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FARMERS' MARKET-SAFE HORTICULTURAL CROP PRODUCTION IN PERI-URBAN AREAS AND MARKETING IN DHAKA CITY TO MITIGATE THE IMPACT OF COVID-19 CRISIS.

December 2023

SDGs:



Country:

Bangladesh

Project Code:

TCP/BGD/3807

FAO Contribution:

USD 265 000

Duration:

1 July 2021-30 September 2023

Contact Info:

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Implementing Partners

Department of Agricultural Marketing (DAM) of the Ministry of Agriculture.

Beneficiaries

Bangladesh Agricultural Research Institute (BARI); Bangladesh Food Safety Authority (BFSA) of the Ministry of Food; Department of Agricultural Extension (DAE) of the Ministry of Agriculture; Horticultural farmers and shop owners.

Country Programming Framework (CPF) Outputs

CPF Programme Pillar 1: Healthy, safe and nutritious food.

CPF Output 1.1: Nutrition sensitive interventions promoted in the agriculture, fisheries, health and livestock sectors.

CPF Output 1.2: Technical support provided to increase the supply and consumption of safe and nutritious food.

CPF Output 1.4: Management of public health threats emerging from food system improved.

CPF Programme Pillar 3: Resilient and inclusive agri-economic growth.

CPF Output 3.2: Market opportunities, mechanization and value addition of primary produce promoted for rural non-farm income and reduction of harvest loss and food waste.



BACKGROUND

In Bangladesh, the agriculture sector contributed in 2022 to around 11.7 percent of gross domestic product (GDP), with 60 percent of the workforce engaged directly or indirectly in agriculture¹. The Government of Bangladesh, in pursuit of its objectives outlined in the Seventh Five Year Plan (7YFP) 2016-2020, is dedicated to advancing the shift in agriculture from semi-subsistence farming to commercialization, focusing on enhancing productivity, expanding diversity, adding value, improving food safety and quality and streamlining processing methods.

In accordance with the Food Safety Act of 2013, the Bangladesh Food Safety Authority (BFSA) was instituted in 2015 as the sole authority responsible for overseeing food safety initiatives in the country. Despite the emphasis on adopting good agricultural practices (GAP) – a set of principles to ensure the production of safe, healthy and sustainable agricultural products – in the Food Safety Act of 2013, there are currently no officially approved GAP standards in Bangladesh. To meet quality and safety standards, both international and domestic buyers and especially organized retailers, now demand that primary producers implement GAP as a procurement prerequisite for fruits and vegetables.

Due to rapid urbanization in Bangladesh, there is a growing disconnect between urban consumers and producers. This has sparked increased interest among consumers regarding the origin, production methods and the environmental and social impact of their food. Additionally, addressing the need for diverse crop varieties and affordable technology is crucial to ensuring year-round availability of vegetables, particularly during the typically scarce summer season in Bangladesh.

In December 2019, the Ministry of Agriculture's Department of Agricultural Marketing (DAM) initiated a trial of a weekly farmers' market in Dhaka City. The aim was to offer city residents safe produce from nearby farming areas. The DAM facilitated the collection of vegetables from farmers by establishing collection points in administrative subdistricts (*upazilas*). The Department of Agricultural Extension (DAE) of the Ministry of Food and the BFSA jointly ensured the quality assurance of vegetables and fruits available at the market. Today, this market not only provides consumers with the confidence that the food they purchase is safe but also enables farmers to receive fair prices by minimizing the involvement of intermediaries and brokers.

In response to positive feedback from consumers and a growing demand to sustain and expand these initiatives, the Ministry of Agriculture requested the Food and Agriculture Organization (FAO) provide technical support to expand the initiative for safe horticultural crop production and marketing. Additionally, due to the COVID-19 pandemic disrupting Dhaka city's food systems, the Ministry of Agriculture also requested FAO assistance in establishing a secure market to allow local communities to safely obtain fresh produce and enable farmers to continue selling during the emergency period of the pandemic.

¹ Bangladesh Bureau of Statistics. 2023. *Statistical Yearbook Bangladesh 2022*.

IMPACT

The establishment and dissemination of GAP standards in Bangladesh has prompted farmers and sellers to actively adopt and promote these practices in the production, sale and consumption of safe food. By ensuring farmers have access to adequate agricultural technologies and solutions to enhance productive livelihoods, sustain food production and increase incomes, and by ensuring consumers have access to safe and diversified food commodities, the project made a significant contribution to Sustainable Development Goal (SDG) 2, which aims at ending hunger.

ACHIEVEMENT OF RESULTS

The project contributed to develop a peri-urban crop production system and a secure marketplace to ensure the availability of diverse and safe vegetables and fruits in Dhaka City. To achieve this, the expertise of 450 farmers and ten officers from the Ministry of Agriculture in safe horticultural crop production has been strengthened. This included proficiency in post-harvest handling and transportation management techniques aligned with GAP standards. Farmers also received farming equipment. In addition, equipment was provided to farmers. In Dhaka, the pre-existing temporary farmers' market underwent a transformation into a secure marketplace, featuring safe transportation and storage. Furthermore, market managers and shop owners received training in food safety, hygiene and COVID-19-safe practices.

The project also facilitated the generation of demand among consumers and institutional buyers for safe vegetables and fruits by conducting an awareness-raising campaign and bridging the gap between demand and supply through the establishment of the secure market.

The project also established a strong public-private partnership and built solid linkages with the private sector. The involvement of diverse stakeholders throughout the project, including government agencies, research institutions, private sector entities and consumers, has bolstered their capacity and awareness regarding the efficacy of employing the farmers' market model.

Now under the oversight of national authorities, the secured market is expected to serve as a catalyst, influencing not only farmers and consumers but also potential development partners interested in establishing similar markets in other cities or districts. The success of this secure market serves as an exemplary model for further advancing the safe horticultural crop value chain in Bangladesh. It is expected that the success of the model will provide good evidence for policy development to scaling up of the safe horticultural production and market linkages.

IMPLEMENTATION OF WORK PLAN AND BUDGET

Delays in constructing the farmers' market on government-owned land occurred due to prolonged processes for obtaining special permission and the need to issue submission calls twice to ensure adherence to procurement rules and procedures. In response, the project was subject to an extension. Nevertheless, all planned project activities were executed within the revised completion date and remained within the allocated budget.

FOLLOW-UP FOR GOVERNMENT ATTENTION

With a rising demand for safe vegetables, it is anticipated that further efforts will be needed to enhance market facilities in the near future. The government possesses the capacity to replicate this project and is now initiating new projects focused on establishing new farmers' markets.

SUSTAINABILITY

1. Capacity development

The project has facilitated the acquisition of knowledge and innovative ideas on enhanced production techniques through the adoption of GAP standards among producers and stakeholders. Training of trainers (ToT) sessions were conducted for government officials from DAE and DAM to enable them to train farmers effectively. Notably, shop owners also received training on food safety, hygiene and COVID-19-safe practices.

2. Gender equality

Recognizing the limited participation of women in vegetable and fruit production, 13 percent of all selected producers were deliberately chosen as women. The project contributed to women's economic empowerment through providing employment opportunities in grading, sorting, marketing and selling processes. Women were also given priority in participating in business activities at the farmers' market, advancing their economic inclusion and opportunities.

3. Environmental sustainability

The project promoted environmental sustainability through its emphasis on safe vegetable and fruit production, adhering to GAP standards. The adoption of GAP is expected to reduce the excessive use of chemical pesticides, minimizing the environmental impact associated with their application.

4. Human Rights-based Approach (HRBA) – in particular Right to Food and Decent Work

By guaranteeing enhanced practices for agricultural sector workers alongside increased incomes, the project upheld both the principle of Decent Work and the Right to Food.

5. Technological sustainability

The project introduced significant changes in traditional vegetable and fruit production practices, incorporating expertise from the Bangladesh Agricultural Research Institute (BARI), DAM, DAE and the private sector to ensure safe production. Beneficiaries and stakeholders acquired technical expertise in production, pest and disease management and the reduction of post-harvest losses through the adoption of GAP. The DAE's sub-assistant agricultural officers have also undergone similar training, enabling them to conduct quality monitoring and provide valuable advice to farmers. This is anticipated to empower them to sustain project-related activities independently, without the need for additional technical assistance in the future.

Suitable technologies were identified and implemented in the farmers' market, including the installation of solar systems and lightning protection systems. Additionally, measures such as rainwater harvesting, fire safety and emergency exits have been ensured in the market.

6. Economic sustainability

The project ensured that products and services were accessible and affordable for farmers. The acquired technical knowledge, encompassing vegetable production management and nutrition, is anticipated to empower farmers to sustain increased production, leading to a growth in family income. With a dynamic market for vegetables, farmers now have the opportunity to cultivate more and sell their produce in a farmers' market.



DOCUMENTS AND OUTREACH PRODUCTS

- ❑ **FAO.** July 2023. *Standard operating procedure for farmers' market management.*
- ❑ **FAO.** June 2023. *Training report on market-oriented safe crop production post-harvest handling and transportation of agricultural products following the good agricultural practice.*
- ❑ **FAO.** April 2023. *Training module on market-oriented safe crop production post-harvest handling and transportation of agricultural products following the good agricultural practice.*
- ❑ **FAO.** March 2023. *Training of trainers report on market-oriented safe crop production post-harvest handling and transportation of agricultural products following the good agricultural practice.*



ACHIEVEMENT OF RESULTS - LOGICAL FRAMEWORK

Expected Impact	Enhanced food and nutrition security		
Outcome	Greater national awareness on good agricultural practices (GAP) and motivation to produce, market and consume safe food in Bangladesh		
	Indicator	Policy document on adoption and promotion of safe horticultural crop production and marketing developed and endorsed..	
	Baseline	N/A	
	End Target	1 document.	
	Comments and follow-up action to be taken	<ul style="list-style-type: none"> - The project's achievements align with the national plan and strategies of the Government of Bangladesh. - The interventions were specifically designed to address the government's needs and have been seamlessly incorporated into its ongoing initiatives to enhance the safety of the horticultural value chain in Bangladesh. This integration extends beyond the project's duration and includes endeavours to establish Bangladesh GAP certification. - Comprehensive documentation of both the project's processes and results has been created, serving as a valuable resource for ongoing maintenance and widespread application. 	
Output 1	Pilot implementation of safe horticultural crop production and post-harvest handling		
	Indicators	Target	Achieved
	Number of farmers piloting safe horticultural production and post-harvest handling.	450	Yes
Baseline	0		
Comments	The project contributed to safe vegetables production, postharvest handling and transportation following GAP standards. The DAM has designated three upazilas as the project's focal areas. Simultaneously, the DAE has identified 150 farmers from each of these selected upazilas as beneficiaries, resulting in a total of 450 farmers being chosen for the project.		
Activity 1.1	Selection of producers groups and demonstration site		
	Achieved	Yes	
	Comments	<p>For the pilot implementation of safe horticultural crop production and post-harvest handling, a team consisting of FAO, DAM and DAE focal points visited the selected <i>upazilas</i>. They conducted consultation meetings with the <i>upazila</i> agricultural officer and sub-assistant agricultural officers to discuss project details, implementation processes, and other relevant information. During these sessions, the criteria for selecting farmers were also deliberated. Subsequently, the FAO team visited the fields of selected farmers to engage in discussions regarding safe production, challenges and limitations associated with safe vegetable production. Subsequently, FAO formulated the selection criteria, deliberating them during the Project Implementation Committee meeting, where they received approval. FAO created a template for selecting farmers and provided a concise orientation to the <i>upazila</i> agricultural officers and sub-assistant agricultural officers regarding the selection of 150 farmers from each <i>upazila</i>. As per the guidelines, sub-assistant agricultural officers selected farmers from various unions, leading to the formation of farmers' groups within each union and the subsequent selection of demonstration sites.</p>	
Activity 1.2	Training of Trainers (ToT) on safe crop production an post-harvest handling following GAP guideline		
	Achieved	Yes	
	Comments	<p>A three-day ToT was conducted for ten officers, including six from DAE and four from DAM. The programme titled "Market-oriented safe vegetable production, post-harvest handling and transportation following good agricultural practices" aimed to achieve the following objectives: i) enhance knowledge and skills in safe crop production, post-harvest handling, and transportation by providing theoretical and practical demonstrations based on GAP guidelines, emphasizing their significance; and ii) foster a comprehensive understanding of safe crop production and related concepts.</p> <p>The training sessions were facilitated by experts, including a senior scientist from BARI, a post-harvest expert from DAM, a professor from Sher-e-Bangla Agricultural University with expertise in safe crop production and registered as a trainer in the subject. The session on post-harvest handling and transportation management primarily consisted of practical activities. Scientists from BARI's post-harvest technology department and experts in post-harvest management from the DAM led the hands-on practical sessions. The training was organised at the conference room of the DAM in Dhaka. The Director-General of DAM was present during the ToT programme and delivered a keynote speech.</p>	

Activity 1.3	Training on market oriented production of fruits and vegetables	
	Achieved	Yes
Activity 1.4	Comments	<p>A three-day training programme on market-oriented safe vegetable production, adhering to GAP, was conducted at the upazila level for a group of 450 selected farmers. A total of nine sessions were conducted: three in each selected upazila. Two days were dedicated to classroom-based sessions involving presentations and open discussions, while one day was allocated to hands-on practice in the crop field. The practical component proved highly effective, enabling participants to physically identify pests and diseases and learn how to manage them.</p> <p>The training aimed to achieve the following objectives: raise awareness and impart knowledge about GAP; provide a comprehensive understanding of improved and safe production technologies for market-oriented crops; and enhance knowledge and skills in safe crop production, including pest and disease identification and management following GAP standards.</p> <p>In addition to representatives from the private sector (BRAC Seed and Agro Enterprise, Lal Teer Seed, Supreme Seed Company, Malik Seeds and Giant Agro Processing Ltd.) and a professor from Sher-e-Bangla Agricultural University, resource persons for the training were selected from senior officials from the DAE and DAM of the respective district, agricultural officers and agriculture extension officers of the respective upazila. The DAE plans to integrate the training contents into their regular training programs for vegetable growers.</p>
	Training on post-harvest handling and transportation management	
	Achieved	Yes
	Comments	<p>The 450 selected participants also underwent a three-day training programme on post-harvest handling and transportation in accordance with GAP. The training programme notably demonstrated the processes of grading, sorting, and the utilization of crates, modified atmosphere packaging and other materials ensuring safe transportation. The objectives of the training were as follows: enhance knowledge and skills in postharvest handling, including understanding maturity stages, optimal harvesting times and harvesting methods, following the GAP standards; gain a clear understanding of how to minimize postharvest losses, from harvesting to marketing; develop a comprehensive concept of grading and sorting, recognizing their significance in obtaining higher prices, and explore modern packaging systems to extend the shelf life of harvested vegetables; and acquire knowledge about safe transportation practices, including the appropriate tools and materials for ensuring the safe transportation of produce to the market.</p> <p>Two days were dedicated to classroom-based sessions involving presentations and open discussions, while one day was allocated to hands-on practice in the crop field. Resource persons for the training were chosen from district and upazila officers of the DAE and DAM based on their expertise and competencies. The DAE plans to integrate the training contents into their regular training programs for vegetable growers.</p> <p>In addition, essential equipment was provided to farmers, including two silos for safe seed preservation, two crates to minimize post-harvest losses during harvesting and transportation, one spade and one watering can.</p>

Output 2	Development of a safe market equipped with safe transportation, and required safety measures to ensure safety and nutritional value reducing post-harvest losses		
	Indicators	Target	Achieved
	- Number of shop keepers trained and participated in a safe market. - Communication materials on safe production and marketing.	- 60 - 1 set	Yes
Baseline	0		
Comments	<p>A modern farmers' market with 33 shops has been built within the premises of the Bangladesh Jute Research Institute (BJRI) on Manik Mia Avenue in Dhaka. The market is equipped with various facilities, including a guard room, an office that also serves as a mini-laboratory, separate washrooms for males and females, a vegetable washing point, a garbage storage station, rainwater harvesting facilities, parking spaces for cars and motorcycles, an unloading platform, emergency exits, fire safety equipment, electricity and solar systems, a lightning protection device, handwashing stations, access to pure drinking water and distinct entry and exit gates. Inside the market, a well-designed drainage system was constructed, and, in consideration of the COVID-19 situation, ample space for wide walkways was provided.</p> <p>Farmers selected for the project, along with other participants, have the opportunity to sell their produce in the market. Sixty individuals, including shop managers and owners, underwent training on food safety, hygiene, and COVID-19-safe practices. Additionally, a set of communication materials, such as leaflets and stickers, was developed and distributed to raise awareness about safe food and promote the market. The DAM took the initiative to organize awareness-raising activities and develop and distribute communication materials to both farmers and consumers. The objectives of the awareness campaign were to emphasize the importance of farmers' markets, encouraging buyers to choose safe agricultural produce from the newly established markets. Additionally, the campaign aimed to raise awareness about the safe production and consumption of vegetables, motivating farmers to actively participate in farmers' markets by selling their produce at competitive rates. Furthermore, the campaign sought to inform local residents about the newly established market, urging regular engagement to ensure its sustained and regular operation. A total 10 000 leaflets on the importance of safe food and 1 000 stickers on participating farmers' market were developed and distributed. News of farmers' market has brought under print and electronic media coverage to inform the customer for buy safe produce from this market. In three upazilas, the DAM and the DAE convened meetings with community leaders, private sector representatives and producers, to raise awareness on the safe cultivation of crops and their marketing within farmers' markets.</p> <p>In response to a request from the DAM, FAO constructed an office room to establish a mini-laboratory within the market for rapid testing purposes. Currently, the evaluation of vegetables relies primarily on visual observation, however comprehensive testing can be conducted, if needed, at BARI and BFSa, both of which are equipped with facilities for testing vegetables, or within the farmers' market as required.</p>		
Activity 2.1	Inception Workshop		
	Achieved	Yes	
	Comments	With the participation of the implementing and collaborating partner representatives the inception workshop was organized on 20 September 2021 at the DAM's conference room. Participants, who represented the DAE, DAM and BARI, appreciated the project interventions and provided valuable suggestions for successful implementation of the project.	
Activity 2.2	Establishment of a COVID-19-safe market		
	Achieved	Yes	
	Comments	FAO consistently monitored the market construction, which was designed by an engineer hired by the organization. Following a bidding process, one company was selected for construction, and another for installing a solar system. The initial construction awardee declined the offer due to a sudden rise in material costs, resulting in a second bidding process. Construction progress faced occasional delays due to high temperatures, leading FAO to extend the project timeline.	
Activity 2.3	Training on food safety, hygiene and COVID-19 safe practices		
	Achieved	Yes	
	Comments	Two one-day training sessions on food safety, hygiene and COVID-19-safe practices were organized at the DAM Mirpur office for a total of 60 shop owners and managers from the three selected upazilas. The resource persons leading the training were selected from the DAM. The objectives of the training were to provide a comprehensive understanding of food safety issues, hygiene and COVID-19-safe practices; to enhance the understanding of participants on business concept, customer management, behaviour, and attitude in relation with business through training session and discussion; and to disseminate information about the Market Management Committee, its roles and standard operating procedures to shop owners and managers. The training's concept and content will be integrated into the standard training programs of both the DAE and the DAM.	

Activity 2.4	Grand opening of the safe market	
	Achieved	Yes
	Comments	<p>The market was officially transferred to DAM during a significant opening ceremony. This event served as an occasion to operationalize the market and guarantee access for both male and female farmers and customers. The aim was to promote the significance of these farmers' markets, encourage buyers to purchase safe agricultural produce, demonstrate to farmers that there is a demand for safe vegetables, and motivate them to cultivate and sell secure horticultural crops at a higher price and in a better environment. The grand opening comprised two parts. The initial phase involved the ceremonial inauguration of the market, featuring the ribbon-cutting ceremony and a tour of the market premises. The second part included a discussion session. The distinguished Chief Guest for the grand opening session was the Honourable Secretary of the Ministry of Agriculture, while the Director-General of DAM served as the chairperson. Special guests included representatives from FAO, the Executive Chairman of BARC, a delegate from DAE, the Chairman of BFSA and the Director General of BJRI. During the second session, the assistant FAO representative officially transferred the market to the Director-General of the DAM in the presence of the chief guest.</p> <p>A total of 750 participants received invitations to attend the grand opening programme, representing various entities such as the Ministry of Agriculture, DAM, DAE, BARI, BFSA, Bangladesh Agricultural Development Corporation (BADC), BJRI, as well as representatives from producers' groups, shop owners and other organizations. The inauguration generated widespread awareness among urban residents, motivating them to visit this secure market for the acquisition of fresh vegetables</p>
Activity 2.5	Closing Workshop	
	Achieved	Yes
	Comments	<p>A workshop marking the closure of the project took place at the conference room of BARC on 20 August 2023. Participants from stakeholder ministries and departments, including officials from the Ministry of Agriculture, DAM, DAE, BARI, BFSA, BADC and BJRI, as well as selected farmers, attended the event. During the workshop, FAO presented all activities completed under the project, while participants actively took part in discussions, sharing their opinions and suggesting that the market be managed by the DAM with the active engagement of all market actors and committees formed under this project.</p>

Partnerships and Outreach

For more information, please contact: Reporting@fao.org

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