2016-17 to 2019-20.

(no. of packages)

Procurement Package (completed)	Years				Remaining Procurement
	2016-17	2017-18	2018-19	2019-20	
Goods	3	6	11	5	03 work packages are under scrutiny of/for DPP revision
Services	-	11	3	1	

6. The Challenges

While the Covid-19 pandemic continues to affect every walks of life posing as the overwhelming challenge and is discussed below under sub-section 5.1, the initial and operational challenges are recorded first.

For securing the intended results to improve smallholder farmers' access to markets in the selected districts, process of selection of CCMC had been a formidable challenge as no single CCMC could exist for the 20 CIGs that were organized for this value chain development work. Between four and nine CIGs could at best be served in an upazila from any one place/market. As a result, more than half of the CIGs were at a disadvantage to access the CCMC. This constrains the process for marketing of safe and quality products as the non-connected areas/CIGs/bazaars continue to pour in unprocessed produces and weakens the efforts.

Getting traders and market actors to adopt new and improved PHM practices still remain as an arduous undertaking. Although some improvements at the CCMCs are visible in terms of sorting, grading and washing, the bulk of the products from the remaining markets are not processed that way which distort the overall quality in the supply chain. Therefore, the products from the CCMCs are having little appreciable effect.

A big deficiency has been the two-year input of the Training Management Expert, which is insufficient to complete the training mandate and related tasks. Allocation deficiencies for workshops, studies, monthly MMC meetings, collection and processing of postharvest loss data and price differences pose quite serious challenges to complete these activities. The other challenges of misplaced budgets in renovation/construction and needs in the above mentioned areas have been quite some thorny issues, which were negotiated to certain extent during the year for a revision in the DPP.

6.1 Dealing with the challenges of lockdown and the Covid-19 pandemic to keep the CCMCs operational

Drastic measures to lock down the country to contain the Covid-19 pandemic were introduced from 26th March 2020. Under such situation, CCMCs faced serious challenges to operate. These were as follows:

- Traders, usually coming from outside to buy produces from the CCMCs, could not come due to shut-down of public transport;
- Transports were not available for the same reason to enable shipping fresh produces to different higher markets or related destinations;
- Movement restrictions prevented farmers from bringing their products to the CCMCs;
- Forced closure of some of the CCMCs by police/administrative authorities was applied as a blanket rule to keep all market/shops closed, despite government directive to allow uninterrupted flow of food and related agricultural products.

As a result, prices went down, farmers were discouraged from harvesting their produces to bring for sale, and in some places farmers even destroyed their crops and planted a next season crop.

In the first few weeks following the lockdown, almost all the CCMCs faced some level of disruption or closure. There were lots of confusion to organizing and keeping chain of essential supplies open as concerns of catching the infection also troubled people. In some cases, the whole areas remained under lockdown and nobody could move, in some places the LBFs could not come as they were obstructed on their way and the CCMCs could not be opened. Three of the LBFs were forced to leave station for their homes as their co-habitants left and food became unavailable, but they left arrangements with MMC functionaries to keep the CCMCs operational. Despite all odds, all the CCMCs managed to operate once or twice every week during the first few weeks of the lockdown. But as has been mentioned earlier, fewer farmers brought produces for sale while few local traders bought those as demands and prices were low.

Hortex Foundation was ahead of the crisis and had already sent leaflets recommending practices (hand-washing, social distancing, etc.) for its staff and farmers for safety measures against possible infection (Annex 9). Necessary soap for hand-washing at the CCMC for all and masks, gloves, etc. for the LBFs were provided. In order to avoid crowding by farmers at the CCMC, Hortex worked with the CIGs along with DAE officers and staff to organize group marketing. One member of a CIG would thus bring produce from other fellow farmers of the group to the CCMC, whilst sharing transport and other costs between them. Hortex kept contact with the UAOs, LBFs and the MMCs for keeping the CCMCs functional. MMC members were requested and LBFs were instructed to approach the UAO for supporting CCMC operations, so that Police would not arbitrarily close a CCMC. Gradually, the business improved.

The LBFs mobilized the CIG farmers and traders to join the temporary open field markets where upazila administrations organized such system for maintaining social distancing as regular markets and shops were kept closed. In a number of places, the PO-MMC with the help of UAO and upazila administration organized vegetable sale for the local consumers using the rickshaw vans. In Mithapukur of Rangpur and Palashbari of Gaibandha, the

upazila administrations took advantage of the regular vegetable assembly at the CCMCs that they purchased for distribution as relief material to the poor and needy. The LBF in Muktagachha of Mymensingh organized vegetable sales to the BGB there. UAO of Jashore sadar organized door-to-door vegetable sale collecting on a truck from the CCMC as all other markets were closed. He shipped vegetables from Jashore CCMC to the DC office in Madaripur. He also contacted other group buyers, like 'Ad-Din' to regularly lift vegetables from the CCMC. The LBF from Raipura organized sale to Dhaka cantonment that eased the clearing of farmers' vegetables. Wherever traders were absent, the LBFs called the local ones over phone to help dispose-off the farmers' assembled vegetables within the local markets of the area. Very quickly, the farmers were able to sell in all CCMCs at agreeable prices.

Hortex also arranged from time to time the sale of CIG farmers' vegetables from Savar, Shibpur, Belabo, Madhupur at the Farmers' Market operating during the weekends at Sech Bhaban, Manik Mia Avenue, Dhaka.

With the recent launching of online marketing of fresh produces by Hortex at www.hortexbazarbd.com, CIG farmers around different CCMCs were connected to sell their products here.

7. Lessons Learnt

During the reporting year, consolidation of the gains in the CCMCs was the main focus and as such capacity building of the CCMCs had a major thrust. In terms of institutional capacity building effort, a good learning was bringing in a sense of dynamism in the PO-MMCs. In doing so, the exercises related to documentation in terms of keeping meeting records, maintaining cash-book, etc. and search for new initiatives forced the committees to consider changes in their leaderships. Accordingly, some of the PO-MMCs like in Shibganj of Bogura and Godagari of Rajshahi elected new committees. It is expected that the changed committees will lead to better governance, better asset development towards becoming self-sufficient to continue with the CCMC without project assistance.

During the PO training, it was evident that topic like business planning was not possible for the participants, who are mostly out of any academic exercise for many years, to grasp all its contents and apply it for the CCMCs. It was therefore proposed to organize a separate whole-day workshop at each CCMC for a work-out with a viable business plan. In the process of revision for the DPP, such a proposal has been made.

8. The way forward

Hortex Foundation has achieved remarkable successes in value chain development of the 30 pilot upazila clusters. The CCMCs are functioning as participating farmers and traders interact for marketing safe and high quality fruits and vegetables.

After completing most of the farmers' training on recommended PHM practices and all PO members are covered in this crucial knowledge, next level of capacity building for the POs in market management, governance, book keeping, business planning is being implemented which is crucial for their sustainability. The related group of traders have also been trained in relation to value addition and safety of the HVCs, and handling, transporting and storage. Gradually, therefore, the full scale application of PHM practices at the CCMC is expected to become a regular phenomenon that will contribute to positive impact on the prices and better margin for the farmers as well as reducing the post harvest losses. These are significant gains that Hortex is looking forward to consolidate further.

Whilst most of the participating farmers have been trained in improved PHM practices and are gradually adopting the methods, the PO-MMCs are increasingly acting as a coherent body and taking up the role of managing the operations of the CCMCs. As they have been initiating their own plans and programmes, the way forward is now to consolidate and sustain these gains and prepare for concluding the assistance and support from NATP-2 by working on a sound exit strategy well in advance.

8.1 Sustainability for the CCMCs and PO-MMCs

The sustainability of an entity such as the CCMC is expected to be achieved by fostering it as an institution, so that it can operate as an organization governed by rules, has capital, can make sound plans, and is managed by standard operating procedures (SOPs). It is expected that the CIGs and POs will gradually get absorbed into the process of their institution building with the guidance provided through various training programmes (records-keeping for vegetable sale, book-keeping, governance, etc.) while they interact with traders in the CCMC and improve upon the practices and habits of PHM.

In the meanwhile, the savings activity towards creating their own funds has taken firm root in most of the POs. They aspire to invest this further and in such a project that can earn them the maximum matching grant from the AIF-3 fund. Most of the POs are planning to invest in an endeavour, such as, a mini truck, from where they can earn more money. It will also help them improve their own transport, marketing range and, for venturing into order supplying business with their produces. In addition, the supplied rickshaw van and crates from the project are being used by the PO and CIGs as a source of income by asking for a nominal fee from its user.

It is important to mention here that the supplied rickshaw vans are manual, whereas in rural areas these are all battery-powered. Hortex has introduced some incentive here by providing half of the cost for installing battery power (Photo-16), asking for the other half cost of this from the PO. The PO with the Jhikorgachha CCMC is such an example and they are already earning good from renting these out. The POs are welcoming this cost-sharing approach, though however, Hortex is gearing up this effort in the latest budget revision to make all existing rickshaw vans battery-powered from the project fund.

Photo 16: The rickshaw van was upgraded from manual to battery-powered one with 50:50 cost sharing between Hortex and the PO of Jhikorgachha, Jashore.

All the POs around all 30 CCMCs have now trade licenses, bank account and significant savings. About 10 POs have now more than Tk. Six lakhs of savings. Already ten CCMC-based POs have applied for such grant. Efforts are underway so that all 30 POs can obtain the AIF-3 funds. Business plans of some CCMCs are already drawn and rest of them are drafting such plans to have income streams to expand their capacities. As the POs take control of the operations according to their business plans and start making profits as an entity, the current support of rent for the CCMC will be gradually withdrawn as an exit strategy (explained below), so that they can sustain on their own.

Over and above, the application of proper quality and safety measures for marketing of the agri-commodities through sorting, grading washing, drying, packaging and related care in handling is going to be a key to achieving the goal of sustainability for the POs and the CCMCs. The experience so far shows that slowly, but gradually the essential PHM practices are gaining ground.

8.2 The Exit Strategy to leave the CCMCs viable

The exit strategy envisages a gradual withdrawal of financial assistance to the CCMCs when significant build up of funds and assets by the PO-MMCs at the CCMCs becomes evident. The POs have already been informed that the NATP-2 Project/Hortex will gradually withdraw support from the CCMCs as they grow with savings and income. Before that, efforts are underway to help them consolidate their income from given items and/or AIF-3 support. Gradually the rent support, electric bills payment will be withdrawn and cease finally, while the MMC-PO will be required to bear these costs. However, the advisory support and guidance from Hortex will continue throughout the project period. The withdrawal of rent and other financial support will be gradual, like 10% withdrawal in the first month, 15% next month, 20% withdrawal thereafter, and so on. Once these costs are

no longer borne by the Project, the exit will initiate their financial independence, though they will continue to receive guidance and advice.

In the meanwhile, attempts at making linkage with markets in Dhaka and other high end markets for quality bananas and selected vegetables will be undertaken. As already mentioned in the sub-section 2.12 that in the 2nd National Workshop, the Banana Traders Association have agreed to work with specific CCMCs to improved marketing with safe and quality bananas.

Since Hortex has launched the online marketing of fresh produces at www.hortexbazarbd.com, with different CCMCs already marketing their products, a further expansion of this value chain development will just be a matter of time.

The potentials to **achieving** the results, in spite of all the challenges, has been extremely encouraging. The most important milestone that looks absolutely achievable is the agri-commodity marketing target of 15,000 tons through the CCMC/CPs. Already 93% of that target is achieved as over 14,014 tons of HVCs have been marketed, and the target of 5000 tons for 2019-20 was surpassed by more than 2000 tons. This indicates that the 15,000 tons of agri-commodity marketing will be achieved within next few months and by the end of the project will be surpassed by a wide margin.

The **export** of vegetables/ fruits, also appears very promising for the coming years. Hortex has been able to offer better training and facilities in the upazilas/CCMCs from where the exports are taking place for the handlers/agents in the postharvest processing. The commodity producers are streamlined with assistance from DAE, and given that the standards are maintained, the export volumes will certainly rise.

The value chain activities are intended actually to improve and establish the improved PHM practices so that produce quality and safety are enhanced and post harvest losses are reduced. Obtaining higher prices for the improved PHM (sorting, grading, washing, packaging) is going to realize these goals. However, this process will need gradual change over longer period and sustained support to materialize the goals. The PHM practices are gradually gaining ground and some differences in prices are now coming up as mentioned earlier. It is expected that once the value chain actors, especially the procuring traders, processors, transporters, wholesalers, etc. act more positively as have been trained and given some more time, value additions along the chain will benefit everybody from farmers to consumers.

9. Suggested improvements

The achievements in value chain development activities for the NATP-2 project have been amply and objectively recorded in the previous sections that reflect a robust performance

by Hortex Foundation. The descriptions highlighted activities of the reporting year while summing up data and information for the entire project duration up to June 2020.

While the discussions for revision of the DPP continued throughout the year, the contentious issue like periodic refreshers every quarter for the LBFs at Hortex office in Dhaka to guide them on their day-to-day functional challenges, updating on new developments, etc. is still to be resolved. Such a periodic conference-cum-training can hugely improve the performance of their work at the upazilas and the CCMC/CPs.

A total of 147 DAE officers at upazila and district levels received ToT on topics related to value chain development. The design of the project envisaged the recipients of these ToT courses to further train the CIG farmers, the POs, traders, etc. However, the most of the officers, who received the TOTs, have been transferred. As a consequence, the replacements are not aware or trained to do the job. It is therefore a big void that must be attended to in order to properly guide the value chain development activities in the upazilas. So it is necessary that further ToTs should be arranged for the newly placed officers.

Annex Table 1: Status of the CCMCs and the POs.

Sl. No.	Upazila	District	Location of CCMC	Rent-contract signing date	Status of CCMC	Status of PO+MMC
1.	Birganj	Dinajpur	Birganj hat	Oct 2018	Functioning	Formed
2.	Chirirbandar	Dinajpur	Hatkhola bazaar	Oct 2018	Functioning	Formed
3.	Parbatipur	Dinajpur	Khayerpukur haat	Constructed CCMC-NATP-1	Functioning	Formed
4.	Mithapukur	Rangpur	Baldipukur bazaar	Sep 2018	Functioning	Formed
5.	Palashbari	Gaibandha	BRACSobji Bazaar	Jun 25, 2018	Functioning	Formed
6.	Shibganj	Bogura	Chandihara Bazaar	Nov 2018	Functioning	Formed
7.	Bogura Sadar	Bogura	Pollimangal Haat	Sep 2018	Functioning	Formed
8.	Naogaon Sadar	Naogaon	Tetulia Bazar	Jan' 2019	Functioning	Formed
9.	Baraigram	Natore	Bonpara Bazaar	Dec 15,2018	Functioning	Formed
10.	Godagari	Rajshahi	Rajabari haat	Dec 2018 (old) Feb 2020 (new)	Functioning	Formed
11.	Kaliganj	Jhenidah	Kaliganj bazaar	Sep 2018	Functioning	Formed
12.	Jhikorgachha	Jashore	Barbakpur Bazaaar	Jul 08, 2018	Functioning	Formed
13.	Jashore Sadar	Jashore	Churamonkati	Jan 2019	Functioning	Formed
14.	Bagharpara	Jashore	Dadpur Bazaar	Sep 2018	Functioning	Formed
15.	Nakla	Sherpur	Tarakanda bazaar	Jun 25, 2018	Functioning	Formed
16.	Islampur	Jamalpur	Islampur Bazaar	Sep 2018	Functioning	Formed
17.	Delduar	Tangail	Putiajani Bazaar	May 3, 2018	Functioning	Formed
18.	Madhupur	Tangail	Kuragachha Bazaar	Jun 06, 2018	Functioning	Formed
19.	Muktagachha	Mymensingh	Gabtali bazaar	Jan 2019	Functioning	Formed
20.	Kishoreganj Sadar	Kishoreganj	Mulshotal	Jan 2019	Functioning	Formed
21.	Kapasia	Gazipur	Chandpur bazaar	Constructed CCMC-NATP-1	Functioning	Formed
22.	Shibpur	Narshingdi	Kharakmara Bazaar	May 23, 2018	Functioning	Formed
23.	Belabo	Narshingdi	Baroicha Bazaar	May 10, 2018	Functioning	Formed
24.	Raipura	Narshingdi	Lochonpur Bazaar	May 23, 2018	Functioning	Formed
25.	Savar	Dhaka	Horindhara Bazaar	May 31, 2018	Functioning	Formed
26.	Dakkhin Surma	Sylhet	Rakhalganj bazaar	Nov 2018 (old) Aug 2019	Functioning	Formed
27.	Sreemangal	Moulvibazaar	Notun bazaar	Dec 2018	Functioning	Formed
28.	Chandina	Cumilla	Nimsar bazaar	Mar 2019	Functioning	Formed
29.	Mirsarai	Chattogram	Bhanga dokan	Jan 2019	Functioning	Formed
30.	Khagrachhari Sadar	Khagrachhari	Chhotonala bazaar	Oct 2018 (old) Dec 2019	Functioning	Formed

Annex Table 2: Logistics and other support provided to the CCMCs.

Sl. No.	Name of the Upazila	Office Table	Grading Table	Office Chairs	Plastic chairs	Ceiling fan	Rickshaw van	Plastic crates	Sorting mats	Weighing machine	Washing facility		Display board
											Bucket	Full set	
1.	Birganj	1	1	1	25	2	1	100	10	1	1		1
2.	Chirirbandar	1	1	1	25	4	1	105	10	1	1	1	1
3.	Parbatipur	1	1	1	25	5	1	195	10	1	1	1	1
4.	Mithapukur	1	1	1	25	3	2	135	10	1	1	1	1
5.	Palashbari	1	1	1	25	3	2	135	10	1	1	1	1
6.	Shibganj	1	1	1	25	4	2	135	25	1	1	1	1
7.	Bogra Sadar	1	1	1	25	3	1	135	20	1	1	1	1
8.	Naogaon Sadar	1	1	1	25	3	1	135	10	1	1		1
9.	Baraigram	1	1	1	25	3	1	135	10	1	1	1	1
10.	Godagari	1	1	1	25	4	1	135	10	1	1	1	1
11.	Kaliganj	1	1	1	25	4	2	135	10	1	1	1	1
12.	Jhikorgachha	1	1	1	25	2	2	135	10	1	1	1	1
13.	Jessore Sadar	1	1	1	25	3	1	135	10	1	1	1	1
14.	Bagharpara	1	1	1	25	3	2	135	10	1	1	1	1
15.	Nakla	1	1	1	25	3	1	125	5	1	1		1
16.	Islampur	1	1	1	25	4	2	130	20	1	1	1	1
17.	Delduar	1	1	1	25	2	2	130	15	1	1	1	1
18.	Madhupur	1	1	1	25	2	2	135	20	1	1	1	1
19.	Muktagachha	1	1	1	25	3	1	135	20	1	1	1	1
20.	Kishoreganj Sadar	1	1	1	25	4	1	130	20	1	1	1	1
21.	Kapasia	1	1	1	25	5	1	150	20	1	1	1	1
22.	Shibpur	1	1	1	25	2	2	189	10	1	1	1	1
23.	Belabo	1	1	1	25	2	2	189	10	1	1	1	1
24.	Raipura	1	1	1	25	2	2	169	10	1	1	1	1
25.	Savar	1		1	25	2	1	143	20	1	1	1	1
26.	Dakkhin Surma	1	1	1	25	4	1	135	10	1	1	1	1
27.	Sreemangal	1	1	1	25	4	1	135	10	1	1	1	1
28.	Chandina	1	1	1	25	3	2	135	20	1	1	1	1
29.	Mirsarai	1	1	1	25	3	2	135	20	1	1	1	1
30.	Khagrachhari Sadar	1	1	1	25	3	2	154	20	1	1	1	1

Annex Table 3.1: Month-wise marketing volumes of agri-commodities sold through the CCMCs & CPs during July 2019–June 2020.

Month/ Year	Volume (kg)	Reporting CCMCs from the upazilas
Jul 2019	635,698	Birganj, Chirirbandar, Parbatipur, Mithapukur, Palashbari, Shibganj, Bogura Sadar, Sadar Naogaon, Baraigram, Godagari, Kaliganj, Jhikorgachha, Jessore Sadar, Bagharpara, Nakla, Islampur, Delduar, Madhupur, Muktagachha, Kishoreganj Sadar, Kapasia, Shibpur, Belabo, Raipura, Savar, Sreemangal, Chandina, Mirsarai, Khagrachhari Sadar (29)
Aug 2019	422,332	Birganj, Chirirbandar, Parbatipur, Mithapukur, Palashbari, Shibganj, Bogura Sadar, Sadar Naogaon, Baraigram, Godagari, Kaliganj, Jhikorgachha, Jessore Sadar, Bagharpara, Nakla, Islampur, Delduar, Madhupur, Muktagachha, Kishoreganj Sadar, Kapasia, Shibpur, Belabo, Raipura, Savar, Sreemangal, Mirsarai, Khagrachhari Sadar (28)
Sep 2019	425,048	Birganj, Chirirbandar, Parbatipur, Mithapukur, Palashbari, Shibganj, Bogura Sadar, Sadar Naogaon, Baraigram, Godagari, Kaliganj, Jhikorgachha, Jessore Sadar, Bagharpara, Nakla, Islampur, Delduar, Madhupur, Muktagachha, Kishoreganj Sadar, Kapasia, Shibpur, Belabo, Raipura, Savar, Sreemangal, Chandina, Mirsarai, Khagrachhari Sadar (29)
Oct 2019	404,235	Birganj, Chirirbandar, Parbatipur, Mithapukur, Palashbari, Shibganj, Bogura Sadar, Sadar Naogaon, Baraigram, Godagari, Kaliganj, Jhikorgachha, Jessore Sadar, Bagharpara, Nakla, Islampur, Delduar, Madhupur, Muktagachha, Kishoreganj Sadar, Kapasia, Shibpur, Belabo, Raipura, Savar, Sreemangal, Chandina, Mirsarai, Khagrachhari Sadar (29)
Nov 2019	467,431	All 30 CCMCs
Dec 2019	912,927	All 30 CCMCs
Jan 2020	884,005	All 30 CCMCs
Feb 2020	891,008	Birganj, Chirirbandar, Parbatipur, Mithapukur, Palashbari, Shibganj, Bogura Sadar, Sadar Naogaon, Baraigram, Godagari, Kaliganj, Jhikorgachha, Jessore Sadar, Bagharpara, Nakla, Delduar, Madhupur, Muktagachha, Kishoreganj Sadar, Kapasia, Shibpur, Belabo, Raipura, Savar, Dakkhin Surma, Sreemangal, Chandina, Mirsarai (28)
Mar 2020	1005,464	All 30 CCMCs
Apr 2020	525,491	All 30 CCMCs
May 2020	651,436	All 30 CCMCs
Jun 2020	597,808	All 30 CCMCs
Total	**7822,883**	**7822.883 tons**

Annex Table 3.2 : Volumes of agri-commodities sold through the CCMCs & CPs during Jul 2019 – Jun 2020. *(in order of volumes marketed)*

No.	Name of Vegetable/fruit	Volume (kgs)	No.	Name of Vegetable/fruit	Volume (kgs)
1.	Banana	911,481	29.	Litchi	34,568
2.	Country Bean	895,987	30.	Jute leaf	32,697
3.	Rice	804,630	31.	Taro/Eddo/Aroids	50,887
4.	Brinjal	677,814	32.	Ash Gourd	28,944
5.	Tomato	528,038	33.	Sponge gourd	22,739
6.	Potato	505,746	34.	Coriander	21,565
7.	Lemon	398,804	35.	Jackfruit	20,922
8.	Teasel Gourd	336,718	36.	Palmyra palm (*Taal*)	17,053
9.	Guava	314,365	37.	Green Amaranth	15,621
10.	Pointed Gourd	270,035	38.	Sweet Potato	14,770
11.	Sweet Gourd	252,056	39.	Olive	10,732
12.	Cucumber	212,353	40.	Garlic	9,696
13.	Bitter Gourd	169,569	41.	Grape Fruit	8,326
14.	Cabbage	162,377	42.	Broccoli	6,970
15.	Cauliflower	147,823	43.	Hog Plum	6,939
16.	Long Bean	103,230	44.	Carrots	6,677
17.	Jujube	98,758	45.	Pineapple	6,502
18.	Bottle Gourd	93,521	46.	Spinach	6,337
19.	Ridged Gourd	80,877	47.	Muskmelon (*Bangi*)	5,700
20.	Chilli	79,699	48.	Dragon fruit	2,985
21.	Indian Spinach	74,294	.49.	Bael	2,644
22.	Radish	67,185	50.	Onion	949
23.	Papaya	60,215	51.	Tamarind	842
24.	Taro Stolon	56,645	52.	Strawberries	580
25.	Red Amaranth	55,659	53.	Elephant foot yam	520
26.	Snake gourd	48,497	54.	Turnip	460
27.	Mango	43,731	55.	Pea	292
28.	Okra	35,859	**Total = 7822,883 Kgs (7822.883 tons)**		

Annex Table 3.3: Upazila-wise total sold volume of agri-commodities through the CCMCs & CPs: - July 2019 – June 2020.

No.	Name of the Upazila	Volume (kgs)	No.	Name of the Upazila	Volume (kgs)
1.	Birganj	436,705	16.	Islampur	412,699
2.	Chirirbandar	208,661	17.	Delduar	269,446
3.	Parbatipur	227,329	18.	Madhupur	77,698
4.	Mithapukur	187,440	19.	Muktagachha	170,411
5.	Palashbari	177,549	20.	Kishoreganj Sadar	118,355
6.	Shibganj	476,096	21.	Kapasia	180,976
7.	Bogura Sadar	103,122	22.	Shibpur	163,030
8.	Naogaon Sadar	108,900	23.	Belabo	188,157
9.	Baraigram	137,128	24.	Raipura	329,519
10.	Godagari	738,039	25.	Savar	207,242
11.	Kaliganj	222,464	26.	Dakkhin Surma	807,032
12.	Jhikorgachha	437,554	27.	Sreemangal	242,132
13.	Jashore Sadar	334,833	28.	Chandina	107,901
14.	Bagharpara	41,034	29.	Mirsarai	146,355
15.	Nakla	305,740	30.	Khagrachhari Sadar	259,336
Total = 7822,883 Kgs (7822.883 tons)					

Annex Table 3.4: Agri-commodities marketed from CCMCs+CPs over the years.

SL	Crop	July-16 to Jun-17	July-17 to Jun-18	July-18 to Jun-19	July-19 to Jun-20	Total
1.	Brinjal	28000	223620	782822	677814	1712,256
2.	Bitter Gourd	11000	73300	75734	169569	329,603
3.	Sweet Gourd	11000	16400	121501	252056	400,957
4.	Pointed Gourd	0	42130	119166	270035	431,331
5.	Teasel Gourd	0	56700	235626	336718	629,044
6.	Bottle Gourd	5000	0	86018	93521	184,539
7.	Ash Gourd	10000	17560	41884	28944	98,388
8.	Ridged Gourd	0	6000	11653	80877	98,530
9.	Tomato	3000	7210	311732	528038	849,980
10.	Banana	0	38200	344330	911481	1294,011
11.	Lemon	0	242550	610657	398804	1252,011
12.	Potato	0	45000	559335	505746	1110,081
13.	Chilli	0	48030	27503	79699	155,232
14.	Papaya	0	0	37294	60215	97,509
15.	Taro Stolon	0	0	4997	56645	61,642
16.	Cucumber	0	17800	99842	212353	329,995
17.	Cabbage	4500	9200	82430	162377	258,507
18.	Red Amaranth	0	6940	31321	55659	93,920
19.	Country Bean	3500	2000	472120	895987	1373,607
20.	Cauliflower	4500	13500	65069	147823	230,892
21.	Radish	12000	37210	13417	67185	129,812
22.	Aromatic Rice	0	0	576818	804630	1381,448
23.	Carrots	3000	0	2950	6677	12,627
24.	Indian Spinach	0	9760	33313	74294	117,367
25.	Coriander	0	8080	3544	21565	33,189
26.	Onion	0	0	29220	949	30,169
27.	Pineapple	0	0	8716	6502	15,218
28.	Bael	0	0	1000	2644	3,644
29.	Guava	0	1000	38410	314365	353,775
30.	Long Bean	0	0	20052	103230	123,282
31.	Taro/Eddo/Aroid	0	0	1610	50887	52,497
32.	Moringa (stick)	0	0	2690	0	2,690
33.	Snake gourd	0	4280	33694	48497	86,471
34.	Okra	4500	2080	15193	35859	57,632
35.	Jute leaf	0	9320	38415	32697	80,432
36.	Sapota	0	0	320	0	320
37.	Sponge gourd	0	0	2884	22739	25,623
38.	Mango	0	0	65438	43731	109,169
39.	Jackfruit	0	0	2789	20922	23,711
40.	Litchi	0	0	102835	34568	137,403
41.	Rozelle Leaf	0	0	200	0	200
42.	Palmyra palm (*Taal*)	0	0	0	17053	17,053
43.	Watermelon	0	0	472	0	472
44.	Grape Fruit	0	0	0	8326	8,326
45.	Garlic	0	0	10692	9696	20,388
46.	Hog Plum	0	0	0	6939	6,939
47.	India Olive	0	0	0	10732	10,732
48.	Elephant foot yam	0	0	0	520	520
49.	Broccoli	0	0	0	6970	6,970
50.	Spinach	0	1340	0	6337	7,677
51.	Jujube	0	0	0	98758	98,758
52.	Turnip	0	0	0	460	460
53.	Strawberries	0	0	0	580	580
54.	Green Amaranth	0	26100	0	15621	41,721
55.	Sweet Potato	0	0	0	14770	14,770
56.	Pea	0	0	0	292	292
57.	Muskmelon (Bangi)	0	0	0	5700	5,700
58.	Tamarind	0	0	0	842	842
59.	Dragon fruit	0	0	0	2985	2,985
	Total	**100,000**	**965,310**	**5,125,706**	**7,822,883**	**14,013,899**

Annex Table 4 : Average monthly number of farmers and traders accessing the CCMCs.

	All CCMCs	One CCMC
Farmers	Over 3300	110
Traders	200 to 450	03 to 25

Annex Table 5: Volumes of agri-commodities exported thru CCMCs between 2017-18 and 2019-20.

Years	2017-18	2018-19	2019-20	Total
Volume (tons)	32	739	567.79	**1338.79**

Annex Table 6. Training programmes carried out from 2017-18 to 2019-20.

Training by Client group	Year									Total no. of client days	
	2017 – 18			2018 - 19			2019 – 20				
	Batches	No. of partici-pants	No. of client days	Batches	No. of partici-pants	No. of client days	Batches	No. of partici-pants	No. of client days	Target	Achieved
ToT for DAE Officers	4	94 (12)	188	2	53 (19)	106	-	-	-	300	294 (97%)
SAAOs	10	300 (32)	600	--	--	--	-	-	-	600	600 (100%)
LBFs	2	30X2=60	120	2	30X2=60	120	-	-	-	240	240 (100%)
CIG Farmers	64	1910 (300)	1910	220	6600 (1601)	6600	34	1020 (265)	1020	15000	9530 (64%)
POs	--	--	--	65	1948 (308)	1948	29	660 (95)	660	3420	2608 (76%)
Traders	--	--	--	15	450	450	15	450 (07)	450	900	900 (100%)
Total	80	2364 (344)	2818	304	9111 (1928)	9224	78	2130 (367)	2130	20460	14172 (69%)

Figures in the parentheses indicate number of women participants, except for the last column.

Annex Table 7: Financial Statement.

RADP allocation and financial progress : 2016-17 to 2019-20

(in lakh taka)

Codes & Description		Financial Years								Total	
		2016-17		2017-18		2018-19		2019-20			
Code no.	Description	*RADP Alloca-tion	Expen-diture	*RADP Allocation	Expendi-ture	*RADP Alloca-tion	Expen-diture	*RADP Allocation	Expendi-ture	*RADP Allocation	Expenditure
A. Revenue Component											
4500	Salary of Officers	-	-	2.42	2.32	4.80	4.80	9.80	4.80	**12.02**	**11.92**
4600	Pay of Establishment	-	-	31.32	29.90	62.64	61.12	60.24	59.74	**154.20**	**150.76**
4700	Allowances	-	-	-	-	-	-	-	-	**-**	**-**
4800	Supply & Services	10.65	9.70	170.01	152.76	291.76	274.77	232.96	179.94	**705.38**	**617.17**
4900	Repair and Maintenance	2.60	0.86	11.25	9.33	45.00	45.00	63.00	33.68	**121.85**	**88.87**
Sub Total A:		**13.25**	**10.56**	**215.00**	**194.31**	**404.20**	**385.69**	**361.00**	**278.16**	**993.45**	**868.72**
B. Capital Component											
6800	Asset acquisition	9.15	9.14	18.00	4.40	45.80	45.31	9.00	8.98	**81.95**	**67.83**
7000	Construction & civil work	-	-	-	-	-	-	-	-	**-**	**-**
7900	CD VAT	-	-	-	-	-	-	-	-	**-**	**-**
Sub-Total B:		**9.15**	**9.14**	**18.00**	**4.40**	**45.80**	**45.31**	**9.00**	**8.98**	**81.95**	**67.83**
Grand Total: (A+B)		**22.40**	**19.70 (88%)**	**233.00**	**198.71 (86%)**	**450.00**	**431.00 (95%)**	**370.00**	**287.14 (78%)**	**1075.40**	**936.55 (87%)**

*** Only RPA, no GOB allocation**

Annex Tables 8.1 & 8.2 on Procurement Progress of NATP-2, Hortex Foundation, FY 2019-20

Goods: A total of 05 procurement packages were completed during 2019-20 as detailed in the table below.

Annex Table 8.1 : Completed Goods procurement of Hortex Foundation, NATP-2 during FY2019-20.

Sl. No.	Package Name	Package No.	Qty	Allocation (Taka)	Expenditure (Taka)	Status
01	Printing and Documentation (training manual for CIG farmers/POs, annual report, newsletter, booklet, leaflet, poster etc.)	GD/Hortex-NATP2/24	LS	5,00,000.00	498,075.00	Completed
02	Office Supply	GD/Hortex-NATP2/25	LS	2,00,000.00	198,820.00	Completed
03	Replacement of crates	GD/Hortex-NATP2/28	190 Nos.	1,00,000.00	99,900.00	Completed
04	Procurement of sorting mat	GD/Hortex-NATP2/29	300 Nos.	3,00,000.00	298,500.00	Completed
05	Equipment & furniture for markets and collections points/CCMCs	GD/Hortex-NATP2/30	LS	5,00,000.00	499,400.00	Completed

Services: Only one service package was procured during 2019-20 as described in the table below.

Annex Table 8.2 : Completed Services procurement of Hortex Foundation, NATP-2 during FY2019-20

Sl. No.	Package Name	Package No.	Qty	Allocation (Taka)	Expenditure (Taka)	Status
01	Compiling a database of service providers along the value chain for POs	SD/Hortex-NATP2/18	1.5 mm	75,000.00	75,000.00	Completed

Remaining Procurement Packages of Hortex Foundation under NATP-2

Works: 3 Nos. (3 packages under Works for renovation of existing markets and creation of collection points/CCMCs)

Renovation and construction works of markets and Collection Points were not possible due to the following reasons:

(i) The DPP did not involve the offices of the Deputy Commissioner (DC) or the Upazila Nirbahi Officer (UNO) of the civil administration in districts and upazilas respectively, who could allocate land in a market or other place needed for the construction of the CCMCs/CPs. (ii) Hortex Foundation did not have in-house capacity as it had no Engineers and Procurement Specialist to carry out the activity. In-house document processing and preparation needs to be carried out by an Engineer/Procurement Specialist, and also for follow-up until such construction/renovation is completed. (iii) Also the DPP did not assign the LGED (Local Government Engineering Department), which is normally assigned by the government for most of the rural market construction works, to implement such construction/renovation. (iv) With the lapse of time this far, and given that such renovation and construction following government processes take quite a long time, it is anticipated that this activity may not utilize much of the allocated fund.

However, on account of renting of CCMCs and collection points, about Taka 180 lakh may be utilized, if the project runs for a period of five years. The rest of the fund allocated for the said works will still be put to good use because there were crucial omissions and under-funding of certain activities. The input of the Training Management Expert needs to be extended from the allocated two years to the duration of the project and fund for VAT on consultants' remunerations needs to be organized. While the salaries of the Dispatcher and Support Staff are fixed at Tk. 16,000, that of the LBFs are only Tk. 15,000 – which cannot be this low by any measure. This needs to be adjusted to at least Tk. 25,000 per month as the LBFs carry out many functions like running the CCMC, liaising with the CIGs, PO, the MMC, keeping the sales records with prices and estimating postharvest losses along with all data reporting. There are also areas like MMC monthly meeting costs, Market linkage meeting costs, need for annual review meetings with UAOs in Dhaka, etc. which needs to be financed.

Annex 9: Leaflet by Hortex on instructions to prevent coronavirus infection, March 2020.

বিশ্ব স্বাস্থ্য সংস্থার নির্দেশনা অনুযায়ী

করোনা ভাইরাস সংক্রমণের ঝুঁকি কমাতে যা করতে হবেঃ

- বারবার প্রয়োজনমতো সাবান ও পানি দিয়ে হাত ধুয়ে ফেলুন।

- সর্দি-কাশির সময় টিস্যু পেপার অথবা পরিষ্কার রুমাল দিয়ে নাক-মুখ ঢেকে ফেলুন।

- টিস্যু পেপার না থাকলে অন্তত কনুই ভাজ করে নাক-মুখ ঢেকে ফেলুন।

- যেখানে সেখানে থুতু, কাশি-কফ ফেলা থেকে বিরত থাকুন।

- ব্যবহারের পর টিস্যু পেপার দ্রুত ডাস্টবিনে বা ময়লার ঝুড়িতে ফেলুন ও হাত ধুয়ে ফেলুন। রুমাল পরিষ্কার রাখুন।

- হাত মেলানো বা কোলাকুলি থেকে বিরত থাকুন।

- সর্দি-কাশি ও জ্বরে আক্রান্ত ব্যক্তির কাছে যাওয়া থেকে বিরত থাকুন।

- জনসমাগম এড়িয়ে চলুন।

- মাংস ও ডিম পর্যাপ্ত তাপমাত্রায় রান্না করুন।

- গৃহপালিত বা অন্য কোন প্রাণীর সংস্পর্শ পরিহার করুন।

- আবাসস্থল এবং কাজের জায়গা পরিষ্কার-পরিচ্ছন্ন রাখুন।

- নিজেকে ও অন্যদের নিরাপদ রাখতে আপনার হাত যখন অবশ্যই ধুতে হবেঃ
  - সর্দি-কাশি ঠেকাতে হাত ব্যবহার করলে
  - আক্রান্ত ব্যক্তির সংস্পর্শে যাওয়ার বা তাকে বহন করার পরে
  - খাবার তৈরির আগে, তৈরি করার সময় ও পরে
  - খাবার আগে
  - টয়লেট ব্যবহারের পরে
  - হাতে ময়লা দেখা গেলে
  - পশু বা পশুর বর্জ্য নিয়ে কাজ করার পরে

জনস্বার্থেঃ

হর্টেক্স ফাউন্ডেশন, ঢাকা

কৃষি মন্ত্রণালয়ের নিয়ন্ত্রণাধীন একটি ফাউন্ডেশন

Annex 10: Glimpses of some Value Chain Development Activities.

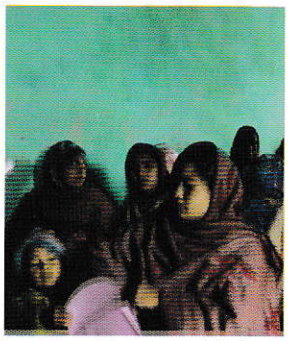
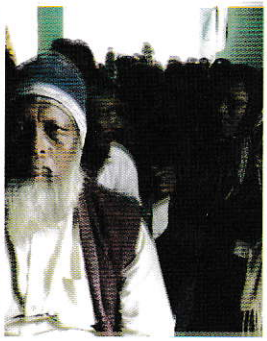




Photo 10.1 to 10.3: Training of the CIG farmers in Mithapukur, Rangpur; 19 January 2020. Mr. Aftab Hossain, the DTO, Rangpur is seen conducting a training session.

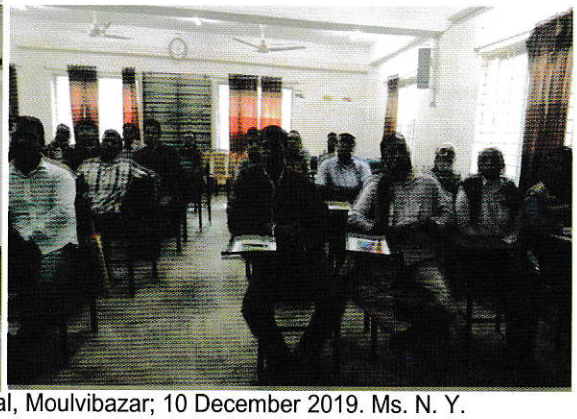



Photo 10.4 & 10.5: Training of the PO in Sreemangal, Moulvibazar; 10 December 2019. Ms. N. Y. Monalisa Sweety, UAO, Sreemangal is seen conducting a session.


Photo 10.6 & 10.7: Training of the Traders in Chirirbandar, Dinajpur; 18 September 2019. Mr Touhidul Iqbal, the DDAE, Dinajpur came to take the training sessions.

Photo 10.8: A shed in front of the CCMC in Kapasia was constructed as an initiative of Hortex Foundation and built by the Upazila Nirbahi Officer (UNO) in order to facilitate the proper assembly of farmers with their produces in one place instead of being scattered in the narrow lanes of the Chandpur bazaar.

Photo 10.9: The CCMC of Belabo in Baroicha bazaar is being used by agents from exporters for processing and packaging fresh produces for export. The PO-MMC thereby charges the exporting agency for the use of the facilities and thus able to increase their financial capacity.

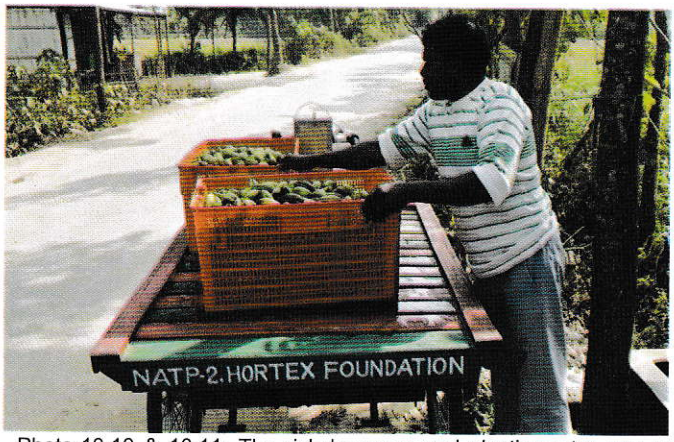
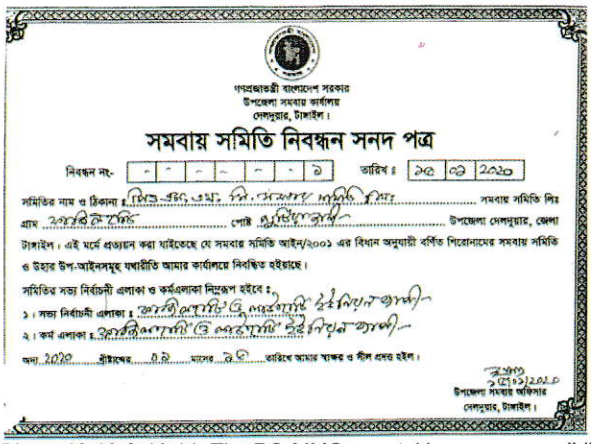


Photo-10.10 & 10.11: The rickshaw van and plastic crates are used by the POs in the CCMCs to increase their income by nominally charging the user farmers at left (in Jhikorgachha, Jashore and in Islampur, Jamalpur).

Photo-10.12: One of the constituent CIGs of the PO in Bagharpara, Jashore, the Habulya Uttorpara Purush CIG Samobay Samity Ltd was able to avail an AIF grant money with which they could procure a mini-truck for their vegetable marketing. Visited in November 2019.



গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
উপজেলা সমবায় কার্যালয়
দেলদুয়ার, টাঙ্গাইল।

সমবায় সমিতি নিবন্ধন সনদ পত্র

নিবন্ধন নং- ৭

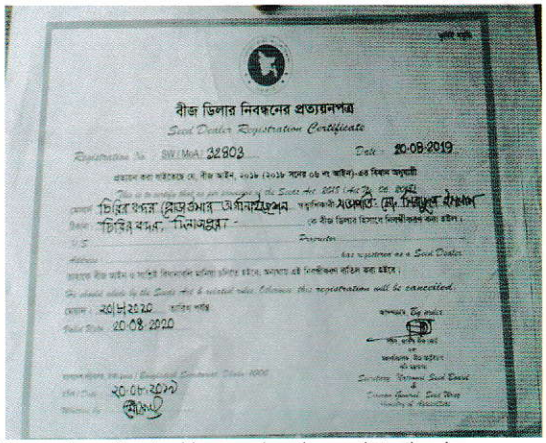
তারিখ : ২৫/০৩/২০২০

সমিতির নাম ও ঠিকানা : ... সমবায় সমিতি লিঃ
গ্রাম ... পোষ্ট ... উপজেলা দেলদুয়ার, জেলা টাঙ্গাইল। এই মর্মে প্রত্যয়ন করা যাইতেছে যে সমবায় সমিতি আইন/২০০১ এর বিধান অনুযায়ী বর্ধিত শিরোনামের সমবায় সমিতি ও উহার উপ-আইনসমূহ যথারীতি আমার কার্যালয়ে নিবন্ধিত হইয়াছে।

সমিতির সভা নির্বাচনী এলাকা ও কর্মএলাকা নিম্নরূপ হইবে :
১। সভা নির্বাচনী এলাকা : ...
২। কর্ম এলাকা : ...

অদ্য 2020 খ্রীষ্টাব্দের ১৭ মাসের ২৫ তারিখে আমার স্বাক্ষর ও সীল প্রদত্ত হইল।

২৫/০৩/২০২০
উপজেলা সমবায় অফিসার
দেলদুয়ার, টাঙ্গাইল।



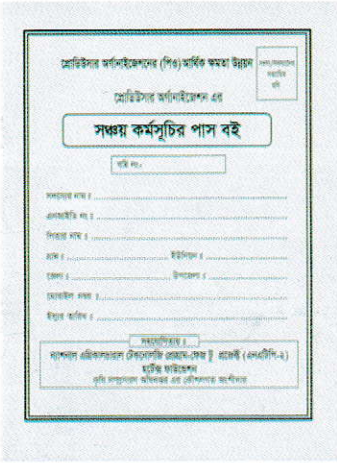
বীজ ডিলার নিবন্ধনের প্রত্যয়নপত্র
Seed Dealer Registration Certificate

Registration No. SW/MoA/32803 Date: 20-08-2019

চিরিরবন্দর, দিনাজপুর

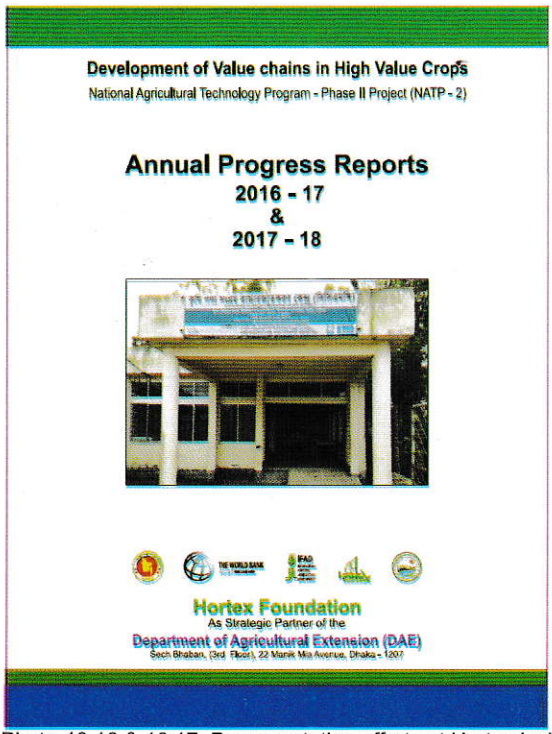
20/8/2020
20.08.2020

Photo-10.13 & 10.14: The PO-MMCs are taking up responsibilities as is evident with securing the registration in Delduar, Tangail and taking up dealership in seed production and business in Chirirbandar, Dinajpur (right)



সঞ্চয় কর্মসূচির পাস বই

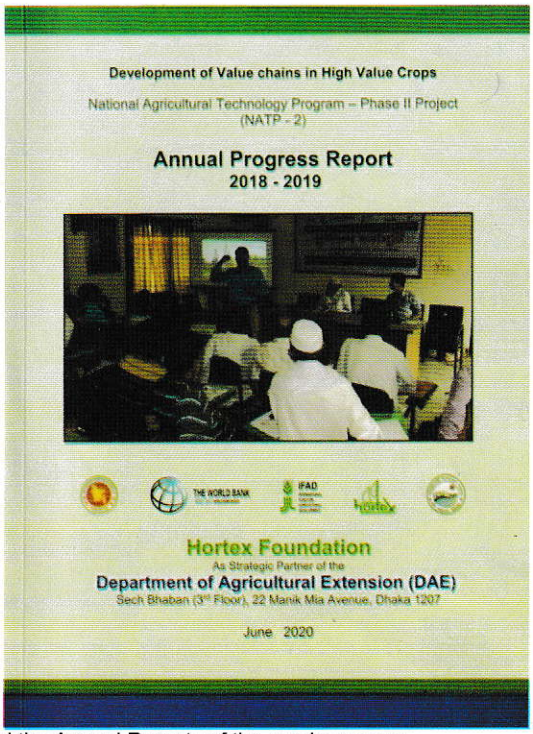
Photo-10.15: Hortex provided the PO-MMCs with savings passbook to assist in their savings programme.



Development of Value chains in High Value Crops
National Agricultural Technology Program - Phase II Project (NATP - 2)

Annual Progress Reports
2016 - 17
&
2017 - 18

Hortex Foundation
As Strategic Partner of the
Department of Agricultural Extension (DAE)
Sech Bhaban, (3rd Floor), 22 Manik Mia Avenue, Dhaka - 1207



Development of Value chains in High Value Crops
National Agricultural Technology Program – Phase II Project (NATP - 2)

Annual Progress Report
2018 - 2019

Hortex Foundation
As Strategic Partner of the
Department of Agricultural Extension (DAE)
Sech Bhaban (3rd Floor), 22 Manik Mia Avenue, Dhaka 1207

June 2020

Photo-10.16 & 10.17: Documentation efforts at Hortex included the Annual Reports of the previous years.

Photo-10.18: Her Highness the Ambassador of Thailand, Ms Arunrung Phothong H. visited Hortex Foundation to know about its activities, especially about the functioning of the CCMCs, 28 November 2019.

Photo-10.19: Mr Harunur Rashid and Dr G P Das from the PMU, NATP-2 visited the CCMC in Sreemangal and met with some of the PO-MMC members.

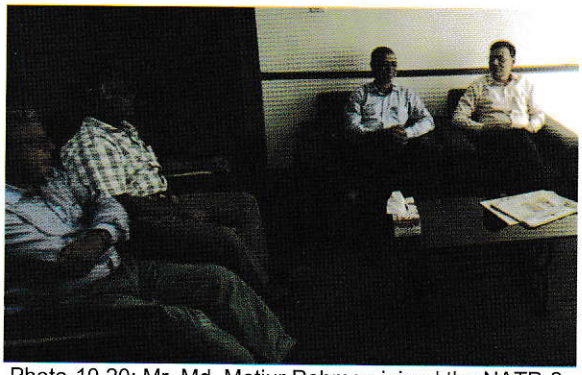


Photo-10.20: Mr. Md. Motiur Rahman joined the NATP-2 as the Project Director in October 2019 and visited Hortex Foundation soon after, 15 Oct 2019.

Annex 11: List of Personnel.

Md. Manzurul Hannan
Managing Director
Hortex Foundation
&
Coordinator
NATP-2 Project

Project Personnel (NATP-2)

Dr. Md. Atiqur Rahman	*Post-Harvest Management Expert*
Md. Bazlur Rahman	*Supply Chain Integration & Marketing Expert*
Md. Qudrat-E-Ghani	*Training Management Expert*
Dr. Mofarahus Sattar	*Monitoring & Evaluation Expert*
Biplab Das	*Accounts Officer*
Md. Mizanur Rahman	*Data Analyst*
Md. Masud Haque	*LBF, Birganj, Dinajpur*
Md. Ashraful Islam	*LBF, Chirirbandar, Dinajpur*
SDM Monjurul Hasan	*LBF, Parbatipur, Dinajpur*
Md. Abu Helal	*LBF, Palashbari, Gaibandha*
Md. Mazharul Islam	*LBF, Mithapukur, Rangpur*
Md. Jahanur Islam	*LBF, Shibganj, Bogura*
Md. Abu Rayhan	*LBF, Sadar upazila, Bogura*
Sreekanto Kumer Sarker	*LBF, Sadar upazila, Naogaon*
Md. Nizam Uddin	*LBF, Baraigram, Natore*
Ahmed Tarique Mannan	*LBF, Godagari, Rajshahi (up to 29 Feb 2020)*
Md. Rofizuddin	*LBF, Godagari, Rajshahi (joined 01 Mar 2020)*
Md. Hafijur Rahman	*LBF, Kaliganj, Jhinaidah*
Md. Torikul Islam	*LBF, Sadar upazila, Jashore*
Md. Mahamudul Hasan	*LBF, Jhikorgachha, Jashore*
Md. Raihan Hosen	*LBF, Baghapara, Jashore*
Ahsanuzzaman Zebu	*LBF, Nakla, Sherpur*
Anath Chandra Paul	*LBF, Islampur, Jamalpur (up to 16 Feb 2020)*
Md.Josim Uddin	*LBF, Islampur, Jamalpur (joined 01 Mar 2020)*
Md. Jafar Ali Khan	*LBF, Delduar, Tangail*
Md. Abdullah Al Rakib	*LBF, Madhupur, Tangail*
Md. Limon Talukdar	*LBF, Muktagachha, Mymensingh*
Md. Tifur Rahman	*LBF, Sadar upazila, Kishoregonj (joined 25 Jul 2019)*
Md Tazul Islam Khandaker	*LBF, Kapasia, Gazipur*
Md. Robel Molla	*LBF, Shibpur, Narshingdi*
Md. Saifuddin Bhuiyan	*LBF, Belabo, Narshingdi*
Md. Alamgir Hossain	*LBF, Raipura, Narshingdi*
Md. Riyazul Islam	*LBF, Savar, Dhaka*
Md. Shorif Ahmed	*LBF, Dakkhin Surma, Sylhet*
Ajit Kairi	*LBF, Sreemangal, Moulvibazar*
Sahajahan	*LBF, Chandina, Cumilla (up to 31 Jul 2019)*
Sajib Ahmed	*LBF, Chandina, Cumilla (joined 03 Sep 2019)*
Shibu Chandra Roy	*LBF, Mirsarai, Chattogram*
Debashis Tripura	*LBF, Sadar Upazila, Khagrachhari (up to 31 Jan 2020)*
Satten Tripura	*LBF, Sadar Upazila, Khagrachhari (joined 01 Mar 2019)*
Md. Nurul Islam	*Driver*
Abu Saied Chowdury	*Driver*
Md. Sumon Mia	*Driver*
Md. Delwar Hossain	*Driver (joined 01 Jul 2019)*
Md. Rasel Ali	*Dispatcher/Office Support*
Mithun Chandra Das	*Office Support staff*

Hortex Foundation Staff

Mitul Kumar Saha	*Assistant General Manager*
Joynal Abedin	*Manager*
Syed Miraz Mahmud	*Deputy Manager*
Mohiuddin Md. Nurul Absar	*Assistant Manager*
Md. Nawab Ali	*Driver*
Mojibur Talukder	*Driver*
Md. Forkan Ahmed	*Driver*
Md. Safiqul Islam	*Driver*
Md. Maklesur Rahman	*Driver*
Abdul Matin Mollah	*Support Staff*
Md. Billal Hossain	*Support Staff*
Zitu Mia	*Night Guard*
Hosneara Begum	*Cleaner*